PRECISION MEASURING TOOLS



CUTTING & CARBIDE TOOLS



MACHINE TOOL ACCESSORIES



SHOP SUPPLIES



CAT. No. 26N
Effective, 2018

NEW PRODUCTS

EXTERNAL & INTERNAL GROOVING SETS

- Right hand.
- Suitable for varied external & internal grooving.
- Carbide inserts are included for semi-finishing/roughing machining.



Set Includes:
1-External tool holder (MGEHR)
1-Internal tool holder (S-MGIVR)
10 - TiN coated inserts
2 - Hex key
1 -Aluminium fitted case





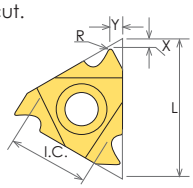
Item#	Shank Size in Set	Holder Ext.	Internal Holder Dimensions (Inch) Holder Style	Shank Size d	Depth of Cut T	F	Length L	Screw	Hex	Insert
2208-0003	5/8"	MGEHR10-2B	S10K-MGIVR2	5/8	3/16	1/2	5	GB70-85-M4X10	S3	MGMN200
2208-0006	3/4"	MGEHR12-3C	S12M-MGIVR-3	3/4	1/4	5/8	6	GB70-85-M4X12	S3	MGMN300
2208-0009	1"	MGEHR16-4D	S16R-MGIVR4	1	1/4	3/4	8	GB70-85-M5X16	S4	MGMN400

* See page 103-108 For More Grooving Sets

THREAD CARBIDE INSERTS/PARTIAL PROFILE 60°

- 60° V partial profile threading insert.
- Right hand cut.

TiN COATED



RIGHT HAND



10 PC PER PACKAGE

Item#	Insert	I.C.	Pitch Range mm	Pitch Range TPI
6061-0156	06IRA60	.156"	0.5-1.25	48-20
6061-0187	08IRA60	.188"	0.5-1.5	48-16
6007-0008	11IRA60	1/4"	0.5~1.5	48~16
6007-0015	16IRAG60	3/8"	0.5~3.0	48~8
6007-0018	22IRN60	1/2"	3.5~5.0	5~7
6007-0002	06ERA60	.156"	0.5-1.25	48-20
6007-0001	08ERA60	.197"	0.5~1.5	48~16
6007-0004	11ERA60	1/4"	0.5~1.5	48~16
6007-0012	16ERAG60	3/8"	0.5~3.0	48~8
6007-0020	22ERN60	1/2"	3.5~5.0	5~7

* See page 151-152 for More Threading Inserts

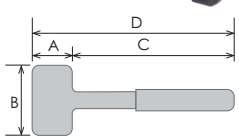
PU-DEAD BLOW HAMMERS

- Advanced Polyurethane(PU) material will not mar surfaces or absorb liquids.
- Basic: Steel structure and include steel shot.
- Absorbs shock from impact reduces rebound and maximizes force due to steel shot filled canisters.
- Grip is synthetic rubber improving grip and comfort.

MADE IN TAIWAN



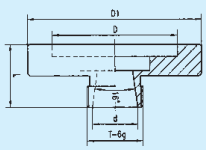
Item#	Size OZ	(mm) A	B	C	D
7080-0331	18	38	100	249	287
7080-0333	24	46	100	260	306
7080-0336	33	50	110	290	340
7080-0339	49	60	130	308	368



* See page 290 For More Hammers

ER COLLET FIXTURES-Plain Back

- Mount to your choice of backplate for using on a lathe or could be used as a fixture on a milling table.
- Concentricity: .04mm/ .00016"





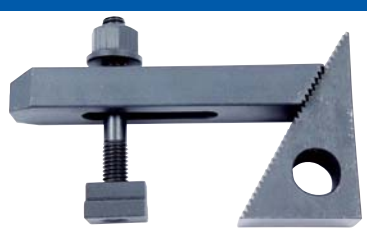


Item#	Type	D1	(mm) D	L	No. of Bolt Hole	Bolt Hole Size
3901-5016	ER-16	45	22	25	4	5
3901-5025	ER-25	102	52	36	3	M10
3901-5032	ER-32	80	55	42	3	M6
3901-5033	ER-32	100	72	42	3	M8
3901-5036	ER-40	100	72	42	3	M8
3901-5038	ER-40	132	100	42	3	M10

* See page 190 & 238 For More Fixtures

5PC Ultra Quality STEEL CLAMPING SETS

- **Manufactured at world class factory that produces highest quality US bands.**
- Made of IC45e steel for stronger strength.
- All parts are case hardend or heat treated to HRC30~40.



Item#	Table Slot	Stud Size	(Inch) Clamp Length	Clamp Height
3901-0301	3/8	5/16~18	4	3
3901-0302	7/16	3/8~16	4	3
3901-0304	0.54	1/2~13	6	3
3901-0307	5/8	1/2~13	6	3
3901-0311	11/16	5/8~11	6	4.5
3901-0314	3/4	5/8~11	6	4.5

* See page 207 & 208 For More Clamping Sets

Dasqua® IP 65 ELECTRONIC MICROMETER

- IP65 Water-Dust resistant
- Graduation: .00005"/ .001mm
- Extra large characters LCD display
- Measuring faces are carbide-tipped
- 3 keys: On/off, Inch/mm, Zero reset.
- Ratchet Spindle with lock.
- Supplied with fitted case
- One button battery CR2032, 3 V
- **Meet DIN 863.**



IP 65

0~1"/0~25mm
4209-0012

REPLACEMENT BATTERY (ITEM #4102-0032)

* See page 11 for Electronic Micrometers

AGD GROUP 2, 1" DIAL INDICATOR WITH LIFTING LEVER

- Lifting lever.
- Rack & contact point made of hardened stainless steel.
- Contact point interchangeable with thread 4-48.
- Stem: 3/8" diameter.
- Jeweled movement.
- 2" Dia. dial face.
- Lug Back

0~1" Range
4400-1090

Reading 0-100







* See page 32-34 for More Indicators

22PC HSS Tap & Die Set Range 1/4 ~ 1/2"

- Made of High Speed Steel.
- Wooden case included.

HIGH SPEED STEEL



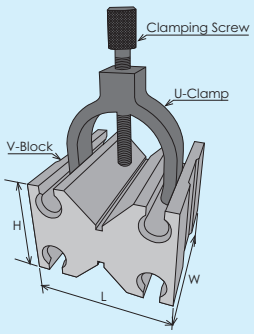
INCLUDES:
1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20 Plug Tap and Die each, 1" OD Adjustable Die Stock, T-Handle Tap Wrench.

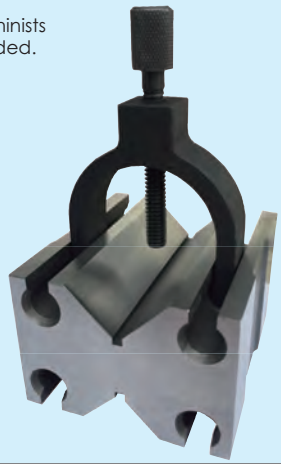
Range 1/4 ~ 1/2"
1011-0007

* See page 72-78 for More Sets

Toolmaker's V-BLOCK -Slot-In CLAMP

- Made of hardened tool steel machined & ground in pairs toclose tolerance.
- A versatile tool for Toolmakers & Machinists
- Clamps can easily slide in & are included.
- Both sides have different Vee sizes



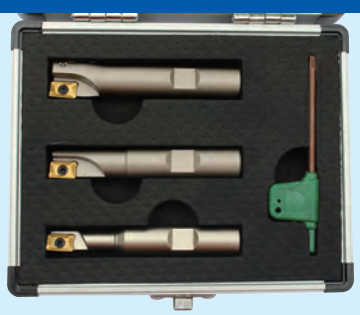


Item #	W	H	L	Small Vee	Large Vee	G.W.
3402-0968	2-1/2	1-3/4	2-3/4	1	1-3/16	6 lbs.
3402-0970	3-1/2	2-3/4	4-7/8	1.22	1.38	24 lbs.

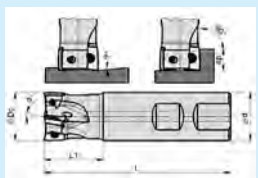
* See page 52-56 for More V-Blocks

3PC COOLANT THRU INDEXABLE END MILL SET

- Coolant thru.
- 90° square shoulder milling
- Used for slotting and peripheral milling
- Excellent alternative to HSS, cobalt and carbide end mills for heavy material removal rates
- Used standard APKT-1003 inserts (not included) with M2.5x6mm screw.



SQUARE SHOULDER



5822-1710



INSERTS NOT INCLUDED

Size in Set	Cutter Dia.	Shank Dia.	No. of Flute	Head Length	(Inch) OAL	Screw	Style Inserts	Wrench
3/8x1/2"	3/8	1/2	1	1-1/2	3.00	M2.5x5mm	APKT1003	T8
1/2x1/2"	1/2	1/2	1	1-1/2	3.00	M2.5x5mm	APKT1003	T8
5/8x1/2"	5/8	1/2	2	1-1/2	3.00	M2.5x5mm	APKT1003	T8

* See page 91 & 93 for More Indexable End Mill Sets

ELECTRONIC CALIPERS

3-KEY AUTO-OFF ELECTRONIC CALIPERS

INCH/METRIC
.0005" RESOLUTION



REPLACEMENT BATTERY (ITEM #4102-0030)

0~6" Range
4100-0030

- Auto power off or manual on/off key.
- Three-key Model: Inch/MM, On/Off & Zero.
- Switchable inch/metric, with resolution to .0005"/.01mm on high contrast easy to read LCD display.
- 4-way measurements: Outside, Inside, Depth & Step.
- Floating zero.
- Body and measuring are hardened stainless steel.
- Standard SR 44, 1.55V battery included.
- With fitted case.
- Meets DIN 862

Item#	Range	Accuracy
4100-0029	0-4" / 0-100mm	± 0.001"/ 0.02mm
4100-0030	0-6" / 0-150mm	± 0.001"/ 0.02mm
4100-0031	0-8" / 0-200mm	± 0.001"/ 0.03mm
4100-0032	0-12" / 0-300mm	± 0.0015"/ 0.04mm

Fraction/Inch/Metric ELECTRONIC CALIPERS

INCH/METRIC
.0005" RESOLUTION



REPLACEMENT BATTERY (ITEM #4102-0030)

* Limited Supply

0~6" Range
4100-3506

- Reads in fraction of an inch, easy to read.
- Resolution 0.0005"/0.01mm/1/64th
- Press button to change mode mm/inch/fractional
- 4-way measurements: Outside, Inside, Depth & Step.
- Standard SR 44, 1.55V battery included.
- Switch on/off and auto off
- Zero setting
- With fitted case.
- Meets DIN 862

Item#	Range	Accuracy
4100-3504*	0-4"/0-100mm	.001"/.02mm
4100-3506	0-6"/0-150mm	.001"/.02mm
4100-3508	0-8"/0-200mm	.001"/.03mm
4100-3512	0-12"/0-300mm	.0015"/.04mm

SUPER SMOOTH GLASS SCALE ELECTRONIC CALIPERS

- Glass scale gives extreme accuracy and smooth reading
- Auto power off with manual On/Off key, Inch/mm key & Zero key.
- 4-way measurement for outside, inside, depth and step.
- High contrast Yellow or Black background LCD.
- Thumb roller for moving the slider in small and smooth increments.
- CR2025, 3V battery included.
- With fitted case.
- Meets DIN 862



REPLACEMENT BATTERY (ITEM #4102-0030)



ACCURACY .001/.02MM"
.0005"/.01MM RESOLUTION

* Limited Supply

Range	Black LCD Item#	Yellow LCD Item#
0-6"/0-150mm	4100-3426*	4100-3436
0-8"/0-200mm	4100-3428*	4100-3438
0-12"/0-300mm	4100-3430*	4100-3440

4-KEY DIGITAL ELECTRONIC CALIPERS

INCH/METRIC
.0005" RESOLUTION



REPLACEMENT BATTERY (ITEM #4102-0030)

0~6" Range
4100-3006

- Four-key type: Hold-key, On/Off key, Inch/mm key & Zero key. Enter high/low dimensional limits-out of limits will flash on display.
- Body is hardened stainless steel.
- 4-way measurement for outside, inside, depth and step.
- Thumb roller for moving the slider in small and smooth increments.
- Hold-key can be used for data hold at any position.
- Standard SR 44, 1.55V battery included.
- With fitted case.
- Meets DIN 862

Item#	Range	Accuracy
4100-3006	0-6" /0-150mm	± .001"/.02mm
4100-3008	0-8" /0-200mm	± .001"/.03mm
4100-3012	0-12" /0-300mm	± .0015"/.04mm

Z-Limit ULTRA SERIES ELECTRONIC CALIPERS

- Manufactured and inspected at world class factory that produces highest quality US brands.
- Last measuring position retained when shut off
- 4-way measurements: Outside, Inside, Depth & Step
- Body is hardened stainless steel
- Automatic shut-off after 5 minutes of non-use
- Three-key Model: Inch/MM, On/Off & Zero
- Standard CR-2032(3V) battery included
- With thumb roller
- Meets DIN 862



0~6" Range
4109-0030

Item#	Range	Accuracy
4109-0030	0-6"/0-150mm	.001"/ .01mm
4109-0031	0-8"/0-200mm	.001"/ .01mm
4109-0032	0-12"/0-300mm	.0015"/ .04mm

.0005" / .01mm GRADUATION

REPLACEMENT BATTERY (ITEM #4102-0032)

Dasqua® SPLASH PROOF ELECTRONIC CALIPERS

NEW

IP 54



0~6" Range
4109-3036

- Coolant splash-proof, dust-proof and chip-proof.
- Switch power on/off key.
- Switchable inch/mm
- Max. Measuring Speed: 3.0m/s.
- Body and measuring is hardened stainless steel.
- Floating zero.
- With fitted case.
- Battery included.
- Meets DIN 862



Item#	Range	Accuracy	Battery
4109-3036	0-6"/0-150mm	.001"/ .02mm	CR-2032/3V
4109-3038	0-8"/0-200mm	.001"/ .02mm	CR-2032/3V
4109-3040	0-12"/0-300mm	.0015"/ .04mm	CR-2032/3V

INCH/METRIC .0005"/0.01mm RESOLUTION

REPLACEMENT BATTERY (ITEM #4102-0032/CR-2032)

SPLASH-PROOF DIGIMATIC CALIPERS

- Coolant splash-proof, dust-proof and chip-proof.
- Auto power on/off key.
- Switchable inch/mm
- Floating zero.
- Body is hardened stainless steel.
- With fitted case.
- Meets DIN 862

IP 54

0~6" Range
4100-2806

- High contrast LCD display with resolution 0.0005"/0.01mm.
- 4-way measurements: Outside, Inside, Depth & Step.
- Standard SR44, 1.55V batter included.



INCH/METRIC .0005"/0.01mm RESOLUTION

Item#	Range	Accuracy
4100-2806	0-6"/0-150mm	.001"/ .02mm
4100-2808	0-8"/0-200mm	.001"/ .02mm
4100-2812	0-12"/0-300mm	.0015"/ .04mm

REPLACEMENT BATTERY (ITEM #4102-0030)

LEFT HANDED ELECTRONIC CALIPERS

- Special made model for left-handed people.
- Extra large LCD.
- Three-key Model: Inch/MM, On/Off & Zero.
- 4-way measurements: Outside, Inside, Depth & Step.
- Standard SR 44, 1.55V battery included.
- Digits Display Height: 0.4".
- Resolution : .0005"/.01mm.
- Body is hardened stainless steel.
- With fitted case.
- Meets DIN 862



INCH/METRIC
.0005" RESOLUTION

Limited Supply!

Item#	Range	Accuracy
4100-3206	0-6"/0-150mm	± 0.001"/ 0.02mm
4100-3212	0-12"/0-300mm	± 0.0015"/ 0.03mm

REPLACEMENT BATTERY (ITEM #4102-0030)

ELECTRONIC CALIPERS

Dasqua® IP67 WATER PROOF ELECTRONIC CALIPERS

NEW



- Strictly made in accordance with **DIN 862**.
- IP67 protection against water, oil, dust or any other liquid.
- Large easy-to-read display.
- Silky smooth movement throughout.
- Hardend, ground and lapped measuring surfaces.
- Four-way measuring for outside,inside,depth and step.
- Standard CR-2032, 3V battery included.

REPLACEMENT BATTERY (ITEM #4102-0032)

0~6" Range
4109-3046

Item#	Range	Accuracy	Battery
4109-3046	0-6"/0-150mm	.001"/ .02mm	CR-2032/3V
4109-3048	0-8"/0-200mm	.001"/ .02mm	CR-2032/3V
4109-3050	0-12"/0-300mm	.0015"/ .04mm	CR-2032/3V

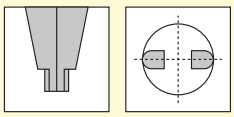
Pro-Series LONG RANGE DIGITAL ELECTRONIC CALIPERS



.0005" / .01MM RESOLUTION

0~20" Range
4100-0233

- Manufactured and inspected at world class factory that produces highest quality US brands.
- Switchable inch/metric.
- High contrast LCD display.
- Preset function.
- On/Off button.
- Internal and external measurement.
- Absolute/Incremental measurement with fine adjustment.
- Meets DIN 862
- Body is hardened stainless steel , no-glare satin reading.
- Standard CR-2032, 3V battery included.
- With fitted case.

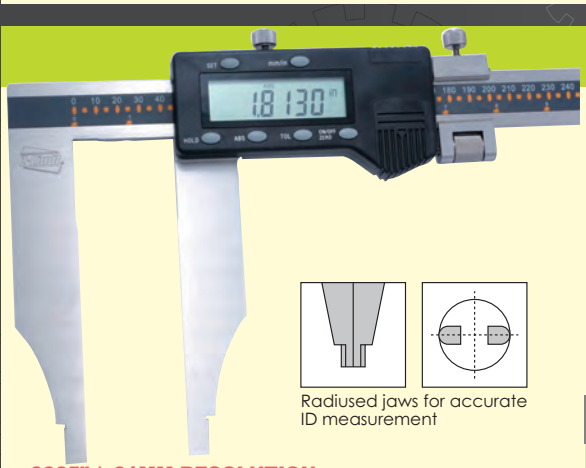


Radiused jaws for accurate ID measurement

Item#	Range	Jaw Length	Radiused Jaw Width	Accuracy
4100-0233	0-20"/ 0-500mm	4"	0.787"	± .001"/ .02mm
4100-0234	0-24"/ 0-600mm	4"	0.787"	± .0015"/ .03mm
4100-0236	0-40"/ 0-1000mm	6"	0.787"	± .002"/ .05mm

REPLACEMENT BATTERY (ITEM #4102-0032)

Z-Limit LONG- JAW ELECTRONIC CALIPERS



Radiused jaws for accurate ID measurement

- Manufactured and inspected at world class factory that produces highest quality US brands.
- Internal and external measurement.
- Absolute/Incremental measurement with fine adjustment.
- Body is hardened stainless steel , no-glare satin reading.
- Standard CR-2032, 3V battery included.
- Switchable inch/metric.
- High contrast LCD display.
- Preset function.
- On/Off button.
- With fitted case.
- Meets DIN 862





.0005" / .01MM RESOLUTION

REPLACEMENT BATTERY (ITEM #4102-0032)

Item#	Range	Jaw Length	Radiused Jaw Width	Accuracy
4109-0242	0-24"/ 0-600mm	6"	0.787"	± .0015"/ .03mm
4109-0243	0-24"/ 0-600mm	8"	0.787"	± .0015"/ .03mm

LONG RANGE DIGITAL ELECTRONIC CALIPERS

- Resolution to .0005"/ .01mm on high contrast LCD display.
- Internal and external measurement.
- Absolute/Incremental measurement with fine adjustment.
- Body is hardened stainless steel , no-glare satin reading.
- Standard SR 44, 1.55V battery included.
- Switchable inch/metric.
- Preset function.
- On/Off button.
- With fitted wooden case.
- Meets DIN 862

INCH/METRIC .0005" RESOLUTION

Item#	Range	Jaw Length	Radiused Jaw Width	Accuracy
4100-0033	0-20"/ 0-500mm	4	0.787"	± 0.002"/ 0.05mm
4100-0034	0-24"/ 0-600mm	4	0.787"	± 0.0025"/ 0.06mm
4100-0036	0-40"/ 0-1000mm	6	0.787"	± 0.004"/ 0.10mm
4100-0037	0-60"/ 0-1500mm	5-1/4	0.787"	± 0.004"/ 0.10mm
4100-0038*	0-80"/ 0-2000mm	6	0.787"	± 0.004"/ 0.10mm



Radiused jaws for accurate ID measurement

* Truck Ship Only

REPLACEMENT BATTERY (ITEM #4102-0030)

Dasqua® IP65 WATER PROOF HEAVY DUTY ELECTRONIC CALIPER

NEW



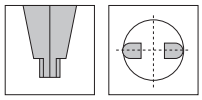
IP 65

0~20" Range
4109-3083

INCH/METRIC .0005"/0.01mm RESOLUTION
REPLACEMENT BATTERY (ITEM #4102-0032)

BUILT-IN BLUETOOTH

- The new generation measuring series with Built-in-Bluetooth transmission.
- Strictly made in accordance with **DIN 862**.
- IP65 protection against water,oil,dust or any othr liquid.
- Silky smooth movement throughout.
- Hardend, ground and lapped measuring surfaces.
- Metric/Inch/Fraction conversion.
- Standard CR-2032, 3V battery included.

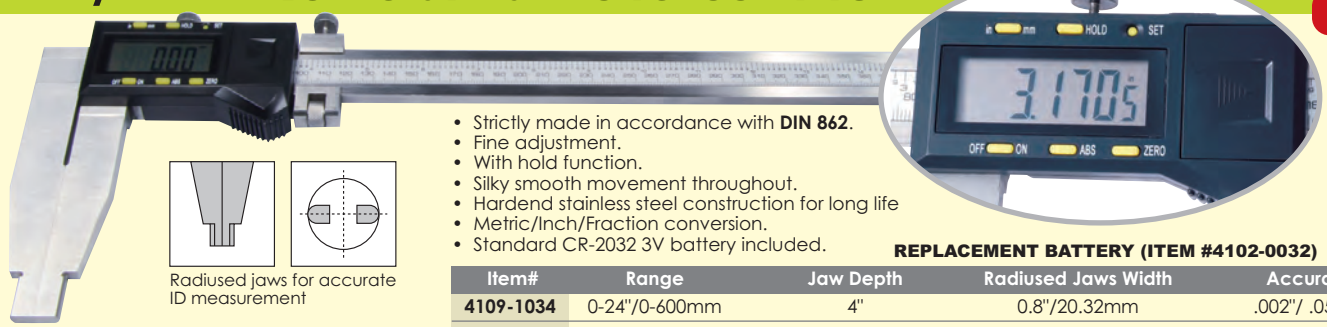


Radiused jaws for accurate ID measurement

Range	Jaw Depth	Radiused Jaws Width	Accuracy
0-20"/0-500mm	4"	0.787"	.002"/ .05mm

Dasqua® HEAVY DUTY LONG RANGE ELECTRONIC CALIPERS

NEW



Radiused jaws for accurate ID measurement

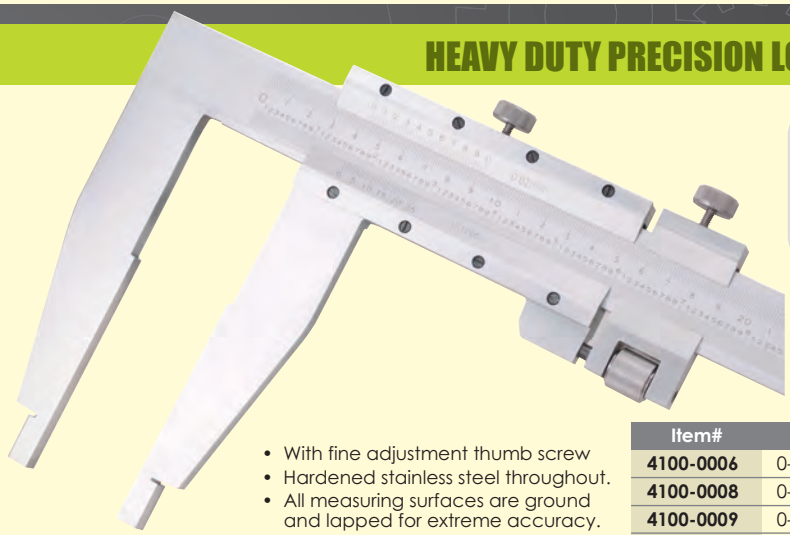
- Strictly made in accordance with **DIN 862**.
- Fine adjustment.
- With hold function.
- Silky smooth movement throughout.
- Hardend stainless steel construction for long life
- Metric/Inch/Fraction conversion.
- Standard CR-2032 3V battery included.

REPLACEMENT BATTERY (ITEM #4102-0032)

INCH/METRIC .0005"/0.01mm RESOLUTION

Item#	Range	Jaw Depth	Radiused Jaws Width	Accuracy
4109-1034	0-24"/0-600mm	4"	0.8"/20.32mm	.002"/ .05mm
4109-1036	0-40"/0-1000mm	5"	0.8"/20.32mm	.002"/ .06mm

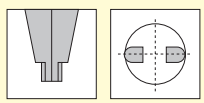
HEAVY DUTY PRECISION LONG RANGE VERNIER CALIPERS







INCH/METREIC GRADUATION: 0.001" / 0.02 MM



Radiused jaws for accurate ID measurement

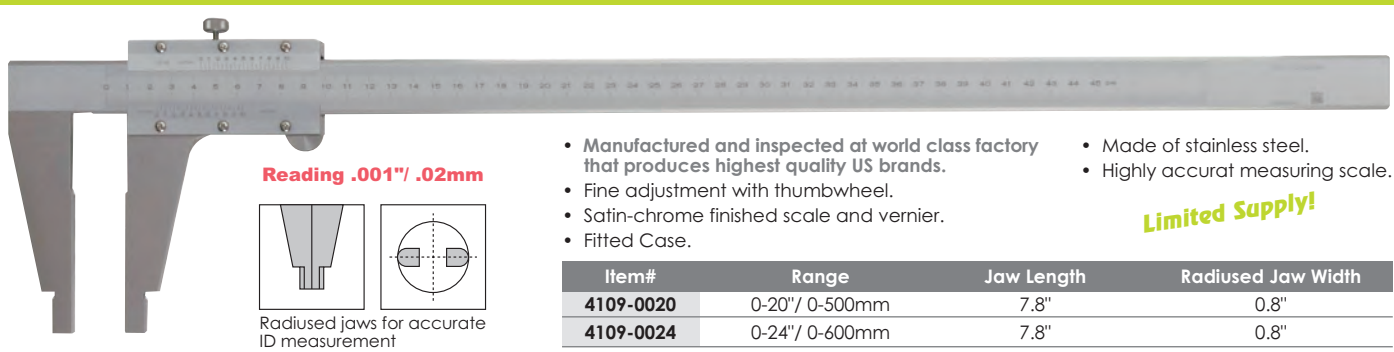
Reading .001"/ .02mm

- With fine adjustment thumb screw
- Hardened stainless steel throughout.
- All measuring surfaces are ground and lapped for extreme accuracy.
- Supplied in wooden case.
- Satin chrome finish: Non-glare.
- Meets DIN 862

Item#	Range	Jaw Depth	Radiused Jaw Width
4100-0006	0-24" / 0-600mm	4"	10mm
4100-0008	0-40" / 0-1000mm	5-1/2"	20mm
4100-0009	0-60" / 0-1500mm	6-1/2"	20mm
4100-0010*	0-80" / 0-2000mm	7-1/2"	30mm
4100-0012*	0-100" /0-2500mm	10"	30mm

* Truck Ship Only

Z-Limit LONG JAW VERNIER CALIPERS



Reading .001"/ .02mm

Radiused jaws for accurate ID measurement

- Manufactured and inspected at world class factory that produces highest quality US brands.
- Fine adjustment with thumbwheel.
- Satin-chrome finished scale and vernier.
- Fitted Case.
- Made of stainless steel.
- Highly accurat measuring scale.

Limited Supply!

Item#	Range	Jaw Length	Radiused Jaw Width
4109-0020	0-20"/ 0-500mm	7.8"	0.8"
4109-0024	0-24"/ 0-600mm	7.8"	0.8"

LONG RANGE DIAL CALIPERS

Ultra-Series LONG RANGE DIAL CALIPERS

- Manufactured and inspected at world class factory that produces highest quality US brands.
- Made of stainless steel hardened and precision ground.
- One revolution per each 0.100"
- Covered screw-on rack made from one piece.
- 3-way measurement: Outside, Inside and Depth.
- Thumb roll for rapid measuring.
- Beam graduation in 0.100" increments stain chrome finished.
- With fitted case.
- Meets DIN 862

SMOOTH MOVEMENT

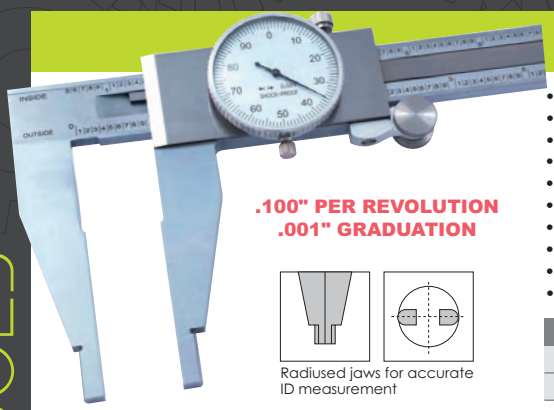
Item#	Range	Jaw Depth	Radiused Jaws Width	Accuracy
4100-2428	0-18"	4"	0.787"	.0028"
4100-2430	0-20"	4"	0.787"	.0030"
4100-2434	0-24"	4"	0.787"	.0038"



Radiused jaws for accurate ID measurement

.100" PER REVOLUTION
.001" GRADUATION

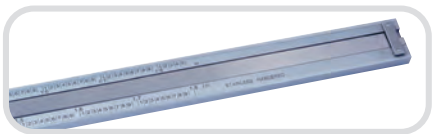
LONG RANGE PRECISION DIAL CALIPERS



.100" PER REVOLUTION
.001" GRADUATION

Radiused jaws for accurate ID measurement

- Heavy duty made of stainless steel hardened and precision ground.
- 3-way measurement: Outside, Inside and Depth.
- Thumb roll for rapid measuring.
- Beam graduation in 0.100" increments stain chrome finished.
- Large dial face (2" dia.) for easy reading.
- Covered screw-on rack made from one piece.
- One revolution per each 0.100".
- Shock proof.
- With fitted wooden case.
- Meets DIN 862



Item#	Range	Jaw Depth	Radiused Jaws Width	Accuracy
4100-2418	0~18"	3.4"	0.500"	.003"
4100-2424	0~24"	3.4"	0.500"	.004"

Dasqua® 2PC IP54 ABSOLUTE ELECTRONIC MEASURING SET

NEW



IP 54

- Strictly made in accordance with **DIN 862/863**.
- Caliper and micrometer water resistance reach to IP54 standard.
- 0-6"/0-150mm (0.0005"/0.01mm) digital caliper with **Absolute function.**
- 0-1"/0-25mm (0.00005"/0.001mm) digital micrometer.Complete with fitted case.
- Metric/Inch conversion.
- Standard CR-2032, 3V battery included.

RESOLUTION
CALIPER- 0.0005"/0.01mm
MICROMETER- 0.00005/0.001mm

2PC/SET
4209-1002







REPLACEMENT BATTERY (ITEM #4102-0032)

CASES FOR CALIPERS

NEW

- Fits most of dial and electronic calipers.
- Durable ABS material.
- Case only.

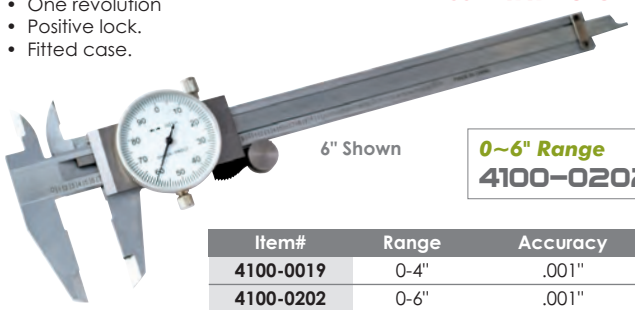


Item#	Fits Caliper	LxWxThick
4100-0030CASE	6"	9.8x3.5x1"
4100-0031CASE	8"	12.0x3.8x1"
4100-0032CASE	12"	16.7x4.9x1.1"

PRECISION DIAL CALIPERS

- Covered rack for longer life and chip free operation.
- 4-way measurement for outside, inside, depth and step.
- Adjustable dial for easy reading.
- Meets DIN 862
- One revolution
- Positive lock.
- Fitted case.

.001 GRADUATION
.100 PER REVOLUTION



6" Shown

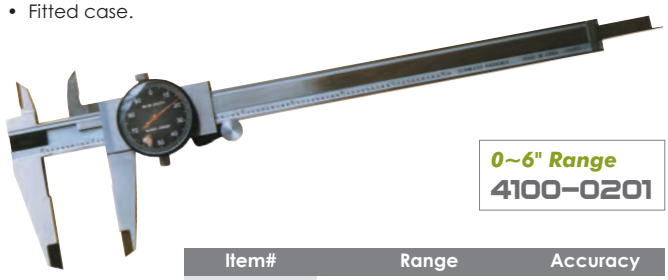
0~6" Range
4100-0202

Item#	Range	Accuracy
4100-0019	0-4"	.001"
4100-0202	0-6"	.001"
4100-0021	0-8"	.0012"
4100-0022	0-12"	.0016"

BLACK FACE PRECISION DIAL CALIPERS

- Covered rack for longer life and chip free operation.
- 4-way measurement for outside, inside, depth and step.
- Adjustable dial for easy reading.
- Meets DIN 862
- One revolution
- Positive lock.
- Fitted case.

.001 GRADUATION
.100 PER REVOLUTION

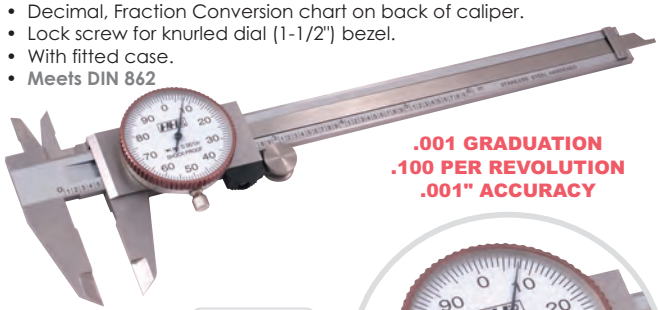


0~6" Range
4100-0201

Item#	Range	Accuracy
4100-0201	0-6"	.001"
4100-0221	0-12"	.0016"

Pro-Series PRECISION DIAL CALIPERS

- Direct reading, reliable and accurate.
- Graduations of .001" in one revolution.
- Hardened stainless steel bar, rack, gears, depth rod and measuring faces.
- Screw on rack, covered for chip free operation.
- Shock proof.
- Knife-edge contacts for both inside and outside measurements.
- 4-way measurements: inside, outside, depth and step.
- Lock screw for holding the sliding jaw in position.
- One hand use with the thumb operated fine adjustment roller.
- Decimal, Fraction Conversion chart on back of caliper.
- Lock screw for knurled dial (1-1/2") bezel.
- With fitted case.
- Meets DIN 862



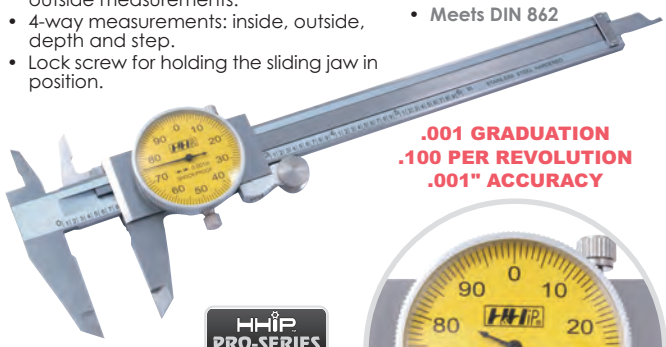
.001 GRADUATION
.100 PER REVOLUTION
.001" ACCURACY



0~6" Range
4100-0020

Pro-Series YELLOW FACE PRECISION DIAL CALIPERS

- Direct reading, reliable and accurate.
- Graduations of .001" in one revolution.
- Hardened stainless steel bar, rack, gears, depth rod and measuring faces.
- Screw on rack, covered for chip free operation.
- Shock proof.
- Knife-edge contacts for both inside and outside measurements.
- 4-way measurements: inside, outside, depth and step.
- Lock screw for holding the sliding jaw in position.
- One hand use with the thumb operated fine adjustment roller.
- Decimal, Fraction Conversion chart on back of caliper.
- Lock screw for knurled dial (1-1/2") bezel.
- With fitted case.
- Meets DIN 862



.001 GRADUATION
.100 PER REVOLUTION
.001" ACCURACY



0~6" Range
4100-0205

Z-Limit SHOCKPROOF DIAL CALIPERS WITH THUMBWHEEL





- Manufactured and inspected at world class factory that produces highest quality US brands.
- 4-way measuring: outside, inside, depth and step.
- Sliky smooth movement throughout the entire range, tough, shockproof design.
- Stainless steel construction.
- .100" range per revolution.
- .001" reading dial face.
- Supplies in a shop-hardened case.

Item#	Range	Accuracy	Jaw Length
4109-2801	0-6"	.001"	1.6"
4109-2802	0-8"	.001"	2.0"
4109-2803	0-12"	.0015"	2.5"

DIAL CALIPERS

Z-Limit SUPER QUALITY DIAL CALIPERS

- Manufactured and inspected at world class factory that produces highest quality European brands.
- Graduations of .001" in one revolution.
- Hardened stainless steel very well finished.
- Smooth operating, Shockproof.
- Screw on rack.
- Knife-edge contacts for both inside and outside measurements.
- 4-way measurements: inside, outside, depth and step.
- One hand use with the thumb operated fine adjustment roller.
- With fitted durable case.
- Meets DIN 862





SMOOTH MOVEMENT

Item#	Range	Accuracy
4109-0006	0-6"	.001"
4109-0008	0-8"	.001"
4109-0012	0-12"	.0015"

SWISS-STYLE PRECISION DIAL CALIPERS



Limited Supply!

.001 GRADUATION
.100 PER REVOLUTION

0~6" Range
4100-2801

- Graduation of 0.001" in one revolution.
- Inverted covered rack prevents dirt for prolonged life.
- Hardened and ground stainless steel with satin chromed.
- Shock proof.
- 4-way measurement: inside, outside, depth and step.
- Complete with fitted case.
- Meets DIN 862

Item#	Range	Accuracy
4100-2801	0-6"	.001"
4100-2803	0-12"	.0016"

6" TiN COATED DIAL CALIPER



Limited Supply!

- TiN coated for longer life.
- Covered rack for longer life and chip free operation.
- 4-way measurement for outside, inside, depth and step.
- Adjustable dial for easy reading.
- Fitted case.
- Meets DIN 862

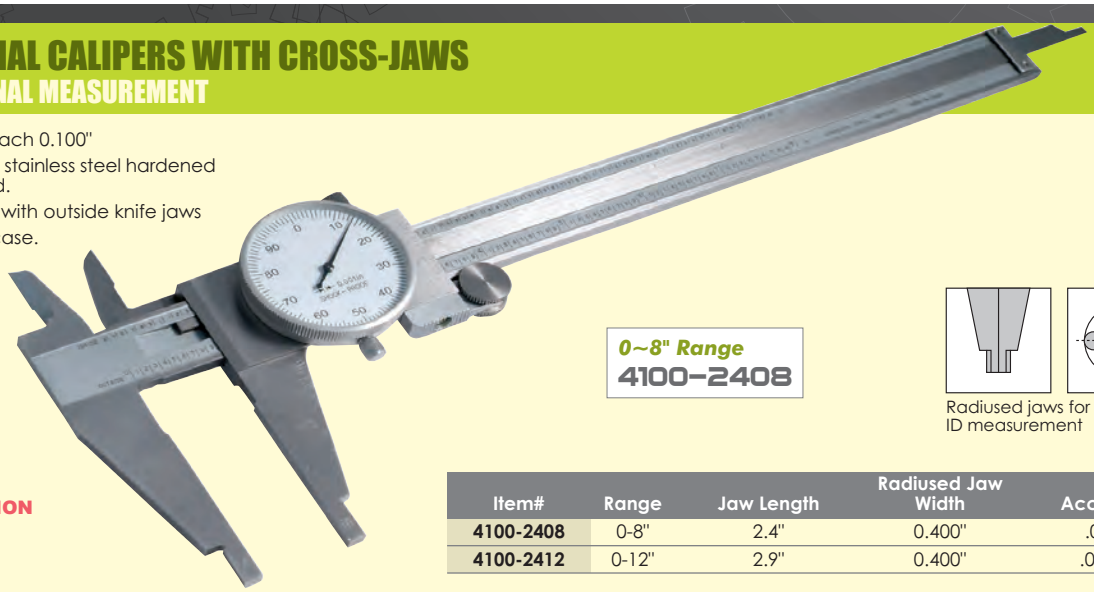


.001 GRADUATION
.100 PER REVOLUTION
.001" ACCURACY

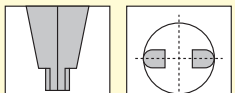
0~6" Range
4100-0208

HEAVY-DUTY DIAL CALIPERS WITH CROSS-JAWS
FOR DIRECT INTERNAL MEASUREMENT

- One revolution per each 0.100"
- Heavy duty, made of stainless steel hardened and precision ground.
- 4 way measurement with outside knife jaws
- With fitted wooden case.
- Meets DIN 862



0~8" Range
4100-2408



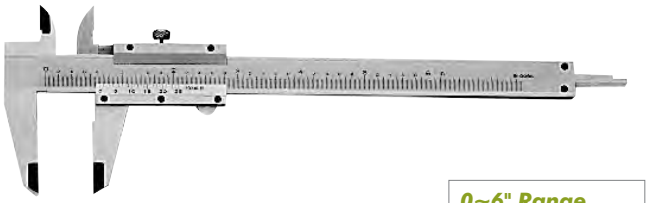
Radiused jaws for accurate ID measurement

.100" PER REVOLUTION
.001" GRADUATION

Item#	Range	Jaw Length	Radiused Jaw Width	Accuracy
4100-2408	0-8"	2.4"	0.400"	.001"
4100-2412	0-12"	2.9"	0.400"	.0015"

6" LOCKING SCREW VERNIER CALIPER

- Satin chrome finish: Non-glare.
- Measuring faces are ground.
- Supplied with case.

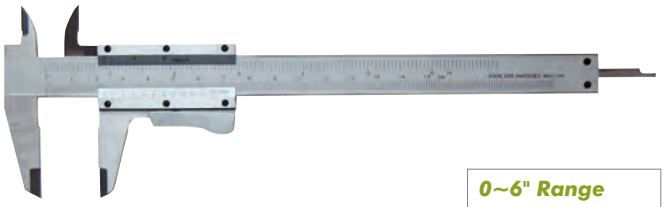


0~6" Range
4100-0002

INCH/METRIC
.001"/ .02mm GRADUATION

6" THUMB LOCK VERNIER CALIPER

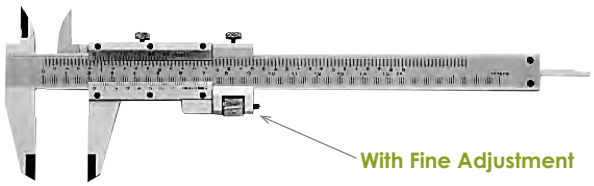
- Made of stainless steel, hardened and ground.
- 4-way measurements: inside, outside, depth and step.
- One hand use with the thumb lock operation.
- With fitted case.



0~6" Range
4100-0004

INCH/METRIC .001"/ .02mm GRADUATION

PRECISION VERNIER CALIPERS W/FINE ADJ.



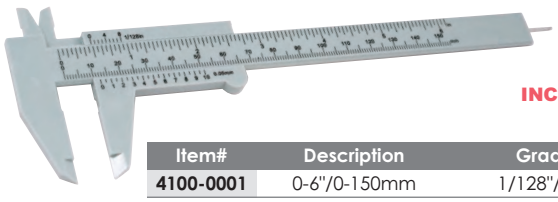
- Satin chrome finish: Non-glare.
- Measuring faces are ground.
- Supplied with case.

INCH/METRIC
.001"/ .02mm GRADUATION

Item#	Description
4100-0003	0-6"/0-150mm
4100-0005	0-12"/0-300mm

PLASTIC VERNIER CALIPER

- Made from durable plastic material.
- 3-way measurement: Inside, outside and depth
- Nice promotion item packed with blister card.
- Neon colors.



INCH/METRIC

Item#	Description	Graduation
4100-0001	0-6"/0-150mm	1/128"/ 0.05mm

CENTER LINE GAGE SETS

- Checks distance between different size holes, or to an edge from a hole. Cone will seek center.
- Adapts to most dial calipers.
- Reads in exact figures.
- High grade alloy steel.



Item#	For
4100-0040	4", 6", 8" Calipers
4100-0041	10", 12" Calipers

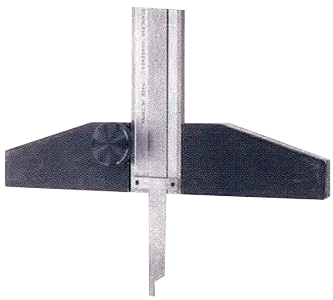
CALIPER ACCESSORY KIT

- Components are hardened.
- 4.1mm slot to fit all kinds of brands.
- **Kit includes:**
  4 sets of points
  4 sets of screws
  1 set of clamps
  1 Allen wrench



4100-0044

DEPTH BASE CALIPER ACCESSORY



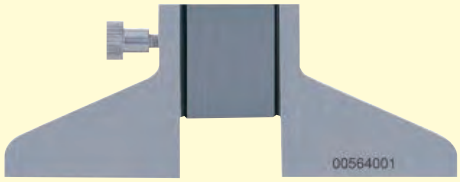
- Fits most brands of dial or vernier calipers
- Accurate direct readings
- Attaches with single screw

Limited Supply!

Item#	Fit Caliper	Base Size	Slot Width
4100-0047	12"	5"	.77"

Z-Limit DEPTH MEASURING BASE FOR 6" CALIPERS

Slot width: .64"
Base width: 3"



4109-0046

INSPECTION TOOL KITS

4PC STUDENT'S KIT



0~1" Outside Micrometer:
- 0.0001" graduation
- Carbide tipped
- Ratchet stop

4902-0004

4" Bevel Squarer:
- Beam size 2-3/4"
- Ground and lapped accuracy for straightness, parallelism, and at right angles.

6" Dial Caliper:
- 0.001"graduation
- 4-way measurement
- Stainless steel
- Shock-proof

6" Flex Ruler:
- 4R graduation
- Satin chrome finish
- Stainless steel

3PC TOOL KIT WITH 1" MICROMETER

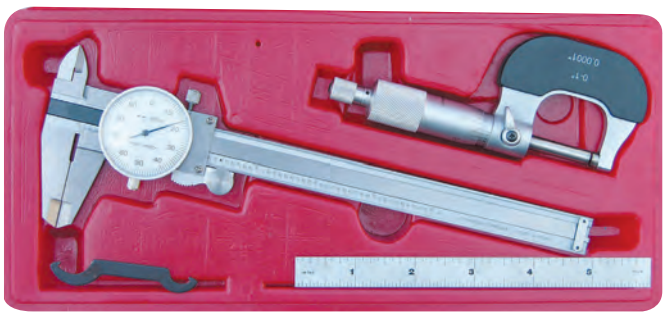
6" Flex Ruler:
- 4R graduation
- Satin chrome finish
- Stainless steel

0~1" Outside Micrometer:
- 0.0001" graduation
- Carbide tipped
- Ratchet stop

6" Dial Caliper:
- 0.001"graduation
- 4-way measurement
- Stainless steel
- Shock-proof

Limited Supply!

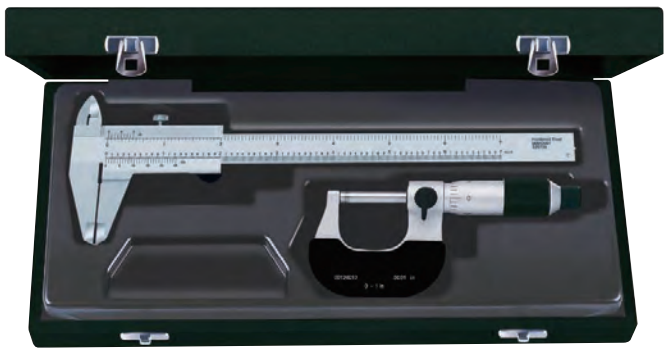
4902-0007



Z-Limit 2PC VERNIER CALIPER & MIC KIT

- Manufactured and inspected at world class factory that produces highest quality US brands.
- 0~1" Outside Micrometer, Resolution: .0001"
- 0~6" Vernier Caliper, Resolution: .001"/ 1/128"
- Fitted Plastic Case

4909-0002



Dasqua® 2PC IP54 ABSOLUTE ELECTRONIC MEASURING SET

NEW

- Strictly made in accordance with **DIN 862/863.**
- Caliper and micrometer water resistance reach to IP54 standard.
- 0-6"/0-150mm (0.0005"/0.01mm) digital caliper with **Absolute function**.
- 0-1"/0-25mm (0.00005"/0.001mm) digital micrometer.Complete with fitted case.
- Metric/Inch conversion.
- Standard CR-2032, 3V battery included.

IP 54



2PC/SET
4209-1002

RESOLUTION
CALIPER- 0.0005"/0.01mm
MICROMETER- 0.00005/0.001mm

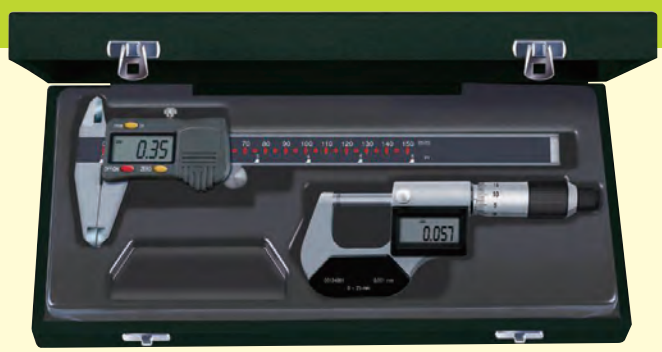
REPLACEMENT BATTERY (ITEM #4102-0032)

Z-Limit 2PC ELECTRONIC CALIPER & MIC KIT

- Manufactured and inspected at world class factory that produces highest quality US brands.
- 0-1" IP54 Digital Micrometer, Resolution: .00005"
- 0-6" Digital Caliper with Precision Glass Scale, Resolution: .0005"
- Absolute Measuring System
- Fitted Wooden Case
- Standard CR-2032, 3V battery included.

Z-Limit ULTRA-SERIES

4909-0012



REPLACEMENT BATTERY (ITEM #4102-0032)

6PC INSPECTION TOOL KIT

22pc Indicator Point Set:
- AGD specification (4-48 threads)
- Fits most indicators

6" Dial Caliper:
- 0.001"graduation
- 4-way measurement
- Stainless steel
- Shock-proof

Magnetic Base:
- Fine adjustment
- 130 lbs. power pull.

0-0.03" Dial Test Indicator:
- 0.0005" graduation,
- Complete with 2 stems (5/32" & 3/8")

0-1" Dial Indicator:
- 0.001" graduation
- 2" dial face

0-1" Outside Micrometer:
- 0.0001" graduation
- Carbide tipped
- Ratchet stop



4902-0006

IN FITTED CASE

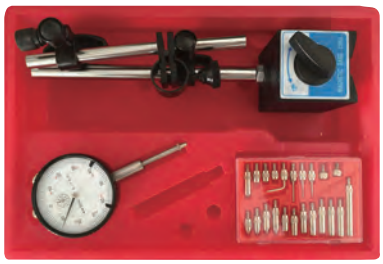


3PC MAGNETIC BASE. & INDICATOR KIT

0-1" DIAL INDICATOR
- Graduation: .001"
- Stem: 3/8" diameter.
- 2" Dia. dial face.
- Lug back.

4902-0012
Complete with fitted case

22PC INDICATOR POINT
- Fits most American and imported indicators.
- A.G.D. specifications (4-48 Threads)
- Assorted points.



MAGNETIC BASE
- Overall height: 9" .
- Off and On switch.
- Scribe-opening: 5/32" .
- Power Pull: 130 lbs.
- Base size : 2" (Width) x 2-1/2" (Depth).
- Holds most of AGD dial and test indicators.

3PC Pro-Series INSPECTION TOOL KIT

0~6" Dial Caliper:
- 0.001" graduation in one revolution,
- Hardened stainless steel, screw-on rack, shock-proof,
- 4-way measurements (inside, outside, depth and step),
- Dial face 1-1/2" diameter with special designed knurled bezel,
- Decimal and fraction conversion chart on back of caliper
- Complete with fitted case.

0~0.03" Dial Test Indicator:
- 0-15-0 reading, 0.0005" graduation,
- Complete with 2 stems(5/32"&3/8"),
- Precision pivot bearing,
- 0.098" contact point,
- Dovetail mounts (top, back & front),
- Jeweled movements,
- Auto reversing.

4902-0003



0~1" Outside Micrometer:
- 0.0001" graduation,
- Anvil and spindle hardened and precision ground, carbide tipped measuring faces, ratchet stop,
- Adjustment wrench supplied

2PC MAGNETIC BASE & INDICATOR KIT

PRO-SERIES MAGNETIC BASES
- Overall height: 9" .
- Off and On switch.
- Scribe-opening: 5/32" .
- Power Pull: 130 lbs.
- Base size : 2" (Width) x 2-1/2" (Depth).
- Holds most of AGD dial and test indicators.



4401-0017
4401-1100 & 4400-0001

0-1" DIAL INDICATOR
- Graduation: .001"
- Stem: 3/8" diameter.
- 2" Dia. dial face.
- Lug back.

2PC MAGNETIC BASE & INDICATOR KIT

DIAL INDICATOR
- 0~1" /0.001"
- Lug back
- Contact point thread 4-48
- Stem: 3/8"
- Dial Face: 2"



MAGNETIC BASE
- **Fine adjustment**
- On/off switch
- Power Pull: 130 lbs.
- Overall Height: 9"
- Max Reach: 16"
- Hold most of AGD group indicators
- Base: 2" (Width) x 2-1/2" (Depth)

4401-0015
Complete with fitted case

6PC CALIPER, MICROMETER & SQUARE KIT



Caliper:
- 0.001"graduation
- 4-way measurement
- Stainless steel
- Shock-proof

0-1" Outside Micrometer:
- 0.0001" graduation
- Carbide tipped
- Ratchet stop

Combination Square:
- Square head
- Protractor heas
- Center head
- 12" 4R blade

4902-0009
Complete with fitted case

ELECTRONIC MICROMETERS

2-KEY STYLE ELECTRONIC MICROMETERS .00005" Graduation



Limited Supply!

- Measuring faces are carbide-tipped
- Two keys with multi-function: On/off, Inch/mm, Zero reset.
- One button battery SR 44,1.55 V
- Ratchet stop for a constant measuring force
- Spindle lock
- Supplied with fitted case

REPLACEMENT BATTERY (ITEM #4102-0030)

Item#	Range	Accuracy
4200-0371	0-1"/0-25mm	.0001"/.001mm
4200-0372	1-2"/25-50mm	.0001"/.001mm
4200-0373	2-3"/50-75mm	.0001"/.001mm
4200-0374	3-4"/75-100mm	.0001"/.001mm

INCH/METRIC
.00005"/ .001MM GRADUATION

Dasqua® IP 65 ELECTRONIC MICROMETER

NEW

- IP65 Water-Dust resistant
- Graduation: .00005"/ .001mm
- Extra large characters LCD display
- Measuring faces are carbide-tipped
- 3 keys: On/off, Inch/mm, Zero reset.
- Ratchet Spindle with lock.
- Supplied with fitted case
- One button battery CR2032, 3 V
- **Meet DIN 863.**



IP 65

0~1"/0~25mm
4209–0012

REPLACEMENT BATTERY (ITEM #4102-0032)

Dasqua® ELECTRONIC MICROMETER .00005" Graduation

NEW

- Graduation: .00005"/ .001mm
- Extra large characters LCD display
- Measuring faces are carbide-tipped
- Two keys with multi-function: On/off(power swithc) & SET (Datum set), Inch/mm, Zero reset, ABS/INC(Absoute and Relative mode).
- Spindle lock
- Supplied with fitted case
- One button battery CR2032, 3 V
- Meets DIN 863



0~1"/0~25mm
4209–0001

REPLACEMENT BATTERY (ITEM #4102-0032)

Dasqua® IP65 QUICK-MOVE BLADE ELECTRONIC MICROMETER

NEW

- **Absolute function**.
- IP65 coolant and fluid resistant.
- Measure narrow grooves and hard-to-reach areas.
- Quick measuring function.
- Large,easy-toread LCD display.
- Class A in electrostatic discharge.
- Measuring faces are carbide-tipped
- Supplied with fitted case
- One button battery CR2032, 3V
- **Meet DIN 863**



IP 65

INCH/METRIC
.00005"/ .001MM GRADUATION

0~1"/ 0~25mm
4209–0021

REPLACEMENT BATTERY (ITEM #4102-0032)

7PC ANVIL ATTACHMENT KIT FOR OUTSIDE MICROMETERS

- Turns your micrometer into 7 different tools.
- Set contains: ball, spline, knife, super spline, blade, comparator.
- Fits all brands of outside micrometers.
- Attachments other than ball are .500" long. This mount must be subtracted from the total reading.
- Hardened and ground.



MADE IN USA

4200–0131

4200–0130

BALL ATTACHMENTS



- Used for measuring parts with rounded surfaces
- Ball attachment is applied by snapping onto end of either anvil or spindle.
- Anvil Diameter: .250"



MADE IN USA

4200–0135

PORTABLE MICROMETER STAND

- **Micrometer stand** is uniquely designed for easy locking and carrying around.
- Stand can be folded to dimension: 4.6" x 3.2" x 1.5"
- Lacquered cast iron stand weighing 2 lbs.



4401–0044

MICROMETER SOLD SEPARATELY

THREAD TRIANGLE

- One pair gauges all 60° threads from 4-80 pitch, standard and special
- For any thread, mic the distance over the triangles,then refer to the chart to determine class of fit
- For special threads, add constant to nominal O.D. and check against mic reading to determine class of fit



Standard 60°
4901–0063
PER PAIR

MADE IN USA



For Checking All Standard 60° Threads

THREAD WIRE MEASURING SET

- Measures all metric threads from .5mm to 6mm.
- 48 wires; 16 different sizes.
- Measures all 60° thread
- 3 to 48 threads per inch.
- Laminated chart included.
- Complete in vinyl case.

4200–0241



MICROMETER STAND

- Fully adjustable micrometer clamp.
- Non marring.
- Lacquered cast iron base.
- Clamping capacity: 5/8".
- Flat frame style.
- Base weight: 3 lbs.



4401–0043

OUTSIDE MICROMETERS

SOLID METAL FRAME OUTSIDE MICROMETERS & SETS

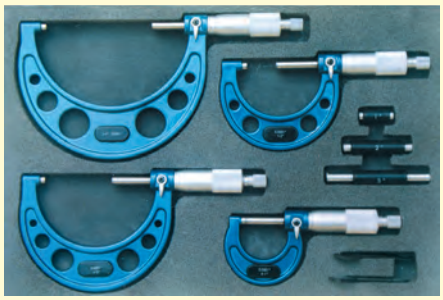
- Solid Mitutoyo style metal C-shape frame for all sizes.
- Graduation: 0.0001"
- Hardened and precision ground anvil spindle thread with microlap finish on ends.
- Positive locking clamp with ratchet stop.
- Carbide tipped faces.
- Meets or exceeds federal specifications.
- Supplied with fitted case.



0~12" Set
Consists of 0~6 & 6~12" SET
4200-0163

.0001 GRADUATION

Item#	Range
4200-0150	0-1"
4200-0152	1-2"
4200-0153	2-3"
4200-0154	3-4"
4200-0155	4-5"
4200-0156	5-6"
4200-0157	6-7"
4200-0158	7-8"
4200-0159	8-9"
4200-0160	9-10"
4200-0161	10-11"
4200-0162	11-12"



WITH STANDARDS

0~3" Set
4200-0165

0~6" Set
4200-0166

Limited Supply!

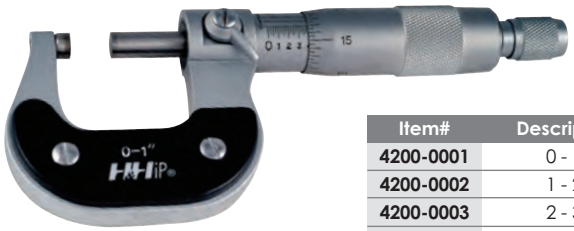
0~4" Set
4200-0164

6~12" Set
4200-0167

PRECISION OUTSIDE MICROMETERS & SETS

- Hardened and precision ground anvil spindle thread with microlap finish on ends.
- Meets or exceeds federal specifications.
- Micro fine graduations.
- Spindle lock.
- Graduation: 0.0001".
- Carbide faces.
- Ratchet stop.
- Fitted case.
- Standards included.

0~3" Set
4200-0010



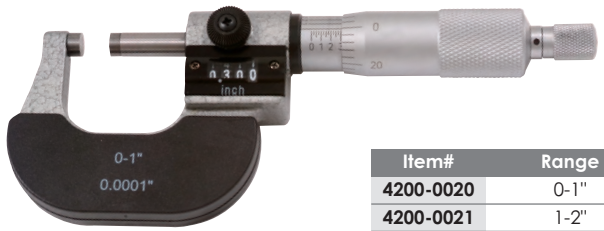
.0001 GRADUATION

Item#	Description
4200-0001	0 - 1"
4200-0002	1 - 2"
4200-0003	2 - 3"
4200-0010	0 - 3" (3pc/set)
4200-0011	0 - 6" (6pc/set)

DIGITAL READOUT OUTSIDE MICROMETERS & SET

- Anvil and spindle hardened and precision ground with microlap finish.
- Carbide tipped measuring faces.
- Ratchet stop.
- Meets or exceeds U.S. Federal specifications.
- Standards included.
- Supplied with fitted case.

0~3" Set
4200-0030



.0001 GRADUATION

Item#	Range
4200-0020	0-1"
4200-0021	1-2"
4200-0022	2-3"
4200-0023	3-4"
4200-0030	0-3"(3pc/set)

METRIC OUTSIDE MICROMETER & SET

- Graduation: 0.01mm
- Carbide faces.
- Ratchet stop.
- Micro fine graduations.
- Spindle lock.
- Fitted case.
- Hardened and precision ground anvil spindle thread with microlap finish on ends.
- Meets or exceeds federal specifications.
- Standards included.

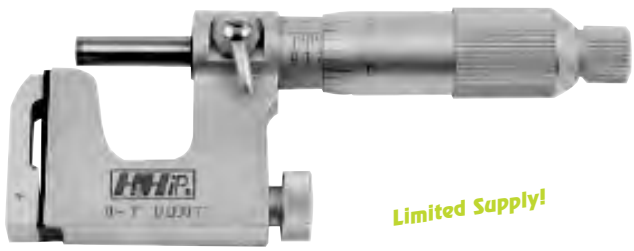


0~75mm,3pc Set
4200-1075

.01mm GRADUATION

Item#	Description
4200-1025	0-25mm
4200-1075	0-75mm **(3pc/set)** 25mm Step

PRECISION UNIVERSAL ANVIL MICROMETER



Limited Supply!

.0001" GRADUATION

0~1" Range
4200-0239

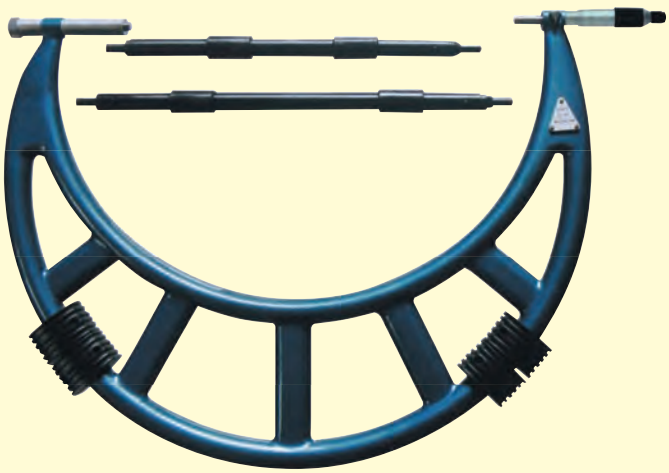
- 0.0001" graduation.
- Interchangeable anvils, 2 supplied, 1 rod, 1 flat.
- Carbide tipped spindle face.
- Friction thimble.
- Measures hard to reach areas, holes and slot to the edge.
- Complete with fitted case.

INTERCHANGEABLE ANVIL MICROMETERS

- Long range outside micrometers.
- Pipe combined steel frame provides lightness plus extreme rigidity for perfect balance.
- Micro fine graduations.
- Carbide tipped measuring faces.
- Ratchet stop.
- Fitted case.
- Standards included.

12~16" Range
4200-0171

.001 GRADUATION



Item#	Range	Accuracy
4200-0171	12-16"	.001"
4200-0172	16-20"	.001"
4200-0173	20-24"	.001"
4200-0174	24-28"	.001"
4200-0175	28-32"	.001"

ELECTRONIC SCREW THREAD MICROMETER KITS

- Non-rotation spindle
- 60° V-shaped and knife-edged anvils
- With cable for RS232 output.
- Ratchet stop.
- With fitted case.
- Direct RS232 output.

INCH/METRIC
.00005" GRADUATION



** Limited Supply!*

Anvil in Pairs	Pitch TPI	Pitch MM
#1	64~48	.4~.5
#2	44~28	.6~.9
#3	24~14	1.0~1.75
#4	13~9	2~3
#5	8~5	3.5~5.0
#6	4.5~3.5	5.5~7.0

REPLACEMENT BATTERY (ITEM #4102-0030)

Item#	Range	Anvils
4200-0361	0-1"	#1-5
4200-0362*	1-2"	#2-6

SCREW THREAD MICROMETER KITS

- Direct reading of pitch diameter in threads with interchangeable anvil and spindle pairs.
- Anvils and spindles made of tool steel, hardened and ground.
- Micro fine slant line graduations.
- Ratchet stop.
- With fitted case.

.001" GRADUATION



Anvil in Pairs	Pitch TPI
#1	64~48
#2	44~28
#3	24~14
#4	13~9
#5	8~5
#6	4.5~3.5
#7	28~20
#8	18~12
#9	11~7
#10	6~4.5

Item#	Range	Anvils
4200-0226	0-1"	#1-5
4200-0227	1-2"	#2-6
4200-0228	2-3"	#7-10

PRECISION DISC TYPE MICROMETERS

- Measures root tangent length of spur gears and helical gears.
- For measuring narrow grooves & other recessed features from 0.03" thick.
- Discs are .787" in diameter, 0.3" thick at the edge.
- Measuring discs are hardened , ground and micro-lapped for greater accuracy.
- Positive locking clamp with ratchet stop.
- Satin-chrome for easy reading.
- Supplied with fitted case.

Limited Supply!



.0001" GRADUATION

Item#	Range	Accuracy
4200-0222	0-1"	± .0001"
4200-0224	2-3"	± .0001"
4200-0225	3-4"	± .0001"

Dasqua® IP65 QUICK-MOVE BLADE ELECTRONIC MICROMETER

NEW

- **Absolute function.**
- IP65 coolant and fluid resistant.
- Measure narrow grooves and hard-to-reach areas.
- Quick measuring function.
- Large,easy-toread LCD display.
- Class A in electrostatic discharge.
- Measuring faces are carbide-tipped
- Supplied with fitted case
- One button battery CR2032, 3V
- **Meet DIN 863**

INCH/METRIC
.00005"/ .001MM GRADUATION

0~1"/ 0~25mm
4209-0021



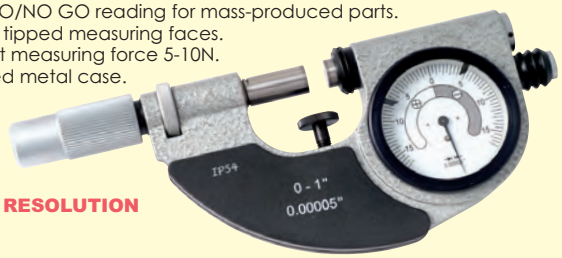
REPLACEMENT BATTERY (ITEM #4102-0032)

PRECISION MEASURING TOOLS

SPECIALTY MICROMETERS

ULTRA PRECISION INDICATING MICROMETERS

- Indicator Range: +/- 0.0015"
- IP54-Splash and dust proof.
- Direct GO/NO GO reading for mass-produced parts.
- Carbide tipped measuring faces.
- Constant measuring force 5-10N.
- With fitted metal case.



.00005" RESOLUTION



0~1" Range
4200-0242

IP 54

1~2" Range
4200-0243

Limited Supply!

Dasqua® IP 65 QUICK-MOVE ELECTRONIC INDICATING MICROMETER

NEW

- **Absolute** function.
- IP65 coolant and fluid resistant.
- Class A in electrostatic discharge.
- Measuring spindle hardened and ground.
- 4 keys: On/off, Inch/mm, Origin & ABS/Zero.
- Carbide-tipped anvils.
- Supplied with fitted case
- One button battery CR2032, 3 V
- **Meet DIN 863.**

0~1"/0~25mm
4209-0017

.00005"/ .001mm RESOLUTION



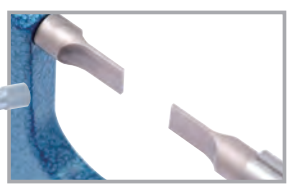
IP 65

REPLACEMENT BATTERY (ITEM #4102-0032)

PRECISION BLADE MICROMETERS

- Graduation: .0001".
- For taking measurements of workpieces which have narrow grooves or "T" slots when standard micrometer can't reach.
- Microfine graduations on satin chrome finish for easy reading.
- Anvil & spindle hardened & precision ground.
- Blade penetration=0.315".
- Blade thickness=0.03".
- Blade width=0.256".
- Non-rotating spindle.

.0001" GRADUATION





Item#	Range	Accuracy
4200-0251	0-1"	.00016"
4200-0252	1-2"	.00016"
4200-0253	2-3"	.00020"

INDICATING MICROMETERS

- Carbide tipped measuring faces.
- Jeweled bearings.
- Retracting button.
- Tolerance hands.
- Easy zero adjustment.
- With fitted case.
- Standard included.



.00005" GRADUATION



0~1" Range
4200-0205

1~2" Range
4200-0206

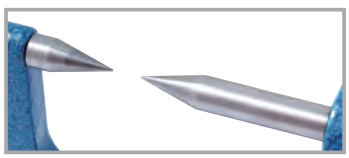
PRECISION POINT MICROMETER

- Carbide tipped measuring point: 30°, approx. 0.012" radius.
- For measuring small grooves, keyways and hard to reach dimensions.
- Positive lock.

.0001" GRADUATION

0~1" Range
4200-0214





ELECTRONIC BLADE MICROMETERS

- For taking measurements of workpieces which have narrow grooves or "T" slots when standard micrometers can't reach.
- Anvil & spindle hardened & precision ground.
- Graduation: .00005"/ .001mm
- Chrome finished frame
- Friction thimble
- Blade penetration=0.315".
- Blade thickness=0.03".
- Blade width=0.256".
- Non-rotating spindle.
- One button battery SR44, 1.5V.



Limited Supply!

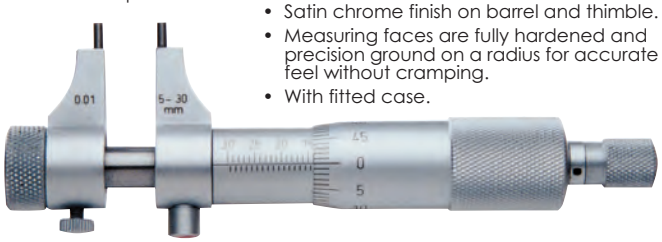
INCH/METRIC .00005" GRADUATION

Item#	Range
4200-0351	0-1"/0-25mm
4200-0352	1-2"/25-50mm

REPLACEMENT BATTERY (ITEM #4102-0030)

PRECISION INSIDE MICROMETERS

- Spindle threads are hardened and ground.
- Ratchet stop.
- Satin chrome finish on barrel and thimble.
- Measuring faces are fully hardened and precision ground on a radius for accurate feel without cramping.
- With fitted case.



Item#	Range	Graduation
4200-0201	0.2 - 1.2"	0.001"
4200-0202*	1 - 2"	0.001"

* Limited Supply

INSIDE MICROMETER SETS

- The combining of extension rods provides a wide measuring range
- Carbide measuring faces
- Positive lock clamp
- Supplied with a standard caliper gage for zero setting
- **With Fitted Case**



4200-0333 Shown

.001" GRADUATION

Item#	Range
4200-0332	4 - 20"
4200-0333	4 - 36"



4200-0332 Shown

35PC GAGE SET

4400-1035





INCLUDES:

- TELESCOPING GAGES SET 6 PC 5/16-6" Range #4200-0255
- SMALL HOLE GAGES SET 4 PC .125-.500" Range #4400-0009
- RADIUS GAGE SET 25 PC 1/61-1/2" Range #4901-0040

10PC MEASURING TOOLS SETTING MASTERS

- Quick easy and extremely accurate.
- Each block comes with a cerificate of calibration.
- Complete with aluminum carry case.
- **Set Includes:**

9pc Gage Blocks(Grade 0): .0625", .100", .125", .200", .250", .300", .500", 1.000", & 2.000"

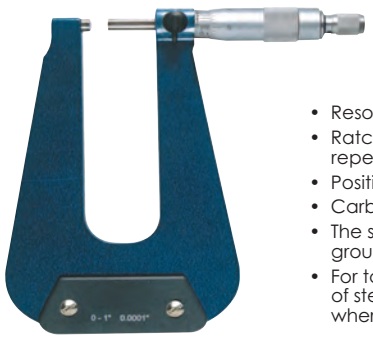
1 PC Optical Flat: 1" Dia. x .5125" Thickness, .000004" Flatness, .00002" Parallel

4101-0036





DEEP THROAT MICROMETERS



.0001" GRADUATION

- Resolution: 0.0001".
- Ratchet stop thimble for exact and repetitive readings.
- Positive locking clamp.
- Carbide tipped measuring faces.
- The spindle thread is hardened, ground and lapped.
- For taking accurate measurements of steel and plastic sheets and plates wherever there is a deep depth.

Item#	Range	Throat Depth	Accuracy
4200-0208	0-1"	6"	.0001"
4200-0210*	0-1"	8"	.0001"
4200-0209*	1-2"	8"	.0001"

* Limited Supply

DIGITAL ELECTRONIC DEPTH MICROMETER KIT

NEW

- Deluxe model micrometer head
- High accuracy Interchangeable rods
- High contrast LCD display
- Spherical end for easy straight measurement
- 4" base
- Friction thimble
- With fitted case



0~6"/0~150mm
4500-0406

INCH/METRIC .0005" GRADUATION
REPLACEMENT BATTERY (ITEM #4102-0030)

DEPTH GAUGES

PRECISION DEPTH MICROMETER SETS

- Interchangeable rods are fitted to the micrometer spindle against a positive stop and locked.
- Base surface hardened & lapped.
- Ratchet stop for consistent and repetitive measurements.
- Satin chrome non~glare.
- Complete w/ fitted case and w/ a spanner wrench.



Item#	Range	Base size	No. of Rods	Accuracy
4500-0001	0-4"	2.5"	4	0.001"
4500-0011	0-4"	4"	4	0.001"
4500-0002	0-6"	4"	6	0.001"

ELECTRONIC DEPTH GAGE



.0005"/ .01mm RESOLUTION

- Sliding LCD unit features push-button control.
- Stainless steel linear scale.
- Inch/metric conversion.
- Accuracy: .001"/ .02mm.
- Standard SR44, 1.55V batter included.
- With fitted case

0~6" Range, 4" Base
4500–0006

REPLACEMENT BATTERY (ITEM #4102-0030)

Z-Limit 0~6" ELECTRONIC DEPTH GAGE

- **Manufactured and inspected at world class factory that produces highest quality US brands.**
- Supplied in a suited case.
- Direct metric/inch conversion
- Made of stainless steel
- Resolution .0005"/ .01mm
- Large LC display
- Standard SR44, 1.55V batter included.

0~6" Range
4509–0006

Limited Supply!



REPLACEMENT BATTERY (ITEM #4102-0030)

0~22" DIAL DEPTH GAGE KIT





- Provides rapid, direct reading measurements of depths.
- 6 rod extensions can be connected together for a full 0-22" capacity.
- Supplied with fitted case.
- 2" diameter dial face.
- 2-1/2" base

.001" ACCURACY

0~22" Range
4500–0004

PRECISION SPLINE MICROMETERS

- For hard to reach grooves and special occasions.
- Carbide tipped measuring points
- Ratchet stop.
- Accuracy: .0001"

Limited Supply!



Tip 3x10mm(Dia.x Length)

Item#	Range
4200-0382	1-2"
4200-0383	2-3"

DIAL THICKNESS GAGE

- Spindle made of hardened stainless steel.
- Diameter of upper anvil is .394"
- 1" throat capacity
- Dial reading 0~100.
- Accuracy: .001".



.001" GRADUATION

0~0.500" Range
4200–0005

0-1 DIGITAL DEPTH GAGE

- Suitable for tire depth, brake shoe and pad wear.
- High contrast LCD for reading Inch/MM
- Zero-set at any point.
- Accuracy: .001"/ .02mm.
- On/off button
- Standard SR44, 1.55V batter included.

.0005"/ .01mm RESOLUTION



0~1"/0~25mm
4500–0025

REPLACEMENT BATTERY (ITEM #4102-0030)

PRECISION RADIUS GAGE SETS

- Five different gauging surfaces on each gage for both convex and concave radius.
- Made of satin finish stainless steel-rust and stain resistant.
- With handy gage holders.



Item#	Set	Description
4901-0040	25pc	1/64"-17/64" x 64ths and 9/32"-1/2" x 32nds
4901-0026	26pc	0.010-0.500"
4901-0044	10pc	0.55-1.00" by 0.05"
4901-0047	26pc	0.5-13mm by 0.5mm

8PC RADIUS GAGE SETS

- Each gage has five measuring surface for checking radius, convex and concave radii easily
- Satin chrome finish and each gage size is marked



Item#	Range
4901-0041	8pc 9/16~1" by 16ths
4901-0042	8pc 1-1/16~1-1/2" by 16ths

TELESCOPING GAGE & SETS



4200-0255 SHOWN

- Double action (self centering) for quick checking of inside measurements.
- Satin chrome finish.
- Vinyl pouch included.
- Constant spring tension for uniform feel.
- Contact point ends are hardened tool steel and precision ground on a radius of the smallest hole the gage will enter.

STANDARD SET

(Inch) Set Range	OAL
5/16~1/2	4.20
1/2~3/4	4.40
3/4~1-1/4	4.40
1-1/4~2-1/8	5.85
2-1/8~3-1/2	5.85
3-1/2~6.0	5.85

Set Range
10" Long Reach
5/16~1/2"
1/2~3/4"
3/4~1-1/4"
12" Long Reach
1-1/4~2-1/8"
2-1/8~3-1/2"
3-1/2~6.0"

STANDARD SET
6PC Set, 5/16~6" Range
4200-0255

10" LONG REACH SET
3PC Set, 5/16~1-1/4" Range
4200-0260

8" WIDE RANGE
4-3/4~8" Range, 6" Long
4200-0258

12" LONG REACH SET
3PC Set, 1-1/4~6" Range
4200-0262

CONCAVE & CONVEX RADIUS GAGES



Item#	Radius Range	Concave Blade	Convex Blade
4901-0101	1/32 -1/4" x 1/64	15	15
4901-0102	17/64 -1/2" x 1/32	16	16
4901-0103	17/32 -1" x 1/32	16	16

Pro-Series 6PC TELESCOPING GAGE SET

NEW

- Double action (self centering) for quick checking of inside measurements.
- Smooth movement.
- Satin chrome finish.
- Constant spring tension for uniform feel.
- Contact point ends are hardened tool steel and precision ground on a radius of the smallest hole the gage will enter.
- Includes shop-hardened case.



6PC Set
5/16~6" Range
4209-0255

STANDARD 6PC SET

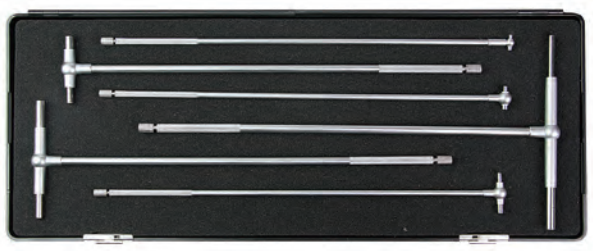
(Inch) Set Range	OAL
5/16~1/2	4.20
1/2~3/4	4.40
3/4~1-1/4	4.40
1-1/4~2-1/8	5.85
2-1/8~3-1/2	5.85
3-1/2~6.0	5.85



Dasqua® 6PC LONG-REACH TELESCOPING GAGE SET

NEW

- Double action (self centering) for quick checking of inside measurements.
- Smooth movement, rigid handle with self-centering feature.
- Satin chrome finish.
- Constant spring tension for uniform feel.
- Contact point ends are hardened tool steel and precision ground on a radius of the smallest hole the gage will enter.
- Includes a fitted case.



Long-Reach 6pc Set

(Inch) Set Range	OAL
5/16~1/2	12"/300mm
1/2~3/4	12"/300mm
3/4~1-1/4	12"/300mm
1-1/4~2-1/8	12"/300mm
2-1/8~3-1/2	12"/300mm
3-1/2~6.0	12"/300mm

12" LONG REACH SET
6PC Set, 5/16~6" Range
4209-0266

THREAD PLUG GAGES & RING GAGES

- Gages are made in "X" tolerance
- Classes 2A and 2B for Inch, classes 6H and 6G for MM most commonly used for general applications including bolts, nuts, screws and similar fasteners





PRICED & SOLD BY SET

Metric Size	Plug Gages GO-NOGO with Handle Class 6H Item#	Ring Gages GO-NOGO Class 6G Item#
M2 x 0.4	4101-1102	4101-1202
M3 x 0.5	4101-1103	4101-1203
M2.5 x 0.45	4101-1125	4101-1225
M3.5 x 0.6	4101-1135	4101-1235
M4 x 0.7	4101-1104	4101-1204
M5 x 0.8	4101-1105	4101-1205
M6 x 1.0	4101-1106	4101-1206
M7 x 1.0	4101-1107	4101-1207
M8 x 1.25	4101-1108	4101-1208
M10 x 1.25	4101-1110	4101-1210
M10 x 1.50	4101-1111	4101-1211
M12 x 1.75	4101-1112	4101-1212
M14 x 2.0	4101-1114	4101-1214
M16 x 2.0	4101-1116	4101-1216
M18 x 2.50	4101-1118	4101-1218
M20 x 2.50	4101-1120	4101-1220
M22 x 2.50	4101-1122	4101-1222
M24 x 3.0	4101-1124	4101-1224

Inch Size	Plug Gages GO-NOGO with Handle Class 2B Item#	Ring Gages GO-NOGO Class 2A Item#
4-40UNC	4101-0208	4101-0308
5-40UNC	4101-0210	4101-0310
6-32UNC	4101-0212	4101-0312
8-32UNC	4101-0214	4101-0314
10-24UNC	4101-0216	4101-0316
10-32UNF	4101-0217	4101-0317
1/4-20UNC	4101-0221	4101-0321
1/4-28UNF	4101-0222	4101-0322
5/16-18UNC	4101-0224	4101-0324
5/16-24UNF	4101-0225	4101-0325
3/8-16UNC	4101-0227	4101-0327
3/8-24UNF	4101-0228	4101-0328
7/16-14UNC	4101-0230	4101-0330
7/16-20UNF	4101-0231	4101-0331
1/2-13UNC	4101-0233	4101-0333
1/2-20UNF	4101-0234	4101-0334

7PC THREAD PLUG GAGE SETS

Inch Set
4101–0260
Includes: 8-32, 10-24, 1/4-20, 5/16-18, 3/8-16, 7/16-14 & 1/2-13

Metric Set
4101–1170
Includes: M3x0.5, M4x0.7, M5x0.8 M6x1.0, M8x1.25, M10x1.5 & M12x1.75



- Gages are made in "X" tolerance
- Class 2B for Inch, Class 6H MM set.
- Solid wooden case included.

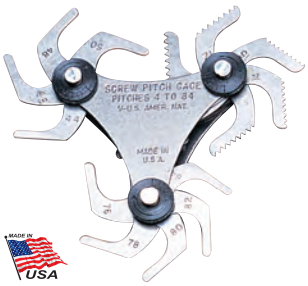
SCREW PITCH GAGES

- Correct pitch is determined by matching blade teeth with threaders.
- Each blade clearly marked with proper thread size.
- Blades protected in sturdy steel case.
- Narrow designed blade permits use for internal and external screw threads.



Item#	Thread Range	No. of Leaves
4901-0028	.25~2.5mm 60°	28
4901-0029	0.5~7.0mm 60°	17
4901-0037	4~84 TPI 60°	51
4901-0038	4~62 TPI 55° & .25~6mm 60°	52

SCREW PITCH GAGES



- Narrow designed blades permit use for internal and external screw threads.
- Correct pitch is determined by matching blade teeth with threads.
- Locking device at each end secures all blades for storage, or positions an individual blade for use.
- Each blade clearly marked with proper thread size
- Blades protected in sturdy steel case.

Item#	Thread Range	No. of Blades	No. of Group
4901-0094	4~84 TPI 60°	51	3
4901-0095	4~56 TPI & .50~6.00mm	28	2
4901-0096	0.25~2.50mm	28	2
4901-0097	0.50~7.00mm	18	2

CENTER GAGES

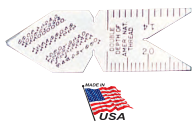
- Graduated in 14ths and 20ths on one side and 24ths and 32nds on the other
- Micro-fine graduations
- Accuracy meets Federal Specifications.



Whitworth or English Standard 55°
4901–0061



Standard 60°
4901–0060



Standard 60°
4901–0059

29° ACME SCREW THREAD PITCH GAGE-15 BLADES



- Made of tool steel hardened and precision ground
- Pitch number marked on each blade
- Threads: 1, 1-1/3, 1-1/2, 1-3/4, 2, 2-1/2, 3, 3-1/2, 4, 5, 6, 7, 8, 9 & 10
- Blades length: 3"

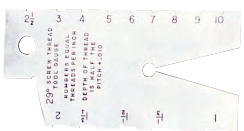
4901-0033

29° ACME SCREW THREAD GAGES

- Standard for grinding and setting tools when cutting Acme threads.
- Angle & edges are hardened and precision ground.
- Threads: 1, 1-1/3, 1-1/2, 1-3/4, 2, 2-1/2, 3, 4, 5, 6, 7, 8, 9 & 10.



4901-0031



4901-0032

36-0 WIRE MEASURING GAGES



- For measuring wire diameter and non-ferrous sheets such as copper, brass, aluminum, etc.
- Measures gauge no. from 36 to 0 (.003 ~.3125).
- Made of hardened steel and satin chrome finish.
- Marks of wire size on front, decimal equivalents on reverse side
- Complete in vinyl pouch.

4901-0048

4901-0049

18PC PRECISION ANGLE GAGE SET

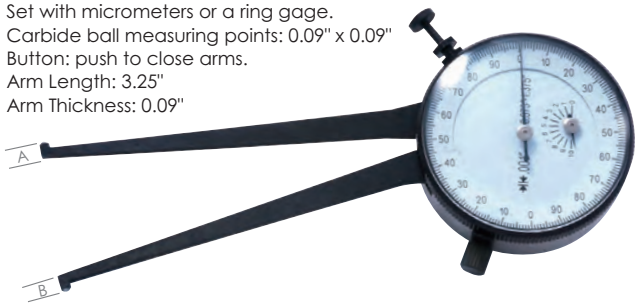
- Stainless steel and satin chrome finished.
- Each gage has eight gauging surfaces.
- Quick inspection of angles and I.D. or O.D. chamfers-in or out of the machine.
- Each gage checks primary, 1/2 primary and complementary angles.
- Supplied with pouch.



Item#	Primary Angle
4901-0045	5°~ 90° by 5°

INTERNAL DIAL CALIPER GAGE

- 0~1" movement to check recessed diameters, internal bores, etc.
- Bezel can be rotated for zero setting and can be locked with screw.
- Set with micrometers or a ring gage.
- Carbide ball measuring points: 0.09" x 0.09"
- Button: push to close arms.
- Arm Length: 3.25"
- Arm Thickness: 0.09"



Item#	Range	Graduation	A	B
4400-0801	0.375" ~1.375"	0.001"	5/32"	5/32"

0~6" BORE GAGE SETTING MASTER

- Bore Gage Setting Master Kit is used for accurately setting any bore gage up to 6" inch.
- Each Set includes:

1- Setting Device
Base anvil: 2.750" x .80"
Adjustable anvil 2.375" x .375" (two each)
Baseanvil: 2.750"
Internal capacity: 6"
Depth capacity: 1"
Centralizer capacity width: 2.625"
Quick-release holder for fast adjustment

1- Economy Gage Block Set
36 piece
Tolerances to .00005"
Certificate of Calibration to N.I.S.T.
High quality wooden case

4400-0070



4PC SMALL HOLE GAGE SETS

- Easy to adjust with full spherical, hardened, satin-chrome plated measuring faces.
- Set furnished in plastic pouch.

.125~.500" RANGE

Full Ball
4400-0009



BORE GAGES

.0001" GRADUATION DIAL BORE GAGE SET

- For closer tolerance measurements of holes, taper and roundness.
- Self centering.
- Gages are supplied with AGD Group II dial indicator.
- Easy setting with micrometers or ring gages.
- Fitted case with anvils index.

2~6" Range
4040-0017

.0001" GRADUATION DIAL INDICATOR



.0005" GRADUATION DIAL BORE GAGE SETS

- For close tolerance measurements of holes, taper and roundness.
- Gages are supplied with AGD Group II dial indicator.
- Easy setting with micrometers or ring gages.
- Fitted case with anvils index.
- Self centering.

2~6" Range
4400-0007



.0005" GRADUATION DIAL INDICATOR

Item#	Range	Probe Depth	No. of Anvils
4400-0061	0.24 - 0.4"	2"	9
4400-0062	0.4 - 0.7"	4"	11
4400-0063	0.7 -1.5"	6"	9
4400-0064	1.4 - 2.4"	6"	6
4400-0007	2.0 - 6.0"	6"	11
4400-1406	1.4 - 6.0"	6"	17

DIGITAL ELECTRONIC BORE GAGES

- Zero reset allows absolute or comparative measurements
- Extra large LCD, 360° rotation
- Dual display: digital and electronic scale
- Power supply: 3V CR2032 lithium battery
- True inch/mm conversion
- One button easy calibration

.0001" / .001MM RESOLUTION

Limited Supply!



2~6" Range
4400-0054

Item#	Range	Probe Depth	No. of Anvils
4400-0052	.70-1.5"/18-35mm	6"	9
4400-0053	1.4-2.4"/35-50mm	6"	4
4400-0054	2-6"/50-160mm	6"	12

5-KEY ELECTRONIC BORE GAGE SETS

- 5 Keys: Zero/Set, On/Off, Hold, + & -.
- Large LCD display.
- Auto shut off.
- Power supply: 3V CR2025 lithium battery
- Complete with fitted case.



.0005" RESOLUTION



Item#	Range	Probe Depth	No. of Anvils
4400-0081	.40-.70"	4"	9
4400-0082	.70-1.5"	6"	9
4400-0083	1.4-2.4"	6"	4
4400-0084	2-6"	6"	12

TECLOCK METRIC DIAL BORE GAGE/CYLINDER GAGE KITS

- Made in Japan by TECLOCK
- For closer tolerance measurements of holes, taper and roundness
- Easy setting with micrometers or ring gages
- Complete with Measuring Instructions and Certificate of Calibration
- Fitted wooden case with anvils index

0.01mm GRADUATION



MADE IN JAPAN

Range: 35~60mm
4409-0064

Range:50~150mm
4409-0068



Pro-Series PRECISION STEEL PIN GAGE SETS-Inch

- **Certified sets**
- Supplied in a plastic, sturdy, dust-proof fitted case.
- Sizes marked on case for easy identification.
- Fully hardened to 62-64 RC.
- Finish to 10 Micron or better.
- Class ZZ
- OAL: 2" .

Item#	SET	Size
Accuracy -0.0002" + 0.00000" (Minus)		
4101-0040	50pc	0.011~0.060"
4101-0041	190pc	0.061~0.250"
4101-0042	250pc	0.251~0.500"
4101-0043	125pc	0.501~0.625"
4101-0044	125pc	0.626~0.750"
4101-0045	82pc	0.751~0.832"
4101-0046	84pc	0.833~0.916"
4101-0047	84pc	0.917~1.000"

PIN GAGE HANDLE INCLUDED



PRECISION STEEL PIN GAGE SETS

- Supplied in a plastic, sturdy, dust-proof fitted case.
- Sizes marked on case for easy identification.
- Fully hardened to 60-62 RC.
- Finish to 10 Micron or better.
- Class ZZ
- OAL: 2" .



Minus Set
.061~.250" Range
4101-0011

Size	SET	STANDARD SETS Item#
MINUS SETS (-) -0.0002" + 0.0000"		
0.011~0.060"	50pc	4101-0010
0.061~0.250"	190pc	4101-0011
0.251~0.500"	250pc	4101-0012
0.501~0.625"	125pc	4101-0013
0.626~0.750"	125pc	4101-0014
0.751~0.832"	82pc	4101-0015
0.833~0.916"	84pc	4101-0016
0.917~1.000"	84pc	4101-0017
PLUS SETS (+) -0.0000" + 0.0002"		
0.061~0.250"	190pc	4101-0111
0.251~0.500"	250pc	4101-0112

Pro-Series PRECISION STEEL PIN GAGE SETS-Metric

NEW

- **Certified sets**
- Supplied in a plastic, sturdy, dust-proof fitted case.
- Sizes marked on case for easy identification.
- Fully hardened to 62-64 RC.
- Finish to 10 Micron or better.
- Class ZZ
- OAL: 2" .

PIN GAGE HANDLE INCLUDED



Item#	Description	Size
Accuracy - 0.005mm + 0.000mm (Minus)		
4101-1010	55pc	0.20~1.28mm
4101-1011	55pc	0.21~1.29mm
4101-1012	185pc	1.30~4.98mm
4101-1013	185pc	1.31~4.99mm
4101-1014	250pc	5.00~9.98mm
4101-1015	250pc	5.01~9.99mm
4101-1016	200pc	10.00~13.98mm
4101-1017	200pc	10.01~13.99mm

PRECISION PIN GAGE M1&M2 SET-Inch

NEW

- Supplied in a plastic, sturdy, dust-proof fitted case.
- Sizes marked on case for easy identification.
- Fully hardened to 60-62 RC.
- Finish to 10 Micron or better.
- Class ZZ
- OAL: 2" .

Accuracy -0.0002" + 0.00000" (Minus)



440 PC SET
.061~ .500" Range
4101-0050



Pro-Series PLUG GAGE HANDLES

- SPI style.
- Superior finish and smooth operation.
- Holds pin gage with greatest gripping power.
- Can be used with GO pin (green) and NO GO pin (red).
- Comfortable and ergonomically designed handle for pin gages.
- No bushings required.



Item #	Measuring Range (inch) Min.	Max.
4102-0011	0.011	0.060
4102-0012	0.061	0.250
4102-0013	0.251	0.500
4102-0014	0.501	0.625
4102-0015	0.626	0.750

PIN GAGE HANDLES

- Comfortable, ergonomically made handle for pin gages.
- Made from aluminum and powder coated.
- Can be used with GO pin (green) on one end, NO GO pin (red) on opposite end.



Item#	For Pin Gage
4102-0001	.011 ~ .060"
4102-0002	.061 ~ .250"
4102-0003	.251 ~ .500"
4102-0004	.501 ~ .625"
4102-0005	.626 ~ .750"
4102-0006	.751 ~ .832"
4102-0007	.833 ~ .916"
4102-0008	.917 ~ 1.000"

NEW COMBINATION PIN GAGE SETS WITH HANDLE

NEW

- Supplied in a plastic, sturdy, dust-proof fitted case.
- Sizes marked on case for easy identification.
- Fully hardened to 60-62 RC.
- Finish to 10 Micron or better.
- Class ZZ
- OAL: 2" .





MINUS SETS (-) -0.0002" + 0.0000"

Size	SET	Item#
0.011~0.1000"	90pc	4103-3001
0.101~0.200"	100pc	4103-3003
0.201~0.300	100pc	4103-3005
0.301~0.400"	100pc	4103-3007

Pro-Series PIN GAGE HANDLE 1/32-1/2"

NEW

- For pin gage sizes: 1/32~1/2"
- Casting aluminum
- Go and No-Go clearly marked
- Large capacity.

4102-0020



35PC GAGE SET





4400-1035



INCLUDES:

- TELESCOPING GAGES SET 6 PC 5/16-6" Range #4200-0255
- SMALL HOLE GAGES SET 4 PC .125-.500" Range #4400-0009
- RADIUS GAGE SET 25 PC 1/61-1/2" Range #4901-0040

Pro-Series BLACK-OXIDE STEEL PIN GAGE SET [Large Range]

NEW

- Certified set, traceable to N.I.S.T.
- Supplied in a plastic, sturdy, dust-proof fitted case.
- Sizes marked on case for easy identification.
- Black-oxide finish to 10 Micron or better.
- Hardened to 60-62 RC.
- Class ZZ
- OAL: 2" .
- 2 handles included.

MINUS SET: (-)0.0002" (+)0.0000"

Minus Set, 240PC .0110~.250" Range
4101-0102



INDIVIDUAL CLASS ZZ PIN GAGES



- Replace missing, damaged, or worn-out Class ZZ gages from existing sets and libraries.
- Each pin is individually marked with size.
- Fully hardened to 60-62 RC.
- Finish to 10 Micron or better.
- Overall Length: 2"
- Tolerance: Minus .0002"

Item#	Size	Item#	Size	Item#	Size	Item#	Size	Item#	Size	Item#	Size
4103-0011	0.011	**4103-0094**	0.094	**4103-0177**	0.177	**4103-0260**	0.260	**4103-0343**	0.343	**4103-0426**	0.426
4103-0012	0.012	**4103-0095**	0.095	**4103-0178**	0.178	**4103-0261**	0.261	**4103-0344**	0.344	**4103-0427**	0.427
4103-0013	0.013	**4103-0096**	0.096	**4103-0179**	0.179	**4103-0262**	0.262	**4103-0345**	0.345	**4103-0428**	0.428
4103-0014	0.014	**4103-0097**	0.097	**4103-0180**	0.180	**4103-0263**	0.263	**4103-0346**	0.346	**4103-0429**	0.429
4103-0015	0.015	**4103-0098**	0.098	**4103-0181**	0.181	**4103-0264**	0.264	**4103-0347**	0.347	**4103-0430**	0.430
4103-0016	0.016	**4103-0099**	0.099	**4103-0182**	0.182	**4103-0265**	0.265	**4103-0348**	0.348	**4103-0431**	0.431
4103-0017	0.017	**4103-0100**	0.100	**4103-0183**	0.183	**4103-0266**	0.266	**4103-0349**	0.349	**4103-0432**	0.432
4103-0018	0.018	**4103-0101**	0.101	**4103-0184**	0.184	**4103-0267**	0.267	**4103-0350**	0.350	**4103-0433**	0.433
4103-0019	0.019	**4103-0102**	0.102	**4103-0185**	0.185	**4103-0268**	0.268	**4103-0351**	0.351	**4103-0434**	0.434
4103-0020	0.020	**4103-0103**	0.103	**4103-0186**	0.186	**4103-0269**	0.269	**4103-0352**	0.352	**4103-0435**	0.435
4103-0021	0.021	**4103-0104**	0.104	**4103-0187**	0.187	**4103-0270**	0.270	**4103-0353**	0.353	**4103-0436**	0.436
4103-0022	0.022	**4103-0105**	0.105	**4103-0188**	0.188	**4103-0271**	0.271	**4103-0354**	0.354	**4103-0437**	0.437
4103-0023	0.023	**4103-0106**	0.106	**4103-0189**	0.189	**4103-0272**	0.272	**4103-0355**	0.355	**4103-0438**	0.438
4103-0024	0.024	**4103-0107**	0.107	**4103-0190**	0.190	**4103-0273**	0.273	**4103-0356**	0.356	**4103-0439**	0.439
4103-0025	0.025	**4103-0108**	0.108	**4103-0191**	0.191	**4103-0274**	0.274	**4103-0357**	0.357	**4103-0440**	0.440
4103-0026	0.026	**4103-0109**	0.109	**4103-0192**	0.192	**4103-0275**	0.275	**4103-0358**	0.358	**4103-0441**	0.441
4103-0027	0.027	**4103-0110**	0.110	**4103-0193**	0.193	**4103-0276**	0.276	**4103-0359**	0.359	**4103-0442**	0.442
4103-0028	0.028	**4103-0111**	0.111	**4103-0194**	0.194	**4103-0277**	0.277	**4103-0360**	0.360	**4103-0443**	0.443
4103-0029	0.029	**4103-0112**	0.112	**4103-0195**	0.195	**4103-0278**	0.278	**4103-0361**	0.361	**4103-0444**	0.444
4103-0030	0.030	**4103-0113**	0.113	**4103-0196**	0.196	**4103-0279**	0.279	**4103-0362**	0.362	**4103-0445**	0.445
4103-0031	0.031	**4103-0114**	0.114	**4103-0197**	0.197	**4103-0280**	0.280	**4103-0363**	0.363	**4103-0446**	0.446
4103-0032	0.032	**4103-0115**	0.115	**4103-0198**	0.198	**4103-0281**	0.281	**4103-0364**	0.364	**4103-0447**	0.447
4103-0033	0.033	**4103-0116**	0.116	**4103-0199**	0.199	**4103-0282**	0.282	**4103-0365**	0.365	**4103-0448**	0.448
4103-0034	0.034	**4103-0117**	0.117	**4103-0200**	0.200	**4103-0283**	0.283	**4103-0366**	0.366	**4103-0449**	0.449
4103-0035	0.035	**4103-0118**	0.118	**4103-0201**	0.201	**4103-0284**	0.284	**4103-0367**	0.367	**4103-0450**	0.450
4103-0036	0.036	**4103-0119**	0.119	**4103-0202**	0.202	**4103-0285**	0.285	**4103-0368**	0.368	**4103-0451**	0.451
4103-0037	0.037	**4103-0120**	0.120	**4103-0203**	0.203	**4103-0286**	0.286	**4103-0369**	0.369	**4103-0452**	0.452
4103-0038	0.038	**4103-0121**	0.121	**4103-0204**	0.204	**4103-0287**	0.287	**4103-0370**	0.370	**4103-0453**	0.453
4103-0039	0.039	**4103-0122**	0.122	**4103-0205**	0.205	**4103-0288**	0.288	**4103-0371**	0.371	**4103-0454**	0.454
4103-0040	0.040	**4103-0123**	0.123	**4103-0206**	0.206	**4103-0289**	0.289	**4103-0372**	0.372	**4103-0455**	0.455
4103-0041	0.041	**4103-0124**	0.124	**4103-0207**	0.207	**4103-0290**	0.290	**4103-0373**	0.373	**4103-0456**	0.456
4103-0042	0.042	**4103-0125**	0.125	**4103-0208**	0.208	**4103-0291**	0.291	**4103-0374**	0.374	**4103-0457**	0.457
4103-0043	0.043	**4103-0126**	0.126	**4103-0209**	0.209	**4103-0292**	0.292	**4103-0375**	0.375	**4103-0458**	0.458
4103-0044	0.044	**4103-0127**	0.127	**4103-0210**	0.210	**4103-0293**	0.293	**4103-0376**	0.376	**4103-0459**	0.459
4103-0045	0.045	**4103-0128**	0.128	**4103-0211**	0.211	**4103-0294**	0.294	**4103-0377**	0.377	**4103-0460**	0.460
4103-0046	0.046	**4103-0129**	0.129	**4103-0212**	0.212	**4103-0295**	0.295	**4103-0378**	0.378	**4103-0461**	0.461
4103-0047	0.047	**4103-0130**	0.130	**4103-0213**	0.213	**4103-0296**	0.296	**4103-0379**	0.379	**4103-0462**	0.462
4103-0048	0.048	**4103-0131**	0.131	**4103-0214**	0.214	**4103-0297**	0.297	**4103-0380**	0.380	**4103-0463**	0.463
4103-0049	0.049	**4103-0132**	0.132	**4103-0215**	0.215	**4103-0298**	0.298	**4103-0381**	0.381	**4103-0464**	0.464
4103-0050	0.050	**4103-0133**	0.133	**4103-0216**	0.216	**4103-0299**	0.299	**4103-0382**	0.382	**4103-0465**	0.465
4103-0051	0.051	**4103-0134**	0.134	**4103-0217**	0.217	**4103-0300**	0.300	**4103-0383**	0.383	**4103-0466**	0.466
4103-0052	0.052	**4103-0135**	0.135	**4103-0218**	0.218	**4103-0301**	0.301	**4103-0384**	0.384	**4103-0467**	0.467
4103-0053	0.053	**4103-0136**	0.136	**4103-0219**	0.219	**4103-0302**	0.302	**4103-0385**	0.385	**4103-0468**	0.468
4103-0054	0.054	**4103-0137**	0.137	**4103-0220**	0.220	**4103-0303**	0.303	**4103-0386**	0.386	**4103-0469**	0.469
4103-0055	0.055	**4103-0138**	0.138	**4103-0221**	0.221	**4103-0304**	0.304	**4103-0387**	0.387	**4103-0470**	0.470
4103-0056	0.056	**4103-0139**	0.139	**4103-0222**	0.222	**4103-0305**	0.305	**4103-0388**	0.388	**4103-0471**	0.471
4103-0057	0.057	**4103-0140**	0.140	**4103-0223**	0.223	**4103-0306**	0.306	**4103-0389**	0.389	**4103-0472**	0.472
4103-0058	0.058	**4103-0141**	0.141	**4103-0224**	0.224	**4103-0307**	0.307	**4103-0390**	0.390	**4103-0473**	0.473
4103-0059	0.059	**4103-0142**	0.142	**4103-0225**	0.225	**4103-0308**	0.308	**4103-0391**	0.391	**4103-0474**	0.474
4103-0060	0.060	**4103-0143**	0.143	**4103-0226**	0.226	**4103-0309**	0.309	**4103-0392**	0.392	**4103-0475**	0.475
4103-0061	0.061	**4103-0144**	0.144	**4103-0227**	0.227	**4103-0310**	0.310	**4103-0393**	0.393	**4103-0476**	0.476
4103-0062	0.062	**4103-0145**	0.145	**4103-0228**	0.228	**4103-0311**	0.311	**4103-0394**	0.394	**4103-0477**	0.477
4103-0063	0.063	**4103-0146**	0.146	**4103-0229**	0.229	**4103-0312**	0.312	**4103-0395**	0.395	**4103-0478**	0.478
4103-0064	0.064	**4103-0147**	0.147	**4103-0230**	0.230	**4103-0313**	0.313	**4103-0396**	0.396	**4103-0479**	0.479
4103-0065	0.065	**4103-0148**	0.148	**4103-0231**	0.231	**4103-0314**	0.314	**4103-0397**	0.397	**4103-0480**	0.480
4103-0066	0.066	**4103-0149**	0.149	**4103-0232**	0.232	**4103-0315**	0.315	**4103-0398**	0.398	**4103-0481**	0.481
4103-0067	0.067	**4103-0150**	0.150	**4103-0233**	0.233	**4103-0316**	0.316	**4103-0399**	0.399	**4103-0482**	0.482
4103-0068	0.068	**4103-0151**	0.151	**4103-0234**	0.234	**4103-0317**	0.317	**4103-0400**	0.400	**4103-0483**	0.483
4103-0069	0.069	**4103-0152**	0.152	**4103-0235**	0.235	**4103-0318**	0.318	**4103-0401**	0.401	**4103-0484**	0.484
4103-0070	0.070	**4103-0153**	0.153	**4103-0236**	0.236	**4103-0319**	0.319	**4103-0402**	0.402	**4103-0485**	0.485
4103-0071	0.071	**4103-0154**	0.154	**4103-0237**	0.237	**4103-0320**	0.320	**4103-0403**	0.403	**4103-0486**	0.486
4103-0072	0.072	**4103-0155**	0.155	**4103-0238**	0.238	**4103-0321**	0.321	**4103-0404**	0.404	**4103-0487**	0.487
4103-0073	0.073	**4103-0156**	0.156	**4103-0239**	0.239	**4103-0322**	0.322	**4103-0405**	0.405	**4103-0488**	0.488
4103-0074	0.074	**4103-0157**	0.157	**4103-0240**	0.240	**4103-0323**	0.323	**4103-0406**	0.406	**4103-0489**	0.489
4103-0075	0.075	**4103-0158**	0.158	**4103-0241**	0.241	**4103-0324**	0.324	**4103-0407**	0.407	**4103-0490**	0.490
4103-0076	0.076	**4103-0159**	0.159	**4103-0242**	0.242	**4103-0325**	0.325	**4103-0408**	0.408	**4103-0491**	0.491
4103-0077	0.077	**4103-0160**	0.160	**4103-0243**	0.243	**4103-0326**	0.326	**4103-0409**	0.409	**4103-0492**	0.492
4103-0078	0.078	**4103-0161**	0.161	**4103-0244**	0.244	**4103-0327**	0.327	**4103-0410**	0.410	**4103-0493**	0.493
4103-0079	0.079	**4103-0162**	0.162	**4103-0245**	0.245	**4103-0328**	0.328	**4103-0411**	0.411	**4103-0494**	0.494
4103-0080	0.080	**4103-0163**	0.163	**4103-0246**	0.246	**4103-0329**	0.329	**4103-0412**	0.412	**4103-0495**	0.495
4103-0081	0.081	**4103-0164**	0.164	**4103-0247**	0.247	**4103-0330**	0.330	**4103-0413**	0.413	**4103-0496**	0.496
4103-0082	0.082	**4103-0165**	0.165	**4103-0248**	0.248	**4103-0331**	0.331	**4103-0414**	0.414	**4103-0497**	0.497
4103-0083	0.083	**4103-0166**	0.166	**4103-0249**	0.249	**4103-0332**	0.332	**4103-0415**	0.415	**4103-0498**	0.498
4103-0084	0.084	**4103-0167**	0.167	**4103-0250**	0.250	**4103-0333**	0.333	**4103-0416**	0.416	**4103-0499**	0.499
4103-0085	0.085	**4103-0168**	0.168	**4103-0251**	0.251	**4103-0334**	0.334	**4103-0417**	0.417	**4103-0500**	0.500
4103-0086	0.086	**4103-0169**	0.169	**4103-0252**	0.252	**4103-0335**	0.335	**4103-0418**	0.418	**4103-0501**	0.501
4103-0087	0.087	**4103-0170**	0.170	**4103-0253**	0.253	**4103-0336**	0.336	**4103-0419**	0.419	**4103-0502**	0.502
4103-0088	0.088	**4103-0171**	0.171	**4103-0254**	0.254	**4103-0337**	0.337	**4103-0420**	0.420	**4103-0503**	0.503
4103-0089	0.089	**4103-0172**	0.172	**4103-0255**	0.255	**4103-0338**	0.338	**4103-0421**	0.421	**4103-0504**	0.504
4103-0090	0.090	**4103-0173**	0.173	**4103-0256**	0.256	**4103-0339**	0.339	**4103-0422**	0.422	**4103-0505**	0.505
4103-0091	0.091	**4103-0174**	0.174	**4103-0257**	0.257	**4103-0340**	0.340	**4103-0423**	0.423	**4103-0506**	0.506
4103-0092	0.092	**4103-0175**	0.175	**4103-0258**	0.258	**4103-0341**	0.341	**4103-0424**	0.424	**4103-0507**	0.507
4103-0093	0.093	**4103-0176**	0.176	**4103-0259**	0.259	**4103-0342**	0.342	**4103-0425**	0.425	**4103-0508**	0.508

INDIVIDUAL CLASS ZZ PIN GAGES



- Replace missing, damaged, or worn-out Class ZZ gages from existing sets and libraries.
- Each pin is individually marked with size.
- Fully hardened to 60-62 RC.
- Finish to 10 Micron or better.
- Overall Length: 2"
- Tolerance: Minus .0002"

Item#	Size	Item#	Size	Item#	Size	Item#	Size	Item#	Size	Item#	Size
4103-0509	0.509	**4103-0592**	0.592	**4103-0675**	0.675	**4103-0758**	0.758	**4103-0841**	0.841	**4103-0924**	0.924
4103-0510	0.510	**4103-0593**	0.593	**4103-0676**	0.676	**4103-0759**	0.759	**4103-0842**	0.842	**4103-0925**	0.925
4103-0511	0.511	**4103-0594**	0.594	**4103-0677**	0.677	**4103-0760**	0.760	**4103-0843**	0.843	**4103-0926**	0.926
4103-0512	0.512	**4103-0595**	0.595	**4103-0678**	0.678	**4103-0761**	0.761	**4103-0844**	0.844	**4103-0927**	0.927
4103-0513	0.513	**4103-0596**	0.596	**4103-0679**	0.679	**4103-0762**	0.762	**4103-0845**	0.845	**4103-0928**	0.928
4103-0514	0.514	**4103-0597**	0.597	**4103-0680**	0.680	**4103-0763**	0.763	**4103-0846**	0.846	**4103-0929**	0.929
4103-0515	0.515	**4103-0598**	0.598	**4103-0681**	0.681	**4103-0764**	0.764	**4103-0847**	0.847	**4103-0930**	0.930
4103-0516	0.516	**4103-0599**	0.599	**4103-0682**	0.682	**4103-0765**	0.765	**4103-0848**	0.848	**4103-0931**	0.931
4103-0517	0.517	**4103-0600**	0.600	**4103-0683**	0.683	**4103-0766**	0.766	**4103-0849**	0.849	**4103-0932**	0.932
4103-0518	0.518	**4103-0601**	0.601	**4103-0684**	0.684	**4103-0767**	0.767	**4103-0850**	0.850	**4103-0933**	0.933
4103-0519	0.519	**4103-0602**	0.602	**4103-0685**	0.685	**4103-0768**	0.768	**4103-0851**	0.851	**4103-0934**	0.934
4103-0520	0.520	**4103-0603**	0.603	**4103-0686**	0.686	**4103-0769**	0.769	**4103-0852**	0.852	**4103-0935**	0.935
4103-0521	0.521	**4103-0604**	0.604	**4103-0687**	0.687	**4103-0770**	0.770	**4103-0853**	0.853	**4103-0936**	0.936
4103-0522	0.522	**4103-0605**	0.605	**4103-0688**	0.688	**4103-0771**	0.771	**4103-0854**	0.854	**4103-0937**	0.937
4103-0523	0.523	**4103-0606**	0.606	**4103-0689**	0.689	**4103-0772**	0.772	**4103-0855**	0.855	**4103-0938**	0.938
4103-0524	0.524	**4103-0607**	0.607	**4103-0690**	0.690	**4103-0773**	0.773	**4103-0856**	0.856	**4103-0939**	0.939
4103-0525	0.525	**4103-0608**	0.608	**4103-0691**	0.691	**4103-0774**	0.774	**4103-0857**	0.857	**4103-0940**	0.940
4103-0526	0.526	**4103-0609**	0.609	**4103-0692**	0.692	**4103-0775**	0.775	**4103-0858**	0.858	**4103-0941**	0.941
4103-0527	0.527	**4103-0610**	0.610	**4103-0693**	0.693	**4103-0776**	0.776	**4103-0859**	0.859	**4103-0942**	0.942
4103-0528	0.528	**4103-0611**	0.611	**4103-0694**	0.694	**4103-0777**	0.777	**4103-0860**	0.860	**4103-0943**	0.943
4103-0529	0.529	**4103-0612**	0.612	**4103-0695**	0.695	**4103-0778**	0.778	**4103-0861**	0.861	**4103-0944**	0.944
4103-0530	0.530	**4103-0613**	0.613	**4103-0696**	0.696	**4103-0779**	0.779	**4103-0862**	0.862	**4103-0945**	0.945
4103-0531	0.531	**4103-0614**	0.614	**4103-0697**	0.697	**4103-0780**	0.780	**4103-0863**	0.863	**4103-0946**	0.946
4103-0532	0.532	**4103-0615**	0.615	**4103-0698**	0.698	**4103-0781**	0.781	**4103-0864**	0.864	**4103-0947**	0.947
4103-0533	0.533	**4103-0616**	0.616	**4103-0699**	0.699	**4103-0782**	0.782	**4103-0865**	0.865	**4103-0948**	0.948
4103-0534	0.534	**4103-0617**	0.617	**4103-0700**	0.700	**4103-0783**	0.783	**4103-0866**	0.866	**4103-0949**	0.949
4103-0535	0.535	**4103-0618**	0.618	**4103-0701**	0.701	**4103-0784**	0.784	**4103-0867**	0.867	**4103-0950**	0.950
4103-0536	0.536	**4103-0619**	0.619	**4103-0702**	0.702	**4103-0785**	0.785	**4103-0868**	0.868	**4103-0951**	0.951
4103-0537	0.537	**4103-0620**	0.620	**4103-0703**	0.703	**4103-0786**	0.786	**4103-0869**	0.869	**4103-0952**	0.952
4103-0538	0.538	**4103-0621**	0.621	**4103-0704**	0.704	**4103-0787**	0.787	**4103-0870**	0.870	**4103-0953**	0.953
4103-0539	0.539	**4103-0622**	0.622	**4103-0705**	0.705	**4103-0788**	0.788	**4103-0871**	0.871	**4103-0954**	0.954
4103-0540	0.540	**4103-0623**	0.623	**4103-0706**	0.706	**4103-0789**	0.789	**4103-0872**	0.872	**4103-0955**	0.955
4103-0541	0.541	**4103-0624**	0.624	**4103-0707**	0.707	**4103-0790**	0.790	**4103-0873**	0.873	**4103-0956**	0.956
4103-0542	0.542	**4103-0625**	0.625	**4103-0708**	0.708	**4103-0791**	0.791	**4103-0874**	0.874	**4103-0957**	0.957
4103-0543	0.543	**4103-0626**	0.626	**4103-0709**	0.709	**4103-0792**	0.792	**4103-0875**	0.875	**4103-0958**	0.958
4103-0544	0.544	**4103-0627**	0.627	**4103-0710**	0.710	**4103-0793**	0.793	**4103-0876**	0.876	**4103-0959**	0.959
4103-0545	0.545	**4103-0628**	0.628	**4103-0711**	0.711	**4103-0794**	0.794	**4103-0877**	0.877	**4103-0960**	0.960
4103-0546	0.546	**4103-0629**	0.629	**4103-0712**	0.712	**4103-0795**	0.795	**4103-0878**	0.878	**4103-0961**	0.961
4103-0547	0.547	**4103-0630**	0.630	**4103-0713**	0.713	**4103-0796**	0.796	**4103-0879**	0.879	**4103-0962**	0.962
4103-0548	0.548	**4103-0631**	0.631	**4103-0714**	0.714	**4103-0797**	0.797	**4103-0880**	0.880	**4103-0963**	0.963
4103-0549	0.549	**4103-0632**	0.632	**4103-0715**	0.715	**4103-0798**	0.798	**4103-0881**	0.881	**4103-0964**	0.964
4103-0550	0.550	**4103-0633**	0.633	**4103-0716**	0.716	**4103-0799**	0.799	**4103-0882**	0.882	**4103-0965**	0.965
4103-0551	0.551	**4103-0634**	0.634	**4103-0717**	0.717	**4103-0800**	0.800	**4103-0883**	0.883	**4103-0966**	0.966
4103-0552	0.552	**4103-0635**	0.635	**4103-0718**	0.718	**4103-0801**	0.801	**4103-0884**	0.884	**4103-0967**	0.967
4103-0553	0.553	**4103-0636**	0.636	**4103-0719**	0.719	**4103-0802**	0.802	**4103-0885**	0.885	**4103-0968**	0.968
4103-0554	0.554	**4103-0637**	0.637	**4103-0720**	0.720	**4103-0803**	0.803	**4103-0886**	0.886	**4103-0969**	0.969
4103-0555	0.555	**4103-0638**	0.638	**4103-0721**	0.721	**4103-0804**	0.804	**4103-0887**	0.887	**4103-0970**	0.970
4103-0556	0.556	**4103-0639**	0.639	**4103-0722**	0.722	**4103-0805**	0.805	**4103-0888**	0.888	**4103-0971**	0.971
4103-0557	0.557	**4103-0640**	0.640	**4103-0723**	0.723	**4103-0806**	0.806	**4103-0889**	0.889	**4103-0972**	0.972
4103-0558	0.558	**4103-0641**	0.641	**4103-0724**	0.724	**4103-0807**	0.807	**4103-0890**	0.890	**4103-0973**	0.973
4103-0559	0.559	**4103-0642**	0.642	**4103-0725**	0.725	**4103-0808**	0.808	**4103-0891**	0.891	**4103-0974**	0.974
4103-0560	0.560	**4103-0643**	0.643	**4103-0726**	0.726	**4103-0809**	0.809	**4103-0892**	0.892	**4103-0975**	0.975
4103-0561	0.561	**4103-0644**	0.644	**4103-0727**	0.727	**4103-0810**	0.810	**4103-0893**	0.893	**4103-0976**	0.976
4103-0562	0.562	**4103-0645**	0.645	**4103-0728**	0.728	**4103-0811**	0.811	**4103-0894**	0.894	**4103-0977**	0.977
4103-0563	0.563	**4103-0646**	0.646	**4103-0729**	0.729	**4103-0812**	0.812	**4103-0895**	0.895	**4103-0978**	0.978
4103-0564	0.564	**4103-0647**	0.647	**4103-0730**	0.730	**4103-0813**	0.813	**4103-0896**	0.896	**4103-0979**	0.979
4103-0565	0.565	**4103-0648**	0.648	**4103-0731**	0.731	**4103-0814**	0.814	**4103-0897**	0.897	**4103-0980**	0.980
4103-0566	0.566	**4103-0649**	0.649	**4103-0732**	0.732	**4103-0815**	0.815	**4103-0898**	0.898	**4103-0981**	0.981
4103-0567	0.567	**4103-0650**	0.650	**4103-0733**	0.733	**4103-0816**	0.816	**4103-0899**	0.899	**4103-0982**	0.982
4103-0568	0.568	**4103-0651**	0.651	**4103-0734**	0.734	**4103-0817**	0.817	**4103-0900**	0.900	**4103-0983**	0.983
4103-0569	0.569	**4103-0652**	0.652	**4103-0735**	0.735	**4103-0818**	0.818	**4103-0901**	0.901	**4103-0984**	0.984
4103-0570	0.570	**4103-0653**	0.653	**4103-0736**	0.736	**4103-0819**	0.819	**4103-0902**	0.902	**4103-0985**	0.985
4103-0571	0.571	**4103-0654**	0.654	**4103-0737**	0.737	**4103-0820**	0.820	**4103-0903**	0.903	**4103-0986**	0.986
4103-0572	0.572	**4103-0655**	0.655	**4103-0738**	0.738	**4103-0821**	0.821	**4103-0904**	0.904	**4103-0987**	0.987
4103-0573	0.573	**4103-0656**	0.656	**4103-0739**	0.739	**4103-0822**	0.822	**4103-0905**	0.905	**4103-0988**	0.988
4103-0574	0.574	**4103-0657**	0.657	**4103-0740**	0.740	**4103-0823**	0.823	**4103-0906**	0.906	**4103-0989**	0.989
4103-0575	0.575	**4103-0658**	0.658	**4103-0741**	0.741	**4103-0824**	0.824	**4103-0907**	0.907	**4103-0990**	0.990
4103-0576	0.576	**4103-0659**	0.659	**4103-0742**	0.742	**4103-0825**	0.825	**4103-0908**	0.908	**4103-0991**	0.991
4103-0577	0.577	**4103-0660**	0.660	**4103-0743**	0.743	**4103-0826**	0.826	**4103-0909**	0.909	**4103-0992**	0.992
4103-0578	0.578	**4103-0661**	0.661	**4103-0744**	0.744	**4103-0827**	0.827	**4103-0910**	0.910	**4103-0993**	0.993
4103-0579	0.579	**4103-0662**	0.662	**4103-0745**	0.745	**4103-0828**	0.828	**4103-0911**	0.911	**4103-0994**	0.994
4103-0580	0.580	**4103-0663**	0.663	**4103-0746**	0.746	**4103-0829**	0.829	**4103-0912**	0.912	**4103-0995**	0.995
4103-0581	0.581	**4103-0664**	0.664	**4103-0747**	0.747	**4103-0830**	0.830	**4103-0913**	0.913	**4103-0996**	0.996
4103-0582	0.582	**4103-0665**	0.665	**4103-0748**	0.748	**4103-0831**	0.831	**4103-0914**	0.914	**4103-0997**	0.997
4103-0583	0.583	**4103-0666**	0.666	**4103-0749**	0.749	**4103-0832**	0.832	**4103-0915**	0.915	**4103-0998**	0.998
4103-0584	0.584	**4103-0667**	0.667	**4103-0750**	0.750	**4103-0833**	0.833	**4103-0916**	0.916	**4103-0999**	0.999
4103-0585	0.585	**4103-0668**	0.668	**4103-0751**	0.751	**4103-0834**	0.834	**4103-0917**	0.917	**4103-1000**	1.000
4103-0586	0.586	**4103-0669**	0.669	**4103-0752**	0.752	**4103-0835**	0.835	**4103-0918**	0.918		
4103-0587	0.587	**4103-0670**	0.670	**4103-0753**	0.753	**4103-0836**	0.836	**4103-0919**	0.919		
4103-0588	0.588	**4103-0671**	0.671	**4103-0754**	0.754	**4103-0837**	0.837	**4103-0920**	0.920		
4103-0589	0.589	**4103-0672**	0.672	**4103-0755**	0.755	**4103-0838**	0.838	**4103-0921**	0.921		
4103-0590	0.590	**4103-0673**	0.673	**4103-0756**	0.756	**4103-0839**	0.839	**4103-0922**	0.922		
4103-0591	0.591	**4103-0674**	0.674	**4103-0757**	0.757	**4103-0840**	0.840	**4103-0923**	0.923		

Z-Limit MAGNETIC BASES

- **Manufactured and inspected at world class factory that Produces highest quality Japanese brands.**
- Holds most of AGD dial and test indicators.
- Power Pull: 145 lbs.
- Overall Height: 9-1/4".
- Off/On switch.
- Base Size: 2" (Width) x 2-5/8" (Depth)



Standard **4409–0002**

With Fine Adj **4409–0001**

Pro-Series MAGNETIC BASES

- Overall height: 9" .
- Off and On switch.
- Scribe-opening: 5/32" .
- Power Pull: 130 lbs.
- Base size : 2" (Width) x 2-1/2" (Depth).
- Holds most of AGD dial and test indicators.
- V-shape on bottom surface for firm holding.





Standard **4401–1100**

With Fine Adj **4401–0001**

SUPER POWER DIN MAGNETIC BASE

- Power Pull: 160 lbs.
- On/off switch
- Base Dimension: 2.75" (Depth) x 1.77" (Width) x 2.56" (Height)
- Main Stem: 5/8" dia. x 9"
- Extension Stem: 0.47" dia. x 8" with fine adjustment
- Hold any indicators with stem 8mm diameter.



4401–0515

Limited Supply!

FLEXIBLE ARM MAGNETIC BASE

- Permanent magnet with On/ Off switch control.
- Cam lever operates cable. Locks it rigid at any desired position.
- Cable tension adjustable.
- Stem flexes full 360°.
- Accepts all A.G.D. dial indicators.
- Overall length: 13"
- Power Pull: 130 lbs.
- Base Dimension: 2" (Width) x 2-1/2" (Depth)

4401–0002



Pro-Series CONTOUR MAGNETIC BASE

- Cam lock mechanism
- Unlimited versatility
- Fine Adjustment
- On/off knob

4401–0510



MAGNETIC BASE W/DOVETAIL CLAMP

- Dovetail groove for clamping a test indicator
- Indicator stem hole on top 8mm diameter
- Fine adjustment
- On/Off switch
- Base dimension: 2x2x2-1/4" (depth)
- Main stem: 7" long
- Branch stem: 8" long
- Power pull: 130lbs

4401–0530



CENTERED V-MAGNET

- Grip on round or flat surfaces
- Post Mount Thread: M8x1.25
- 2 magnetic mounting surfaces- bottom and back
- On/off switch

1.4 x 1.2 x 1.5"(Depth)
Post Mount Thread: M5x0.8
4401–0814
66 lbs. Power Pull

2 x 2 x 2-1/2"(Depth)
4401–0111
170 lbs. Power Pull

2 x 2 x 4-5/8"(Depth)
4401–0108
260 lbs. Power Pull



MAGNETIC BASES

UNIVERSAL MAGNETIC BASE

- 3-D rigid steel arm movement.
- Unique central locking mechanism.
- Overall stem length: 11.4"
- Fine adjustment.
- On/Off switch.
- Super power pull 130 lbs.
- Base Dimension: 2" (Width) x 2-1/2" (Depth)
- Accepts all AGD dial indicators and test indicators.

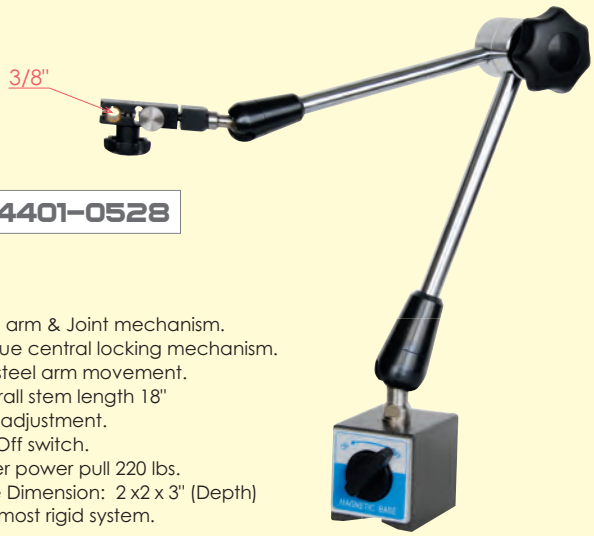


4401-0511

HHIP PRO-SERIES



STRONG-LOCK UNIVERSAL MAGNETIC BASE



4401-0528

- Solid arm & Joint mechanism.
- Unique central locking mechanism.
- 3-D steel arm movement.
- Overall stem length 18"
- Fine adjustment.
- On/Off switch.
- Super power pull 220 lbs.
- Base Dimension: 2 x2 x 3" (Depth)
- Our most rigid system.

UNIVERSAL MAGNETIC BASE -UNIQUE TOP ADJUSTMENT



- 3-D rigid aluminium arm movement.
- Unique fine adjustment mechanism.
- On/Off switch
- Dovetail groove for test indicator



Item#	Power Pull (Lbs.)	Base (L x W x H)	Max. Reach (Inch)
4401-0532	66	36x30x35mm	6.5
4401-0533	176	60x50x55mm	10.7
4401-0534	220	74x50x55mm	13.7

ROUND UNIVERSAL MAGNETIC BASE



4401-0525

- 3-D rigid steel arm movement.
- Overall stem length 10"
- Hold 3/8" stem indicator or dovetail.
- Unique central locking mechanism.
- Fine adjustment.
- Power pull 90 lbs.
- Base Diameter: 1.6"

Heavy Duty UNIVERSAL MAGNETIC BASES



- 3-D rigid alumium arm movement.
- Unique central locking mechanism.
- Fine adjustment.
- On/Off switch.
- Accepts all AGD dial indicators and test indicators.

Item#	Power Pull (Lbs.)	Base (L x W x H)	Max. Reach (Inch)
4401-0536	132	58x50x55mm	13.0
4401-0537	176	60x50x55mm	14.5
4401-0538	220	74x50x55mm	16.0

HYDRAULIC MAGNETIC BASE

- Absolute sealed hydraulic system.
- Knob turning creates tension and high pressure on the joints to hold the rods absolutely rigid.
- Multi-nimble joint for instant fix at any desired position.
- Fine adjustment.
- Fits dovetail and 3/8" stem indicators.
- Super power pull 130 lbs.
- Overall stem length 13"
- Base Dimension: 2" (Width) x 2-1/2" (Depth)



4401-0003

MINI UNIVERSAL MAGNETIC BASES

- 3-D rigid steel arm movement.
- Unique central locking mechanism.
- Accepts all A.G.D. dial indicators and test indicators.
- Base Dimension: 1.2" (width) x 1.5" (depth).
- Holds 3/8" stem dial indicators & dovetail test indicators
- On/Off magnet power switch.
- Max. Reach: 7.5" .
- With 8mm bushing

With Fine Adj
4401-0811



4401-0810



MINI INDICATOR MAG. BASE-One Knob Lock

- Base dimension: 1-1/8 (W) x 1-3/8 (H)x 1-3/8" (D)
- Max. Reach: 10"
- On/Off switch
- Hold stems: 8mm & 3/8"
- With dovetail clamp

4401-0005



EASY RELEASE MAGNETIC BASE



- Single universal rod, has 3 diameters to allow mounting popular indicators without changing rods
- Full 360° swivel
- Strong magnetic pull with easy release switch

4401-0802

MITY-MAG INDICATOR HOLDER

- Zinc die cast housing.
- 45 lbs holding power.
- Hold up to 3/8" dia. stem.
- 5 Locations for mounting accessories.
- Holder Dimensions: 4-1/2" x1" x1-1/4".

4401-0042



MAGNETIC INDICATOR HOLDER



- Holds most of dial and test indicators.
- Stem holds: 3/8" ,5/16" , 1/4" diameter.
- 80 lbs magnetic pull.
- Overall height: 5"
- Fine adjustment.

4401-0004

DUAL CLAMPING HOLES MAGNETIC BASE-One Knob Lock



- Dual Stem Clamping Hole: 8mm & 3/8"
- Dovetail groove for testing indicator
- Base dimension: 1-1.97(W) x 2.17(H)x 2.36" (D)
- On/Off switch
- Max. Reach: 17"
- 180 lbs. magnet power.

4401-0008

Base (LxWxH)	Tapped Hole	Main Stem	Branch Stem	Weight
60x50x55	M10x1.5	Ø16x230	Ø16x210	1.9kg

LOCKING PLIER SHAFT INDICATOR HOLDER

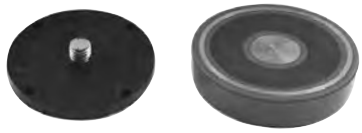


- Accept AGD group indicators
- Vise-Grip easy to hold the indicator anywhere.
- Flexible shaft made from steel
- 13" reach

4401-0520

Group 2 INDICATOR MAGNETIC BACK

- Diameter of Magnetic Back: 2-1/4" for Group II indicators.
- Magnetic back comes with screw-on indicator plain back.
- Can be used with both lug back and plain back indicators.
- Permanent magnet with strong power pull.



4401-0055

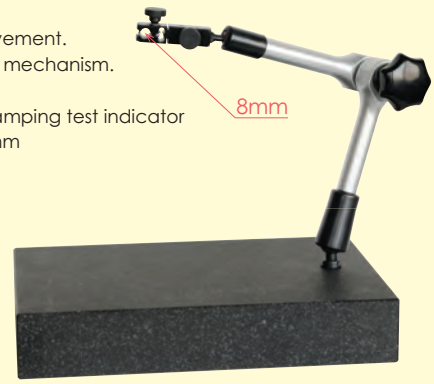


4401-0056

INDICATOR STANDS & SURFACE GAGES

GRANITE STAND W/UNIVERSAL ARM

- 12x8x2" granite plate.
- 3-D rigid steel arm movement.
- Unique central locking mechanism.
- Fine adjustment.
- Dovetail groove for clamping test indicator
- Indicator stem hole 8mm
- Overall Reach: 15"
- Weight: 24 lbs.



4401-0120

UNIVERSAL MEASURING STAND

- Heavy base allows any surface set-up.
- Base is made of high grade tool steel hardened and precision ground.
- With fine adjustment.
- Max. Extension: 14"
- Base Dimension:
  8.90" Length x 2.30" Width x 1.40" Height.
- Conforms to most of AGD indicators.
- Weight: 7 lbs



4401-0413

STEEL SURFACE GAGE

- Fine adjustment.
- Retractable pins in base for working on flat surfaces.
- Bottom V-groove ground for cylindrical works.
- Spindle can be adjustable to any angle above or below base.
- Scriber head hardened has spring control.
- Base fully hardened throughout.

Item#	Post Length
4401-2012	4 & 7"
4401-2014	9 & 12"



HDF-TYPE SURFACE GAGE

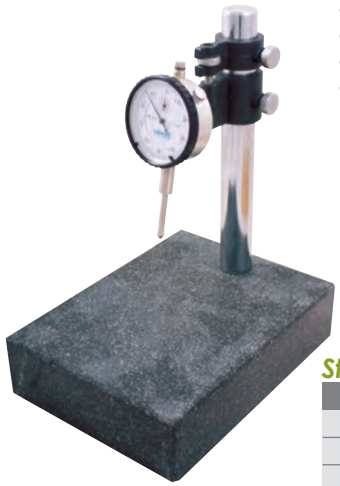
- There are two frictional held gage pins in the base, which can be pushed down and used against the edge of a surface plate or T-slot for linear works.
- One handed fine adjustment.
- Steel base hardened and ground on one end and bottom surface.
- Bottom V-groove for cylindrical works.
- V groove on the front end which allows the spindle to adjust to any angle above or below the base
- Scriber head hardened.

Post Length
12 & 18" Included

4401-2018



GRANITE CHECK (INDICATOR STAND)



- Fine adjustment.
- 10" height.
- 0.00005" granite flatness.
- Accepts all AGD Indicators with lug back.

Stand & 1"
Travel Indicator Kit
4401-2001
4401-0020 & 4400-0001

Stand Only

Item#	Base Size
4401-0020	6 x 6 x 2"
4401-0021	6 x 8 x 2"
4401-0019	12 x 8 x 2"

16" GRANITE CHECK REPLACEMENT COLUMN (Post)

Optional Long Column for Holding Long Range Indicators



PRICED FOR POST ONLY

4401-0018
Includes Clamp & Mounting Screw



- Convert your standard 6x6, 6x8 or12x8 base to larger capacity stand with this 1" diameter column.
- 16" column includes mounting screw and fine adjustment clamp for all AGD indicators with lug back.

SURFACE GAGE - Fine Tune On Top

NEW

- Knob on top of surface gage for easy adjustament.
- One handed fine adjustment.
- Steel base hardened and ground with magnet On/Off switch.
- Scriber head hardened.



Post Length 12"

4401-2020

Interapid STYLE TEST INDICATOR & MAGNETIC INDICATOR HOLDER KIT



TEST INDICATOR

- Swiss type horizontal dial test indicator
- .080" tungsten carbide point
- Automatic reversal
- Jeweled movement
- Dial reading 0-15-0
- Easy-to-read tilted dial
- Dial diameter: 1-1/2"
- 210° swivel arc.
- Range: 0~ .060"
- Graduation: .0005"



INDICATOR HOLDER

- 80 lbs magnetic pull.
- Overall height: 5"
- Fine adjustment.
- Holds most dial and test indicators.
- Stem holds: 3/8, 5/16, 1/4" diameter.

4400-0023
4400-1006 & 4401-0004

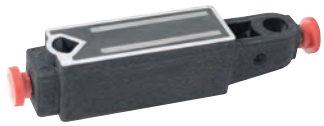
MITY-MAG HOLDER & 1" TRAVEL DIAL INDICATOR KIT

0-1" DIAL INDICATOR

- Contact point interchangeable with thread 4-48.
- Rack & contact point made of hardened stainless steel.
- Stem: 3/8" diameter.
- Jeweled movement.
- 2" Dia. dial face.
- Lug back.



4400-0024
4400-0001 & 4401-0042



MITY-MAG HOLDER

- Zinc die cast housing.
- 45 lbs holding power.
- 5 Locations for mounting accessories.
- Hold up to 3/8" dia. stem.
- Holder Dimensions: 4-1/2 x1x1-1/4"

DIAL TEST INDICATOR & MINI UNIVERSAL MAGNETIC BASE KIT

4400-0016
4400-0010 & 4401-0810



0-0.03" RANGE TEST INDICATOR

- Reading: 0-15-0
- Precision pivot bearing.
- 0.098" Contact point.
- Satin chrome finish.
- Dovetail mount top, back, & front.
- Includes fitted case & 2 stems (5/32" & 3/8").
- Jeweled movements.
- Automatic reversing.



.0005 GRADUATION

MINI UNIVERSAL MAG BASE

- 3-D rigid steel arm movement.
- Unique central locking mechanism.
- Accepts all A.G.D. dial indicators and test indicators.
- On/Off magnet power switch.
- Max. Reach: 7.5".
- Base Dimension: 1.2" (width) x 1.5" (depth).

2PC MAGNETIC BASE & INDICATOR KIT

DIAL INDICATOR

- 0~1" /0.001"
- Lug back
- Contact point thread 4-48
- Stem: 3/8"
- Dial Face: 2"



4401-0015
Complete with fitted case

MAGNETIC BASE

- Fine adjustment,
- On/off switch,
- Power Pull: 130 lbs.
- Overall Height: 9"
- Max Reach: 16"
- Hold most of AGD group indicators
- Base: 2" (Width) x 2-1/2" (Depth)



DIAL TEST INDICATOR & MINI UNIVERSAL MAGNETIC BASE KIT

0-0.03" RANGE TEST INDICATOR

- Dovetail mount top, back, & front.
- Includes fitted case & 2 stems(5/32" & 3/8").
- Precision pivot bearing.
- Reading: 0-15-0
- 0.098" Contact point.
- Satin chrome finish.
- Jeweled movements.
- Automatic reversing.

.0005 GRADUATION



Base&Indicator Kit
4400-0027
With Fitted Case



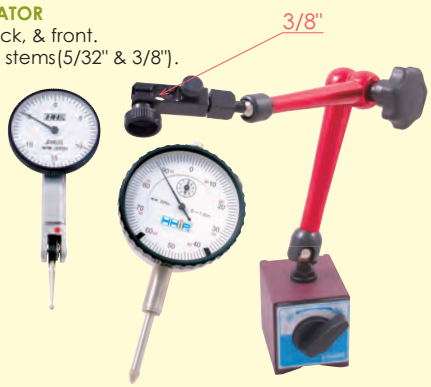
MINI UNIVERSAL MAG BASE W/FINE ADJUSTMENT

- 3-D rigid steel arm movement.
- Unique central locking mechanism.
- Accepts all A.G.D. dial indicators and test indicators.
- On/Off magnet power switch.
- Max. Reach: 7.5".
- Base Dimension: 1.2" (width) x 1.5" (depth).

3PC TEST INDICATOR, TRAVEL INDICATOR & UNIVERSAL MAGNETIC BASE KIT

0-0.03" RANGE TEST INDICATOR

- Dovetail mount top, back, & front.
- Includes fitted case & 2 stems(5/32" & 3/8").
- Reading: 0-15-0
- Graduation: .0005"
- Precision pivot bearing.
- 0.098" Contact point.
- Satin chrome finish.
- Jeweled movements.
- Automatic reversing.



4400-0018
4400-0010, 4400-0001 & 4401-0511

0-1" DIAL INDICATOR

- Graduation: .001"
- Contact point interchange-able with thread 4-48.
- Stem: 3/8" diameter.
- Rack & contact point made of hardened stainless steel.
- Jeweled movement.
- 2" Dia. dial face.
- Lug back.

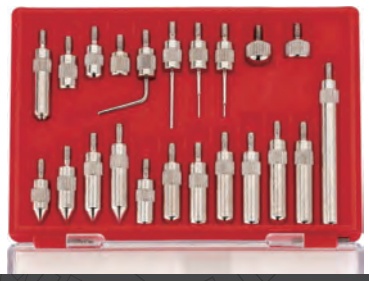
PRO-QUALITY UNIVERSAL MAGNETIC BASE

- 3-D rigid steel arm movement.
- Unique central locking mechanism.
- Fine adjustable.
- On/Off switch.
- Super power pull 130 lbs.
- Base Dimension: 2"(Width)x2-1/2"(Depth)

INDICATOR ACCESSORIES

22PC INDICATOR POINT KITS

- Fits most American and imported indicators.
- A.G.D. Specifications (4-48 Threads).
- Assorted points.

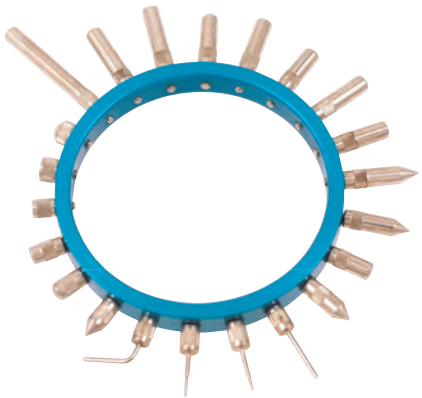


4400-0050

MADE IN USA 4400-1050

22PC CONTACT POINT RING & KIT

- 22 Points with4-48 screw thread to fit AGD indicators
- All Points are mounted on a convenent alumium ring for safe keeping and ready selection.
- Premium quality.



RING ONLY
4401-0480

22PC POINT & RING KIT
4401-0481

EXTENSION POINTS & KIT

- 4-48 internal and external threads
- Fits most of AGD group indicators

MADE IN USA *3PC Steel Kit (1,2,3")*
4401-0433





Length	Material	Item#	Price (F)
1"	Stainless Steel	4401-0439	4.29
2"	Stainless Steel	4401-0441	4.83

METRIC TO ENGLISH CONVERSION POINT

- Use the same standard inch AGD points with metric indicators
- Dimension: 7/32" dia., 1/2" long
- **4-48 internal threads, M2.5 x 0.45 external threads**
- Steel, black oxide plated



MADE IN USA 4401-0430

USE ENGLISH POINTS ON METRIC INDICATORS

0.2" SHORT RANGE DIAL INDICATOR
-Designed for Making Comparative Tests



- Dial face: 1-1/2" diameter
- Contact point: .098"x1.25"
- Stem: 1/4"x1.5"
- Includes: 3 plunge contacts: 3/16x3/32", 5/16x3/32" & 3/16x1" & 3/8" bottom contact point.
- With case.

NEW

Measuring Range: 0~0.2"
0~100 Reading
Graduation: 0.001"

4400-0031



Replacement 3/8" Dia.(4-48)
Button Contact Point
4400-0048

BACK PLUNGE DIAL INDICATOR

- Easy to read from top.
- Reading: 0-100
- Conforms to AGD standards.
- Dial face diameter: 1-3/8"
- Made of stainless steel.
- Rotatable bezel.



.001" GRADUATION

0~0.20" Range
4400-0015

SPINDLE SQUARE

A SIMPLE SOLUTION T SQUARING YOUR MACHINE

Just zero indicators on flat surface, install in milling machine spindle , bring the spindle down to the table and adjust the head until both indicators read the same. It's that simple!

4401-0060

- 1/2" shank.
- Fully assembled with indicators mounted and ready for use.
- Can also be used with a sine bar or protractor to set angle.
- No more tramming or split reading, compensating for loose, worn gears or mirrors.
- Supplied with fitted case



Z-Limit INDICATOR, 5MM TRAVEL

- Manufactured and inspected at world class factory that produces highest quality European brands.
- 6 Jewel movement.
- Reading range pointers installed in the bezel.
- Flat back.
- Complete with a fitted durable ABS case.
- Long form of Calibration Certificate included.

ULTRA-SERIES

Shockproof

.01mm GRADUATION
0-100-0 READING



- AGD Group 1: 40mm diameter face.
- 6 Jewel movement.
- Contact point interchangeable with thread M2.5
- Stem: 8mm diameter.

RANGE: 0~5MM
4409-1110

Z-Limit 1/4" TRAVEL DIAL INDICATOR

- Manufactured and inspected at world class factory that produces highest quality European brands.
- Reading range pointers installed in the bezel.
- Complete with a fitted durable ABS case.
- Long form of Calibration Certificate included.
- 6 Jewel movement.
- Flat back.

.001" GRADUATION
0-100-0 READING

Shockproof

ULTRA-SERIES

RANGE: 0~0.25"
4409-1105



- AGD Group 1: 1-1/2" diameter face.
- Contact point interchangeable with thread 4-48
- Stem: 3/8" diameter.

Z-Limit INDICATOR, 1" TRAVEL

- Manufactured and inspected at world class factory that produces highest quality European brands.
- Reading range pointers installed in the bezel.
- Complete with a fitted durable ABS case.
- Long form of Calibration Certificate included.
- Contact point interchangeable with thread 4-48
- AGD Group 2.
- 6 Jewel movement.
- Shock-Proof.
- Stem: 3/8" diameter.
- Reading: 0-100-0.
- Flat back.

Shockproof



ULTRA-SERIES

Range: 0 ~ 1"
Graduation: .001"
4409-1101

Z-Limit INDICATOR, 10MM TRAVEL

- Manufactured and inspected at world class factory that produces highest quality European brands.
- Contact point interchangeable with thread M2.5
- Complete with a fitted durable ABS case.
- Reading range pointers installed in the bezel.
- Long form of Calibration Certificate included.
- AGD Group 2: 60mm diameter face.
- 6 Jewel movement.
- Shock-Proof.
- Stem: 8mm diameter.
- Flat back.

ULTRA-SERIES

Shockproof

.01mm GRADUATION
0-100-0 READING



RANGE: 0~10MM
4409-1111

Z-Limit INDICATOR, 1/2" TRAVEL

- Manufactured and inspected at world class factory that produces highest quality European brands.
- Reading range pointers installed in the bezel.
- Complete with a fitted durable ABS case.
- Long form of Calibration Certificate included.
- Contact point interchangeable with thread 4-48
- AGD Group 2.
- 6 Jewel movement.
- Shock-Proof.
- Stem: 3/8" diameter.
- Reading: 0-100-0.
- Flat back.

Shockproof



ULTRA-SERIES

Range: 0 ~ 0.5"
Graduation: .0005"
4409-1109

Z-Limit 1" TRAVEL INDICATOR



- 6 Jeweles movement.
- Bezel lock screw designed for easy adjustment.
- Contact point interchangeable with thread 4-48.
- Stem: 3/8" diameter.
- Dial Face: 2.19" diameter.
- Reading range pointers installed in the bezel.
- Long form of calibration certificate included
- Dual Back: flat back installed with an extra lug back.
- Complete with a fitted durable plastic case.

ULTRA-SERIES



0~1" Range
4409-4001

.001" GRADUATION
READING 0-100-0

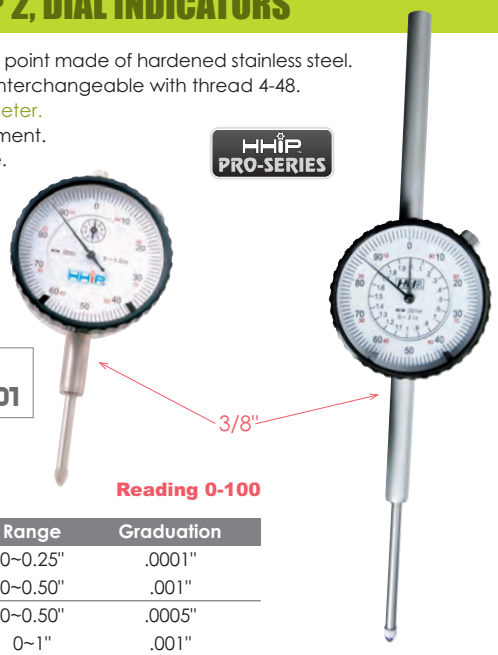
Replacement Contact Point (4-48 thread) (Item #4400-3139)

PRECISION MEASURING TOOLS

DIAL INDICATORS

AGD GROUP 2, DIAL INDICATORS

- Rack & contact point made of hardened stainless steel.
- Contact point interchangeable with thread 4-48.
- Stem: 3/8" diameter.
- Jeweled movement.
- 2" Dia. dial face.
- Lug Back



0~1" Range
4400-0001

Reading 0-100

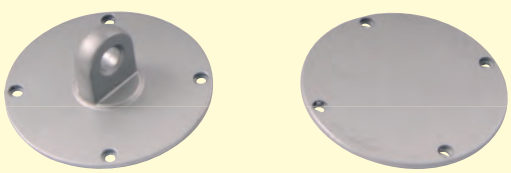
Item#	Range	Graduation
4400-1250	0~0.25"	.0001"
4400-0004	0~0.50"	.001"
4400-1095	0~0.50"	.0005"
4400-0001	0~1"	.001"
4400-1100	0~1"	.0005"
4400-1000	0~1"	.0001"
4400-0012	0~1" (Flat Back)	.001"
4400-0002	0~2"	.001"

0~2" Range
4400-0002

Replacement Contact Point (4-48 thread)(Item #4400-3139)

DIAL INDICATOR BACK COVER

- For AGD group 2 indicator with 2-1/4" diameter.
- Four hole pattern.



Lug Back
4401-0057

Flat Back
4400-3140

0~30MM, LARGE FACE DIAL INDICATOR

- **AGD Group 3.**
- Range: 0~30mm
- Contact point interchangeable with thread 4-48.
- Stem: 8mm diameter.
- Dial Face: 2.97" diameter.
- Lug back.

.01mm GRADUATION

4400-1113



Limited Supply!

Replacement Contact Point (4-48 thread)(Item #4400-3139)

Pro-Series AGD 2, COLOR FACE DIAL INDICATORS

- Contact point interchangeable with thread 4-48.
- Rack & contact point made of hardened stainless steel.
- Jeweled movement.
- Stem: 3/8" diameter.
- 2" Dia. dial face.
- **Graduation: 0.001"**
- Reading: 0-100
- Lug back.



Blue Face
0~1" Range
4400-1104

Black Face
0~1" Range
4400-1102

Black Face
0~2" Range
4400-0035

Replacement Contact Point (4-48 thread)(Item #4400-3139)

LARGE FACE, 2" TRAVEL INDICATOR

- **AGD Group 3.**
- Contact point interchangeable with thread 4-48.
- Stem: 3/8" diameter.
- **Dial Face: 2.97" diameter.**
- Lug back.

.001" GRADUATION
READING 0-100-0



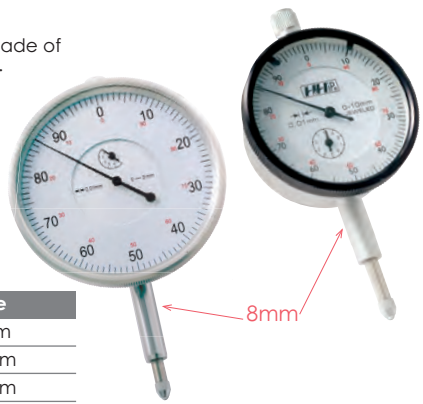
0~2" Range
4400-0036

Replacement Contact Point (4-48 thread)
(Item #4400-3139)

AGD GROUP 2, METRIC DIAL INDICATORS

- Reading: 0-100
- Rack & contact point made of hardened stainless steel.
- Jeweled movement.
- 2" diameter dial face.
- Stem: 8mm
- Lug back.

.01mm GRADUATION



Item#	Range
4400-1110	0~5mm
4400-1101	0~10mm
4400-0019	0~20mm

0-0.4" WATERPROOF DIAL INDICATOR

NEW

- Robust, shockproof design
- Trave: 1"
- Readig: .001"
- Continuous reading: 0-50
- Tolerance markers
- AGD Group 2, 2-1/4" dia.
- Stem: 8mm
- Lug back and carbide contact point.



.0005 GRADUATION

Waterproof

RANGE: 0~0.4"
4400-1280

Protection Includes:
- Rubber bellows on stem
- Sealed back plate
- O-ring seal on safety cap
- O-ring protection for bezel and rotating dial

0~.125 TRAVEL AGD GROUP 1 DIAL INDICATOR



- AGD Group I.
- 1-1/2" diameter dial face.
- Reading: 0-50
- Rack & contact point made of hardened stainless steel.
- Jeweled movement.
- Lug back.

4400-0005

.0005" GRADUATION

AGD GROUP 2, 1" DIAL INDICATOR WITH LIFTING LEVER

NEW

- Lifting lever.
- Rack & contact point made of hardened stainless steel.
- Contact point interchangeable with thread 4-48.
- Stem: 3/8" diameter.
- Jeweled movement.
- 2" Dia. dial face.
- Lug Back

Reading 0-100







0~1" Range
4400-1090

0~.250 TRAVEL AGD GROUP 1 DIAL INDICATOR



- AGD Group I.
- 1-1/2" diameter dial face.
- Reading: 0-100
- Rack & contact point made of hardened stainless steel.
- Jeweled movement.
- Lug back.

.001" GRADUATION

0~0.25" Range
4400-0003

Teclock GROUP 2 METRIC DIAL INDICATORS



- Easy-to-read graduations.
- Hard satin-chrome finish.
- Spindle rack, pinions and gear trains are superior quality, ensuring longevity.
- Conforms to AGD specifications.
- Meets or exceeds applicable federal specifications.
- Stem: 8mm
- Revolution counter.
- Lug back.

.01mm GRADUATION

Item#	Range
4409-1112	0~10mm
4409-1114	0~20mm
4409-1115	0~30mm

Teclock GROUP 2 DIAL INDICATORS

- Easy-to-read graduations.
- Hard satin-chrome finish.
- Spindle rack, pinions and gear trains are superior quality, ensuring longevity.
- Conforms to AGD specifications.
- Meets or exceeds applicable federal specifications.
- Revolution counter.
- Stem: 3/8" Diameter.
- Lug back.



.001" GRADUATION

Item#	Range	Reading	Dia.
4409-1001	0~1"	0-100	2-3/16"
4409-1002	0~2"	0-100	2-3/16"

.00005" DIGITAL ELECTRONIC INDICATOR

- True inch/mm conversion
- Accuracy: 0.0002" / 0.005mm.
- 7 Keys: On/Off, Dir, Inch/mm, Tol., Set, ABS & Range.
- Easy adjusting for standard or reverse reading.
- Flat back.
- Stem Diameter: 8mm
- Button battery SR44 , 1.5V
- Supplied in fitted case.



.00005" / .001mm RESOLUTION

0~0.5"/0~12.7mm
4400–1500

Limited Supply!

STARRETT STYLE ELECTRONIC INDICATOR

- Front battery cover allows easy access to change battery.
- Extra large LCD display.
- Reverse travel.
- True inch/mm conversion.
- Absolute zero reset button.
- Zero at any point.
- On/Off button.
- Flat back.
- Stem: 8mm
- Battery included: SR44, 1.55V.
- Supplied with fitted case.



.0005" / 0.01mm RESOLUTION

0~1/2"/0~13mm
4400–0115

Dasqua® LONG RANGE TEST INDICATOR

- **Swiss** style horizontal dial test indicator
- Automatic reversal
- Jeweled movement
- Dial reading 0-15-0
- Easy-to-read tilted dial
- 2 Stems (5/32" & 3/8") included.
- 3 Points (.04, .08 & .12") included.
- With fitted case.
- 210° swivel arc.
- .080" carbide contact point.
- Very large measuring range.
- 4mm(5/32") swivel stem.
- With revolution counter.

NEW



.0005 GRADUATION
Reading: 0-15-0



Range: 0~ .060"
4409–1006

SUPERIOR CRAFTMANSHIP

QUICK ACTION ELECTRONIC INDICATORS

- Excellent repeatability with quick movement of measurements
- True Inch/MM conversion
- Absolute zero reset button
- On/Off button
- Stem: 8mm
- Lug back
- With fitted case

.0005"/ .01mm RESOLUTION



0~0.5"/0~12mm
4400–0109

0~1"/0~25mm
4400–0110

Limited Supply!

LONG TRAVEL DIGITAL ELECTRONIC INDICATOR



- True inch/mm conversion
- Zero reset button allows absolute or comparative style measurements.
- Easy adjusting for standard or reverse reading.
- Stem: 8mm.
- Flat back.
- Button battery SR 44,1.55 V
- Supplied with fitted case.

.0005" / .01mm RESOLUTION

0~2"/0~50mm
4400–0112

Pro-Series LONG RANGE TEST INDICATOR

- Swiss style horizontal dial test indicator
- Automatic reversal
- Jeweled movement
- Dial reading 0-15-0
- Easy-to-read tilted dial
- 210° swivel arc.
- Dial diameter: 30mm(1.185")
- .080" carbide contact point.
- Very large measuring range.
- 4mm(5/32") swivel stem.
- With revolution counter.
- 2 Stems (5/32" & 3/8") included.
- With fitted case.



NEW

.0005 GRADUATION
Reading: 0-15-0

Range: 0~ .060"
4400–1260

PRECISION DIAL TEST INDICATORS

- Dovetail mount top, back & front.
- Includes fitted case & 2 stems(5/32" & 3/8").
- Precision pivot bearing.
- 0.098" Contact point.
- Satin chrome finish.
- Jeweled movements.
- Automatic reversing.

Item#	Range	Graduation	Face	Reading
4400-0010	0~0.03"	.0005"	White	0-15-0
4400-0101	0~0.03"	.0005"	Yellow	0-15-0
4400-1001	0~0.03"	.0005"	Black	0-15-0
4400-0100	0~0.008"	.0001"	White	0-40-0

REPLACEMENT POINT (for 0~0.03")(Item #4400-1007)(M1.8 Thread)
(for 0~0.008")(Item #4400-1008)(M2 Thread)



Yellow Face
0~0.03" Range
4400-0101

Interapid Style TEST INDICATOR & SET



- Swiss type horizontal dial test indicator
- Automatic reversal
- Jeweled movement
- Dial reading 0-15-0
- Easy-to-read tilted dial
- Dial diameter: 1-1/2"
- 210° swivel arc.
- .080" steel contact point.

.0005 GRADUATION

Complete Kit
0~ .060"
4400-0014

Indicator only
0~ .060"
4400-1006
Case&2 Stems(5/32&3/8") Included

Kit Includes:
- Dial test indicator
- Axial support
- Height gage bar with clamp
- Universal holder
- 2 stems (5/32" & 3/8")
- .04, .08, .12" points, 1.4mm thread
- Completed with fitted cased



Ultra-Series DIAL TEST INDICATORS

- Manufactured and inspected at world class factory that produces highest quality European brands.
- Three dovetail positioning mounts work with most existing test indicator accessories.
- Precision gear-driven design with smooth, jeweled movement.
- Contact point reverses automatically, always maintaining clockwise hand rotation.
- Frictionally adjustable contacts.
- Meets or exceeds ANSI/ASME accuracy specifications.
- High contrast, easy-to-read dials with white background.
- Satin chrome finish.

1-1/4"(32mm) DIAL FACE
INCLUDES CASE & 2 STEMS(5/32&3/8")



0~0.03" Range
Graduation .0005
4409-1201



0~0.008" Range
Graduation .0001
4409-1206

REPLACEMENT PARTS FOR Interapid Style INDICATORS


Holding Bar


Stem 5/32" Dia.


Stem 3/8" Dia.


Dovetail Clamp


Replacement Point


Adaptor Sleeve

Item#	Description
4401-0731	1/4x1/2" Holding Bar with 1/4" pin
4401-0732	Stem 5/32" dia. with dovetail washer
4401-0733	Stem 3/8" dia. with dovetail washer
4401-0734	Dovetail Clamp, bore dia. 1/4 & 3/8"
4401-0735	Replacement Point 0.04"(M1.4 thread)
4401-0736	Replacement Point 0.08" (M1.4 thread)
4401-0737	Replacement Point 0.12" (M1.4 thread)
4401-0739	Adaptor Sleeve 3/8x5/32"

Ultra-Series DIAL TEST INDICATOR WITH DOVETAIL MOUNT



- Manufactured and inspected at world class factory that produces highest quality European brands.
- Three dovetail positioning mounts work with most existing test indicator accessories.
- Precision gear-driven design with smooth, jeweled movement.
- Contact point reverses automatically, always maintaining clockwise hand rotation.
- Frictionally adjustable contacts.
- Meets or exceeds ANSI/ASME accuracy specifications.
- High contrast, easy-to-read dials with white background.
- Narrow body for in reach ability.
- Satin chrome finish for durability.

Kit includes:
2-contact points,
2-dovetail clamps(stem 5/32&3/8"),
1-swivel post holder,
1-tool post holder,
1-contact wrench with fitted case.

0~0.03" Range
Graduation .0005
4409-1208

TEST & CENTERING INDICATORS

1-1/2" LARGE FACE, DIAL TEST INDICATORS

- Dial Face: 1-1/2" diameter
- Contact Point: .098"
- Dovetail mount top, back & front
- 2 stems (5/32 & 3/8") included
- Jeweled movements
- Satin chrome finish
- Automatic reversing
- With fitted case.





HHIP PRO-SERIES

0~0.03" Range
Graduation .0005
4400–1010

0~0.008" Range
Graduation .0001
4400–0103

REPLACEMENT POINT
(for 0~0.03") (Item #4400-1007) (M1.8 Thread)
(for 0~0.008") (Item #4400-1008) (M2 Thread)

Ultra-Series LARGE FACE DIAL TEST INDICATOR

- Manufactured and inspected at world class factory that produces highest quality European brands.
- Three dovetail positioning mounts work with most existing test indicator accessories.
- Precision gear-driven design with smooth, jeweled movement.
- Contact point reverses automatically, always maintaining clockwise hand rotation.
- Frictionally adjustable contacts.
- Meets or exceeds ANSI/ASME accuracy specifications.
- High contrast, easy-to-read dials with white background.
- Satin chrome finish.



1-9/16" (40mm) DIAL FACE

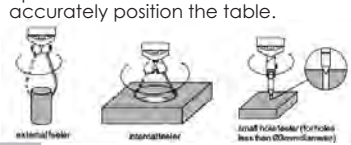
2 stems (5/32 & 3/8") ncluded

0~0.03" Range
Graduation .0005
4409–1203

PRECISION CENTERING INDICATOR



- Quick, accurate, easy centering in boring and milling set-up on horizontal or vertical machines.
- Operates at an angle from horizontal to vertical machines, and from internal to external diameter without any change by simply changing the feeler.
- Face of the indicator remains stationary at any desired position while the machine spindle rotates, leaving the operator with both hands free to accurately position the table.



SPECIFICATIONS	
Body Length:	5-1/2"
Shank:	3/8" diameter x 7/8" long
Weight:	9-1/2 OZ
Feeler Ball:	1/8" diameter
Measuring Range:	250 axis offset
Capacity:	Internal 5/32" to 4-1/4" dia. External 0 to 4-1/4" dia.
Speed:	Spindle rotation up to 800RPM (Exceeding this speed is not recommended)
Locating Accuracy:	0.0002" of true center

.0005 Graduation
4400–0020

Includes:
- Restraining rod
- Center point feeler
- 2" straight feeler
- 4" straight feeler
- 6" straight feeler
- 2" curved feeler
- 4" curved feeler
- 6" curved feeler

METRIC DIAL TEST INDICATORS



- Precision pivot bearing.
- 2.5mm Contact point.
- Satin chrome finish.
- Jeweled movements.
- Automatic reversing.
- Includes fitted case & 2 stems (6mm&8mm).
- Dovetail mount top, back, & front.

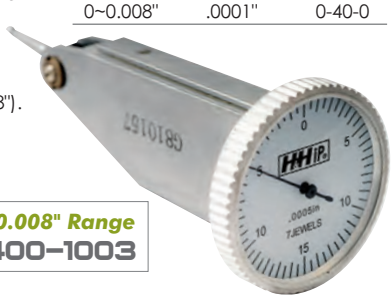
0~0.8mm Range
.01mm Graduation
4400–1004

0~0.2mm Range
.002mm Graduation
4400–1014

VERTICAL DIAL TEST INDICATORS

- Dovetail mounting top, back and bottom.
- Adjustable bezel and dial are easily set and reset to zero.
- Satin chrome finishing.
- Contact point can be displaced 210°.
- Includes 2 stems (5/32" & 3/8").

Range	Graduation	Reading
0~0.03"	.0005"	0-15-0
0~0.008"	.0001"	0-40-0



0~0.03" Range
4400–1002

0~0.008" Range
4400–1003

Pro-Series CENTERING INDICATORS

- Provides a simplified method of centering a workpiece or fixture on horizontal or vertical machines, internal or external diameters. Face of indicator remains stationary in any desired position while the machine spindle rotates, leaving the operator with both hands free to accurately position the machine table.
- Length: 6-7/8", Shank Dia.: 3/8", Feeler Dia.: 1/8".
- Locating accuracy within .0002" of true center.
- Operating speed not to exceed 800 RPM.
- Capacity: 5/32"-12" internal, up to 12" external.
- With fitted wooden case.

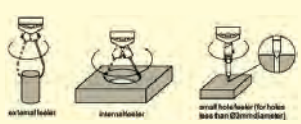
HHIP PRO-SERIES





Kit Includes:
3 ID Feeler: 2, 3 & 4" long
3 OD Feeler: 2, 3, & 4" long
1 Center Locating Feeler

INCH
.0005 Graduation
4400–0120



METRIC
0.01mm Graduation
4400–0121

Z-Limit QUILL CLAMP HOLDER



- **Manufactured and inspected at world class factory that produces highest quality European brands.**
- Fits Bridgeport type milling machines.
- Fits milling machines with 1-7/8" dia. quills.
- Clamps directly onto machine quill.
- Will not disturb working tool in the machine.

Z-Limit ULTRA-SERIES

INDICATOR IS NOT INCLUDED

4409–0010

PRECISION TEST INDICATOR HOLDER & KIT



0~0.03" TEST INDICATOR

- Resolution: 0.0005" .
- Precision pivot bearing.
- 0.098" Contact point.
- Satin chrome finish.
- Dovetail mount top, back, & front.
- 2 stems(5/32" & 3/8").
- Jeweled movements.
- Automatic reversing.



Holder Only
4401–0401

Test Indicator Kit
4400–0013
FITTED DURABLE PLASTIC CASE

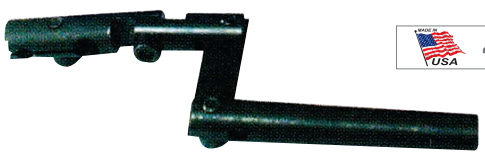
UNIVERSAL TEST INDICATOR HOLDER

- 1-7/8" Clamping diameter.
- Length from center of clamping bracket to indicator: 6-1/2".
- Fits Bridgeport "J" head.

AXIAL SUPPORT BRACKET

- Used for mounting indicators with dovetails or rods
- 3/8" diameter body for secure support
- Multi-position, 360° capability
- .375" shank
- Constant tension
- 6.500 radial sweep

4401–0740



MADE IN USA **4401–0741**

HALF-ROUND COMBINATION HOLDER

- Versatile holder for test indicators equipped with stems or dovetails
- 1/4 x 2" long holding bar
- Accepts 5/32" stem or dovetails
- 3-1/2" effective measuring range



INDICATOR IS NOT INCLUDED

4401–0412

UNIVERSAL EXTENSION ARM

- Unique central locking mechanism.
- Both sides with male threads(M8x1.25x8mm VS 5/16"-18x8mm)
- Rigid universal steel arm.
- Extends up to 12"



4401–0113

UNIVERSAL ARM FOR INDICATORS

- Rigid universal steel arm.
- Indicator stem hole: 8mm
- Unique central locking mechanism.
- Dovetail groove for clamping test indicator.
- Fine adjustment.
- Arm length 11"
- Rod side dimension (dia.x L): 8mmx40mm



4401–0115

MINI UNIVERSAL ARM FOR INDICATORS

- Unique central locking mechanism.
- Dovetail groove for clamping test indicator.
- Indicator stem hole: 8mm
- Rigid universal steel arm.
- Arm length 6"
- Rod side dimension (dia.x L): 8mmx40mm



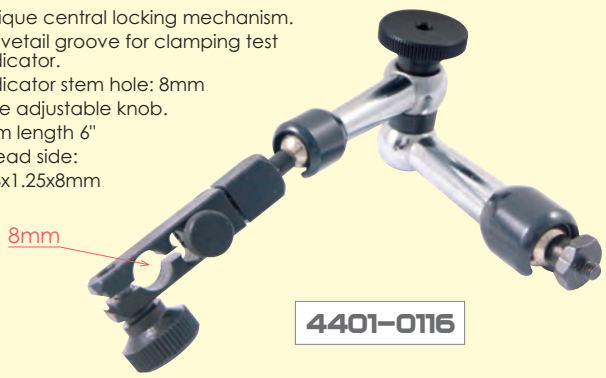
Standard Shown

Standard
4401–0117

Fine Adjustment
4401–0118

MINI UNIVERSAL ARM W/FINE ADJUSTMENT

- Unique central locking mechanism.
- Dovetail groove for clamping test indicator.
- Indicator stem hole: 8mm
- Fine adjustable knob.
- Arm length 6"
- Thead side: M8x1.25x8mm

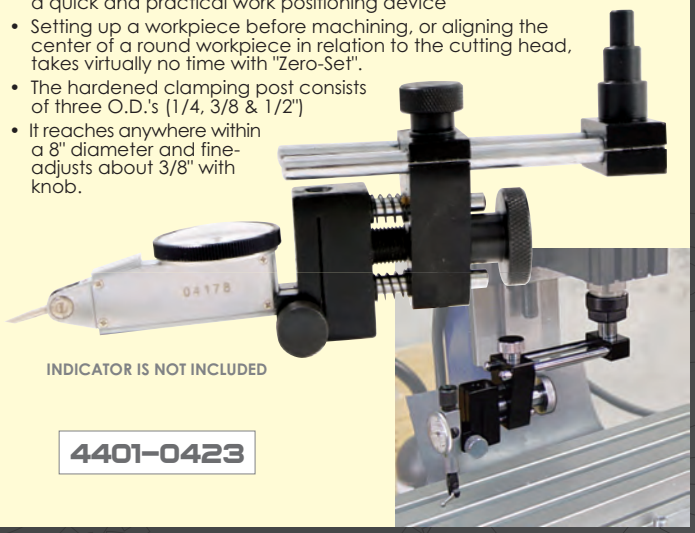


4401–0116

INDICATOR ACCESSORIES

ZERO-SET UNIVERSAL KIT FOR TEST INDICATORS

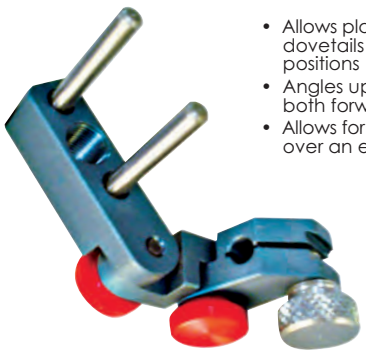
- Designed for test indicator with dovetails or 1/4" post and functions as a quick and practical work positioning device
- Setting up a workpiece before machining, or aligning the center of a round workpiece in relation to the cutting head, takes virtually no time with "Zero-Set".
- The hardened clamping post consists of three O.D.'s (1/4, 3/8 & 1/2")
- It reaches anywhere within a 8" diameter and fine-adjusts about 3/8" with knob.



INDICATOR IS NOT INCLUDED

4401–0423

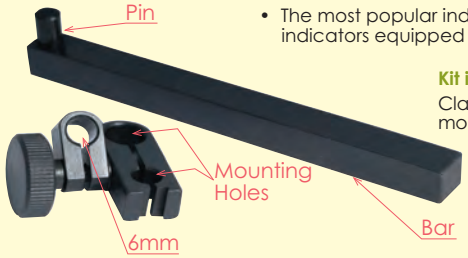
ZERO SET UNIVERSAL ATTACHMENT



- Allows placement of any test indicator with dovetails or 1/4" posts in a multitude of positions
- Angles up to 90° on either side and bends both forward and backward
- Allows for an infinite range of measurement over an extensive area

4401–0422

HEIGHT GAGE ATTACHMENT CLAMP SET



- The most popular indicator clamp. Fits all indicators equipped with rods or dovetails

Kit includes:
Clamp with dovetail and mounting holes

NEW

Item#	Mounting Holes	Bar	Pin
4401-0419	5/32 & 1/4"	5/16 x 5/16 x 3"	6mm
4401-0420	6 & 8 mm	9 x 9 x 75mm	6mm
4401-0421	7/32 & 3/8"	3/8 X 3/8 x 4"	6mm

ADAPTER CLAMP

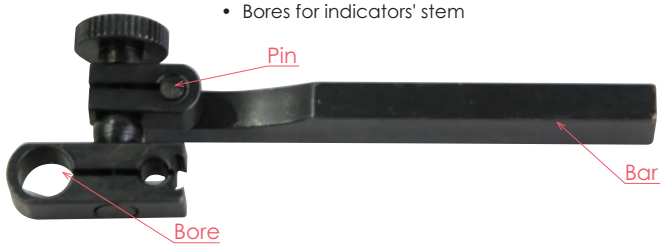
- Adapter for mag. base, indicator stems and connect rods
- Rigid steel construction.
- Bore Diameter: 5/32, 1/4 & 1/4"



4401–0123

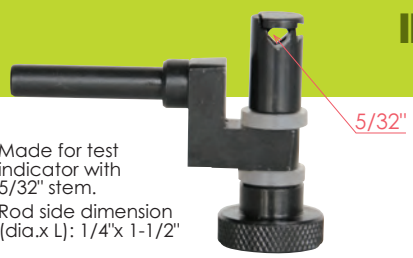
SWIVEL HEAD CLAMPING HOLDERS

- Rigid steel construction
- Dovetail groove for clamping test indicators
- Bores for indicators' stem



Item#	Bore	Bar	Pin
4401-0450	5/32 & 1/4"	1/2 x 1/4 x 3"	1/4
4401-0453	5/32 & 3/8"	1/2 x 1/4 x 3"	1/4
4401-0456	1/4 & 3/8"	1/2 x 1/4 x 3"	1/4

INDICATOR GRIP HOLDER



- Made for test indicator with 5/32" stem.
- Rod side dimension (dia.x L): 1/4"x 1-1/2"

4401–0119

DOVETAIL INDICATOR CLAMPS

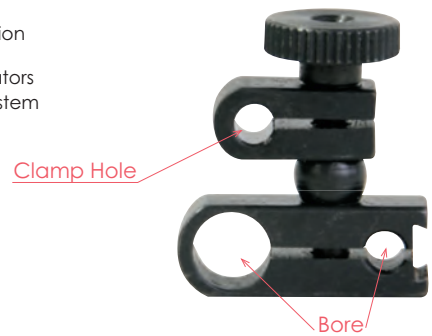
- 3" overall length
- For use with all test indicators and probes with dovetails
- Locks in four 90° quadrants



Item#	Dia. of Rod
4401-0426	1/4"
4401-0427	6mm
4401-0428	8mm

DOVETAIL CLAMPS

- Rigid steel construction
- Dovetail groove for clamping test indicators
- Bores for indicators' stem



Item#	Bore	Clamp Hole
4401-0465	4 & 8mm	4mm
4401-0466	6 & 8mm	6mm
4401-0467	4 & 6mm	4mm
4401-0468	5/32 & 3/8"	1/4"
4401-0469	1/4 & 3/8"	4mm
4401-0470	5/32 & 1/4"	5/32"

Pro-Series FLEX & RIGID RULES

Style	Graduation
4R	8ths & 16ths, 32nds & 64ths
5R	32nds & 64ths, 10ths & 100ths
16R	32nds & 64ths, 50ths & 100ths
3R	32nds & 64ths, 10ths & 50ths
E/M	32nds & 64ths, mm & .5mm

- Made from the finest steel available.
- All fully hardened, tempered and chrome finished.
- Precisely etched for accuracy and readability.



Length (Inch)	Style	FLEX Item#	Width (Inch)	RIGID Item#	Width (Inch)
6	4R	4901-0131	1/2	4901-0201	3/4
12	4R	4901-0132	1/2	4901-0202	1
24	4R	4901-0134	3/4	4901-0204	1-1/8
36	4R	4901-0136	3/4	4901-0206	1-1/4
48	4R	4901-0138	3/4	4901-0208	1-1/4
6	5R	4901-0140	1/2	4901-0210	3/4
12	5R	4901-0142	1/2	4901-0212	1
24	5R	4901-0144	3/4	4901-0214	1-1/8
36	5R	4901-0146	3/4	4901-0216	1-1/4
48	5R	4901-0148	3/4	----------	-------
6	16R	4901-0150	1/2	4901-0220	3/4
12	16R	4901-0152	1/2	4901-0222	1
24	16R	4901-0154	3/4	4901-0224	1-1/8
36	16R	4901-0156*	3/4	4901-0226*	1-1/4
48	16R	4901-0158*	3/4	----------	------
6	3R	4901-0161	1/2	4901-0231	3/4
6	E/M	4901-0166	1/2	4901-0236	3/4
12	E/M	4901-0168	1/2	4901-0238	1

Pro-Series DRILL POINT GAGE

- For measuring properly ground 59° drill tips.
- Made of steel - satin chrome finished.
- End clip is adjustable and removable.
- Versatile-can be used as rule, hook rule, try square, depth gage, or caliper and for layouts.

4901-0110



SLIDE IN 32ND GRADUATION

Pro-Series SPRING DIVIDERS



- Easy adjustment over entire range.
- Balanced legs, uniform tension.
- Polished natural steel finish.

Size	Item#
4"	4901-0065
6"	4901-0066
8"	4901-0067
10"	4901-0068
12"	4901-0069

Pro-Series HOOK RULES



Limited Supply!

Item#	Length	Width
4901-0116	6"	3/4"
4901-0120	12"	1"
4901-0122	18"	1-1/8"
4901-0124	24"	1-1/8"

- Hardened and tempered tool steel,chrome finished.
- Thickness .040".
- Furnished with adjustable hook.
- 4R: 8ths & 16ths, 32nds & 64ths.

Pro-Series INSIDE CALIPERS

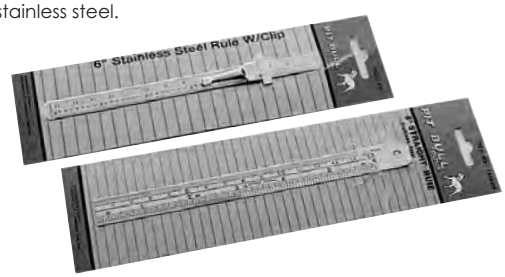
- Easy adjustment over entire range.
- Balanced legs, uniform tension.
- Polished natural steel finish.

Size	Item#
6"	4901-0070
8"	4901-0071
12"	4901-0072



STAINLESS STEEL RULERS

- Hardened stainless steel.
- Flexible.



Item#	Size	Reading
7019-0001	6"/15cm	3R-16ths, 32nd, 1mm
7019-0002	6"/15cm w/clip	2R-64ths, 1mm

Pro-Series OUTSIDE CALIPERS

- Easy adjustment over entire range.
- Balanced legs, uniform tension.
- Polished natural steel finish.

Size	Item#
6"	4901-0073
8"	4901-0074
12"	4901-0075

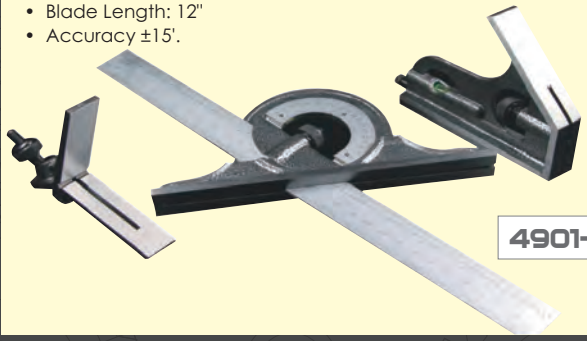


PROTRACTORS

Dasqua® 4PC COMBINATION SQUARE SET

- Set includes: square head, center head, protractor and blade.
- Double indexed protractor is graduated 180° in both directions.
- Blade marked graduation: E/M 0.5mm & 32nds, 1.0mm & 64ths.
- Blade made of hardened stainless steel.
- Blade Length: 12"
- Accuracy ±15'.

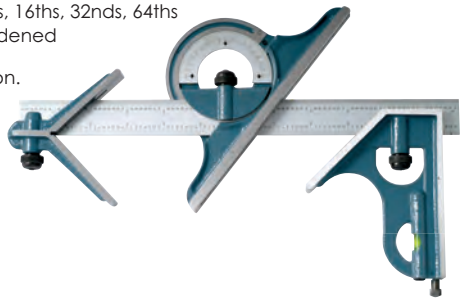
NEW



4901–1003

4PC COMBINATION SQUARE SET

- Set includes: square head, center head, protractor and blade.
- Double indexed protractor is graduated 180° in both directions.
- Graduation: 4R-8ths, 16ths, 32nds, 64ths
- Blade made of hardened stainless steel.
- Microfine graduation.
- Blade: 0~12"
- Accuracy ±15'.



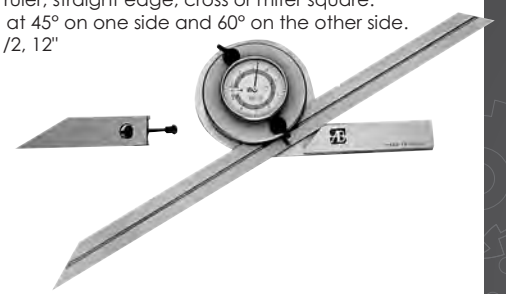
4901–0003

16R Blade (32nds,64ths,50ths&100ths) (Item#4901-0316)
Satin Chrome Finish

UNIVERSAL DIAL PROTRACTOR SET

- The measuring value can be read on the dial indicator.
- An inspection window reads a full 360° with four 0-90° sections.
- Hardened stainless steel construction throughout this tool.
- It can be used as a ruler, straight edge, cross or miter square.
- Blades are beveled at 45° on one side and 60° on the other side.
- Blade Length: 6, 8-1/2, 12"

WITH 3 BLADES



0~360° Range
4901–0001

STEEL PROTRACTORS

- Measures angles from 0 to 180°.
- Used for drawing radial lines, transferring angles and setting bevels.
- Blade secured firmly by lock nut at any angle.
- Made of tempered steel with satin chrome finish.
- Semi-circle Head Radius: 2"
- Features 6" arm and knurled thumb locknut.

Head Shape	Item #	USA Made Item #
Round	4901-0005	4901-0015
Square	4901-0006	4901-0016



3PC COMBINATION SQUARE SET

- Microfine graduation.
- Easy-to-ready blade is fully hardened and tempered
- Square head has level and scriber point
- Graduation: E/M 0.5mm & 32nds, 1.0mm & 64ths.
- Blade satin chrome finish.

0~12" Blade
4901–0314



ECONOMY 2PC COMBINATION SQUARE SET

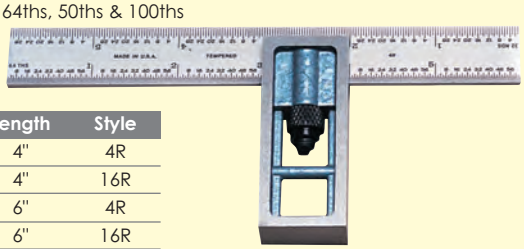
- Square head made of cast aluminum
- Graduation: 8ths, 16ths, 1mm,1mm
- Blade made of tool steel
- Blade: 0~12"



4901–0312

DOUBLE SQUARES

- Made of steel hardened and satin chrome finished.
- Slide is adjustable and removable.
- **4R:** 8ths & 16ths, 32nds & 64ths
- **16R:** 32nds & 64ths, 50ths & 100ths



Item#	Length	Style
4901-0318	4"	4R
4901-0324*	4"	16R
4901-0319	6"	4R
4901-0325	6"	16R

* Limited Supply

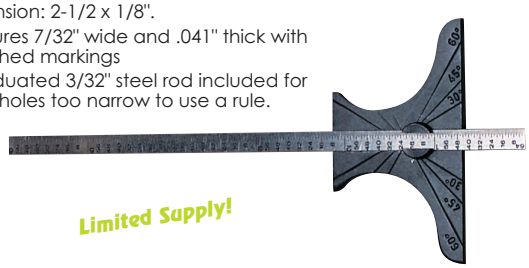
DEPTH & ANGLE GAGE

- Heads made of hardened steel.
- Protractor graduations: 30°, 45° & 60°.
- Rule made of hardened and tempered stainless steel.

0~6" Range
4500–0010



- Base Dimension: 2-1/2 x 1/8".
- Rule measures 7/32" wide and .041" thick with deeply etched markings
- 6" non-graduated 3/32" steel rod included for measuring holes too narrow to use a rule.



Limited Supply!

360° DIGITAL LEVEL/PROTRACTOR

- Accuracy: 0-10° =0.1°, 11-79°=0.2° , 80-90°=0.1°
- Instant LCD display of level, tilt, true vertical or any angle in between to highest accuracy, one tenth of a degree reading
- Deviation from true plane is measurable through full 360° (4x90°)
- Reset plus superset self-calibration modes
- 4 x 90° protractor inclinometer
- Range: 360°
- Resolution: 0.1°
- Floating zero
- Hold button
- On/off button



DIMENSION: 151x60x32mm

4901-0010

0~360° DIGITAL LEVEL/PROTRACTOR

- Easy reading 45° LCD display.
- Conversion between absolute and relative measurement
- Hold function to freeze measurements.
- Auto off.
- Backlight function.
- Digitally reads all angles in degrees, % slope and pitch.



Limited Supply!

6-1/2x2-1/8x1" (L x H x Width)

SPECIFICATIONS
Accuracy.....0 & 90° : 0.1°; Rest: 0.2°
Resolution.....0.1 degree
Power.....3V CR2032 Lithium Battery

4901-0011

PRECISION CYLINDRICAL SQUARES

- Used for checking squares, height gages and many instruments.
- Easy to access from any angle around it.
- Hardened and both ends are lapped.
- Absolute 90° angle.



Item#	Dimension Dia.	Height	Squareness	W.T. (lbs.)
4901-2601	3"	6"	± 0.00010"	13
4901-2602	4"	12"	± 0.00015"	45

DIGITAL ANGLE GAGE W/MAGNET

- Coolant splash-proof, dust-proof and chip-proof.
- Auto off.
- Compact and lightweight.
- Base has disk magnet.

IP 54

4901-0013



SPECIFICATIONS
Resolution.....0.1 degree
Repeatability..... ± 0.1 degree
Angle Range.....± 180 degree
Power.....3V CR2032 Lithium Battery
Dimension.....2 x 2 x 1.3"

REPLACEMENT BATTERY (ITEM #4102-0032)

MASTER PRECISION LEVELS

- Graduation: 0.0005" per 10" .
- For accurately checking the work of machinists and toolmakers setting up machinery and other work that requires extreme leveling accuracy.
- Ground and graduated main vial of 10 second accuracy.



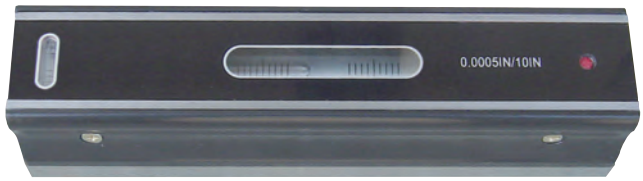
4 INCH	8 INCH	12 INCH
4901-0084	4901-0081	4901-0008

INSPECTION BLOCK LEVELS WITH 2 VIALS

- For accurately checking the work of machinists and toolmakers setting up machinery and other work that requires extreme leveling accuracy.
- Feature a cross and main vial that is easiily adjustable. They are heat insulated and are resistant to shock.
- 0.0005 Graduation Sensitivity per 10 Inch.

Item#	Length
4901-0086	6 "
4901-0088	8"
4901-0092	12"

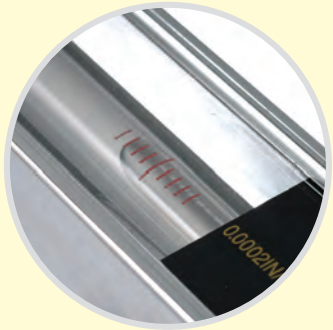
NEW



PRECISION FRAME SPIRIT LEVELS

- This level comes with frame level and master level
- With fitted case





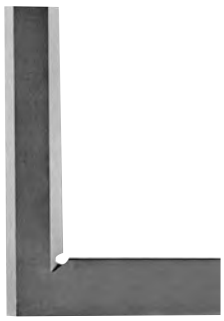
.0002" GRADUATION

6 x 6"	8 x 8"	12 x 12"
4901-0077	4901-0078	4901-0007

PRECISION MEASURING TOOLS

PRECISION BEVEL EDGE SQUARES

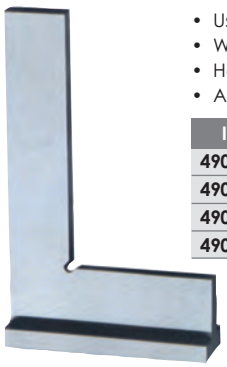
- Squares have accurate right angles both inside and outside.
- Beveled blade on both sides.
- Made from a single piece of fully seasoned tool steel.
- Fully hardened.
- Beam ground and lapped.
- Accuracy class H.



4 x 2-1/2"
4901-0022

6 x 4"
4901-0023

90° WIDE BASE SQUARES

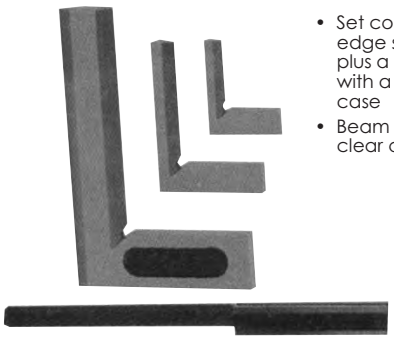


- Used for checking squares.
- Wide base for easy free standing.
- Hardened and both ends are lapped.
- Absolute 90° angle.

Item#	Blade Length	Beam Length
4901-1213	3"	2"
4901-1214	4"	3"
4901-1216	6"	4"
4901-1218	8"	5"

.0002" SQUARENESS

DIEMAKER'S 4PC SQUARE SET



- Set consists of 3 hardened beveled edge squares (3/4,1-1/4 and 2-3/8") plus a 1-1/2" triangular straight edge with a removable handle and fitted case
- Beam is grooved at inner corner to clear out burrs and dirt

4901-0018

PRECISION GRANITE SQUARES

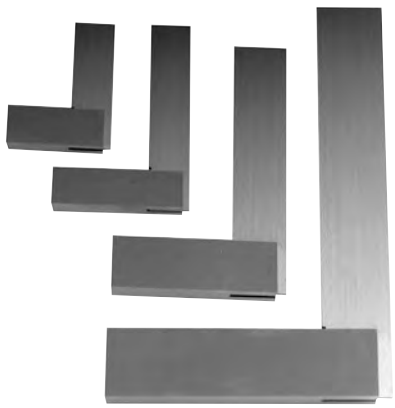


- To squareness check and for inspection purposes.
- Squareness: ±0.0001"
- Round hole for less weight and easy handling (larger size with multi-holes).
- Complete with calibration sheet

Item#	H x W x Thick	Wt. (lbs.)
4901-2705	10x 6x 1"	6
4901-2706	15x10x1.5"	18

MACHINIST STEEL SQUARES & SET

- Made from fully seasoned tool steel.
- Accurate right angles both inside and outside.
- Fully hardened.
- Beam ground and lapped.



4 PC SET
2, 3, 4 & 6"
4901-0014

Item#	Size	Beam
4901-0604	6"	4"
4901-0906	9"	6"
4901-1208	12"	8"

Z-Limit MACHINIST STEEL SQUARES



- **Manufactured and inspected at world calss factory that produces highest quality European brands.**
- Made of high grade stainless steel, hardened and ground.
- Accurate right angles both inside and outside

Item#	Blade Length	Beam Length
4909-0003*	3	2
4909-0004*	4	2-3/4
4909-0006	6	4
4909-0008	8	5

* Limited Supply

Tolerance(Squareness): +/- .0002"

BEVEL EDGE SQUARE

Pro-Series SOLID SQUARES

- Made from tool steel, hardened and ground.
- Accurate right angles both inside and outside.



4 PC SET
2, 3, 4 & 6"
4901-0598

Item#	Blade Length	Beam Length
4901-0590	2"	1-1/2"
4901-0591	3"	2-1/2"
4901-0592	4"	3"
4901-0593	6"	4"
4901-0594	9"	6"
4901-0595	12"	8"
4901-0598	Set of 2,3,4 & 6"	
4901-0599	Set of 4,6,9 & 12"	

DIAL HEIGHT GAGES



- Made of high quality stainless steel and satin chrome finish.
- Carbide tipped scriber for longer life.
- Fine feed adjustment.
- Positive lock screw.
- Come with fitted case.



.001" GRADUATION

Item#	Range
4300-0028	0~6"
4300-0029	0~8"
4300-0030	0~12"



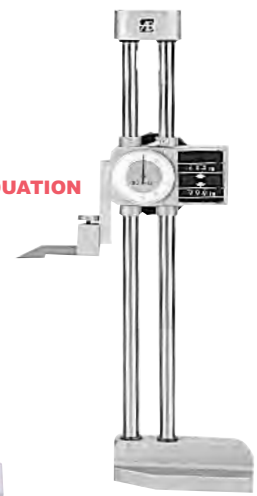
Replacement Clamp & Scribe (see Page 46 for Dimensions)

Scribe Item#	Clamp Item#
4300-0035	4300-0042

DIGIT-READOUT DIAL HEIGHT GAGE



.001" GRADUATION



- 0.001" dual reading digital counter.
- Reset button, zero set at any height.
- Chrome plated double beam.
- Fine adjustment wheel & lock.
- Made of high quality stainless steel.
- Carbide tip scriber.



Replacement Clamp & Scribe (see Page 46 for Dimensions)

Scribe Item#	Clamp Item#
4300-0016	4300-0151

0~12" Range
4300-0010

Z-Limit 12"/300MM VERNIER HEIGHT GAGE

- Manufactured and inspected at world class factory that produces highest quality US brands.
- Made of stainless steel.
- The finest of vernier scribers for accurate work.
- Satin-chrome finished scale and vernier.
- **.001"/.02mm reading.**

Limited Supply!



0~12"/0~300mm Range
4309-0002

Z-Limit HEIGHT GAGES-ELECTRONIC

- Manufactured and inspected at world calss factory that produces highest quality European brands.
- Made of high quality stainless THROUGHOUT.
- Function Keys: On/Off/Zero, mm/inch, Tol, ABS, Hold and Set.
- Power: SR 44, 1.55V battery (included).
- True inch/metric conversion.
- Complete with fitted case.
- Scriber is carbide tipped .
- Fine adjustment.





INCH/METRIC .0005"/.01mm RESOLUTION

Item#	Range
4309-0112	12"/300mm
4309-0120*	20"/500mm
4309-0124	24"/600mm

* Limited Supply

REPLACEMENT BATTERY (ITEM #4102-0030)

Z-Limit DIAL HEIGHT GAGES



- Manufactured and inspected at world calss factory that produces highest quality European brands.
- Fine feed adjustment with positive lock.
- Other side of scriber has a pin to attach indicators clamp and dovetail.
- Made of high quality stainless
- Scriber is carbide tipped.
- Complete with fitted case.

Limited Supply!





CLAMP SHOWN INCLUDED

.001" GRADUATION

0~12" Range
4309-0012

0~24" Range
4309-0024

PRECISION MEASURING TOOLS

HEIGHT GAGES & SURFACE PLATES

BLACK GRANITE SURFACE PLATES

- Surface plates are checked by auto-collimator for overall accuracy assurance.
- Granite surface plates meet or exceed Federal Specifications GGG-P-463C.



INCLUDE CERTIFICATE OF INSPECTION. NOT NIST TRACEABLE

Grade: A • Ledge: 0

Item#	Size	Accuracy	Wt. (lbs)
4401-1812	18 x 12 x 3"	±.000050"	80
4401-2418	24 x 18 x 3"	±.000075"	150
4401-3624	36 x 24 x 4"	±.0001"	495
4401-4836	48 x 36 x 6"	±.0002"	1200

****Please let us know if you require calibration****

Grade: B • Ledge: 0

Item#	Size	Accuracy	Wt. (lbs)
4401-0011	12 x 9 x 3"	±.0001"	40
4401-0012	18 x 12 x 3"	±.0001"	80
4401-0013	24 x 18 x 3"	±.00015"	150
4401-0014	36 x 24 x 4"	±.0002"	495
4401-1604	48 x 36 x 6"	±.0004"	1200
4401-1607	48 x 72 x 6"	±.0004"	2480

ELECTRONIC HEIGHT GAGES W/SPC OUTPUT



- Made of stainless steel throughout.
- Fine adjustment control for smooth movement
- Inch/mm conversion
- ABS and Inc. mode.
- Zero setting.
- Carbide tipped scriber
- With RS232 output port.
- Power: 3V CR2032 battery.

INCH/METRIC
.0005" /.01mm RESOLUTION

Item#	Range	Accuracy
4300-0138	8"/200mm	.0015"/.03mm
4300-0140	12"/300mm	.002"/0.04mm
4300-0142	20"/500mm	.002"/0.04mm
4300-0146	24"/600mm	.0025"/0.05mm

REPLACEMENT BATTERY (ITEM #4102-0032)



Replacement Clamp & Scribe (see Page 46 for Dimensions)

Scribe Item#	Clamp Item#
4300-0016	4300-0151

GRANITE SURFACE PLATE STANDS



- Overall working height: 36"
- Made of heavy-gauge steel with durable baked enamel finish.
- Assembly required.
- Stand comes with leveling screws

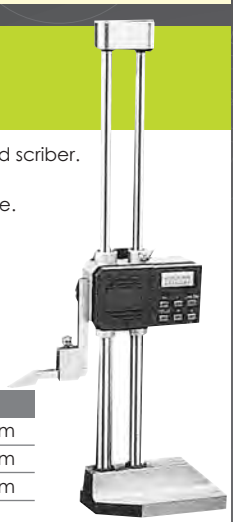




For 0 Ledge

Item#	For Plate Size	Wt. (lbs)
4401-1301	24 x 18"	64
4401-1401	36 x 24"	82
4401-1602	48 x 36"	126
4401-1608	48 x 72"	225

DIGIMATIC STYLE ELECTRONIC HEIGHT GAGES



- Double beam.
- Accuracy .001" /.02mm.
- Switchable English/metric, high contrast LCD with fine adjustment.
- Stainless steel precision ground.
- Button battery SR 44,1.55 V
- Carbide tipped scriber.
- On/Off switch.
- With fitted case.

INCH/METRIC .001" RESOLUTION

REPLACEMENT BATTERY (ITEM #4102-0030)
* Limited Supply

Item#	Range	Resolution
4300-0020	12"/300mm	0.001"/0.01mm
4300-0021*	18"/450mm	0.001"/0.01mm
4300-0023	24"/600mm	0.001"/0.01mm

Replacement Clamp & Scribe (see Page 46 for Dimensions)

Scribe Item#	Clamp Item#
4300-0016	4300-0151





ELECTRONIC HEIGHT GAGES



- Large display screen
- Hardened and ground stainless steel frame
- Preset memorizing function
- Cast iron base
- True inch/metric conversion.
- Button battery SR 44,1.55 V

INCH/METRIC
.0005" /.01mm RESOLUTION



0~12" Range
4300-0112

Item#	Range	Accuracy
4300-0112	12"/300mm	.0020"/0.04mm
4300-0120	20"/500mm	.0022"/0.05mm
4300-0124	24"/600mm	.0025"/0.05mm

REPLACEMENT BATTERY (ITEM #4102-0030)

Replacement Clamp & Scribe (see Page 46 for Dimensions)

Scribe Item#	Clamp Item#
4300-0126	4300-0128



ELECTRONIC HEIGHT GAGES W/WHEEL

NEW

- Large control panel.
- Beam is made of stainless steel.
- Fine adjustment.
- Inch/mm conversion.
- Zero setting.
- Carbide tipped scriber.
- Power: 1.5V SR44 battery.
- Ergonomic heavy duty base.

INCH/METRIC .0005"/ .01MM RESOLUTION









SUPPLIED WITH INDICATOR ADPATER WITH 5/16" HOLE

Item#	Range	Accuracy
4300-0161	12"/300mm	+/- .002"/ .04mm
4300-0162	20"/500mm	+/- .002"/ .05mm
4300-0163	24"/600mm	+/- .002"/ .05mm

REPLACEMENT BATTERY (ITEM #4102-0030)

12" ELECTRONIC HEIGHT GAGE

- Large display screen.
- Preset memorizing function.
- Hardened and ground stainless steel frame.
- Cast iron base.
- Cast iron base.
- True inch/metric conversion.
- One button battery SR 44,1.55 V Included.

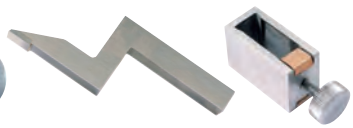
INCH/METRIC .0005" /.01mm RESOLUTION

0~12" Range
4300-0112









REPLACEMENT BATTERY (ITEM #4102-0030)

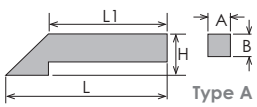
Replacement Clamp & Scribe (see Page 46 for Dimensions)

Scribe Item#	Clamp Item#
4300-0126	4300-0128

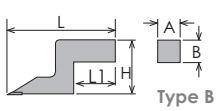
CARBIDE SCRIBES & CLAMPS FOR HEIGHT GAGES







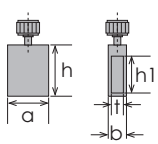
Type A



Type B

Unit: Inch

Scribes Item#	Type	L	L1	H	A	B
4300-0016	A	3.2	1.95	0.6	0.35	0.35
4300-0035	B	1.7	0.79	1.3	0.23	0.32
4300-0126	B	3.2	1.60	1.2	0.35	0.35



Clamps Item#	h	a	h1	b	t
4300-0042	1.1	0.58	0.76	0.46	0.23
4300-0128	1.3	0.79	0.79	0.58	0.355
4300-0151	1.34	0.79	0.80	0.59	0.355

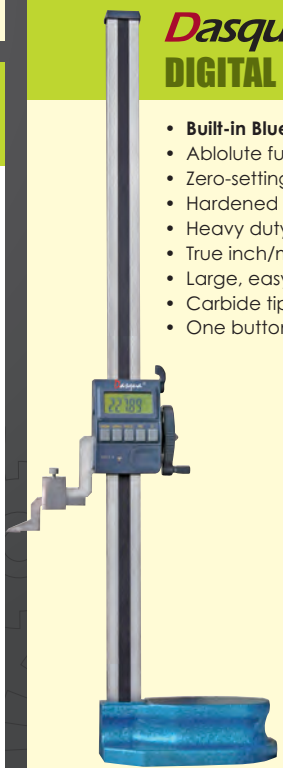


Dasqua® BUILT-IN BLUETOOTH DIGITAL HEIGHT GAGES

NEW

- **Built-in Bluetooth** transmission.
- Ablolute function.
- Zero-setting at any position.
- Hardened and ground steel frame.
- Heavy duty cast iron base.
- True inch/metric conversion.
- Large, easy-to-read digital display.
- Carbide tipped scriber for sharp and clean scribbed lines.
- One button battery CR2032, 3V Included.

BUILT-IN BLUETOOTH





Item#	Range	Accuracy
4309-0212	12"/300mm	.0005"/ .01mm
4309-0216	24"/600mm	.0005"/ .01mm

REPLACEMENT BATTERY (ITEM #4102-0032)

GAGE BLOCKS

Pro-Series RECTANGULAR STEEL GAGE BLOCK SETS



- Meets or exceeds Federal GGG-G-15C.
- Made of the highest quality tool steel.
- Surface hardness: HRC 64
- Complete with manufacturer's calibration or certificate.
- With fitted wooden case with sizes labeled.

Offering N.I.S.T. Traceable Calibration Conforms to
- MIL-STD 45662A
- GGG-G-15C
- ISO/IEC 17025 Accredited
- ISO 9000, 10012-1
- ANSI-NCSL Z540-1
- ISO GUIDE 25 Certified

81pc Set, Grade AS-2 (Grade B)
4101-0022

HHIP PRO-SERIES



ACCURACY
Grade AS-0= Grade 2(At) : +4/-2 millionth
Grade AS-1= Grade 3(Bt): +8/-4 millionth
Grade AS-2= Grade B: ± 50 millionth

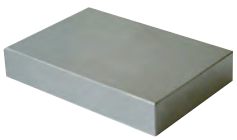
Item#	No. of Blocks	Grade	Blocks Included in All Sets
4101-0001	81pc	AS-0	9 Blocks: .1001" thru .1009" step of .0001"
4101-0021	81pc	AS-1	49 Blocks: .101" thru .149" step of .001"
4101-0022	81pc	AS-2	19 Blocks: .050" thru .950" step of .050"
NIST Calibration Certificate 81pc/Set			4 Blocks: 1.000" thru 4.000" step of 1.000"
4101-0002	36pc	AS-0	10 Blocks: .1000" thru .1009" step of .0001"
4101-0004	36pc	AS-2	9 Blocks: .101" thru .109" step of .001"
NIST Calibration Certificate 36pc/Set			9 Blocks: .110" thru .190" step of .010" 8 Blocks: .050, .200,.300, .400, .500, 1.0, 2.0 & 4.0"

INDIVIDUAL RECTANGULAR GAGE BLOCKS

Offering N.I.S.T. Traceable Calibration Conforms to
- MIL-STD 45662A
- GGG-G-15C
- ISO/IEC 17025 Accredited
- ISO 9000, 10012-1
- ANSI-NCSL Z540-1
- ISO GUIDE 25 Certified

Tolerance
0-1".....+.000004/ -.000002"
2" .....+.000008/-.000004"
3" .....+.000010/-000005"
4" .....+.000012/ -.000006"

- Grade AS-0 (Grade 2(At)
- Each block is supplied with a manufacturer's certificate



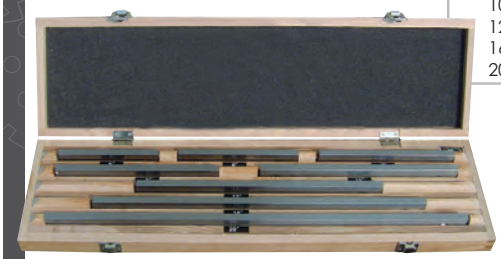
Item#	Size (Inch)
4101-0701	0.0500
4101-0702	0.1000
4101-0703	0.1001
4101-0704	0.1002
4101-0705	0.1003
4101-0706	0.1004
4101-0707	0.1005
4101-0708	0.1006
4101-0709	0.1007
4101-0710	0.1008
4101-0711	0.1009
4101-0712	0.101
4101-0713	0.102
4101-0714	0.103
4101-0715	0.104
4101-0716	0.105
4101-0717	0.106
4101-0718	0.107
4101-0719	0.108
4101-0720	0.109
4101-0721	0.110
4101-0722	0.111
4101-0723	0.112
4101-0724	0.113
4101-0725	0.114
4101-0726	0.115
4101-0727	0.116
4101-0728	0.117
4101-0729	0.118
4101-0730	0.119
4101-0731	0.120
4101-0732	0.121
4101-0733	0.122
4101-0734	0.123
4101-0735	0.124
4101-0736	0.125
4101-0737	0.126
4101-0738	0.127
4101-0739	0.128
4101-0740	0.129
4101-0741	0.130
4101-0742	0.131
4101-0743	0.132
4101-0744	0.133
4101-0745	0.134
4101-0746	0.135
4101-0747	0.136
4101-0748	0.137
4101-0749	0.138
4101-0750	0.139
4101-0751	0.140
4101-0752	0.141
4101-0753	0.142
4101-0754	0.143
4101-0755	0.144
4101-0756	0.145
4101-0757	0.146
4101-0758	0.147
4101-0759	0.148
4101-0760	0.149
4101-0761	0.150
4101-0766	0.200
4101-0767	0.250
4101-0768	0.300
4101-0769	0.350
4101-0770	0.400
4101-0771	0.450
4101-0772	0.500
4101-0773	0.550
4101-0774	0.600
4101-0775	0.650
4101-0776	0.700
4101-0777	0.750
4101-0778	0.800
4101-0779	0.850
4101-0780	0.900
4101-0781	0.950
4101-0782	1.000
4101-0783	2.000
4101-0784	3.000
4101-0785	4.000

GRADE AS-2 EXTRA LONG STEEL GAGE BLOCKS AND SET

- Must have for CNC machine set-up.
- Rectangular shape with two holes.
- Meet or exceeds Federal GGG-G-15C.
- Made of the highest quality tool steel.
- Surface Hardness: HRC 64.
- Complete with manufacturer's calibration or certificate.

Grade AS-2=Grade B

Tolerance (in Microinchs)		
Nominal Size	AS-2	
5"	+50	-30
6"	+60	-36
7"	+70	-42
8"	+80	-48
10"	+100	-60
12"	+120	-72
16"	+160	-96
20"	+200	-120





8pc Set 5,6,7,8,10,12,16&20"
4101-0810

INDIVIDUALS * Limited Supply

Item#	Length
4101-0831*	5"
4101-0832*	6"
4101-0833*	7"

RECTANGULAR GAGE BLOCK ACCESSORIES

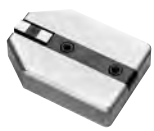
- Made with gage block accuracy.
- Base block's mounting surface lapped flat and parallel with base.



RADIUS CYLINDRICAL JAWS



CLAMP



BASE BLOCK

Item#	Description
4101-0601	Base Block (4x2.750x1/7")
4101-0606	Clamp 4" capacity
4101-0607	Clamp 8" capacity
4101-0610	Radius (0.0787")Cylindrical Jaws (pair)
4101-0611	Radius (0.200") Cylindrical Jaws (pair)
4101-0612	Radius (0.750") Cylindrical Jaws (pair)

METRIC RECTANGULAR STEEL GAGE BLOCK SETS

- Fitted case supplied.
- Meets or exceeds JS Standard.
- Furnished with manufacturer's calibration or certificate.
- Each block has a series no.
- Made of the highest quality tool steel.

ACCURACY		
Nominal Size (mm)	JIS 1 Tolerances in Microns (0.001mm)	JIS 2
10 or Less	±0.20	±0.45
10~25	±0.30	±0.60
25~50	±0.40	±0.80
50~75	±0.50	±1.00
75~100	±0.60	±1.20

Offering N.I.S.T. Traceable Calibration Conforms to

- MIL-STD 45662A
- GGG-G-15C
- ISO/IEC 17025 Accredited
- ISO 9000, 10012-1
- ANSI-NCSL Z540-1
- ISO GUIDE 25 Certified



Item#	No. of Blocks	Grade	Blocks Included in All Sets
4101-1041	87pc	JIS 1	**9Blocks:** 1.001~1.009 Step of 0.001mm
4101-1042	87pc	JIS 2	**49Blocks:** 1.01~1.49 Step of 0.01mm
NIST Calibration Certificate 87pc/Set			**19Blocks:** 0.5~9.5 Step of 0.5mm **10Blocks:** 10~100 Step of 25mm

12PC MICRO CHECKING SET



Grade AS-0= Grade 2(At) : +4/-2 millionth

Grade AS-0
4101-0032

- For checking various spindle positions of entire micrometer range.
- Meet or exceeds U.S. Federal specification GGG-G-15C and ISO 9000 requirements.
- Gauge blocks include: .105, .210, .315, .420, .500, .605, .710, .815, .920 & 1.000".
- Optical flats for checking micrometer flatness are .500 & .5125"
- Manufacturer's calibration certificate included.
- Completed with fitted case.

10PC MICRO CHECKING SET



Grade AS-0= Grade 2(At) : +4/-2 millionth

Grade AS-0
4101-0031

- Meet or exceeds U.S. Federal specification GGG-G-15C and ISO 9000 requirements.
- Gauge blocks include: .0625, .100, .125, .200, .250, .300, .500, 1.000 & 2.000".
- Optical flats for checking micrometer flatness.
- Manufacturer's calibration certificate included.
- Completed with fitted case.

81PC STEEL SQUARE GAGE BLOCK SETS

- Each block with center hole threaded.
- Meet or exceeds U.S. Federal specification GGG - G - 15C.
- Complete with manufacturer's calibration or certification.
- Made of the highest quality tool steel.
- Surface Hardness: HRC 64
- With sturdy fitted wooden case.
- With center hole.

Offering N.I.S.T. Traceable Calibration Conforms to

- MIL-STD 45662A
- GGG-G-15C
- ISO/IEC 17025 Accredited
- ISO 9000, 10012-1
- ANSI-NCSL Z540-1
- ISO GUIDE 25 Certified



ACCURACY
Grade AS-0= Grade 2(At) : +4/-2 millionth
Grade AS-1= Grade 3(Bt): +8/-4 millionth
Grade AS-2= Grade B: ± 50 millionth

81pc Set
Grade AS-2 (Grade B)
4101-0052

Item#	Grade	Blocks Included in All Sets
4101-0051	AS-0	**9 Blocks:** .1001~ .1009" step of .0001"
4101-0005	AS-1	**49 Blocks:** .101~ .149" step of .001"
4101-0052	AS-2	**19 Blocks:** .050~ .950" step of .050"
NIST Calibration Certificate 81pc/Set		**4 Blocks:** 1.000~ 4.000" step of 1.000"

INDIVIDUAL SQUARE GAGE BLOCKS

- Grade AS-0 (Grade 2(At) : +4/-2 millionth)
- Each block is supplied with a manufacturer's certificate

Tolerance
0-1".....+.000004/ -.000002"
2" .....+.000008/-.000004"
3" .....+.000010/-000005"
4" .....+.000012/ -.000006"



EACH BLOCK HAS 1/4" DIA. HOLE

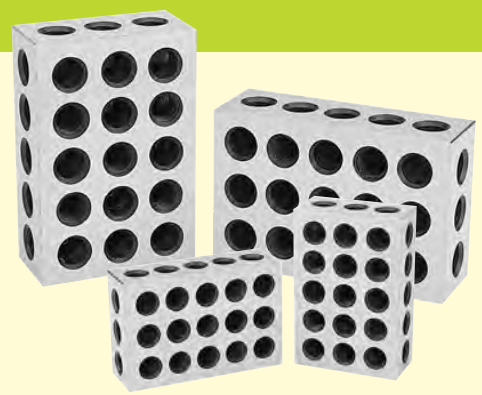
Item#	Size (Inch)	Item#	Size (Inch)	Item#	Size (Inch)
4101-0901	.050	4101-0928	.117	4101-0955	.144
4101-0902	.1000	4101-0929	.118	4101-0956	.145
4101-0903	.1001	4101-0930	.119	4101-0957	.146
4101-0904	.1002	4101-0931	.120	4101-0958	.147
4101-0905	.1003	4101-0932	.121	4101-0959	.148
4101-0906	.1004	4101-0933	.122	4101-0960	.149
4101-0907	.1005	4101-0934	.123	4101-0961	.150
4101-0908	.1006	4101-0935	.124	4101-0966	.200
4101-0909	.1007	4101-0936	.125	4101-0967	.250
4101-0910	.1008	4101-0937	.126	4101-0968	.300
4101-0911	.1009	4101-0938	.127	4101-0969	.350
4101-0912	.101	4101-0939	.128	4101-0970	.400
4101-0913	.102	4101-0940	.129	4101-0971	.450
4101-0914	.103	4101-0941	.130	4101-0972	.500
4101-0915	.104	4101-0942	.131	4101-0973	.550
4101-0916	.105	4101-0943	.132	4101-0974	.600
4101-0917	.106	4101-0944	.133	4101-0975	.650
4101-0918	.107	4101-0945	.134	4101-0976	.700
4101-0919	.108	4101-0946	.135	4101-0977	.750
4101-0920	.109	4101-0947	.136	4101-0978	.800
4101-0921	.110	4101-0948	.137	4101-0979	.850
4101-0922	.111	4101-0949	.138	4101-0980	.900
4101-0923	.112	4101-0950	.139	4101-0981	.950
4101-0924	.113	4101-0951	.140	4101-0982	1.000
4101-0925	.114	4101-0952	.141	4101-0983	2.000
4101-0926	.115	4101-0953	.142	4101-0984	3.000
4101-0927	.116	4101-0954	.143	4101-0985	4.000

1-2-3 & 2-4-6 BLOCKS

PRECISION 1-2-3 & 2-4-6 BLOCKS SETS

- Heat treated and case hardened to HRC 55 to 60.
- Hardened and precision ground on all 6 sides of each block.
- Accuracy with Squareness on all sides within .0002" per inch.
- 23 holes consists of 5 tapped holes (3/8" - 16 for 1-2-3, 5/8"-11 for 2-4-6) for clamping and 18 untapped holes drilled.
- Cross drilling design gives minimum weight and maximum strength.
- Dimensions: 1-2-3 is 1 x 2 x 3"
  2-4-6 is 2 x 4 x 6"

MATCHED PAIRS AND SOLD AS PAIR



5 TAPPED HOLES & 18 UNTAPPED THROUGH HOLES

1-2-3 BLOCK SET
3402-0005

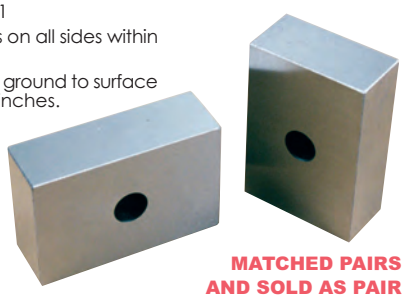
TiN Coated
1-2-3 BLOCK SET
3402-0905

2-4-6 BLOCK SET
3402-0510

1-2-3 BLOCKS WITH ONE HOLE-Ultra Precision

- For precision grinding, layout, etc.
- Drilled Hole Size: .500 ~.501
- Accuracy with Squareness on all sides within .0001 per inch.
- Hardened to RC 58-60 and ground to surface finish from 6 to 10 micron inches.
- Dimensions: 1 x 2 x 3"

3402-0054



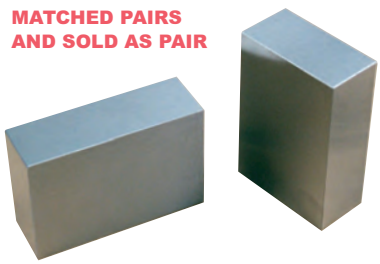
MATCHED PAIRS AND SOLD AS PAIR

1-2-3 BLOCKS WITH NO HOLE-Ultra Precision

- Hardened to RC 58-60 and ground to surface finish from 6 to 10 micron inches.
- Dimensions: 1 x 2 x 3 .

MATCHED PAIRS AND SOLD AS PAIR

3402-0058

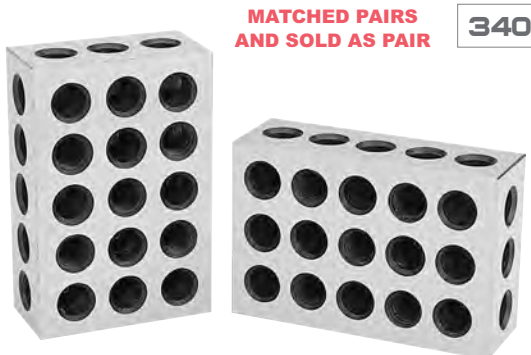


PRECISION 2-3-4 BLOCKS SET

- Hardened and precision ground on all 6 sides of each block.
- Accuracy with Squareness on all sides within .0001" per inch.
- 23 holes consist of 5 (3/8"-16)tapped holes for clamping and 18 untapped holes drilled.
- Dimensions: 2 x 3 X 4".

MATCHED PAIRS AND SOLD AS PAIR

3402-0906



5 TAPPED HOLES & 18 UNTAPPED THROUGH HOLES

1-2-3 BLOCKS WITH 11 HOLES-Ultra Precision

- Hardened and precision ground on all 6 sides of each block.
- Accuracy with Squareness on all sides within .0001 per inch.
- Consists of 5 tapped holes 5/16 - 18 for clamping and 6 untapped holes drilled through.
- Dimensions: 1 x 2 x 3 ".

MATCHED PAIRS AND SOLD AS PAIR

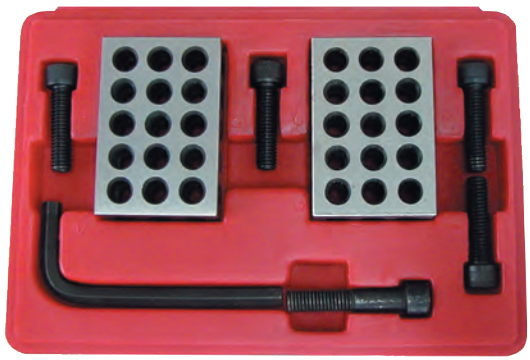
3402-0051



5 TAPPED HOLES &
6 UNTAPPED THROUGH HOLES

8PC 1-2-3 BLOCKS & SCREWS SET -Ultra Precision

- Hardened and precision ground on all 6 sides of each block.
- Accuracy with Squareness on all sides within .0001 per inch.
- 23 holes consist of 5 (3/8"-16) tapped holes for clamping and 18 untapped holes drilled .
- Supplied with fitted case.



5 TAPPED HOLES & 18 UNTAPPED THROUGH HOLES

MATCHED PAIRS

8 PC SET
3402-0055

INCLUDES
Matched pair of 1-2-3 blocks with 23 holes, 5pc of 3/8 -16 Socket Screws, Hex key

PRECISION PARALLEL SETS

- Made from fine quality tool steel stress relieved against distortion, precision ground and hardened.
- These precision parallels are recommended for layout work, standards and set-up.
- The holes are designed for easier handling and set-ups.
- Hardness: Case hardened RC 55 to 62 on 2 sides, top and bottom only.
- Complete with fitted durable plastic case.
- TOLERANCE: PARALLEL TO 0.0003 ON 2 SIDES, TOP AND BOTTOM.
- DIMENSIONS: WITHIN 0.001"ALLOWANCE.

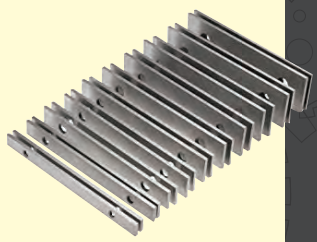


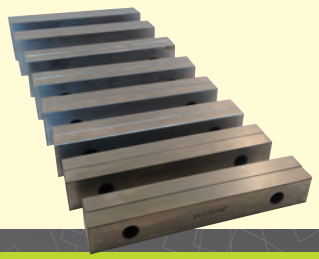
3/16", 4 PAIR SET
3900-3004

DIMENSION
3/16 x 1 x 6"
3/16 x 1-1/4 x 6"
3/16 x 1-1/2 x 6"
3/16 x 1-3/4 x 6"

1/4", 9 PAIR SET
3900-3009

DIMENSION
1/4 x 3/4 x 6"
1/4 x 7/8 x 6"
1/4 x 1 x 6"
1/4 x 1-1/8 x 6"
1/4 x 1-1/4 x 6"
1/4 x 1-3/8 x 6"
1/4 x 1-1/2 x 6"
1/4 x 1-5/8 x 6"
1/4 x 1-3/4 x 6"





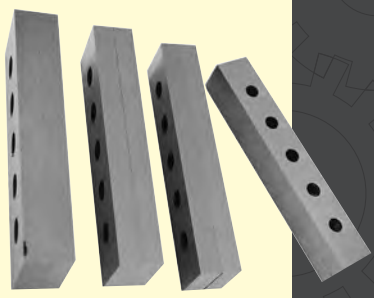
1/2", 8 PAIR SET
3900-3008

DIMENSION
1/2 x 7/8 x 6"
1/2 x 1 x 6"
1/2 x 1-1/8 x 6"
1/2 x 1-1/4 x 6"
1/2 x 1-3/8 x 6"
1/2 x 1-1/2 x 6"
1/2 x 1-5/8 x 6"
1/2 x 1-3/4 x 6"

1/2", 4 PAIR SET
3900-3014

DIMENSION
1/2 x 1 x 6"
1/2 x 1-1/4 x 6"
1/2 x 1-1/2 x 6"
1/2 x 1-3/4 x 6"

Item 3900-3014 Shown



INDIVIDUAL PRECISION PARALLELS

- Made from fine quality tool steel stress relieved against distortion, precision ground and hardened.
- 2 Holes in each parallel, are designed for easier handling and set-ups.
- Tolerance: Parallel to 0.0003 on 2 sides, top and bottom.
- Dimensions: Within 0001" allowance.



SOLD BY PAIR

Item#	DIMENSION (ThinkxHt.xLong)
3900-3061	1/8 x 1/2 x 6"
3900-3062	1/8 x 5/8 x 6"
3900-3063	1/8 x 3/4 x 6"
3900-3064	1/8 x 7/8 x 6"
3900-3065	1/8 x 1 x 6"
3900-3066	1/8 x 1-1/8 x 6"
3900-3067	1/8 x 1-1/4 x 6"
3900-3068	1/8 x 1-3/8 x 6"

Item#	DIMENSION (ThinkxHt.xLong)
3900-3069	1/8 x 1-1/2 x 6"
3900-3070	1/8 x 1-5/8 x 6"
3900-3075	1/4 x 3/4 x 6"
3900-3077	1/4 x 1 x 6"
3900-3079	1/4 x 1-1/4 x 6"
3900-3085	1/2 x 1 x 6"
3900-3086	1/2 x 1-1/8 x 6"
3900-3087	1/2 x 1-1/4 x 6"

ULTRA PRECISION INSPECTION PARALLELS

- Parallels are furnished by pair.
- Made of high grade tool steel, stabilized and thoroughly hardened to HRC 58.
- Surface finish to 16 microninches.
- High precision - 4 faces accuracy within .00015" per 6 inches

PRICED IN PAIR



Item#	Size	Weight (lbs.)
3900-3040	1 x 1-1/4 x 12"	7
3900-3049	1 x 2 x 12"	14

10 PAIR 1/8 PRECISION PARALLEL SETS

- Made from fine quality tool steel stress relieved against distortion, precision ground and hardened.
- Complete with fitted durable plastic or wooden case.
- 2 holes in each parallel.

3900-3010 Shown



- TOLERANCE: PARALLEL TO 0.0003 ON 2 SIDES, TOP AND BOTTOM.
- DIMENSIONS: WITHIN 0.001"ALLOWANCE.





1/8X6" SET
3900-3010
PLASTIC CASE

1/8X3" SET
3900-3012
WOODEN CASE



3900-3012 Shown



DIMENSION ThickxHt.xLong
1/8 x 1/2 x X"
1/8 x 5/8 x X"
1/8 x 3/4 x X"
1/8 x 7/8 x X"
1/8 x 1 x X"
1/8 x 1-1/8 x X"
1/8 x 1-1/4 x X"
1/8 x 1-3/8 x X"
1/8 x 1-1/2 x X"
1/8 x 1-5/8 x X"

TiN COATED 1/8X6" SET
3900-3011
PLASTIC CASE

1/8X5" SET
3900-3013
WOODEN CASE

1/8X4" SET
3900-3002
WOODEN CASE

PARALLELS SETS

Pro-Series 1/32" ULTRA THIN PARALLEL SET

- Length: 6
- Hardness: RC 40~50
- Each parallel size clearly marked.
- Complete with fitted case.
- Thickness: 1/32"
- Made from fine quality alloy tool steel, stress relieved against distortion, precision ground, hardened and blue finished.

NEW

Close Tolerance! Completed with Certification!

10 PAIR SET
3901-3030





DIMENSION
1/32 x 1/2 x 6"
1/32 x 5/8 x 6"
1/32 x 3/4 x 6"
1/32 x 7/8 x 6"
1/32 x 1 x 6"
1/32 x 1-1/8 x 6"
1/32 x 1-1/4 x 6"
1/32 x 1-3/8 x 6"
1/32 x 1-1/2 x 6"
1/32 x 1-5/8 x 6"

TOLERANCE:
- Total Parallelism Within Entire Length: .0002"
- Flatness or Starightness: .0002"
- Height Dimensions: +/- .0002"
- Other Dimensional Tolerance:Width (or Thickness)+/- .005"

Pro-Series 1/4" PARALLEL SET



Close Tolerance! Completed with Certification!

1/4", 9 PAIR SET
3901-3009



NEW

- Made from fine quality alloy tool steel stress relieved against distortion, precision ground and hardened.
- Each parallel size clearly marked.
- Hardness: Case hardened RC 52 to 58.
- Complete with fitted wood case.

DIMENSION
1/4 x 3/8 x 6"
1/4 x 7/16 x 6"
1/4 x 1/2 x 6"
1/4 x 9/16 x 6"
1/4 x 5/8 x 6"
1/4 x 11/16 x 6"
1/4 x 3/4 x 6"
1/4 x13/16 x 6"
1/4 x 7/8 x 6"

TOLERANCE:
- Total Parallelism Within Entire Length: .0002"
- Flatness or Starightness: .0002"
- Height Dimensions: +/- .0002"
- Other Dimensional Tolerance:Width (or Thickness) +/- .005"
- Squareness to the Adjacent Sides With Each Other: .002 to .004"

1/32" ULTRA THIN STEEL PARALLEL SET

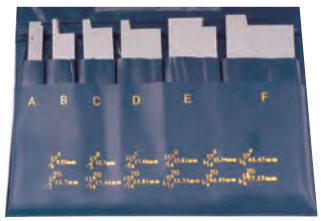
- Length: 6
- Parallelism: ± .0001"
- Paired ± .0001" in height.
- Hardness: RC 50~55
- Thickness: 1/32"
- Made from fine quality tool steel, stress relieved against distortion, precision ground, hardened and blue finished.

20 PAIR SET
3900-3032



DIMENSION
1/32 x 1/2 x 6"
1/32 x 9/16 x6
1/32 x 5/8 x 6"
1/32 x 11/16 x 6"
1/32 x 3/4 x 6"
1/32 x 13/16 x 6"
1/32 x 7/8 x 6"
1/32 x 15/16 x 6"
1/32 x 1 x 6"
1/32 x 1-1/16 x 6"
1/32 x 1-1/8 x 6"
1/32 x 1-3/16 x 6"
1/32 x 1-1/4 x 6"
1/32 x 1-5/16 x 6"
1/32 x 1-3/8 x 6"
1/32 x 1-7/16 x 6"
1/32 x 1-1/2 x 6"
1/32 x 1-9/16x 6"
1/32 x 1-5/8 x 6"
1/32 x 1-11/16 x 6"

6PC ADJUSTABLE PARALLEL SET



- Made of precision ground tool steel.
- Easily expanded to size in openings for quick reference measurements.
- Lock desired size by set screws provided.
- Exact size can be set with micrometer.
- Furnished in fitted plastic case with size range markings.

3900-0029



DIMENSION
3/8~1/2", 1/2~11/16", 11/16~15/16", 15/16~1-5/16", 1-5/16~1-3/4", 1-3/4~2-1/4"

Pro-Series 1/8" PARALLEL SET



- Made from fine quality tool steel stress relieved against distortion, precision ground and hardened.
- Hardness: Case hardened RC 52 to 58.
- Each parallel size clearly marked.
- Complete with fitted case.
- 2 holes in each parallel.

NEW

1/8", 10 PAIR SET
3901-3010



DIMENSION ThickxHt.xLong
1/8 x 1/2 x 6"
1/8 x 5/8 x 6"
1/8 x 3/4 x 6"
1/8 x 7/8 x 6"
1/8 x 1 x 6"
1/8 x 1-1/8 x 6"
1/8 x 1-1/4 x 6"
1/8 x 1-3/8 x 6"
1/8 x 1-1/2 x 6"
1/8 x 1-5/8 x 6"

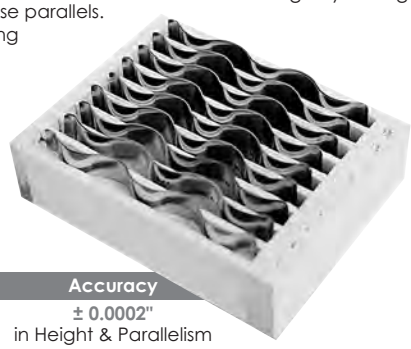
TOLERANCE:
- Total Parallelism Within Entire Length: .0002"
- Flatness or Starightness: .0002"
- Height Dimensions: +/- .0002"
- Other Dimensional Tolerance:Width (or Thickness) +/- .005"

Close Tolerance! Completed with Certification!

9 PAIR WAVY PARALLEL SET

- For use on: Precision clamping of parts in drilling, boring, milling, grinding, assembly work, etc.
- Can readily be used as elastic shims.
- Thin and fragile workpieces can be secured without damage by utilizing the spring pressure of these parallels.
- Made of high quality spring steel, hardened, stress relieved and precision ground.
- Fitted case.

3900-2909



Range	Accuracy
1/2" ~ 1-1/2" in 1/8" Height Increments	± 0.0002" in Height & Parallelism

9PC UNIVERSAL ANGLE BLOCK SET



- HRC 45 to 50 heat treatment.
- Angle Accuracy: ±5'
- Combination V-block and angle plate for rapid, easy setting.
- No sine vise, sine plate, angle vise, chart or gage block needed.

3402–0018

BLOCK SIZE: 2.75 L x 1.18 W

Set Includes
V-Blocks: 10, 15, 30°
Angle plates: 0.5, 1, 2, 3, 4, 5°

17PC PRECISION ANGLE BLOCK SET

- Get quick setups for fringing various angles from 1/4 to 45°
- Hardened steel
- With fitted case

ACCURACY: .0003"

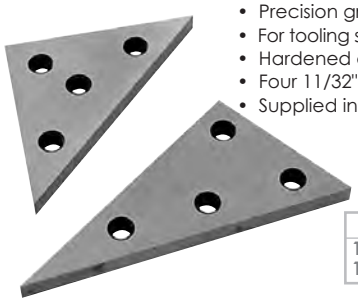


17 PC SET
3402–0019

BLOCK SIZE:
3" Length x 1/4" Thickness

INCLUDES
1/4, 1/2, 1, 2, 3, 4, 5, 10, 15, 20, 25, 30, 35, 40, & 45° and 2 riser blocks

2PC SOLID ANGLE PLATE SET



- Precision ground angles.
- For tooling setups, production and inspection.
- Hardened and ground steel.
- Four 11/32" holes.
- Supplied in fitted case.

3402–0016

Description
1pc- 45° x 45° x 90° (3 x 3 x 5/16)
1pc- 30° x 60° x 90° (2 x 3-3/8 x 5/16)

36PC SPACE BLOCK SET

- Four connecting screws 1/4"~28 are included to make any length desired.
- **ID is threaded 1/4"~28.**
- Meets or exceeds federal specifications.
- Work surface hardened to 57~60 RC.
- Made of precision tool steel.
- Individually marked.
- Complete in fitted case.

ACCURACY: ±0.0001"



3101–0003

Set Includes:
9 Blocks: .101 to .109 by .001"
15 Blocks: .050 to .190 by .010"
9 Blocks: . 200 to 1.000 by .100"
2 Blocks: .0625" and .125"
1 Extra Block: 1.000"

10PC ANGLE BLOCKS SET

BLOCK SIZE:
3" Length x 1/4" Thickness



- Simple, quick angle set ups.
- Manufactured of tool steel-hardened, stabilized and ground.
- Angle accuracy: 20'.
- Fitted case.

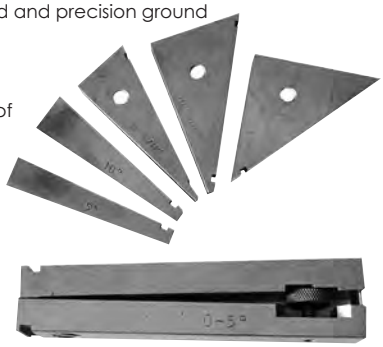
3402–0015

INCLUDES
1, 2, 3, 4, 5, 10, 15, 20, 25, 30°

TANGENT BAR & ANGLE GAGE BLOCK SET

- Made of tool steel hardened and precision ground
- Tangent bar is micrometric

INCLUDES:
one Tangent Bar, one each of Angle Block 5, 10, 20, 30, 45°



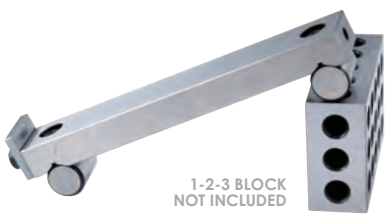
6 PC SET
3402–0962

SINE BARS

- For angles set up by using Sine Bar with 1-2-3 Blocks or Gage Block.
- Parallelism: 0.0004".
- Working face accuracy 0.00003"/ per inch.
- Rolls center distance accuracy 0.0002".
- Flange on the end for the resting of workpiece.

5x1"(LxW)
3402–1205

2.5 x1"(LxW)
3402–1203

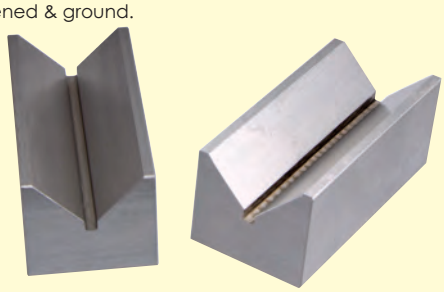


1-2-3 BLOCK
NOT INCLUDED

ULTRA PRECISION V-BLOCK SETS

- Guaranteed square and parallel within .00016".
- All surfaces are hardened & ground.
- 90° Vee blocks.

SUPPLIED BY MATCHED PAIR



Item#	Size (LxWxH)	Vee Capacity	Wt. (Lbs)
3402-1017	3 x 1.4 x 1.2"	1-1/4"	2.4
3402-1019	4 x 1.9 x 1.6"	1-3/4"	5.2
3402-1021	6 x 2.2 x 1.8"	2"	10.4
3402-1023	8 x 2.6 x 1.8"	2-3/8"	19.5

V-BLOCKS

SUPER VEE BLOCK SET

- A unique and universal holding tool for small, miniature or intricate parts, used in conjunction with larger V-blocks
- Furnished with bridges to straddle long workpieces, allowing top hold down screw of V-block clamp to be utilized
- Hardened and high-precision ground
- With fitted case

SOLD AS PAIR



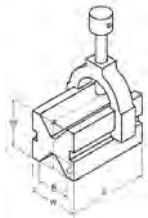
SQUARENESS & PARALLELISM: .0002"

3402-0958

INCLUDES
2 V-blocks: ..... 0.030~ .156" & .050~ .281" capacity 2 bridges and 5 upper prisms: .....1/8, 5/32 & 3/16" capacity

V-BLOCKS & CLAMPS SET

- 90° V groove accuracy are central, parallel and square with all surfaces within 0.0003".
- Case is hardened and ground.
- Clamps are included.





SUPPLIED IN MATCHED PAIR

Item#	Vee Capacity	Dimension (W x H x L)
3402-0952	1"	1-1/4 x 1-1/4 x 1-5/8"
3402-0951	1"	1-3/8 x 1-5/8 x 1-3/4"
3402-0953	1-1/2"	1-5/8 x 1-3/4 x 2-3/4"
3402-0954	1-1/2"	1-3/4 x2-1/2 x 2-3/4"
3402-0955	2-1/8"	2-3/4 x 3-1/2 x 4-7/8"

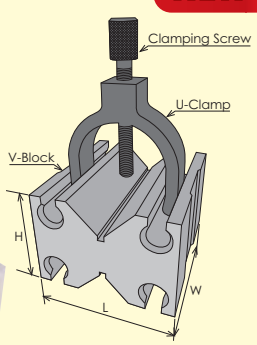
Pro-Series V-BLOCK WITH CLAMP

NEW

- Made of hardened tool steel machined & ground in pairs toclose tolerance.
- A versatile tool for Toolmakers & Machinists
- Clamps can easily slide in & are included.
- Both sides have different Vee sizes







MADE IN TAIWAN

SUPPLIED IN MATCHED PAIR

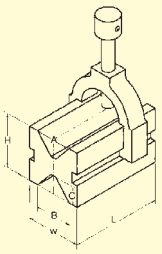
3402-0964

W	H	L	Small Vee	Large Vee	G.W.
2-1/2	1-3/4	2-3/4	1	1-3/16	6 lbs

STAINLESS STEEL V-BLOCK SETS

- Guaranteed square parallel within .00016".
- Hardened & ground
- Used for rust-free environment.
- 90° Vee blocks.





SUPPLIED IN MATCHED PAIR

Item#	Size (LxWxH)	Vee Capacity
3402-0943	2 x 1-9/16 x 1-9/16"	1-1/2"
3402-0945	3 x 2-5/32 x 2-5/32"	2"

ULTRA PRECISION V-BLOCK & CLAMP SETS

- Guaranteed square parallel within .0002".
- Hardened & ground to RC 58-60.
- 90° Vee blocks.
- Supplied with bolts and clamps in wooden case.

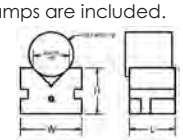
SUPPLIED IN MATCHED PAIR

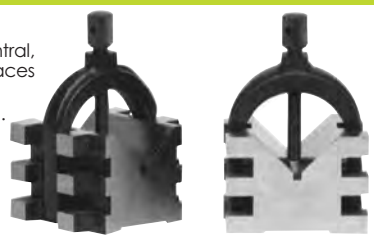


Item#	Length	(Inch) Width	Height
3402-0001	1-3/8	1-3/8	1-3/16
3402-0002	2-3/8	2-3/8	2
3402-0003	4-1/8	4-1/8	3-1/16

MULTI-USE V-BLOCKS & CLAMPS SET

- Stepped groove construction.
- 90° V groove accuracy are central, parallel and square with all surfaces within 0.0003".
- Case is hardened and ground.
- Clamps are included.





SUPPLIED IN MATCHED PAIR

Item#	Size (L x W x H)	Capacity Round	Capacity Square
3402-0112	2.50 x 2.75 x 2.00"	2"	1-7/16"

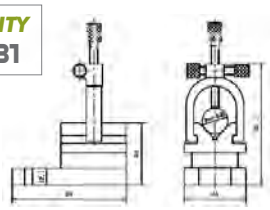
TOOLMAKER'S V-BLOCKS W/CLAMP

- Blocks have four 3/8"~26 tapped holes, two in the base and one on each side for attachment to an angle iron. The angle iron holding the block can then be attached to a lathe faceplate or held by a magnetic chuck.
- Versatile tool for grinding, milling or drilling
- A clearance hole for drilling or removing dowel pins is provided in the block
- Blocks are hardened and precision ground
- Side screw supports the block and prevents tilting.



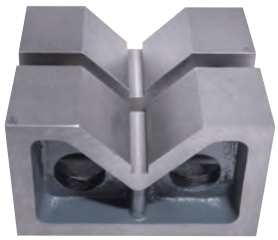
1-5/16" CAPACITY

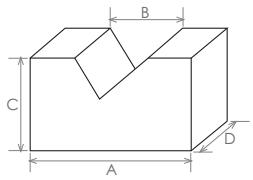
3402-0981



CAST IRON V-BLOCKS SETS

- Made of high quality casting, properly seasoned against distortion.
- Machined square and parallel to meet standard specifications.





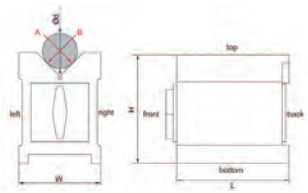
SUPPLIED IN MATCHED PAIR

Item#	A	B	C	D	Wt. (lbs)
3402-1000	2"	1-5/8	1-3/8	7/8	2
3402-1001	3"	1-3/4	2-3/8	1-5/16	3
3402-1002	4"	2-1/4	2-5/8	1-5/8	5
3402-1003	5"	2-1/2	3-1/8	2	8
3402-1006	6"	3-1/8	3-1/2	2-1/2	13
3402-1007	7"	3-1/2	4-1/2	3	27
3402-1008	8"	4-1/2	5-1/2	4	44
3402-1010	10"	5	6-5/8	5	73
3402-1012	12"	6	8	7	135

Pro-Series MAGNETIC V-BLOCKS WITH SWITCH

- Precision ground finished working surfaces.
- Ideal for scribing, grinding, measuring and machining round or irregular shape items.
- On/Off switch.



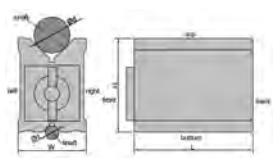


Item#	W	Dimension H	L	Vee Width	Power Pull (lbs)
3402-0995	2.13"	2.87"	2.76"	1.5"	66
3402-0997	2.36"	2.87"	4.29"	1.5"	77

MAGNETIC V-BLOCKS W/ SWITCH

- Precision ground finished working surfaces.
- Ideal for scribing, grinding, measuring and machining round or irregular shape items.
- On/Off switch.
- Two-centered 90° Vees.



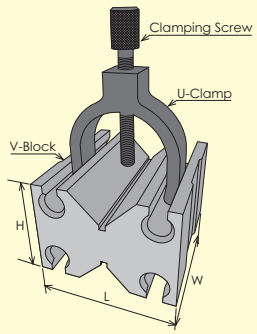


Item#	W	Dimension H	L	Power Pull (lbs)
3402-0990	2-3/4"	3-3/4"	3"	130
3402-0901	2-3/4 "	3-3/4"	4"	250
3402-0992	2-3/4"	3-3/4"	5"	275
3402-0993	3"	3-3/4"	6"	320

Toolmaker's V-BLOCK -Slot-In CLAMP

NEW

- Made of hardened tool steel machined & ground in pairs toclose tolerance.
- A versatile tool for Toolmakers & Machinists
- Clamps can easily slide in & are included.
- Both sides have different Vee sizes



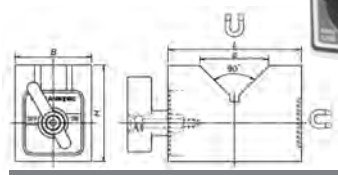


Item #	W	H	L	Small Vee	Large Vee	G.W.
3402-0968	2-1/2	1-3/4	2-3/4	1	1-3/16	6 lbs.
3402-0970	3-1/2	2-3/4	4-7/8	1.22	1.38	24 lbs.

ALUMINUM CAST MAGNETIC V-BLOCK SETS

- Holds cylindrical workpieces for grinding.
- 90° Vee blocks.
- Precision ground flat, square and parallel to 0.0005".
- Switch on/off.



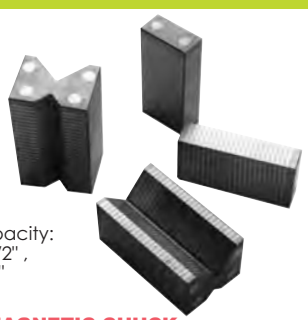


SUPPLIED IN MATCHED PAIR

Item#	Dimension B	H	L	Max. Hold Dia.	Power Pull Each (lbs)
3402-0890	1-1/2"	2"	2-3/4"	1.90"	33
3402-0900	2"	3"	4"	3.15"	44
3402-0902	2"	4"	6"	3.90"	50

MAGNETIC V-BLOCKS & PARALLELS

- Universal-holds in any direction on the magnetic chuck.
- Aluminum cast.
- Ground all over.
- Blocks transmit magnetism, they are not magnetic.



V-BLOCK & PARALLELS KIT
3402-0013
Item 3402-0006 & 3402-0009

V-BLOCKS:
- 90° Vee Capacity: Small Vee-1/2" , Large Vee-2"

FOR USE ON MAGNETIC CHUCK

	Item#	Length	Width	Height
SINGLE 90° V-BLOCK:	3402-0007	4-3/8"	2-3/8"	1-7/8"
MATCHED PAIR 90° V-BLOCK:	3402-0006	2"	2-3/8"	1-7/8"
MATCHED PAIR PARALLELS:	3402-0009	4"	2"	1"

ANGLE PLATES

PRECISION GROUND UNIVERSAL RIGHT ANGLE PLATES

- Widely used for fixture components.
- All face, ends and edges are finished square and parallel.
- The opening provides a convenient hand grip for handling.
- Square within 0.0005" per 6".
- Parallel within 0.00025" per 6".

PRECISION GROUND SURFACE

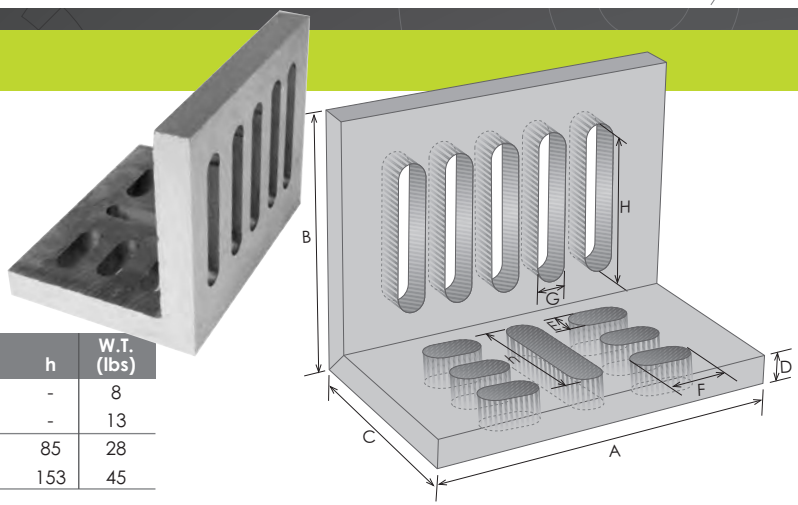


Item#	(Inch) A	B	C	Wt. (lbs)
3402-1031	3-3/4	4	5	10
3402-1032	4	5	6	16
3402-0103	4	4	6	15
3402-1033	4-1/2	5	8	21
3402-1041	5	8	12	49
3402-1043	5-1/2	8	10	49
3402-0109	6	6	8	35
3402-0110	8	10	12	78

SLOTTED ANGLE PLATES (OPEN END)

- Convenient clamping slots for mounting and are widely used for machining, layout and inspection.
- Made of high tensile cast iron properly seasoned against distortion.
- Open-End style, accurately machined square and parallel on all faces.
- Slot A is 90° to slot C.

MACHINED TO .002 PER 6"

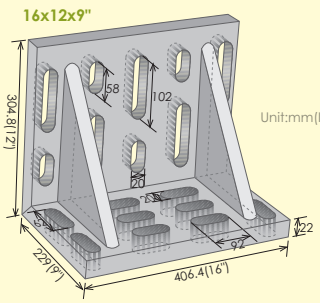


Item#	(Inch) A x B x C	(mm) D	E	F	G	H	h	W.T. (lbs)
3402-0203	6 x 5 x 4-1/2	15	12	87	12	74	-	8
3402-0209	8 x 6 x 5	18	16	118	16	86	-	13
3402-0210	10 x 8 x 6	20	20	67	20	118	85	28
3402-0212	12 x 9 x 8	23	22	81	22	120	153	45

GIANT SLOTTED ANGLE PLATES

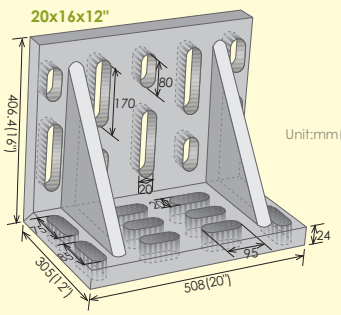
- Machined on outside faces and with cored slots arranged for maximum clamping versatility.
- Made of high grade closegrained cast iron, stress relieved against distortion.

16x12x9"



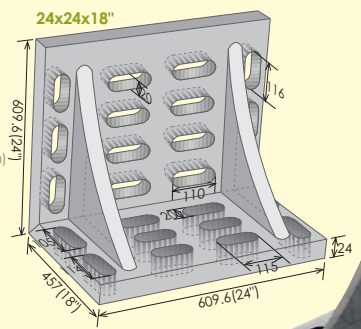
Unit:mm(Inch)

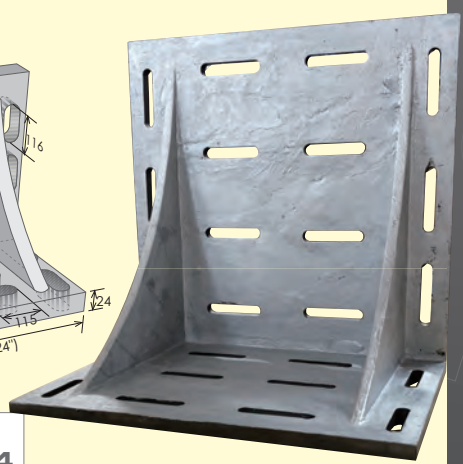
20x16x12"



Unit:mm(Inch)

24x24x18"



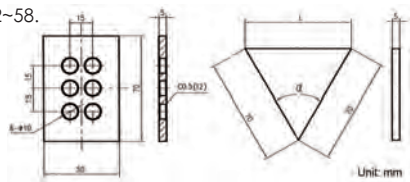


16x12x9"	20x16x12"	24x24x18"
3402-0340	3402-0342	3402-0344
74 Lbs.	150 Lbs.	330 Lbs.

7PC ANGLE & RECTANGULAR BLOCK SET

- Quick setup set from 15° to 90°
- Hardened steel to HRC52~58.
- With fitted case

7 PC SET
3402-0020



BLOCK SIZE Unit:mm

Angle	L	Thick
15°	18.3	5
30°	36.2	5
45°	53.6	5
50°	59.2	5
60°	70.0	5
75°	85.2	5
90°	70x50	5



NEW

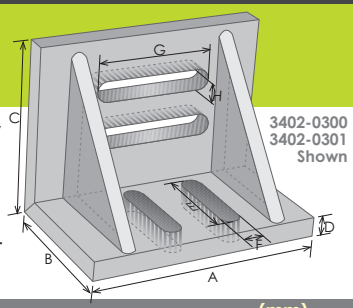
ACCURACY: ±5'

INCLUDES
15, 30, 45, 50, 60, 75 & 90°

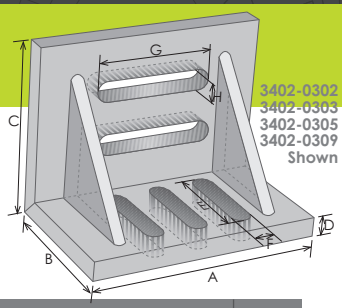
SLOTTED ANGLE PLATES (Webbed)

- Made of high tensile cast iron properly seasoned against distortion.
- Clamping slots are widely used for machining, layout and inspection.
- Accurately machined and ground square and parallel on outside and ends.

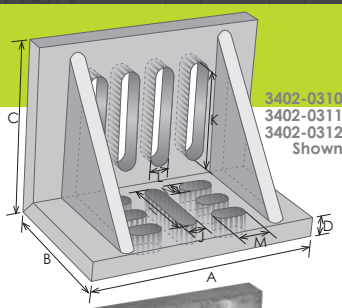
MACHINE TO .002 PER 6"



3402-0300
3402-0301
Shown

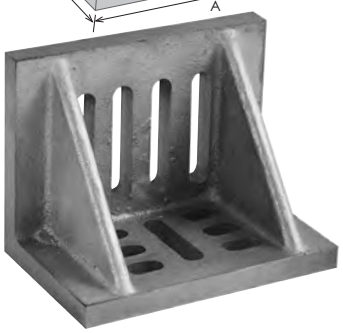


3402-0302
3402-0303
3402-0305
3402-0309
Shown



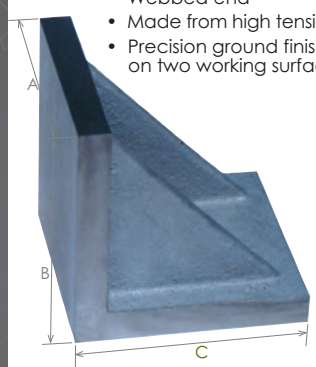
3402-0310
3402-0311
3402-0312
Shown

Item#	(Inch) A	B	C	(mm) D	E	F	G	H	I	J	K	L	M	N	W.T. (lbs)
3402-0300	3	2.5	2	9	40	10	37	10	-	-	-	-	-	-	5
3402-0301	3.5	3	2.5	11	48	10	47	10	-	-	-	-	-	-	6
3402-0302	4.5	3.5	3	12.5	50	11	70	11	-	-	-	-	-	-	7
3402-0303	6	5	4.5	13	74	12	86	12	-	-	-	-	-	-	11
3402-0305	7	5.5	4.5	15	88	13	105	13	-	-	-	-	-	-	14
3402-0309	8	6	5	15	98	14	105	14	-	-	-	-	-	-	17
3402-0311	9	6	7	15	-	-	-	-	94	52	116	18	52	18	27
3402-0310	10	6	8	16	-	-	-	-	89	52	130	18	52	18	38
3402-0312	12	8	9	18	-	-	-	-	128	58	150	20	58	20	50



PRECISION GROUND ANGLE PLATES

- Webbed end
- Made from high tensile cast iron normalized and stress relieved.
- Precision ground finishing: Square and parallel to .0005" per 6" on two working surfaces.



Item#	(Inch) A	B	C
3402-1052	2	2	2
3402-1053	3	3	3
3402-1054	4	4	5
3402-1055	5	5	5
3402-1056	6	6	6
3402-1058	8	8	8
3402-1060	10	10	10
3402-1062	12	12	12

PLANER AND SHAPER GAGE

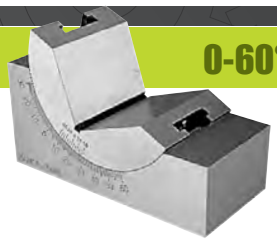
NEW

- Hardened and ground forged steel.
- Ground, flat and V ways assure accuracy.
- Both sides are ground square with working edges.
- In-built precision level.
- Base size: 5-1/4" long and 3/4" wide.
- Includes 3" extension rod.
- Supplied in wooden case.

Max. Range 6-1/4"
3402–0025



0-60° PRECISION ANGLE BLOCKS



- For drilling, milling, and set up applications.
- 0~60° adjustable angle by locking the hex screw on the bottom.
- Squareness: - 0.0002".
- Angle accuracy: ±10'.
- Hardness: HRC 50-55.

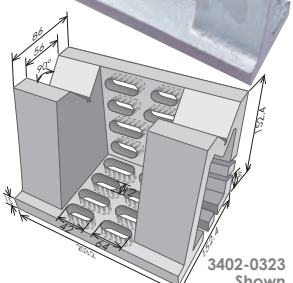
1 x 1-1/4 x 3" (W x H x L)
3402–0010

1-3/16 x 1-13/16 x 4" (W x H x L)
3402–0011

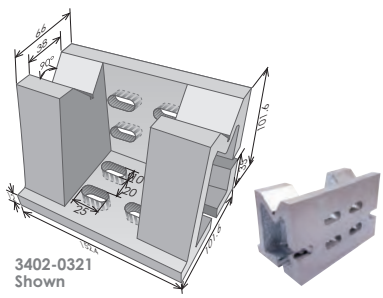
V - ANGLE PLATES

- As the name rightly suggests it has dual usage as a vee block and an angle plate.
- Having a single piece close grained cast iron construction, which ensures rigidity.
- Casting are stress relieved.
- Useful for easy operations in set up jobs.
- The angle block is precision ground and has a parallelism of + 0.005" and a squareness of + 0.005".





3402-0323
Shown



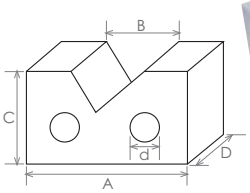
3402-0321
Shown

Item#	Size
3402-0321	4 x 4 x 6"
3402-0323	6 x 6 x 8"

STEEL V-BLOCKS SETS

- Made of tool steel, hardened and ground.
- Machined square and parallel to meet standard specifications.

Item#	A	B	C	D	d	Wt. (lbs)
3402-1302	2"	1	1.26	0.90	0.24	1.1
3402-1303	3"	1.7	2.38	1.33	0.45	4.6
3402-1304	4"	2.2	2.66	1.66	0.54	8.3
3402-1305	5"	2.45	3.14	2.03	0.78	15.3
3402-1306	6"	3.1	3.52	2.52	0.93	25





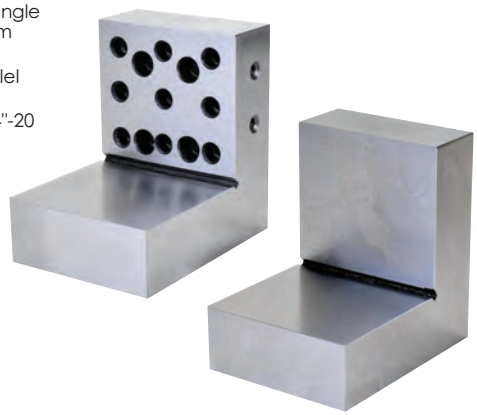
NEW

SUPPLIED IN MATCHED PAIR

ANGLE PLATES & SINE PLATES

STEEL RIGHT ANGLE PLATES

- Solid, one piece angle plate is made from hardened steel
- Square and parallel within 0.0002".
- Furnished with 1/4"-20 tapped holes

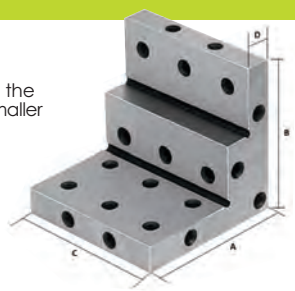


* Limited Supply

Item#	Size	Holes
3402-0443	4 x 4 x 3 x 1-1/8"	Yes
3402-1443*	4 x 4 x 3 x 1-1/8"	No

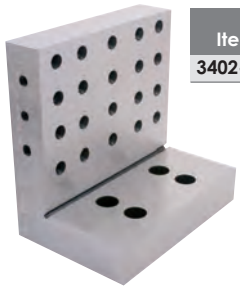
STEPPED ANGLE PLATES

- Manufactured from a single piece of hardened tool steel.
- A convenient step of 1-1/4" down from the top and a 1/2" seat allows for use with smaller work pieces.
- Tapped holes allow for fastening to fixtures and clamping workpiece to the angle plate.
- Precision ground finishing.
- Square and parallel within 0. 0002".



Item#	Dimension A x B x C x D	Thread of tapped holes
3402-0100	3 x 3 x 3 x 1-1/2"	(20) 1/4"-20
3402-0101	4 x 4 x 4 x 1-1/4"	(20) 5/16"-18

ANGLE PLATES W/BACK HOLES



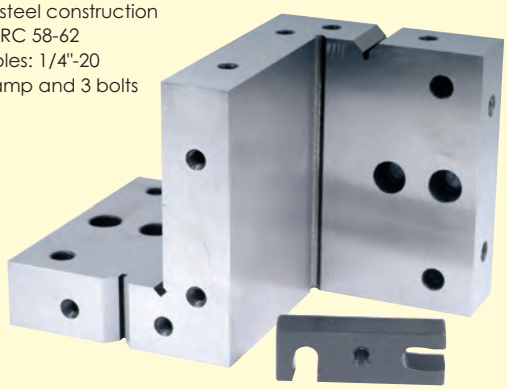
Item#	Dimension	Thread of tapped holes	W.t. (lbs.)
3402-2664	6x6x4x1-1/4"	(26) 1/4"-20	20



- Solid, one piece angle plate is made from hardened tool steel
- Square and parallel within .0002"
- Precision ground finishing
- (4) Bolt Holes: 7/16" diameter

COMPOUND ANGLE PLATE

- Features ground vees for convenient holding of small round parts
- Ground flat, square and parallel within 0.0002"
- Wall dimension: 6"x4"x1"
- Solid 1 piece steel construction
- Hardened to RC 58-62
- Tapped 16 holes: 1/4"-20
- Includes 1 clamp and 3 bolts



Item #	Length	Wall Height	Thickness	Tapped Holes	W.t. lbs
3402-1101	6"	4"	1"	(16) 1/4"-20	12

STEEL ANGLE PLATES

Item#	Dimensions	W.t. (lbs.)
3402-0402	4x3x3x1"	6
3402-0404	4x4x4x1-1/4"	10

Limited Supply!



- Solid, one piece angle plate is made from hardened steel
- Square and parallel within 0.0002".
- Furnished with (13) 1/4"-20 tapped holes

6 x 6 ULTRA PRECISION SINE PLATES

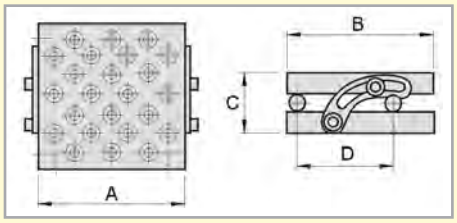


MADE IN TAIWAN

HHIP PRO-SERIES

3800-5526

SPECIFICATION	
Capacity:	0~60°
Squareness:	within 0.0002"
Parallelism:	within 0.0002"
Center Distance of Rolls Accuracy:	within 0.0002"
Minute Angle Step on Gage Block Roll:	0.200"
Tapped holes:	1/4"-20 UNC
Size (B x A)	6" x 6"
Height (C)	2.36
Center Distance of Rolls (D)	5"
No. of Tapped Hole	24
Wt. (lbs.)	18



- Made of high grade tool steel hardened and precision ground HRC 55~58.
- Two hardened side rails and one locking strap included.

VALUE
3900-5526



3R ROCKWELL HARDNESS TESTER

- This hardness tester is used to determine Rockwell hardness of hard alloys, quenched and unquenched steels.
- It can be applied in the laboratories, scientific research institutes and colleges.

Standard Accessories Included:

- 5-3/4" testing table.
- 2-3/16" testing table.
- 2-3/16" testing table with "V" groove.
- 120° diamond penetrator.
- 1/16" steel ball penetrating.
- Rockwell A test block (1pc)
- Rockwell B test block (1pc)
- Rockwell C test block (3pc)
- Screwdrivers (2)
- Complete instruction manual.
- Dust-proof plastic cover.

SPECIFICATIONS	
Maximum load	330 lbs.
Load range	132lbs, 220lbs, 330lbs.
Initial range load	22 lbs.
Maximum test load	4-1/4"
Depth throat	5-1/4"
Maximum depth of spindle below base	2"
Base size	7" x18"
Height	24-1/2"
Approx.. weight	209 lbs.

8902-0150



Load Range	132lbs	220lbs	330lbs
Penetrator	Diamond 120	Ball 1/16"	Diamond 120
Test Scales	Rockwell A	Rockwell B	Rockwell C
Suitable for	Test on case hardened steel	Annealed ferrous & non-ferrous metal	Annealed hardened & tempered or deep case hardened steel

HARDNESS TESTER ACCESSORIES



Item#	Description
8902-0151	C Diamond
8902-0152	1/16" Steel Ball



REPLACEMENT DIAL IND.
8902-0160



Item#	Description
8902-0130	20-30 HRC Test Block
8902-0155	35~55 HRC Test Block
8902-0170	60~70 HRC Test Block
8902-0188	80~88 HRA Test Block
8902-0195	85~95 HRB Test Block

6PC COMPOSITE SET OF SPECIMENS

- Each Specimen 7/8" x 3/8" of electroformed solid nickel.
- Each type of surface finish is truly and consistently reproduced with a realistic idea of the feel, appearance and texture of the machined components.
- For quick and easy comparisons.
- Conforms to S.A.E and military specifications.
- Supplied with wallet, instructions and certificate.



Item#	Surface Type	Micron Inch AA
4101-0024	Plain Grinding	2, 4, 8, 16, 32 & 63
4101-0025	Horizontal Milling	16, 32, 63, 125, 250 & 500
4101-0026	Vertical Milling	16, 32, 63, 125, 250 & 500
4101-0027	Turning	16, 32, 63, 125, 250 & 500
4101-0028	External Grinding	8, 16, 32 & 63

COMPOSITE SET OF SURFACE ROUGHNESS STANDARDS

- 30 Specimens 7/8" x 3/8" of electroformed solid nickel.
- Each type of surface finish is truly and consistently reproduced with a realistic idea of the feel, appearance and texture of the machined components.
- For quick and easy comparisons.
- Conforms to S.A.E and military specifications.
- Supplied with wallet, instructions and certificate.

4101-0030



SPECIFICATIONS	
Horizontal Milling (6 specimens)	16, 32, 63, 125, 250 and 500*
Vertical Milling (6 specimens)	16, 32, 63, 125, 250 and 500*
Turning (6 specimens)	16, 32, 63, 125, 250 and 500*
Plain Grinding (6 specimens)	2, 4, 8, 16, 32 and 63*
Flat Lapping (2 specimens)	2 and 4 *
External Grinding (4 specimens)	8, 16, 32 and 63*

*** Micron Inch AA**

STEREO MICROSCOPE
W/ UNIVERSAL STAND (BOOM STAND)



Limited Supply!

- Optical glass lens.
- Stand with 11" vertical and 9" horizontal extension bar with chrome finished.
- Stand: 8" L x 4.6" W x 2.5" H.
- Rack & pinion focus adjustable.
- Locking collar.
- Universal movement with no limit for most working applications.
- Focal Distance: 4.50"
- Illumination system: (halogen, top only) attached with head of microscope.
- Eyepiece rubber protectors & dust cover included.
- Power supply: 110V/60Hz/1Ph.

10x Microscope
8902-0048
10x eyepiece & 1x objective

20x Microscope
8902-0050
10x eyepiece & 2x objective

Item#	Description
8902-3005	5x Eyepiece (pair)
8902-3015	15x Eyepiece (pair)
8902-3020	20x Eyepiece (pair)
8902-5081	Replacement Bulb 10W

VIDEO BORESCOPE WITH LCD DISPLAY

- Vivid 2.4" color TFT LCD monitor allows image rotation for detailed images
- 39" flexible gooseneck cable retains configured shape.
- Optional 78" flexible shaft with 9mm or 17mm camera available
- Mini waterproof 9mm(IP67) camera head provides on-the-spot viewing.
- Night Vision Range: 20".
- Power indicator, low voltage indicator.
- Mirrow button.
- LED brightness control.
- LCD contrast control.
- Power Supply: 4 x AA battery.
- Dimension: (WxDxH) 8x3.3x2.4".
- Operating Temperature: 14 ~122° F.
- Weight: 14 oz.

9mm Camera, 39"Shaft
8902-0065

Light, handheld design enables you to easily find, diagnose and solve problems in hard-to-reach areas. Perfect for all kinds of inspections.



640 X 480 PIXEL





3 Useful Accessories Included.

OPTIONAL EXTENSION CABLES WITH CAMERA

Item#	Camera Head	Shaft Length
8902-6010	9mm (IP67)	78"/2M
8902-6017	17mm (IP67)	78"/2M

20X & 40X STEREO MICROSCOPE

- Optical glass lens.
- Illuminator both stand and overhead switchable.
- Stereo body rotatable 360°.
- Possible magnification from 20 x through 80 x (Depending upon accessories selected).
- Dioptric adjustment: Ø5 diopter
- Eyepiece: 10X , 30.50 mm (insertion part)
- objective: 2X & 4X rotatable
- Direct measuring on workpiece.
- Microscope illuminator (tungsten) 10W, 12V.
- Impeccable performance through coated optics assures better resolution.
- Locking adjustable head.
- Stage difussing glass: Ø3-3/4"
- Eyepiece rubber protectors & dust cover included.
- Power supply: 115V / 60Hz / 1PH.



Item#	Description
8902-3005	5X Eyepiece (Pair)
8902-3015	15X Eyepiece (Pair)
8902-3020	20X Eyepiece (Pair)
8902-3081	Replacement Bulb

Limited Supply!

20x & 40x Microscope
8902-0302

FLUORESCENT RING LIGHT FOR MICROSCOPE





- Fixed output white light.
- 360° of "Shadow-Less" illumination to provide a well distributed illuminated image.
- Power Supply: 115 V/60 Hz, 8 W.
- Ring Internal Dimension: 2" diameter.
- Recommend to be used with ring adapter or auxiliary lens.
- Thickness of light: 1".
- On/Off switch.
- One ring adapter with thread included to fit 48mm diameter microscope objective lens.

Item#	Description
8902-6005	Ring Light
8902-6006	Spare Bulb

MICROSCOPE HALOGEN LIGHT

- Portable light to provide illumination image for microscope or other application.
- Universal movement arm.
- Power On/Off switch.
- 4 steps brightness 3, 6, 9 & 12.
- Max. Height: 10-1/2" .
- Power Supply (5 ft. cord): 115 V/60 Hz, 15 W.

Limited Supply!

8902-6007



SPARE BULB 15W (Item #8902-3086)

20X SHOP MICROSCOPE

- Easy focal adjustment .
- Illuminated light allows use in dark places and are adjustable.
- 2 in 1 metric and inch straight line scale
- Operations on 2 AAA battery.



20x POWER
8902-0035

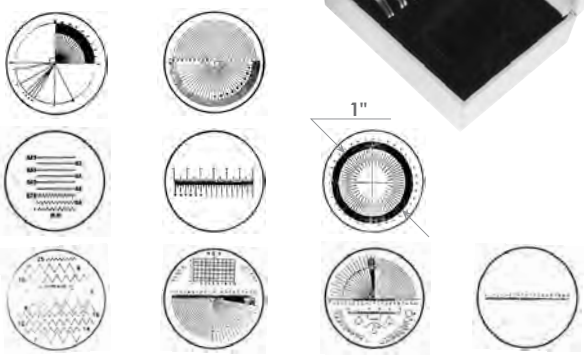
Limited Supply!

10X POCKET OPTICAL COMPARATOR SET

- Widely used by machinists, toolmakers and inspectors for checking angles, diameters, radii, thread pitches, hole sizes, etc.
- The scales are photo etched into glass reticle for easy reading.
- Reticle screw-in mounting are interchangeable.
- **9 pc/set includes: Comparator and 8 pc Reticle.**
- Lens diameter: 21mm

10x POWER
8902-0041





8X LED LIGHT DESK TOP MAGNIFIER

- 8x powerful magnifier
- Flexible arm any desired position adjustable
- Diameter of Visible Area: 5"
- Adjustable LED light with 300 LUX brightness, 2.5Watt.
- Power Supply: 110V/1 phase
- Furnished with 60" cord.

8070-0001





SPARE LED BULB 2.5W(Item #8070-0004)

HASTINGS TRIPLET MAGNIFIER

- Triplet lens system
- Case color: black

Item#	Power	Lens Dia.
4902-0045	10 X	21mm
4902-0046	15 X	21mm



40X, 80X SHOP MICROSCOPES W/RETICLE

- Wide field eyepiece with direct reading reticle(no calibration required. Eyepiece turns to permit sharp focus of reticle scale
- Penlight illuminator in swivel mount. requires 2 AAA batteries
- Jack and pinion focusing with dual focusing knobs
- Cast aluminum structure
- Height: 9"

Limited Supply!

RETICLE: 0-18mm/.02mmx90

40x POWER
8902-0036

80x POWER
8902-0037



INDUSTRIAL GRADE LED LAMP MAGNIFIER

- Light source LED, 390 Lums brightness.
- Lens Size: 7.5x6.0".
- Lens frame: 12x9".
- Lens material: glass.
- 3 diopter lens provides 1.75x magnification.
- Swing arm with 32" reach.
- Max. 2-1/2" adjustable bench clamp.
- Power On/Off switch.
- Power Supply: 115V.









8401-0045



DRILLS & DRILL SETS

29PC JOBBER DRILL SETS

- Production grade
- Straight shank **1/16~1/2" by 64ths**
- Right hand
- Supplied in metal drill index
- **COBALT** used for drilling in tough high tensile strength materials like stainless steel, titanium and inconel
- **TiN Coated** will improve the tool life and is used where elevated speeds & feeds are the objective. TiN provides high lubricity and facilitates chip flow which reduces heat and edge build-up.

M35 (5%) Cobalt
5000-0011

MADE IN USA
TiN Coated, HSS
5001-0029

TiN Coated, HSS
5000-0001

Black Oxide, HSS
5000-0002

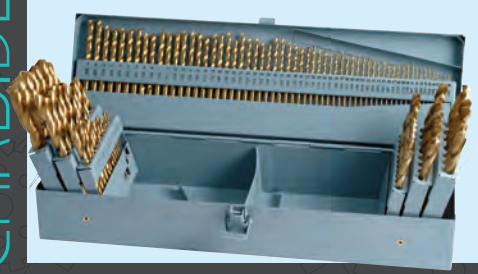




115PC HSS JOBBER DRILL SETS

SET INCLUDES: 1/16~1/2" By 64ths, #1~60, A~Z

- Supplied in metal drill index
- High speed steel
- **TiN Coated** will improve the tool life and is used where elevated speeds & feeds are the objective. TiN provides high lubricity and facilitates chip flow which reduces heat and edge build-up.
- Right hand
- Straight shank
- Production grade



MADE IN USA
Bright Finish
5001-0115

TiN Coated
5000-0003

18PC HSS TAP & DRILL COMBO SET



MADE IN USA

- High speed steel made taps and drills.
- Made in USA with index steel case.
- Drills are matched with taps to make jobs much easier.

#6 ~ 1/2"
1011-0018



Set Includes

1 each HSS Hand Tap
6-32 NC, 8-32 NC, 10-24 NC, 10-32 NF, 1/4"-20 NC, 5/16"-18 NC, 3/8"-16 NC, 7/16"-14 NC, 1/2"-13 NC

1 each HSS Jobbers Drill
#36, #29, #25, #21, #7, F, 5/16" ,U, 27/64"

HSS WIRE GAGE DRILL SETS

NEW

- Supplied in metal index case
- High speed steel
- Right hand

61 PC SET #1~60
5001-1060

20 PC SET #61~80
5001-1020

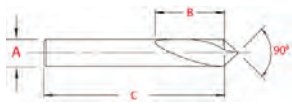


5001-1020 Shown

NC SPOTTING DRILLS - M35 5% COBALT
RIGHT HAND • 90° SPLIT POINT

- Ground from solid.
- Designed for quick starting and a constant web to allow for re-sharpening without the need for web thinning

MADE FOR CNC DRILLING!



Limited Supply!



Dia. A	Flute Length B	OAL C	Item#
.118"(3mm)	3/4"	2"	**5000-1001**
.157"(4mm)	7/8"	2-3/16"	**5000-1002**
.197"(5mm)	1"	2-3/8"	**5000-1004**
.236"(6mm)	1"	2-3/4"	**5000-1006**
1/4"	1"	2-3/4"	**5000-1008**
.315"	1-1/8"	3-1/8"	**5000-1010**
3/8"	1-1/8"	3-1/2"	**5000-1012**
1/2"	1-1/2"	4"	**5000-1018**
3/4"	1-3/4"	5-1/8"	**5000-1024**



25PC METRIC 118° DRILL SET

- Production grade
- High speed steel
- Black surface treated

MM DRILL SETS IN METAL INDEX

Item#	Set	Range
5000-0007	25	1~13mm x 0.5mm

18PC HSS METRIC TAP & DRILL COMBO SET

NEW

- High speed steel made taps and drills.
- Plug taps are fully ground.
- With index steel case.
- Drills are matched with taps to make jobs much easier.



M2.5 ~ M12
1011-0020







Set Includes

1 each HSS Hand Tap
M2.5x0.45, M3.0x0.50, M3.5x0.60, M4.0x0.70, M5.0x0.80, M6.0x1.00, M8.0x1.25, M10.0x1.50 & M12.0x1.75

1 each HSS Jobbers Drill
2.05, 2.50, 2.90, 3.30, 4.20, 5.00, 6.70, 8.50 & 10.20mm

PRODUCTION GRADE DRILLS
HIGH SPEED STEEL 118°

- Ground from solid.
- Surface treated to increase abrasion resistance

While Supplies Last!



GROUND FROM SOLID

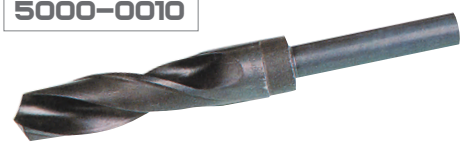
Size	OAL	Item#
1/64	3/4	5001-4001
1/32	1-3/8	5001-4002
3/64	1-3/4	5001-4003
5/64	2	5001-4005
3/32	2-1/4	5001-4006
7/64	2-5/8	5001-4007
1/8	2-3/4	5001-0008
9/64	2-7/8	5001-4009
11/64	3-1/4	5001-4011
13/64	3-5/8	5001-4013
15/64	3-7/8	5001-4015
17/64	4-1/8	5001-4017
9/32	4-1/4	5001-4018
11/32	4-3/4	5001-4022
23/64	4-7/8	5001-4023
27/64	5-3/8	5001-4027
29/64	5-5/8	5001-4029
15/32	5-3/4	5001-4030
31/64	5-7/8	5001-4031

SILVER & DEMMING DRILLS & SET
118° DRILL POINT • 1/2" STRAIGHT SHANK

- High Speed Steel.
- 6" overall length.
- Black oxide.
- Set supplied with case.



8PC SET, 9/16~1" x16ths
5000-0010



INDIVIDUALS

Item#	Size
5000-0050	17/32"
5000-0052	9/16"
5000-0056	5/8"
5000-0060	11/16"
5000-0064	3/4"
5000-0068	13/16"
5000-0072	7/8"
5000-0076	15/16"
5000-0078*	31/32"
5000-0080	1"
5000-0088	1-1/8"
5000-0094	1-1/4"
5000-0097	1-3/8"
5000-0099	1-1/2"

* LIMITED SUPPLY

M35 5% COBALT DRILLS
135° SPLIT POINT

- **COBALT** used for drilling in tough high tensile strength materials like stainless steel, titanium and inconel
- **135° SPLIT POINT** provides self-centering properties and secure positioning on work surface face treatment increases abrasion resistance



GROUND FROM SOLID

Size	OAL	Item#
3/64	1-3/4	5002-4003
1/16	1-7/8	5002-4004
5/64	2	5002-4005
3/32	2-1/4	5002-4006
7/64	2-5/8	5002-4007
1/8	2-3/4	5002-4008
9/64	2-7/8	5002-4009
5/32	3-1/8	5002-4010
11/64	3-1/4	5002-4011
3/16	3-1/2	5002-4012
13/64	3-5/8	5002-4013
7/32	3-3/4	5002-4014
15/64	3-7/8	5002-4015
1/4	4	5002-4016
17/64	4-1/8	5002-4017
9/32	4-1/4	5002-4018
19/64	4-3/8	5002-4019
5/16	4-1/2	5002-4020
21/64	4-5/8	5002-4021
11/32	4-3/4	5002-4022
23/64	4-7/8	5002-4023
3/8	5	5002-4024
25/64	5-1/8	5002-4025
13/32	5-1/4	5002-4026
27/64	5-3/8	5002-4027
7/16	5-1/2	5002-4028
29/64	5-5/8	5002-4029
15/32	5-3/4	5002-4030
31/64	5-7/8	5002-4031
1/2	6	5002-4032

SOLID CARBIDE DRILLS
STANDARD LENGTH, 118° SPLIT POINT

- SOLID CARBIDE used for low tensile strength materials such as zinc, brass, plastics and other abrasive material

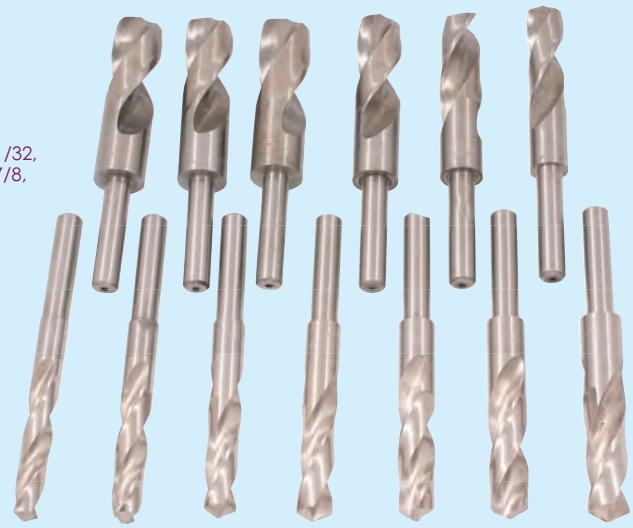


Size	OAL	Item#
1/16	1-1/2	5003-4004
5/64	1-3/4	5003-4005
3/32	2	5003-4006
7/64	2-1/4	5003-4007
1/8	2-1/4	5003-4008
9/64	2-1/2	5003-4009
5/32	2-1/2	5003-4010
11/64	2-3/4	5003-4011
3/16	2-3/4	5003-4012
13/64	3	5003-4013
7/32	3	5003-4014
15/64	3-1/4	5003-4015
1/4	3-1/4	5003-4016
17/64	3-1/2	5003-4017
9/32	3-1/2	5003-4018
19/64	3-3/4	5003-4019
5/16	3-3/4	5003-4020
21/64	4	5003-4021
11/32	4	5003-4022
23/64	4-1/4	5003-4023
3/8	4-1/4	5003-4024
25/64	4-1/4	5003-4025
13/32	4-1/4	5003-4026
27/64	4-1/4	5003-4027
7/16	4-1/4	5003-4028
29/64	4-3/4	5003-4029
15/32	4-3/4	5003-4030
31/64	4-3/4	5003-4031
1/2	4-3/4	5003-4032

13PC M35 COBALT SILVER & DEMMING DRILL SET
118° DRILL POINT • 1/2" STRAIGHT SHANK

- M35 (5%)cobalt used for drilling in tough high tensile strength materials like stainless steel, titanium and inconel.
- 6" overall length.
- Supplied with case.

13 PC SETS:
17/32, 9/16, 19/32, 5/8, 21/32, 11/16, 23/32, 3/4,13/16, 7/8, 15/16, 31/32 & 1"



13 PC SET
5000-0012

CENTER DRILLS

HSS COMBINED DRILLS & COUNTERSINKS

- Made of high speed steel and ground.
- Plain style.
- Used for centering work ends, where the workpiece is to be revolved on machine centers, 60° countersink angle fits all standard centers.

GROUND FROM SOLID



Item#	Size	Body Dia.	(Inch) Drill Dia.	OAL
5000-2020	000	1/8	.020	1-1/4
5000-2025	00	1/8	.025	1-1/4
5000-2031	0	1/8	1/32	1-1/4
5000-2047	1	1/8	3/64	1-1/4
5000-2078	2	3/16	5/64	1-7/8
5000-2109	3	1/4	7/64	2
5000-2125	4	5/16	1/8	2-1/8
5000-2187	5	7/16	3/16	2-3/4
5000-2218	6	1/2	7/32	3

HSS COMBINED DRILL & COUNTERSINK SETS

- Made of high speed steel and ground.
- Plain style.
- Used for centering work ends, where the workpiece is to be revolved on machine centers, 60° countersink angle fits all standard centers.

4PC SET
SIZE: #1~ #4
5000-0019

NEW

GROUND FROM SOLID





5PC SET
SIZE: #1~ #5
5000-0020

Size	Body Dia.	(Inch) Drill Dia.	OAL
1	1/8	3/64	1-1/4
2	3/16	5/64	1-7/8
3	1/4	7/64	2
4	5/16	1/8	2-1/8
5	7/16	3/16	2-3/4

HSS LONG SERIES CENTER DRILLS

- Made of high speed steel and ground.
- Combined drills and countersinks (60°).

GROUND FROM SOLID



Item#	Size	OAL	(Inch) Body Dia.	Drill Dia.
5000-0025	1	4	1/8	3/64
5000-0027	1	6	1/8	3/64
5000-0029	2	4	3/16	5/64
5000-0031	2	6	3/16	5/64
5000-0032	3	4	1/4	7/64
5000-0034	3	6	1/4	7/64
5000-0035	4	4	5/16	1/8
5000-0036	4	5	5/16	1/8
5000-0038	5	4	7/16	3/16
5000-0040	5	6	7/16	3/16
5000-0041	6	4	1/2	7/32
5000-0043	6	6	1/2	7/32

Pro-Series HSS CENTER DRILL SETS

NEW

- Made of high speed steel and precision ground to accuracy.
- Plain style.
- Used for centering work ends, where the workpiece is to be revolved on machine centers, 60° countersink angle fits all standard centers.

5pc set, #1~#5
5000-3001



8pc set, #1~#8
5000-3003



Size	Body Dia.	(Inch) Drill Dia.	OAL
1	1/8	3/64	1-1/4
2	3/16	5/64	1-7/8
3	1/4	7/64	2
4	5/16	1/8	2-1/8
5	7/16	3/16	2-3/4
6	1/2	7/32	3
7	5/8	1/4	3-1/4
8	3/4	5/16	3-1/4

M42 8% COBALT CENTER DRILLS

- **COBALT** used for drilling in tough high tensile strength materials like stainless steel, titanium and inconel
- Plain style.
- Used for centering work ends, where the workpiece is to be revolved on machine centers, 60° countersink angle fits all standard centers.



GROUND FROM SOLID

Item#	Size	Body Dia.	(Inch) Drill Dia.	OAL
5000-3020	000	1/8	.020	1-1/4
5000-3025	00	1/8	.025	1-1/4
5000-3031	0	1/8	1/32	1-1/4
5000-3047	1	1/8	3/64	1-1/4
5000-3078	2	3/16	5/64	1-7/8
5000-3109	3	1/4	7/64	2
5000-3125	4	5/16	1/8	2-1/8
5000-3187	5	7/16	3/16	2-3/4
5000-3218	6	1/2	7/32	3

COBALT

M42 Cobalt (8%) is designed to cut difficult and abrasive materials, ranging from medium to high hardness. Roughing end mills are made of cobalt to withstand elevated temperatures and assure high-edge hardnessduring rapid stock removal. Choose cobalt end mills on hardwork materials or when there is a problem with wear or short tool lige.

5PC M42 8% COBALT 60° CENTER DRILL SET

- **COBALT** used for drilling in tough high tensile strength materials like stainless steel, titanium and inconel
- Plain style.
- Used for producing center holes on parts that require matching between centers right hard cut.
- Creates 60° countersink.
- Double end provides two cutting ends.
- Right hand cut.

NEW

5pc set, #1~#5
5000-3011

GROUND FROM SOLID



Size	Body Dia.	(Inch) Drill Dia.	OAL
1	1/8	3/64	1-1/4
2	3/16	5/64	1-7/8
3	1/4	7/64	2
4	5/16	1/8	2-1/8
5	7/16	3/16	2-3/4

HSS & M35 COBALT ANNULAR CUTTERS, 3/4" SHANK

- **HSS** Production grade.
- Pilot holes.
- For general purpose hole making.
- Made of high speed steel, heat treated and tempered for maximum strength.
- Hardened and ground.
- **M35 Cobalt (5%)** is designed to cut difficult and abrasive materials, ranging from medium to high hardness, such ascastings and forgings. They have high heat and abrasion resistant properties and are best used when making heavy cuts, at high speeds and feeds, or where high heat is a factor.
- Pilot holes.
- Produces a slug of material.



NEW



3/4" SHANK

Size	HSS(High Speed Steel)		M35 (5% Cobalt)	
	1" Depth of Cut Item#	2" Depth of Cut Item#	1" Depth of Cut Item#	2" Depth of Cut Item#
7/16"	5020-0437	5021-0437	----------	----------
1/2	5020-0500	5021-0500	5022-0500	5023-0500
9/16	5020-0562	5021-0562	5022-0562	----------
5/8	5020-0625	5021-0625	5022-0625	5023-0625
11/16	5020-0687	5021-0687	5022-0687	----------
3/4	5020-0750	5021-0750	5022-0750	5023-0750
13/16	5020-0812	5021-0812	5022-0812	----------
7/8	5020-0875	5021-0875	5022-0875	5023-0875
15/16	5020-0937	5021-0937	5022-0937	----------
1	5020-1000	5021-1000	5022-1000	5023-1000
1-1/16	5020-1062	5021-1062	5022-1062	5023-1062
1-1/8	5020-1125	5021-1125	5022-1125	5023-1125
1-3/16	5020-1187	5021-1187	5022-1187	----------
1-1/4	5020-1250	5021-1250	5022-1250	5023-1250
1-5/16	5020-1312	5021-1312	5022-1312	----------
1-3/8	5020-1375	5021-1375	5022-1375	5023-1375
1-7/16	5020-1437	5021-1437	5022-1437	----------
1-1/2	5020-1500	5021-1500	5022-1500	5023-1500
1-9/16	5020-1562	5021-1562	5022-1562	----------
1-5/8	5020-1625	5021-1625	5022-1625	5023-1625
1-11/16	5020-1687	5021-1687	5022-1687	----------
1-3/4	5020-1750	5021-1750	5022-1750	5023-1750
1-13/16	5020-1812	5021-1812	5022-1812	----------
1-7/8	5020-1875	5021-1875	5022-1875	----------
1-15/16	5020-1937	5021-1937	5022-1937	----------
2	5020-2000	5021-2000	5022-2000	5023-2000

9PC 1/2 INCH CUTTING DEPTH HSS ANNULAR CUTTER SET

- Material Application: Hardened Steel; Mild Steel; Stainless Steel
- Bright Finish, High Speed Steel
- Thread Mount Shank
- 1/2 Inch Cutting Depth
- 7/8 to 1-1/2 Inch Cutter Diameter
- 1/2-20 Thread Hole.

NEW

Set Includes:

6 - Annular Cutters 7/8, 1, 1-1/8, 1-1/4, 1-3/8 & 1-1/2"
1 - Arbor Assembly
1 - Center Punch
1 - Pilot
Fitted Case

9PC SET
5020-5001





PIN FOR ANNULAR CUTTER

- Fits annular cutters.
- Hardened and ground.



For 1" Depth Cutter
5020-0003
6.34/5.30 x 77mm

For 2" Depth Cutter
5020-0006
6.34/5.30 x 102mm

COUNTERSINKS & DOVETAIL CUTTERS

82° 6 FLUTE CHATTERLESS COUNTERSINKS & SET
For Producing Machined Countersinks In Holes

- Right Hand.
- High speed steel.
- 6 fluted cutters with relatively short length for maximum rigidity.



8 PC SET
1/4~ 1"
2001–3001

INDIVIDUALS

Item#	Size	(Inch) Shank Dia.	Overall Length
2001-3187	3/16	3/16	1-1/2
2001-3250	1/4	1/4	1-1/2
2001-3312	5/16	1/4	1-3/4
2001-3375	3/8	1/4	1-3/4
2001-3500	1/2	1/4	2-1/8
2001-3625	5/8	1/2	2-3/8
2001-3750	3/4	1/2	2-11/16
2001-3875	7/8	1/2	2-13/16
2001-4000	1	1/2	2-13/16
2001-4250	1-1/4	3/4	3-3/8
2001-4500	1-1/2	3/4	3-1/2
2001-4750	1-3/4	1	4-1/4
2001-4999	2	1	4-3/8

HSS 82° 3-FLUTE COUNTERSINKS & SET

- Utilized in countersinking screw and rivet heads and for centering lathe work.
- 3-Flute eliminates chatter in most applications, while providing better accuracy than a single flute countersink.
- Set complete with wooden case.

HIGH SPEED STEEL



5 PC SET
1/4,3/8,1/2,3/4 & 1"
2001–2005

INDIVIDUALS

Diameter(Inch) Cutter	Shank	OAL Approx.	82° Item#
1/4	3/16	1-1/2	2001-1250
3/8	1/4	1-3/4	2001-1375
1/2	3/8	2	2001-1500
5/8	3/8	2-1/4	2001-1625
3/4	1/2	2-5/8	2001-1750
1	1/2	2-3/4	2001-2000

5PC ZERO-FLUTE COUNTERSINK & DEBURRING TOOL SETS

- Cam relieved for totally chatter free cuts
- Through hole design that is easy to re-sharpen using a small grinding wheel in cross-hole
- Excels in aluminum, plastics and other nonmetallics



82°, 5 PC SET
2001–0006

5 PC INCLUDES

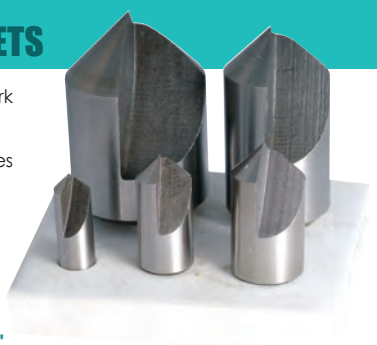
Size	Dia. Cut Range	Shank Diameter
0 double end	1/16~15/64"	1/4"
1 single end	5/32~13/32"	1/4"
2 single end	3/16~17/32"	1/4"
3 single end	5/16~25/32"	1/2"
4 single end	9/16~1-3/32"	1/2"

HIGH SPEED STEEL

Item#	Degree
2001-0005	60°
2001-0006	82°
2001-0007	90°

SINGLE FLUTE COUNTERSINKS & SETS

- For portable and machine work when operated at comparatively high speeds
- Single flutes will countersink holes much smaller than multi-flute tools



5 PC. SETS: 1/4, 3/8, 1/2, 3/4 & 1"

Degree	Item#
60°	2000-0030
82°	2000-0031
90°	2000-0032

HIGH SPEED STEEL

INDIVIDUAL(Inch), 82°

Diameter Body	End	Dia. of Shank	OAL Approx.	82°, HSS Item#
1/4	1/32	1/4	2	2001-0250
3/8	1/32	1/4	2	2001-0375
1/2	1/32	1/4	2	2001-0500
5/8	1/32	3/8	2-1/4	2001-0625
3/4	1/8	1/2	2-3/4	2001-0750
1	1/8	1/2	2-3/4	2001-1000

60° ANGLE DOVETAIL CUTTERS & SET

5PC SET INCLUDES:
- Cutter Diameters: 3/8, 1/2, 3/4, 1-3/8 & 1-7/8"
- Supplied with wooden stand

5 PC SET
2006–0205

HIGH SPEED STEEL • RIGHT HAND CUT • 60° ANGLE



Item#	Cutter Dia. (Inch)	Shank Dia. (Inch)	Face OAL (Inch)	Length of Cut (Inch)
2006-0210	3/8	3/8	2-1/8	3/16
2006-0212	1/2	3/8	2-1/8	1/4
2006-0214	3/4	3/8	2-1/8	5/16
2006-0216	1-3/8	5/8	2-7/8	9/16
2006-0218	1-7/8	7/8	3-1/4	13/16
2006-0220	2-1/4	1	3-3/4	1-1/16

DEBURRING TOOL SETS



Item#	Style	Set Includes
2001-0220	B	4pc set -plastic handle, telescoping holder and blades B10 & B20
2001-0222	E	5pc set -plastic handle, telescoping holder and blades E100, E200 & E300

UNIVERSAL DEBURRING SET

SET INCLUDES:
4 - Handles
4 - Blades:
B10 (for Aluminum)
B20 (for Brass & Cast iron)
E100 (for Steel)
E102 (for Plastic)

8 PC SET
2001-0223



ROYAL STYLE DEBURRING TOOL SET

- Pressing locking button to change blades.
- Blades can be stored in the handle.
- Accepts all " E" blades on the market.

SET INCLUDES:
HANDLE BLADES:
E100, E101, E102,
E200 & E350



6 PC SET
2001-0226

5PC BLADES
(One each of E100,E101,E102,E200 & E350).....Item **2001-2261**

MINI DEBURRING & SCRAPING TOOL KIT



- Easy to reach the most inaccessible areas.
- Finishes workpiece perfectly.
- In fitted case

KIT INCLUDES:
Flat diamond coated file,
triangular scraper,
round scraper,
swivel blade tool,
rotating deburring tool,
flat scraper.

Limited Supply!

6 PC SET
2001-0228

EDGE OFF STYLE DEBURRING TOOL

- Hexagonal aluminum handle with pocket clip.
- E100 blade mounted (not replaceable).

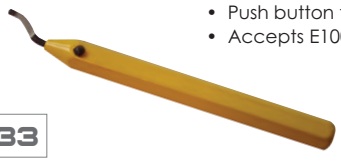


2001-0232



RAPID PUSH BUTTON DEBURRING TOOL

- Push button to change blade.
- Accepts E100 blade (included).



2001-0233



DEBURRING BLADES

SOLD IN PACKAGE QUANTITY !
Price Per Package of 10

10 PC PER PACKAGE

Blade Style	Item#	Description	Used with Set	Blade	APPLICATIONS: Straight Edge	Hole Edge	Cross-Hole Both-Edges	Hole Black-Edge	Hole Inner Surface	Flat Surface	Sheet	MATERIALS: Steel	Aluminum	Copper	Brass	Cast Iron	Stainless Steel	Hardened	Plastics
B10	**2001-2201**	HSS. Deburrs materials with spiral chips	B		X	X						X	X	X					X
B20	**2001-2202**	HSS. Rotates clockwise & counterclockwise	B		X	X									X	X			X
B30	**2001-2203**	Simultaneously deburrs the inside and outside of holes up to 0.16" (4mm) thick	B				X					X	X	X					X
E100	**2001-2251**	Heavy-duty HSS. Deburrs material with spiral chips	E									X	X	X					X
E200	**2001-2252**	HSS for materials with powdery chips. Rotates clockwise & counterclockwise	E		X	X									X	X			X
E300	**2001-2253**	HSS for materials with spiral chips. Simultaneously deburrs the inside and outside of holes up to 0.24" (6mm) thick	E				X					X	X	X					X
E350	**2001-2258**	HSS for materials with powdery chips. Rotates clockwise & counterclockwise	E		X	X									X	X			X

FILES & DEBURRING TOOLS

SCRAPER SET

- Triangular blades with 3 cutting edges and a telescopic blade holder that lets you reach hard to access areas.
- Provides maximum grip comfort when used with UNI handle.

SET INCLUDES:
UNI Handle with hex inner thread holder, Scraper D20, C25, D30, D40 & Wrench



6 PC SET
2001–0224

6PC COUNTERSINK SET

- For chamfering and countersinking.
- Complete with fitted case.



INCLUDES:
UNI handle
M7 holder
Countersink: C12, C20 & C30
Wrench

2001–0234

20PC DIAMOND PIN SET

- Various shapes and grit sizes for grinding carbide, ceramics, etc.
- Overall length 1-3/4" .
- Suitable for grinding in tight or precision areas, on jigs, dies and fixtures.



1/8" SHANK
3000–0049

12PC NEEDLE FILE SETS

- Industrial grade.
- Complete with durable pouch.
- **Shapes: Barrette, Crossing, Equalling, Half Round, Round Edge Joint, Knife, Marking, Round, Slitting, Square, Three Square and Warding**

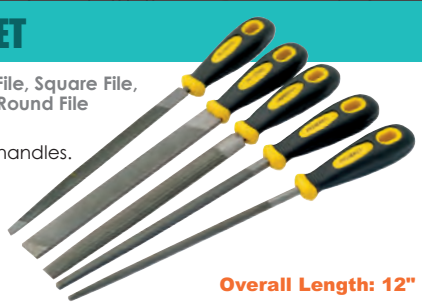


#0 Cut
3000–0080

5-1/2" OAL

5PC STEEL FILE SET

- **Shapes: Flat File, Round File, Square File, Three Square File & Half Round File**
- For general purpose.
- Complete with durable handles.



3000–0055

Overall Length: 12"

10PC DIAMOND NEEDLE FILE SET
MEDIUM-D126

- Can be used on carbide, hardened steel, glass and ceramics. Made with a hard chrome bond that gives a long life and wears extremely well.
- Overall length 5-1/2" .
- Diamond impregnated length: 1-9/16".
- In fitted pouch.

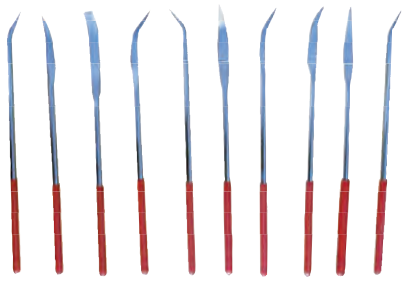


INCLUDES SHAPES:
2 of round,
2 of hand,
1 of square,
Three - square,
half round,
barrette, flat, knife.

3000–0062

10PC DIAMOND RIFFLER FILE SET
MEDIUM-D126

- Can be used for cleaning odd and difficult places.
- Diamond impregnated length: 1-9/16" .
- Overall length 5-1/2" .
- With fitted pouch.



3000–0072

SELF STARTING STEP DRILLS & SETS

- Made of **high speed steel**, heat treated and tempered for maximum strength.
- Requires no center punch to start drilling.
- Automatically deburrs drilled hole.



5000-0890 Shown

3 PC SET
5000–0889
INCLUDES: 1/8-1/2x1/32", 3/16-1/2x1/16", 1/4-3/4x1/16"



3 PC SET, TiN Coated
5000–0890
INCLUDES: 1/8-1/2x1/32", 3/16-1/2x1/16", 1/4-3/4x1/16"

INDIVIDUALS

Hole Range	Step	Step Depth	Shank	Uncoated Item#	TiN Coated Item#
1/8~1/2x1/32"	13	1/8"	1/4"	5000-0013	5000-0500
3/16~1/2x1/16"	6	3/8"	1/4"	5000-0014	5000-0501
1/4~3/4x1/16"	9	1/8"	3/8"	5000-0015	5000-0750
3/16~7/8x1/16"	12	1/8"	3/8"	5000-0016	5000-0875
1/4~1-3/8x1/8"	10	1/8"	1/2"	5000-0017	5000-0876

HSS ADJUSTABLE BLADE REAMERS & SETS

- Adjustable blade lets you handle multiple hole sizes with a single tool and multiple tools in each set let you handle even more hole sizes, making these sets virtually indispensable. Reamers are hardened, precision-ground high speed steel with a black oxide finish and include a wooden storage box.
- Ends are center drilled so blades can be sharpened in place.
- Blades are adjusted by loosening one nut and tightening the other.
- Each reamer expands to the next size.
- Adjustable blades give the operator the ability to handle multiple hole sizes with a single tool, making them a good choice for users with low volume reaming needs.
- Square end allows the user to turn the reamer by hand with an adjustable wrench or straight handle tap wrench.

NEW

HIGH SPEED STEEL



2006-0024 Shown 2006-0026 Shown 2006-0028 Shown

Size	Set	Capacity Range	Item#
#8/A - 5/A	4	1/4~3/8"	**2006-0024**
A-H(15/32~1-1/16")	8	15/32~1-1/16"	**2006-0026**
A-K(15/32~1-1/2")	11	15/32~1-1/2"	**2006-0028**

STRAIGHT FLUTE REAMERS SHOULD BE USED IN THRU-HOLE APPLICATIONS ONLY



INDIVIDUALS

Item#	Size	Range	OAL
2006-0070	#8/A	1/4 to 9/32	3-1/4
2006-0072	#7/A	9/32 to 5/16	3-1/2
2006-0073	#6/A	5/16 to 11/32	4-1/8
2006-0074	#5/A	11/32 to 3/8	4-3/8
2006-0075	#4/A	3/8 to 13/32	4-3/4
2006-0076	#3/A	13/32 to 7/16	5
2006-0077	#2/A	7/16 to 15/32	5-1/4
2006-0078	A	15/32 to 17/32	5-1/2
2006-0079	B	17/3219/32	5-3/4
2006-0080	C	19/32 to 21/32	6-1/2
2006-0081	D	21/32 to 23/32	6-3/4
2006-0082	E	23/32 to 25/32	7
2006-0083	F	25/32 to 27/32	7-3/8
2006-0084	G	27/32 to 15/16	8
2006-0085	H	15/16 to 1-1/16	9
2006-0086	I	1/1/16 to 1-3/16	10
2006-0087	J	1-3/16 to 1-11/32	11
2006-0088	K	1-11/32 to 1-1/2	12
2006-0089	L	1-1/2 to 1-13/16	14
2006-0090	M	1-13/16 to 2-7/32	16

CARBIDE ROTARY BURRS

NEW

- All rotary burs have hardened steel shanks.



SA Carbide Cylindrical Shape

Industrial No.	Cut Dia (In)	Cut Length (In)	Shank Dia. (In)	Item#
SA-1	1/4	5/8	1/4	**3000-0101**
SA-3	3/8	3/4	1/4	**3000-0103**
SA-5	1/2	1	1/4	**3000-0105**
SA-6	5/8	1	1/4	**3000-0106**
SA-7	3/4	1	1/4	**3000-0107**



SC Carbide Cylindrical Ball Nose Shape

Industrial No.	Cut Dia (In)	Cut Length (In)	Shank Dia. (In)	Item#
SC-1	1/4	5/8	1/4	**3000-0111**
SC-3	3/8	3/4	1/4	**3000-0113**
SC-5	1/2	1	1/4	**3000-0115**
SC-6	5/8	1	1/4	**3000-0116**
SC-7	3/4	1	1/4	**3000-0117**



SD Carbide Ball Shape

Industrial No.	Cut Dia (In)	Cut Length (In)	Shank Dia. (In)	Item#
SD-1	1/4	1/4	1/4	**3000-0121**
SD-3	3/8	3/8	1/4	**3000-0123**
SD-5	1/2	1/2	1/4	**3000-0125**
SD-6	5/8	5/8	1/4	**3000-0126**
SD-7	3/4	3/4	1/4	**3000-0127**



SE Carbide Egg Shape

Industrial No.	Cut Dia (In)	Cut Length (In)	Shank Dia. (In)	Item#
SE-3	3/8	5/8	1/4	**3000-0133**
SE-5	1/2	7/81	1/4	**3000-0135**
SE-6	5/8	1	1/4	**3000-0136**
SE-7	3/4	1	1/4	**3000-0137**



SF Carbide Round Nose Tree Shape

Industrial No.	Cut Dia (In)	Cut Length (In)	Shank Dia. (In)	Item#
SF-1	1/4	5/8	1/4	**3000-0141**
SF-3	3/8	3/4	1/4	**3000-0143**
SF-5	1/2	1	1/4	**3000-0145**
SF-6	5/8	1	1/4	**3000-0146**
SF-7	3/4	1	1/4	**3000-0147**

1/4" SHANK CARBIDE BURR SETS -Double Cut





Overall Length: 2"

5 PC SET	9 PC SET*	12 PC SET
3000-0005	**3000-0009**	**3000-0012**
SA-3,SC-3,SF-3, SG-3 & SD-3	SA-1, SA-3, SA-5, SC-1, SC-3, SC-4, SC-5, SF-1 & SF-3	SA-14,SA-1,SC-14,SC-1,SD-14,SD-1, SE-1,SF-1,SG-1,SM1,SM2 & SN-1

*Limited supply

Type	Cutting Dia.	Cutting Lenth	Shape
SA-1	1/4	5/8	Cylindrical
SA-3	3/8	3/4	Cylindrical
SA-5	1/2	1	Cylindrical
SA-14	3/16	5/8	Cylindrical
SC-1	1/4	5/8	Cylindrical Radius End
SC-3	3/8	3/4	Cylindrical Radius End
SC-5	1/2	1	Cylindrical Radius End
SD-14	3/16	--	Ball
SD-1	1/4	--	Ball
SD-3	3/8	--	Ball
SE-1	1/4	3/8	Oval
SF-1	1/4	5/8	Oval
SF-3	3/8	3/4	Oval
SF-5	1/2	1	Oval
SG-1	1/4	5/8	Tree Point End
SG-3	3/8	3/4	Tree Point End
SM-1	1/4	1/2	Cone 22 Degree
SM-2	1/4	3/4	Cone 14 Degree
SN-1	1/4	5/16	Inverted Cone 10 Degree

NEW

REAMERS & COUNTERBORES

HSS CHUCKING REAMER SETS
• HIGH SPEED STEEL • STRAIGHT SHANK • STRAIGHT FLUTES

- Used in general purpose though-hole applications.
- Used for reaming holes without interrupted cuts.
- Hight speed steel.
- Straight shank.
- Straight flutes.

14 PC SET INCLUDES:
0.1240, 0.1260, 0.1865, 0.1885, 0.2490, 0.2510, 0.3115, 0.3135, 0.3740, 0.3760, 0.4365, 0.4385, 0.4995, 0.5010"

14 PC SET
2006–0001
.1240 ~ .5010"

29 PC SET
2006–0011
1/16~1/2" x 64ths

60 PC SET
2006–0060
#1 ~ #60

NEW



HSS SPIRAL FLUTE TAPER PIPE REAMERS

NEW

- Right hand cut tapered 3/4" per foot.
- Designed for reaming holes to be tapped with American Standard Taper Pipe Taps (NPT).



HIGH SPEED STEEL . SPIRAL FLUTE

Item#	Size	Large End Dia.	(Inch) Small End Dia.	Flute Length	Overall Length
2006-2014	1/16	.291	.245	3/4	2
2006-2018	1/8	.362	.316	3/4	2-1/8
2006-2026	1/4	.472	.406	1-1/16	2-7/16
2006-2034	3/8	.606	.540	1-1/16	2-9/16
2006-2042	1/2	.751	.665	1-3/8	3-1/8
2006-2058	3/4	.962	.876	1-3/8	3-1/4
2006-2074	1	1.212	1.103	1-3/4	3-3/4
2006-2090	1-1/4	1.553	1.444	1-3/4	4

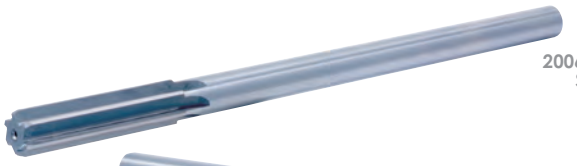
STRAIGHT SHANK HSS CHUCKING REAMERS

NEW

- ANSI standard.
- Suitable for production reaming of most materials.
- Used in general purpose though-hole applications.
- Used for reaming holes without interrupted cuts.

Item#	Size	Flute Length	OAL
2006-3004	1/16	3/8	1-1/2
2006-3008	1/8	7/8	3-1/2
2006-3009	9/64	1	4
2006-3010	5/32	1	4
2006-3012	3/16	1-1/8	4-1/2
2006-3014	7/32	1-1/4	5
2006-3015	15/64	1-1/2	6
2006-3016	1/4	1-1/2	6
2006-3020	5/16	1-1/2	6
2006-3023	23/64	1-3/4	7
2006-3024	3/8	1-3/4	7
2006-3027	27/64	1-3/4	7
2006-3028	7/16	1-3/4	7
2006-3031	31/64	2	8
2006-3032	1/2	2	8
2006-3036	9/16	2	8
2006-3040	5/8	2-1/4	9
2006-3044	11/16	2-1/4	9
2006-3048	3/4	2-1/2	9-1/2
2006-3056	7/8	2-5/8	10
2006-3100	1	2-3/4	10-1/2

- High speed steel
- Straight flute.
- 45 degree lead chamfer allows gradual starting load.
- Designed for use in drill presses, turret lathes, and screw machines.



2006-3032 Shown



2006-3640 Shown

Over-Under Reamers

Item #	Size	Flute Length	OAL
2006-3510	.1240	7/8	3-1/2
2006-3520	.1260	7/8	3-1/2
2006-3530	.1865	1-1/8	4-1/2
2006-3540	.1885	1-1/8	4-1/2
2006-3550	.2490	1-1/2	6
2006-3560	.2510	1-1/2	6
2006-3590	.3740	1-3/4	7
2006-3600	.3760	1-3/4	7
2006-3630	.4990	2	8
2006-3640	.5010	2	8

3 FLUTE METRIC SOLID PILOT COUNTERBORES-STRAIGHT SHANK

NEW

- Continuous pilot counterbores cut rapidly, smoothly and accurately, producing long spiraling chips rather than small metal particles.
- The pilot extends the full length of the flute portion of the tool.
- As cutter flutes are ground back due to wear, a new section of pilot becomes exposed.
- The pilot head may be cut off to any desired length when repeated sharpening make it too long for practical use.
- Continuous pilot counterbores have a life many times that of the conventional type counterbore.

High Speed Steel



Cap Screw	Cutter Dia.	(mm) Pilot Dia.	Shank Dia.	OAL	Item#
M3	6.0	3.4	5.0	71	2007-0051
M3.5	6.5	3.7	5.0	71	2007-0053
M4	8.0	4.5	5.0	71	2007-0055
M5	10.0	5.5	8.0	80	2007-0057
M6	11.0	6.6	8.0	80	2007-0060
M8	15.0	9.0	12.5	100	2007-0062
M10	18.0	11.0	12.5	100	2007-0064
M12	20.0	13.5	12.5	100	2007-0066
M14	24.0	16.0	12.5	100	2007-0068

40PC HSS COUNTERBORE SET
Straight Shank • Interchangeable Pilot

- High speed steel.
- Straight shank

2007-0040



SET INCLUDES:

26 Pilots
- 3/32" Shank: 1/8, 5/32, 3/16 & 1/4"
- 5/32" Shank: 3/16, 7/32, 1/4, 9/32 & 5/16"
- 3/16" Shank: 1/4, 5/16, 3/8, 7/16 & 1/2"
- 1/4" Shank: 5/16, 3/8, 7/16, 1/2, 9/16 & 5/8"
- 5/16" Shank: 3/8, 7/16, 1/2, 9/16, 5/8 & 3/4"

13 Counterbores
- 1/4" thru 1" by 16ths.
- Supplied in fitted case.

21PC INTERCHANGEABLE PILOT COUNTERBORE SET
High Speed Steel • Straight Shank

SET INCLUDES:

14 Pilots (5/32" Shank)
- 0.187, 0.204, 0.213, 0.229, 1/4, 17/64, 9/32, 5/16, 21/64, 11/32, 3/8, 25/64, 13/32 & 7/16"

6 Counterbores (14mm shank)
- 5/16, 3/8, 7/16,1/2, 9/16 & 5/8"

1 Holder
- **3/8" Straight Shank**

- High speed steel.
- Straight shank

Supplied in Fitted Case

2007-0021



2 FLUTE SOLID CAP SCREW COUNTERBORES



- High speed steel.
- Straight shank

FOR SOCKET HEAD CAP SCREWS

(Inch) Size	Pilot Size	Cutting Dia.	Shank Dia.	OAL	Item#
1/4	1/4	13/32	3/8	3-5/8	**2007-0105**
5/16	5/16	15/32	7/16	4	**2007-0106**
3/8	3/8	19/32	1/2	4-3/8	**2007-0107**
7/16	7/16	21/32	1/2	4-3/4	**2007-0108**
1/2	1/2	25/32	3/4	5-1/8	**2007-0109**

2MT SHANK-For 21PC Counterbore Set

NEW

- Morse taper #2 shank.
- Overall length: 135mm.
- Hole Diamter: 14mm.

2007-0022



For use with our 21pc counterbore, take 14mm shank counterbores.

3-FLUTE SOLID PILOT COUNTERBORES & SETS FOR SOCKET HEAD CAP SCREWS

- 3-Flute, straight shank
- Continuous pilot counterbores cut rapidly, smoothly and accurately, producing long spiraling chips rather than small metal particles
- The pilot extends the full length of the flute portion of the tool
- As cutter flutes are ground back due to wear, a new section of pilot becomes exposed
- The pilot head may be cut off to any desired length when repeated sharpening make it too long for practical use
- Continuous pilot counterbores have a life many times that of the conventional type counterbore.
- Set supplied with fitted wooden case.



NEW



HIGH SPEED STEEL



7 PC SET (#6~1/2")
2007-0002
#6, 8, 10, 1/4, 5/16, 3/8, 1/2"



6 PC SET (1/4~3/4")
2007-0003
1/4, 5/16, 3/8, 1/2, 5/8, 3/4"

INDIVIDUALS

Cap Screw	Cutter Dia.	(Inch) Pilot Dia.	Shank Dia.	OAL	Item#
#6	.242	.150	7/32	3	**2007-0006**
#8	19/64	11/64	1/4	3	**2007-0008**
#10	21/64	13/64	5/16	3-1/2	**2007-0010**
1/4	13/32	9/32	3/8	5	**2007-0016**
5/16	1/2	11/32	7/16	5	**2007-0020**
3/8	19/32	13/32	1/2	6	**2007-0024**
1/2	25/32	17/32	3/4	7-1/2	**2007-0032**
5/8	31/32	21/32	3/4	7-1/2	**2007-0033**
3/4	1-3/16	13/16	1	8	**2007-0034**

SPIRAL POINT TAPS-Plug Type

GROUND FROM SOLID
FOR THROUGH HOLES



GROUND THREAD, HIGH SPEED STEEL

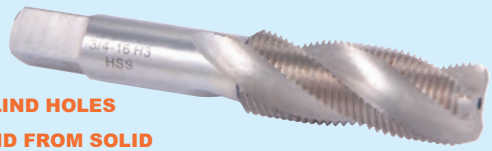
Item#	Size	H Limit/Flute
1011-6004	0~80NF	H-2/2
1011-6006	1~64NC	H-1/2
1011-6012	1~72NF	H-2/2
1011-6014	2~56NC	H-2/2
1011-6016	2~64NF	H-2/2
1011-6018	3~48NC	H-2/2
1011-6020	3~56NF	H-2/2
1011-6022	4~40NC	H-2/2
1011-6026	4~48NF	H-2/2
1011-6028	5~40NC	H-2/2
1011-6032	5~44NF	H-2/2
1011-6036	6~32NC	H-3/2
1011-6040	6~40NF	H-2/2
1011-6042	8~32NC	H-2/2

Item#	Size	H Limit/Flute
1011-6044	8~32NC	H-3/2
1011-6048	8~36NF	H-2/2
1011-6050	10~24NC	H-2/2
1011-6058	10~32NF	H-3/2
1011-6062	12~24NC	H-3/2
1011-6064	12~28NF	H-3/2
1011-6074	1/4"~20NC	H-3/3
1011-6078	1/4"~28NF	H-3/3
1011-6094	5/16"~18NC	H-3/3
1011-6102	5/16"~24NF	H-3/3
1011-6106	3/8"~16NC	H-3/3
1011-6112	3/8"~24NF	H-3/3
1011-6114	7/16"~14NC	H-3/3
1011-6120	7/16"~20NF	H-3/3

Item#	Size	H Limit/Flute
1011-6122	1/2"~13NC	H-3/3
1011-6126	1/2"~20NF	H-3/3
1011-6130	9/16"~12NC	H-3/3
1011-6136	9/16"~18NF	H-3/3
1011-6138	5/8"~11NC	H-3/3
1011-6142	5/8"~18NF	H-3/3
1011-6146	11/16"~11NS	H-3/3
1011-6148	11/16"~16NS	H-3/3
1011-6150	3/4"~10NC	H-3/3
1011-6154	3/4"~16NF	H-3/3
1011-6160	7/8"~9NC	H-4/4
1011-6164	7/8"~14NF	H-4/4
1011-6168	1"~8NC	H-4/4
1011-6170	1"~12NF	H-4/4
1011-6172	1"~14NS	H-4/4

SPIRAL FLUTE TAPS-Bottom Type

GROUND THREAD, HIGH SPEED STEEL



FOR BLIND HOLES
GROUND FROM SOLID

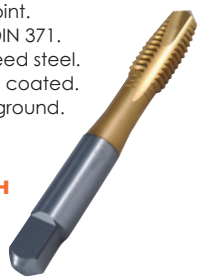
Item#	Size	H Limit/Flute
1011-8505	4-40NC	H-2/2
1011-8513	6-32NC	H-3/2
1011-8517	8-24NC	H-3/2
1011-8518	8-32NC	H-3/2
1011-8609	10-24NC	H-3/2
1011-8610	10-32NF	H-3/2
1011-8613	1/4"-20NC	H-3/3
1011-8614	1/4"-28NF	H-3/3
1011-8615	5/16"-18NC	H-3/3
1011-8616	5/16"-24NF	H-3/3
1011-8617	3/8"-16NC	H-3/3
1011-8618	3/8"-24NF	H-3/3
1011-8621	1/2"-13NC	H-3/3
1011-8622	1/2"-20NF	H-3/3
1011-8626	5/8"-11NC	H-3/3
1011-8627	5/8"-18NF	H-3/3
1011-8628	3/4"-10NC	H-3/3
1011-8629	3/4"-16NF	H-3/3

METRIC SPIRAL POINT TIN COATED TAPS-Plug

GROUND FROM SOLID

- Spiral point.
- Metric DIN 371.
- High speed steel.
- Titanium coated.
- Thread ground.

FOR THROUGH HOLES



Item#	Size	Limit
1011-7700	M2-0.4	D3
1011-7699	M2.5-0.45	D3
1011-7701	M3-0.5	D3
1011-7702	M4-0.7	D4
1011-7703	M5-0.8	D4
1011-7704	M6-1.0	D5
1011-7705	M8-1.25	D5
1011-7706	M10-1.25	D5
1011-7707	M10-1.50	D6
1011-7708	M12-1.75	D6

METRIC 35° SPIRAL FLUTE TIN COATED TAPS-Bottom

GROUND FROM SOLID

- 35° Spiral flute.
- Metric DIN 371.
- High speed steel.
- Titanium coated.
- Thread ground.



FOR BLIND HOLES

Item#	Size	Limit
1011-7752	M2-0.4	D3
1011-7750	M2.5-0.45	D3
1011-7753	M3-0.5	D3
1011-7754	M4-0.7	D4
1011-7755	M5-0.8	D4
1011-7756	M6-1.0	D5
1011-7758	M8-1.25	D5
1011-7759	M10-1.25	D5
1011-7760	M10-1.50	D6
1011-7762	M12-1.75	D6

STANDARD HAND TAPS

HIGH SPEED STEEL
GROUND THREAD
GROUND FROM THREAD



Limited Supply!

TAPER: 7-10 THREAD CHAMFER
PLUG: 3-5 THREAD CHAMFER
BOTTOM: 1-2 THREAD CHAMFER

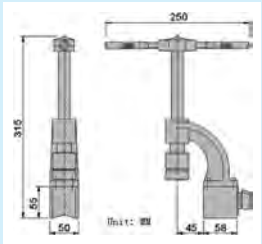
Size	No. of Flutes	Thread Limit	*Taper* Item#	*Bottom* Item#	*Plug* Item#
4-40NC	3	H2	1012-0440	1014-0440	1013-0440
6-32NC	3	H3	1012-0632	1014-0632	1013-0632
8-32NC	3	H3	1012-0832	1014-0832	1013-0832
10-24NC	4	H3	1012-1024	1014-1024	1013-1024
10-32NF	4	H3	1012-1032	1014-1032	1013-1032
1/4-20NC	4	H3	1012-2520	1014-2520	1013-2520
1/4-28NF	4	H3	1012-2528	1014-2528	1013-2528
5/16-18NC	4	H3	1012-3118	1014-3118	1013-3118
3/8-16NC	4	H3	1012-3716	1014-3716	1013-3716
3/8-24NF	4	H3	----------	1014-3717	---------
7/16-20NF	4	H3	1012-4320	1014-4320	1013-4320
1/2-13NC	4	H3	1012-5013	1014-5013	1013-5013
1/2-20NF	4	H3	1012-5020	1014-5020	1013-5020

HAND TAPPER ON MAG BASE



- Compact and portable design, easy to operate.
- Guide bar helps the tap positioning precisely.
- Evenly force delivering during operation prevent tap from breaking.
- Quick chuck enables the tap to be easily loaded and took off.
- Powerful permanent magnet seat with On/Off switch.

Tap Capacity 0~1/2"
3900-0254



SELF-ALIGNING TAP & REAMER HOLDERS

NEW



- Base of guide has two 120° Vees, which accepts round parts.
- New 4 jaw design provides firm grip and 90° alignment, eliminates tap breakage while producing perfectly aligned theads.

3900-0291 Shown



Tap Range: 0~#8
3900-0291



NEW DESIGN



3900-0293 Shown

Tap Range 0~1/2"
(2 Collets-0~#8 & #10~1/2")
3900-0293

RATCHET T-HANDLE TAP HOLDERS & SET



- Ratcheting type.
- This tap holder is made of tool steel, hardened and ground.
- Can be used for holding taps, reamers.

3 PC SET
#0~1/2"
3900-0240

Item#	Body Length	Capacity for Tap Size	Square Shank
3900-0241	2-1/8"	1/16~3/16"	1/16~5/32"
3900-0245	2-5/8"	7/32~7/16"	5/32~1/4"
3900-0248	3-1/2"	1/4~1/2"	3/16~5/16"

ADJUSTABLE TAP & REAMER WRENCHES & SET

- Knurled steel handles.
- Jaws surface hardened.
- Zinc die casting.

4 PC SET
#0, 1-1/2, 3, 4
3900-0236

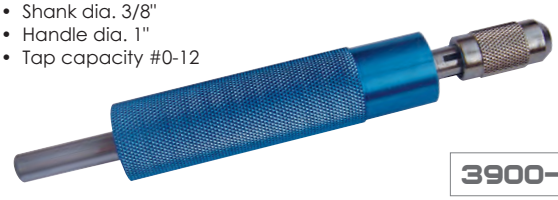




Item#	Size	Range For Hand Taps	Range For Pipe Taps	OAL
3900-0209	#0	0~1/4"	None	5"
3900-0210	#1-1/2	1/16~1/2"	None	7"
3900-0232	#2	1/64~15/32"	1/8"	11"
3900-0211	#3	3/16~3/4"	1/8~3/8"	15"
3900-0235	#4	1/4~1-1/8"	1/8~3/4"	19"
3900-0237	#5	1/2~1-1/4"	1/4~1"	30"

MACHINE TAPPING GUIDE

- Provide sensitive feel for hand tapping small holes on mills and drill presses
- Starts every hole straight and prevents tap breakage
- Shank dia. 3/8"
- Handle dia. 1"
- Tap capacity #0-12



3900-0220

SPRING-LOADED TAP GUIDE

- Adjustable tension spring
- Reversible tension pin for male and female hole centering or tapping
- 1/2" dia. hardened shank, knurled for easy handling
- 3/16" dia. hardened tension pin

FOR DRILL PRESSES & MILLS



3900-0215

TAP WRENCH EXTENTIONS

- High-quality precision tap extensions.
- Two-jaw chuck.



Item#	Tap Capacity	Length	Shank
3900-0218	#0 ~ 12	7"	3/8"
3900-0219	#12 ~ 1/2"	10-3/4"	1/2"

SELF REVERSING TAPPING HEAD SET



- Adjustable torque prevents damage and tap breakage.
- High reverse ratio increases productivity.
- Jacobs mount can be adapted to most spindles with the help of an arbor.
- Thread mount are designed to adapt to tapping machines or fixed, threaded mount spindles.
- **Includes: 2 rubber flex collets and 2 shanks.**

For Drill Presses, Drill Units & Manually Operated Machines With Rotating Spindles !

Capacity in Steel	Item#	Mount	Included Shanks
#0-1/4" (M1.4-M7)	**3900-1250**	JT6	2 &3 MT
	3900-1251	JT33	2&3 MT
#6-1/2" (M3-M12)	**3900-1500**	JT6	3 & 4 MT
	3900-1501	JT33	3 & 4 MT
#10-3/4" (M3-M20)	**3900-1750**	JT3	3 & 4 MT

PRECISION HAND TAPPER

- Precision ground work table and spindle to high accuracy.
- **9 tap adapters included: #6, #8, #10, 1/4, 5/16, 3/8, 7/16, 1/2 & 5/8" .**
- Assures straight perpendicular tapped holes.
- Rigid structure made of high grade tool steel.
- Equipped with tap guide.
- Working Area: 6-1/2" x 10"
- Clearance Height: 7"
- Depth of Throat: 7-1/2"
- Overall Height: 13"
- Weight: 37 lbs.

3900-0250



Replacement Adapters

Item#	Size
3900-0280*	#6
3900-0281*	#8
3900-0282*	#10
3900-0283*	1/4
3900-0284*	5/16
3900-0285*	3/8
3900-0286*	7/16
3900-0287*	1/2
3900-0288*	5/8
3900-0289	9pc/set

* Limited Supply

RUBBER FLEX TAP CHUCK COLLETS

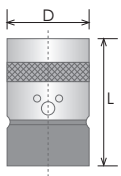
- For tapping heads
- Multi range
- Accurate gripping force

Item#	Outside Diameter (Inch)	Capacity Range (Inch/mm) Minimum	Capacity Range (Inch/mm) Maximum	Contact Length (Inch)	Cone Angle (Degree)
3900-1781	0.591	0.098/2.50	0.165/4.20	0.433	26
3900-1782	0.591	0.165/4.20	0.256/6.50	0.433	26
3900-1783	0.827	0.138/3.50	0.276/7.00	0.512	40
3900-1784	0.827	0.276/7.00	0.394/10.00	0.512	40
3900-1785	1.043	0.236/6.00	0.354/9.00	0.591	40
3900-1786	1.043	0.354/9.00	0.551/14.00	0.591	40



TC TYPE MULTI-FUNCTION TAPPING HEADS

- Can be used on tapping, drilling, high speed machine and CNC with taper mounting.
- High precision and good stability.
- Adjustable clamping range.
- Quick and easy loading and unloading.
- Includes hook wrench and Allen wrench.



NEW



Item#	Taper Mount	Capacity	D (mm)	L (mm)
3900-1255	JT6	1/8~1/2"	48	73
3900-1256	JT33	1/8~1/2"	48	73
3900-1259	JT3	1/8~5/8"	54	85

MINI E-Z HAND TAPPER

- Assures straight perpendicular tapped holes up to #10 diameter.

3900-0252



SPECIFICATIONS	
Table size	8-1/2x6"
Height	9"
Clearance height	3-3/4"
Depth of throat	4-1/2"
Approx. weight	12 lbs.

Complete with tap guide, precision ground work table, tap spindle wrench, and 7 steel tap adapters (#0-5/16")



REPLACEMENT ADAPTERS 7pc(#0-5/16")
(Item 3900-0253)

TAPER PIPE (NPT) TAPS

- Cuts internal threads in pipes.
- Ideal for pipe fitting
- Tapered at a rate of 3/4" per foot.





THREAD GROUND • HIGH SPEED STEEL

Size	No. of Flute	Thread Length	Overall Length	HSS Item#	TiN Coated Item#
1/16~27	4	11/16	2-1/8	----------	1011-3305
1/8~27	4	3/4	2-1/8	1011-3211	1011-3310
1/4~18	4	1-1/16	2-1/8	1011-3215	1011-3315
3/8~18	4	1-1/16	2-7/16	1011-3220	1011-3320
1/2~14	4	1-3/8	2-9/16	1011-3225	1011-3325
3/4~14	5	1-3/8	3-1/8	1011-3230	1011-3330
1~11-1/2	5	1-3/4	3-1/4	1011-3235	1011-3335
1-1/4~11-1/2	5	1-3/4	3-1/4	1011-3240	----------
1-1/2~11-1/2	7	1-3/4	4	1011-3245	----------
2~11-1/2	7	1-3/4	4-1/4	1011-3250	----------

HEXAGON PIPE (NPT) DIES

- Ideal for cutting right-hand external pipe threads.
- Hex head shape die is designed for use in die stocks or adjustable wrenches.
- Each NPT die is etched with the size for easy reference.

CARBON STEEL, RIGHT HAND

Size	Item#
1/8~27	1017-1800
1/4~18	1017-1802
3/8~18	1017-1804
1/2~14	1017-1806
3/4~14	1017-1808
1~11-1/2	1017-1810



HEXAGON PIPE (NPT) DIES

- Ideal for cutting right-hand external pipe threads.
- Hex head shape die is designed for use in die stocks or adjustable wrenches.
- Each NPT tap & die is etched with the size for easy reference.
- Supplied with solid wooden case.
- Includes one of each of the following NPT tap & dies: 1/8~27, 1/4~18, 3/8~18, 1/2~14, 3/4~14 & 1~11-1/2

THREAD GROUND • HIGH SPEED STEEL

12 PC Set
Range 1/8 ~ 1"
1011-3312

NEW



TAPER PIPE (NPT) TAP SETS



- Cuts internal threads in pipes.
- Ideal for pipe fitting
- Tapered at a rate of 3/4" per foot.

THREAD GROUND • HIGH SPEED STEEL

3 PC SET
1011-3303
1-1/4~11-1/2, 1-1/2~11-1/2, 2~11-1/2

6 PC SET
1011-3306
1/4~18, 3/8~18, 1/2~14, 3/4~14, 1~11-1/2, 1-1/4~11-1/2

7PC HEXAGON RETHREADING DIE SET, Metric

- Right hand.
- Supplied with fitted metal case.

NEW

7pc Includes:
M6x1.00, M8x1.25, M10x1.50, M12x1.75, M14x2.00, M16x2.00 & M20x2.50

CARBON STEEL

Range M6 ~ M20
1017-0007



CUTTING & CARBIDE TOOLS

HEX RETHREADING DIES



CARBON STEEL, RIGHT HAND

Size	Item#
1/4~20	1017-1717
1/4~28	1017-1718
5/16~18	1017-1719
5/16~24	1017-1720
3/8~16	1017-1721
3/8~24	1017-1722
7/16~14	1017-1723

Size	Item#
7/16~20	1017-1724
1/2~13	1017-1725
1/2~20	1017-1726
9/16~12	1017-1727
9/16~18	1017-1728
5/8~11	1017-1729
5/8~18	1017-1730
3/4~10	1017-1733
3/4~16	1017-1734
1~8	1017-1737
1~14	1017-1739

16PC HEXAGON RETHREADING DIE SET

- Right hand.
- Supplied with fitted metal case.

16pc Includes:
1/4~20, 1/4~28, 5/16~18, 5/16~24, 3/8~16, 3/8~24, 7/16~14, 7/16~20, 1/2~13, 1/2~20, 9/16~12, 9/16~18, 5/8~11, 5/8~18, 3/4~10 & 3/4~16.

NEW



CARBON STEEL

Range 1/4 ~ 3/4" NC&NF
1017-0016

20PC HEXAGON RETHREADING DIE SET

- Right hand.
- Supplied with fitted metal case.

CARBON STEEL

20pc Includes:
1/4~20, 1/4~28, 5/16~18, 5/16~24, 3/8~16, 3/8~24, 7/16~14, 7/16~20, 1/2~13, 1/2~20, 9/16~12, 9/16~18, 5/8~11, 5/8~18, 3/4~10, 3/4~16, 7/8~9, 7/8~14, 1~8 & 1~14.



Range 1/4 ~ 1" NC&NF
1017-0020

NEW

HEXAGON DIE SET

- Right hand.
- Supplied with fitted case.

CARBON STEEL



8 PC SET
1017-0008

8pc Includes:
1/4~20, 5/16~18, 3/8~16, 7/16~14
1/2~13, 9/16~12, 5/8~11 & 3/4~10

ADJUSTABLE HSS ROUND SPLIT DIES

HIGH SPEED STEEL, RIGHT HAND

- Adjustable with screw

13/16" O.D.

Size	Item#
4~40	1016-1014
5~40	1016-1018
6~32	1016-1022
6~40	1016-1024
8~32	1016-1026
8~36	1016-1027
10~24	1016-1030
10~32	1016-1032
1/4~20	1016-1040
1/4~28	1016-1042
5/16~18	1016-1044
5/16~24	1016-1045

1" O.D.

Size	Item#
6~32	1016-1122
6~40	1016-1124
8~32	1016-1126
8~36	1016-1128
10~24	1016-1130
10~32	1016-1132
1/4~20	1016-1140
1/4~28	1016-1142
5/16~18	1016-1144
5/16~24	1016-1146
3/8~16	1016-1148
3/8~24	1016-1150
7/16~14	1016-1152
7/16~20	1016-1154
1/2~13	1016-1156
1/2~20	1016-1158

1-1/2" O.D.

Size	Item#
1/4~20	1016-1240
1/4~28	1016-1242
5/16~18	1016-1244
5/16~24	1016-1246
3/8~16	1016-1248
3/8~24	1016-1250
7/16~14	1016-1252
7/16~20	1016-1254
1/2~13	1016-1258
1/2~20	1016-1260
9/16~12	1016-1262
9/16~18	1016-1264
5/8~11	1016-1266
5/8~18	1016-1268
3/4~10	1016-1270
3/4~16	1016-1272



2" O.D.

Size	Item#
3/8~16	1016-1348
1/2~13	1016-1356
5/8~11	1016-1364
3/4~10	1016-1368
7/8~9	1016-1372
1~8	1016-1378

45PC TUNGSTEN STEEL TAP & DIE SETS





- Ideal set for any situation.
- Packed in fitted durable & attractive plastic case with index marked.
- **Tungsten steel.**

Range 1/4~1"
1011-0001

Range 6~24mm
1011-0002

TiN COATED
Range 1/4~1"
1011-0003

Range: 1/4" -1" Size and Threads per inch			Taps	Dies	Die Stock	"T" Holder	Screw Driver
NC 1/4~20, 5/16~18, 3/8~16, 7/16~14, 1/2~13, 1~1/2" O.D. 9/16~12, 5/8~11, 3/4~10, 7/8~9, 1~8 NF 1/4~28, 5/16~24, 3/8~24, 7/16 ~20, 1/2~20 2" O.D. 9/16~18, 5/8~18, 3/4~16, 7/8~14, 1~14			20	20	2	2	1
Range: 6mm-24mm							
6 x 0.75	12 x 1.75	20 x 1.50	20	20	2	2	1
6 x 1.00	14 x 1.50	20 x 2.50					
8 x 1.00	14 x 2.00	22 x 1.50					
8 x 1.25	16 x 1.50	22 x 2.50					
10 x 1.25	16 x 2.00	24 x 1.50					
10 x 1.50	18 x 1.50	24 x 3.00					
12 x 1.50	18 x 2.50						

41PC TUNGSTEN STEEL TAP & DIE SETS



- Hexagon shape dies
- Packed in fitted durable & attractive plastic case with index marked.
- **Tungsten steel.**

Range: #4-1/2" Size and Threads per inch			Screw Pitch	Taps	Dies	Die Stock	"T" Holder	Tap & Reamer Wrench	Screw Driver
NC 4~40, 6~32, 8~32, 10~24, 12~24, 1/4~20, 5/16~18, 3/8~16, 7/16~14, 1/2~13 NF 10~32, 1/4~28, 5/16~24, 3/8~24, 7/16~20, 1/2~20 NPT 1/8"~27R			1	17	17	1	2	1	1
Range: 3mm-12mm									
3 x 0.50	6 x 0.75	10 x 1.25	1	17	17	1	2	1	1
3 x 0.60	6 x 1.00	10 x 1.50							
4 x 0.70	7 x 0.75	12 x 1.50							
4 x 0.75	7 x 1.00	12 x 1.75							
5 x 0.80	8 x 1.00								
5 x 0.90	8 x 1.25	NPT-1/8"-27							

Range 3~12mm
1011-0005

Range #4~1/2"
1011-0004

110PC STANDARD QUALITY TAP & DIE COMBO SET

- SAE, NC, NF, NS threads
- Metric, International, Special
- American National Pipe, NPT, NPS
- 1" O.D. die stock
- 1-1/2" O.D. die stock
- No. 4 adjustable tap wrench
- No. 6 adjustable tap wrench
- T-handle tap wrench
- **Material: Carbon Steel**

Range #4~3/4" & 6~18mm
1011-0111



NEW

INCLUDES:
1 taper tap, 1 bottoming tap and die in each of the following sizes:
4-40, 6-32, 8-32, 10-24, 12-24, 10-32, 1/4-20, 1/4-24, 1/4-28, 1/4-40, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, 9/16-12, 9/16-18, 5/8-11, 5/8-18, 3/4-10, 3/4-16, 1/8-27NPT, 1/4-18NPT, M6x1.0, M8x1.25, M10x1.0, M10x1.5, M11x1.5, M12x1.25, M12x1.75, M14x1.25 & M18x1.5

TAP & DIE SETS

22PC HSS Tap & Die Set Range 1/4 ~ 1/2"

NEW

- Made of High Speed Steel.
- Wooden case included.



HIGH SPEED STEEL

INCLUDES:
1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20 Plug Tap and Die each, 1" OD Adjustable Die Stock, T-Handle Tap Wrench.

Range 1/4 ~ 1/2"
1011-0007

44PC HSS Tap & Die Set Range M2 ~ M18

NEW

INCLUDES:
20 Sizes Tap & Die Each: M2x0.4, M2.5x0.45, M3x0.50, M4x0.70, M5x0.80, M6x1.0, M7x1.0, M8x1.0, M8x1.25, M10x1.0, M10x1.25, M10x1.5, M12x1.0, M12x1.25, M12x1.50, M12x1.75, M14x1.5, M14x2.0, M16x2.0, M18x1.5, 1" & 1-1/2" OD (M14-M18) Adjustable Die Stock, 2 Tap Wrench.

- Made of High Speed Steel.
- Wooden case included.



HIGH SPEED STEEL

Range M2 ~ M18
1011-0009

110PC HSS TAP & DIE COMBO SET

- SAE, NC, NF, NS threads
- Metric, International, Special
- American National Pipe, NPT, NPS
- 1" O.D. die stock
- 1-1/2" O.D. die stock
- No. 4 adjustable tap wrench
- No. 6 adjustable tap wrench
- T-handle tap wrench

Range #4~3/4" & 6~18mm
1011-0110

HIGH SPEED STEEL



INCLUDES:
1 taper tap, 1 bottoming tap and die in each of the following sizes:
4-40, 6-32, 8-32, 10-24, 12-24, 10-32, 1/4-20, 1/4-24, 1/4-28, 1/4-40, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, 9/16-12, 9/16-18, 5/8-11, 5/8-18, 3/4-10, 3/4-16, 1/8-27NPT, 1/4-18NPT,
M6x1.0, M8x1.25, M10x1.0, M10x1.5, M11x1.5, M12x1.25, M12x1.75, M14x1.25 & M18x1.5

TAP & DIE SETS WITH RATCHETING WRENCH

- SAE, NC, METRIC threads
- Ratcheting tap & die wrench
- 1" O.D. die adapter
- Locking tap adapter (for big taps)
- T-handle tap wrench (for small taps)
- Fitted metal case.

38 PC SET
#6~1/2"&M3~M12
1011-0138



NEW



Set	Range	Taps	Dies	Ratchet Wrench	T-handle Wrench	Tap Adapter	Die Adapter	Screw Driver
24pc	#6 ~ 1/2" 6-32, 8-32, 10-24, 12-24, 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13	9	9	1	1	1	1	1
38pc	#6 ~ 1/2" & M3 ~ M12 6-32, 8-32, 10-24, 12-24, 1/4-20 5/16-18, 3/8-16, 7/16-14, 1/2-13, M3x0.5, M4X0.7, M5X0.8, M6X1.0, M8X1.25, M10X1.5, M12X1.75	16	16	1	1	1	1	1

24 PC SET
#6~1/2"
1011-0124

27PC METRIC TAP, DIE & DRILL SET

NEW

- **Ratcheting tap & die wrench**
- 25mm O.D. die adapter
- Locking tap adapter (for big taps)
- T-handle tap wrench (for small taps)
- Tungsten steel taps & dies.
- High speed steel drills.
- Fitted metal case.





27PC SET M3~M12
1011–0127

INCLUDES:
7 Sizes Tap & Die Each: M3 x0.50, M4x0.70, M5x0.80, M6x1.00, M8x1.25, M10x1.50, M12x1.75, **7 Sizes Drill:** 2.5, 3.3, 4.2, 5.0, 6.8, 8.5, 10.2mm, Ratcheting Wrench, Round Die Adapter, Locking Tap Adapter, T-Handle Tap Wrench & Flat Tip screwdriver.

SCREW EXTRACTOR & LEFT HAND DRILL SET

- Quick & easy removal of broken screws, pipes, bolts, & studs without damaging the threads in the hole.
- Supplied in plastic pouch.
- High speed steel



1011–0011

10 PC SET
Extractors: No. 1, 2, 3, 4 & 5
Left Hand Drill Bits: 1/8, 3/16, 1/4, 5/16 & 3/8"

8PC SCREW EXTRACTOR SETS

- Quick & easy removal of broken screws, pipes, bolts, & studs w/o damaging the threads in the hole.

Includes
#1, 2, 3, 4 , 5, 6, 7 & 8
For Removing 3/32 ~ 1-3/8"
of studs, bolts & screws



1011–0016

DIE STOCKS

- For adjustable round split dies
- Designed to accommodate round screw adjustable dies



INDIVIDUALS

Item#	Size No.	Die O.D.	Length
3900-0225	2	13/16"	6-1/2"
3900-0226	3	1"	8-1/2"
3900-0227	5	1-1/2"	12"
3900-0228	6	2"	15"
3900-0229	7	2-1/2"	19"

4 PC SET
3900–0233
No.2, 3, 5 & 6

3PC FLOATING DIE HOLDER SET

- One piece construction
- Total length 3"

Die Dia.	Body D x Length	Shank
13/16	1-1/2"x1	1/2
1	1-1/2"x1	1/2
1-1/2	2"x 1-1/4	3/4



3900–0223

IDEAL FOR SHORT OR MEDIUM-RUN THREADING OF SHAFTS !

INDIVIDUAL SCREW EXTRACTORS

- Quick & easy removal of broken screws, pipes, bolts, & studs without damaging the threads in the hole.



Item#	Size	For Remove Screw/Bolt	Drill to Use
1011-0021	#1	3/32~5/32"	5/64"
1011-0022	#2	5-32~7/32"	7/64"
1011-0023	#3	7/32~9/32"	5/32"
1011-0024	#4	9/32~3/8"	1/4"
1011-0025	#5	3/8~5/8"	17/64"
1011-0026*	#6	5/8~7/8"	13/32"
1011-0027*	#7	7/8~1-1/8"	17/32"

*Limited Supply

5PC SCREW EXTRACTOR SETS

- Quick & easy removal of broken screws, pipes, bolts, & studs w/o damaging the threads in the hole.
- Screw extractors made of chrome-molly steel.
- Supplied in plastic case.



Limited Supply!

Includes
#1, 2, 3, 4 & 5
For Removing 1/4-5/8"
of studs, bolts & screws

1011–0015

1011–0010

HELICAL S.T.I. THREAD REPAIR KITS-SAE & METRIC

NEW

- Simple and easy to use kit.
- For repairing tapped holes.
- Cost effective system creates stronger than original threads.
- Creates a stronger internal thread in soft metals.
- Professional kit includes drills, STI taps and lug breaking tool.

- **132pc set Includes:**
  - 110pc- Stainless Steel Inserts
  - 5pc- STI HSS Taps
  - 5pc- HSS Twist Drills
  - 5pc- Coil Drivers
  - 5pc- Tang Removers
  - 1pc- L Hex Wrench
  - 1pc- Metal Case



132PC SETS

Item#	Description	Insert Thread	STI Tap	HSS Drill
1011-0055	Coarse Thread Repair Kit	25ea-1/4-20	1/4-20	17/64
		25ea-5/16-18	5/16-18	21/64
		25ea- 3/8-16	3/8-16	25/64
		25ea-7/16-14	7/16-14	29/64
		10ea-1/2-13	1/2-13	17/32
1011-0056	Fine Thread Repair Kit	25ea-1/4-28	1/4-28	17/64
		25ea-5/16-24	5/16-24	21/64
		25ea-3/8-24	3/8-24	25/64
		25ea-7/16-20	7/16-20	29/64
		10ea-1/2-20	1/2-20	17/32
1011-0051	5-12mm	25ea-M5 x 0.80	M5 x 0.80	5.2
		25ea-M6 x 1.00	M6 x 1.00	6.3
		25ea-M8 x 1.25	M8 x 1.25	8.3
		25ea-M10 x 1.50	M10 x 1.50	10.4
		10ea-M12 x 1.75	M12 x 1.75	12.4

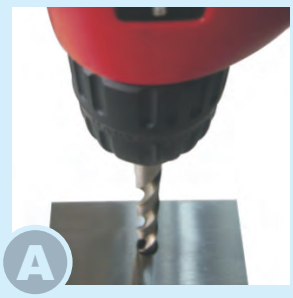
STAINLESS STEEL INSERTS LENGTH -1.5 X Diameter

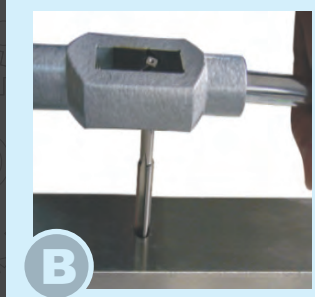


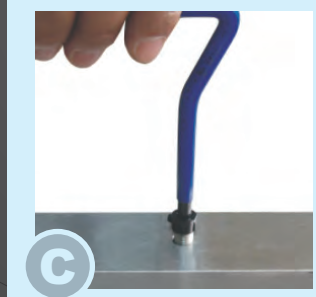
- **16pc & 31pc Kit Includes:**
  - 10pc or 25pc- Stainless Steel Inserts
  - 1pc- STI HSS Tap
  - 1pc- HSS Twist Drills
  - 1pc- Coil Driver
  - 1pc- Tang Breaker
  - 1pc- L Hex Wrench
  - 1pc- Metal Case

16PC & 31PC SETS

Item#	Insert-Thread	No of Insert In Set	STI Tap	HSS Drill
1011-0081	1/4-20	25	1/4-20	17/64
1011-0084	5/16-18	25	5/16-18	21/64
1011-0087	3/8-16	25	3/8-16	25/64
1011-0094	1/2-13	10	1/2-13	17/32
1011-0065	M5 x 0.80	25	M5 x 0.80	5.2
1011-0066	M6 x 1.00	25	M6 x 1.00	6.3
1011-0068	M8 x 1.25	25	M8 x 1.25	8.3
1011-0070	M10 x 1.50	25	M10 x 1.50	10.4
1011-0072	M12 x 1.75	10	M12 x 1.75	12.4









SELF TAPPING THREAD REPAIR KITS-SAE & METRIC

NEW

- Self tapping, no pre-tapping required.
- Very high pull-out resistance.
- Unlimited thread re-usability.
- Protects expensive components from damage.
- Fits almost every application.
- Produces high quality, permanent, wear-resistant threads.
- Highly resistant to vibration, can withstand vibration without loosening.



Kit Includes:

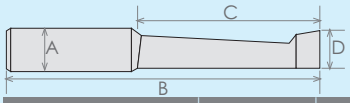
10pc- Stainless Steel Inserts
1pc- HSS Twist Drills
1pc- Installation Tool
1pc- Metal Case

Item#	Insert-Thread
1011-0175	1/4-20
1011-0178	5/16-18
1011-0181	3/8-16
1011-0187	1/2-13
1011-0205	M5 x 0.80
1011-0207	M6 x 1.00
1011-0209	M8 x 1.25
1011-0211	M10 x 1.50
1011-0213	M12 x 1.75

COBALT (M42) BORING BAR SETS

- One piece cobalt structure to give more boring accuracy and longer life.
- All purpose.
- All shanks are held 0.000~0.005" from the nominal size.
- **COBALT** used for boring in tough high tensile strength materials like stainless steel, titanium and inconel.





Item#	B (In) Length	C (In) Bore Depth	D (In) Min.bore
	2	3/4	1/4
	2-3/8	1-1/8	1/4
1001-0033	2-3/4	1-1/2	5/16
(8pc/set)	2-3/16	15/16	3/8
	2-21/32	1-13/32	3/8
	3-1/8	1-7/8	3/8
	2-3/8	1-1/8	7/16
	3-15/16	1-11/16	7/16
	2-1/8	5/8	5/16
	2-1/4	3/4	5/16
	2-5/8	1-1/8	5/16
	3	1-1/2	5/16
1001-0035	2-5/8	1-1/8	7/16
(10pc/set)	3-3/16	1-11/16	7/16
	3-3/4	2-1/4	7/16
	3	1-1/2	9/16
	3-3/4	2-1/4	9/16
	4-1/2	3	9/16

8 PC SET
3/8" SHANK
1001-0033

M42 8% COBALT
MADE OF SOLID COBALT

10 PC SET
1/2" SHANK
1001-0035

DOUBLE-END BORING BARS & SETS

- Straight shank.
- Tool bits sold seperately.
- Double end.
- Made of tool steel.



ONE END 90° AND ONE END 45°

TOOL BITS NOT INCLUDED



5 PC SET
1001-0008
Includes: BD-1,3,4,6&7

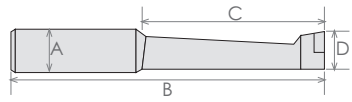
5 PC SET
1001-0010
Includes: BD-3,4,6,7&9

INDIVIDUALS

Item#	Style No.	Bar Dia.	Bar OAL	Bit Size	Bit Type
1015-0250	BD-1	1/4"	5	5/32	Round
1015-0312	BD-2	5/16"	5	3/16	Round
1015-0375	BD-3	3/8"	6	3/16	Round
1015-0500	BD-4	1/2"	6	3/16	Square
1015-0562	BD-5	9/16"	9	3/16	Square
1015-0625	BD-6	5/8"	10	1/4	Square
1015-0750	BD-7	3/4"	12	1/4	Square
1015-1000	BD-9	1"	12	5/16	Square
1015-1250	BD-11	1-1/4"	16	1/2	Square

CARBIDE-TIPPED BORING BAR SETS

- Quality tool designed to be used as a boring tool bit.
- All shanks are held to 0.000 - 0.0005" from the nominal size.
- Shanks are made of special heat treated alloy steel.
- Three lengths for each minimum bore size.





GRADE C-6
FOR ALL STEEL AND ALL PURPOSE

C-6 Item#	A Shank Dia. (In)	Set PC.	B (In) Length	C (In) Bore Depth	D (In) Min.bore
			2	3/4	5/16
			2-3/8	1-1/8	5/16
			2-3/4	1-1/2	5/16
			2-3/16	15/16	3/8
1001-0001	3/8	9	2-21/32	1-13/32	3/8
			3-1/8	1-7/8	3/8
			2-3/8	1-1/8	7/16
			3-15/16	1-11/16	7/16
			3-1/2	2-1/4	7/16
			2-1/4	3/4	5/16
			2-5/8	1-1/8	5/16
			3	1-1/2	5/16
1001-0002	1/2	9	2-5/8	1-1/8	7/16
			3-3/16	1-11/16	7/16
			3-3/4	2-1/4	7/16
			3	1-1/2	9/16
			3-3/4	2-1/4	9/16
			4-1/2	3	9/16
			2-1/4	3/4	5/16
			2-5/8	1-1/8	5/16
			3	1-1/2	5/16
			2-5/8	1-1/8	7/16
			3-3/16	1-11/16	7/16
1001-0003	5/8	12	3-3/4	2-1/4	7/16
			3	1-1/2	9/16
			3-3/4	2-1/4	9/16
			4-1/2	3	9/16
			3-3/8	1-7/8	11/16
			4-5/16	2-13/16	11/16
			5-1/4	3-3/4	11/16
			3-1/8	1-1/8	7/16
			3-11/16	1-11/16	7/16
			4-1/4	2-1/4	7/16
			3-1/2	1-1/2	9/16
			4-1/4	2-1/4	9/16
			5	3	9/16
1001-0004	3/4	12	3-7/8	1-7/8	11/16
			4-13/16	2-13/16	11/16
			5-3/4	3-3/4	11/16
			4-1/4	2-1/4	13/16
			5-3/8	3-3/8	13/16
			6-1/2	4-1/2	13/16
			5	3	9/16
			5-3/4	3-3/4	11/16
			6-1/2	4-1/2	7/8
1001-0005	1	7	6-1/2	4-1/2	1-1/16
			7-3/4	5-3/4	1-1/4
			8-1/4	6-1/2	1-1/2
			9-1/2	7-1/2	1-5/8

BROACHES & KEYWAY BUSHINGS

KEYWAY BROACHES
HEAVY DUTY • HIGH SPEED STEEL

- Broach is tapered and ground with bright finishing.
- Shim included.
- One-pass keyway broaches require appropriate guide bushing.



Item#	Broach Size	Type	Broach Dimensions	Shims Required	Length of Cut(Min.)	Length of Cut(Max)	Tolerances
2006-1008	1/8"	A	1/8 x 5	1	13/64	1-1/8	.1252~.1262
2006-1018	1/8"	B	3/16 x 6-3/4	1	19/64	1-11/16	.1252~.1262
2006-1022	3/16	B	3/16 x 6-3/4	1	19/64	1-11/16	.1877~.1887
2006-1024	3/16	C	3/8 x 11-3/4	1	25/64	2-1/2	.1877~.1887
2006-1026	1/4	C	3/8 x 11-3/4	1	25/64	2-1/2	.2502~.2512
2006-1030	5/16	C	3/8 x 11-3/4	2	25/64	2-1/2	.3127~.3137
2006-1034	3/8	C	3/8 x 11-3/4	2	25/64	2-1/2	.3755~.3765
2006-1046	1/2	D	9/16 x 13-7/8	3	1	6	.5006~.5016
2006-1050	5/8	E	3/4 x 15-1/2	4	1	6	.6260~.6270

Shims

- For keyway broaches.



A Style



C Style

Item#	Style-Size
2006-1552	A-1/8"
2006-1556	B-1/8"
2006-1558	B-5/32"
2006-1562	B-3/16"
2006-1566	C-3/16"
2006-1570	C-1/4 & 3/8"

Item#	Style-Size
2006-1574	C-5/16"
2006-1578	D-5/16"
2006-1582	D-3/8 & 1/2"
2006-1586	D-7/16"
2006-1590	E-5/8 & 3/4"
2006-1594	F-7/8 & 1"

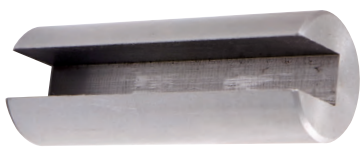
KEYWAY BUSHINGS

- Different size bushings enable the individual keyway broach to be used in a variety of sizes.



D,E STYLE: Plain
A,B,C STYLE: Collared

The letter designation signifies the body width of the keyway broach



STYLE "A", 1/8" SLOT-COLLARED

Bushing	Diameter	Item#
A	1/4	**2006-1102**
A	5/16	**2006-1104**
A	3/8	**2006-1106**
A	7/16	**2006-1108**
A	1/2	**2006-1110**

STYLE "E", 3/4" SLOT-PLAIN TYPE

Bushing	Diameter	Item#
E	2-5/16	**2006-1502**
E	2-3/8	**2006-1504**
E	2-7/16	**2006-1506**
E	2-1/2	**2006-1508**
E	2-9/16	**2006-1510**
E	2-5/8	**2006-1512**
E	2-11/16	**2006-1514**
E	2-3/4	**2006-1516**
E	2-13/16	**2006-1518**
E	2-7/8	**2006-1520**
E	2-15/16	**2006-1522**
E	3	**2006-1524**

STYLE "B", 3/16" SLOT-COLLARED

Bushing	Diameter	Item#
B	1/2	**2006-1202**
B	9/16	**2006-1204**
B	5/8	**2006-1206**
B	11/16	**2006-1208**
B	3/4	**2006-1210**
B	13/16	**2006-1212**
B	7/8	**2006-1214**

STYLE "C", 3/8" SLOT-COLLARED

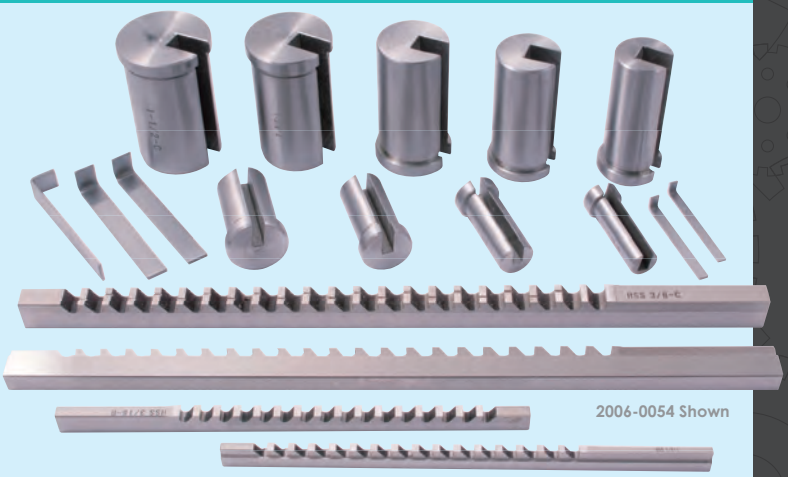
Bushing	Diameter	Item#
C	3/4	**2006-1302**
C	13/16	**2006-1304**
C	7/8	**2006-1306**
C	15/16	**2006-1308**
C	1	**2006-1310**
C	1-1/16	**2006-1312**
C	1-1/8	**2006-1314**
C	1-3/16	**2006-1316**
C	1-1/4	**2006-1318**
C	1-5/16	**2006-1320**
C	1-3/8	**2006-1322**
C	1-7/16	**2006-1324**
C	1-1/2	**2006-1326**
C	1-9/16	**2006-1328**

STYLE "D", 9/16" PLAIN TYPE

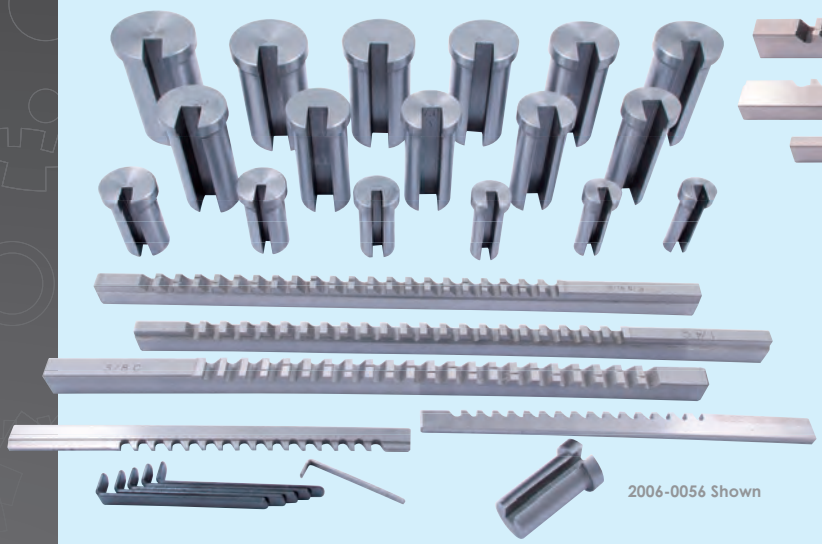
Bushing	Diameter	Item#
D	1-7/16	**2006-1402**
D	1-1/2	**2006-1404**
D	1-9/16	**2006-1406**
D	1-5/8	**2006-1408**
D	1-11/16	**2006-1410**
D	1-3/4	**2006-1412**
D	1-13/16	**2006-1414**
D	1-7/8	**2006-1416**
D	1-15/16	**2006-1418**
D	2	**2006-1420**
D	2-1/16	**2006-1422**
D	2-1/8	**2006-1424**
D	2-3/16	**2006-1426**
D	2-1/4	**2006-1428**
D	2-5/16	**2006-1430**
D	2-3/8	**2006-1432**
D	2-7/16	**2006-1434**
D	2-1/2	**2006-1436**
D	2-9/16	**2006-1438**
D	2-5/8	**2006-1440**
D	2-11/16	**2006-1442**
D	2-3/4	**2006-1444**
D	2-13/16	**2006-1446**
D	2-7/8	**2006-1448**
D	2-15/16	**2006-1450**
D	3	**2006-1452**

HSS KEYWAY BROACH SETS-HEAVY DUTY • HIGH SPEED STEEL

- Heavy duty.
- High speed steel.
- Provides great versatility.
- Specialty tools designed for cutting keyways in machined holes.
- Typically used manually with an arbor press or hydraulic press to produce the keyways.
- Well suited for use in a variety of ferrous and non-ferrous materials.
- Includes shims & wooden case.



2006-0054 Shown



2006-0056 Shown

17 PC SET
2006-0054
4 Broaches, 9 Collared Bushings, 4 Shims

NEW



30 PC SET
2006-0056
INCLUDES: 5 Broaches, 18 Collared Bushings, 7 Shims

27 PC SET *
2006-0055
4 Broaches, 18 Collared Bushings, 5 Shims
*Limited Supply

9 PC SET
2006-0051
INCLUDES: 3 Broaches, 5 Collared Bushings, 1 Shim

Item#	Set	Keyway Size	Broach Style	Collared Bushing	Keyway Combination
2006-0051	9PC	1/16, 3/32, 1/8"	A	1/4, 5/16",3/8, 7/16",1/2"	15
2006-0054	17PC	1/8, 3/16"	B	1/2, 5/8, 3/4, 7/8",	
		1/4, 3/8"	C	1, 1-1/8, 1-1/4,1-3/8, 1-1/2"	18
2006-0055	27PC	1/8, 3/16"	B	1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8"	
		1/4, 3/8"	C	15/16, 1, 1-1/16, 1-1/8, 1-3/16, 1-1/4, 1-5/16, 1-3/8, 1-7/16, 1-1/2, 1-9/16"	36
2006-0056	30PC	1/8, 3/16"	B	1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8,	
		1/4, 5/16, 3/8"	C	15/16, 1, 1-1/16, 1-1/8, 1-3/16, 1-1/4, 1-5/16, 1-3/8, 1-7/16, 1-1/2, 1-9/16"	47

SQUARE PUSH BROACHES
HEAVY DUTY • HIGH SPEED STEEL

- Broach is tapered and ground with bright finishing.
- Used for cutting square shaped hole in round pilot holes.
- Well suited for ferrous and non-ferrous materials.



Item#	Broach Size	Broach Length	Pilot Dia.	(Inch) Drill Size	LengthofCut Min.	LengthofCut Max.	Tolerance
2006-0114	1/4	6-1/2	17/64	17/64	1/4	3/4	.2505~.2515
2006-0122	3/8	9-3/8	25/64	25/64	3/8	1-1/4	.3755~.3765
2006-0124	7/16	10-7/8	29/64	9/64	1/2	1-3/8	.4385~.4395
2006-0126	1/2	12	17/32	17/32	1/2	1-3/8	.5005~.5015
2006-0138	3/4	17-3/4	13/16	13/16	5/8	1-5/8	.7510~.7520

END MILL SETS

CORNER ROUNDING END MILLS & SET

HIGH SPEED STEEL FORMED RADIUS CUTTERS-RH CUT



8 PC SET
5800-4195
1/16, 3/32, 1/8, 5/32, 3/16, 1/4, 5/16, 3/8"

- Intended for use in milling rounded corners, etc.
- Form-relieved type; can be sharpened many times without changing the form

Item#	Radius	Diameter (Inch) Mill	Shank	OAL
5800-4020	1/16	7/16	3/8	2-1/2
5800-4030	3/32	1/2	3/8	2-1/2
5800-4040	1/8	5/8	1/2	3
5800-4050	5/32	3/4	1/2	3
5800-4060	3/16	7/8	1/2	3
5800-4080	1/4	1	1/2	3
5800-4090	5/16	1-1/8	1/2	3-1/4
5800-4110	3/8	1-1/4	1/2	3-1/2
5800-4115	7/16	1-3/8	1	4
5800-4160	1/2	1-1/2	3/4	3-7/8

3/16" SHANK DOUBLE-END 10PC END MILL SET

2&4 Flute
8000-0025
1pc each: 1/16, 3/32, 1/8, 5/32 & 3/16"



- High speed steel.
- Center-cut.
- Double end.
- Supplied with wooden stand.

6PC HSS END MILL SETS
Center Cut • 3/8" Shank

- Single end.
- High speed steel.
- Center cut.
- With stand.

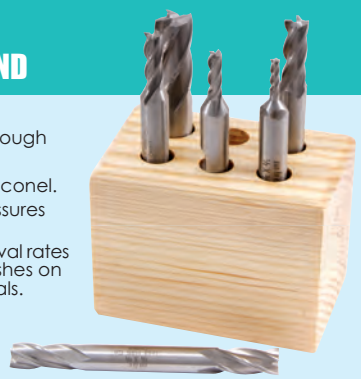
2 FLUTE SET
8000-0001

6 PC INCLUDES:
1/8, 3/16, 1/4, 5/16, 3/8 & 1/2"

4 FLUTE SET
8000-0002



6PC COBALT 4 FLUTE END MILL SET-DOUBLE END



- Center cut.
- M42 (8%) cobalt, used for cut in tough high tensile strength materials like stainless steel, titanium and inconel.
- Uniform cutting load per tooth assures minimum chatter deflections.
- Preferred for light to medium removal rates and obtaining better surface finishes on soft, tough and long chip materials.
- With wooden stand.

Set Includes

Size	Shank Dia.	Flute Length	OAL
1/8	3/8	3/8	3-1/16
3/16	3/8	1/2	3-1/4
1/4	3/8	5/8	3-3/8
5/16	3/8	3/4	3-1/2
3/8	3/8	3/4	3-1/2
1/2	1/2	1	4-1/8

M42 8% COBALT

8000-0005

6PC COBALT 4 FLUTE END MILL SETS-SINGLE END

NEW

- Center cut.
- M42 (8%) cobalt, used for cut in tough high tensile strength materials like stainless steel, titanium and inconel.
- Uniform cutting load per tooth assures minimum chatter deflections.
- Preferred for light to medium removal rates and obtaining better surface finishes on soft, tough and long chip materials.
- With wooden stand.



M42 8% COBALT



8000-0004

Set Includes

Size	Shank Dia.	Flute Length	OAL
1/8	3/8	1/2	2-11/32
3/16	3/8	9/16	2-3/8
1/4	3/8	11/16	2-1/2
5/16	3/8	3/4	2-17/32
3/8	3/8	3/4	2-1/2
1/2	1/2	1-1/4	3-9/32

TITANIUM COATED END MILL SETS

- Titanium coated for longer life.
- High speed steel, single end.
- Complete with wooden case.



20 PC SET
8000-0020
2 & 4 FLUTE
10 PC OF EACH: 3/16-3/4" by 16ths



10 PC SET
5800-0010
4 FLUTE
3/16-3/4" by 16ths

GROUND FROM SOLID CENTER CUT

DOUBLE-END MINIATURE 3/16" SHANK END MILLS

- Used for general-purpose maching of both ferrous and noferrous materials.
- Popular for small slotting, engraving, pocketing and similar applications.
- The medium-high helix angle produces and ideal shearing cut for outstanding performance.
- 3/16" shank.

HIGH SPEED STEEL





Diameter (In) Mill	Flute (In) Length	OAL (In)	2-Flure Item#	4-Flure Item#
1/32	3/32	2-1/4	**5830-0002**	----------
3/64	9/64	2-1/4	**5830-0003**	----------
1/16	3/16	2-1/4	**5830-0004**	**5831-0018**
5/64	15/64	2-1/4	**5830-0005**	**5831-0020**
3/32	9/32	2-1/4	**5830-0006**	**5831-0022**
7/64	21/64	2-1/4	**5830-0007**	**5831-0024**
1/8	3/8	2-1/4	**5830-0008**	**5831-0026**
9/64	13/32	2-1/4	**5830-0009**	**5831-0028**
5/32	7/16	2-1/4	**5830-0011**	**5831-0030**
11/64	1/2	2-1/4	**5830-0010**	**5831-0031**
3/16	1/2	2-1/4	**5830-0012**	**5831-0034**

2-FLUTE HSS BALL NOSE END MILLS

- Used for general-purpose maching of both ferrous and noferrous materials.

HIGH SPEED STEEL



Diameter (In) Mill	Shank	Flute (In) Length	OAL (In)	Item#
1/8	3/8	3/8	2-5/16	**5841-0125**
3/16	3/8	7/16	2-5/16	**5841-0187**
1/4	3/8	5/8	2-7/16	**5841-0250**
5/16	3/8	3/4	2-1/2	**5841-0312**
3/8	3/8	3/4	2-1/2	**5841-0375**
7/16	1/2	1	3	**5841-0437***
1/2	1/2	1	3	**5841-0500**
9/16	1/2	1	3	**5841-0562**
5/8	5/8	1-3/8	3-3/8	**5841-0625**
3/4	1/2	1-5/8	3 -5/8	**5841-0750**
3/4	3/4	1-5/8	3-7/8	**5841-0751***
7/8	7/8	2	4-1/4	**5841-0875***
1	1	2-1/4	4-3/4	**5841-1000***

*Limited Supply

HSS BALL NOSE END MILL SETS

- Single end.
- Full radius cutting edge.
- Designed for milling radius bottom slots, fillets and special contours.
- Wooden stand included.



8001-0009 Shown

DIMENSIONS
(Mill x Shank x Flute Length x OAL)

1/8 x 3/8 x 3/8 x 2-5/16"
3/16 x 3/8 x 1/2 x 2-3/8"
1/4 x 3/8 x 5/8 x 2-7/16"
5/16 x 3/8 x 3/4 x 2-1/2"
3/8 x 3/8 x 3/4 x 2-1/2"
7/16 x 1/2 x 1 x 3"
1/2 x 1/2 x 1 x 3"
5/8 x 1/2 x 1-1/8 x 3-1/8"
3/4 x 1/2 x 1-5/8 x 3-5/8"



CENTER CUT • HIGH SPEED STEEL

Item#	Set	Flute	Size Includes
8001-0006	**6PC**	2	1/8,3/16,1/4,5/16,3/8 & 1/2"
8001-0007	**6PC**	4	1/8,3/16,1/4,5/16,3/8 & 1/2"
8001-0009	**9PC**	2	1/8,3/16,1/4,5/16,3/8,7/16,/2,5/8 & 3/4"

2-FLUTE S-E M42 COBALT BALL NOSE END MILLS

- M42 Cobalt (8%) is designed to cut difficult and abrasive materials, ranging from medium to high hardness. Roughing end mills are made of cobalt to withstand elevated temperatures and assure high-edge hardnessduring rapid stock removal. Choose cobalt end mills on hardwork materials or when there is a problem with wear or short tool lige.



M42 (8%) COBALT

Diameter (In) Mill	Shank	Flute (In) Length	OAL (In)	M42 COBALT Item#
1/8	3/8	3/8	2-5/16	**5842-0125**
3/16	3/8	1/2	2-3/8	**5842-0187**
1/4	3/8	5/8	2-7/16	**5842-0250**
3/8	3/8	3/4	2-1/2	**5842-0375**
1/2	1/2	1	3	**5842-0500**
5/8	5/8	1-3/8	3-3/8	**5842-0625**
3/4	3/4	1-5/8	3-7/8	**5842-0751**
1	1	2-1/4	4-3/4	**5842-1000**

2-FLUTE & 60° HELICAL END MILLS

2-FLUTE SINGLE-END CENTER CUT END MILLS



GROUND FROM SOLID • CENTER CUTTING

- 2-Flute used for slotting, ramping, pocketing and plunging operations. Preffered for small and medium removal rates on soft, tough and long chip materials such as aluminum, copper & brass.

Diameter (In) Mill	Diameter (In) Shank	Flute (In) Length	OAL (In)	HSS Item#	TiN Coated Item#	M42(8%) Item#
1/8	3/8	3/8	2-5/16	5801-0125	5826-0125	5824-0125
3/16	3/8	7/16	2-5/16	5801-0187	5826-0187	5824-0187
1/4	3/8	1/2	2-5/16	5801-0250	5826-0250	5824-0250
5/16	3/8	9/16	2-5/16	5801-0312	5826-0312	5824-0312
3/8	3/8	9/16	2-5/16	5801-0375	5826-0375	5824-0375
7/16	3/8	13/16	2-1/2	5801-0437	----------	5824-0437
1/2	3/8	1	3	5801-0500	----------	5824-0500
1/2	1/2	1	3	5801-0501	5826-0501	5824-0501
9/16	1/2	1-1/8	3-1/8	5801-0562	----------	5824-0562
5/8	1/2	1-1/8	3-1/8	5801-0625	----------	5824-0625
5/8	5/8	1-5/16	3-7/16	5801-0626	5826-0626	5824-0626
11/16	5/8	1-5/16	3-7/16	----------	----------	5824-0750
3/4	1/2	1-5/16	3-5/16	5801-0750	----------	5824-0751
3/4	5/8	1-5/16	3-7/16	5801-0751	----------	----------
3/4	3/4	1-5/16	3-9/16	5801-0753	5826-0753	5824-1000
7/8	3/4	1-1/2	3-5/8	----------	----------	5824-1001
1	1/2	1-1/2	3-5/8	5801-1000	----------	5824-1002
1	3/4	1-1/2	3-3/4	5801-1001*	----------	5824-1125
1	1	1-5/8	4-1/8	5801-1002*	----------	5824-1250
1-1/8	3/4	1-5/8	3-7/8	5801-1125*		
1-1/4	3/4	1-5/8	3-7/8	5801-1250*		
1-1/2	3/4	1-5/8	4-1/8	5801-1500*		
2	3/4	1-5/8	4-1/8	5801-2000*		

* Limited Supply

HIGH SPEED STEEL

Used for general-purpose maching of both ferrous and noferrous materials.

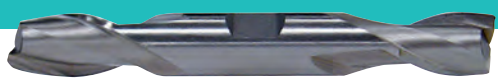
TiN-Titanium Nitride

Gold in color, this is an excellent general-purpose PVD coating that is suitable for a wide range of materials. The TiN coating will improve the tool life and is used where elevated speeds & feeds are the objective. TiN provides high lubricity and facilitates chip flow which reduces heat and edge buidup on the end mill.

COBALT

M42 Cobalt (8%) is designed to cut difficult and abrasive materials, ranging from medium to high hardness. Roughing end mills are made of cobalt to withstand elevated temperatures and assure high-edge hardnessduring rapid stock removal. Choose cobalt end mills on hardwork materials or when there is a problem with wear or short tool lige.

2-FLUTE DOUBLE-END END MILLS



GROUND FROM SOLID • CENTER CUTTING

- 2-Flute used for slotting, ramping, pocketing and plunging operations. Preffered for small and medium removal rates on soft, tough and long chip materials such as aluminum, copper & brass.

Diameter (In) Mill	Diameter (In) Shank	Flute (In) Length	OAL (In)	HSS Item#	TiN Coated Item#	M42 Cobalt Item#
1/8	3/8	3/8	3-1/16	5803-0125	5827-0125	5825-0125
5/32	3/8	7/16	3-1/8	5803-0156	----------	----------
3/16	3/8	7/16	3-1/8	5803-0187	5827-0187	5825-0187
7/32	3/8	1/2	3-1/8	5803-0218	----------	----------
1/4	3/8	1/2	3-1/8	5803-0250	5827-0250	5825-0250
9/32	3/8	9/16	3-1/8	5803-0281	----------	----------
5/16	3/8	9/16	3-1/8	5803-0312	----------	5825-0312
3/8	3/8	9/16	3-1/8	5803-0375	5827-0375	5825-0375
7/16	1/2	13/16	3-3/4	5803-0437	----------	----------
1/2	1/2	13/16	4	5803-0500	5827-0500	5825-0500
9/16	5/8	1-1/8	4-1/2	5803-0562		
5/8	5/8	1-1/8	4-1/2	5803-0625		
3/4	3/4	1-5/8	5	5803-0750		
1	1	1-5/8	5-7/8	5803-1000		

M42 COBALT 60° HELICAL PROFILING END MILLS

GROUND FROM SOLID • M42 8% COBALT • CENTER CUTTING



- High helix 60° end mills have longer tool life and less cutting resistance than 45° high helix end mills.
- Smooth cutting and reduced cutting resistance
- Suitable for machining difficult to cut materials

Limited Supply!

Diameter (In) Mill	Diameter (In) Shank	Flute (In) Length	OAL (In)	No. of Flutes	Item#
1/4	3/8	5/8	2-7/16	3	5805-0250
5/16	3/8	3/4	2-1/2	3	5805-0312
3/8	3/8	3/4	2-1/2	3	5805-0375
7/16	3/8	1	2-11/16	3	5805-0437
1/2	1/2	1-1/4	3-1/4	3	5805-0500
5/8	5/8	1-5/8	3-3/4	3	5805-0625
3/4	3/4	1-5/8	3-7/8	3	5805-0750
7/8	7/8	1-7/8	4-1/8	4	5805-0875
1	1	2	4-1/2	4	5805-1000

HSS 4-FLUTE SINGLE-END CENTER CUT END MILLS

GROUND FROM SOLID • CENTER CUTTING



Diameter (In) Mill	Shank	Flute (In) Length	OAL (In)	HSS Item#	TiN Coated Item#	M42 Cobalt Item#
1/8	3/8	3/8	2-5/16	5802-0125	5828-0125	5835-0125
3/16	3/8	1/2	2-3/8	5802-0187	5828-0187	5835-0187
1/4	3/8	5/8	2-1/2	5802-0250	5828-0250	5835-0250
5/16	3/8	3/4	2-1/2	5802-0312	5828-0312	5835-0312
3/8	3/8	3/4	2-1/2	5802-0375	5828-0375	5835-0375
7/16	3/8	13/16	2-1/2	5802-0437	5828-0437	5835-0437
1/2	3/8	13/16	2-1/2	5802-0500	5828-0500	5835-0500
1/2	1/2	1-1/4	3-1/4	5802-0501	5828-0501	5835-0501
9/16	1/2	1-3/8	3-3/8	5802-0562	5828-0562	5835-0562
5/8	1/2	1-5/16	3 -7/16	5802-0625	----------	5835-0625
5/8	5/8	1-5/8	3-3/4	5802-0626	5828-0626	5835-0626
3/4	1/2	1-5/8	3-5/8	5802-0750	----------	5835-0750
3/4	5/8	1-5/8	3-3/4	5802-0751*	----------	5835-0751*
3/4	3/4	1-5/8	3-7/8	5802-0753	5828-0751	5835-0753
7/8	3/4	1-7/8	4-1/8	----------	----------	5835-0875
1	1/2	1-7/8	4-1/8	5802-1000*	----------	5835-1000
1	3/4	1-7/8	4-1/8	5802-1001*	----------	5835-1001
1	1	2	4-1/2	5802-1002	----------	5835-1002

* While Supply Last

6-FLUTE SINGLE-END CENTER CUT END MILLS



GROUND FROM SOLID • CENTER CUTTING

Diameter (In) Mill	Shank	Flute (In) Length	OAL (In)	HSS Item#	M42 Cobalt Item#
1-1/16	3/4	1-5/8	3-7/8	----------	5835-1062
1-3/16	3/4	1-1/2	3-7/8	----------	5835-1087
1-1/8	1	2	4-1/2	5802-1252	----------
1-1/4	1	2	4-1/2	----------	5835-1250
1-1/4	1-1/4	2	4-1/2	5802-1256	
1-1/2	1-1/4	2	4-1/2	5802-1506	

HIGH SPEED STEEL

Used for general-purpose maching of both ferrous and noferrous materials.

TiN-Titanium Nitride

Gold in color, this is an excellent general-purpose PVD coating that is suitable for a wide range of materials. The TiN coating will improve the tool life and is used where elevated speeds & feeds are the objective. TiN provides high lubricity and facilitates chip flow which reduces heat and edge buidup on the end mill.

COBALT

M42 Cobalt (8%) is designed to cut difficult and abrasive materials, ranging from medium to high hardness. Roughing end mills are made of cobalt to withstand elevated temperatures and assure high-edge hardnessduring rapid stock removal. Choose cobalt end mills on hardwork materials or when there is a problem with wear or short tool lige.

MULTI-FLUTE END MILLS

For profiling, shoulder milling and finishing operations.Multi-flute tools for light to medium removal rates and obtaining better surface finishesin steels and steel alloys. Center cutting multi-flute end mills allow plunge cutting and slotting.

HSS 4-FLUTE DOUBLE-END END MILLS

GROUND FROM SOLID • CENTER CUTTING



Diameter (In) Mill	Shank	Flute (In) Length	OAL (In)	HSS Item#	TiN Coated Item#	M42 Cobalt Item#
1/8	3/8	3/8	3-1/16	5804-0125	5829-0125	5836-0125
5/32	3/8	7/16	3-1/8	5804-0156*	----------	----------
3/16	3/8	1/2	3-1/4	5804-0187	5829-0187	5836-0187
1/4	3/8	5/8	3-3/8	5804-0250	5829-0250	5836-0250
5/16	3/8	3/4	3-1/2	5804-0312	5829-0312	5836-0312
3/8	3/8	3/4	3-1/2	5804-0375	5829-0375	5836-0375
7/16	1/2	13/16	3-3/4	5804-0437*	----------	5836-0437*
1/2	1/2	1	4-1/8	5804-0500	5829-0500	5836-0500
5/8	5/8	1-3/8	5	5804-0625	5829-0625	5836-0625
3/4	3/4	1-5/8	5-5/8	5804-0750	----------	5836-0750

* While Supply Last

ROUGHING END MILLS

M42 COBALT ROUGHING END MILLS

- Their uniform cutting load per tooth assures minimum chatter deflection.
- Fast stock removal.
- Ideal for N/C machines.

• GROUND FROM SOLID M42 BLANK
• 8% COBALT
• CENTER CUTTING





Size (In)	Shank Dia.	Flute Length	OAL	Flute	Uncoated Item#	Tin Coated Item#
1/4	3/8	5/8	2-7/16	3	8002-5708	8002-6708
1/4	3/8	5/8	2-7/16	4	8002-5710	----------
5/16	3/8	3/4	2-1/2	4	8002-5716	----------
3/8	3/8	3/4	2-1/2	4	8002-5721	8002-6721
3/8	3/8	1-1/2	3-1/4	4	8002-5727	----------
1/2	1/2	1-1/4	3-1/4	4	8002-5733	8002-6733
1/2	1/2	2	4	4	8002-5736	----------
5/8	5/8	1-5/8	3-3/4	4	8002-5748	8002-6748
3/4	3/4	1-5/8	3-3/4	4	8002-5766	----------
3/4	3/4	1-5/8	3-7/8	4	8002-5770	8002-6770
3/4	3/4	3	5-1/4	4	8002-5775	----------
1	3/4	1-1/2	3-3/8	5	8002-5794	----------
1	1	2	4-1/2	5	8002-5802	8002-6802
1	1	3	5-1/2	5	8002-5805	----------

M42 COBALT ROUGHING END MILLS-FINE PITCH

GROUND FROM SOLID M42 BLANK • 8% COBALT • CENTER CUTTING

- Recommended for high production milling in difficult-to-machine materials such as inconel, hasteloy, titanium alloys and other materials up to RC 40
- The pressure of the cut is distributed over many teeth.
- Low co-efficient friction.



*Limited Supply

Size (In)	Shank Dia.	Flute Length	OAL	Flute	Item#
3/16	3/8"	1/2	2-3/8	4	5823-0187
1/4	3/8	5/8	2-7/16	4	5823-0250
1/4	3/8	1-1/4	3-1/16	4	5823-0251
5/16	3/8	3/4	2-1/2	4	5823-0312
3/8	3/8	3/4	2-1/2"	4	5823-0375
3/8	3/8	1-1/2	3-1/4	4	5823-0376
7/16	3/8	1	2-11/16	4	5823-0437
1/2	1/2	1-1/4	3-1/4	4	5823-0500
1/2	1/2	2	4	4	5823-0501
1/2	1/2	3	5	4	5823-0502

Size (In)	Shank Dia.	Flute Length	OAL	Flute	Item#
9/16	1/2	1-3/8	3-3/8	4	5823-0562
5/8	5/8	1-5/8	3-3/4	4	5823-0625*
5/8	5/8	2-1/2	4-5/8	4	5823-0626
3/4	3/4	3/4	2/7/8	4	5823-0750
3/4	3/4	3	5-1/4	4	5823-0752
3/4	5/8	1-5/8	3-3/4	4	5823-0753*
7/8	3/4	1-7/8	4-1/8	5	5823-0875
7/8	3/4	3-1/2	5-5/8	5	5823-0876*
7/8	7/8	3-1/2	5-3/4	5	5823-0878*
1	1	2	4-1/2	5	5823-1000
1	1	3	5-1/2	5	5823-1001*
1	1	4	6-1/2	5	5823-1002
1-1/4	1-1/4	2	4-1/2	6	5823-1250
1-1/4	1-1/4	4	6-1/2	6	5823-1252
1-1/2	1-1/4	2	4-1/2	6	5823-1500
1-1/2	1-1/4	3	5-1/2	6	5823-1501
1-1/2	1-1/4	5	7-1/2	6	5823-1503*
2	1-1/4	2	4-1/2	8	5823-2000
2	1-1/4	4	6-1/2	8	5823-2001*
2	2	2	5-3/4	8	5823-2002*
2	2	4	7-3/4	8	5823-2003*

HIGH SPEED STEEL

Used for general-purpose maching of both ferrous and noferrous materials.

COBALT

M42 Cobalt (8%) is designed to cut difficult and abrasive materials, ranging from medium to high hardness. Roughing end mills are made of cobalt to withstand elevated temperatures and assure high-edge hardnessduring rapid stock removal. Choose cobalt end mills on hardwork materials or when there is a problem with wear or short tool lige.

HSS T-SLOT CUTTERS

- High speed steel.
- Rugged design with free cutting features.
- Cutters have positive radial rake, right and left hand spiral with alternate side cutting teeth for maximum chip clearance.



HIGH SPEED STEEL

Bolt Size	Cutter Dia.	Cutter Width	Neck Dia.	Shank Dia.	Undercut Length	OAL	Tooth	Item#
1/4	9/16	15/64	17/64	1/2	35/64	2-19/32	8	2006-0161
5/16	21/32	17/64	21/64	1/2	39/64	2-11/16	8	2006-0163
3/8	25/32	21/64	13/32	3/4	3/4	3-1/4	8	2006-0165
1/2	31/32	25/64	17/32	3/4	3/4	3-7/16	8	2006-0167
5/8	1-1/4	31/64	21/32	1	1-9/64	3-15/16	10	2006-0169
3/4	1-15/32	5/8	25/32	1	1-1/2	4-7/16	10	2006-0171
1	1-27/32	53/64	1-1/32	1-1/4	1-43/64	4-13/16	10	2006-0173
1-1/4	2-7/32	1-3/32	1-9/32	1-1/4	1-31/32	5-3/8	12	2006-0175
1-1/2	2-21/32	1-11/32	1-17/32	1-1/4	2-1/8	5-29/32	12	2006-0177

PLAIN METAL SLITTING SAWS

- For general-purpose slotting and cut-off operations. Sides concave for smooth cuts.
- With keyway (except 3").



HIGH SPEED STEEL

Dia. (Inch)	No. of Teeth	Face (Inch)	Hole (Inch)	Item #
3	30	1/64	1	5071-4201
3	30	1/32	1	5071-4202
3	30	3/64	1	5071-4203
3	30	1/16	1	5071-4204
3	30	3/32	1	5071-4206
3	30	1/8	1	5071-4208
3	30	5/32	1	5071-4210
4	36	1/32	1	5071-4402
4	36	1/16	1	5071-4404
4	36	3/32	1	5071-4406
4	36	1/8	1	5071-4408
4	36	5/32	1	5071-4410
4	36	3/16	1	5071-4412
5	40	1/16	1	5071-4604
5	40	3/32	1	5071-4606
5	40	3/16	1	5071-4612
5	40	1/16	1-1/4	5071-4704
5	40	3/32	1-1/4	5071-4706
5	40	1/8	1-1/4	5071-4708
5	40	5/32	1-1/4	5071-4710
5	40	3/16	1-1/4	5071-4712
6	42	1/16	1	5071-4804
6	42	3/32	1	5071-4806
6	42	1/8	1	5071-4808
6	42	5/32	1	5071-4810
6	42	3/16	1	5071-4812

HIGH SPEED STEEL

Used for general-purpose maching of both ferrous and noferrous materials.

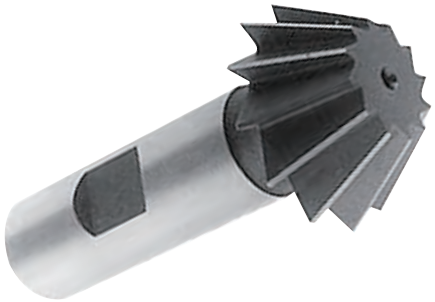
COBALT

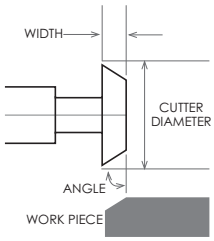
M42 Cobalt (8%) is designed to cut difficult and abrasive materials, ranging from medium to high hardness. Cutters are made of cobalt to withstand elevated temperatures and assure high-edge hardness during rapid stock removal. Choose cobalt on hardwork materials or when there is a problem with wear or short tool life.

SINGLE ANGLE 45° COBALT CHAMFERING CUTTERS

M42 (8%) COBALT • RIGHT HAND CUT • 45° CHAMFER ANGLE

- Use for chamfering and angle milling operations.

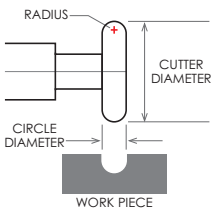




Cutter Dia.	Cutter Width	Shank Dia.	Overall Length	Item#
1/2	1/8	3/8	2-1/8	2006-0351
3/4	3/16	3/8	2-1/8	2006-0353
1	5/16	1/2	2-1/2	2006-0356
1-1/2	1/2	3/4	2-3/4	2006-0360

CONVEX RADIUS HSS MILLING CUTTERS

- Precision ground
- Performance at lower cost
- Better finish possible in many materials with profile ground.
- Used for milling female half circle.



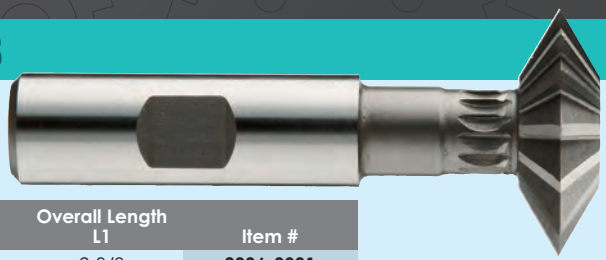
HIGH SPEED STEEL



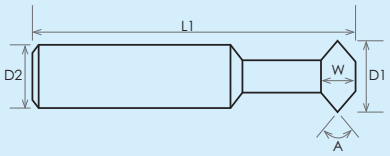
Item#	No. of Teeth	Radius (Inch)	Cutter Dia(In)	Shank Dia(In)	OAL (Inch)
2006-0401	6	1/32	3/4	1/2	3
2006-0406	6	1/16	3/4	1/2	3
2006-0411	6	3/32	7/8	1/2	3
2006-0416	6	1/8	1-1/4	3/4	3-1/2

DOUBLE ANGLE COBALT SHANK CUTTERS

- Double angle cutters are available with either a 60° or 90° included angle for milling a double angle cut in one pass.



M42 (8%) COBALT



Cutter Angle A	Cutter Dia. D1	Shank Dia. D2	Cutter Width W	Overall Length L1	Item #
60°	3/4	3/8	3/16	2-3/8	2006-0301
	1	1/2	5/16	2-27/32	2006-0303
	1-1/2	5/8	1/2	3-3/8	2006-0306
	2-1/4	7/8	3/4	4-5/32	2006-0310
90°	3/4	3/8	1/4	2-7/16	2006-0331
	1	1/2	3/8	2-29/32	2006-0333
	1-1/2	5/8	9/16	3-7/16	2006-0336
	2-1/4	7/8	3/4	4-5/32	2006-0340

CARBIDE END MILLS & CHAMFERNG TOOLS

2 FLUTE STUB LENGTH SOLID CARBIDE SINGLE END MILLS

CENTER CUTTING
SUBMICRON GRAIN CARBIDE

While Supplies Last!

Cutting diameter tolerance + .000/.002

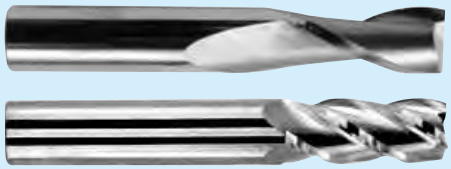


Diameter (In) Mill	Diameter (In) Shank	Flute (In) Length	OAL (In)	Uncoated Item#	AlTiN Coated Item#
3/32	1/8	3/16	1-1/2	**5816-0937**	**5817-0937**
1/8	1/8	1/4	1-1/2	**5816-1250**	**----------**

APPLICATION

- **2 Flute** - For milling lower strength materials. Offers the maximum flute volume for chip removal.

2 & 4 FLUTE SOLID CARBIDE SINGLE END MILLS



- Regular length
- Submicron grain carbide

CENTER CUTTING

APPLICATION

- **2 Flute** - For milling lower strength materials. Offers the maximum flute volume for chip removal
- **4 Flute** - For milling tougher metals where their thicker webs offer maximum rigidity and greater feed rates

- AlTiN coating is beneficial in wet, semi-dry to dry cutting of most steels and highly abrasive materials. Provides good thermal stability for increased speeds and feeds that offers excellent heat resistance, good lubricity, better finishes and prolongs tool life.

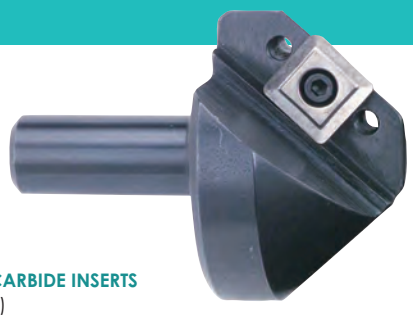
Cutting diameter tolerance + .000/.002

Diameter (In) Mill	Diameter (In) Shank	Flute (In) Length	OAL (In)	2-Flute Uncoated Item#	2-Flute AlTiN Coated Item#	4-Flute Uncoated Item#	4-Flute AlTiN Coated Item#
1/32	1/8	3/32	1-1/2	**8003-0005**	**5806-0313**	**8003-1243**	**5807-0313**
1/16	1/8	1/4	1-1/2	**8003-0007**	**5806-0625**	**8003-1245**	**5807-0625**
3/32	1/8	3/8	1-1/2	**8003-0009**	**5806-0937**	**8003-1247**	**5807-0937**
1/8	1/8	1/2	1-1/2	**8003-0012**	**5806-1250**	**8003-1250**	**5807-1250**
3/16	3/16	5/8	2	**8003-0018**	**5806-1875**	**8003-1875**	**5807-1875**
1/4	1/4	3/4	2-1/2	**8003-0025**	**5806-2500**	**8003-2500**	**5807-2500**
5/16	5/16	13/16	2-1/2	**8003-0029**	**5806-3125**	**8003-3125**	**5807-3125**
3/8	3/8	1	2-1/2	**8003-0037**	**5806-3750**	**8003-3750**	**5807-3750**
1/2	1/2	1	3	**8003-0050**	**5806-5000**	**8003-5000**	**5807-5000**

82° INDEXABLE COUNTERSINK & CHAMFER TOOLS



- Deburr and countersink large diameter holes.
- Positive rake for smooth cutting without chatter.
- Carbide indexable, no tool re-sharpening needed.
- 7° relief.



Cutter Min-Max.	Shank Dia.	Use Insert	Insert Screw	Wrench	Item#
1/4~3/4	1/2	TCMT32.51	M4x8	T15	**2001-0036**
1/2~1-3/4	1/2	SCMT432	M5x10	T20	**2001-0038**
1-1/4~2-1/4	3/4	SCMT432	M5x10	T20	**2001-0040**

TIN COATED REPLACEMENT CARBIDE INSERTS
(TCMT32.51) (Item 6004-9031)
(SCMT 432) (Item 6004-4432)

See page 144 & 149 for inserts and page 128 for screws.

3PC INDEXABLE COUNTERSINK & CHAMFERING TOOL SETS

- Use for deburring and countersinking large diameter holes.
- Positive rake for smooth cutting without chatter.
- Carbide indexable so no tool resharpening is needed.
- 7° relief.



Item#	Degree
2001-0010	60°
2001-0011	82°
2001-0012	90°

SET INCLUDES 1 of EACH: 1/4 x 3/4 x 1/2" shank,1/2 x 1-3/4 x 1/2" shank, 1-1/4 x 2-1/2 x 3/4" shank, C-5 inserts & Wrenches (T15,T20)

REPLACEMENT SCREWS are #2100-0069 for triangle insert (TCMT 32.5_) and #2100-0075 (SCMT-432) for the square inserts.

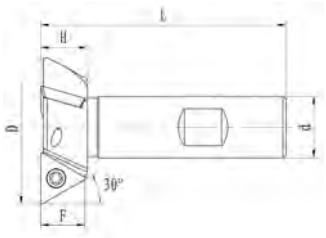
REPLACEMENT INSERTS are #6004-9031(TCMT32.51) triangle and #6004-4432(SCMT-432) Square

#6004-9031(TCMT32.51)
#6004-4432(SCMT432)
#2100-0069 (M4x8)
#2100-0075(M5x10)

60° INDEXIABLE DOVETAIL CUTTERS-Accepts TDEX Carbide Insert

- Right hand cut.
- 60° angle, 15° clearance.
- For milling, roughing & finishing at high speeds & feeds.
- Insert is NOT included.

NEW





Cutting Diameter D	Shank d	(Inch) OAL L	Cutting Depth F	Height H	No. of Insert	Use Insert	Screw	Item#
1/2	3/8	2.36	0.32	0.375"	1	TDEX1102	M2.5X6.5	**2075-0500**
3/4	3/8	2.36	0.32	0.375"	2	TDEX1102	M2.5X6.5	**2075-0502**
1	1/2	2.36	0.32	0.375"	2	TDEX1102	M2.5X6.5	**2075-0504**
1-3/8	5/8	2.76	0.51	0.550"	2	TDEX1603	M4x10	**2075-0506**
1-7/8	3/4	2.95	0.51	0.550"	3	TDEX1603	M4x10	**2075-0508**
2-1/4	1	3.35	0.70	0.750"	3	TDEX2204	M5x12	**2075-0510**
2-1/2	1	3.35	0.70	0.750"	3	TDEX2204	M5x12	**2075-0512**

TDEX 60° TRIANGLE CARBIDE INSERTS

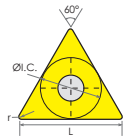
TDEX

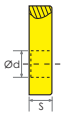
- 60° indexiable dovetail milling cutter
- Honed edge allows for a heavier cuts.
- For special applications
- 3 cutting edges.

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	TiN Coated Grade
6062-0215	TDEX 21.5	TDEX110204	1/4	7/16	3/32	7/64	.0157	C-5
6062-0320	TDEX32	TDEX16T308	3/8	5/8	5/32	0.17	.0315	C-5
6062-0430	TDEX43	TDEX220408	1/2	7/8	3/16	0.22	.0315	C-5

10 PC PER PACKAGE







INDEXABLE T-SLOT CUTTERS
Accepts CCMT Carbide Inserts

NEW

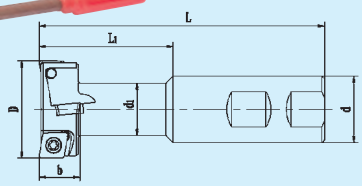
- 7° relief.
- Setting rake 90°.
- For milling, "T" sloting, bottom shouldering & side slotting.
- Weldon shank.

INSERT NOT INCLUDED







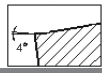


Bolt Size	Cutter Dia. D	Cutter Width b	Neck Dia. d1	Shank Dia. d	Undercut Length L1	OAL L	Tooth	Insert	Screw	Item#
1/2	31/32	25/64	17/32	3/4	1-7/16	3-1/2	4	CCMT21.5_	M2.5x6.5	**2077-0500**
5/8	1-1/4	31/64	21/32	1	1-11/16	4	4	CCMT21.5_	M2.5x6.5	**2077-0502**
3/4	1-15/32	5/8	25/32	1	2-3/16	4-1/2	4	CCMT32.5_	M4x10	**2077-0504**
1	1-27/32	53/64	1-1/32	1-1/4	2-9/16	4-7/8	4	CCMT43_	M5x12	**2077-0506**

CCMT/EM 80° DIAMOND - POSITIVE RAKE CARBIDE INSERTS

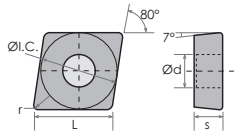
CCMT-EM

EM -Single-side chipbreaker with M-class tolerance serves to reduce cutting force and workpiece adhesion when machining stainless steel. Possesses higher feed and depth of cut capability than EF chipbreaker.



EM - Semi-Finishing Geometry. Stainless Steel Material





10 PC PER PACKAGE

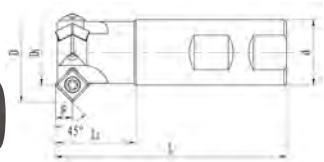
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6053-0111	CCMT-21.51-EM	CCMT060204EM	1/4	1/4	3/32	7/64	.0157	XAF798
6053-0112	CCMT-21.52-EM	CCMT060208EM	1/4	1/4	3/32	7/64	.0315	XAF798
6053-0221	CCMT-32.51-EM	CCMT09T304EM	3/8	3/8	5/32	0.17	.0157	XAF798
6053-0222	CCMT-32.52-EM	CCMT09T308EM	3/8	3/8	5/32	0.17	.0315	XAF798
6053-0432	CCMT-432-EM	CCMT120408EM	1/2	1/2	3/16	7/32	.0315	XAF798

45° INDEXIABLE CHAMFERING END MILLS
-Accepts SPMT Carbide Insert

NEW

- Straight shank.
- Insert is NOT included.





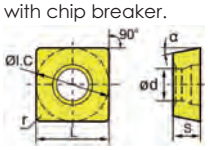
Cutting Diameter	Min. Cutting Dia.	Shank	OAL	(Inch) Cutting Diameter	No. of Insert	Use Insert	Screw	Item#
1	0.52	3/4	3.35	0.23	2	SPMT32_	M3x8	**2076-0001**
1-1/8	0.59	3/4	3.35	0.23	2	SPMT32_	M3x8	**2076-0003**
1-1/4	0.65	3/4	3.35	0.23	2	SPMT32_	M3x8	**2076-0006**
1-1/2	0.78	1	3.74	0.23	3	SPMT32_	M3x8	**2076-0010**
1-3/4	0.91	1-1/4	3.94	0.23	3	SPMT32_	M3x8	**2076-0013**
2	1.04	1-1/2	3.94	0.23	4	SPMT32_	M3x8	**2076-0016**

SPMT CARBIDE INSERT

SPMT

- Screw on style.
- -11° relief.
- Single sided with chip breaker.





Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) S	d	r	Grade
6018-3251	SPMT32.51	SPMT09T304	3/8"	5/32	0.173"	0.0156"	TiN(C-5)
6018-3252	SPMT32.52	SPMT09T308	3/8"	5/32	0.173"	0.031"	TiN(C-5)
6018-3432	SPMT432	SPMT120408	1/2"	3/16	0.216"	0.031"	XAF698

MINI INDEXABLE END MILLS & SET

- Made of high grade tool steel hardened.
- Carbide triangle inserts included TPG222.



3 PC SET
8005-0020
1/2, 9/16 & 5/8"

- **1/2" SHANK**
- **1" BODY LENGTH**
- **3" OAL**

Item#	Cutting Dia.	No. of Insert	Insert	Locking Screw
5820-0500	1/2"	1	TP_22	PM5x5
5820-0562	9/16"	1	TP_22	PM5x5
5820-0625	5/8"	1	TP_22	PM5x5

LOCKING CREW (M5x5) (Item#2100-0104)

90° SQUARE SHOULDER INDEXABLE END MILLS -STRAIGHT SHANK



- For use in heavy duty milling application.
- Higher metal removal rates.
- Cutting rake angle 0°.
- Axial rake angle 0°.
- Setting anle 90°.
- Positive rake 90°.
- Right hand cut.
- Unique clamping mechanism. One clamp fits all sizes.
- **Inserts included.**

STRAIGHT SHANK

*Limited Supply

NEW

Item#	Cutting Dia.	Shank Dia.	No. of Insert	Insert	Screw
5820-0750	3/4	3/4	2pc	TP_22_	PM5x8
5820-1000	1	3/4	2pc	TP_22_	PM5x8
5820-1250	1-1/4	3/4	2pc	TP_32_	PM6x12
5820-1500	1-1/2	3/4	3pc	TP_32_	PM6x12
5820-1750	1-3/4	3/4	3pc	TP_32_	PM6x12
5820-2000	2	3/4	3pc	TP_43_	PM8x16
5820-3000*	1	1	2pc	TP_22_	PM5x8
5820-3250*	1-1/4	1	2pc	TP_32_	PM6x12
5820-4000	2	1	3pc	TP_43_	PM8x16

CARBIDE INSERT & LOCKING SCREW

Description		Item #
CARBIDE INSERT (C6)	TPCN22PDTR	6004-9122
	TPCN32PDTR	6004-9132
	TPCN43PDTR	6004-9143
LOCKING SCREW	PM5x8	2100-0105
	PM6x12	2100-0106
	PM8x16	2100-0108

R-8 INDEXABLE END MILLS & SET

- For use in heavy duty milling application.
- Higher metal removal rates.
- Unique clamping mechanism. One clamp fits all sizes.
- **Inserts included.**



3 PC SET
5820-0001
1, 1-1/4 & 1-1/2"

R8 SHANK

Item#	Cutting Dia.	Length of Cut	OAL	No. of Insert	Inserts	Locking Screw
1006-0005	1"	1"	5-9/16	2	TP_22_	PM5x8
1006-0006	1-1/4"	1-1/4"	5-9/16	2	TP_32_	PM6x12
1006-0011	1-1/2"	1-3/8"	5-9/16	3	TP_32_	PM6x12
1006-0012	2"	1-3/8"	6	3	TP_32_	PM6x12

LOCKING SCREW (PM5x8) (Item# 2100-0105)
(PM6x12) (Item#2100-0106)

90° SQUARE SHOULDER INDEXABLE FACE MILLS Accepts TPG Carbide Inserts

Features:

- This 90° major cutting edge angle square shoulder milling cutter is fitted with strong 11° positive triangular inserts allowing high depth of cut and feed per tooth.
- The clamping system (screw) makes quick and easy insert mounting (indexing) and removal.



Limited Supply!

Cutting Diameter	Hole Size	Teeth	Use Insert	Screw	Item#
2-1/2"	3/4"	4	TP_32_	PM6x12	2061-2500
4"	1-1/2"	5	TP_43_	PM8x16	2061-4000
5"	1-1/2"	6	TP_43_	PM8x16	2061-5000

REPLACEMENT SCREW (PM6x12) (Item #2100-0106)
(PM8x16) (Item #2100-0108)

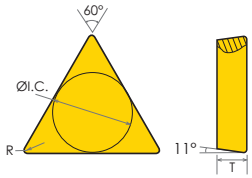
TPG - POSITIVE RAKE CARBIDE INSERTS

TPG

GRADE C-2 FOR CAST IRON AND GENERAL PURPOSE
GRADE C-6 FOR ALL STEEL AND GENERAL PURPOSE

- Single sided without chipbreaker.
- 11° relief angle.
- Suitable for fifficult to cut materials.





10 PC PER PACKAGE

Insert No.	I.C.	(Inch) T	R	Uncoated C-2 Item#	Uncoated C-6 Item#	TiN Coated(C-6) Item#
TPG-21.51	1/4	.094	1/64	--------	.....	6020-1121
TPG-221	1/4	1/8	1/64	6020-2221	6020-0221	6020-1221
TPG-222	1/4	1/8	1/32	6020-2222	6020-0222	6020-1222
TPG-223	1/4	1/8	3/64	6020-2223	6020-0223	6020-1223
TPG-32.51	3/8	5/32	1/64	.....	.....	6020-1122
TPG-321	3/8	1/8	1/64	6020-2321	6020-0321	6020-1321
TPG-322	3/8	1/8	1/32	6020-2322	6020-0322	6020-1322
TPG-323	3/8	1/8	3/64	6020-2323	6020-0323	6020-1323
TPG-324	3/8	1/8	1/16	6020-2324	6020-0324	6020-1324
TPG-431	1/2	3/16	1/64	6020-2431	6020-0431	6020-1431
TPG-432	1/2	3/16	1/32	6020-2432	6020-0432	6020-1432
TPG-433	1/2	3/16	3/64	6020-2433	6020-0433	6020-1433
TPG-434	1/2	3/16	1/16	6020-2434	6020-0434	6020-1434

SQUARE SHOULDER INDEXABLE END MILLS -Accept APKT(10mm) Carbide Insert

- 90° square shoulder milling
- Used for slotting and peripheral milling
- Excellent alternative to HSS, cobalt and carbide end mills for heavy material removal rates
- Used standard APKT-1003 inserts (not included)

SQUARE SHOULDER

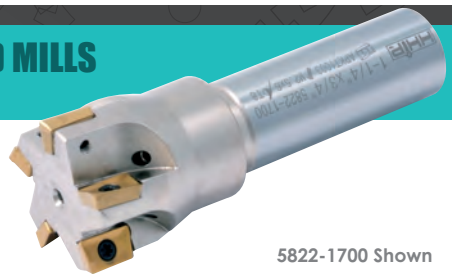


INSERTS NOT INCLUDED

Item#	Cutter Dia.	Shank Dia.	(Inch) OAL	No of Insert	Use Insert	Screw	Torx Wrench
5822-0375	3/8	1/2	3.00	1	APKT1003	M2.5x5	T-8
5822-0500	1/2	5/8	3.25	1	APKT1003	M2.5x5	T-8
5822-0625	5/8	5/8	3.25	2	APKT1003	M2.5x5	T-8
5822-0750	3/4	3/4	3.50	3	APKT1003	M2.5x6	T-8
5822-1000	1	1	3.50	4	APKT1003	M2.5x6	T-8
5822-1250	1-1/4	1.25	3.75	5	APKT1003	M2.5x6	T-8
5822-1500	1-1/2	1.50	4.25	6	APKT1003	M2.5x6	T-8

CARBIDE INSERT (APKT-1003) (Item #6010-4203)
SCREW (M2.5X5) (Item #2100-0067)
(M2.5X6) (Item #2100-0070)

SQUARE SHOULDER COOLANT-THRU INDEXABLE END MILLS -Accept APKT(10mm) Carbide Insert



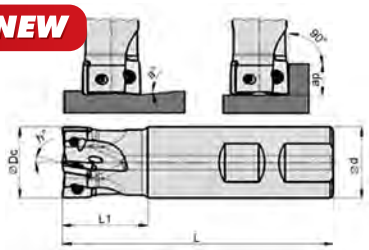


5822-1700 Shown

- Coolant thru.
- 90° square shoulder milling
- Used for slotting and peripheral milling
- Excellent alternative to HSS, cobalt and carbide end mills for heavy material removal rates
- Used standard APKT-1003 inserts (not included).

SQUARE SHOULDER

NEW



INSERTS NOT INCLUDED

Item#	Cutter Dia.	Shank Dia.	No. of Flute	Head Length L1	(Inch) OAL	Use Insert	Screw	Torx Wrench
5822-1601	3/8	1/2	1	1-5/16	3.00	APKT1003	M2.5x5	T8
5822-1603	1/2	1/2	1	1-5/16	3.25	APKT1003	M2.5x5	T8
5822-1605	5/8	1/2	2	1-5/16	3.25	APKT1003	M2.5x5	T8
5822-1606	3/4	3/4	3	1-1/2	3.50	APKT1003	M2.5x6	T8
5822-1608	1	3/4	4	1-1/2	3.50	APKT1003	M2.5x6	T8
5822-1700	1-1/4	3/4	5	1-1/2	3.75	APKT1003	M2.5x6	T8

3PC SQUARE SHOULDER INDEXABLE END MILL SET

- 90° square shoulder milling
- Used for slotting and peripheral milling
- Excellent alternative to HSS, cobalt and carbide end mills for heavy material removal rates
- Used standard APKT-1003 inserts (not included) with M2.5x6mm screw.

5822-0360

NEW

SQUARE SHOULDER







INSERTS NOT INCLUDED

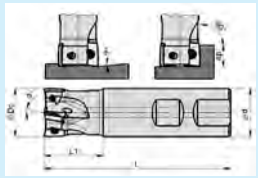
Size in Set	Cutter Dia.	Shank Dia.	No. of Flute	Head Length	(Inch) OAL	Style Inserts	Screw	Wrench
3/8x1/2"	3/8	1/2	1	1-1/2	3.00	APKT1003	M2.5x5mm	T8
1/2x1/2"	1/2	1/2	1	1-1/2	3.00	APKT1003	M2.5x5mm	T8
5/8x1/2"	5/8	1/2	2	1-1/2	3.00	APKT1003	M2.5x5mm	T8

3PC COOLANT THRU INDEXABLE END MILL SET

NEW



- Coolant thru.
- 90° square shoulder milling
- Used for slotting and peripheral milling
- Excellent alternative to HSS, cobalt and carbide end mills for heavy material removal rates
- Used standard APKT-1003 inserts (not included) with M2.5x6mm screw.



5822-1710



SQUARE SHOULDER

INSERTS NOT INCLUDED

Size in Set	Cutter Dia.	Shank Dia.	No. of Flute	Head Length	(Inch) OAL	Screw	Style Inserts	Wrench
3/8x1/2"	3/8	1/2	1	1-1/2	3.00	M2.5x5mm	APKT1003	T8
1/2x1/2"	1/2	1/2	1	1-1/2	3.00	M2.5x5mm	APKT1003	T8
5/8x1/2"	5/8	1/2	2	1-1/2	3.00	M2.5x5mm	APKT1003	T8

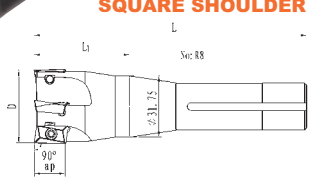
90° R8 SHANK INDEXABLE END MILLS -Accept APKT(16mm) Carbide Insert

NEW

- R8 shank.
- 90° cutting angle.
- Screwdown insert
- Used for slotting and periphial milling.
- **Insert is NOT included.**



SQUARE SHOULDER

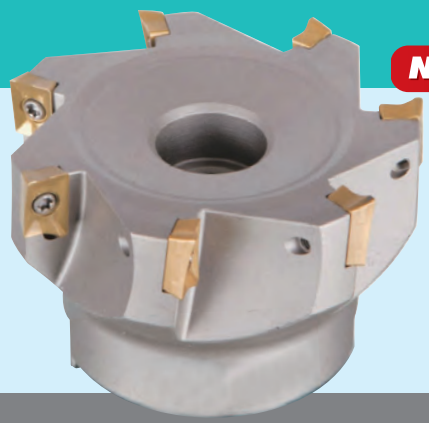


Item#	Cutting Dia. D	OAL L	No. of Insert	Use Insert	Screw	Torx Wr.
5822-3000	1	5-27/32	2	APKT1604	M4x10	T15
5822-3250	1-1/4	5-27/32	3	APKT1604	M4x10	T15
5822-3500	1-1/2	6-1/8	4	APKT1604	M4x10	T15
5822-4000	2	6-1/8	5	APKT1604	M4x10	T15
5822-4500	2-1/2	6-1/8	6	APKT1604	M4x10	T15
5822-5000	3	6-1/4	6	APKT1604	M4x10	T15

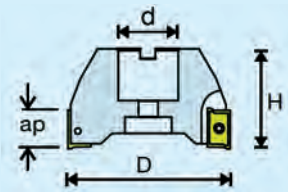
Screw (M4x10) (Item# 2100-0074)

90° SQUARE SHOULDER INDEXABLE FACE MILLS
Accepts APKT (10mm) Carbide Inserts

NEW



Features:
- This 90° major cutting edge angle square shoulder milling cutter is fitted with strong 11° positive rectangular inserts allowing high depth of cut and feed per tooth.
- Insert is NOT included



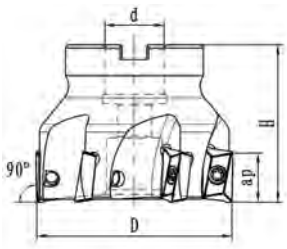
Cutting Diameter D	Hole Size d	Height H	Teeth	ap	Use Insert	Screw	Torx Wrench	Item#
2"	3/4"	1.75	5	0.410	APKT-1003	M2.5x6	T8	**2063-2000**
2-1/2"	3/4"	2.00	6	0.410	APKT-1003	M2.5x6	T8	**2063-2500**
3"	1"	2.00	7	0.410	APKT-1003	M2.5x6	T8	**2063-3000**
4"	1-1/2"	2.00	8	0.410	APKT-1003	M2.5x6	T8	**2063-4000**
5"	1-1/2"	2.00	8	0.410	APKT-1003	M2.5x6	T8	**2063-5000**

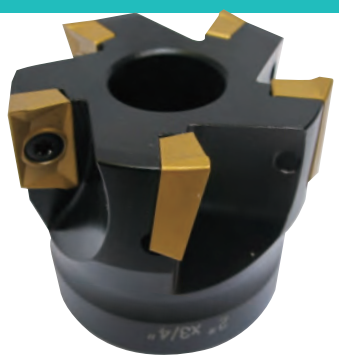
See page 133 for inserts and page 127 for screws.

90° SQUARE SHOULDER INDEXABLE FACE MILLS
-Accepts APKT (16mm) Carbide Inserts

NEW

- This 90° major cutting edge angle square shoulder milling cutter is fitted with strong 11° positive rectangular inserts allowing high depth of cut and feed per tooth.
- Insert(16mm) is NOT included.







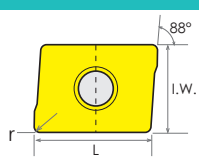
Cutting Diameter D	Hole Size d	Height H	ap	Teeth	Use Insert	Screw	Torx Wrench	Item#
2"	3/4"	1.75"	0.551"	5	APKT-160408	M4x9	T15	**2066-2000**
2-1/2"	3/4"	2"	0.551"	6	APKT-160408	M4x9	T15	**2066-2500**
3"	1"	2"	0.551"	7	APKT-160408	M4x9	T15	**2066-3000**
4"	1-1/2"	2"	0.551"	8	APKT-160408	M4x9	T15	**2066-4000**
5"	1-1/2"	2"	0.551"	8	APKT-160408	M4x9	T15	**2066-5000**

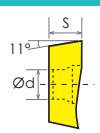
See page 133 for inserts and page 127 for screws.

APKT SQUARE SHOULDER MILLING CARBIDE INSERTS (10MM, 11MM, 16MM)
11° Relief Clearance

PM - Suitable for Mixed Production

PM - With stronger cutting edge, it is better for intermittent cutting than -DM, with wider cutting zone of steel materials.







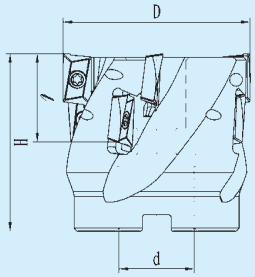
10 PC PER PACKAGE

Item#	Insert No.	I.W.	(Inch) L	S	d	r	Grade
6010-4203	APKT-1003	0.266	0.404	0.139	0.110	0.0315	XAF798
6010-4002	APKT-11T304-PM	0.256	0.482	0.142	0.110	0.0157	XAB699
6010-4308	APKT-11T308-PM	0.256	0.482	0.142	0.110	0.0315	XAF798
6010-4312	APKT-11T312-PM	0.256	0.482	0.142	0.110	0.0472	XAF798
6010-4316	APKT-11T316-PM	0.256	0.482	0.142	0.110	0.0630	XAF798
6010-4003	APKT-160408-PM	0.363	0.704	0.227	0.173	0.0315	XAB699

Helical COOLANT THRU INDEXIABLE FACE MILLS -Accepts APKT (16mm) Carbide Inserts

NEW

- This 90° major cutting edge angle square shoulder milling cutter with helical have longer tool life and less cutting resistance.
- Insert(16mm) is NOT included.







Cutting Diameter D	Hole Size d	Cutting Depth l	Height H	No. of Flute	No. of Insert	Use Insert	Screw	Torx Wrench	Item#
2"	1"	1-1/8"	2-3/8"	3	6	APKT-160408	M4x10	T15	**2066-7000**
2-1/2"	1-1/4"	1-1/8"	2-3/8"	4	8	APKT-160408	M4x10	T15	**2066-7500**
3"	1-1/4"	1-5/8"	2-3/8"	5	15	APKT-160408	M4x10	T15	**2066-8000**

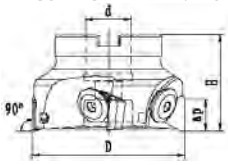
See page 133 for inserts and page 127 for screws.

90° SQUARE SHOULDER INDEXABLE FACE MILLS-Clamp Style, Accepts TPG Carbide Inserts

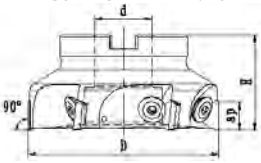
NEW

- Setting angle 90°.
- Nickel coating.
- 11° positive triangular inserts allowing high depth of cut and feed per tooth.
- Radial rake angle +1°
- Axial rake +7° .
- The clamping system (screw) makes quick and easy insert mounting (indexing) and removal.

CUTTING DIAMETER: 2~3"



CUTTING DIAMETER: >3"





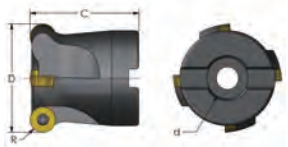
Parts & Screws See Page 127 &128

INSERTS NOT INCLUDED

Cutting Diameter D	Hole Size d	Height H	Teeth	Use Insert	Shim	Shim Screw	Locking Screw	Item#
3"	1"	1.97	5	TPG-322	TP16D	M3x6.5-D5	SM815.18	**2061-3003**
4"	1-1/2"	1.97	5	TPG-432	TP22D	M3x6.5-D5	SM1018.22	**2061-4004**
5"	1-1/2"	2.48	6	TPG-432	TP22D	M3x6.5-D5	SM1018.22	**2061-5005**

SCREW TYPE INDEXABLE FACE MILLS Accepts RCMT-1204 Carbide Inserts

- This multi-purpose milling cutter is fitted with strong round 11° positive inserts allowing high depth of cut.
- Compared to the body using 7° positive inserts, this cutter has a bigger clearance during profiling operations.



Limited Supply!



Cutting Diameter D	Hole Size d	Height C	Teeth	R	Screw	Torx Wr	Item#
2"	3/4"	1.97"	4	0.236	M4X10	T15	**2064-2000**
3"	1"	1.97"	6	0.236	M4X10	T15	**2064-3000**
4"	1-1/2"	1.97"	7	0.236	M4X10	T15	**2064-4000**
5"	1-1/2"	2.48"	7	0.236	M4X10	T15	**2064-5000**

RCKT/DR CARBIDE FACE MILL INSERT

RCKT-DR

7° Positive Relief Angle - For Turning & Facing

DR - Used for roughing of material. It can achieve a high rate of metal removal & a low cutting force .



10 PC PER PACKAGE

Item#	Insert No.	I.C.	Thickness	Hole	Grade
6034-2204	RCKT1204MO-DR	0.472"	3/16"	0.157"	XAL649

RCMT CARBIDE INSERTS

RCMT

7° Positive Relief Angle - For Turning & Facing

TiN Coated



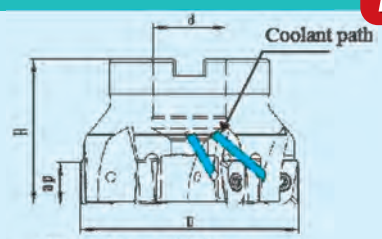
10 PC PER PACKAGE

Item#	Insert No.	I.C.	(Inch) Thickness	Hole
6034-3124	RCMT-1204	.472	.1870	.157
6034-3143	RCMT-43	.500	3/16	.217

90° SQUARE SHOULDER INDEXABLE FACE MILLS-Coolant Through
Accepts ANGX Carbide Inserts

NEW

- ANGX double-sided insert provides 4-cutting edges, has a bigger depth of cut(ap) value and economy.
- ANGX inserts with high precision cutting edge and are more agressive & have more cutting edges than APKT and are disigned to improve shoulder milling surface finish.
- Double negative rake angle of the cutter body in combination with extra thick insert achieves double positive tool angle, reduces cutting resistance and improves impact resistance.
- Coolant throu allows the cutting edge to cool and revoves chips.
- This 90° major cutting edge angle square shoulder milling cutter is fitted with strong 11° positive rectangular inserts allowing high depth of cut and feed per tooth.
- **Insert is NOT included.**








Cutting Diameter D	Arbor Size d	Height H	ap (In)	Teeth	Use Insert	Screw	Torx Wrench	Item#
2"	3/4"	1-3/4"	0.571	4	ANGX150608PNR-GM	M4x11	T15	**2069-2000**
3"	1"	2"	0.571	6	ANGX150608PNR-GM	M4x11	T15	**2069-3000**
4"	1-1/2"	2-1/2"	0.571	8	ANGX150608PNR-GM	M4x11	T15	**2069-4000**
5"	1-1/2"	2-1/2"	0.571	10	ANGX150608PNR-GM	M4x11	T15	**2069-5000**

SCREWS



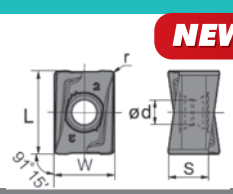
Item#	Style
2100-0065	M2.2x6
2100-0070	M2.5x6
2100-0003	M3x8
2100-0064	M4x11

ANGX CARBIDE INSERTS

ANGX

NEW

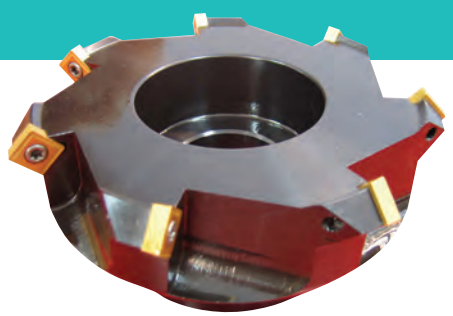
- Double-sided insert provides 4-cutting edges, has a bigger depth of cut providing value and economy.
- High precision cutting edge are more agressive & they have twice the cutting edges of APKT.
- Disigned to improve shoulder milling surface finish.

Item#	Insert No.	L	W	S	d	r	Grade
6064-0011	ANGX110508 PNR-GM	0.467"	0.331"	0.224"	0.138"	0.031"	XAF795
6064-0015	ANGX150608 PNR-GM	0.608"	0.433"	0.287"	0.173"	0.031"	XAF795

45° INDEXABLE FACE MILLS
Accepts SCMT Carbide Inserts

- This positive cutter, 45° major cutting edge angle, is fitted with strong 7° positive square inserts.



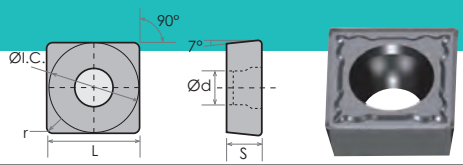
Cutting Diameter	Hole Size	Teeth	Overall Length	Use Insert	Screw	Item#
2"	3/4"	4	1.57"	SCMT-432	M4x10	**2062-2000**
3"	1"	6	1.97"	SCMT-432	M4x10	**2062-3000**
3-1/2"	1"	6	1.97"	SCMT-432	M4x10	**2062-3500**
4"	1-1/2"	6	1.97"	SCMT-432	M4x10	**2062-4000**
5"	1-1/2"	7	2.48"	SCMT-432	M4x10	**2062-5000**

SCMT/EM SQUARE - POSITIVE RAKE CARBIDE INSERTS

SCMT-EM

EM - Semi-Finishing Geometry. Stainless Steel Material

EM - Double-side chipbreaker with M-class tolerance serves to reduce cutting force and workpiece adhesion when machining stainless steel. Possesses higher feed and depth of cut capability than EF chipbreaker.



10 PC PER PACKAGE

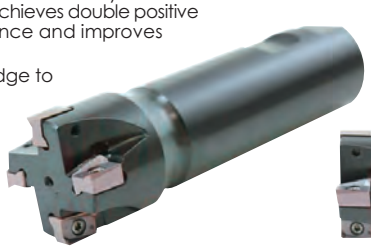
Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) L	S	d	r	Grade
6056-0431	SCMT-431-EM	SCMT120404EM	1/2	1/2	3/16	7/32	.0157	XAF798
6056-0432	SCMT-432-EM	SCMT120408EM	1/2	1/2	3/16	7/32	.0315	XAF798

90° SQUARE SHOULDER INDEXABLE END MILLS-Coolant Through
Accepts ANGX Carbide Inserts

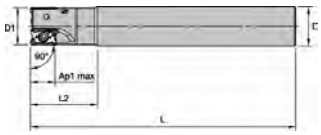


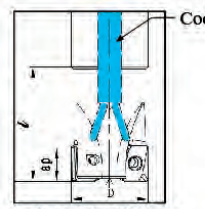
- ANGX double-sided insert provides 4-cutting edges, has a bigger depth of cut(ap) value and economy.
- ANGX inserts with high precision cutting edge are more agressive & have more cutting edges than APKT and are disigned to improve shoulder milling surface finish.
- Double negative rake angle of the cutter body in combination with extra thick insert achieves double positive tool angle, reduces cutting resistance and improves impact resistance.
- Coolant throu allows the cutting edge to cool and revoves chips.
- This 90° major cutting edge angle square shoulder milling cutter is fitted with strong 11° positive rectangular inserts allowing high depth of cut and feed per tooth.
- **Insert is NOT included**

NEW









Coolant end mill shown

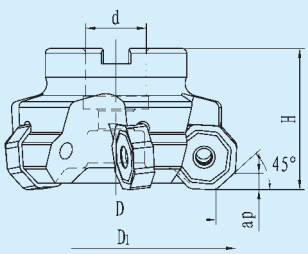
Cutting Diameter D1	Shank Size D	Head Length L2	OAL L	No. of Insert	Ap1	Use Insert	Screw	Torx Wrench	Item#
3/4"	3/4"	1-1/4"	4	1	0.441	ANGX110508	M3x8	T10	**5822-7750**
1"	1"	1-1/2"	4.5	2	0.441	ANGX110508	M3x8	T10	**5822-8000**
1-1/4"	1-1/4"	1-21/32"	5	3	0.441	ANGX110508	M3x8	T10	**5822-8250**
1-1/2"	1-1/2"	1-21/32"	5	4	0.441	ANGX110508	M3x8	T10	**5822-8500**

45° INDEXIABLE FACE MILLS
Accepts OCTAGON Carbide Insert

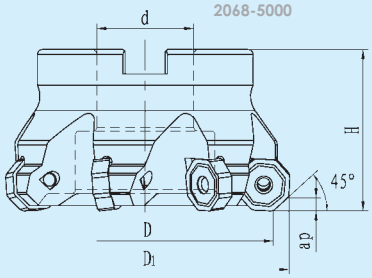
NEW

- Octagonal double side insert with 16 cutting edges is the most economical insert on the market for face machining application.
- Negative radial rake angle and axial rake angle structure combined with thick ONHU insert body improves cutter overall resistance to impact and toughness.
- Insert is NOT included.

2068-2500
2068-3000 Shown



2068-4000
2068-4001 Shown
2068-5000





Cutting Diameter D	Hole Size d	(Inch) Overall Height	Height H	D1	ap	No. of Teeth	Use Insert	Screw	Torx Wr	Item#
2-1/2	3/4	1-3/4	1-3/4"	3.03	0.196	5	ONHU08	M5x14	T20	**2068-2500**
3	1	2	2"	3.53	0.196	6	ONHU08	M5x14	T20	**2068-3000**
4	1-1/4	2-1/2	2-1/2"	4.53	0.196	7	ONHU08	M5x14	T20	**2068-4000**
4	1-1/2	2-1/2	2-1/2"	4.53	0.196	7	ONHU08	M5x14	T20	**2068-4001**
5	1-1/2	2-1/2	2-1/2"	5.53	0.196	8	ONHU08	M5x14	T20	**2068-5000**

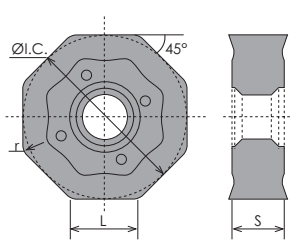
OCTAGON CARBIDE MILLING INSERT

ONHU

- Solid carbide provides better rigidity than high speed steel. It is extremely heat resistant and used for high speed applications on cast iron, nonferrous materials, plastics and other tough-to-machine materials.
- Octagonal double sided insert with 16 cutting edes provides the most economic face machining results.



10 PC PER PACKAGE

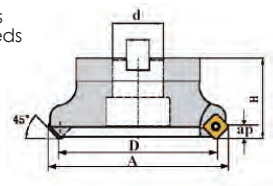


Item#	ISO Insert No.	r	(Inch) I.C.	T	Grade
6063-0008	ONHU08T508	1/32	.795	.228	XAB698

INDEXABLE FACE MILLS

45° INDEXABLE FACE MILLS-Accepts SQUARE Carbide Inserts

- The close pitch, super positive, 45° major cutting edge angle, milling cutter reduces cutting forces and permits high cutting speeds with limited power machines.







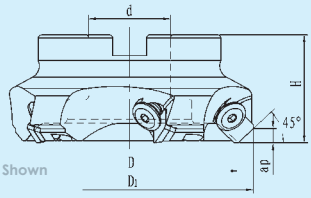
INSERTS INCLUDED

Cutting Diameter D	Hole Size d	Teeth	Overall Height H	ap	Use Insert	Screw	Torx Wrench	Item#
2"	3/4"	4	1.57"	0.236/4	SEHT-432/SE_ _432AFTN	M5x10	T20	**2065-2000**
2-1/2"	3/4"	5	1.57"	0.236/5	SEHT-432/SE_ _432AFTN	M5x10	T20	**2065-2500**
3"	1"	6	1.97"	0.236/6	SEHT-432/SE_ _432AFTN	M5x10	T20	**2065-3000**
4"	1-1/2"	6	1.97"	0.236/6	SEHT-432/SE_ _432AFTN	M5x12	T20	**2065-4000**
5"	1-1/2"	7	2.00"	0.236/7	SEHT-432/SE_ _432AFTN	M5x12	T20	**2065-5000**

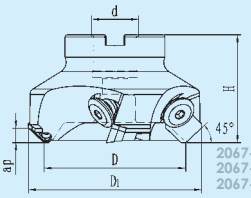
TiN Coated Carbide Insert (SEHT-432/SEHT120408) (Item #6017-0432)...**$5.85(F)**

45° INDEXIABLE FACE MILLS-Accepts SE Carbide Insert

- 45° lead angle allows an increase of feed rate by 50% over 90 degree face mill and also allows this face mill to used on smaller horse power mills. It accepts industry standard SEAN / SEKN / SEKR 42 insert which has a positive 20° clearance angle.
- The insert pockets are designed to be 19° positive inclined to minimize vibration and allowing fast cutting and lowering cutting noise.
- Insert is NOT included.



2067-4000
2067-5000 Shown



2067-2000
2067-2500 Shown
2067-3000





NEW

INSERTS NOT INCLUDED

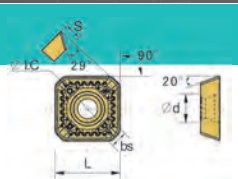
Cutting Dia. D	Hole Size d	Overall Height H	No. of Teeth	D1	ap (Inch)	Use Insert	Shim	Shim Screw	Shim Torx Wr.	Insert Screw	Insert Hex Key	Item#
2"	3/4"	1.89	3	2.53"	15/64	SEAN/SEKN-42	SE1203X	I86M4x7	T15	SM815.18L	S4	**2067-2000**
2-1/2"	3/4"	1.89	4	3.01"	15/64	SEAN/SEKN-42	SE1203X	I86M4x7	T15	SM815.18L	S4	**2067-2500**
3"	1"	1.97	5	3.53"	15/64	SEAN/SEKN-42	SE1203X	I86M4x7	T15	SM815.18L	S4	**2067-3000**
4"	1-1/4"	1.97	5	4.54"	15/64	SEAN/SEKN-42	SE1203X	I86M4x9	T15	SM815.18L	S4	**2067-4000**
5"	1-1/2"	2.48	6	5.54"	15/64	SEAN/SEKN-42	SE1203X	I86M4x9	T15	SM815.18L	S4	**2067-5000**

SEET/DR CARBIDE INSERT

SEET-DR

DR - Used for roughing of material. It can achieve a high rate of metal removal & a low cutting force .





10 PC PER PACKAGE

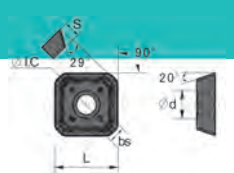
Item#	ASA Insert No.	ISO Insert No.	I.C.	bs	Thick	d	Grade
6016-0123	SEET-42-AFER	SEET12T3-DR	.500"	.071"	1/8	0.173"	XAB699

SEET/DM CARBIDE INSERT

SEET-DM

DM - Widely used chip-breaker is used for semi-finishing and finishing of steel and stainless steel





10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	bs	Thick	d	Grade
6016-1123	SEET-42-AFEM	SEET12T3-DM	.500"	.071"	1/8	0.173"	XAB698

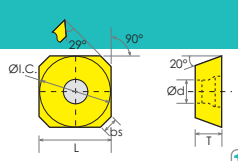
SEHT CARBIDE FACE MILL INSERT

SEHT

- 20° positive single sided chip breaker
- Wiper flat parallel land.
- 4 cutting edges

TiN COATED(C-6)





10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	bs	T	d
6017-0432	SEHT-432	SEHT120408	1/2"	1/2"	.071"	3/16"	13/64"

See page 146 for inserts and page 127 & 128 for screws & shims.

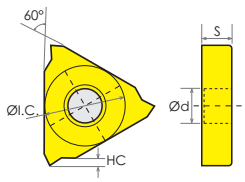
INTERNAL THREADING & GROOVING CARBIDE INSERTS-Metric Thread

Item#	Insert No.	I.C.	Screw Pitch	S	d	Grade
6006-1006	RT16.01N-1.25GM	3/8"	1.25	5/32"	0.173"	XAF799
6006-1007	RT16.01N-1.50GM	3/8"	1.50	5/32"	0.173"	XAF799
6006-1008	RT16.01N-1.75GM	3/8"	1.75	5/32"	0.173"	XAF799
6006-1009	RT16.01N-2.00GM	3/8"	2.00	5/32"	0.173"	XAF799
6006-1010	RT16.01N-2.50GM	3/8"	2.50	5/32"	0.173"	XAF799
6006-1011	RT16.01N-3.00GM	3/8"	3.00	5/32"	0.173"	XAF799

RIGHT HAND

10 PC PER PACKAGE





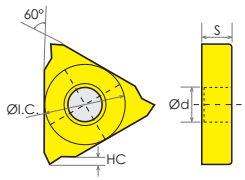
EXTERNAL THREADING & GROOVING CARBIDE INSERTS-Metric Thread

Item#	Insert No.	I.C.	Screw Pitch	S	d	Grade
6006-3006	RT16.0W-1.25GM	3/8"	1.25	5/32"	0.173"	XAF799
6006-3007	RT16.0W-1.50GM	3/8"	1.50	5/32"	0.173"	XAF799
6006-3008	RT16.0W-1.75GM	3/8"	1.75	5/32"	0.173"	XAF799
6006-3009	RT16.0W-2.00GM	3/8"	2.00	5/32"	0.173"	XAF799
6006-3010	RT16.0W-2.50GM	3/8"	2.50	5/32"	0.173"	XAF799
6006-3011	RT16.0W-3.00GM	3/8"	3.00	5/32"	0.173"	XAF799

RIGHT HAND

10 PC PER PACKAGE





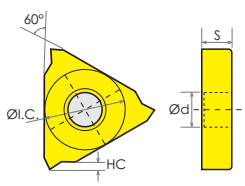
INTERNAL THREADING & GROOVING CARBIDE INSERTS-Inch Thread

Item#	Insert No.	I.C.	Screw Pitch	S	d	Grade
6006-4008	RT16.01N-8UN	3/8"	8 TPI	5/32"	0.173"	XAF799
6006-4010	RT16.01N-10UN	3/8"	10TPI	5/32"	0.173"	XAF799
6006-4012	RT16.01N-12UN	3/8"	12 TPI	5/32"	0.173"	XAF799
6006-4014	RT16.01N-14UN	3/8"	14 TPI	5/32"	0.173"	XAF799
6006-4016	RT16.01N-16UN	3/8"	16 TPI	5/32"	0.173"	XAF799
6006-4018	RT16.01N-18UN	3/8"	18 TPI	5/32"	0.173"	XAF799
6006-4020	RT16.01N-20UN	3/8"	20 TPI	5/32"	0.173"	XAF799

RIGHT HAND

10 PC PER PACKAGE





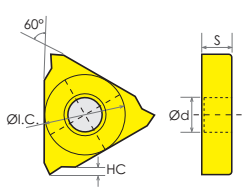
EXTERNAL THREADING & GROOVING CARBIDE INSERTS-Inch Thread

Item#	Insert No.	I.C.	Screw Pitch	S	d	Grade
6006-4108	RT16.01N-8UN	3/8"	8 TPI	5/32"	0.173"	XAF799
6006-4110	RT16.01N-10UN	3/8"	10TPI	5/32"	0.173"	XAF799
6006-4112	RT16.01N-12UN	3/8"	12 TPI	5/32"	0.173"	XAF799
6006-4114	RT16.01N-14UN	3/8"	14 TPI	5/32"	0.173"	XAF799
6006-4116	RT16.01N-16UN	3/8"	16 TPI	5/32"	0.173"	XAF799
6006-4118	RT16.01N-18UN	3/8"	18 TPI	5/32"	0.173"	XAF799
6006-4120	RT16.01N-20UN	3/8"	20 TPI	5/32"	0.173"	XAF799

RIGHT HAND

10 PC PER PACKAGE



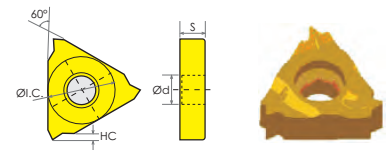


INTERNAL (NPT) THREADING CARBIDE INSERTS-Pipe Thread

Item#	Insert No.	I.C.	Screw Pitch	S	d	Grade
6006-6011	RT16.001N-11.5NPT	.375"	11.5 TPI	.156"	0.173"	XAF799
6006-6014	RT16.001N-14NPT	.375"	14 TPI	.156"	0.173"	XAF799
6006-6018	RT16.001N-18NPT	.375"	18 TPI	.156"	0.173"	XAF799
6006-6027	RT16.001N-27NPT	.375"	27 TPI	.156"	0.173"	XAF799

RIGHT HAND

10 PC PER PACKAGE

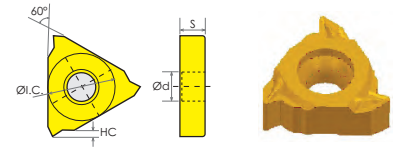


EXTERNAL (NPT) THREAD CARBIDE INSERTS-Pipe Thread

Item#	Insert No.	I.C.	Screw Pitch	S	d	Grade
6006-6111	RT16.001W-11.5NPT	.375"	11.5 TPI	.156"	0.173"	XAF799
6006-6114	RT16.001W-14NPT	.375"	14 TPI	.156"	0.173"	XAF799
6006-6118	RT16.001W-18NPT	.375"	18 TPI	.156"	0.173"	XAF799
6006-6127	RT16.001W-27NPT	.375"	27 TPI	.156"	0.173"	XAF799

RIGHT HAND

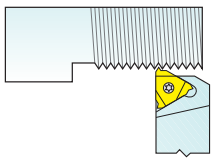
10 PC PER PACKAGE



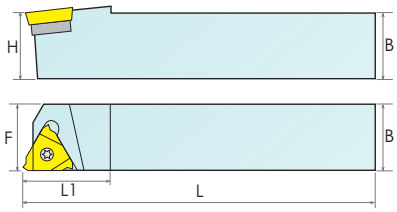
See page 130 For grade information

INDEXABLE THREADERS

INDEXABLE EXTERNAL THREADING TOOL HOLDERS







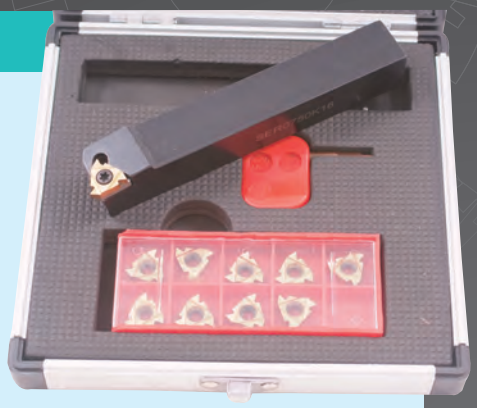
See page 127 & 128 for spare parts

RH Item#	Style	Shank BXB	(Inch) L	Insert I.C.	Insert	Insert Screw	Shim	Shim Screw	Wrench
2301-0375	SER0375D16	3/8 x 3/8	2-1/2	3/8	16ER..	M3.5x12	LT16R-3.0	SDN535	T15+S3.5
2301-0500	SER0500F16	1/2 x 1/2	3-1/4	3/8	16ER..	M3.5x12	LT16R-3.0	SDN535	T15+S3.5
2301-0625	SER0625K16	5/8 x 5/8	5	3/8	16ER..	M3.5x12	LT16R-3.0	SDN535	T15+S3.5
2301-0750	SER0750K16	3/4 x 3/4	5	3/8	16ER..	M3.5x12	LT16R-3.0	SDN535	T15+S3.5
2301-1000	SER1000M16	1 x 1	6	3/8	16ER..	M3.5x12	LT16R-3.0	SDN535	T15+S3.5

INDEXABLE EXTERNAL THREADING TOOL HOLDER KITS

- Right hand external threads cut.
- AG60 inserts range 0.5~3.00mm/8~48 TPI
- A60 inserts range 0.5~1.5mm/16~48 TPI
- Complete with aluminium case.

Kit includes:
1-Tool Holder
10-TiN Coated Carbide Insert
1-Torx Wrench
Fitted Case



Item#	Style	Shank	(Inch) OAL	Insert I.C.	Insert	Insert Screw	Wrench
2301-1375	SER0312D08	5/16	2.5	.197"	08ERA60	M2.5x6	T8
2301-1500	SER0375E11	3/8	3	1/4"	11ERA60	M2.5x7	T8
2301-1625	SER0500H11	1/2	4	1/4"	11ERA60	M2.5x7	T8
2301-1750	SER0625H16	5/8	4	3/8"	16ERAG60	M3.5x12	T15
2301-2000	SER0750K16	3/4	5	3/8"	16ERAG60	M3.5x12	T15

INDEXABLE INTERNAL & EXTERNAL THREADING TOOL HOLDER KITS

NEW

Kit includes:
1-Internal Tool Holder
1-External Tool Holder
3-IR (Internal) TiN Coated Carbide Insert
4-ER (External) TiN Coated Carbide Insert
1-Torx Wrench
Fitted Case





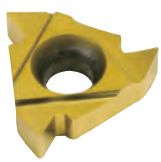
See page 127 & 128 for spare parts

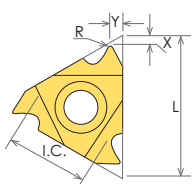
RH Item#	Style (INT & EXT)	Shank	Insert	Insert Screw	Shim Screw	Shim	Wrench
2301-2250	SIR0250H06 & SER0250D06	1/4	06IR/06ER..	M2x5	-	-	T6
2301-2312	SIR0312H08 & SER0312D08	5/16	06IR/08ER..	M2.5X6	-	-	T8
2301-2375	SIR0375H11 & SER0375E11	3/8	11IR/11ER..	M2.5x6	-	-	T8
2301-2500	SIR0500K11 & SER0500F11	1/2	11IR/11ER..	M2.5x6	-	-	T8
2301-2625	SIR0625M16 & SER0625H16	5/8	16IR/16ER..	M3.5x8/M3.5x12	SDN535(EXT)	LT16R-3.0(EXT)	T15+S3.5
2301-2750	SIR0750P16 & SER0750K16	3/4	16IR/16ER..	M3.5x8/M3.5x12	SDN535 (EXT)	LT16R-3.0(EXT)	T15+S3.5

THREAD CARBIDE INSERTS/PARTIAL PROFILE 60°

NEW

- 60° V partial profile threading insert.
- Right hand cut.





TiN COATED

10 PC PER PACKAGE

	Item#	Insert	I.C.	Pitch Range mm	Pitch Range TPI	L (in)	R (in)	X (in)	Y (in)
INTERNAL	**6061-0156**	06IRA60	.156"	0.5-1.25	48-20	.236	.002	.020	.024
	6061-0187	08IRA60	.188"	0.5-1.5	48-16	.315	.002	.024	.028
	6007-0008	11IRA60	1/4"	0.5~1.5	48~16	.435	.003	.031	.035
	6007-0015	16IRAG60	3/8"	0.5~3.0	48~8	.630	.003	.047	.035
	6007-0018	22IRN60	1/2"	3.5~5.0	5~7	.866	.010	.067	.098
EXTERNAL	**6007-0002**	06ERA60	.156"	0.5~1.25	48~20	.236	.002	.020	.024
	6007-0001	08ERA60	.197"	0.5~1.5	48~16	.315	.002	.024	.028
	6007-0004	11ERA60	1/4"	0.5~1.5	48~16	.435	.003	.031	.035
	6007-0012	16ERAG60	3/8"	0.5~3.0	48~8	.630	.003	.047	.035
	6007-0020	22ERN60	1/2"	3.5~5.0	5~7	.866	.016	.067	.098

MINI INDEXABLE THREADING TOOL HOLDER KIT

- Right hand.
- Super for running at low speeds
- Threads all the way down in a blind hole
- 3 cutting edge on insert provides 3x tool life
- 06IR A60 insert range 48-20 TPI/ 0.5~1.25mm.
- 08IR A60 insert range 48-16 TPI/ 0.5~1.50mm.

Set Includes:

- 1-mini tool holder
- 10 -60° partial profile internal insert, TiN coated
- 1 - Torx wrench
- 1 -Aluminium fitted case





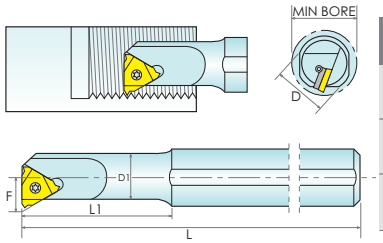


Item#	Shank Dia. D	D1	(Inch) L	L1	Min. Bore	Use Insert	Screw	Wrench
2305-0312	5/16	0.205	4	0.500	0.240	06IRA60	M2x3.5mm	T6
2305-0375	3/8	0.265	5	0.710	0.310	08IRA60	M2.5x5mm	T8
2305-0500	1/2	0.205	4	0.500	0.240	06IRA60	M2x3.5mm	T6
2305-0625*	5/8	0.290	5	0.830	0.354	08IRA60	M2.5x5mm	T8
2305-0626	5/8	0.265	5	0.710	0.307	08IRA60	M2.5x5mm	T8

*Limited Supply

INDEXABLE INTERNAL THREADING TOOL HOLDERS





RH Item#	Style	Shank D	(Inch) L	Min. Bore	F	Insert I.C.	Insert	Insert Screw	Wrench	Anvil Screw	Shim
2302-0375	SIR0375H11	3/8	4	.47	0.29	1/4	11IR..	M2.5x6	T8	----	----
2302-0500	SIR0500K16	1/2	5	.64	0.39	3/8	16IR..	M3.5x8	T15	----	----
2302-0625	SIR0625P16	5/8	7	.75	0.45	3/8	16IR..	M3.5x8	T15	----	----
2302-0750	SIR0750P16	3/4	7	1.00	0.51	3/8	16IR..	M3.5x8	T15	----	----
2302-0751	SIR0750P22	3/4	7	1.00	0.51	1/2	22IR..	M4x12-Ø6.8	T15	----	----
2302-1000	SIR1000R16	1	8	1.20	0.65	3/8	16IR..	M3.5x12	T15+S3.5	SDN535	LT16L-3.0

INDEXABLE INTERNAL THREADING TOOL HOLDER KITS

- Right hand internal threads cut.
- **Kit includes:** 1-Tool Holder, 10-TiN Coated Carbide Insert, 1-Torx Wrench
- AG60 inserts range 0.5~3.00mm/8~48 TPI
- A60 inserts range 0.5~1.5mm/16~48 TPI
- Complete with aluminium case.



Item#	Style	Shank	OAL	Insert I.C.	Insert	Insert Screw	Wrench
2302-1250	SIR0375H11	3/8	4	1/4	11IRA60	M2.5x6	T8
2302-1500	SIR0500K11	1/2	5	1/4	11IRA60	M2.5x6	T8
2302-1625	SIR0625M16	5/8	6	3/8	16IRAG60	M3.5x8	T15
2302-1787	SIR0750P16	3/4	7	3/8	16IRAG60	M3.5x8	T15

5PC INDEXABLE INTERNAL THREADING TOOL HOLDER SET

- Suitable for varied pitch internal threading.
- Supplied with fitted aluminium case.
- Carbide inserts are included for semi-finishing/roughing.



Size in Set	Insert	OAL	Screw	Wrench
5/16	08IR A60	4"	M2.5x5mm	T6
3/8	11IRA A60	5"	M2.5x5mm	T6
1/2	11IRA A60	6"	M2.5x5mm	T6
5/8	16IR AG60	7"	M3.5x10mm	T15+S3.5
3/4	16IR AG60	10"	M3.5x10mm	T15+S3.5

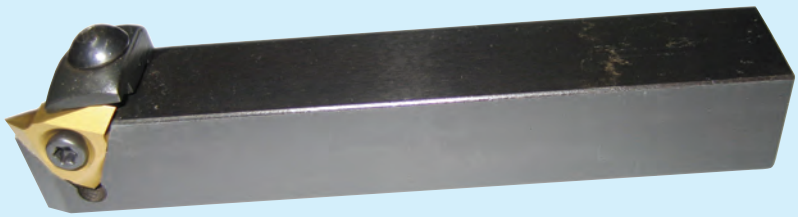
2305-1005

INDEXABLE THREADING TOOL HOLDERS

MTVO STYLE EXTERNAL THREADING & GROOVING HOLDERS

- For OD threading and grooving
- Nuetral rake.
- Right hand.
- Torx & Allen wrench included.

ALSO USE INSERT: TNMA-NV, TNMC-NC, TPMC-NV



INSERT NOT INCLUDED

RH Item#	Holder Style	Shank	(Inch) OAL	Insert I.C.	Use Insert	Insert Screw	Clamp	Spring	Locking Screw	Torx Wr.	Allen Wr.
2304-1500	MTVOR08-3B	1/2x1/2	4-1/2	3/8	TNMA-32NV	M3.5x8	MTH0820	MTH0610	GB/T70.2 M6x20	T15	S4
2304-1750	MTVOR12-3B	3/4x3/4	4-1/2	3/8	TNMA-32NV	M3.5x8	MTH0820	MTH0610	GB/T70.2 M6x20	T15	S4
2304-1751	MTVOR12-4B	3/4x3/4	4-1/2	1/2	TNMA-43NV	M5X12	MTH0820	MTH0610	DLS5 M6x26	T20	S4
2304-2000	MTVOR16-3D	1x1	6	3/8	TNMA-32NV	M3.5X8	MTH0820	MTH0610	DLS5 M6x26	T15	S4
2304-2001	MTVOR16-4D	1x1	6	1/2	TNMA-43NV	M5X12	MTH0820	MTH0610	DLS5 M6x26	T20	S4



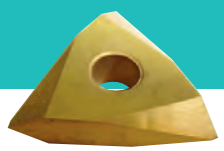



Parts

Item#	Insert Screw	Item#	Locking Clamp	Item#	Locking Screw	Item#	Spring
2100-0073	M3.5x8	**2100-0015**	MTH0820	**2100-0026**	GB/T70.2 M6X20	**2100-0100**	MTH0610
2100-0076	M5X12			**2100-0027**	DLS5 M6X26		

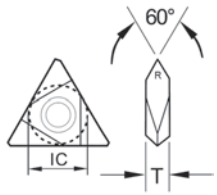
TNMA THREADING CARBIDE INSERTS
0-Degree Rake, Precision Ground

- 60° "V"-threading.
- 0° Rake angle.
- Cylindrical thru hole.



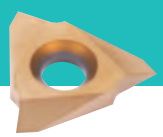
Item#	Insert No.	I.C.	Pitch	Radiu R	Thread Degree	Thick T	Hole d	Grade C6
6043-0375	TNMA-32NV	3/8	8 TPI Max.	.003~.005	60	.125"	.150"	TiN
6043-0500	TNMA-43NV	1/2	6 TPI Max.	.005~.008	60	.187"	.202"	TiN
6043-0005	TNMA-43NV	1/2	6 TPI Max.	.005~.008	60	.187"	.202"	Uncoated

10 PC PER PACKAGE



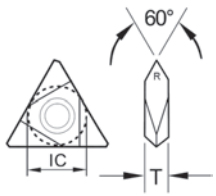
TPMC THREADING INSERTS
10-Degree Rake, Precision Ground

- 60° "V"-threading.
- 10° Rake angle.
- Double countersink thru hole.
- TiN coated.



Item#	Insert No.	I.C.	Pitch	Radiu R	Thread Degree	Groove Width
6043-1375	TPMC-32NV	3/8	8 TPI Max.	.003~.005	60	.125"
6043-1500	TPMC-43NV	1/2	6 TPI Max.	.005~.008	60	.187"
6043-1625	TPMC-54NV	5/8	4 TPI Max.	.005~.008	60	.250"

10 PC PER PACKAGE



TNMC GROOVING CARBIDE INSERTS

- Right hand on two sides.
- Neutral rake angle.
- Double countersink thu hole.
- TiN coated.

Limited Supply!

TiN Coated

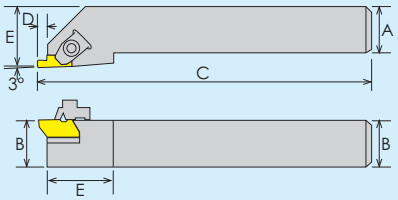


Item#	Insert No.	I.C. (In)	Pitch	Groove Width (In)	Groove Depth (In)
6043-0632	TNMC-32NGR031	0.375	8 TPI Max.	.031	.075
6043-0633	TNMC-32NGR062	0.375	8 TPI Max.	.062	.150
6043-0634	TNMC-32NGR094	0.375	8 TPI Max.	.094	.150
6043-0635	TNMC-32NGR125	0.375	8 TPI Max.	.125	.150
6043-0643	TNMC-43NGR062	0.500	6 TPI Max.	.062	.125
6043-0644	TNMC-43NGR094	0.500	6 TPI Max.	.094	.150
6043-0645	TNMC-43NGR125	0.500	6 TPI Max.	.125	.210
6043-0646	TNMC-43NGR156	0.500	6 TPI Max.	.156	.210
6043-0647	TNMC-43NGR187	0.500	6 TPI Max.	.187	.210
6043-0654	TNMC-54NGR250	0.625	4 TPI Max.	.250	.210

TOP NOTCH STYLE EXTERNAL THREADING & GROOVING TOOLHOLDERS

NEW

- Right hand.
- Excellent all-purpose system for threading and grooving.
- Very strong insert design and wide insert selection and range.
- Clamping system draws the insert consistently back into the pocket for superior repeatability.
- Fully interchangable with other simliar "notch" type tools and inserts.
- Fit notch carbide inserts above.





Insert Not Included

Right Hand Holder Use Right Hand Inserts

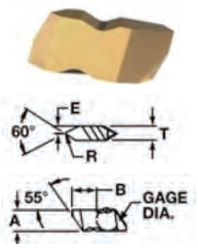
Item#	Holder #	A	B	C	(Inch) D	F	E	CLAMP	Screw	Gage Insert Size
2301-3108	TNSR08-2V	.50	.500	3.5	.138	.75	.75	TNSB-2B	M4x14	2
2301-3112	TNSR12-2B	.75	.750	4.5	.138	1.00	.75	TNSB-2B	M4x14	2
2301-3113	TNSR12-3B	.75	.750	4.5	.210	1.00	1.25	TNSB-3B	M5x18	3
2301-3116	TNSR16-3D	1	1.000	6.0	.210	1.25	1.25	TNSB-3B	M5x18	3
2301-3117	TNSR16-4D	1	1.000	6.0	.294	1.25	1.38	TNSB-3B	M5x18	4

NOTCH THREADING & GROOVING CARBIDE INSERTS, CLAMP & SCREWS

NEW

- Completely interchangeable with the *Kennametal TopNotch and the Teledyne Firth Notch systems.
- 60° Negitive rake, netural.
- NT-600 parting profile general purpose threading inserts.
- NG-Grooving & Turning inserts.
- Grade: C5/TIC-65 coated, which is same as KENNAMETAL KC810, KC850, KC950, KC730

* Trademark of Kennametal.



Grade C5/TIC 65

R=Right Hand
L=Left Hand

THREADING INSERTS

Item#	Insert #	R	B	(Inch) T	E	A	Gage Dia.
6062-5001	T/NT-2R	.003	.2661	.150	.075	.219	.1875
6062-5002	T/NT-2L	.005	.2661	.150	.075	.219	.1875
6062-5003	T/NT-3R	.005	.3999	.195	.098	.344	.3750
6062-5004	T/NT-3L	.008	.3999	.195	.098	.344	.3750
6062-5005	T/NT-4R	.005	.6293	.255	.128	.453	.3750
6062-5006	T/NT-4L	.008	.6293	.255	.128	.453	.3750

SPECIFICATIONS

Insert #	External TPI	Internal TPI
T/NT-2R/2L	8-36	7-20
T/NT-3R/3L	6-20	5-12
T/NT-4R/4L	4-20	4-12

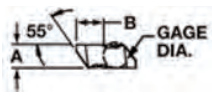
CLAMP



Item #	Style
2100-0011	TNSB-2B
2100-0010	TNSB-3B







GROOVIING INSERTS

Item#	Insert #	R	Groove Width W	B	(Inch) T	Depth of Cut E	A	Gage Dia.
6062-2030	T/NG-2031R	.002	.031	.2700	.150	.050	.219	.1875
6062-2031	T/NG-2031L	.005	.031	.2700	.150	.050	.219	.1875
6062-2046	T/NG-2047R	.002	.047	.2700	.150	.050	.219	.1875
6062-2047	T/NG-2047L	.005	.047	.2700	.150	.050	.219	.1875
6062-2061	T/NG-2062R	.005	.062	.2700	.150	.050	.219	.1875
6062-2062	T/NG-2062L	.010	.062	.2700	.150	.050	.219	.1875
6062-2093	T/NG-2094R	.005	.094	.2700	.150	.050	.219	.1875
6062-2094	T/NG-2094L	.010	.094	.2700	.150	.050	.219	.1875
6062-2124	T/NG-2125R	.005	.125	.2700	.150	.050	.219	.1875
6062-2125	T/NG-2125L	.010	.125	.2700	.150	.050	.219	.1875
6062-3046	T/NG-3047R	.005	.047	.4050	.195	.075	344	.3750
6062-3047	T/NG-3047L	.010	.047	.4050	.195	.075	.344	.3750
6062-3061	T/NG-3062R	.005	.062	.4050	.195	.075	.344	.3750
6062-3062	T/NG-3062L	.010	.062	.4050	.195	.075	.344	.3750
6062-3077	T/NG-3078R	.005	.078	.4050	.195	.075	.344	.3750
6062-3078	T/NG-3078L	.010	.078	.4050	.195	.075	.344	.3750
6062-3087	T/NG-3088R	.005	.088	.4050	.195	.075	.344	.3750
6062-3088	T/NG-3088L	.010	.088	.4050	.195	.075	.344	.3750
6062-3093	T/NG-3094R	.005	.094	.4050	.195	.075	.344	.3750
6062-3094	T/NG-3094L	.010	.094	.4050	.195	.075	.344	.3750
6062-3124	T/NG-3125R	.005	.125	.4050	.195	.075	.344	.3750
6062-3125	T/NG-3125L	.010	.125	.4050	.195	.075	.344	.3750
6062-3155	T/NG-3156R	.005	.156	.4050	.195	.075	.344	.3750
6062-3156	T/NG-3156L	.010	.156	.4050	.195	.075	.344	.3750
6062-3188	T/NG-3189R	.005	.189	.4050	.195	.075	.344	.3750
6062-3189	T/NG-3189L	.010	.189	.4050	.195	.075	.344	.3750
6062-4124	T/NG-4125R	.005	.125	.6360	.255	.250	.453	.3750
6062-4125	T/NG-4125L	.010	.125	.6360	.255	.250	.453	.3750
6062-4188	T/NG-4189R	.020	.189	.6360	.255	.250	.453	.3750
6062-4189	T/NG-4189L	.025	.189	.6360	.255	.250	.453	.3750
6062-4249	T/NG-4250R	0.20	.250	.6360	.255	.250	.453	.3750
6062-4250	T/NG-4250L	.025	.250	.6360	.255	.250	.453	.3750

MINI-SYSTEM EXTERNAL GROOVING & CUT-OFF HOLDERS

INSERTS NOT INCLUDED

NEW

- Right hand shank external holder.
- Insert not included.
- Set Includes: 1pc- External Holder, 1pc-T10 Wrench, 1pc-Aluminum Case.
- Accepts NIKCOLE style inserts.
- For use with .019 to .125" thin inserts.
- Ideal for external grooving, threading, cut-off, turning & copying under .125" width.

RIGHT HAND HOLDER ONLY ACCEPT RIGHT HAND INSERTS



2306-0375 Shown



2306-0500 Shown



2306-0625 Shown

Item#	Toolholder Designation	Shank Dia (In)	OAL (In)	Use Insert	Screw	Tox Wrench
2306-0375	THE-7-3/8-R	3/8	4.5	GIE-7-SG-	M3x8mm	T10
2306-0500	THE-7-1/2-R	1/2	4.5	GIE-7-SG-	M3x8mm	T10
2306-0625	THE-75/8-R	5/8	5.0	GIE-7-SG-	M3x8mm	T10

MINI-SYSTEM INTERNAL GROOVING & CUT-OFF HOLDERS

NEW



2306-2000 Shown *INSERTS NOT INCLUDED*

- Right hand shank.
- Insert not included.
- Set Includes: 1pc- Internal Holder, 1pc-T10 Wrench, 1pc-Aluminum Case.
- Accepts NIKCOLE style inserts.
- For use with .019 to .125" thin inserts.
- Ideal for internal grooving, threading, cut-off, turning & copying under .125" width.

RIGHT HAND HOLDER ONLY ACCEPT RIGHT HAND INSERTS

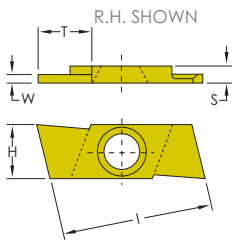
Item#	Toolholder Designation	Shank Dia (In)	OAL (In)	Use Insert	Screw	Tox Wrench
2306-1750	THI-7-3/4-R	3/4	5.6	GIE-7-SG-	M3x8mm	T10
2306-2000	THI-7-1-R	1	6.0	GIE-7-SG-	M3x8mm	T10

MINI-SYSTEM STANDARD CARBIDE GROOVING, CUT-OFF INSERTS-GRADE C6-PV

NEW

- Grade C6-PV-Coated grade recommented for machining steels, cutting off and grooving at higher speeds.
- Toerances: Width: +.0009"/ -.0000"
- Fits NIKCOLE style mini groove RH tool holders.





Item#	Insert #	Hand	Depth of Cut	Width of Cut
6061-0300	GIE-7-SG-05	R	.100" (2.54mm)	.019" (0.5mm)
6061-0301	GIE-7-SG-07	R	.100" (2.54mm)	.027" (0.7mm)
6061-0302	GIE-7-SG-08	R	.100" (2.54mm)	.031" (0.8mm)
6061-0303	GIE-7-SG-09	R	.100" (2.54mm)	.035" (0.9mm)
6061-0304	GIE-7-SG-1.1	R	.235" (6.0mm)	.043" (1.1mm)
6061-0305	GIE-7-SG-1.3	R	.235" (6.0mm)	.051" (1.3mm)
6061-0306	GIE-7-SG-1.6	R	.235" (6.0mm)	.063" (1.6mm)
6061-0307	GIE-7-SG-1.85	R	.235" (6.0mm)	.073" (1.85mm)
6061-0311	GIE-7-SG-07	L	.100" (2.54mm)	.027" (0.7mm)
6061-0312	GIE-7-SG-08	L	.100" (2.54mm)	.031" (0.8mm)
6061-0313	GIE-7-SG-09	L	.100" (2.54mm)	.035" (0.9mm)
6061-0314	GIE-7-SG-1.1	L	.235" (6.0mm)	.043" (1.1mm)
6061-0315	GIE-7-SG-1.3	L	.235" (6.0mm)	.051" (1.3mm)
6061-0316	GIE-7-SG-1.6	L	.235" (6.0mm)	.063" (1.6mm)
6061-0317	GIE-7-SG-1.85	L	.235" (6.0mm)	.073" (1.85mm)

TOP NOTCH STYLE INTERNAL THREADING & GROOVING TOOLHOLDERS

- Right hand.
- Excellent all-purpose system for threading and grooving.
- Very strong insert design and wide insert selection and range.
- Clamping system draws the insert consistently back into the pocket for superior repeatability.
- Fully interchangable with other simliar "notch" type tools and inserts.
- Insert not included.

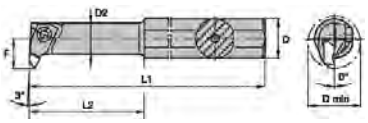
Right Hand Holder Use Left Hand Inserts



NEW

Insert Not Included

Item#	Holder #	D min.	L1	(Inch) D	F	(mm) D2	(mm) L2	CLAMP	Screw	Gage Insert Size
2301-3010	S10S-TNER2	1.000	10	0.625	.500	14.88	34	TNSN02B	M4X12	2
2301-3016	S16T-TNER3	1.375	12	1.000	.688	23.4	47.8	TNSN-3B	M5X16	3
2301-3020	S20U-TNER3	1.750	14	1.250	.875	29.75	50.6	TNSN-3B	M5X18	3
2301-3024	S24U-TNER3	2.000	14	1.500	1.000	35.1	50.6	TNSN-3B	M5X18	3



MGEHR EXTERNAL PARTING GROOVING & TURNING TOOLHOLDERS

NEW

- Right hand.
- Tool holder design provides precision clamping & insert indexing accuracy.
- Ideal for external grooving, turning, part-off, reliefing & profile machining.

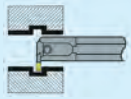




Item#	Toolholder Designation	Insert Width	Max. Cutting Depth	Shank Height	Shank Width	OAL (In)	Use Insert	Screw	Hex Key
2207-0375	MGEHR06-2	0.079"	1/2"	3/8	3/8	3	MGMN200	GB70-85-M4X12	S3
2207-0500	MGEHR08-2A	0.079"	1/2"	1/2	1/2	4	MGMN200	GB70-85-M4X12	S3
2207-0625	MGEHR10-2B	0.079"	1/2"	5/8	5/8	4.5	MGMN200	GB70-85-M5X14	S4
2207-0750	MGEHR12-2C	0.079"	1/2"	3/4	3/4	5	MGMN200	GB70-85-M5X14	S4
2207-1000	MGEHR16-2D	0.079"	1/2"	1	1	6	MGMN200	GB70-85-M6X20	S5

MGIV INTERNAL PARTING GROOVING & TURNING TOOLHOLDERS

- Right hand.
- Tool holder design provides precision clamping & insert indexing accuracy.
- Ideal for internal grooving, turning & profile machining.







NEW

Item#	Toolholder Designation	Insert Width W	Max. Cutting Depth T	Shank Dia. d	F	OAL L	Use Insert	Screw	Hex Key
2208-0625	S10K-MGIVR/L2	0.079"	0.197"	5/8	1/2	5"	MGMN200	GB70-85-M4X12	S3
2208-0750	S12M-MGIVR/L2	0.079"	0.197"	3/4	5/8	6"	MGMN200	GB70-85-M5X14	S4
2208-1000	S16R-MGIVR/L2	0.079"	0.197"	1	3/4	8"	MGMN200	GB70-85-M5X14	S4

MGMN-G GROOVING CARBIDE INSERTS

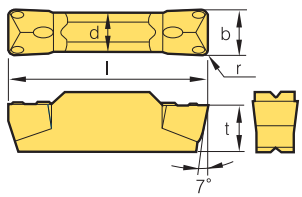
MGMN-G

NEW

- Specially designed chip breaker allows narrower chips to promote better chip flow.
- Specifically designed for grooving applications.



10 PC PER PACKAGE



Item#	Insert No.	Cutting Width b	OAL L	(Inch) d	Cutting Edge Heigh t	r	Grade
6024-3021	MGMN-150-G	.059	.138	.047	.138	.006	BPS253-CVD
6024-3022	MGMN-200-G	.079	.138	.063	.138	1/128	BPS253-CVD
6024-3051	MGMN-200-G	.079	.138	.063	.138	1/128	BPG20B-PVD

MGMN-M GROOVING CARBIDE INSERTS

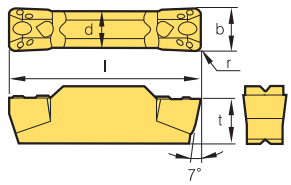
MGMN-M

NEW

- Specially designed chip breaker allows as moother chip flow versus conventional flattop geometries through the use of a central chip breaker.
- Specially placed convex dots assits twith chip control in external machining, for a smoother chip flow.
- Chip breaker designed for turning , grooving & parting applications.



10 PC PER PACKAGE



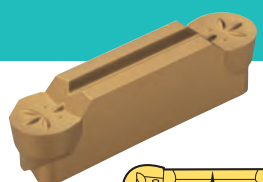
Item#	Insert No.	Cutting Width	OAL L	(Inch) d	Cutting Edge Heigh t	r	Grade
6024-3002	MGMN-250-M	.098	.152	.079	.152	1/128	BPS253-CVD
6024-3003	MGMN-300-M	.118	.189	.093	.189	1/64	BPS253-CVD
6024-3004	MGMN-400-M	.157	.189	.130	.189	1/64	BPS253-CVD
6024-3052	MGMN-250-M	.098	.152	.079	.152	1/128	BPG20B-PVD
6024-3053	MGMN-300-M	.118	.189	.093	.189	1/64	BPG20B-PVD

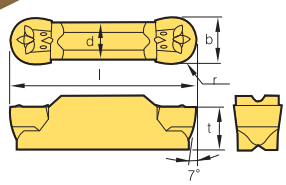
MRMN-M GROOVING CARBIDE INSERTS

MRMN-M

NEW

- Full radius geometry for applications that require profiling
- Available for relief machining





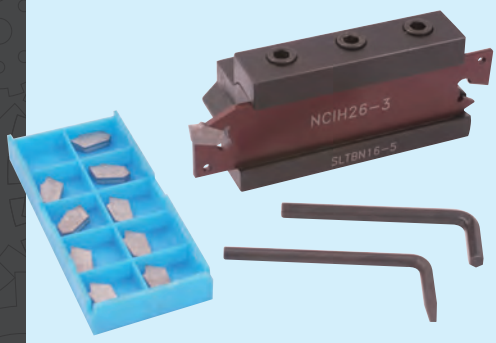
10 PC PER PACKAGE

Item#	Insert No.	Cutting Width b	OAL L	(Inch) d	Cutting Edge Heigh t	r	PVD Grade
6024-3031	MRMN-200-M	.079	.630	.059	.079	3/64	BPS253
6024-3032	MRMN-300-M	.118	.827	.093	.118	1/16	BPS253
6024-3033	MRMN-400-M	.157	.827	.130	.157	5/64	BPS253
6024-3034	MRMN-500-M	.197	1.024	.161	.197	3/32	BPS253
6024-3035	MRMN-600-M	.236	1.024	.197	.236	1/8	BPS253

INDEXABLE CUT-OFF TOOLS & KITS

All Tools Are Interchangeable With ISCAR & Other Fine Brands !

ISCAR TYPE CUT-OFF TOOLS



15 PC KIT INCLUDES:
- 1 - 0.625" x1.02" Tool Block
- 1 - 26-3 Blade
- 10 - C-6 GTN-3 Inserts
- 1 - Insert Holder
- 1 - Allen Wrench
- 1 - Fitted case

15 PC KIT
5/8" SHANK
3900-5359



16 PC KIT INCLUDES:
- 1 - 0.75" x1.02" Tool Block
- 1 - 26-3 Blade
- 1 - 26-4 Blade
- 5 - C-6 GTN-3 Inserts
- 5 - C-6 GTN-4 Inserts
- 2 - Insert Holder
- 1 - Allen Wrench

16 PC KIT
3/4" SHANK
3900-5361



22 PC KIT INCLUDES:
- 1 - 1.000" x1.25" Tool Block
- 2 - 32-3 Blade
- 2 - 32-4 Blade
- 2 - 32-5 Blade
- 4 - C-6 GTN-3 Inserts
- 4 - C-6 GTN-4 Inserts
- 4 - C-6 GTN-5 Inserts
- 1 - Insert Holder
- 1 - Allen Wrench
- 1 - Fitted case

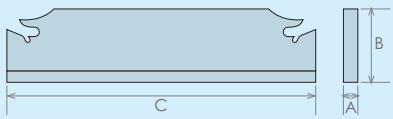
22 PC KIT
1" SHANK
3900-5364

INDIVIDUAL BLADES

Item#	Insert Width A	Blade Style	C	B
3900-5313	.087&.094"	19-2	3.38	3/4
3900-5311	.087&.094"	26-2	4-5/16"	1-1/32
3900-5312	.120"	26-3	4-5/16"	1-1/32
3900-5314	.160"	26-4	4-5/16"	1-1/32
3900-5316	.187& .200"	26-5	4-5/16"	1-1/32
3900-5315	.250"	26-6	4-5/16"	1.1/32
3900-5317	.120"	32-3	5-7/8"	1-1/4
3900-5318	.160"	32-4	5-7/8"	1-1/4
3900-5319	.187&.200"	32-5	5-7/8"	1-1/4
3900-5325	.250"	32-6	5-7/8"	1-1/4



Blade

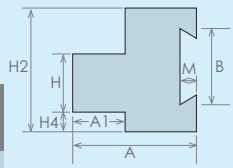


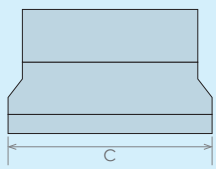


Block

INDIVIDUAL TOOL BLOCKS

Clamping Height H (In)	Blade Height B(In)	Clamping Depth A1(In)	Block Width A (In)	Block Height H2(In)	Shoulder Depth H4(In)	Blade Pocket M (In)	Block Length C (In)	Blade Fit	Item#
0.625	0.75	0.625	1.02	1.19	.20	.16	3.40	19-2	**3900-5353**
0.625	1.02	0.625	1.31	1.50	.22	.16	3.40	26-2, 26-3, 26-4,26-5, 26-6	**3900-5354**
0.750	1.02	0.790	1.45	1.70	.39	.16	3.40	26-2, 26-3, 26-4, 26-5, 26-6	**3900-5351**
0.750	1.25	0.790	1.50	1.94	.55	.21	3.95	32-3, 32-4, 32-5, 32-6	**3900-5352**
1.000	1.25	1.030	1.75	1.95	.30	.21	4.33	32-3, 32-4, 32-5, 32-6	**3900-5355**
1.250	1.25	1.140	1.90	2.10	.20	.21	4.33	32-3, 32-4, 32-5, 32-6	**3900-5356**





CARBIDE INSERTS

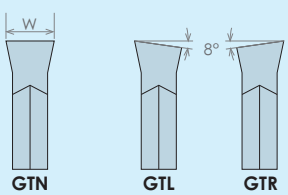
Insert Style	Insert Size (W) (In)	C-2 Item#	C-6 Item#	TiN Coated(C-6) Item#
GTN-2	.087	**3900-5802**	**3900-5309**	**6024-2002**
GTN-2.4	.094	**6024-0002***	----------	----------
GTN-3	.120	**6024-0003**	**6024-1003**	**6024-2003**
GTN-4	.160	**6024-0004**	**6024-1004**	**6024-2004**
GTN-4.8	.187	**6024-0008***	**6024-1008***	**6024-2008***
GTN-5	.200	**6024-0005**	**6024-1005**	**6024-2005**
GTR-4.8	.187	**6024-1014***	**6024-1015***	**6024-2014***
GTL-4.8	.187	**6024-1024***	----------	**6024-2034***

GRADE
C-2 FOR CAST IRON AND GENERAL PURPOSE
C-6 FOR ALL STEEL AND GENERAL PURPOSE
TiN (C-6) FOR INCREASED PRODUCTIVITY



10 PC PER PACKAGE

*Limited Supply



SGTF STYLE CUT-OFF TOOL HOLDERS
Accepts GTN Carbide Inserts

Limited Supply!



Inserts NOT Included

Holder Style	Shank Size	Insert Width	Use Insert	Max. Work Diameter	RH Item#
12.7-3	1/2 x 1/2"	.120"	GTN-3	1.25"	**2202-1273**
16-3	5/8 x 5/8"	.120"	GTN-3	1.38"	**2202-1630**
16-4	5/8 x 5/8"	.160"	GTN-4	1.50"	**2202-1640**
19-4	3/4 x 3/4"	.160"	GTN-4	2.00"	**2202-1940**
19-5	3/4 x 3/4"	.187 & .200"	GTN-5	2.00"	**2202-1950**
25.4-5	1 x 1"	.187 & .200"	GTN-5	3.00"	**2202-2545**

SGTH STYLE CUT-OFF TOOL HOLDERS
Accepts GTN Carbide Inserts



Inserts NOT Included

*Limited Supply

Holder Style	Shank Size	Insert Width	Use Insert	Max. Work Diameter	RH Item#
9.5-2	3/8 x 3/8"	.087 & .094"	GTN-2	1.10"	**2203-0952**
12.7-2	1/2 x 3/8"	.087 & .094"	GTN-2	1.18"	**2203-1272**
12.7-3	1/2 x 3/8"	.120"	GTN-3	1.26"	**2203-1273**
16-3	5/8 x 1/2"	.120"	GTN-3	1.26"	**2203-1630***
16-4	5/8 x 1/2"	.160"	GTN-4	1.34"	**2203-1640***
19-4	3/4 x 1/2"	.160"	GTN-4	1.38"	**2203-1940**
19-5	3/4 x 1/2"	.187 & .200"	GTN-5	1.38"	**2203-1950**
25.4-5	1 x 1"	.187 & .200"	GTN-5	2.95"	**2203-2545**

SLTH STYLE CUT-OFF TOOL HOLDERS
Accepts GTN Carbide Inserts



*Limited Supply

Holder Style	Shank Size	Insert Width	Use Insert	Max. Work Diameter	RH Item#
9.5-2	3/8 x 3/8"	.087 & .094"	GTN-2	1-7/64"	**2201-0952**
12.7-2	1/2 x 25/64"	.087 & .094"	GTN-2	1-11/64"	**2201-1272**
12.7-3	1/2 x 25/64"	.120"	GTN-3	1-17/64"	**2201-1273***
16-3	5/8 x 15/32"	.120"	GTN-3	1-17/64"	**2201-1630***
16-4	5/8 x 15/32"	.160"	GTN-4	1-21/64"	**2201-1640***
19-3	3/4 x 15/32"	.120"	GTN-3	1-13/32"	**2201-1930***
19-4	3/4 x 15/32"	.160"	GTN-4	1-17/32"	**2201-1940***
25.4-5	1 x 63/64"	.187 & .200"	GTN-5	3"	**2201-2545***

GROOVING INTERGRAL SHANK TOOL HOLDERS
Accepts GTN Carbide Inserts



Inserts NOT Included

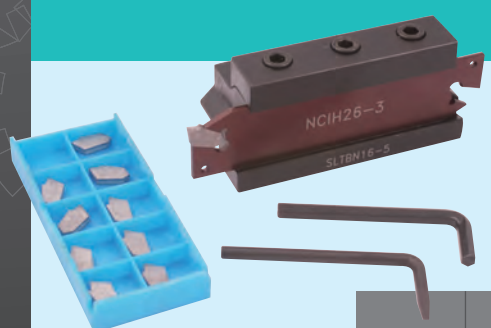
Holder Style	Shank Size	Use Insert	Max. Depth	RH Item#
08R-25	1/2 x 1/2"	GTN-3	.79"	**2204-0825**
10R-25	5/8 x 5/8"	GTN-3	.79"	**2204-1025**
12R-30	3/4 x 3/4"	GTN-3	.79"	**2204-1230**
12R-40	3/4 x 3/4"	GTN-4	.79"	**2204-1240**
16R-30	1 x 1"	GTN-4	.98"	**2204-1630**
16R-50	1 x 1"	GTN-5	.98"	**2204-1650***

*Limited Supply

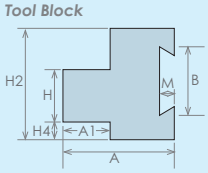
INDEXABLE CUT-OFF & GROOVING TOOL KITS

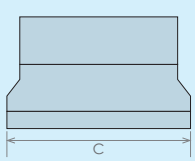
NEW

All Tools Are Interchangeable With ISCAR & Other Fine Brands !



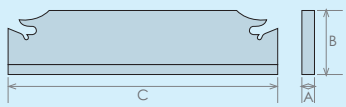
Tool Block





ISCAR TYPE CUT-OFF TOOLS

Cut-off Blade



15 PC KIT INCLUDES:

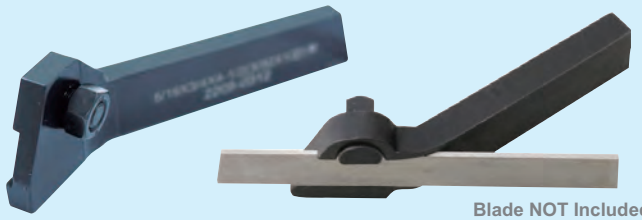
- 1 - Tool Block (SLTBN)
- 1 - Cut-off Blade (NCIH)
- 10 - C-6 GTN Inserts (TiN Coated)
- 2 - Allen Wrench
- 1 - Fitted case

Item#	Tool Block Dimension (Inch)									Cut-off Blade Dimension (Inch)			Blade Fil	Insert
		H	A1	A	B	H2	H4	M	C		C	B		
3900-5366	SLTBN0250-2	1/4	0.472	0.984	0.787	1.161	0.498	0.118	2.2	NCIH19-2	3.38	3/4	19-2	GTN-2
3900-5367	SLTBN0312-2	5/16	0.472	0.984	0.787	1.161	0.435	0.118	2.2	NCIH19-2	3.38	3/4	19-2	GTN-2
3900-5368	SLTBN0375-2	3/8	0.472	0.984	0.787	1.161	0.373	0.118	2.2	NCIH19-2	3.38	3/4	19-2	GTN-2
3900-5369	SLTBN0500-2	1/2	0.472	0.984	0.787	1.161	0.248	0.118	2.2	NCIH19-2	3.38	3/4	19-2	GTN-2

CUT-OFF TOOL HOLDERS & BLADES

CUT-OFF TOOL HOLDERS
For Use With Cut-Off Blades

- Machined to precise tolerances and carefully heat-treated, these cut-off toll holders support the blade over a wide area, reducing the chance of blade breakage. Blade can be adjusted to any desired clearance for greater versatility, and it is beveled on both sides and held at an angle, providing necessary side clearance and top rake for a clean smooth cut. These holders DO NOT hold parallel type cut-off blades.



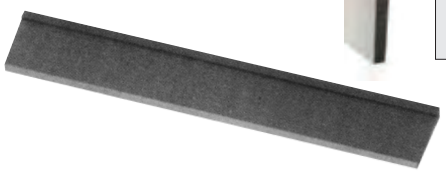
Blade NOT Included

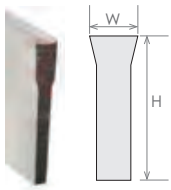
*Limited Supply

Holder Size	Cut-Off Blade Size	Item#
5/16 x 3/4 x 4-1/2"	3/32 x 1/2"	**2205-0312**
3/8 x 7/8 x 5"	3/32 x 5/8"	**2205-0375**
1/2 x 1-1/8 x 6"	1/8 x 3/4"	**2205-0500**
5/8 x 1-3/8 x 7"	1/8 x 7/8"	**2205-0625**
3/4 x 1-5/8 x 8"	3/16 x 1"	**2205-0750***

SCMT/EM SQUARE - POSITIVE RAKE CARBIDE INSERTS

- Parallel style blades have continuous width of cutting edge throughout length of blade.
- Used with Aloris, DORIAN & KDK type quick-change tool holders.





- **M2 HIGH SPEED STEEL** A fine general purpose ground tool bits show exceptional result on mild steel, alloysand tool steels. This tool bit makes a superior finishing tool.
- **COBALT** M42 (8%) Superior types of high speed steel which will work better where high heat is present. Used for heavy cuts in hard materials.

Parallel Style	Width W (In)	Height H (In)	Length (In)	*HSS* Item#	*8% Cobalt* Item#
P1N	.04	1/2	3-1/2	**2000-6008**	**2000-7008**
P1	1/16	1/2	4-1/2	**2000-6010**	**2000-7010**
P2	3/32	1/2	4-1/2	**2000-6020**	**2000-7020**
P2N	5/64	1/2	4-1/2	**2000-6022**	----------
P3S	1/8	1/2	4-1/2	**2000-6025**	**2000-7025**
P3N	3/32	11/16	5	**2000-6030**	**2000-7030**
P3	1/8	11/16	5	**2000-6035**	**2000-7035**
P3W	1/8	3/4	5	**2000-6050**	**2000-7050**
P4	5/32	11/16	5	**2000-6055**	**2000-7055**
P5	3/16	7/8	6	**2000-6064**	----------
P5X	1/8	7/8	6	**2000-6065**	**2000-7065**
P5N	5/32	7/8	6	**2000-6066***	**2000-7066**
P6	1/4	7/8	6	**2000-6070***	**2000-7070***

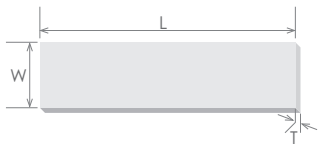
*Limited Supply

CUT-OFF BLADES, BEVELED

- **M2 HIGH SPEED STEEL** A fine general purpose ground tool bits show exceptional result on mild steel, alloys and tool steels. This tool bit makes a superior finishing tool.
- **COBALT** M35 (5%) Superior types of high speed steel which will work better where high heat is present. Used for heavy cuts in hard materials.

(Inch) Size (TxWxL)	*HSS* Item#	*5% COBAL* Item#
3/32 x 1/2 x 4-1/2	**2000-1002**	**2000-1102**
3/32 x 5/8 x 5	**2000-1003**	**2000-1106**
1/8 x 1/2 x 4-1/2	**2000-1000**	**2000-1110**
1/8 x 3/4 x 5	**2000-1004**	**2000-1114**
1/8 x 7/8 x 6	**2000-1005**	**2000-1118**

- Used with Aloris, DORIAN & KDK type quick-change tool holders.
- 10° double beveled.





RETROFIT GTN CUT-OFF AND GROOVING BLADES



INSERT IS NOT INCLUDED

See page 141 for inserts

- Used on Aloris and DORAIN Type Quick-Change Tool Holders
- High performance rates. No more re-grinding. Insert indexability.
- Also can use GTL, GTR inserts.

Item#	Fits Holder	HSS Blade Reference	Blade Width	Cutting Width	Overall Length	Use Insert
3900-5971	**AXA-7**	P2	1/2	.087 & .093"	4-11/32	GTN/R/L 2
3900-5973	**BXA-7**	P3N	11/16	.087 & .093"	4-11/32	GTN/R/L 2
3900-5975	**BXA-7**	P3, T3	11/16	.120"	4-11/32	GTN/R/L 3
3900-5977	**CXA-7**	P3W	3/4	.120"	4-11/32	GTN/R/L 3
3900-5979	**CA-7**	P5X	7/8	.120"	5-29/32	GTN/R/L 3
3900-5981	**CA-7**	P5N	7/8	.160"	5-29/32	GTN/R/L 4

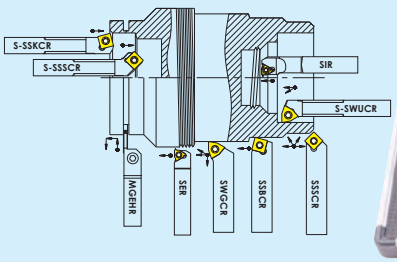
9PC INDEXABLE TURNING & BORING TOOL SETS

- Complete with fitted aluminium case.
- **Set includes:** Turning Holders, Boring Tools Holders, Inserts & Torx Wrenchs

Item #	Shank	Style in Set	Insert	Screw
2002-0212	3/8	SSSCR3/8-3	SCMT09T3	M4x10
		SSBCR3/8-3	SCMT09T3	M4x10
		SWGCR3/8"-3	WCMT06T3	M4x10
		S-SSSCR5/16H3	SCMT060204	M2.5x6
		S-SSKCR5/16H3	SCMT060204	M2.5x6
		S-SWUCR5/16"H3	WCMT06T3	M4x8
		SER0375F11	11ERA60	M2.5x6
		S3/8H-SIR11	11IRA60	M2.5x6
		MGEHR3/8-02	MGMN200	GB70-85/M4x12
2002-0213	1/2	SSSCR1/2-3	SCMT09T3	M4x10
		SSBCR1/2-3	SCMT09T3	M4x10
		SWGCR1/2-3	WCMT06T3	M4x10
		S-SSSCR3/8J3	SCMT09T3	M4x10
		S-SSKCR3/8J3	SCMT09T3	M4x10
		S-SWUCR3/8J3	WCMT06T3	M4x10
		SER0500H11	11ERA60	M2.5x6
		S1/2J-STR11	11IRA60	M2.5x6
		MGEHR1/2-02	MGMN200	GB70-85/M4x12









REPLACEMENT CARBIDE INSERTS

- **For 9pc Indexable Tools Sets.**
- Coated.


SCMT Style Shown


WCMT Style Shown


MGMN Style Shown


11ERA60 11IRA60 Style Shown

Item#	Insert No.	Coated Grade
6004-3031	SCMT09T304	XAB749
2002-0128	WCMT06T308	TiN
6004-3030	SCMT060204	TiN
6007-0004	11ERA60	TiN
6007-0008	11IRA60	TiN
6024-3022	MGMN-200-G	BPS253CVD

EXTERNAL & INTERNAL GROOVING SETS

- Right hand.
- Suitable for varied external & internal grooving.
- Carbide inserts are included for semi-finishing/roughing machining.

Set Includes:
1-External tool holder (MGEHR)
1-Internal tool holder (S-MGIVR)
10 - TiN coated inserts
2 - Hex key
1 -Aluminium fitted case





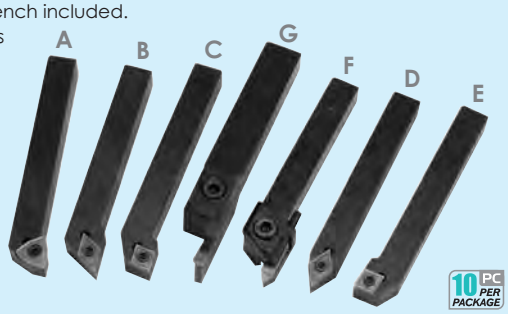


Item#	Shank Size in Set	Holder Ext.	Internal Holder Dimensions (Inch) Holder Style	Shank Size d	Depth of Cut T	F	Length L	Screw	Hex	Insert
2208-0003	5/8"	MGEHR10-2B	S10K-MGIVR2	5/8	3/16	1/2	5	GB70-85-M4X10	S3	MGMN200
2208-0006	3/4"	MGEHR12-3C	S12M-MGIVR-3	3/4	1/4	5/8	6	GB70-85-M4X12	S3	MGMN300
2208-0009	1"	MGEHR16-4D	S16R-MGIVR4	1	1/4	3/4	8	GB70-85-M5X16	S4	MGMN400

INDEXABLE CUT OFF AND TURNING TOOL SETS

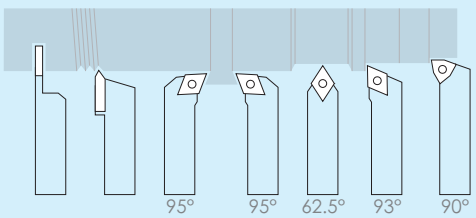
- Carbide inserts and Allen wrench included.
- Multi-purpose Indexable tools
- Complete with fitted case.

7PC SET INCLUDES:
(A) Right Hand 90°
(B)Right Hand 93°
(C) Right Hand 95°
(D) Right Hand 62.5°
(E) Left Hand 95°
(F) External Threading
(G) Cut-off tool



7 PC SET

Item#	Shank
2002-0010	1/4"
2002-0012	3/8"
2002-0013	1/2"
2002-0014	5/8"
2002-0015	3/4"



C-6 REPLACEMENT INSERTS



Item#	Style	For Shank	Insert No.
2002-0103	C, E	1/4,3/8 & 1/2"	CCMT060204
2002-0104	B, D	1/4,3/8 & 1/2"	DCMT070202
2002-0105	F	1/4,3/8 & 1/2"	JCL-15-120
2002-0106	G	All	JCQ3
2002-0107	A	1/4,3/8 & 1/2"	WCMX50308
6003-5031	C, E	5/8 & 3/4"	CCMT09T304
2002-0124	B, D	5/8 & 3/4"	DCMT11T304
2002-0127	F	5/8 & 3/4"	JCL20-120A
2002-0128	A	5/8 & 3/4"	WCMT06T308
2002-0126	A	5/8 & 3/4"	WCMT06T304
2002-0130	A	1/4,3/8 & 1/2"	WCMT050308



REPLACEMENT SCREWS-Sold Set of 7pcs

Item#	For Shank
2002-0122	1/4,3/8 & 1/2"
2002-0142	5/8, & 3/4"

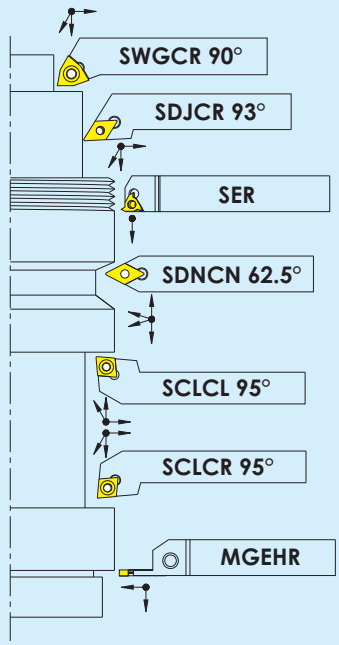
Pro-Series 7PC INDEXABLE TURNING TOOL SETS





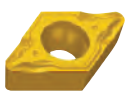
- Complete with fitted aluminium case.
- **Set includes:** Turning Holders, Inserts & Torx Wrenchs

Item #	Shank	Style in Set	Insert	Screw
2002-0112	3/8	MGEHR3/8-02 (CUT OFF BLADE)	MGMN200	GB70-85/M4x12
		SER3/8-11	11ERA60	M2.5x6
		SWGCR3/8-05	WCMT050308	M3x8
		SCLCR3/8-2	CCMT060204	M2.5x6
		SCLCL3/8-2	CCMT060204	M2.5x6
		SDNCN3/8-2	DCMT070204	M2.5x6
		SDJCR3/8-2	DCMT070204	M2.5x6
2002-0113	1/2	MGEHR1/2-02 (CUT OFF BLADE)	MGMN200	GB70-85/M4x12
		SER1/2-11	11ER A60	M2.5x6
		SWGCR1/2-05	WCMT050308	M3x8
		SCLCR1/2-2	CCMT060204	M2.5x6
		SCLCL1/2-2	CCMT060204	M2.5x6
		SDNCN1/2-2	DCMT070204	M2.5x6
		SDJCR1/2-2	DCMT070204	M2.5x6
2002-0114	5/8	MGEHR5/8-03 (CUT OFF BLADE)	MGMN300	GB70-85/M5x14
		SER5/8-16	16ER A60	M3.5x11
		SWGCR5/8-06	WCMT06T308	M4x8
		SCLCR5/8-3	CCMT09T304	M4x10
		SCLCL5/8-3	CCMT09T304	M4x10
		SDNCN5/8-3	DCMT11T304	M4x10
		SDJCR5/8-3	DCMT11T304	M4x10
2002-0115	3/4	MGEHR3/4-03 (CUT OFF BLADE)	MGMN300	GB70-85/M5x14
		SER3/4-16	16ER A60	M3.5x11
		SWGCR3/4-06	WCMT06T308	M4x10
		SCLCR3/4-3	CCMT09T304	M4x10
		SCLCL3/4-3	CCMT09T304	M4x10
		SDNCN3/4-3	DCMT11T304	M4x10
		SDJCR3/4-3	DCMT11T304	M4x10



REPLACEMENT CARBIDE INSERTS

- **For 7pc Indexable Tools Sets.**
- Coated.


DCMT Style Shown


CCMT Style Shown


WCMT Style Shown


11ERA60 16ERA60 Style Shown


MGMN Style Shown

Item#	Insert No.	Coated Grade
6024-3022	MGMN-200-G	BPS253CVD
6007-0004	11ERA60	TiN
6015-0005	WCMT050308	XAF799
6003-2021	CCMT060204	TiN
6004-0021	DCMT070204	XAB749
6024-3003	MGMN300-M	BPS-253CVD
6007-0012	16ERA60	TiN
6015-0008	WCMT06T304	XAF799
6003-2032	CCMT09T304	TiN
6004-2032	DCMT11T304	XAB749

REPLACEMENT CARBIDE INSERTS-TCMT

- **For 5pc Indexable Tools Sets.**
- Coated.

Item#	Insert No.	Grade
6004-9020	TCMT090204	TiN
6004-9021	TCMT110204	TiN
6004-9031	TCMT16T304	TiN



SCREWS



Item#	Style
2100-0082	GB70-85 M4x12
2100-0065	M2.2x6
2100-0070	M2.5x6
2100-0003	M3x8
2100-0069	M4x8
2100-0074	M4x10
2100-0083	M3.5x11
2100-0087	GB70-85 M5x14

7PC MINI TOOL HOLDER SET-Accept CCMT Inserts

- Use CCMT inserts
- Complete with fitted case.

Item#	Turn Shank	Bore Shank	Insert	Screw
2003-0250	1/4"	5/16"	CCMT21.5	M2.5x6
2003-0375	3/8"	3/8"	CCMT21.5	M2.5x6
2003-0500	1/2"	1/2"	CCMT21.5	M2.5x6
2003-0625	5/8"	5/8"	CCMT32.5	M4x10

- **Set includes:**
  6-Turning Holder (SCMCN, SCDCN, SCLCR, SCLCL, SCKCR & SCBCR)
  1-Boring Holder (SCLCR)
  1-T8 Torx Wrench

Inserts see page 133

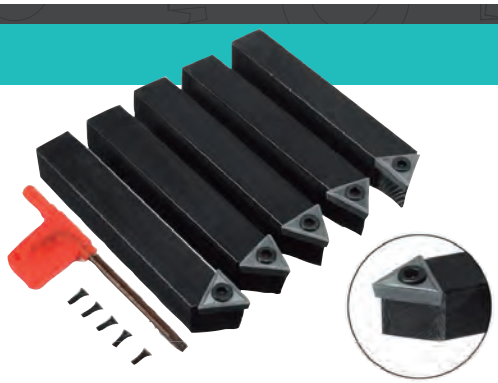


5PC INDEXABLE CARBIDE TURNING TOOL SETS

5 PC SET

Item#	Square Shank	Insert I.C.	Set No.	Torx Wr.
2003-0001	1/4"	7/32"	ST-4	T6
2003-0002	3/8"	1/4"	ST-6	T8
2003-0003	1/2"	3/8"	ST-8	T15
2003-0004	5/8"	3/8"	ST-10	T15
2003-0005	3/4"	3/8"	ST-12	T15
2003-0006	1"	1/2"	ST-16	T20

- **5pc set includes:**
  - One of each - AR, AL, BR, BL & E Holder
  - C-5 Inserts, TCMT style
  - 5pc spare screws
  - 2 Torx wrench
  - Fitted case.



INDIVIDUAL (Insert & Torx Wrench Included)

Type	*1/4 Shank* 7/32 IC Insert Item#	*3/8 Shank,* 1/4 IC Insert Item#	*1/2 Shank,* 3/8 IC Insert Item#	*5/8 Shank,* 3/8 IC Insert Item#	*3/4 Shank,* 3/8 IC Insert Item#	*1 Shank,* 1/2 IC Insert Item#
AR	2003-0101	2003-0111	2003-0121	2003-0131	2003-0141	2003-0151
AL	2003-0102	2003-0112	2003-0122	2003-0132	2003-0142	2003-0152
BR	2003-0103	2003-0113	2003-0123	2003-0133	2003-0143	2003-0153
BL	2003-0104	2003-0114	2003-0124	2003-0134	2003-0144	2003-0154
E	2003-0105	2003-0115	2003-0125	2003-0135	2003-0145	2003-0155

REPLACEMENT INSERTS

Fit Shank	Insert I.C.	Insert No.	*TiN (C-6)* Item#
1/4"	7/32	TCMT090204	6004-9020
3/8"	1/4	TCMT110204	6004-9021
1/2, 5/8 & 3/4"	3/8	TCMT16T304	6004-9031
1"	1/2	TCMT220408	6004-6142

See page 149 & 150 for more inserts





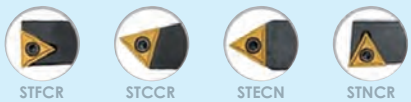
REPLACEMENT SCREWS

Screw	For Set	Item#
M2.5	1/4, 3/8"	2003-0012
M4	1/2, 5/8 & 3/4"	2100-0074
M5	1"	2100-0076

5PC INDEXABLE TURNING & BORING TOOL SETS-Accept TCMT Inserts

- Use TCMT inserts
- Set comes with 4 turning tool, 1 boring tool, Inserts & torx wrenches
- Complete with fitted aluminium case.







Inserts see page 149 & 150

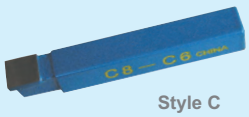
Item #	Shank	Style in Set	Insert	Screw
2003-0031	5/16	STACR05-1.8	TCMT090204	M2.2x6
		STDCR05-1.8	TCMT090204	M2.2x6
		STNCR05-1.8	TCMT090204	M2.2x6
		STECN05-1.8	TCMT090204	M2.2x6
		S05H-STFCR1.8	TCMT090204	M2.2x6
2003-0032	3/8	STACR06-2	TCMT110204	M2.5x6
		STDCR06-2	TCMT110204	M2.5x6
		STNCR06-2	TCMT110204	M2.5x6
		STECN06-2	TCMT110204	M2.5x6
		S06M-STFCR2	TCMT110204	M2.5x6
2003-0033	1/2	STACR08-2	TCMT110204	M2.5x6
		STDCR08-2	TCMT110204	M2.5x6
		STNCR08-2	TCMT110204	M2.5x6
		STECN08-2	TCMT110204	M2.5x6
		S08Q-STFCR2	TCMT110204	M2.5x6
2003-0034	5/8	STACR10-3	TCMT16T304	M4x10
		STDCR10-3	TCMT16T304	M4x10
		STNCR10-3	TCMT16T304	M4x10
		STECN10-3	TCMT16T304	M4x10
		S10R-STFCR3	TCMT110204	M2.5x6
2003-0035	3/4	STACR12-3	TCMT16T304	M4x10
		STDCR12-3	TCMT16T304	M4x10
		STNCR12-3	TCMT16T304	M4x10
		STECN12-3	TCMT16T304	M4x10
		S12S-STFCR3	TCMT110204	M2.5x6

TOOL BITS & KNURLING TOOLS

CARBIDE-TIPPED SINGLE-POINT BRAZED TOOL BITS

RIGHT HAND CUTS FROM RIGHT TO LEFT
LEFT HAND CUTS FROM LEFT TO RIGHT

GRADE C-2 for cast iron and non-ferrous materials
GRADE C-6 for steel and steel alloys.



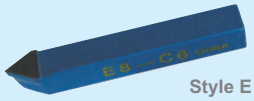
Style C

(Inch) Size	OAL	Style C Tool Style	C-6 Item#
1/4	2	C-4	2008-1104
5/16	2-1/4	C-5	2008-1105
3/8	2-1/2	C-6	2008-1106
1/2	3-1/2	C-8	2008-1108



Style D

(Inch) Size	OAL	Style D Tool Style	C-6 Item#
1/4	2	D-4	2008-1204
3/8	2-1/2	D-6	2008-1206
1/2	3-1/2	D-8	2008-1208



Style E

(Inch) Size	OAL	Style E Tool Style	C-6 Item#
1/4	2	E-4	2008-1304
5/16	2-1/4	E-5	2008-1305
3/8	2-1/2	E-6	2008-1306
1/2	3-1/2	E-8	2008-1308
5/8	4	E-10	2008-1310


Style A

Style A (Inch) Size	OAL	Right Hand Tool Style	C-2 Item#	C-6 Item#	Left hand Tool Style	C-2 Item#	C-6 Item#
1/4	2	AR-4	2008-0014	2008-0004	AL-4	2008-1014	2008-1004
5/16	2-1/4	AR-5	2008-0015	2008-0005	AL-5	2008-1015	2008-1005
3/8	2-1/2	AR-6	2008-0016	2008-0006	AL-6	2008-1016	2008-1006
1/2	3-1/2	AR-8	2008-0018	2008-0008	AL-8	2008-1018	2008-1008
5/8	4	AR-10	2008-0020	2008-0010	AL-10	2008-1020	2008-1010
3/4	4-1/2	AR-12	----------	2008-0012			

38PC CARBIDE-TIPPED BRAZED TOOL BITS

GRADE C-6 for steel and steel alloys premium carbide.

Set Includes:
8pc - Style AR, AL
6pc - Style E
4pc - Style BR, BL
4pc - Style C, D

Item #	Shank
2008-3001	1/4
2008-3003	5/16
2008-3005	3/8
2008-3007	1/2



SINGLE KNURLING TOOL

Features:
- Supplied with medium cut high speed steel knurl.
- Each holder includes one medium pitch.
- Holder size 4 x 5/8 x 5/8.
- Straight (AA) pattern knurl.
- Shiny black finish.

Knurl Size:
3/4x1/4x1/4"
2220-0004



PIVOT HEAD KNURLING TOOL

Features:
- Self-adjusting pivot head.
- Holder size: 4x1/2x1/2"
- 3/4x3/8x1/4" knurls.
- Produces medium diamond pattern.



Knurl Size:
3/4x3/8x1/4"
2220-0005

HSS KNURLING WHEELS

- High speed steel.
- Dimension: 3/4 (O.D.)x3/8 (Width)x1/4" (Hole)

Sold and supplied in Pair



Pitch	Lines (Inch)	Diamond Item#	Straight Item#
Coarse	14	2220-0014	2220-0214
Medium	21	2220-0016	2220-0216
Fine	33	2220-0018	2220-0218

SQUARE TOOL BITS - HSS & COBALT GROUND

- **M2 HIGH SPEED STEEL** A fine general purpose ground tool bits show exceptional result on mild steel, alloys and tool steels. This tool bit makes a superior finishing tool.
- **COBALT** Superior types of high speed steel which will work better where high heat is present. Used for heavy cuts in hard materials.



REGULAR LENGTH

Size (Inch) SQ x OAL	HSS Item#	M42 8% Cobalt Item#
1/8 x 2-1/2	2000-0001	2000-0041
3/16 x 2-1/2	2000-0002	2000-0042
1/4 x 2-1/2	2000-0003	2000-0043
5/16 x 2-1/2	2000-0004	2000-0044
3/8 x 3	2000-0005	2000-0045
7/16 x 3-1/2	2000-0006	2000-0046
1/2 x 4	2000-0007	2000-0047
5/8 x 4-1/2	2000-0008	2000-0048
3/4 x 5	2000-0009	2000-0049
1 x 7	2000-0011	2000-0051

EXTRA LONG

Size (Inch) SQ x OAL	HSS Item#	M35 5% Cobalt Item#
1/4 x 4	2000-0071	2000-0020
1/4 x 6	2000-0072	2000-0021
1/4 x 8	2000-0073	2000-0022
5/16 x 6	2000-0075	2000-0025
3/8 x 4	2000-0077	2000-0027
3/8 x 6	2000-0078	2000-0028
3/8 x 8	2000-0079	2000-0029
1/2 x 6	2000-0083	2000-0060

ROUND TOOL BITS - HSS

HIGH SPEED STEEL



Size (Inch)	Item#	Size (Inch)	Item#
1/8x2-3/4	2000-0331	1/4x4	2000-0377
5/32x2-1/2	2000-0338	3/8x5	2000-0385
3/16x3-1/2	2000-0353	1/2x6	2000-0389

3PC FLY CUTTER SETS-Straight & R8 Shank

- Utilizes standard tool bits.
- Counter balanced.
- Made of durable hardened steel.
- Cuts flat and smooth surface with a single cut.





R8 Shank
2-1/2 Head, 5/16 SQ Tool Bit
4002-0018

Item#	Set	Diameter Tool Bit Head (In)	Shank (In)	Fit (In)
4002-0001	3	3/4 1-1/8 1-1/2	1/2	3/16 1/4 5/16
4002-0002	3	1-1/2 2 2-1/2	3/4	5/16 5/16 5/16
4002-0003	3	1-1/2 2 2-1/2	3/4	3/8 3/8 1/2

RECTANGULAR TOOL BITS - HSS

HIGH SPEED STEEL



*Limited Supply

Size (Inch)	Item#
1/4 x 3/8 x 3	2000-0203
1/4 x 1/2 x 4	2000-0220
1/4 x 3/4 x 5	2000-0235
3/8 x 3/4 x 5	2000-0248
3/8 x 1-1/4 x 6	2000-0252
1/2 x 3/4 x 5	2000-0257*
1/2 x 1-1/2 x 7	2000-0261*
5/8 x 1-1/2 x 7	2000-0270*
3/4 x 1-1/2 x 7	2000-0276*

TURNING TOOL HOLDERS-For Use With Rocker Style Turning Tool Holders

NEW

- Accurately machined and carefully heat-treated, these tool holders feature a relieved cutter bit hole to assure proper seating of tool bits, thereby reducing breakage. These holders are for use with high speed steel tool bits.

RIGHT HAND



Tool Bit NOT Included

Holder Size	Tool Bit Size	RH Offset Item#
3/8 x 7/8 x 5"	1/4"	2206-0375
1/2 x 1-1/8 x 6"	5/16"	2206-0500
5/8 x 1-3/8 x 7"	3/8"	2206-0625
3/4 x 1-5/8 x 8"	7/16"	2206-0750

INDEXABLE BORING BAR IDENTIFICATION SYSTEM

S 8 R - S C L P R 2

TYPE OF BAR
S = Steel
A = Steel with coolant hole
C = Carbide
E = Carbide with coolant hole

SHANK DIAMETER (INCH)
Indicates bar diameter in sixteenths of an inch. Consult catalog for minimum bore diameter capability

BORING BAR LENGTH (INCH)
F=3" Q=7"
G=3.5 R=8
H=4 S=10
J=4.5 T=12
K=5 U=14
L=5.5 V=16
M=6 W=18
N=6.5 T=20
P=6.75 X=Special Length

HAND OF BAR
R = Right
L = Left

INSERT SIZE (I.C.)
1.2 = .1562"
1.5 = .1875
1.8 = .2187
2 = .250
2.5 = .3125
3 = .375
4 = .500
5 = .625
6 = .750
8 = 1.000

METHOD OF HOLDING INSERT
M = Clamp and lock pin
P = Lock pin
C = Clamp
S = Screw

INSERT SHAPE
C = 80° Diamond Insert
D = 55° Diamond Insert
S = Square Insert
T = Triangle Insert
V = 35° Diamond Insert
R = Round (Inch)
W = Trigon

BAR STYLE
U=Offset shank with negative 3° (93°) end or side cutting edge angle
F=Offset shank with 0° (90°) end cutting edge angle
G=Offset shank side/end cutting (round insert)
K=Offset shank with 15° (75°) end cutting edge angle
L=Offset shank with negative 5° (93°) end or side cutting edge angle
Q=Offset shank with negative 17.5° (107.5°) cutting edge angle
LX=Offset shank with negative 5° (95°) end cutting edge angle, back boring
X=Offset shank with negative 27.5° (117.5°) side or end cutting edge angle

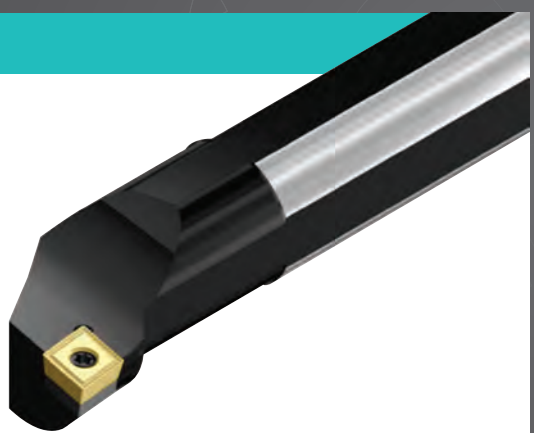
BAR RAKE ANGLE
P = Positive
N = Negative
O = Neutral

SCLCR INDEXABLE BORING BARS & SETS

SCLCR

- Utilize CCMT 80° diamond inserts.
- 7° Relief angle.
- Negative 5° Lead angle for boring.
- 3° Side & end cutting edge angle.
- Torx wrench included.
- CCMT insert included.





3 PC SET
Style A, B, C
1001–0020
5/16, 3/8 & 1/2

3 PC SET
Style C, E, F
1001–0021
1/2, 5/8 & 3/4"

4 PC SET
Style B, D, E, F
1001–0054
3/8, 1/2, 5/8 & 3/4"

5 PC SET
Style A, B, C, E, F
1001–0023
5/16, 3/8, 1/2, 5/8 & 3/4"

Application:
- Profiling bars for semi-finishing and finishing operations

REPLACEMENT INSERTS *(CCMT-21.51)* # ***6003-2021***
REPLACEMENT INSERTS *(CCMT-32.5)* # ***6003-2031***

INDIVIDUALS

Dimension Style	SET/Style	Dia. x OAL	Min. Bore	Insert	Screw	Torx Wrench	Item#
S05H-SCLCR2	A	5/16 x 4"	.437"	CCMT-21.5	M2.5x5	T-8	**1001-0025**
S06M-SCLCR2	B	3/8 x 6"	.500"	CCMT-21.5	M2.5x6	T-8	**1001-0026**
S08R-SCLCR2	C	1/2 x 8"	.625"	CCMT-21.5	M2.5x6	T-8	**1001-0024**
S08Q-SCLCR3	D	1/2 x 7"	.812"	CCMT-32.5	M4x8	T-15	**1001-0027**
S10R-SCLCR3	E	5/8 x 8"	.812"	CCMT-32.5	M4x8	T-15	**1001-0028**
S12S-SCLCR3	F	3/4 x 10"	1.00"	CCMT-32.5	M4x10	T-15	**1001-0029**
S16T-SCLCR3	G	1 x 12"	1.00"	CCMT-32.5	M4x10	T-15	**1001-0030**
S16T-SCLCR4	H	1 x 12"	1.25"	CCMT-432	M5x12	T-20	**1001-0031**

See page 133 for CCMT inserts
See page 127 & 128 for screws & spare parts

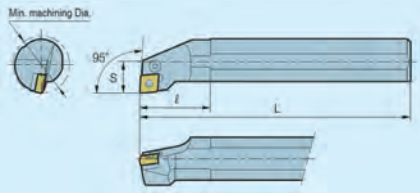
SCLCR COOLANT-THRU INDEXABLE BORING BARS & SETS

SCLCR

- Utilize CCMT 80° diamond inserts.
- 7° Relief angle.
- Negative 5° Lead angle for boring.
- Torx wrench included.
- CCMT insert included.

4pc Set Includes:
- (4) Indexable Boring Bars.
- (2) Torx wrenches.
- (14) CCMT inserts





COOLANT THRU 4 PC SET
1001–0699
5/16, 3/8, 1/2 & 5/8"

Application:
- Profiling bars for semi-finishing and finishing operations
- The coolant hole allows the cutting edge to cool and removes chips.

See page 133 for replacement inserts

INDIVIDUAL

See page 127 & 128 for screws & spare parts

Dimension Style	(Inch) Dia. x OAL	Min. Bore	Insert	Screw	Torx Wrench	Item#
A05H-SCLCR2	5/16 x 4	0.415"	CCMT-21.5	M2.5x5	T-8	**1001-0312**
A06J-SCLCR2	3/8 x 4-1/2	0.48"	CCMT-21.5	M2.5x6	T-8	**1001-0375**
A08K-SCLCR2	1/2 x 5	0.6"	CCMT-21.5	M2.5x6	T-8	**1001-0500**
A10M-SCLCR2	5/8 x 6	0.77"	CCMT-21.5	M2.5x6	T-8	**1001-0625**

SCLPR INDEXABLE BORING BARS-SCREW ON STYLE
Negative 5-Degree Lead Angle for Boring and Profiling, 11° Relief

SCLPR

- Use for boring & facing

Boring Bar Style	Shank	(Inch) Min. Bore	OAL	Insert Style	Screw	Torx Wrench	Item#
6M-2	0.375	0.500	6	CPMT-21.51	M2.5x8	T-8	**1009-0375**
8R-2	0.500	0.625	8	CPMT-21.51	M2.5x8	T-8	**1009-0500**
10S-3	0.625	0.812	10	CPMT-32.52	M4x10	T-15	**1009-0625**
12S-3	0.750	1.000	10	CPMT-32.52	M4x10	T-15	**1009-0750**
16T-4	1.000	1.250	12	CPMT-432	M5x12	T-20	**1009-1000**
18S-09	18mm	22mm	250mm	CPMT09T304	M4x9	T15	**1009-1018**

See page 138 for DCMT inserts



See page 127 & 128 for screws & spare parts

SDJCR INDEXABLE BORING BARS - SCREW ON
Negative 3-Degree Lead Angle, 7° Relief

SDJCR-RH

- Use DCMT 55° rhombic positive inserts

Application: Profiling and copying boring bar for semi finishing

Boring Bar Style	Shank	(Inch) Min. Bore	OAL	Use Insert	Screw	Torx Wrench	Item#
8-2	1/2	.780	8	DCMT-21.52	M2.5x6	T-8	**1010-0500**
10-2	5/8	.840	10	DCMT-21.52	M2.5x6	T-8	**1010-0625**
12-3	3/4	1.125	10	DCMT-32.52	M4x10	T-15	**1010-0750**
16-3	1	1.500	12	DCMT-32.52	M4x10	T-15	**1010-1000**

See page 138 & 139 for DCMT inserts



See page 127 & 128 for screws & spare parts

SDUCR INDEXABLE BORING BARS - SCREW ON STYLE
Negative 3-Degree Lead Angle for Boring and Profiling, 7° Relief
Offset shank with negative 3°(93°) end or side cutting edge

SDUCR

- Use DCMT 55° rhombic positive inserts

Application: Profiling and copying boring bar for semi finishing

Boring Bar Style	Shank	(Inch) Min. Bore	OAL	Use Insert	Screw	Torx Wrench	Item#
6-2	0.375	0.500	6	DCMT-21.51	M2.5x6	T-8	**1003-2375**
8-2	0.500	0.625	6	DCMT-21.51	M2.5x6	T-8	**1003-2500**
10-2	0.625	0.812	8	DCMT-21.51	M2.5x6	T-8	**1003-2625**
12-3	0.750	1.000	10	DCMT-32.52	M4x10	T-15	**1003-2750**

See page 138 & 139 for DCMT inserts



See page 127 & 128 for screws & spare parts

INDEXABLE BORING BARS

STFCR INDEXABLE BORING BARS-SCREW ON STYLE
0-Degree Lead Angle for Boring and Profiling, 7° Relief

STFCR



- Use TCGT or TCMT inserts

Boring Bar Style	Shank	Min. Bore	OAL	Use Insert	Screw	Torx Wrench	Item#
6-2	0.375"	0.500"	6"	TCMT-21.51	M2.5x6	T-8	**1004-2375**
8-2	0.500"	0.625"	8"	TCMT-21.51	M2.5x6	T-8	**1004-2500**
10-2	0.625"	0.812"	10"	TCMT-21.51	M2.5x6	T-8	**1004-2625**
12-3	0.750"	1.000"	10"	TCMT-32.52	M4x10	T-15	**1004-2750**
18S-16	18mm	22mm	250mm	TCMT16T304	M4x8	T-15	**1004-3018**

See page 149 & 150 for replacement inserts, See page 127 & 128 for screws & spare parts

STFPR INDEXABLE BORING BARS - SCREW ON
0-Degree Lead Angle For Boring and Facing, 11° Relief

STFPR



- Use TPGB inserts

Boring Bar Style	Shank	Min. Bore	OAL	Use Insert	Screw	Torx Wrench	Item#
6M-2	3/8"	.500"	6"	TPGB-21.51	M2.5x6	T-8	**1021-0375**
8R-2	1/2"	.625"	8"	TPGB-21.51	M2.5x6	T-8	**1021-0500**
10S-2	5/8"	.812"	10"	TPGB-21.51	M2.5x6	T-8	**1021-0625**
12S-3	3/4"	1.00"	10"	TPGB-32.52	M4x10	T-15	**1021-0750**
16T-3	1"	1.20"	12"	TPGB-32.52	M4x10	T-15	**1021-1000**
18S-16	18mm	22	250mm	TPMT16T304	M4x8	T-15	**1021-1018**

See page 155 & 157 for replacement inserts, See page 127 & 128 for screws & spare parts

SVQBR INDEXABLE BORING BARS - SCREW ON
Negative 17.5-Degree Lead Angle For Boring and Facing, 5° Relief

SVQBR



Limited Supply!

- Use VBMT inserts

Boring Bar Style	Shank	Min. Bore	OAL	Use Insert	Screw	Torx Wrench	Item#
16T-3	1"	1.375"	12"	VBMT-332	M4x10	T-15	**1022-1000**
20U-3	1-1/4"	1.625"	14"	VBMT-332	M4x10	T-15	**1022-1250**
24U-3	1-1/2"	2.000"	14"	VBMT-332	M4x10	T-15	**1022-1500**

See page 158 & 159 for replacement inserts, See page 127 & 128 for screws & spare parts

CTFPR INDEXABLE BORING BARS - CLAMP ON
0-Degree Lead Angle For Boring and Facing

CTFPR



- Use TPG inserts

Boring Bar Style	Shank	Min. Bore	OAL	Use Insert	Clamp	Clamp Screw	Hex Wrench	Item#
12S-3	3/4"	1.00"	10"	TPG-32.	CTFPN-5	CTFP-M5	3.0mm	**1023-0750**
16T-3	1"	1.22"	12"	TPG-32.	CTFPN-5	CTFP-M5	3.0mm	**1023-1000**
20U-3	1-1/4"	1.60"	14"	TPG-32.	CTFPN-5	CTFP-M5	3.0mm	**1023-1250***
24U-3	1-1/2"	1.84"	14"	TPG-32.	CTFPN-5	CTFP-M5	3.0mm	**1023-1500***

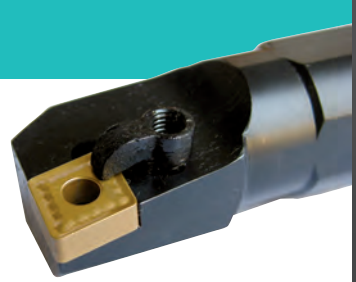
*Limited Supply

See page 127 & 128 for screws & spare parts

See page 156 for replacement inserts

MCLNR INDEXABLE BORING BARS - CLAMP ON
Negative 5-Degree Lead Angle

MCLNR



- Use CNMG inserts

Boring Bar Style	Shank	Min. Bore	OAL	Use Insert	Lock Pin	Shim	Clamp	Clamp Screw	Hex Wrench	Item#
20T-4	1-1/4"	1.53"	12"	CNMG-432	NL-0617	C1203B	CL-6	XNS0520	2.5mm	**1024-1250**
24U-4	1-1/2"	1.78"	14"	CNMG-432	NL-0617	C1203B	CL-6	XNS0520	2.5mm	**1024-1500**
28U-4	1-3/4"	2.03"	14"	CNMG-432	NL-0617	C1203B	CL-6	XNS0520	2.5mm	**1024-1750**

See page 135-137 for replacement inserts, See page 127 & 128 for screws & spare parts

MTFNR INDEXABLE BORING BARS - CLAMP ON
0-Degree Lead Angle

Uses TNMG, TNMM, TNMA Inserts

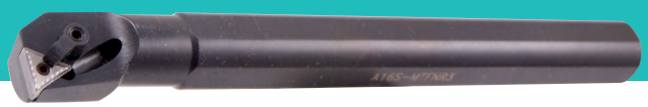
Boring Bar Style	Shank	(Inch) Min. Bore	OAL	Lock Pin	Hex Wrench	Shim	Use Insert	Hex Wrench	Clamp	Clamp Screw	Item#
12-3	3/4	1.00	10	NL-0410	2mm	----	TN..-33.	2.5mm	CL-6	XNS0520	**1025-0750**
16-3	1	1.28	12	NL-0410	2mm	T-1603B	TN..-33.	2.5mm	CL-6	XNS0520	**1025-1000**
20-3	1-1/4	1.53	14	NL-0410	2mm	T-1603B	TN..-33.	2.5mm	CL-6	XNS0520	**1025-1250**
24-3	1-1/2	1.70	14	NL-0410	2mm	T-1603B	TN..-33.	2.5mm	CL-6	XNS0520	**1025-1501**
24-4	1-1/2	1.78	14	NL-0617	2.5mm	T-2203B	TN..-43.	4mm	CL-12	XNS0829	**1025-1500**



Limited Supply!

See page 153-155 for replacement inserts, See page 127 & 128 for screws & spare parts

MTFNR3 INDEXABLE BORING BARS - COOLANT THRU
0-Degree Lead Angle



Uses TNMG, TNMM, TNMA Inserts

Limited Supply!

Boring Bar Style	Shank	(Inch) Min. Bore	OAL	Use Insert	Shim	Lock Pin	Clamp	Hex Wrench	Clamp Screw	Item#
A16S	1	1.28	12	TN..-33.	T1603B	NL-0414	CL-6	2.5mm	XNS-0520	**1007-1000**
A20T	1-1/4	1.53	14	TN..-33.	T1603B	NL-0414	CL-6	2.5mm	XNS-0520	**1007-1250**
A24T	1-1/2	1.78	14	TN..-33.	T1603B	NL-0414	CL-6	2.5mm	XNS-0520	**1007-1500**

See page 153-155 for replacement inserts, See page 127 & 128 for screws & spare parts

MVUR INDEXABLE BORING BARS - CLAMP ON
Negative 3-Degree Lead Angle

Uses VNMG, VNMM, VNMA,VBMT Inserts

Boring Bar Style	Shank	Min. Bore	OAL	Use Insert	Clamp	Shim	Lock Pin	Clamp Screw	Hex Wrench	Item#
16T-3	1"	2.00"	12"	VBMT-332	CL-20	----	NL-0410	XNS0620	2.5mm	**1026-1000**
20U-3	1-1/4"	2.25"	14"	VBMT-332	CL-20	V1603B	NL-0414	XNS0620	2.5mm	**1026-1250***
24U-3	1-1/2"	2.50"	14"	VBMT-332	CL-20	V1603B	NL-0414	XNS0620	2.5mm	**1026-1500***



*Limited Supply

See page 158-159 for replacement inserts, See page 127 & 128 for screws & spare parts

MSKNR INDEXABLE BORING BARS - CLAMP ON
15-Degree Lead Angle

Uses SNMG, SNMA Inserts

Boring Bar Style	Shank	Min. Bore	OAL	Use Insert	Shim	Hex Wrench	Lock Pin	Clamp	Clamp Screw	Hex Wrench	Item#
20T-4	1-1/4"	1.53"	14"	SNMG-432	S1203B	2.5mm	NL-0617	CL-12	XNS0829	4mm	**1027-1250**



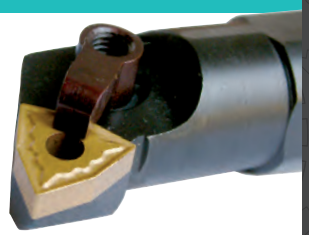
Limited Supply!

See page 147-148 for replacement inserts, See page 127 & 128 for screws & spare parts

MWLNR INDEXABLE BORING BARS - CLAMP ON
Negative 5-Degree Lead Angle, 0° Relief

Uses WNMG, WNMA Inserts

Boring Bar Style	Shank	Min. Bore	OAL	Hex Wrench	Use Insert	Lock Pin	Shim	Clamp	Clamp Screw	Hex Wrench	Item#
12S-3	3/4"	.98"	10"	2mm	WNMG-332	NL-0410	---	CL-6	XNS0520	2.5mm	**1028-0750**
16T-4	1"	1.30"	12"	2mm	WNMG-432	NL-0611	---	CL-20	XNS0620	2.5mm	**1028-1001**
20U-3	1-1/4"	1.47"	14"	2mm	WNMG-332	NL-0414	W0603B	CL-6	XNS0520	2.5mm	**1028-1250***
20U-4	1-1/4"	1.57"	14"	2mm	WNMG-432	NL-0617	W0803B	CL-20	XNS0620	2.5mm	**1028-1251**
24U-4	1/1/2"	2.50"	14"	2mm	WNMG-432	NL-0617	W0803B	CL-20	XNS0620	2.5mm	**1028-1500***



* Limited Supply

See page 161 & 162 for replacement inserts, See page 127 & 128 for screws & spare parts

MWLNR INDEXABLE BORING BARS - COOLANT THRU
Negative 5-Degree Lead Angle, 0° Relief

Uses WNMG, WNMA Inserts

Boring Bar Style	Shank	Min. Bore	OAL	Use Insert	Hex Wrench	Shim	Lock Pin	Clamp	Clamp Screw	Hex Wrench	Item#
A16S-4	1"	1.20"	12"	WNMG-432	2.5mm	----	NL-0611	CL-20	XNS-0620	2.5mm	**1008-1000**
A20T-4	1-1/4"	1.47"	14"	WNMG-432	2.5mm	W0803B	NL-0617	CL-20	XNS-0620	2.5mm	**1008-1250**
A24T-4	1/1/2"	2.50"	14"	WNMG-432	2.5mm	W0803B	NL-0617	CL-20	XNS-0620	2.5mm	**1008-1500**



Limited Supply!

See page 161-162 for replacement inserts, See page 127 & 128 for screws & spare parts

INDEXABLE BORING BARS

MINI INDEXABLE BORING BARS
Use CCMT Inserts, 7° Relief

- Screw down style



See page 133 for replacement inserts, See page 127 & 128 for screws & spare parts

Boring Bar Style	Shank	Min. Bore	OAL	Neck Dia.	Neck Length	Use Insert	Screw	Torx	Item#
S05 SCLCR06	5/16"	.415"	4.00"	.236"	.985"	CCMT-21.5	M2.5x5	T-8	**1031-0312**
S06 SCLCR06	3/8"	.472"	4.33"	.315"	1.26"	CCMT-21.5	M2.5x6	T-8	**1031-0375**
S08 SCLCR06	1/2"	.552"	5.00"	.393"	1.50"	CCMT-21.5	M2.5x6	T-8	**1031-0500**
S10 SCLCR06	5/8"	.708"	5.90"	.472"	1.97"	CCMT-21.5	M2.5x6	T-8	**1031-0625**

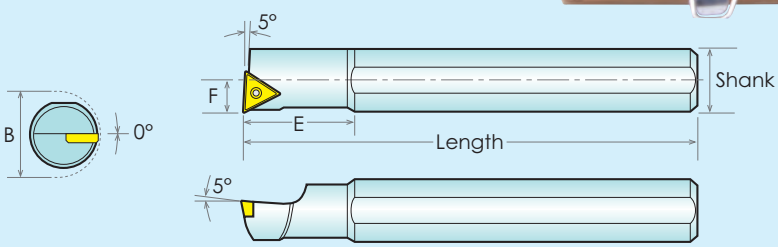
TPBN INDEXABLE BORING BAR SETS
Use TPGW Inserts

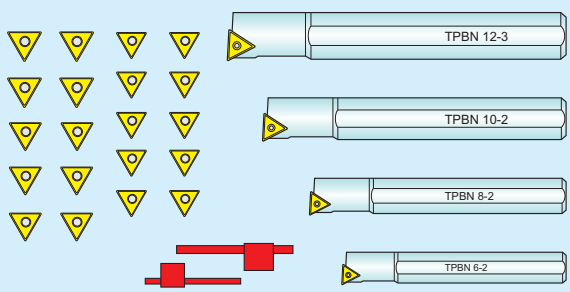
Features:

- Small hole capacity to a minimum of .430"
- Insert pocket has been scientifically designed to eliminate vibration and maximize the depth of cut.
- Bars made of heat treated, precision ground alloy steel.
- Clearance angle of the insert, in relation to cutting edge, gives best micro finish.
- The positive insert with advanced chip breaker design allows for heavier cuts.



1001-0727 Shown





27 PC SET
1001-0727
Includes: 8pc of each Boring Bars, Carbide Inserts, & Torx Screws, 3pc Torx Keys, Fitted Case

27 PC SET

Boring Bar Style	Shank	(Inch) Min. Bore	OAL	Screw	Torx Wr.	Use Insert
6-2	1/2	.430	5	M2.5x6	T8	TPGW-21.5
8-2	1/2	.590	6	M2.5x6	T8	TPGW-21.5
10-2	5/8	.682	8	M2.5x6	T8	TPGW-21.5
12-3	3/4	.845	10	M4x8	T15	TPGW-32.
16-3	1	1.115	12	M4x10	T15	TPGW-32.
20-3	1-1/4	1.370	12	M4x10	T15	TPGW-32.
20-4	1-1/2	1.370	12	M5x12	T20	TPGW-43.
24-4	1-1/2	1.680	12	M5x12	T20	TPGW-43.

31 PC SET
1001-0731
Includes: 4 pc Boring Bars, 20 pc Carbide Inserts, & 4 pc Torx Screws, 2 pc Torx Keys, Fitted Case

31 PC SET

Boring Bar Style	Shank	Min. Bore	OAL	Screw	Torx Wr.	Use Insert
6-2	1/2"	.430"	5"	M2.5x6	T8	TPGW-21.5
8-2	1/2"	.590"	6"	M2.5x6	T8	TPGW-21.5
10-2	5/8"	.682"	8"	M2.5x6	T8	TPGW-21.5
12-3	3/4"	.845"	10"	M4x8	T15	TPGW-32.

TBB INDEXABLE BORING BARS
Use TPGH, TPMM, TPGW Inserts, 11° Relief

See page 155-157 for replacement inserts
See page 127 & 128 for screws & spare parts



Limited Supply!

Boring Bar Style	Shank	(Inch) Min. Bore	OAL	Use Insert	Angle Enter	Screw	Torx Wrench	Item#
S6-2	1/2	.430	5	TPG.-22.	91°	M2.5x6	T-8	**1029-0500**
N6-2	1/2	.430	5	TPG.-22.	95°	M2.5x6	T-8	**1029-0501**
S8	1/2	.700	6	TPG.-32.	91°	M4x8	T-15	**1029-0503**
L8	1/2	.700	6	TPG.-32.	85°	M4x8	T-15	**1029-0504**
N8	1/2	.700	6	TPG.-32.	95°	M4x8	T-15	**1029-0505**
S10	5/8	.710	7	TPG.-32.	91°	M4x8	T-15	**1029-0625**
L10	5/8	.710	7	TPG.-32.	85°	M4x8	T-15	**1029-0626**
N10	5/8	.710	7	TPG.-32.	95°	M4x8	T-15	**1029-0627**
S12-3	3/4	.845	10	TPG.-32.	91°	M4x10	T-15	**1029-0750**
N12-3	3/4	.845	10	TPG.-32.	95°	M4x10	T-15	**1029-0751**

BBN/BBS INDEXABLE BORING BARS
Use TPGH, TPMM, TPGW Inserts • Positive Rake • 11° Relief

See page 155-157 for replacement inserts
See page 127 & 128 for screws & spare parts



*Limited Supply

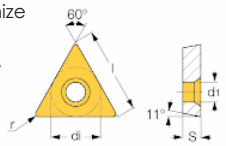
Boring Bar Style	Shank	Min. Bore	OAL	Use Insert	Lead Angle	Screw	Torx Wrench	Item#
S8	1/2"	.700"	6"	TP..-32.	-1	M4x10	T-15	**1030-0500**
N8	1/2"	.700"	6"	TP..-32.	-5	M4x10	T-15	**1030-0502**
S10	5/8"	.710"	7"	TP..-32.	-1	M4x10	T-15	**1030-0625**
L10	5/8"	.710"	7"	TP..-32.	+5	M4x10	T-15	**1030-0626***
N10	5/8"	.710"	7"	TP..-32.	-5	M4x10	T-15	**1030-0627**
N12-3	3/4"	.845"	10"	TP..-32.	-5	M4x10	T-15	**1030-0750**
S12-3	3/4"	.845"	10"	TP..-32.	-1	M4x10	T-15	**1030-0751***

TPGC INSERTS 11° Positive Single Sided

TPGC

NEW

- TPGC ground single sided chip breaker to optimize chip control
- With countersink hole.
- TiN coated.





10 PC PER PACKAGE

Item#	Insert No.	I.C.	Thick (In)	Hole (In)
6025-0721	TPGC-21.51	1/4"	.094	.118
6025-0722	TPGC-21.52	1/4"	.094	.118
6025-0731	TPGC-321	3/8"	.125	.125
6025-0732	TPGC-322	3/8"	.125	.125

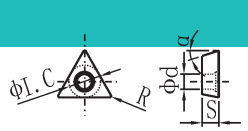
TPGW CARBIDE INSERT 11° Positive Single Sided

TPGW

NEW

- 11° clearance angle.
- Positive insert shape.
- Screw on style.
- Fits many popular boring bar & turning tool holders.
- For machining short chip materials without a chipbreaker.

TiN (C6) coated





10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	Thickness S	(Inch) Corner Radius R	Hole Size d	Grade
6025-2152	TPGW-21.52	TPGW110208	0.250	.093	.0315	0.110	TiN(C6)
6025-0222	TPGW-222	TPGW110308	0.250	.125	.0315	0.110	TiN(C6)
6025-3321	TPGW-321	TPGW160304	0.375"	.125	.0157	0.173	TiN(C6)
6025-3322	TPGW-322	TPGW160308	0.375"	.125	.0315	0.173	TiN(C6)
6025-4432	TPGW-432	TPGW220408	0.500"	.187	.0315	0.217	TiN(C6)

TPGB CARBIDE INSERTS 11° Positive Single Sided

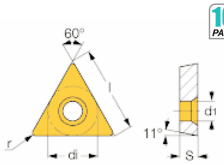
TPGB

NEW

- TPGB for machinging short chip materials without chipbreaker.
- With countersunk hole.
- Fits popular boring bar & turning tool holders.

TiN COATED(C6)





10 PC PER PACKAGE

Item#	Insert No.	I.C.	Thick (In)	Hole (In)
6025-0251	TPGB-21.51	1/4"	.094	.118
6025-0252	TPGB-21.52	1/4"	.094	.118
6025-0321	TPGB-321	3/8"	.125	.125
6025-0322	TPGB-322	3/8"	.125	.125
6025-0431	TPGB-431	1/2"	.188	.220
6025-0432	TPGB-432	1/2"	.188	.220

INDIVIDUAL ROUND SHANK INDEXABLE BORING BARS
Use TCMT Inserts • Positive Rake 90° Lead, 7° Relief

- Negative 3° lead angle.
- Use TCMT insert.
- Screw down style.
- Includes TiN coated insert.



See page 149 & 150 for TCMT inserts

Item#	Shank Dia.	Length	Bore Depth	Min. Bore	Insert	Screw	Torx Wr.
1001-0741	1/2	2-3/4	1-1/4	7/16	TCMT21.51	M2.5x5	
1001-0743	1/2	3-5/8	2-1/8	7/16	TCMT21.51	M2.5x5	
1001-0745	1/2	3	1-1/2	1/2	TCMT21.51	M2.5x6	
1001-0747	1/2	4	2-1/2	1/2	TCMT21.51	M2.5x6	
1001-0751	5/8	3	1-1/4	7/16	TCMT21.51	M2.5x5	T-8
1001-0753	5/8	3-7/8	2-1/8	7/16	TCMT21.51	M2.5x5	
1001-0755	5/8	3-1/4	1-1/2	1/2	TCMT21.51	M2.5x6	
1001-0757	5/8	4-1/4	2-1/2	1/2	TCMT21.51	M2.5x6	
1001-0759	5/8	3-1/2	1-3/4	9/16	TCMT221	M2.5x6	

Item#	Shank Dia.	Length	Bore Depth	Min. Bore	Insert	Screw	Torx Wr.
1001-0761	5/8	4-5/8	2-7/8	9/16	TCMT221	M2.5x6	
1001-0771	3/4	3-3/8	1-3/8	7/16	TCMT21.51	M2.5x5	
1001-0773	3/4	4-1/4	2-1/4	7/16	TCMT21.51	M2.5x5	
1001-0775	3/4	3-5/8	1-5/8	1/2	TCMT21.51	M2.5x6	
1001-0777	3/4	4-5/8	2-5/8	1/2	TCMT21.51	M2.5x6	T-8
1001-0779	3/4	3-7/8	1-7/8	9/16	TCMT221	M2.5x6	
1001-0781	3/4	5	3	9/16	TCMT221	M2.5x6	
1001-0783	3/4	4-1/4	2-1/4	11/16	TCMT221	M2.5x7	
1001-0785	3/4	5-1/2	3-1/2	11/16	TCMT221	M2.5x7	

4PC 1/2" ROUND SHANK INDEXABLE BORING BAR SET
Use TCMT Inserts • Positive Rake 90° Lead, 7° Relief

- Negative 3° lead angle.
- TCMT21-5. insert fits all bars.
- Screw down style.
- Includes inserts.

4 PC SET
1/2" SHANK
1001-0704



See page 149 & 150 for TCMT inserts

Set	Shank	Min. Bore	(Inch) OAL	Bore Depth	Use Insert	Use Torx Wr.	Use Screw
4	1/2	7/16	2-3/4	1-1/4	TCMT21-51	T-8	M2.5x5
	1/2	7/16	3-5/8	2-1/8			M2.5x5
	1/2	1/2	3	1-1/2			M2.5x6
	1/2	1/2	4	2-1/2			M2.5x6

6PC 5/8" ROUND SHANK INDEXABLE BORING BAR SET
Use TCMT Inserts • Positive Rake 90° Lead, 7° Relief

NEW

- Negative 3° lead angle.
- TCMT21-5. insert fits all bars.
- Screw down style.
- Includes inserts.
- Includes fitted case.

5/8" shank

6 PC SET
5/8" SHANK
1001-0711



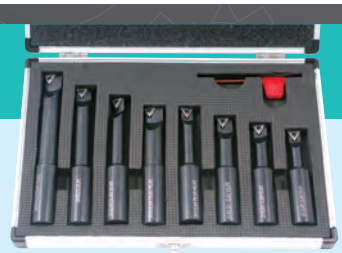
Set	Shank	Min. Bore	(Inch) OAL	Bore Depth	Use Insert	Use Torx Wr.	Use Screw
6	5/8	7/16	3	1-1/4	TCMT21-51	T-8	M2.5x5
		7/16	3-7/8	2-1/8			M2.5x5
		1/2	3-1/4	1-1/2			M2.5x6
		1/2	4-1/4	2-1/2			M2.5x6
		9/16	3-1/2	1-3/4	TCMT221		M2.5x6
		9/16	4-5/8	2-7/8			M2.5x6

8PC 3/4" ROUND SHANK INDEXABLE BORING BAR SET
Use TCMT Inserts • Positive Rake 90° Lead, 7° Relief

- Negative 3° lead angle.
- TCMT21-5. insert fits all bars.
- Screw down style.
- Includes inserts.
- Includes fitted case.

8 PC SET
3/4" SHANK
1001-0708

3/4" shank





See page 149 & 150 for TCMT inserts

Set	Shank	Min. Bore	(Inch) OAL	Bore Depth	Use Insert	Use Torx Wr.	Use Screw
8	3/4	7/16	3-3/8	1-3/8	TCMT21-51	T-8	M2.5x5
		7/16	4-1/4	2-1/4			M2.5x5
		1/2	3-5/8	1-5/8			M2.5x6
		1/2	4-5/8	2-5/8			M2.5x6
		9/16	3-7/8	1-7/8	TCMT221		M2.5x6
		9/16	5	3			M2.5x6
		11/16	4-1/4	2-1/4			M2.5x7
		11/16	5-1/2	3-1/2			M2.5x7

TOOLHOLDER TECHNICAL INFORMATION

METHOD OF HOLDING

C = Clamp lock assembly (PC Tool-holders)
M = Multiple lock assembly (Pin & clamp lock) (M-type Tool-holders)
P = Pin lock assembly (NL/PL Tool-holders)
S = Screw lock

TOOL-HOLDER STYLE

A = Straight shank w/0° side cutting edge angle
B = Straight shank w/15° side cutting angle
C = Shank w/0° end cutting dege angle
D = Straight shank w/4 °side cutting edge angle
E = Straight shank w/30° side cutting edge angle
F = Offset shank w/0° end cutting edge angle
G = Offset shank w/0° side cutting edge angle
J = Offset shank w/negative 3° side cutting angle
K = Offset shank w/15° end cutting edge angle
L = Offset shank w/negative 5° end or side cutting angle
M = Straight shank w/50° side cutting edge angle
P = Straight shank w/27° side cutting edge angle
R = Offset shank w/15° side cutting edge angle
S = Offset shank w/45° side cutting edge angle
V = Straight shank w/17.5° side cutting edge angle
W = Offset shank w/10° side cutting edge angle

HAND OF TOOL

L = Left
N = Neutral
R = Right

TOOLHOLDER SHANK SIZE

For square shank, the number represents the of sixteenths (1/16) of width and height.

6 = 3/8" square
8 = 1/2" square
10 = 5/8" square
12 = 3/4" square
16 = 1" square
20 = 1-1/4" square
24 = 1-1/2" square

For rectangular shanks, the first digit represents the number of eights (1/8) of width and the second digit represents the number of quarters of height.

64 = 3/4 x 1"
85 = 1 x 1-1/4"
86 = 1 x 1-1/2"

M C L N R □ 12 - 4 B

INSERT SHAPE

C = 80° Diamond
D = 55° Diamond
R = Round
S = Square
T = Triangle
V = 35°
W = Trigon

RAKE ATTITUDE

N = Negative
O = Neutral
P = Positive
C = Neutral-accepts 7° clearance inserts
B = Neutral-accepts 5° clearance inserts

POCKET STYLE

S = Single wall pocket construction.

Full pocket construction, when letter position is vacant

INSERT SIZE I.C.

Number of eighths (1/8) of I.C. (inscribed Circle)

Insert less than 1/4" I.C.

5 = 5/32"
6 = 3/16"
7 = 7/32"

Inserts 1/4" I.C. and cover (in.)

2 = 1/4"
2.5 = 5/16"
3 = 3/8"
4 = 1/2"
5 = 5/8"
6= 3/4"

QUALIFIED SURFACE & LENGTH

A = Qualified back & end, 4" long
B = Qualified back & end, 4.5" long
C = Qualified back & end, 5" long
D = Qualified back & end, 6" long
E = Qualified back & end, 7 long
F = Qualified back & end, 8" long
J = Qualified back & end, 3.5" long
M = Qualified back & end, 4" long
N = Qualified back & end, 4.5" long
P = Qualified back & end, 5" long
R = Qualified back & end, 6" long
S = Qualified back & end, 7" long
T = Qualified back & end, 8" long

MCGN-RH

MCGN PIN & CLAMP STYLE TURNING TOOL HOLDERS
0-Degree Lead Angle for Turning to Square Shoulders, 0° Relief



See page 127 & 128 for spare parts & screws

- USE CNMA, CNMG & CNMM INSERTS

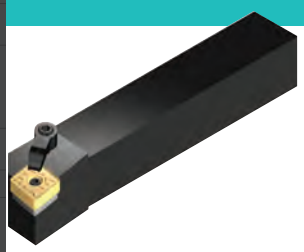
*Limited Supply

Tool Holder Style	Shank	(Inch) OAL	Offset	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
124C	3/4	5	1	CNMG-43	C1203B	NL-0617	CL-20	XNS-0829	**2010-1124**
164D	1	6	1-1/4	CNMG-43	C1203B	NL-0617	CL-20	XNS-0829	**2010-1164**
165D	1	6	1-1/4	CNMG-54	C1604B	NL-0822	CL-12	XNS-0829	**2010-1165***
204D	1-1/4	6	1-1/2	CNMG-43	C1604B	NL-0617	CL-20	XNS-0829	**2010-1204**
206E	1-1/4	7	1-1/2	CNMG-54	C1604B	NL-0822	CL-12	XNS-0829	**2010-1206***

Replacement inserts page 135-137

MCLN-RH

MCLN PIN & CLAMP STYLE TURNING TOOL HOLDERS
Reverse 5-Degree Lead Angle for Turning and Facing, 0° Relief



See page 127 & 128 for spare parts & screws

- USE CNMA, CNMG & CNMM INSERTS

*Limited Supply

Tool Holder Style	Shank	(Inch) OAL	Offset	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
12-4B	3/4	4-1/2	1	CNMG-43	C1203B	NL-0617	CL-12	XNS-0829	**2011-1124**
16-4D	1	6	1-1/4	CNMG-43	C1203B	NL-0617	CL-12	XNS-0829	**2011-1164**
16-5D	1	6	1-1/4	CNMG-54	C1604B	NL-0822	CL-12	XNS-0829	**2011-1165***
20-4D	1-1/4	6	1-1/2	CNMG-43	C1203B	NL-0617	CL-12	XNS-0829	**2011-1204**
20-5E	1-1/4	7	1-1/2	CNMG-54	C1604B	NL-0822	CL-12	XNS-0829	**2011-1205***
20-6E	1-1/4	7	1-1/2	CNMG-64	C1904B	NL-0823	CL-30	XNS-0829	**2011-1206***

Replacement inserts page 135-137

MDJN-RH

MDJN PIN & CLAMP STYLE TURNING TOOL HOLDERS
3-Degree Lead Angle for Turning • Profiling and Facing • 0° Relief



See page 127 & 128 for spare parts & screws

- USE DNMG INSERTS

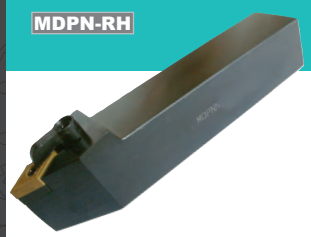
*Limited Supply

Tool Holder Style	Shank	(Inch) OAL	Offset	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
12-3B	3/4	4-1/2	1	DNMG-32	D1103B	NL-0414	CL-20	XNS-0829	**2012-1123**
12-4B	3/4	4-1/2	1	DNMG-43	D1504B	NL-0617	CL-30	XNS-0829	**2012-1124**
16-4D	1	6	1-1/4	DNMG-43	D1504B	NL-0617	CL-30	XNS-0829	**2012-1164**
20-4E	1-1/4	7	1-1/4	DNMG-43	D1504B	NL-0617	CL-30	XNS-0829	**2012-1204***

Replacement inserts page 139-140

MDPN-RH

MDPNN PIN & CLAMP STYLE TURNING TOOL HOLDERS
27.5-Degree Lead Angle for Turning and Profiling, 0° Relief



See page 127 & 128 for spare parts & screws

- USE DNMG INSERTS

Limited Supply!

Tool Holder Style	Shank	(Inch) OAL	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
16-4D	1	6	DNMG-432	D1504B	NL-0617	CL-30	XNS-0829	**2024-0164**
16-5D	1	6	DNMG-543	D1904B	NL-0822	CL-30	XNS-0829	**2024-0165**
20-4D	1-1/4	6	DNMG-432	D1504B	NL-0617	CL-30	XNS-0829	**2024-0204**

Replacement inserts page 139-140

MRGN-RH

MRGN PIN & CLAMP STYLE TURNING TOOL HOLDERS
0-Degree Lead Angle for Turning and Profiling, 0° Relief



See page 127 & 128 for spare parts & screws

- USE RNMA, RNMG INSERTS

Tool Holder Style	Shank	(Inch) OAL	Offset	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
12-3B	3/4	4.5	1	RNMA-32	R0903B	NL-0412	CL-6	XNS-0520	**2026-0123**
12-4B	3/4	4.5	1	RNMA-43	R1203B	NL-0617	CL-12	XNS-0829	**2026-0124**
16-3B	1	6	1-1/4	RNMA-32	R0903B	NL-0412	CL-6	XNS-0520	**2026-0163**

Replacement inserts page 144

MSDNN INDEXABLE TOOL HOLDERS- CLAMP ON
45-Degree Lead Angle • 0° Relief • Use SNMA • SNMG • SNMM Insert

MSDN-RH



See page 127 & 128 for spare parts & screws

RIGHT HAND

*Limited Supply

Tool Holder Style	(Inch) Shank	OAL	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
8-3B	1/2	4-1/2	SN..-32.	S0903B	NL-0412	CL-6	XNS-0520	**2027-0083**
10-3B	5/8	4-1/2	SN..-32.	S0903B	NL-0412	CL-6	XNS-0520	**2027-0103**
12-3B	3/4	4-1/2	SN..-32.	S0903B	NL-0412	CL-6	XNS-0520	**2027-0123***
12-4B	3/4	4-1/2	SN..-43.	S1203B	NL-0617	CL-12	XNS-0829	**2027-0124**
16-4D	1	6	SN..-43.	S1203B	NL-0617	CL-12	XNS-0829	**2027-0164***
16-5D	1	6	SN..-54.	S1504B	NL-0822	CL-12	XNS-0829	**2027-0165***

Replacement inserts page 147-148

MSKNR INDEXABLE TOOL HOLDERS- CLAMP ON
15-Degree Lead Angle • 0° Relief • Use SNMA • SNMG • SNMM Insert

MSKN-RH

Limited Supply!



See page 106 for spare parts & screws

RIGHT HAND

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
12-4C	3/4	5	1	SN..-43.	S1203B	NL-0617	CL-12	XNS-0829	**2021-0124**
16-4D	1	6	1-1/4	SN..-43.	S1203B	NL-0617	CL-12	XNS-0829	**2021-0164**
16-5D	1	6	1-1/4	SN..-54.	S1504B	NL-0822	CL-12	XNS-0829	**2021-0165**

Replacement inserts page 147-148

MSRNR INDEXABLE TOOL HOLDERS- CLAMP ON
15-Degree Lead Angle • 0° Relief • Use SNMA • SNMG • SNMM Insert

MSRN-RH

Limited Supply!



See page 127 & 128 for spare parts & screws

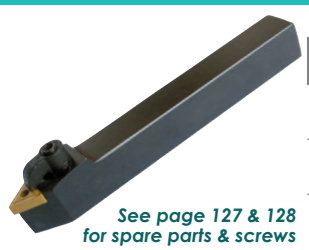
RIGHT HAND

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
12-3B	3/4	4-1/2	.880	SN..-33.	S0903B	NL-0412	CL-6	XNS-0520	**2028-0123**
12-4B	3/4	4-1/2	.880	SN..-43.	S1203B	NL-0617	CL-12	XNS-0829	**2028-0124**
16-4D	1	6	1.130	SN..-43.	S1203B	NL-0617	CL-12	XNS-0829	**2028-0164**
16-5D	1	6	1.103	SN..-54.	S1504B	NL-0822	CL-12	XNS-0829	**2028-0165**
20-4D	1-1/4	6	1.353	SN..-54.	S1203B	NL-0617	CL-12	XNS-0829	**2028-0204**

Replacement inserts page 147-148

MTENN INDEXABLE TOOL HOLDERS- CLAMP ON
30-Degree Lead Angle • 0° Relief • Use TNMA • TNMG• TNMM Insert

MTEN-RH



See page 127 & 128 for spare parts & screws

RIGHT HAND

*Limited Supply

Tool Holder Style	(Inch) Shank	OAL	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
8-2B	1/2	4-1/2	TN..-22.	----------	NL-0409	CL-6	XNS-0520	**2029-0082**
10-3B	5/8	4-1/2	TN..-32.	T1603B	NL-0414	CL-6	XNS-0520	**2029-0103**
12-3B	3/4	4-1/2	TN..-32.	T1603B	NL-0414	CL-6	XNS-0520	**2029-0123**
12-4B	3/4	4-1/2	TN..-43.	T2203B	NL-0617	CL-12	XNS-0829	**2029-0124**
16-4D	1	6	TN..-43.	T2203B	NL-0617	CL-12	XNS-0829	**2029-0164**
20-5E	1-1/4	7	TN..-54.	T2703B	NL-0822	CL-12	XNS-0829	**2029-0205***

Replacement inserts page 153-155

MTFNR INDEXABLE TOOL HOLDERS- CLAMP ON
0-Degree Lead Angle • 0° Relief • Use TNMA • TNMG • TNMM Insert

MTFN-RH



See page 127 & 128 for spare parts & screws

RIGHT HAND

*Limited Supply

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	RH Item#
8-2A	1/2	4	1/2	TN..-22.	----	NL-0409	CL-6	XNS-0520	**2022-0082**
10-2B	5/8	4-1/2	5/8	TN..-22.	----	NL-0409	CL-6	XNS-0520	**2022-0102***
10-3B	5/8	4-1/2	5/8	TN..-33.	T1603B	NL-0414	CL-6	XNS-0520	**2022-0103**
12-3C	3/4	5	3/4	TN..-33.	T1603B	NL-0414	CL-6	XNS-0520	**2022-0123***
16-3D	1	6	1-1/4	TN..-33.	T1603B	NL-0414	CL-6	XNS-0520	**2022-0163***
16-4D	1	6	1-1/4	TN..-43.	T2203B	NL-0617	CL-12	XNS-0829	**2022-0164***
20-4E	1-1/4	7	1-1/2	TN..-43.	T2203B	NL-0617	CL-12	XNS-0829	**2022-0204***

Replacement inserts page 153-155

MTGN PIN & CLAMP STYLE TURNING TOOL HOLDERS

MTGN-RH

0-Degree Lead Angle for Turning to Square Shoulders, 0° Relief • Use TNMA • TNMG • TNMM Inserts

RIGHT HAND



See page 127 & 128 for spare parts & screws

*Limited Supply

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
8-2A	1/2	4	1	TNMG-22.	-------	NL-0409	CL-6	XNS-0520	**2013-1082**
10-2B	5/8	4-1/2	1	TNMG-22.	-------	NL-0409	CL-6	XNS-0520	**2013-1102***
10-3B	5/8	4-1/2	1	TNMG-33.	T1603B	NL-0414	CL-6	XNS-0520	**2013-1103**
12-3B	3/4	4-1/2	1	TNMG-33.	T1603B	NL-0414	CL-6	XNS-0520	**2013-1123**
16-3D	1	6	1-1/4	TNMG-33.	T1603B	NL-0414	CL-6	XNS-0520	**2013-1163***
16-4D	1	6	1-1/4	TNMG-43.	T2203B	NL-0617	CL-12	XNS-0829	**2013-1164***
85-4E	1-1/4	7	1-1/4	TNMG-43.	T2203B	NL-0617	CL-12	XNS-0829	**2013-1854***
20-4E	1-1/4	7"	1-1/4	TNMG-43.	T2203B	NL-0617	CL-12	XNS-0829	**2013-1204***

Replacement inserts page 153-155

MTJNR INDEXABLE TOOL HOLDERS- CLAMP ON

MTJN-RH

Negative 3-Degree Lead Angle • 0° Relief • Use TNMA • TNMG • TNMM Inserts

RIGHT HAND



See page 127 & 128 for spare parts & screws

*Limited Supply

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
12-3C	3/4	5	1	TN..-32.	T1603B	NL-0414	CL-6	XNS-0520	**2023-0123**
16-3D	1	6	1-1/4	TN..-32.	T1603B	NL-0414	CL-6	XNS-0520	**2023-0163**
16-4D	1	6	1-1/4	TN..-43.	T2203B	NL-0617	CL-12	XNS-0829	**2023-0164**
20-4E	1-1/4	7	1-1/2	TN..-43.	T2203B	NL-0617	CL-12	XNS-0829	**2023-0204***

Replacement inserts page 153-155

MVJN PIN & CLAMP STYLE TURNING TOOL HOLDERS

MVJN-RH

3-Degree Lead Angle for Turning and Profiling, 0° Relief • Use VNMA • VNMG Inserts

RIGHT HAND



See page 127 & 128 for spare parts & screws

*Limited Supply

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
12-3B	3/4	4-1/2	1	VNMG-33.	V1603B	NL-0414	CL-30	XNS-0829	**2014-1123**
16-3D	1	6	1-1/4	VNMG-33.	V1603B	NL-0414L	CL-30	XNS-0829	**2014-1163**
16-4D	1	6	1-1/4	VNMG-43.	V2203B	NL-0617	CL-30	XNS-0829	**2014-1164**
20-3E	1-1/4	7	1-1/2	VNMG-33.	V1603B	NL-0414	CL-30	XNS-0829	**2014-1203***
20-4E	1-1/4	7	1-1/2	VNMG-43.	V2203B	NL-0617	CL-30	XNS-0829	**2014-1204**

Replacement inserts page 159-160

MVVNN INDEXABLE TOOL HOLDERS- CLAMP ON

MVVN-RH

17.5-Degree Lead Angle • 0° Relief • Use VNMA• VNMG Inserts

RIGHT HAND



See page 127 & 128 for spare parts & screws

*Limited Supply

Tool Holder Style	(Inch) Shank	OAL	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
12-3B	3/4	4-1/2	VNMG-33.	V1603B	NL-0414	CL-30	XNS-0829	**2030-0123**
12-4D	3/4	6	VNMG-43.	V2203B	NL-0617	CL-30	XNS-0829	**2030-0124***
16-3C	1	5	VNMG-33.	V1603B	NL-0414	CL-30	XNS-0829	**2030-0163**
16-4D	1	6	VNMG-43.	V2203B	NL-0617	CL-30	XNS-0829	**2030-0164**
20-3D	1-1/4	6	VNMG-33.	V1603B	NL-0414	CL-30	XNS-0829	**2030-0203***

Replacement inserts page 159-160

MWLN INDEXABLE TOOL HOLDERS- CLAMP ON

MWLN-RH

Use WNMA, WNMG, WNMM Inserts, 0° Relief

RIGHT HAND



See page 127 & 128 for spare parts & screws

Tool Holder Style	(Inch) Shank	OAL	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
10-3A	5/8	4	WNM.-32.	W0603B	NL-0414	CL-6	XNS-0520	**2025-0103**
12-3B	3/4	4-1/2	WNM.-32.	W0603B	NL-0414	CL-6	XNS-0520	**2025-0123**
12-4B	3/4	6	WNM.-43.	W0803B	NL-0617	CL-12	XNS-0829	**2025-0124**
16-3C	1	5	WNM.-32.	W0603B	NL-0414	CL-6	XNS-0520	**2025-0162**
16-3D	1	6	WNM.-32.	W0603B	NL-0414	CL-6	XNS-0520	**2025-0163**
16-4D	1	6	WNM.-43.	W0803B	NL-0617	CL-12	XNS-0829	**2025-0164**

Replacement inserts page 161-162

DCLN-RH

DCLNR INDEXABLE TOOL HOLDERS- CLAMP ON
Negative 5-Degree Lead Angle • 0° Relief • Use CNMA • CNMG • CNMM Inserts



Limited Supply!

RIGHT HAND

See page 127 & 128 for spare parts & screws
Replacement inserts page 135-137

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
12-4C	3/4	4-1/2	1	CN..-43.	C1203B	THT0706	DLM4	LE06	**2017-0124**
16-4D	1	6	1-1/4	CN..-43.	C1203B	THT0706	DLM4	LE06	**2017-0164**
16-5D	1	6	1-1/4	CN..-54.	C1604B	THT0907	DLM4	LE06	**2017-0165**
20-4E	1-1/4	7	1-1/2	CN..-43.	C1203B	THT0706	DLM4	LE06	**2017-0204**
20-5E	1-1/4	7	1-1/2	CN..-54.	C1604B	THT0907	DLM4	LE06	**2017-0205**

DDJN-RH

DDJNR INDEXABLE TOOL HOLDERS- CLAMP ON
Negative 3-Degree Lead Angle • 0° Relief • Use DNMA • DNMG • DNMM Inserts



Limited Supply!

RIGHT HAND

See page 127 & 128 for spare parts & screws
Replacement inserts page 139-140

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
12-4C	3/4	5	1	DNM..-43.	D1504B	THT0706	DLM4	LE06	**2018-0124**
16-4D	1	6	1-1/4	DNM..-43.	D1504B	THT0706	DLM4	LE06	**2018-0164**
20-4E	1-1/4	7	1-1/2	DNM..-43.	D1504B	THT0706	DLM4	LE06	**2018-0204**

DTGN-RH

DTGNR INDEXABLE TOOL HOLDERS- CLAMP ON
0-Degree Lead Angle • 0° Relief • Use TNMA • TNMG • TNMM Inserts



Limited Supply!

RIGHT HAND

See page 127 & 128 for spare parts & screws
Replacement inserts page 153-155

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
12-3C	3/4	4-1/2	1	TNM..-32.	T1603B	THT0505	DLM3	LE05	**2019-0123**
16-3D	1	6	1-1/4	TNM..-32.	T1603B	THT0505	DLM3	LE05	**2019-0163**
16-4D	1	6	1-1/4	TNM..-43.	T2203B	THT0706	DLM4	LE06	**2019-0164**
20-4E	1-1/4	7	1-1/2	TNM..-43.	T2203B	THT0706	DLM4	LE06	**2019-0204**

DTJN-RH

DTJNR INDEXABLE TOOL HOLDERS- CLAMP ON
Negative 3-Degree Lead Angle • 0° Relief • Use TNMA • TNMG • TNMM Inserts



Limited Supply!

RIGHT HAND

See page 127 & 128 for spare parts & screws
Replacement inserts page 153-155

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
12-3C	3/4	5	1	TNM..-32.	T1603B	THT0505	DLM3	LE05	**2020-0123**
16-3D	1	6	1-1/4	TNM..-32.	T1603B	THT0505	DLM3	LE05	**2020-0163**
16-4D	1	6	1-1/4	TNM..-43.	T2203B	THT0706	DLM4	LE06	**2020-0164**
20-4E	1-1/4	7	1-1/2	TNM..-43.	T2203B	THT0706	DLM4	LE06	**2020-0204**

CTGP-RH

CTGP CLAMP STYLE TURNING TOOL HOLDERS
0° Side Cutting Edge Angle • 11° Relief • Use TPG • TPU Inserts



RIGHT HAND

See page 127 & 128 for spare parts & screws
Replacement inserts page 156

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Shim	Shim Screw	Clamp	Clamp Screw	Item#
10-3	5/8	4-1/2	7/8	TPG-32.	TP16D	M3X8	CL-6	XNS-0520	**2015-1103**
12-3C	3/4	5	1	TPG-32.	TP16D	M3X8	CL-6	XNS-0520	**2015-1123**
16-3D	1	6	1-1/4	TPG-32.	TP16D	M3X8	CL-6	XNS-0520	**2015-1163**

CTAP CLAMP STYLE TURNING TOOL HOLDERS

CTAP-RH

0-Degree Lead Angle for Turning and Facing, 11° Relief • Use TPG • TPU Inserts



Limited Supply!

RIGHT HAND

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Shim	Shim Screw	Clamp	Clamp Screw	Item#
08-2	1/2	3-1/2	.515	TPG-22.	--	--	CL-6	XNS-0520	**2016-2082**
10-2	5/8	4-1/2	.641	TPG-22.	--	--	CL-6	XNS-0520	**2016-2102**
12-3C	3/4	5	.756	TPG-32.	TP16D	M3X8	CL-6	XNS-0520	**2016-2123**
16-3D	1	6	1.016	TPG-32.	TP16D	M3X8	CL-6	XNS-0520	**2016-2163**

See page 127 & 128 for spare parts & screws

Replacement inserts page 156

CTFPR INDEXABLE TOOL HOLDERS- CLAMP ON

CTFP-RH

0-Degree Lead Angle • 11° Relief • Use TPG • TPU Inserts



RIGHT HAND

*Limited Supply

Tool Holder Style	(Inch) Shank	OAL	Insert Style	Shim	Lock Pin	Clamp	Clamp Screw	Item#
8-2	1/2	2-1/2	TPG-22.	---------	---------	CL6	XNS-0520	**2031-0082***
10-3B	5/8	4-1/2	TPG-32.	TP16D	M3X8	CL6	XNS-0520	**2031-0103**
12-4B	3/4	4-1/2	TPG-43.	TP22D	M3X8	CL12	XNS-0829	**2031-0124**
16-3C	1	5	TPG-32.	TP16D	M3X8	CL6	XNS-0520	**2031-0163***
16-4D	1	6	TPG-43.	TP22D	M3X8	CL12	XNS-0829	**2031-0164**
20-4D	1-1/4	6	TPG-43.	TP22D	M3X8	CL12	XNS-0829	**2031-0204***

See page 127 & 128 for spare parts & screws

Replacement inserts page 156

SCLCR INDEXABLE TOOL HOLDERS- SCREW ON

SCLC-RH

Negative 5-Degree Lead Angle • 7° Relief • Use CCMT Insert



RIGHT HAND

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Screw	Item#
8-3A	1/2	3-1/2	1/2	CCMT-32.5	M4X10	**2039-0083**
10-3B	5/8	4-1/2	3/4	CCMT-32.5	M4X10	**2039-0103**
12-3B	3/4	4-1/2	1	CCMT-32.5	M4X10	**2039-0123**
16-4D	1	6	1-1/4	CCMT-43.	M5X12	**2039-0164**

See page 127 & 128 for spare parts & screws

Replacement inserts page 133

SDNCNR INDEXABLE TOOL HOLDERS- SCREW ON

SDNCN-RH

Negative 27.5-Degree Lead Angle • 7° Relief • Use DCMT Insert

Limited Supply!



RIGHT HAND

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Screw	Item#
6-2J	3/8	3-1/2	3/16	DCMT-21.5	M2.5X6	**2032-0062**
8-3A	1/2	4	1/4	DCMT-32.5	M4X10	**2032-0083**
10-3B	5/8	4-1/2	5/16	DCMT-32.5	M4X10	**2032-0103**
12-3B	3/4	4-1/2	3/8	DCMT-32.5	M4X10	**2032-0123**
16-4D	1	6	1/2	DCMT-43.	M5X12	**2032-0164**

See page 127 & 128 for spare parts & screws

Replacement inserts page 138-139

SDJCR INDEXABLE TOOL HOLDERS- SCREW ON

SDJC-RH

Negative 3-Degree Lead Angle • 7° Relief • Use DCMT Insert



RIGHT HAND

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Screw	Item#
6-2J	3/8	3-1/2	1/2	DCMT-21.5	M2.5X6	**2033-0062**
8-3A	1/2	4	5/8	DCMT-32.5	M4X10	**2033-0083**
10-3B	5/8	4-1/2	3/4	DCMT-32.5	M4X10	**2033-0103**
12-3B	3/4	4-1/2	1	DCMT-32.5	M4X10	**2033-0123**

See page 127 & 128 for spare parts & screws

Replacement inserts page 138-139

SVJBR INDEXABLE TOOL HOLDERS- SCREW ON
Negative 3-Degree Lead Angle • 5° Relief • Use VBMT Insert

SVJB-RH

RIGHT HAND



See page 127 & 128 for spare parts & screws

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Screw	Item#
6-2J	3/8	3-1/2	1/2	VBMT-22.	M2.5X6	**2034-0062**
8-2A	1/2	4	1/2	VBMT-22.	M2.5X6	**2034-0082**
8-3A	1/2	4	5/8	VBMT-33.	M4X10	**2034-0083**
10-2B	5/8	4-1/2	3/4	VBMT-22.	M2.5X6	**2034-0102**
12-3B	3/4	4-1/2	1	VBMT-33.	M4X10	**2034-0123**
16-3D	1	6	1-1/4	VBMT-33.	M4X10	**2034-0163**

Replacement inserts page 158-159

SVVBNR INDEXABLE TOOL HOLDERS- SCREW ON
Negative 17.5-Degree Lead Angle • 5° Relief • Use VBMT Insert

SVVBN-RH

Limited Supply!



RIGHT HAND

See page 127 & 128 for spare parts & screws

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Screw	Item#
6-2J	3/8	3-1/2	1/2	VBMT-22.	M2.5x6	**2035-0062**
8-3A	1/2	4	5/8	VBMT-33.	M4X10	**2035-0083**
10-2B	5/8	4-1/2	3/4	VBMT-22.	M2.5x6	**2035-0102**
10-3B	5/8	4-1/2	1	VBMT-33.	M4x10	**2035-0103**
12-3B	3/4	4-1/2	1	VBMT-33.	M4x10	**2035-0123**
16-3D	1	6	1-1/4	VBMT-33.	M4x10	**2035-0163**
16-4D	1	6	1-1/2	VBMT-43.	M5x12	**2035-0164**

Replacement inserts page 158-159

SRDCNR INDEXABLE TOOL HOLDERS- SCREW ON
0-Degree Lead Angle • 7° Relief • Use RCMT Insert

SRDCN-RH



See page 127 & 128 for spare parts & screws

RIGHT HAND

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Screw	Item#
10-6A	3/8	3-1/2	3/16	RCMT-0602	M2.5x6	**2037-0106**
12-10C	1/2	4	1/4	RCMT-10T3	M4x10	**2037-1210**
16-12E	5/8	4-1/2	5/16	RCMT-1204	M4x10	**2037-1612**

Replacement inserts page 144

STGCR INDEXABLE TOOL HOLDERS- SCREW ON
0-Degree Lead Angle • 7° Relief • Use TCMT Insert

STGC-RH

RIGHT HAND



See page 127 & 128 for spare parts & screws

*Limited Supply

Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Screw	Item#
6-2	3/8	2-1/2	1/2	TCMT-21.51	M2.5x6	**2036-0062***
8-2J	1/2	3-1/2	5/8	TCMT-21.51	M2.5x6	**2036-0082**
10-3B	5/8	4-1/2	3/4	TCMT-32.52	M4x10	**2036-0103**
12-3B	3/4	4-1/2	7/8	TCMT-32.52	M4x10	**2036-0123***
16-3D	1	6	1-1/4	TCMT-32.52	M4x10	**2036-0163***

Replacement inserts page 149-150

SRGCR INDEXABLE TOOL HOLDERS- SCREW ON
0-Degree Lead Angle • 7° Relief • Use RCMT Insert

SRGC-RH

Limited Supply!



RIGHT HAND

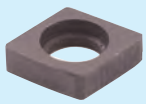
See page 127 & 128 for spare parts & screws

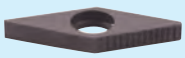
Tool Holder Style	(Inch) Shank	OAL	Offset	Insert Style	Screw	Item#
12-2B	3/4	4-1/2	1	RCMT-22.	M2.5x6	**2038-0122**
16-3D	1	6	1-1/4	RCMT-32.5	M4x10	**2038-0163**
20-2D	1-1/4	6	1-1/2	RCMT-22.	M2.5x6	**2038-0202**
20-3D	1-1/4	6	1-1/2	RCMT-32.5	M4x10	**2038-0203**

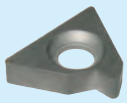
Replacement inserts page 144

SPARE PARTS FOR INDEXABLE TOOLS

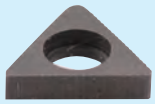
SHIMS FOR INDEXABLE TOOLING

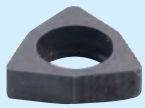

2100-0903 Shown

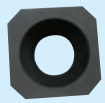

2100-1602 Shown


2100-1630 Shown


2100-0904 Shown


2100-1603 Shown


2100-0603 Shown


2100-4200 Shown

Style	Item#	Item#	Item#	Item#	Item#	Item#	Item#
C0903B	2100-0903						
C1203B	2100-1203						
C1604B	2100-1604						
C1904B	2100-1904						
D1103B		2100-1103					
D1504B		2100-1504					
D1904B		2100-1905					
LT16R-3.0			2100-1630				
LT22R-4B			2100-2204				
R0903B				2100-0904			
R1203B				2100-1204			
S0903B	2100-0905						
S1203B	2100-1205						
S1504B	2100-1505						
S1904B	2100-1906						
SE42AD							2100-4200
T1603B					2100-1603		
T2203B					2100-2203		
T2703B					2100-2703		
TP16D					2100-1100		
TP22D					2100-1101		
V1603B		2100-1602					
V2203B		2100-2202					
W0603B						2100-0603	
W0803						2100-0803	

CLAMPS FOR INDEXABLE TOOLING-Metric


2100-0012 Shown


TNSB-2B
2100-0011 Shown


2100-0032 Shown

Style	Item#	Item#	Item#
CTFPN-5	2100-0031		
CL-12	2100-0012		
CL-20	2100-0020		
CL-30	2100-0030		
CL-6	2100-0006		
DLM2		2100-0032	
DLM3		2100-0033	
DLM4		2100-0034	
TNSB-2B			2100-0011
TNSB-3B			2100-0010

SHIM PIN

Item#	Style
2100-0055	THT0505
2100-0056	THT0706
2100-0057	THT0907
2100-0058	THT1212



LOCK PIN-Metric

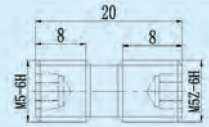
* Use With Shim

Item#	Style
2100-0409	NL-0409
2100-0410	NL-0410
2100-0414*	NL-0414
2100-0611	NL-0611
2100-0617*	NL-0617
2100-0822	NL-0822
2100-0823*	NL-0823

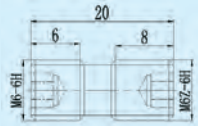


SCREWS FOR INDEXABLE TOOL HOLDERS-Metric

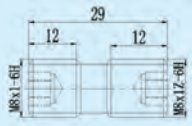
XNS-0520 Shown



XNS-0620 Shown



XNS-0820 Shown

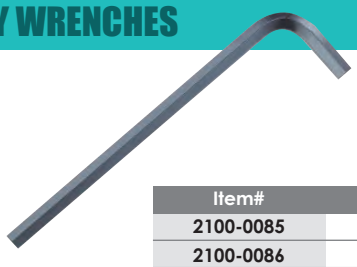




2100-0025 & 2100-0070 Shown | 2100-0051 Shown | 2100-0005 Shown | 2100-0008 Shown | 2100-0078 Shown | 2100-0001 Shown | 2100-0105 Shown

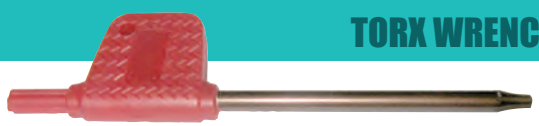
Style	Size	Use Wrench	Item#	Item#	Item#	Item#	Item#	Item#	Item#
M2.2x6	M2.2x6	T6	**2100-0065**						
M2.5x5	M2.5x5	T8	**2100-0067**						
M2.5x6	M2.5x6	T8	**2100-0070**						
M2.5x8	M2.5x8	T8	**2100-0072**						
M3.0X8	M3.0x8	T10	**2100-0003**						
M3.5X8	M3.5x8	T15	**2100-0073**						
M3.5x11	M3.5x11	T15	**2100-0083**						
M3.5x12	M3.5x12	T15	**2100-0084**						
M4.0x8	M4.0x8	T15	**2100-0069**						
M4.0x10	M4.0x10	T15	**2100-0074**						
M4.0x11	M4.0x11	T15	**2100-0064**						
M4.0x12	M4.0x12	T20	**2100-0081**						
M5.0x10	M5.0x10	T20	**2100-0075**						
M5.0x12	M5.0x12	T20	**2100-0076**						
M5.0x14	M5.0x14	T20	**2100-0077**						
M5.0x18	M5.0x18	T20	**2100-0088**						
CTFP-M5	M5.0x13	S3					**2100-0078**		
FM815.18L	M8x1x18	S4		**2100-0051**					
LE05	M5x21	S3			**2100-0005**				
LE06	M6x26	S4			**2100-0007**				
MLD-M25	M2.5x6	T8	**2100-0025**						
MLD-M35	M3.5x12	T15	**2100-0035**						
MLD-M40	M4x10	T15	**2100-0040**						
MLD-M50	M5x12	T20	**2100-0050**						
PM5x5	M5x5	S3							**2100-0104**
PM5x8	M5x8	S3							**2100-0105**
PM6x12	M6x12	S4							**2100-0106**
PM8x12	M8x12	S5							**2100-0107**
PM8x16	M8x16	S5							**2100-0108**
SDN535	M5(Ext.)/M3.5(Int.)	S3.5+T15				**2100-0008**			
SDN850	M8(Ext.)/M5(Int.)	S5				**2100-0009**			
XNS-0520	M5x20	S2.5						**2100-0001**	
XNS-0620	M6x20	S3						**2100-0004**	
XNS-0829	M8x29	S4						**2100-0002**	
GB70-85 M4x12	M4x12	S3	**2100-0082**						
GB70-85 M5x14	M5x14	S4	**2100-0087**						
GB/T70.2 M6x20	M6x20	S5	**2100-0026**						
DLS5 M6x26	M6x26	S4	**2100-0027**						
M3x6.5-D5	M3x6.5	S2	**2100-0089**						

HEX KEY WRENCHES



Item#	Hex Size
2100-0085	2.0mm
2100-0086	2.5mm

TORX WRENCHES



Item#	Size
2100-0091	T-6
2100-0092	T-8
2100-0093	T-9
2100-0094	T-10

Item#	Size
2100-0095	T-15
2100-0096	T-20
2100-0097	T-25

CARBIDE COMPARISON

CARBIDE GRADE INFORMATION/COMPARISON

GRADE	MITSUBISHI	SANDVIK	SECO	KENNAMETAL	VALENITE	KORLOY	WALTER	TaeguTec
XAB849	UE6005/UE6010	GC4015	TX110	KC9110/KC935			WTL41/WTA33	
XAB848	F7010	GC4215	TX110	KC9010/KC910	SV305	NC310	WTA21	TT1500
XAB749	UC6010/EU6020	GC4020	TP200	KC725M/KC9125	SV410		WTA31/WXK15/WQM25/WTL82	TT3500
XAB748	UC6025/F620	GC4025	T250M/T25M	KC9040/KC625M	SV325	NC310	WAP20/WTN43	
XAB699	UP20M/AP20M	GC4030/GC4035	CP20TP200	KC850/CM4KC7025/KC7215	SV935	NC320/NC330	WXM15/WTA41	TT7200
XAB698								
XAB649	UE6035	GC4125	CP30	CD4/KC7020	SV330	NC320	WXP25/WTA61/WTL71/WTL14	
XAB599	UE6035	GC1120	TP40	CS3(KC7030)	SM245	NC330	WQM35/WTP30	TT8020
XAC849	UC6010/EU6020	GC3015/GC3115	TP100	KC625M/KC631M	SV305		WAK15	
XAF799	UP10H	GC1020/GC1120	TX150	KC992M/KC7215/KC9315/KC7225	SV415	NC315K	WAK20/WTA43/WTA33/WTA/41	
XAF798	AP20M	GC3040	F25M	KC9025/KC631M		NCM325	WXP20/WTP20	
XAF797								
XAF960	AP15TF	GC3040		CS3(KC7030)	SV515		WAP35	TT8020
XAL849		GC2015		KC510M			WAM10/WAP10	TT9030
XAL749	F620	GC2025	CP50	KC9225/KC7020	SV415	NC325S	WAM20/WTA43	TT5100
XAL748	F620	GC2025	CP50	KC9225/KC7020	SV415	NC325S	WAM20/WTA43	TT5100
XAL649	F730	GC2035	CP50	KC9040/KC7020		NCM335	WTP35/WTA51	TT8020
XB970R								
XMF849								

CHIP-BREAKER INFORMATION

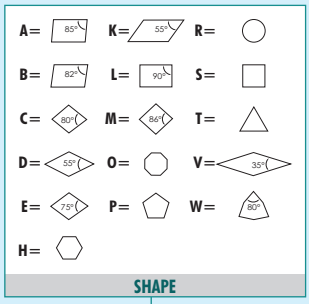
Characteristics	Description
-DF	**Recommended for finishing steel materials.** With a satisfactory flow of chips and an excellent surface quality.
-DM	**Recommended for semi-finishing steel materials.** With a light cutting force and a wide range of chipping, it can achieve better results in machining alloyed steel with a high adhesiveness.
-DR	**Recommended for quasi-roughing steel materials.** It is the first option for roughing operations under general working conditions. It can achieve a high rate of metal removal and economy.
-EF	**Recommended for finishing materials heat-resistant steel.** A specially designed rake angle and an inclined edge angle aimed at machining highly adhesive and plastic material hard to machine, like stainless steel. The edges are sharp making the cutting light and smooth, getting a good control of the chips and obtaining an excellent surface quality, which makes it most suitable for ultra fine and fine machining of such materials.
-EM	**Recommended for 300 series stainless steels.** Impact resistance of the cutting edge is strengthened for interrupted cutting. The sharp cutting edges function to shear low machinability rated metals while resisting edge-build-up.
-HF	**Recommended for finishing of universal applications.** Suitable for finishing internal and peripheric operations in machining steel and cast iron. Fine finishing of surface can be achieved with a slow feed rate.
-HM	**Recommended for semi-finishing of universal applications.** With sharp wave cutting edges to reduce cutting force. Suitable for semi-finishing internal and peripheric operations of steel and cast iron. It is the first choice for semi-finishing of internal holes and allows chips to flow smoothly.
-HR	**Recommended for roughing operations.** With tough cutting edge. Suitable for internal and peripheric machining of steel, stainless steel and cast iron with irregular surface.
-LH	**Recommended for aluminum alloy.** Suitable maching aluminum alloy with larger cutting depth and higher feed rate.
-PF	**Recommended for finishing steel materials.** Suitable for finishing operations under unstable cutting conditions with a light cutting force.
-PM	**Recommended for semi-finishing steel materials.** With a stronger edge than -DM. Suitable for semi-finishing operations under unstable cutting conditions and for machining cast iron as well with a light cutting force.
-PR	**Recommended for roughing of steel.** With a high safety of cutting edges. It can achieve a high rate of metal removal with a low cutting force under working conditions of deep cuts and fast feed rates.

GRADE COMPARISON

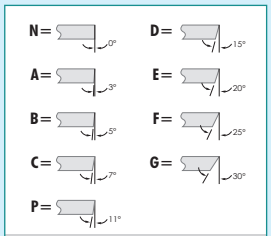
C-2	General purpose-for cast iron and non-ferrous materials. For cast iron and general purpose
C-5	For heavy roughing to semi finishing of all steels. for all steel and general purpose
C-6	Designed for heavy roughing to semi finishing of steels.
BPG253-CVD	CVD coated universal grade, suitable for steel and cast steel continuous cutting and interrupted cutting finishing to roughing, With a wide range of application, Stainless steel continuous cuting and interrupted cutting.
BPG20B-PVD	PVD coated micro-grain carbide, use for a varity of stainless steel finishing at medium to low cutting speed. When need excellent edge strength and high surface quality, provide the perffect ride cutting. A high thermal shock resistance. Suitable for light interrupted cuts.
TiN Coated	For turning and milling carbon and alloy steels, tool steel and stainless steel, provides longer life than uncoated grades. for high heat & wear resistance on alloys, stainless steel & ductile iron
XAB599	CVD all round coated cemented carbide. Optimized for medium rough steel milling, but also a good solution for nodular cast iron.
XAB649	Is a secure all round CVD coated grade for high productive P30 applications. it is tough enough for the most difficult steel machining. Use in dry and wet machining, and interruptions. A grade you can rely on when the going gets tough.
XAB698	Possesses an excellent thermal and chemical stability with a optimized combination of high performance Nano coating and a highly tough substrate of ultra fine grains aimed at materials hard to machine, such as stainless steel, heat resistant alloys, titanium alloys, high temperature alloys, etc. It is especially suitable for the finish and semi-finish.
XAB699	CVD all round coated cemented carbide. Optimized for steel milling, but also a good solution for nodular cast iron. This grade provides good economy in medium to long series production.
XAB748	Comprising of thick TiCN and Al2O3 coating has high anti-plastic yield and cutting edge strength and is preferred universal grade from steel finishing to roughing. It behaves steady in the wicked cutting condition and can realizes environmental dry-cutting. The cutting speed can increase more than 25% at the same cutting condition and the life will be improved more than 30% at the same cutting speed.
XAB749	The cutting edge has special strength and toughness, in an optimal combination with MT-TiCN, thick layer Al2O3TiN coating. It is a suitable grade for a wide application. It is good for the finishing, semi-finishing and light roughing of steel, cast steel, stainless steel and cast iron.
XAB848	Comprised of thick TiCN and Al2O3 coatings makes it suitable for finishing and semi-finishing at high speed. It upgrades abrasive resistance greatly on the premise of increasing toughness. The cutting speed can increase more than 25% and the life will be improved more than 30% at the same cutting speed.
XAB849	Substrate with excellent wear-resistance, in combination with MT-TiCN, thick layer Al2O3TiN coating. It is an ideal grade for the finishing steel, cast steel and stainless steel under high speed and dry machining.
XAC849	CVD all round coated cemented carbide. Optimized for steel milling, but also a good solution for nodular cast iron. This grade provides good economy in medium to long series production.
XAC898	CVD coated grade, which is the combination of hard substrate and coating(thick Al_2O_3 + thick TiCN), shows excellent wear resistance and impact resistance when machining nodular cast iron at high speed.
XAF795	Unique grade material with near perfect wear resistance and high temperature resistance. The nc-TiAlN coating, ultrafine grain substrate , and unique surface treatment make this grade suitable for high precision cutting of "difficult to machine" materials, such as stainless steel, etc..
XAF798	A combination of 2-4 um nc-TiAlN coating and ultrafine grain carbide substrate with high strength and toughness. Suitable for light to medium milling, and boring of all kinds of materials. Recommended for finish and semi-finish turning of stainless steel and roughing turning of high-temperature alloys.of steel from finishing to roughing. Under the same cutting conditions, the cutting speed can be increased by more than 25%, while the tool life can be 30% longer under the same cutting speed.
XAF799	PVD TiN coated carbide grade with good toughness and wear resistance. It is good for threading and drilling (both peripheral and central inserts) low carbon of steel, stainless steel heat resistance steel and cast irons.
XAL649	Substrate with good toughness and strength, in combination with Ti(CN), thin layer Al2O3, TiN coating. It is a premium grade for semi-finishing to light roughing milling of stinless steel at continuous and intermittent milling conditions.
XAL749	A very all around CVD coated cemented carbide grade optimized for medium machining to roughing of stainless steel in both continuous and interrupted cuts. The grade has an excellent resistance to both thermal and mechanical shock.
XC899	With fine size grain. Good for fine and semi-finishing machining of cast iron and nonferrous metal. Particularly for machining of Aluminum.
XMF849	TiCN based cermet, with fine resistant thermoplastic transmutation and resistant built-up. It is suitable for semi-finishing and finishing of steel, stainless steel and cast iron.

INSERT CLASSIFICATION

INSERT DESIGNATION - ANSI



SHAPE



CLEARANCE

Number of 1/16's on inserts less than 1/4" I.C.

Number of 1/8's on inserts 1/4" I.C. and over

Rectangle and parallelogram inserts require two digits:
-1st, Number of 1/8's in width
-2nd, Number of 1/4's in length

2=1/4"	5=5/8"
3=3/8"	6=3/4"
4=1/2"	8=1"

I.C.

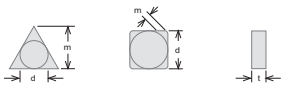
0=Sharp Corner	4=1/16" radius
1=1/64" radius	6=3/32" radius
2=1/32" radius	8=1/8" radius
3=3/64" radius	12=3/16" radius

A=Square w/45° chamfer
D=Square w/30° chamfer
E=Square w/15° chamfer
K=Square w/15° double chamfer
N=Truncated triangle insert
P=Flattened corner triangle

CORNER

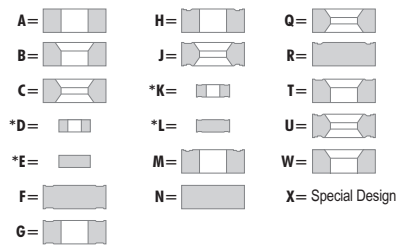
C N M G · 4 3 2

TOLERANCE



d	m	t
A= ± .0010	± .0002	± .001
F= ± .0005	± .0002	± .001
C= ± .0010	± .0005	± .001
H= ± .0005	± .0005	± .001
E= ± .0010	± .0010	± .001
G= ± .0010	± .0010	± .005
**J= ± .002 to ± .006	± .0002	± .001
**K= ± .002 to ± .006	± .0005	± .001
**L= ± .002 to ± .006	± .0010	± .001
**M= ± .002 to ± .006	± .003 to ± .008	± .005
**N= ± .002 to ± .006	± .003 to ± .008	± .001
**U= ± .003 to ± .010	± .005 to ± .015	± .005

GEOMETRY



THICKNESS

Number of 1/32's on inserts less than 1/4" IC

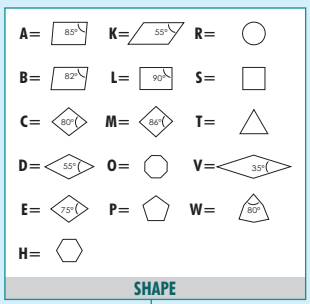
Number of 1/16's on inserts 1/4" IC and over

1=1/16"	4=1/4"
2=1/8"	5=5/16"
3=3/16"	6=3/8"

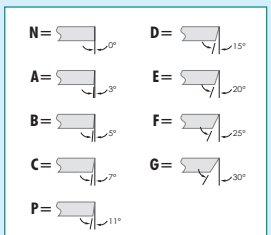
* Smaller than 1/4" I.C.
** Exact tolerance is determined by the size of the insert.

Geometry:
B, C, H, J - countersink is between 70~90 degrees.
Q, T, U, W - countersink is between 40~60 degrees.

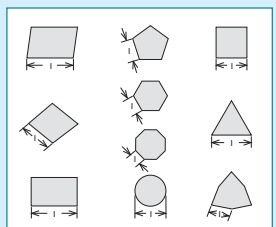
INSERT DESIGNATION - ISO



SHAPE



CLEARANCE



If less than 10 use 0 in first place.
Example: 9.525=09

LENGTH OF CUTTING EDGE

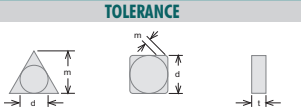
00=Round Insert	12=1.2mm
00=Sharp Corner	16=1.6mm
02=0.2mm	24=2.4mm
04=0.4mm	32=3.2mm
08=0.8mm	40=4.0mm

A=Square w/45° chamfer
D=Square w/30° chamfer
E=Square w/15° chamfer
K=Square w/15° double chamfer
N=Truncated triangle insert
P=Flattened corner triangle

CORNER

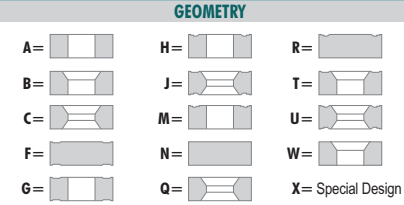
C N M G · 12 04 08

TOLERANCE

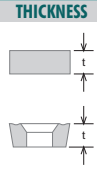


d	m	t
A= ± 0.025	± 0.005	± 0.025
F= ± 0.013	± 0.005	± 0.025
C= ± 0.025	± 0.013	± 0.025
H= ± 0.013	± 0.013	± 0.025
E= ± 0.025	± 0.025	± 0.025
G= ± 0.025	± 0.025	± 0.130
*J= ± 0.05 to ± 0.15	± 0.005	± 0.025
*K= ± 0.05 to ± 0.15	± 0.013	± 0.025
*L= ± 0.05 to ± 0.15	± 0.025	± 0.025
*M= ± 0.05 to ± 0.15	± 0.08 to ± 0.20	± 0.130
*N= ± 0.05 to ± 0.15	± 0.08 to ± 0.20	± 0.025
*U= ± 0.08 to ± 0.25	± 0.13 to ± 0.38	± 0.130

GEOMETRY



THICKNESS



If less than 10 use 0 in first place.

Example: 3.18=03

* Exact tolerance is determined by the size of the insert.

Geometry:
B, C, H, J - countersink is between 70~90 degrees.
Q, T, U, W - countersink is between 40~60 degrees.

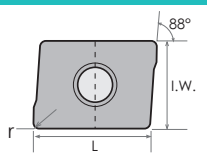
APKT-POSITIVE RAKE CARBIDE INSERT [16MM]

ADKT

LH Chip-Breaker is more suitable for machining aluminum alloy with larger cutting depth and higher feed rate

Limited Supply!

Item#	Insert No.	I.W.	L	S	d	r	Grade
6010-6532	APKT-160408-LH	.363"	.704"	.227"	.173"	.0315"	XC899



10 PC PER PACKAGE

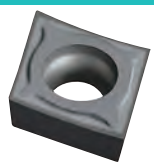
CCGX/LH CARBIDE INSERTS FOR ALUMINUM ALLOY

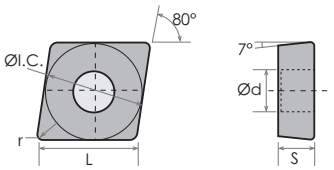
CCGX-LH

LH Chip-Breaker is more suitable for machining aluminum alloy with larger cutting depth and higher feed rate

Limited Supply!

Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) L	S	d	r	Grade
6054-0110	CCGX2(1.5)0-LH	CCGX060202-LH	1/4	.252	3/32	.110	.008	XC899
6054-0111	CCGX2(1.5)1-LH	CCGX060204-LH	1/4	.252	3/32	.110	.016	XC899
6054-0112	CCGX2(1.5)2-LH	CCGX060208-LH	1/4	.252	3/32	.110	.031	XC899
6054-0221	CCGX3(2.5)1-LH	CCGX09T304-LH	3/8	.382	5/32	.173	.016	XC899
6054-0222	CCGX3(2.5)2-LH	CCGX09T308-LH	3/8	.382	5/32	.173	.031	XC899
6054-0431	CCGX-431-LH	CCGX120404-LH	1/2	.508	3/16	.219	.016	XC899
6054-0432	CCGX-432-LH	CCGX120408-LH	1/2	.508	3/16	.219	.031	XC899





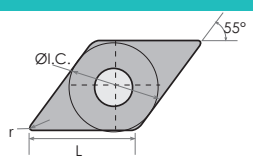
10 PC PER PACKAGE

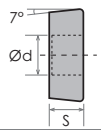
DCGX/LH CARBIDE INSERTS FOR ALUMINUM ALLOY

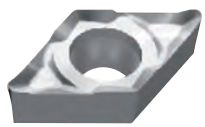
DCGX-LH

LH Chip-Breaker is more suitable for machining aluminum alloy with larger cutting depth and higher feed rate

Limited Supply!







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) L	S	d	r	Grade
6055-0110	DCGX2(1.5)0-LH	DCGX070202-LH	1/4	.307	3/32	.110	.008	XC899
6055-0111	DCGX2(1.5)1-LH	DCGX070204-LH	1/4	.307	3/32	.110	.016	XC899
6055-0221	DCGX3(2.5)1-LH	DCGX11T304-LH	3/8	.457	5/32	.173	.016	XC899
6055-0222	DCGX3(2.5)2-LH	DCGX11T308-LH	3/8	.457	5/32	.173	.031	XC899

TCGX/LH CARBIDE INSERTS FOR ALUMINUM ALLOY

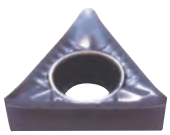
TCGX-LH

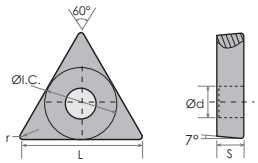
LH Chip-Breaker is more suitable for machining aluminum alloy with larger cutting depth and higher feed rate

Limited Supply!

10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) L	S	d	r	Grade
6057-0100	TCGX1.8(1.5)0-LH	TCGX090202-LH	7/32	.378	3/32	.098	.008	XC899
6057-0101	TCGX1.8(1.5)1-LH	TCGX090204-LH	7/32	.378	3/32	.098	.016	XC899
6057-0110	TCGX2(1.5)0-LH	TCGX110202-LH	1/4	.433	3/32	.110	.008	XC899
6057-0111	TCGX2(1.5)1-LH	TCGX110204-LH	1/4	.433	3/32	.110	.016	XC899
6057-0112	TCGX2(1.5)2-LH	TCGX110208-LH	1/4	.433	3/32	.110	.031	XC899
6057-0221	TCGX3(2.5)1-LH	TCGX16T304-LH	3/8	.650	5/32	.173	.016	XC899
6057-0222	TCGX3(2.5)2-LH	TCGX16T308-LH	3/8	.650	5/32	.173	.031	XC899





VCGX/LH CARBIDE INSERTS FOR ALUMINUM ALLOY

VCGX-LH

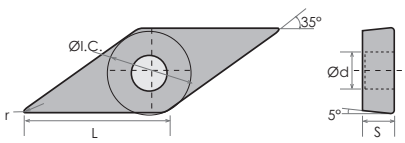
LH Chip-Breaker is more suitable for machining aluminum alloy with larger cutting depth and higher feed rate

Limited Supply!



10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) L	S	d	r	Grade
6058-0111	VCGX2(1.5)1-LH	VCGX110104-LH	1/4	.433	3/32	.110	.016	XC899
6058-0221	VCGX-221-LH	VCGX110204-LH	1/4	.433	1/8	.110	.016	XC899
6058-0222	VCGX-222-LH	VCGX110208-LH	1/4	.433	1/8	.110	.031	XC899
6058-0331	VCGX-331-LH	VCGX160404-LH	3/8	.650	3/16	.173	.016	XC899
6058-0332	VCGX-332-LH	VCGX160408-LH	3/8	.650	3/16	.173	.031	XC899



For Grade & Breaker Information Page 130

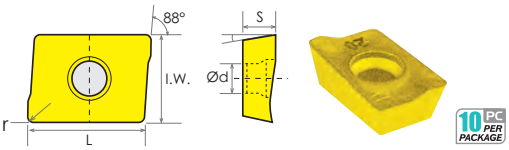
ADKT-POSITIVE RAKE CARBIDE INSERTS (15MM)

ADKT

Limited Supply!

TiN Coated(C-6)

Item#	Insert No.	I.W.	L	S	d	r
6028-1505	ADKT-1505-PDR	.375"	.625"	.222"	.175"	1/32"



10 PC PER PACKAGE

ANGX CARBIDE INSERTS

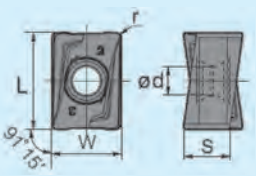
ANGX

NEW

- Double-sided insert provides 4-cutting edges, has a bigger depth of cut providing value and economy.
- High precision cutting edge are more agressive & they have twice the cutting edges of APKT.
- Disigned to improve shoulder milling surface finish.



Item#	Insert No.	L	W	S	d	r	Grade
6064-0011	ANGX110508 PNR-GM	0.467"	0.331"	0.224"	0.138"	0.031"	XAF795
6064-0015	ANGX150608 PNR-GM	0.608"	0.433"	0.287"	0.173"	0.031"	XAF795



APKT-SQUARE SHOULDER MILLING CARBIDE INSERT (10MM)

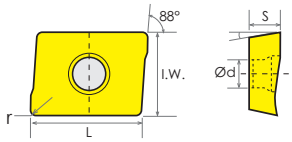
Positive Rake Angle

APKT



Item#	Insert No.	I.W.	L	S	d	r	Grade
6010-4203	APKT-1003PDER	.265"	.441"	.137"	.110"	1/64"	XAF798

10 PC PER PACKAGE



APKT/PF CARBIDE SHOULDER MILLING INSERTS (11MM, 16MM)

11° Relief Clearance

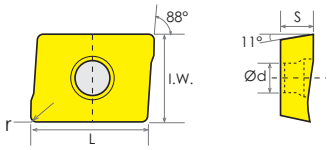
APKT-PF

PF - Excellent Surface Finishing



10 PC PER PACKAGE

Item#	Insert No.	I.W.	(Inch) L	S	d	r	Grade
6010-3002	APKT-11T304-PF	.256	.482	.142	.110	.0157	XAB699
6010-3308	APKT-11T308-PF	.256	.482	.142	.110	.0315	XAF798
6010-3312*	APKT-11T312-PF	.256	.482	.142	.110	.0472	XAF798
6010-3316*	APKT-11T316-PF	.256	.482	.142	.110	.0630	XAF798
6010-3003	APKT-160408-PF	.363	.704	.227	.173	.0315	XAB699



APKT/PM CARBIDE SHOULDER MILLING INSERTS (11MM, 16MM)

11° Relief Clearance

APKT-PM

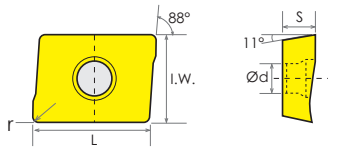
PM - With stronger cutting edge, it is better for intermittent cutting than -DM, with wider cutting zone of steel materials.

PM - Suitable for Mixed Production



10 PC PER PACKAGE

Item#	Insert No.	I.W.	(Inch) L	S	d	r	Grade
6010-4002	APKT-11T304-PM	.256	.482	.142	.110	.0157	XAB699
6010-4308	APKT-11T308-PM	.256	.482	.142	.110	.0315	XAF798
6010-4608*	APKT-11T308-PM	.256	.482	.142	.110	.0315	XAL649
6010-4312*	APKT-11T312-PM	.256	.482	.142	.110	.0472	XAF798
6010-4316*	APKT-11T316-PM	.256	.482	.142	.110	.0630	XAF798
6010-4003	APKT-160408-PM	.363	.704	.227	.173	.0315	XAB699
6010-6532*	APKT-160408-LH	.363	.704	.227	.173	.0315	XC899



*Limited Supply

APKT/PR CARBIDE SHOULDER MILLING INSERTS (11MM)

11° Relief Clearance

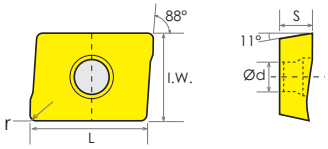
APKT-PR

PR - Roughing of Steel

Limited Supply!



Item#	Insert No.	I.W.	L	S	d	r	Grade
6010-4105	APKT-11T316-PR	0.256"	0.482"	0.142"	0.110"	0.0630"	XAF798



10 PC PER PACKAGE

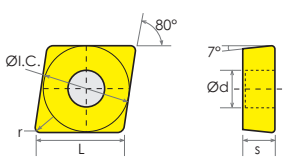
For Grade & Breaker Information Page 130

CCMT 80° DIAMOND - POSITIVE RAKE CARBIDE INSERTS

CCMT

- Use for turning.
- 7° relief angle.
- Single sided..
- Use for light cuts.

TiN(C-5) Coated





10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6003-2021	CCMT-21.51	CCMT060204	1/4	1/4	3/32	7/64	.0157	TiN(C5)
6003-2022	CCMT-21.52	CCMT060208	1/4	1/4	3/32	7/64	.0315	TiN(C5)
6003-2031	CCMT-32.50	CCMT09T302	3/8	3/8	5/32	0.17	.0157	TiN(C5)
6003-2032	CCMT-32.51	CCMT09T304	3/8	3/8	5/32	0.17	.0315	TiN(C5)

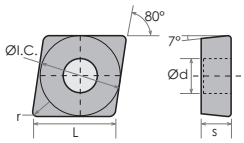
CCMT/EM 80° DIAMOND - POSITIVE RAKE CARBIDE INSERTS

CCMT-EM

EM - Semi-Finishing Geometry. Stainless Steel Material

EM - Single-side chipbreaker with M-class tolerance serves to reduce cutting force and workpiece adhesion when machining stainless steel. Possesses higher feed and depth of cut capability than EF chipbreaker.







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6053-0111	CCMT-21.51-EM	CCMT060204EM	1/4	1/4	3/32	7/64	.0157	XAF798
6053-0112	CCMT-21.52-EM	CCMT060208EM	1/4	1/4	3/32	7/64	.0315	XAF798
6053-0221	CCMT-32.51-EM	CCMT09T304EM	3/8	3/8	5/32	0.17	.0157	XAF798
6053-0222	CCMT-32.52-EM	CCMT09T308EM	3/8	3/8	5/32	0.17	.0315	XAF798
6053-0432	CCMT-432-EM	CCMT120408EM	1/2	1/2	3/16	7/32	.0315	XAF798

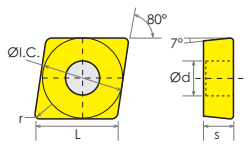
CCMT/HF 80° DIAMOND - POSITIVE RAKE CARBIDE INSERTS

CCMT-HF

HF - Finishing Geometry. Mixed Production

HF - Has a sharp cutting edge. Used for finishing internal holes and fine finishing of surface can be achieved with a slow feed rate.







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6003-3021	CCMT-21.51-HF	CCMT060204HF	1/4	1/4	3/32	7/64	.0157	XAB849
6003-3022	CCMT-21.52-HF	CCMT060208HF	1/4	1/4	3/32	7/64	.0315	XAB849
6003-3032	CCMT-32.52-HF	CCMT09T308HF	3/8	3/8	5/32	0.17	.0315	XAB849
6003-3431*	CCMT-431-HF	CCMT120404HF	1/2	1/2	3/16	7/32	.0157	XAB849

*Limited Supply

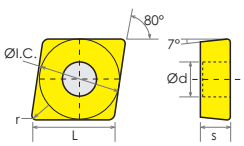
CCMT/HM 80° DIAMOND-POSITIVE RAKE CARBIDE INSERTS

CCMT-HM

HM - Medium Geometry. Periphery Ground Insert. Mixed Production

HM - With a sharp wave cutting edge to reduce cutting force, it is the first choice for semi-finishing of internal holes and allows chips to flow smoothly.







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6003-5021	CCMT-21.51-HM	CCMT060204HM	1/4	1/4	3/32	7/64	.0157	XAB749
6003-5022	CCMT-21.52-HM	CCMT060208HM	1/4	1/4	3/32	7/64	.0315	XAB749
6003-5031	CCMT-32.51-HM	CCMT09T304HM	3/8	3/8	5/32	0.17	.0157	XAB749
6003-5032	CCMT-32.52-HM	CCMT09T308HM	3/8	3/8	5/32	0.17	.0315	XAB749
6003-5431*	CCMT-431-HM	CCMT120404HM	1/2	1/2	3/16	7/32	.0157	XAB749
6003-5432	CCMT-432-HM	CCMT120408HM	1/2	1/2	3/16	7/32	.0315	XAB749
6003-5433*	CCMT-433-HM	CCMT120412HM	1/2	1/2	3/16	7/32	.0472	XAB749

*Limited Supply

For Grade & Breaker Information Page 130

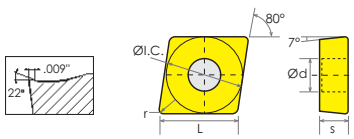
CCMT/HR 80° DIAMOND-POSITIVE RAKE CARBIDE INSERTS

CCMT-HR

HR - Roughing Geometry. Mixed Production

HR - With tough cutting edge, used for roughing/machining of internal holes and intermittent machining of work-piece with irregular surface.

*Limited Supply



10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6003-6021*	CCMT-21.51-HR	CCMT060204HR	1/4	1/4	3/32	7/64	.0157	XAB749
6003-6022	CCMT-21.52-HR	CCMT060208HR	1/4	1/4	3/32	7/64	.0315	XAB749
6003-6031	CCMT-32.51-HR	CCMT09T304HR	3/8	3/8	5/32	0.17	.0157	XAB749
6003-6032	CCMT-32.52-HR	CCMT09T308HR	3/8	3/8	5/32	0.17	.0315	XAB749
6003-6432	CCMT-432-HR	CCMT120408HR	1/2	1/2	3/16	7/32	.0315	XAB749
6003-6433*	CCMT-433-HR	CCMT120412HR	1/2	1/2	3/16	7/32	.0472	XAB749

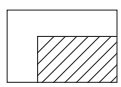
CNMA DIAMOND-NEGATIVE RAKE CARBIDE INSERTS

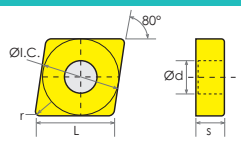
CNMA

- Use for turning & boring
- 0° relief angle.
- No chipbreaker.
- 80° diamond negative rake.

Limited Supply!







10 PC PER PACKAGE

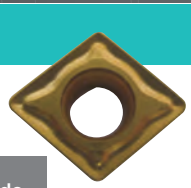
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6000-6431	CNMA-431	CNMA120404	1/2	1/2	3/16	13/64"	.0157	XAC849
6000-6432	CNMA-432	CNMA120408	1/2	1/2	3/16	13/64	.0315	XAC849
6000-6433	CNMA-433	CNMA120412	1/2	1/2	3/16	13/64	.0472	XAC849
6000-6543	CNMA-543	CNMA160612	5/8	5/8	1/4	1/4	.0472	XAC849
6000-6643	CNMA-643	CNMA190612	3/4	3/4	1/4	5/16	.0472	XAC849
6000-6644	CNMA-644	CNMA190616	3/4	3/4	1/4	5/16	.0630	XAC849

CNMG TiN (C5) DIAMOND-NEGATIVE RAKE CARBIDE INSERTS

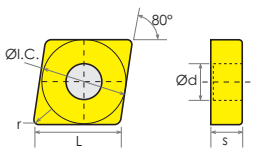
CCMT

- Use for turning & boring
- 0° relief angle.
- Chipbreaker two sides.
- 80° diamond negative rake.

TiN(C-5) COATED



10 PC PER PACKAGE



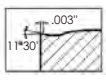
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6000-6831	CNMG-431	CNMG120404	1/2	1/2	3/16	13/64"	.0157	TiN(C5)
6000-6832	CNMG-432	CNMG120408	1/2	1/2	3/16	13/64	.0315	TiN(C5)
6000-6943	CNMG-643	CNMG190612	3/4	3/4	1/4	5/16	.0472	TiN(C5)

CNMG/DF DIAMOND-NEGATIVE RAKE CARBIDE INSERTS

CNMG-DF

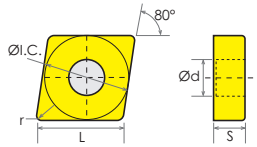
DF-For Steel Finishing

DF-Chip-breaker with special angle design allows for easy cuttings, controls chip flow and provides good surface finish





10 PC PER PACKAGE



Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6000-1431	CNMG-431-DF	CNMG120404DF	1/2	1/2	3/16	13/64	.0157	XAB849
6000-1432	CNMG-432-DF	CNMG120408DF	1/2	1/2	3/16	13/64	.0315	XAB849
6000-1433	CNMG-433-DF	CNMG120412DF	1/2	1/2	3/16	13/64	.0472	XAB849

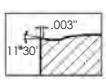
CNMG/DF DIAMOND-NEGATIVE RAKE CERMET INSERTS

CNMG-DF

DF-For Steel Finishing

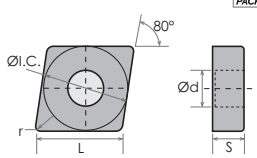
DF-Chip-breaker with special angle design allows for easy cuttings, controls chip flow and provides good surface finish

Limited Supply!





10 PC PER PACKAGE



Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Cermet Grade
6000-4431	CNMG-431-DF	CNMG120404DF	1/2	1/2	3/16	13/64	.0157	XMF849
6000-4432	CNMG-432-DF	CNMG120408DF	1/2	1/2	3/16	13/64	.0315	XMF849

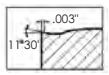
For Grade & Breaker Information Page 130

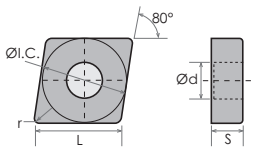
CNMG/DF-BLACK-DIAMOND COATED CARBIDE INSERTS

CNMG-DF

DF-For Steel Finishing

DF-Chip-breaker with special angle design allows for easy cuttings, controls chip flow and provides good surface finish







10 PC PER PACKAGE

TiCN& Al_2O_3 COATED

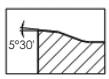
Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) L	S	d	r	Grade
6030-1431	CNMG-431-DF	CNMG120404DF	1/2	1/2	3/16	13/64	.0157	XAB848
6030-1432	CNMG-432-DF	CNMG120408DF	1/2	1/2	3/16	13/64	.0315	XAB848
6030-1433	CNMG-433-DF	CNMG120412DF	1/2	1/2	3/16	13/64	.0472	XAB848

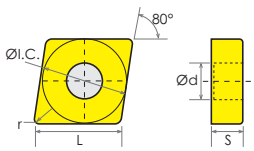
CNMG/DM DIAMOND-NEGATIVE RAKE CARBIDE INSERTS

CNMG-DM

DM - For Steel Medium Machining

DM - Widely used chipbreaker is used for semi-finishing and finishing of steel and stainless steel.







10 PC PER PACKAGE

*Limited Supply

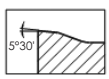
Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) L	S	d	r	Grade
6000-2431	CNMG-431-DM	CNMG120404DM	1/2	1/2	3/16	13/64	.0157	XAB749
6000-2432	CNMG-432-DM	CNMG120408DM	1/2	1/2	3/16	13/64	.0315	XAB749
6000-2433	CNMG-433-DM	CNMG120412DM	1/2	1/2	3/16	13/64	.0472	XAB749
6000-2542*	CNMG-542-DM	CNMG160608DM	5/8	5/8	1/4	1/4	.0315	XAB749
6000-2543*	CNMG-543-DM	CNMG160612DM	5/8	5/8	1/4	1/4	.0472	XAB749
6000-2643*	CNMG-643-DM	CNMG190612DM	3/4	3/4	1/4	5/16	.0472	XAB749

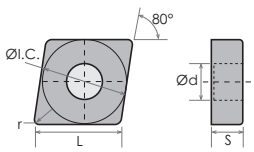
CNMG/DM DIAMOND-NEGATIVE RAKE CERMET INSERTS

CNMG-DM

DM - For Steel Medium Machining

DM - Widely used chipbreaker is used for semi-finishing and finishing of steel and stainless steel.







10 PC PER PACKAGE

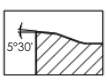
Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) L	S	d	r	Cermet Grade
6000-5431	CNMG-431-DM	CNMG120404DM	1/2	1/2	3/16	13/64	.0157	XMF849
6000-5432	CNMG-432-DM	CNMG120408DM	1/2	1/2	3/16	13/64	.0315	XMF849

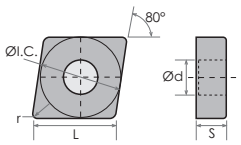
CNMG/DM -BLACK-DIAMOND COATED CARBIDE INSERTS

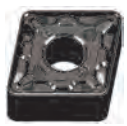
CNMG-DM

DM - For Steel Medium Machining

DM - Widely used chipbreaker is used for semi-finishing and finishing of steel and stainless steel.







10 PC PER PACKAGE

TiCN& Al_2O_3 COATED

Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) L	S	d	r	Grade
6030-2431	CNMG-431-DM	CNMG120404DM	1/2	1/2	3/16	13/64	.0157	XAB748
6030-2432	CNMG-432-DM	CNMG120408DM	1/2	1/2	3/16	13/64	.0315	XAB748
6030-2433	CNMG-433-DM	CNMG120412DM	1/2	1/2	3/16	13/64	.0472	XAB748
6030-2542*	CNMG-542-DM	CNMG160608DM	5/8	5/8	1/4	1/4	.0315	XAB748
6030-2543*	CNMG-543-DM	CNMG160612DM	5/8	5/8	1/4	1/4	.0472	XAB748
6030-2643*	CNMG-643-DM	CNMG190612DM	3/4	3/4	1/4	5/16	.0472	XAB748

*Limited Supply

For Grade & Breaker Information Page 130

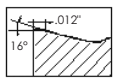
CNMG/DR DIAMOND - NEGATIVE RAKE CARBIDE INSERTS

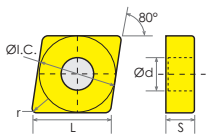
CNMG-DR

DR- For Light Roughing of Steel, Stainless Steel Material

DR - Single-side chipbreaker with M-class tolerance has high security on cutting edge for higher removal rates and low cutting force at large cutting depth and high feed rates.

Limited Supply!







10 PC PER PACKAGE

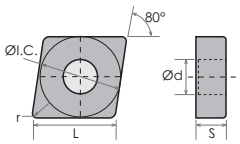
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6048-0432	CNMG-432-DR	CNMG120408DR	1/2	1/2	3/16	13/64	.0315	XAB748
6048-0433	CNMG-433-DR	CNMG120412DR	1/2	1/2	3/16	13/64	.0472	XAB748
6048-0543	CNMG-543-DR	CNMG160612DR	5/8	5/8	1/4	1/4	.0472	XAB748
6048-0544	CNMG-544-DR	CNMG160616DR	5/8	5/8	1/4	1/4	.0630	XAB748
6048-0643	CNMG-643-DR	CNMG190612DR	3/4	3/4	1/4	5/16	.0472	XAB748
6048-0644	CNMG-644-DR	CNMG190616DR	3/4	3/4	1/4	5/16	.0630	XAB748

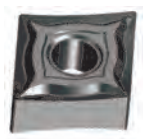
CNMG/EF -CARBIDE INSERTS

CNMG-EF

EF - For Stainless Steel, Highly Adhesive and Plastic Materials

EF Chip-Breaker specially designed rake angle and an inclined edge angle for machining stainless steel. The edges are sharp making the cutting light and smooth, getting a good control of the chips and obtaining a good surface quality, which makes it most suitable for ultra fine and fine machining of highly adhesive and plastic materials.





10 PC PER PACKAGE

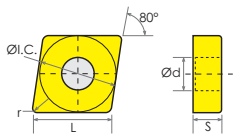
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6030-5431	CNMG-431-EF	CNMG120404EF	1/2	1/2	3/16	13/64	.0157	XAF795
6030-5432	CNMG-432-EF	CNMG120408EF	1/2	1/2	3/16	13/64	.0315	XAF795
6030-5433	CNMG-433-EF	CNMG120412EF	1/2	1/2	3/16	13/64	.0472	XAF795

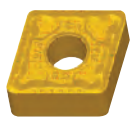
CNMG/PM DIAMOND-NEGATIVE RAKE CARBIDE INSERTS

CNMG-PM

PM - Suitable for Mixed Production

PM - With stronger cutting edge, it is better for intermittent cutting than -DM, with wider cutting zone of steel materials





10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6000-3431	CNMG-431-PM	CNMG120404PM	1/2	1/2	3/16	13/64	.0157	XAB749
6000-3432	CNMG-432-PM	CNMG120408PM	1/2	1/2	3/16	13/64	.0315	XAB749
6000-3433	CNMG-433-PM	CNMG120412PM	1/2	1/2	3/16	13/64	.0472	XAB749
6000-3542	CNMG-542-PM	CNMG160608PM	5/8	5/8	1/4	1/4	.0315	XAB749
6000-3543	CNMG-543-PM	CNMG160612PM	5/8	5/8	1/4	1/4	.0472	XAB749
6000-3642	CNMG-642-PM	CNMG190608PM	3/4	3/4	1/4	5/16	.0315	XAB749
6000-3643	CNMG-643-PM	CNMG190612PM	3/4	3/4	1/4	5/16	.0472	XAB749

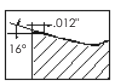
CNMM/DR DIAMOND-NEGATIVE RAKE CARBIDE INSERTS

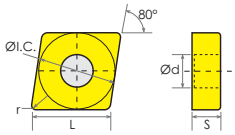
CNMM-DR

DR - For Light Roughing of Steel

DR - Special chip-breaker with high toughness cutting edge can reduce cutting force

Limited Supply!







10 PC PER PACKAGE

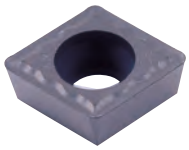
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6001-2432	CNMM-432-DR	CNMM120408HDR	1/2	1/2	3/16	13/64	.0315	XAB749
6001-2433	CNMM-433-DR	CNMM120412DR	1/2	1/2	3/16	13/64	.0472	XAB749
6001-2543	CNMM-543-DR	CNMM160612DR	5/8	5/8	1/4	1/4	.0472	XAB749
6001-2544	CNMM-544-DR	CNMM160616DR	5/8	5/8	1/4	1/4	.0630	XAB749
6001-2643	CNMM-643-DR	CNMM190612DR	3/4	3/4	1/4	5/16	.0472	XAB749
6001-2644	CNMM-644-DR	CNMM190616DR	3/4	3/4	1/4	5/16	.0630	XAB749

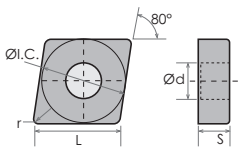
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CPMT 80° BLACK-DIAMOND COATED - POSITIVE RAKE CARBIDE INSERTS

CPMT

- Use for boring & facing.
- 11° relief angle.
- Single sided with chip control.





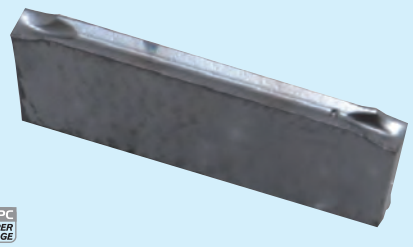
10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6060-0211	CPMT-21.51	CPMT060204	1/4	1/4	3/32	7/64	.0157	XAC898
6060-0322	CPMT-32.52	CPMT09T308	3/8	3/8	5/32	0.17	.0315	XAC898
6060-0431	CPMT-432	CPMT120408	1/2	1/2	3/16	0.217	.0315	XAC898

CUT-OFF & GROOVING INSERTS

DGN

- Used for applications in parting and grooving.
- Fits ISCAR Heliface, Do-Grip and Groove Turn holders.
- Double ended, two cutting edges.



Item#	Insert No.	(mm) Cutting Width	OAL	r	Grade
6024-5001	DGN2202J	2.2	19.8	0.2	BPG20B-PVD
6024-5004	DGN3102C	3.1	20.1	0.2	BPS253-CVD
6024-5014	GRIP4004Y	4.0	19.0	0.4	BPS253-CVD

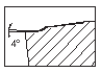
10 PC PER PACKAGE

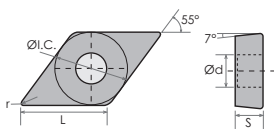
DCMT/EM 55° DIAMOND - POSITIVE RAKE CARBIDE INSERTS

DCMT-EM

EM - Semi-Finishing Geometry. Stainless Steel Material

EM - Single-side chipbreaker with M-class tolerance serves to reduce cutting force and workpiece adhesion when machining stainless steel. Possesses higher feed and depth of cut capability than EF chipbreaker.







10 PC PER PACKAGE

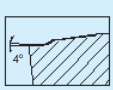
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6004-1021	DCMT-21.51-EM	DCMT070204EM	1/4	0.307	3/32	7/64	.0157	XAF798
6004-1022	DCMT-21.52-EM	DCMT070208EM	1/4	0.307	3/32	7/64	.0315	XAF798
6004-1031	DCMT-32.51-EM	DCMT11T304EM	3/8	29/64	5/32	0.17	.0157	XAF798
6004-1032	DCMT-32.52-EM	DCMT11T308EM	3/8	29/64	5/32	0.17	.0315	XAF798

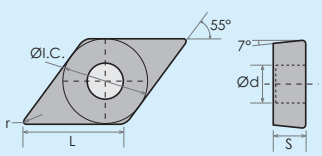
DCMT/HF 55° DIAMOND-POSITIVE RAKE CARBIDE & CERMET INSERTS

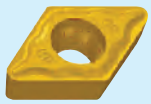
DCMT-HF

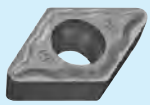
HF - With sharp cutting edge, used for finishing internal holes, fine finishing of surface can be achieved with a slow feed rate.

HF - Finishing Geometry. Mixed Production









10 PC PER PACKAGE

ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Carbide Item#	Carbide Grade	Cermet Item#	Cermet Grade
DCMT-21.51-HF	DCMT-070204HF	1/4	0.307	3/32	7/64	.0157	6003-7021	XAB849	6003-8028	XMF849
DCMT-32.50-HF	DCMT11T302HF	3/8	29/64	5/32	0.17	.0080	---------		6003-8030	XMF849
DCMT-32.51-HF	DCMT11T304HF	3/8	29/64	5/32	0.17	.0157	6003-7031	XAB849	-------	
DCMT-32.52-HF	DCMT11T308HF	3/8	29/64	5/32	0.17	.0315	6003-7032	XAB849	6003-8032	XMF849

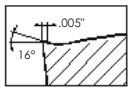
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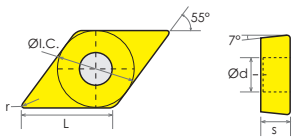
DCMT/HM 55° DIAMOND-POSITIVE RAKE CARBIDE INSERTS

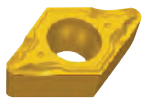
DCMT-HM

HM - Medium Geometry. Periphery Ground Insert. Mixed Production

HM - With sharp wave cutting edge to reduce cutting force, it is the first choice for semi-finishing of internal holes and allows chips to flow smoothly.







10 PC PER PACKAGE

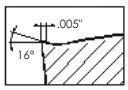
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6004-0021	DCMT-21.51-HM	DCMT070204HM	1/4	0.307	3/32	7/64	.0157	XAB749
6004-0031	DCMT-32.51-HM	DCMT11T304HM	3/8	29/64	5/32	0.17	.0157	XAB749
6004-0032	DCMT-32.52-HM	DCMT11T308HM	3/8	29/64	5/32	0.17	.0315	XAB749
6004-0033	DCMT-32.53-HM	DCMT11T312HM	3/8	29/64	5/32	0.17	.0472	XAB749

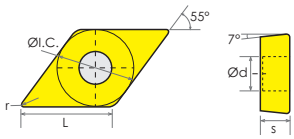
DCMT/HR 55° DIAMOND - POSITIVE RAKE CARBIDE INSERTS

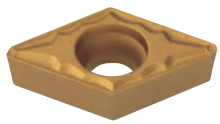
DCMT-HR

HR- General Chipbreaker for Roughing, Stainless Steel Material

HR - M-class tolerance; suitable for both boring and O.D. roughing materials as steel, stainless steel and cast iron etc.







10 PC PER PACKAGE

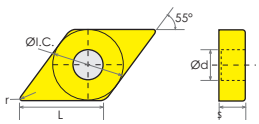
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6004-2031	DCMT-32.51-HR	DCMT11T304HR	3/8	29/64	5/32	0.17	.0157	XAB749
6004-2032	DCMT-32.52-HR	DCMT11T308HR	3/8	29/64	5/32	0.17	.0315	XAB749

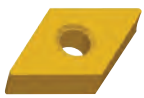
DNMA 55° DIAMOND-NEGATIVE RAKE CARBIDE INSERTS

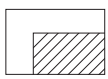
DNMA

- 55° diamond for profiling.

Limited Supply!







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6001-3442	DNMA-442	DNMA150608	1/2	39/64	1/4	13/64	.0315	XAC849
6001-3443	DNMA-443	DNMA150612	1/2	39/64	1/4	13/64	.0472	XAC849
6001-3444	DNMA-444	DNMA150616	1/2	39/64	1/4	13/64	.0630	XAC849

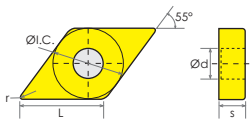
DNMG/DF 55° DIAMOND-NEGATIVE RAKE CARBIDE INSERTS

DNMG-DF

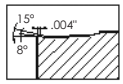
DF - For Steel Finishing

DF-Chip-breaker with special angle design allows for easy cuttings, controls chip flow and provides good surface finish

Limited Supply!







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6000-7331	DNMG-331-DF	DNMG110404-DF	3/8	29/64	3/16	0.15	.0157	XAB749
6000-7332	DNMG-332-DF	DNMG110408DF	3/8	29/64	3/16	0.15	.0315	XAB749
6000-7333	DNMG-333-DF	DNMG110412DF	3/8	29/64	3/16	0.15	.0472	XAB749
6000-7431	DNMG-431-DF	DNMG150404DF	1/2	39/64	3/16	13/64	.0157	XAB749
6000-7432	DNMG-432-DF	DNMG150408DF	1/2	39/64	3/16	13/64	.0315	XAB749

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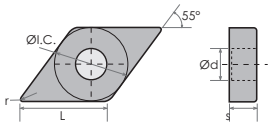
DNMG/DF 55° -BLACK-DIAMOND COATED CARBIDE INSERTS

DNMG-DF

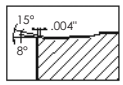
DF - For Steel Finishing

DF-Chip-breaker with special angle design allows for easy cuttings, controls chip flow and provides good surface finish

TiCN& Al_2O_3 COATED







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6033-0331	DNMG-331-DF	DNMG110404-DF	3/8	29/64	3/16	0.15	.0157	XAB848
6033-0332	DNMG-332-DF	DNMG110408DF	3/8	29/64	3/16	0.15	.0315	XAB848
6033-0431	DNMG-431-DF	DNMG150404DF	1/2	39/64	3/16	13/64	.0157	XAB848
6033-0432	DNMG-432-DF	DNMG150408DF	1/2	39/64	3/16	13/64	.0315	XAB848

DNMG/DM 55° DIAMOND-NEGATIVE RAKE INSERTS

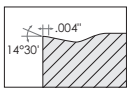
DNMG-DM

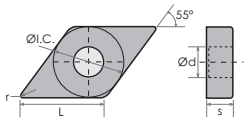
DM - Widely used chip-breaker is used for semi-finishing and finishing of steel and stainless steel

DM - For Steel Medium Machining

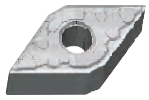
Black-Diamond: TiCN& Al_2O_3 COATED

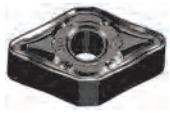
10 PC PER PACKAGE











ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Carbide Item#	Carbide Grade	Cermet Item#	Cermet Grade	Black-Diamond Item#	Black-Diamond Grade
DNMG-331-DM	DNMG110404DM	3/8	29/64	3/16	0.15	.0157	**6000-8331***	XAB749	----------		**6033-1331**	XAB748
DNMG-332-DM	DNMG110408DM	3/8	29/64	3/16	0.15	.0315	**6000-8332***	XAB749	----------		**6033-1332**	XAB748
DNMG-431-DM	DNMG150404DM	1/2	39/64	3/16	13/64	.0157	**6000-8431***	XAB749	**6001-1431**	XMF849	**6033-1431**	XAB748
DNMG-432-DM	DNMG150408DM	1/2	39/64	3/16	13/64	.0315	**6000-8432***	XAB749	**6001-1432**	XMF849	**6033-1432**	XAB748
DNMG-433-DM	DNMG150412DM	1/2	39/64	3/16	13/64	.0472	**6000-8433***	XAB749	----------		**6033-1433**	XAB748

*Limited Supply

DNMG/DR 55° BLACK-DIAMOND - NEGATIVE RAKE CARBIDE INSERTS

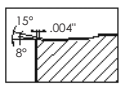
DNMG/DR

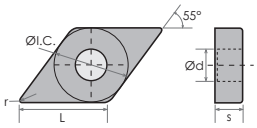
DR- For Light Roughing of Steel, Stainless Steel Material

DR - Single-side chipbreaker with M-class tolerance has high security on cutting edge for higher removal rates and low cutting force at large cutting depth and high feed rates.

Limited Supply!

Black-Diamond: TiCN& Al_2O_3 COATED







10 PC PER PACKAGE

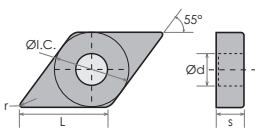
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6046-0433	DNMG-433-DR	DNMG150412DR	1/2	39/64	3/16	13/64	.0472	XAB748
6046-0443	DNMG443-DR	DNMG150612DR	1/2	39/64	13/64	0.17	.0472	XAB748

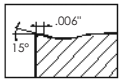
DNMG/EF 55° - CARBIDE INSERTS

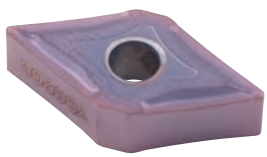
DNMG-EF

EF - For Stainless Steel, Highly Adhesive and Plastic Materials

EF Chip-Breaker specially designed rake angle and an inclined edge angle for machining stainless steel. The edges are sharp making the cutting light and smooth, getting a good control of the chips and obtaining a good surface quality, which makes it most suitable for ultra fine and fine machining of highly adhesive and plastic materials.







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6033-5331	DNMG-331-EF	DNMG110404EF	3/8	29/64	3/16	0.15	.0157	XAF795
6033-5332	DNMG-332-EF	DNMG110408EF	3/8	29/64	3/16	0.15	.0315	XAF795
6033-5431	DNMG-431-EF	DNMG150404EF	1/2	39/64	3/16	13/64	.0157	XAF795
6033-5432	DNMG-432-EF	DNMG150408EF	1/2	39/64	3/16	13/64	.0315	XAF795

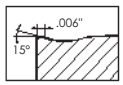
For Grade & Breaker Information Page 130

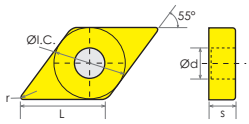
DNMG/PM 55° DIAMOND-NEGATIVE RAKE CARBIDE INSERTS

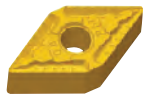
DNMG-PM

PM-Suitable for Mixed Production

PM - With stronger cutting edge, it is better for intermittent cutting than -DM, with wider cutting zone of steel materials







10 PC PER PACKAGE

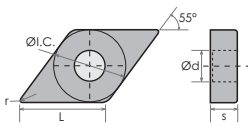
*Limited Supply

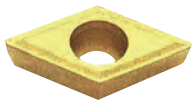
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6000-9331	DNMG-331-PM	DNMG110404PM	3/8	29/64	3/16	0.15	.0157	XAB749
6000-9332	DNMG-332-PM	DNMG110408PM	3/8	29/64	3/16	0.15	.0315	XAB749
6000-9333*	DNMG-333-PM	DNMG110412PM	3/8	29/64	3/16	0.15	.0472	XAB749
6000-9431*	DNMG-431-PM	DNMG150404PM	1/2	39/64	3/16	13/64	.0157	XAB749
6000-9432	DNMG-432-PM	DNMG150408PM	1/2	39/64	3/16	13/64	.0315	XAB749
6000-9433	DNMG-433-PM	DNMG150412PM	1/2	39/64	3/16	13/64	.0472	XAB749
6000-9434	DNMG-434-PM	DNMG150416PM	1/2	39/64	3/16	13/64	.0630	XAB749
6000-9443	DNMG-443-PM	DNMG150612PM	1/2	39/64	3/16	0.17	.0472	XAB749

DPMT CARBIDE INSERTS, 11° Relief

DPMT

Item#	ASA Insert No.	I.C.	r
6027-2151	DPMT-21.51	1/4"	.0157"
6027-3252	DPMT-32.52	3/8"	.0315"





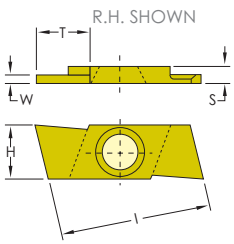
10 PC PER PACKAGE

MINI-SYSTEM STANDARD CARBIDE GROOVING, CUT-OFF INSERTS-GRADE C6-PV

NEW

- Grade C6-PV-Coated grade recommented for machining steels, cutting off and grooving at higher speeds.
- Toerances: Width: +.0009"/ -.0000"
- Fits NIKCOLE style mini groove RH tool holders.





Item#	Insert #	Hand	Depth of Cut	Width of Cut
6061-0300	GIE-7-SG-05	R	.100" (2.54mm)	.019" (0.5mm)
6061-0301	GIE-7-SG-07	R	.100" (2.54mm)	.027" (0.7mm)
6061-0302	GIE-7-SG-08	R	.100" (2.54mm)	.031" (0.8mm)
6061-0303	GIE-7-SG-09	R	.100" (2.54mm)	.035" (0.9mm)
6061-0304	GIE-7-SG-1.1	R	.235" (6.0mm)	.043" (1.1mm)
6061-0305	GIE-7-SG-1.3	R	.235" (6.0mm)	.051" (1.3mm)
6061-0306	GIE-7-SG-1.6	R	.235" (6.0mm)	.063" (1.6mm)
6061-0307	GIE-7-SG-1.85	R	.235" (6.0mm)	.073" (1.85mm)
6061-0311	GIE-7-SG-07	L	.100" (2.54mm)	.027" (0.7mm)
6061-0312	GIE-7-SG-08	L	.100" (2.54mm)	.031" (0.8mm)
6061-0313	GIE-7-SG-09	L	.100" (2.54mm)	.035" (0.9mm)
6061-0314	GIE-7-SG-1.1	L	.235" (6.0mm)	.043" (1.1mm)
6061-0315	GIE-7-SG-1.3	L	.235" (6.0mm)	.051" (1.3mm)
6061-0316	GIE-7-SG-1.6	L	.235" (6.0mm)	.063" (1.6mm)
6061-0317	GIE-7-SG-1.85	L	.235" (6.0mm)	.073" (1.85mm)

GTN-CARBIDE INSERTS

- Self locking inserts.
- Interchangeable with ISCAR & other popular brands.

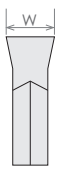
GRADE
C-2 FOR CAST IRON AND GENERAL PURPOSE
C-6 FOR ALL STEEL AND GENERAL PURPOSE
TiN (C-6) FOR INCREASED PRODUCTIVITY

CARBIDE INSERTS

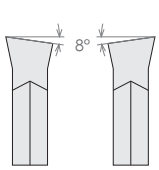
Insert Style	Insert Size (W) (In)	C-2 Item#	C-6 Item#	TiN Coated(C-6) Item#
GTN-2	.087	**3900-5802**	**3900-5309**	**6024-2002**
GTN-2.4	.094	**6024-0002***	----------	----------
GTN-3	.120	**6024-0003**	**6024-1003**	**6024-2003**
GTN-4	.160	**6024-0004**	**6024-1004**	**6024-2004**
GTN-4.8	.187	**6024-0008***	**6024-1008**	**6024-2008***
GTN-5	.200	**6024-0005**	**6024-1005**	**6024-2005**
GTR-4.8	.187	**6024-1014***	**6024-1015***	**6024-2014***
GTL-4.8	.187	**6024-1024***	----------	**6024-2034***



10 PC PER PACKAGE



GTN



GTL GTR

*Limited Supply

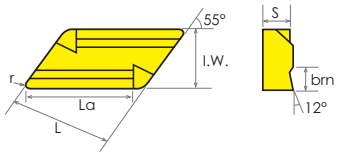
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KNUX PROFILE CARBIDE INSERTS

KNUX

- Turning insert.
- Parallelogram insert for profiling.
- Clamp on style.
- Negetive along cutting edge and positive flank along the narrow edge.





Limited Supply!

10 PC PER PACKAGE

Item#	Insert No.	La	L	I.W.	(Inch) S	bm	r	Grade
6005-4005	KNUX-160405L11	5/8	5/8	3/8	3/16	.0087	0.02	XAB749
6005-4010	KNUX-160410L11	5/8	5/8	3/8	3/16	.0087	0.04	XAB749
6005-4105	KNUX-160405L12	5/8	5/8	3/8	3/16	.0126	0.02	XAB749
6005-4110	KNUX-160410L12	5/8	5/8	3/8	3/16	.0126	0.04	XAB749
6005-4205	KNUX-160405R11	5/8	5/8	3/8	3/16	.0087	0.02	XAB749
6005-4210	KNUX-160410R11	5/8	5/8	3/8	3/16	.0087	0.04	XAB749
6005-4305	KNUX-160405R12	5/8	5/8	3/8	3/16	.0126	0.02	XAB749
6005-4310	KNUX-160410R12	5/8	5/8	3/8	3/16	.0126	0.04	XAB749

MGMN-G GROOVING CARBIDE INSERTS

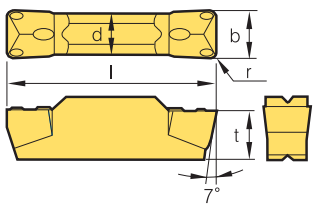
MGMN-G

NEW

- Specially designed chip breaker allows narrower chips to promote better chip flow.
- Specifically designed for grooving applications.



10 PC PER PACKAGE



Item#	Insert No.	Cutting Width b	OAL L	(Inch) d	Cutting Edge Heigh t	r	Grade
6024-3021	MGMN-150-G	.059	.138	.047	.138	.006	BPS253-CVD
6024-3022	MGMN-200-G	.079	.138	.063	.138	1/128	BPS253-CVD
6024-3051	MGMN-200-G	.079	.138	.063	.138	1/128	BPG20B-PVD

MGMN-M GROOVING CARBIDE INSERTS

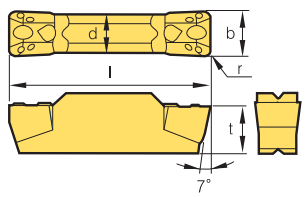
MGMN-M

NEW

- Specially designed chip breaker allows as moother chip flow versus conventional flattop geometries through the use of a central chip breaker.
- Specially placed convex dots assits twith chip control in external machining, for a smoother chip flow.
- Chip breaker designed for turning , grooving & parting applications.



10 PC PER PACKAGE



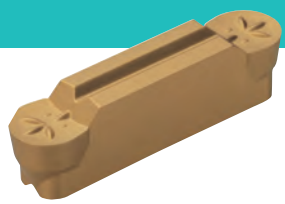
Item#	Insert No.	Cutting Width	OAL L	(Inch) d	Cutting Edge Heigh t	r	Grade
6024-3002	MGMN-250-M	.098	.152	.079	.152	1/128	BPS253-CVD
6024-3003	MGMN-300-M	.118	.189	.093	.189	1/64	BPS253-CVD
6024-3004	MGMN-400-M	.157	.189	.130	.189	1/64	BPS253-CVD
6024-3052	MGMN-250-M	.098	.152	.079	.152	1/128	BPG20B-PVD
6024-3053	MGMN-300-M	.118	.189	.093	.189	1/64	BPG20B-PVD

MRMN-M GROOVING CARBIDE INSERTS

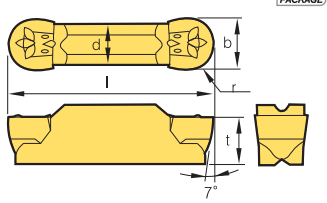
MRMN-M

NEW

- Full radius geometry for applications that require profiling
- Available for relief machining



10 PC PER PACKAGE



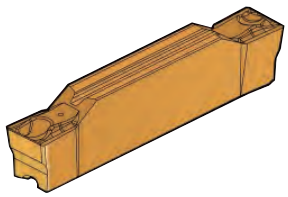
Item#	Insert No.	Cutting Width b	OAL L	(Inch) d	Cutting Edge Heigh t	r	PVD Grade
6024-3031	MRMN-200-M	.079	.630	.059	.079	3/64	BPS253
6024-3032	MRMN-300-M	.118	.827	.093	.118	1/16	BPS253
6024-3033	MRMN-400-M	.157	.827	.130	.157	5/64	BPS253
6024-3034	MRMN-500-M	.197	1.024	.161	.197	3/32	BPS253
6024-3035	MRMN-600-M	.236	1.024	.197	.236	1/8	BPS253

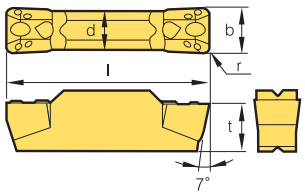
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N123 GROOVING CARBIDE INSERTS

N123E2

- For internal & external grooving.
- For use with Sandvik style holders with V or Rail shape clamp.
- Two cutting edges.





NEW

10 PC PER PACKAGE

Item#	Insert No.	(mm) Cutting Width	OAL L	Cutting Edge Height t	r	Grade
6024-4001	N123E2-0200-0004-GF	2	20.05	4.3	0.4	BPS253-CVD
6024-4002	N123E2-0260-0008-GF	2.6	20.70	4.5	0.8	BPS253-CVD
6024-4003	N123G2-0318-0008-GF	3.18	20.70	4.5	0.8	BPS253-CVD

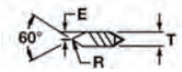
NOTCH THREADING & GROOVING CARBIDE INSERTS, CLAMP & SCREWS

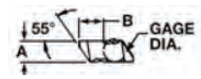
NEW

- Completely interchangeable with the *Kennametal TopNotch and the Teledyne Firth Notch systems.
- 60° Negitive rake, netural.
- NT-600 parting profile general purpose threading inserts.
- NG-Grooving & Turning inserts.
- Grade: C5/TIC-65 coated, which is same as KENNAMETAL KC810, KC850, KC950, KC730

* Trademark of Kennametal.







THREADING INSERTS

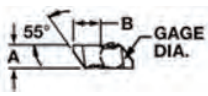
Item#	Insert #	R	B	(Inch) T	E	A	Gage Dia.
6062-5001	T/NT-2R	.003	.2661	.150	.075	.219	.1875
6062-5002	T/NT-2L	.005	.2661	.150	.075	.219	.1875
6062-5003	T/NT-3R	.005	.3999	.195	.098	.344	.3750
6062-5004	T/NT-3L	.008	.3999	.195	.098	.344	.3750
6062-5005	T/NT-4R	.005	.6293	.255	.128	.453	.3750
6062-5006	T/NT-4L	.008	.6293	.255	.128	.453	.3750

Grade C5/TIC 65

R=Right Hand
L=Left Hand







SPECIFICATIONS

Insert #	External TPI	Internal TPI
T/NT-2R/2L	8-36	7-20
T/NT-3R/3L	6-20	5-12
T/NT-4R/4L	4-20	4-12



CLAMP

Item #	Style
2100-0011	TNSB-2B
2100-0010	TNSB-3B

GROOVIING INSERTS

Item#	Insert #	R	Groove Width W	B	(Inch) T	Depth of Cut E	A	Gage Dia.
6062-2030	T/NG-2031R	.002	.031	.2700	.150	.050	.219	.1875
6062-2031	T/NG-2031L	.005	.031	.2700	.150	.050	.219	.1875
6062-2046	T/NG-2047R	.002	.047	.2700	.150	.050	.219	.1875
6062-2047	T/NG-2047L	.005	.047	.2700	.150	.050	.219	.1875
6062-2061	T/NG-2062R	.005	.062	.2700	.150	.050	.219	.1875
6062-2062	T/NG-2062L	.010	.062	.2700	.150	.050	.219	.1875
6062-2093	T/NG-2094R	.005	.094	.2700	.150	.050	.219	.1875
6062-2094	T/NG-2094L	.010	.094	.2700	.150	.050	.219	.1875
6062-2124	T/NG-2125R	.005	.125	.2700	.150	.050	.219	.1875
6062-2125	T/NG-2125L	.010	.125	.2700	.150	.050	.219	.1875
6062-3046	T/NG-3047R	.005	.047	.4050	.195	.075	344	.3750
6062-3047	T/NG-3047L	.010	.047	.4050	.195	.075	.344	.3750
6062-3061	T/NG-3062R	.005	.062	.4050	.195	.075	.344	.3750
6062-3062	T/NG-3062L	.010	.062	.4050	.195	.075	.344	.3750
6062-3077	T/NG-3078R	.005	.078	.4050	.195	.075	.344	.3750
6062-3078	T/NG-3078L	.010	.078	.4050	.195	.075	.344	.3750
6062-3087	T/NG-3088R	.005	.088	.4050	.195	.075	.344	.3750
6062-3088	T/NG-3088L	.010	.088	.4050	.195	.075	.344	.3750
6062-3093	T/NG-3094R	.005	.094	.4050	.195	.075	.344	.3750
6062-3094	T/NG-3094L	.010	.094	.4050	.195	.075	.344	.3750
6062-3124	T/NG-3125R	.005	.125	.4050	.195	.075	.344	.3750
6062-3125	T/NG-3125L	.010	.125	.4050	.195	.075	.344	.3750
6062-3155	T/NG-3156R	.005	.156	.4050	.195	.075	.344	.3750
6062-3156	T/NG-3156L	.010	.156	.4050	.195	.075	.344	.3750
6062-3188	T/NG-3189R	.005	.189	.4050	.195	.075	.344	.3750
6062-3189	T/NG-3189L	.010	.189	.4050	.195	.075	.344	.3750
6062-4124	T/NG-4125R	.005	.125	.6360	.255	.250	.453	.3750
6062-4125	T/NG-4125L	.010	.125	.6360	.255	.250	.453	.3750
6062-4188	T/NG-4189R	.020	.189	.6360	.255	.250	.453	.3750
6062-4189	T/NG-4189L	.025	.189	.6360	.255	.250	.453	.3750
6062-4249	T/NG-4250R	0.20	.250	.6360	.255	.250	.453	.3750
6062-4250	T/NG-4250L	.025	.250	.6360	.255	.250	.453	.3750

For Grade & Breaker Information Page 130

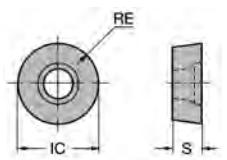
RCKT/DM CARBIDE FACE MILL INSERTS

RCKT-DM

7° Positive Relief Angle - For Turning & Facing

DM - Widely used chip-breaker is used for semi-finishing and finishing of steel and stainless steel

Item#	Insert No.	I.C.	Thickness	Hole	Grade
6034-1204	RCKT1204MO-DM	0.472"	3/16"	0.157"	XAF798
6034-1606	RCKT1606MO-DM	0.630"	1/4"	0.219"	XAF798





10 PC PER PACKAGE

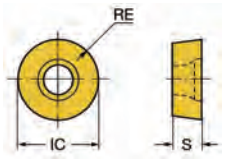
RCKT/DR CARBIDE FACE MILL INSERTS

RCKT-DR

7° Positive Relief Angle - For Turning & Facing

DR - Used for roughing of material. It can achieve a high rate of metal removal & a low cutting force .

Item#	Insert No.	I.C.	Thickness	Hole	Grade
6034-2204	RCKT1204MO-DR	0.472"	3/16"	0.157"	XAL649
6034-2606	RCKT1606MO-DR	0.630"	1/4"	0.219"	XAL649
6034-2607	RCKT2006MO-DR	0.787"	1/4"	0.258"	XAL649





10 PC PER PACKAGE

RCMT CARBIDE INSERTS

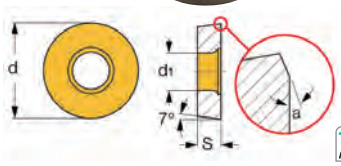
RCMT

7° Positive Relief Angle - For Turning & Facing

*Limited Supply

Insert No.	I.C.	(Inch) Thickness	Hole	Grade C-2 Item#	TiN Coated (C-6) Item#
RCMT-0602	.236	.0940	.110	**6034-3012***	**6034-3062**
RCMT-0803	.315	.1250	.134	**6034-3013***	**6034-3083**
RCMT-10T3	.393	.1563	.173	**6034-3023***	**6034-3103**
RCMT-32	3/8	1/8	.150	**6034-3032***	**6034-3132**
RCMT-1204	.472	.1870	.157	----------	**6034-3124**
RCMT-43	.500	3/16	.217	**6034-3043***	**6034-3143**





10 PC PER PACKAGE

RDKW CARBIDE INSERTS

RDKW

15° Relief Angle

Item#	Insert No.	Nose Radius	I.C.	(Inch) Thickness	Hole	Grade
6045-0803	RDKW0803MO	.157	.315	.125	0.134	XAF798
6045-1003	RDKW10T3MO	.197	.394	.156	0.173	XAF798
6045-1204	RDKW1204MO	.236	.472	.186	0.173	XAF798





10 PC PER PACKAGE

RNMG CARBIDE FACE MILL INSERTS

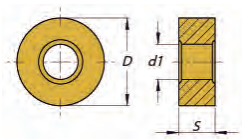
RNMG

0° Relief Angle - For Turning, Plunging & Profilling

*Limited Supply

ASA Insert No.	ISO Insert No.	I.C.	(Inch) Thickness	Hole	Grade C-2 Item#	TiN Coated (C5) Item#
RNMG-32	RNMG0903	3/8	1/8	.150	**6005-6030***	**6005-6032**
RNMG-43MO	RNMG-1204MO	0.472	3/16	.157	----------	**6005-5204**
RNMG-43	RNMG1204	0.500	3/16	.203	**6005-6043***	**6005-6143**
RNMG-64	RNMG1906	0.750	1/4	.312	----------	**6005-6164**





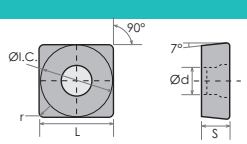
10 PC PER PACKAGE

SCMT CARBIDE INSERTS

SCMT

7° Relief Angle-Single Sided





10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6004-4431	SCMT-431	SCMT120404	1/2	1/2	3/16	7/32	.0157	C-6
6004-4432	SCMT-432	SCMT120408	1/2	1/2	3/16	7/32	.0315	C-6

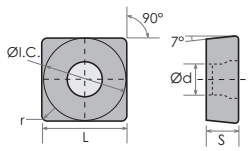
For Grade & Breaker Information Page 130

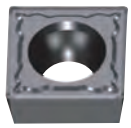
SCMT/EM SQUARE - POSITIVE RAKE CARBIDE INSERTS

SCMT-EM

EM - Semi-Finishing Geometry. Stainless Steel Material

EM - Double-side chipbreaker with M-class tolerance serves to reduce cutting force and workpiece adhesion when machining stainless steel. Possesses higher feed and depth of cut capability than EF chipbreaker.





10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6056-0221	SCMT32.51-EM	SCMT09T304EM	3/8	3/8	5/32	0.17	.0157	XAF798
6056-0222	SCMT32.52-EM	SCMT09T308EM	3/8	3/8	5/32	0.17	.0315	XAF798
6056-0431	SCMT-431-EM	SCMT120404EM	1/2	1/2	3/16	7/32	.0157	XAF798
6056-0432	SCMT-432-EM	SCMT120408EM	1/2	1/2	3/16	7/32	.0315	XAF798

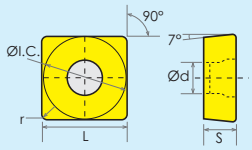
SCMT/HM SQUARE - POSITIVE RAKE CARBIDE INSERTS

SCMT-HM

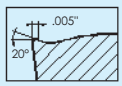
NEW

HM - Medium Geometry. Periphery Ground Insert. Mixed Production

HM - With a sharp wave cutting edge to reduce cutting force, it is the first choice for semi-finishing of internal holes and allows chips to flow smoothly.







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6004-3030	SCMT-21.51	SCMT060204	1/4	1/4	3/32	2.8	.0157	TiN(C6)
6004-3031	SCMT-32.51-HM	SCMT09T304HM	3/8	3/8	5/32	0.17	.0157	XAB749
6004-3032	SCMT-32.52-HM	SCMT09T308HM	3/8	3/8	5/32	0.17	.0315	XAB749
6004-3432	SCMT-432-HM	SCMT120408HM	1/2	1/2	3/16	7/32	.0315	XAB749
6004-3433	SCMT-433-HM	SCMT120412HM	1/2	1/2	3/16	7/32	.0472	XAB749

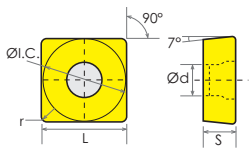
SCMT/HR SQUARE - POSITIVE RAKE CARBIDE INSERTS

SCMT-HR

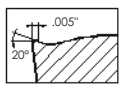
HR- General Chipbreaker for Roughing, Stainless Steel Material

HR - M-class tolerance; suitable for both boring and O.D. roughing materials as steel, stainless steel and cast iron etc.

Limited Supply!







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6056-1221	SCMT32.51-HR	SCMT09T304HR	3/8	3/8	5/32	0.17	.0157	XAB749
6056-1222	SCMT32.52-HR	SCMT09T308HR	3/8	3/8	5/32	0.17	.0315	XAB749
6056-1431	SCMT-431-HR	SCMT120404HR	1/2	1/2	3/16	7/32	.0157	XAB749
6056-1432	SCMT-432-HR	SCMT120408HR	1/2	1/2	3/16	7/32	.0315	XAB749

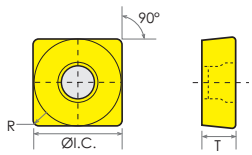
SD-POSITIVE RAKE CARBIDE INSERTS

SD

11° Relief Angle-Positive Rake

TiN COATED(C-6)





10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	T	r
6029-2322	SD-322P	SD160308P	3/8"	1/8"	1/32"
6029-2422	SD-422P	SD220308P	1/2"	1/8"	1/32"

For Grade & Breaker Information Page 130

SEAN TiN (C5) CARBIDE INSERTS

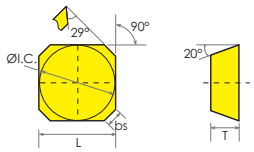
SEAN

- Square 20° positive milling insert
- Used for face mill

TiN COATED(C-5)

Item#	ASA Insert No.	ISO Insert No.	bs	(Inch) I.C.	T
6016-0040	SEAN-42AFN	SEAN1203AFN	.071	.500	1/8
6016-0042	SEAN-42AFTN	SEAN1203AFTN	.071	.500	1/8
6016-0043	SEAN-43AFN	SEAN1204AFN	.071	.500	3/16





10 PC PER PACKAGE

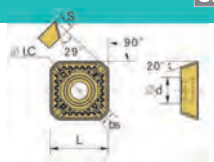
SEET/DR CARBIDE INSERT

SEET-DR

DR - Used for roughing of material. It can achieve a high rate of metal removal & a low cutting force .

Item#	ASA Insert No.	ISO Insert No.	I.C.	bs	S	Grade
6016-0123	SEET-42-AFER	SEET12T3-DR	.500"	.071"	.157"	XAB699





10 PC PER PACKAGE

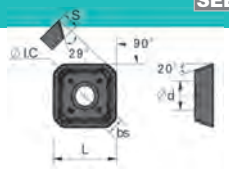
SEET/DM CARBIDE INSERT

SEET-DM

DM - Widely used chip-breaker is used for semi-finishing and finishing of steel and stainless steel

Item#	ASA Insert No.	ISO Insert No.	I.C.	bs	S	Grade
6016-1123	SEET-42-AFEM	SEET12T3-DM	.500"	.071"	.157"	XAB698





10 PC PER PACKAGE

SEHT CARBIDE FACE MILL INSERT

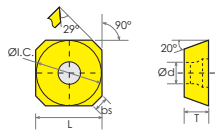
SEHT

- 20° positive single sided chip breaker
- Wiper flat parallel land.
- 4 cutting edges

TiN COATED(C-6)

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	bs	T	d
6017-0432	SEHT120408	SEHT-432	1/2"	1/2"	.071"	3/16"	13/64"





10 PC PER PACKAGE

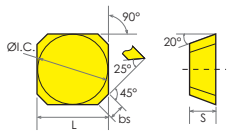
SEKN/AFTN CARBIDE FACE MILL INSERTS

SEKN

- Without chip breaker
- Medium milling aplications.
- 20° relief angle

Item#	Insert No.	I.C.	L	bs	S	Grade
6010-0002	SEKN-1203AFTN	1/2"	1/2"	.094"	1/8"	XAL749
6010-0012	SEKN-1204AFTN	1/2"	1/2"	.094"	3/16"	XAL649
6010-0006	SEKN-1504AFTN	5/8"	5/8"	.094"	3/16"	XAL749



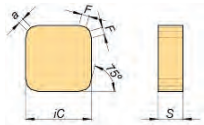


10 PC PER PACKAGE

SNKN CARBIDE FACE MILL INSERTS

SNKN

Item#	Insert No.	I.C.	F	a	S	Grade
6010-1003	SNKN-1204ENN	1/2"	0.059"	0.035"	3/16"	XAB699
6010-1006	SNKN-1504ENN	5/8"	0.059"	0.035"	3/16"	XAB699



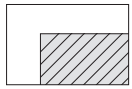


10 PC PER PACKAGE

SNMA SQUARE - NEGATIVE RAKE CARBIDE INSERTS WITH HOLE

SNMA

- Square without chip breaker.
- 0° relief angle.
- Double sided.

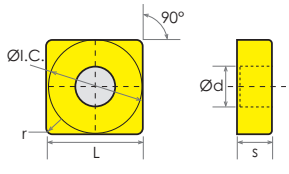


Limited Supply!



10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6001-8432	SNMA-432	SNMA120408	1/2	1/2	3/16	13/64	.0315	XAC849
6001-8433	SNMA-433	SNMA120412	1/2	1/2	3/16	13/64	.0472	XAC849
6001-8542	SNMA-542	SNMA150608	5/8	5/8	1/4	1/4	.0315	XAC849
6001-8643	SNMA-643	SNMA190612	3/4	3/4	1/4	5/16	.0472	XAC849
6001-8644	SNMA-644	SNMA190616	3/4	3/4	1/4	5/16	.0630	XAC849



For Grade & Breaker Information Page 130

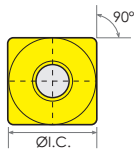
SNMG TiN (C5) CARBIDE FACE MILL INSERTS

SNMG

- Square with chip breaker
- 0° relief angle
- Double sided cutting edges.
- Used for a wide range of materials and aplications.

TiN COATED(C-5)

Item#	ASA Insert No.	ISO Insert No.	(Inch) I.C.	T
6001-0322	SNMG-322	SNMG090308	3/8	1/8
6001-0432	SNMG-432	SNMG120408	1/2	3/16
6001-0433	SNMG-433	SNMG120412	1/2	3/16
6001-0643	SNMG-643	SNMH190612	3/4	1/4



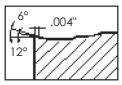


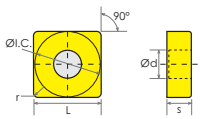
10 PC PER PACKAGE

SNMG/DF SQUARE-NEGATIVE RAKE CARBIDE INSERTS

SNMG-DF

DF - For Steel Finishing







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	S	d	r	Grade
6001-4432	SNMG-432-DF	SNMG120408DF	1/2"	1/2"	3/16"	13/64"	.0315"	XAB749
6001-4433	SNMG-433-DF	SNMG120412DF	1/2"	1/2"	3/16"	13/64"	.0472"	XAB749

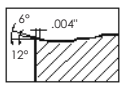
SNMG/DF BLACK DIAMOND COATED CARBIDE INSERTS

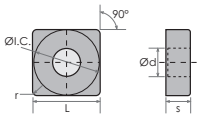
SNMG-DF

DF - For Steel Finishing

TiCNAI COATED

Limited Supply!







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	S	d	r	Grade
6035-1432	SNMG-432-DF	SNMG120408DF	1/2"	1/2"	3/16"	13/64"	.0315"	XAB848
6035-1433	SNMG-433-DF	SNMG120412DF	1/2"	1/2"	3/16"	13/64"	.0472"	XAB848

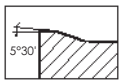
SNMG/DM SQUARE-NEGATIVE RAKE CARBIDE INSERTS

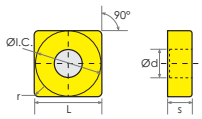
SNMG-DM

DM - For Steel Medium Machining

DM - Widely used chip-breaker is used for semi-finishing and finishing of steel and stainless steel

Limited Supply!







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6001-5322	SNMG-322-DM	SNMG090308DM	3/8	3/8	1/8	0.15	.0315	XAB749
6001-5432	SNMG-432-DM	SNMG120408DM	1/2	1/2	3/16	13/64	.0315	XAB749
6001-5433	SNMG-433-DM	SNMG120412DM	1/2	1/2	3/16	13/64	.0472	XAB749
6001-5543	SNMG-543-DM	SNMG150612DM	5/8	5/8	1/4	1/4	.0472	XAB749
6001-5643	SNMG-643-DM	SNMG190612DM	3/4	3/4	1/4	5/16	.0472	XAB749
6001-5644	SNMG-644-DM	SNMG190616DM	3/4	3/4	1/4	5/16	.0630	XAB749

SNMG/DM BLACK DIAMOND COATED CARBIDE INSERTS

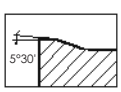
SNMG-DM

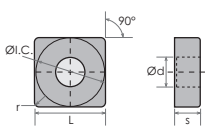
DM - For Steel Medium Machining

DM - Widely used chip-breaker is used for semi-finishing and finishing of steel and stainless steel

Limited Supply!

TiCNAI COATED







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6035-0322	SNMG-322-DM	SNMG090308DM	3/8	3/8	1/8	0.15	.0315	XAB748
6035-0432	SNMG-432-DM	SNMG120408DM	1/2	1/2	3/16	13/64	.0315	XAB748
6035-0543	SNMG-543-DM	SNMG150612DM	5/8	5/8	1/4	1/4	.0472	XAB748
6035-0643	SNMG-643-DM	SNMG190612DM	3/4	3/4	1/4	5/16	.0472	XAB748
6035-0644	SNMG-644-DM	SNMG190616DM	3/4	3/4	1/4	5/16	.0630	XAB748

For Grade & Breaker Information Page 130

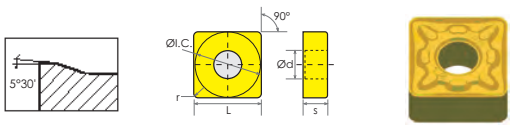
SNMG/DR SQUARE - NEGATIVE RAKE CARBIDE INSERTS

SNMG-DR

DR- For Light Roughing of Steel, Stainless Steel Material

DR - Single-side chipbreaker with M-class tolerance has high security on cutting edge for higher removal rates and low cutting force at large cutting depth and high feed rates.

Limited Supply!



10 PC PER PACKAGE

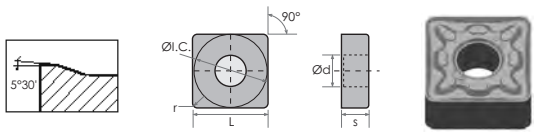
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6049-1432	SNMG-432-DR	SNMG120408DR	1/2	1/2	3/16	13/64	.0315	XAB748
6049-1433	SNMG-433-DR	SNMG120412DR	1/2	1/2	3/16	13/64	.0472	XAB748
6049-1543	SNMG-543-DR	SNMG150612DR	5/8	5/8	1/4	1/4	.0472	XAB748
6049-1544	SNMG-544-DR	SNMG150616DR	5/8	5/8	1/4	1/4	.0630	XAB748
6049-1644	SNMG-644-DR	SNMG190616DR	3/4	3/4	1/4	5/16	.0630	XAB748

SNMG/EF CARBIDE INSERTS

SNMG-EF

EF - For Stainless Steel, Highly Adhesive and Plastic Materials

EF Chip-Breaker specially designed rake angle and an inclined edge angle for machining stainless steel. The edges are sharp making the cutting light and smooth, getting good control of the chips and obtaining a good surface quality, which makes it most suitable for ultra fine and fine machining of highly adhesive and plastic materials.



10 PC PER PACKAGE

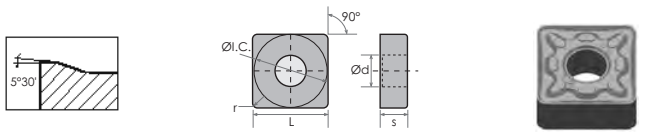
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6035-5322	SNMG-322-EF	SNMG090308EF	3/8	3/8	1/8	0.15	.0315	XAF798
6035-5432	SNMG-432-EF	SNMG120408EF	1/2	1/2	3/16	13/64	.0315	XAF798
6035-5543	SNMG-543-EF	SNMG150612EF	5/8	5/8	1/4	1/4	.0472	XAF798

SNMG/EM SQUARE - NEGATIVE RAKE CARBIDE INSERTS

SNMG-EM

EM - Semi-Finishing Geometry. Stainless Steel Material

EM - Double-side chipbreaker with M-class tolerance serves to reduce cutting force and workpiece adhesion when machining stainless steel. Possesses higher feed and depth of cut capability than EF chipbreaker.



10 PC PER PACKAGE

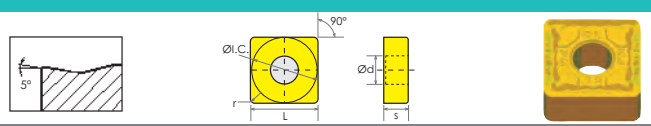
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6049-0432	SNMG-432-EM	SNMG120408EM	1/2	1/2	3/16	13/64	.0315	XAF798
6049-0433	SNMG-433-EM	SNMG120412EM	1/2	1/2	3/16	13/64	.0472	XAF798
6049-0543	SNMG-543-EM	SNMG150612EM	5/8	5/8	1/4	1/4	.0472	XAF798

SNMG/PM SQUARE - NEGATIVE RAKE CARBIDE INSERTS

SNMG-PM

PM - Suitable for Mixed Production

PM - With stronger cutting edge, it is better for intermittent cutting than -DM, with wider cutting zone of steel materials



10 PC PER PACKAGE

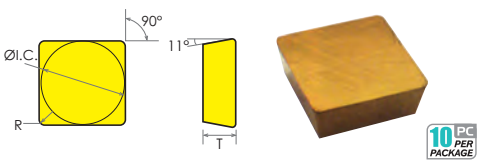
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6001-6322	SNMG-322-PM	SNMG090308PM	3/8	3/8	1/8	0.15	.0315	XAB749
6001-6432	SNMG-432-PM	SNMG120408PM	1/2	1/2	3/16	13/64	.0315	XAB749
6001-6433	SNMG-433-PM	SNMG120412PM	1/2	1/2	3/16	13/64	.0472	XAB749
6001-6434	SNMG-434-PM	SNMG120416PM	1/2	1/2	3/16	13/64	.0630	XAB749
6001-6543	SNMG-543-PM	SNMG150612PM	5/8	5/8	1/4	1/4	.0472	XAB749
6001-6643	SNMG-643-PM	SNMG190612PM	3/4	3/4	1/4	5/16	.0472	XAB749

SPG CARBIDE INSERTS

SPG

TiN Coated(C-6)

C-6 for all steel and general purpose
TiN Coated for high heat & wear resistance on alloys, stainless steel & ductile iron



10 PC PER PACKAGE

Item#	Insert No.	I.C.	(Inch) T	R
6021-2322	SPG-322	3/8	1/8	1/32
6021-2422	SPG-422	1/2	1/8	1/32
6021-2432	SPG-432	1/2	3/16	1/32
6021-2533	SPG-533	5/8	3/16	3/64
6021-2633	SPG-633	3/4	3/16	3/64

For Grade & Breaker Information Page 130

SPGH CARBIDE FACE MILL INSERTS

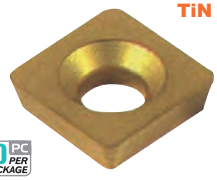
SPGH

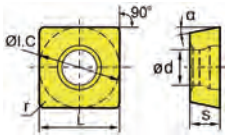
- For difficult to machine material,long or thin wallet parts.
- Screw on style.
- Single sided with chip breaker.
- -11° relief.

TiN COATED(C-5)

NEW

Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) S	d	r
6018-1322	SPGH-322	SPGH090308	3/8	1/8	0.156	.0312
6018-1432	SPGH-432	SPGH120408	1/2	1/8	0.215	.0312
6018-1433	SPGH-433	SPGH120412	1/2	3/16	0.215	.0469





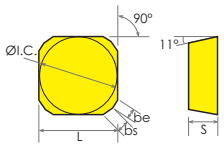
10 PC PER PACKAGE

SPKN/ED CARBIDE FACE MILL INSERTS

SPKN

Used for milling
11° relief angle





10 PC PER PACKAGE

Item#	Insert No.	Feeding Direction	I.C.	L	(Inch) bs	be	s	Grade
6010-2003	SPKN-1203EDL	Left	1/2	1/2	0.055	0.039	1/8	XAB699
6010-2004	SPKN-1203EDR	Right	1/2	1/2	0.055	0.039	1/8	XAB699
6010-2009	SPKN-1504EDL	Left	5/8	5/8	0.055	0.039	3/16	XAB699
6010-2010	SPKN-1504EDR	Right	5/8	5/8	0.055	0.039	3/16	XAB699

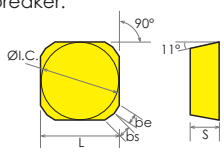
SPMR CARBIDE INSERT

SPMR

- Screw on style.
- Single sided with chip breaker.
- -11° relief.

Limited Supply!





Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	r	Grade
6004-5321	SPMR-321	SPMR090304	3/8	3/8	1/8	.0156	XAB749
6004-5322	SPMR-322	SPMR090308	3/8	3/8	1/8	.031	XAB749
6004-5421	SPMR-421	SPMR120304	1/2	1/2	1/8	.0156	XAB749
6004-5422	SPMR-422	SPMR120308	1/2	1/2	1/8	.031	XAB749

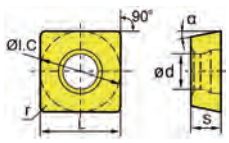
SPMT CARBIDE INSERT

SPMT

NEW

- Screw on style.
- Single sided with chip breaker.
- -11° relief.

Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) S	d	r	Grade
6018-3251	SPMT32.51	SPMT09T304	3/8	5/32	0.173	0.0156	TiN
6018-3252	SPMT32.52	SPMT09T308	3/8	5/32	0.173	0.031	TiN
6018-3432	SPMT432	SPMT120408	1/2	3/16	0.216	0.031	XAF698



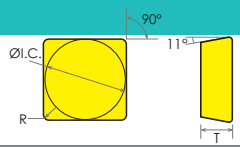


SPU CARBIDE INSERTS

SPU

C-2 for cast iron and general purpose,
C-6 for all steel and general purpose
TiN Coated for high heat & wear resistance on alloys, stainless steel & ductile iron

*Limited Supply





10 PC PER PACKAGE

Insert No.	I.C.	T	R	C-2 Item#	C-6 Item#	TiN Coated(C-6) Item#
SPU-322	3/8"	1/8"	1/32"	--------	-------	6022-2322
SPU-422	1/2"	1/8"	1/32"	--------	6022-1422	6022-2422
SPU-633	3/4"	3/16"	3/64"	6022-0633*	6022-1633	6022-2633

TCMT TiN (C6) TRIANGLE - POSITIVE RAKE CARBIDE INSERTS

TCMT

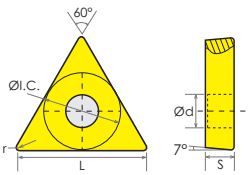
- Single sided for semi-finishing.
- 7° relief angle
- Triangle with chipbreaker.

TiN COATED (C-6)



10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r
6004-9020	TCMT-1.8(1.5)	TCMT090204	0.219	0.378	0.094	0.098	0.016
6004-9021	TCMT-21.51	TCMT110204	1/4	7/16	3/32	7/64	.0157
6004-9022	TCMT-21.52	TCMT110208	1/4	7/16	3/32	7/64	.0315
6004-9031	TCMT-32.51	TCMT16T304	3/8	5/8	5/32	0.17	.0157
6004-9032	TCMT-32.52	TCMT16T308	3/8	5/8	5/32	0.17	.0315
6004-6141	TCMT-431	TCMT220404	1/2	7/8	3/16	0.22	.0157
6004-6142	TCMT-432	TCMT220408	1/2	7/8	3/16	0.22	.0315



For Grade & Breaker Information Page 130

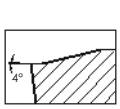
TCMT/HF TRIANGLE - POSITIVE RAKE CARBIDE INSERTS

TCMT-HF

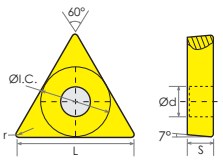
HF - Finishing Geometry. Mixed Production

HF - With sharp cutting edge, used for finishing internal holes, fine finishing of surface can be achieved with a slow feed rate.

Limited Supply!







10 PC PER PACKAGE

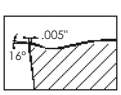
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6004-6021	TCMT-21.51-HF	TCMT110204HF	1/4	7/16	3/32	7/64	.0157	XAB849
6004-6022	TCMT-21.52-HF	TCMT110208HF	1/4	7/16	3/32	7/64	.0315	XAB849
6004-6031	TCMT-32.51-HF	TCMT16T304HF	3/8	5/8	5/32	0.17	.0157	XAB849
6004-6032	TCMT-32.52-HF	TCMT16T308HF	3/8	5/8	5/32	0.17	.0315	XAB849

TCMT/HM TRIANGLE - POSITIVE RAKE CARBIDE INSERTS

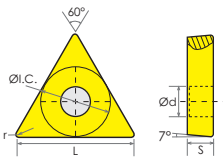
TCMT-HM

HM - Medium Geometry. Periphery Ground Insert. Mixed Production

HM - With sharp wave cutting edge to reduce cutting force, it is the first choice for semi-finishing of internal holes and allows chips to flow smoothly.







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6004-7021	TCMT-21.51-HM	TCMT110204HM	1/4	7/16	3/32	7/64	.0157	XAB749
6004-7022	TCMT-21.52-HM	TCMT110208HM	1/4	7/16	3/32	7/64	.0315	XAB749
6004-7031	TCMT-32.51-HM	TCMT16T304HM	3/8	5/8	5/32	0.17	.0157	XAB749
6004-7032	TCMT-32.52-HM	TCMT16T308HM	3/8	5/8	5/32	0.17	.0315	XAB749
6004-7033	TCMT-32.53-HM	TCMT16T312HM	3/8	5/8	5/32	0.17	.0472	XAB749

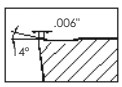
TCMT/HR TRIANGLE - POSITIVE RAKE CARBIDE INSERTS

TCMT-HR

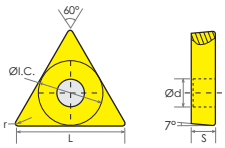
HR - Roughing Geometry. Mixed Production

HR - With tough cutting edge, used for roughing/ machining of internal holes and intermittent machining of work-piece with irregular surface.

Limited Supply!







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6004-8031	TCMT-32.51-HR	TCMT16T304HR	3/8	5/8	5/32	0.17	.0157	XAB749
6004-8032	TCMT-32.52-HR	TCMT16T308HR	3/8	5/8	5/32	0.17	.0315	XAB749
6004-8033	TCMT-32.53-HR	TCMT16T312HR	3/8	5/8	5/32	0.17	.0472	XAB749
6004-8432	TCMT-432-HR	TCMT220408HR	1/2	7/8	3/16	7/32	.0315	XAB749

TDEX 60° TRIANGLE CARBIDE INSERTS

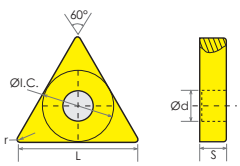
TDEX

- 60° indexiable dovetail milling cutter
- Honed edge allows for a heavier cuts.
- For special applications
- 3 cutting edges.

TiN (C5) COATED

NEW





10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	TiN Coated Grade
6062-0215	TDEX 21.5	TDEX110204	1/4	7/16	3/32	7/64	.0157	C-5
6062-0320	TDEX32	TDEX16T308	3/8	5/8	5/32	0.17	.0315	C-5
6062-0430	TDEX43	TDEX220408	1/2	7/8	3/16	0.22	.0315	C-5

For Grade & Breaker Information Page 130

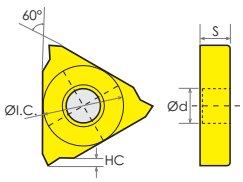
INTERNAL THREADING & GROOVING CARBIDE INSERTS-Metric Thread

Item#	Insert No.	I.C.	Screw Pitch	S	d	Grade
6006-1006	RT16.01N-1.25GM	3/8"	1.25	5/32"	0.173"	XAF799
6006-1007	RT16.01N-1.50GM	3/8"	1.50	5/32"	0.173"	XAF799
6006-1008	RT16.01N-1.75GM	3/8"	1.75	5/32"	0.173"	XAF799
6006-1009	RT16.01N-2.00GM	3/8"	2.00	5/32"	0.173"	XAF799
6006-1010	RT16.01N-2.50GM	3/8"	2.50	5/32"	0.173"	XAF799
6006-1011	RT16.01N-3.00GM	3/8"	3.00	5/32"	0.173"	XAF799

RIGHT HAND

10 PC PER PACKAGE





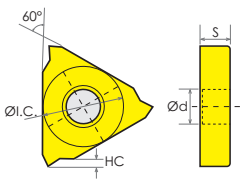
EXTERNAL THREADING & GROOVING CARBIDE INSERTS-Metric Thread

Item#	Insert No.	I.C.	Screw Pitch	S	d	Grade
6006-3006	RT16.0W-1.25GM	3/8"	1.25	5/32"	0.173"	XAF799
6006-3007	RT16.0W-1.50GM	3/8"	1.50	5/32"	0.173"	XAF799
6006-3008	RT16.0W-1.75GM	3/8"	1.75	5/32"	0.173"	XAF799
6006-3009	RT16.0W-2.00GM	3/8"	2.00	5/32"	0.173"	XAF799
6006-3010	RT16.0W-2.50GM	3/8"	2.50	5/32"	0.173"	XAF799
6006-3011	RT16.0W-3.00GM	3/8"	3.00	5/32"	0.173"	XAF799

RIGHT HAND

10 PC PER PACKAGE





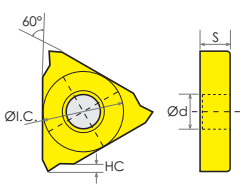
INTERNAL THREADING & GROOVING CARBIDE INSERTS-Inch Thread

Item#	Insert No.	I.C.	Screw Pitch	S	d	Grade
6006-4008	RT16.01N-8UN	3/8"	8 TPI	5/32"	0.173"	XAF799
6006-4010	RT16.01N-10UN	3/8"	10TPI	5/32"	0.173"	XAF799
6006-4012	RT16.01N-12UN	3/8"	12 TPI	5/32"	0.173"	XAF799
6006-4014	RT16.01N-14UN	3/8"	14 TPI	5/32"	0.173"	XAF799
6006-4016	RT16.01N-16UN	3/8"	16 TPI	5/32"	0.173"	XAF799
6006-4018	RT16.01N-18UN	3/8"	18 TPI	5/32"	0.173"	XAF799
6006-4020	RT16.01N-20UN	3/8"	20 TPI	5/32"	0.173"	XAF799

RIGHT HAND

10 PC PER PACKAGE





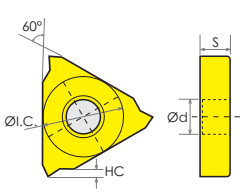
EXTERNAL THREADING & GROOVING CARBIDE INSERTS-Inch Thread

Item#	Insert No.	I.C.	Screw Pitch	S	d	Grade
6006-4108	RT16.01N-8UN	3/8"	8 TPI	5/32"	0.173"	XAF799
6006-4110	RT16.01N-10UN	3/8"	10TPI	5/32"	0.173"	XAF799
6006-4112	RT16.01N-12UN	3/8"	12 TPI	5/32"	0.173"	XAF799
6006-4114	RT16.01N-14UN	3/8"	14 TPI	5/32"	0.173"	XAF799
6006-4116	RT16.01N-16UN	3/8"	16 TPI	5/32"	0.173"	XAF799
6006-4118	RT16.01N-18UN	3/8"	18 TPI	5/32"	0.173"	XAF799
6006-4120	RT16.01N-20UN	3/8"	20 TPI	5/32"	0.173"	XAF799

RIGHT HAND

10 PC PER PACKAGE



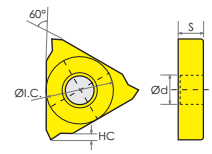


INTERNAL (NPT) THREADING CARBIDE INSERTS-Pipe Thread

Item#	Insert No.	I.C.	Screw Pitch	S	d	Grade
6006-6008	RT16.001N-8NPT	.375"	8 TPI	.156"	0.173"	TiN(C6)
6006-6011	RT16.001N-11.5NPT	.375"	11.5 TPI	.156"	0.173"	XAF799
6006-6014	RT16.001N-14NPT	.375"	14 TPI	.156"	0.173"	XAF799
6006-6018	RT16.001N-18NPT	.375"	18 TPI	.156"	0.173"	XAF799
6006-6027	RT16.001N-27NPT	.375"	27 TPI	.156"	0.173"	XAF799

RIGHT HAND

10 PC PER PACKAGE



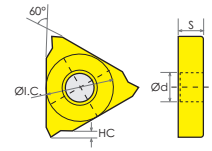


EXTERNAL (NPT) THREAD CARBIDE INSERTS-Pipe Thread

Item#	Insert No.	I.C.	Screw Pitch	S	d	Grade
6006-6108	RT16.001W-8NPT	.375"	8 TPI	.156"	0.173"	TiN(C6)
6006-6111	RT16.001W-11.5NPT	.375"	11.5 TPI	.156"	0.173"	XAF799
6006-6114	RT16.001W-14NPT	.375"	14 TPI	.156"	0.173"	XAF799
6006-6118	RT16.001W-18NPT	.375"	18 TPI	.156"	0.173"	XAF799
6006-6127	RT16.001W-27NPT	.375"	27 TPI	.156"	0.173"	XAF799

RIGHT HAND

10 PC PER PACKAGE





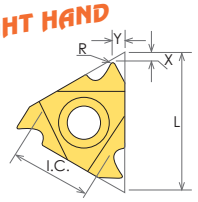
For Grade & Breaker Information Page 130

THREAD CARBIDE INSERTS/PARTIAL PROFILE 60°

NEW

- 60° V partial profile threading insert.
- Right hand cut.

RIGHT HAND



TiN COATED



10 PC PER PACKAGE

Item#	Insert	I.C.	Pitch Range mm	Pitch Range TPI	L (in)	R (in)	X (in)	Y (in)
6061-0156	06IRA60	.156"	0.5-1.25	48-20	.236	.002	.020	.024
6061-0187	08IRA60	.188"	0.5-1.5	48-16	.315	.002	.024	.028
6007-0008	11IRA60	1/4"	0.5~1.5	48~16	.435	.003	.031	.035
6007-0015	16IRAG60	3/8"	0.5~3.0	48~8	.630	.003	.047	.035
6007-0018	22IRN60	1/2"	3.5~5.0	5~7	.866	.010	.067	.098
6007-0002	06ERA60	.156"	0.5-1.25	48-20	.236	.002	.020	.024
6007-0001	08ERA60	.197"	0.5~1.5	48~16	.315	.002	.024	.028
6007-0004	11ERA60	1/4"	0.5~1.5	48~16	.435	.003	.031	.035
6007-0012	16ERAG60	3/8"	0.5~3.0	48~8	.630	.003	.047	.035
6007-0020	22ERN60	1/2"	3.5~5.0	5~7	.866	.016	.067	.098

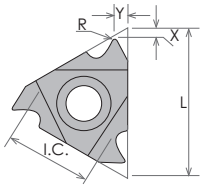
UN-60° INTERNAL THREADING & GROOVING CARBIDE INSERTS

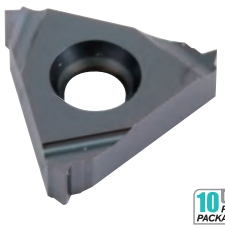
NEW

- UN-60° full profile threading insert.
- Tolerance Class: 2A/2B
- TiALN (TP04) coated .

TiALN COATED

RIGHT HAND





10 PC PER PACKAGE

Item#	Insert	I.C.	Screw Pitch TPI	L (in)	X (in)	Y (in)	Thick (in)
6006-4502	11NR-16UN	1/4	16	.433	.035	.043	.126
6006-4504	11NR-18UN	1/4	18	.433	.031	.039	.126
6006-4508	16NR-8UN	3/8	8	.630	.047	.079	.143
6006-4510	16NR-10UN	3/8	10	.630	.043	.059	.143
6006-4511	16NR-11UN	3/8	11	.630	.043	.059	.143
6006-4512	16NR-12UN	3/8	12	.630	.043	.055	.143
6006-4513	16NR-13UN	3/8	13	.630	.039	.051	.143
6006-4514	16NR-14UN	3/8	14	.630	.039	.047	.143
6006-4516	16NR-16UN	3/8	16	.630	.035	.043	.143
6006-4518	16NR-18UN	3/8	18	.630	.031	.039	.143
6006-4524	16NR-24UN	3/8	24	.630	.028	.031	.143
6006-4528	16NR-28UN	3/8	28	.630	.024	.024	.143

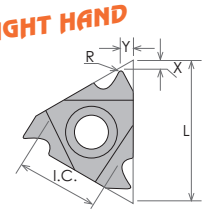
UN-60° EXTERNAL THREADING & GROOVING CARBIDE INSERTS

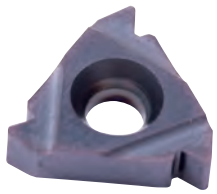
NEW

- UN-60° full profile threading insert.
- Tolerance Class: 2A/2B
- TiALN (TP04) coated .

TiALN COATED

RIGHT HAND





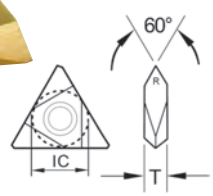
10 PC PER PACKAGE

Item#	Insert	I.C.	Screw Pitch TPI	L (in)	X (in)	Y (in)	Thick (in)
6006-4609	16ER-9UN	3/8	9	.630	.047	.067	.143
6006-4610	16ER-10UN	3/8	10	.630	.043	.059	.143
6006-4611	16ER-11UN	3/8	11	.630	.043	.059	.143
6006-4612	16ER-12UN	3/8	12	.630	.043	.055	.143
6006-4613	16ER-13UN	3/8	13	.630	.043	.051	.143
6006-4614	16ER-14UN	3/8	14	.630	.039	.047	.143
6006-4618	16ER-18UN	3/8	18	.630	.031	.039	.143
6006-4620	16ER-20UN	3/8	20	.630	.031	.035	.143
6006-4624	16ER-24UN	3/8	24	.630	.028	.031	.143
6006-4628	16ER-28UN	3/8	28	.630	.024	.028	.143
6006-4632	16ER-32UN	3/8	32	.630	.024	.024	.143

TNMA THREADING CARBIDE INSERTS 0-Degree Rake, Precision Ground

- 60° "V"-threading.
- 0° Rake angle.
- Cylindrical thru hole.





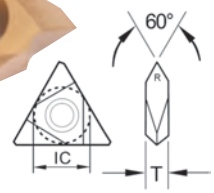
10 PC PER PACKAGE

Item#	Insert No.	I.C.	Pitch	Radiu R	Thread Degree	Thick T	Hole d	Grade C6
6043-0375	TNMA-32NV	3/8	8 TPI Max.	.003~.005	60	.125"	.150"	TiN
6043-0500	TNMA-43NV	1/2	6 TPI Max.	.005~.008	60	.187"	.202"	TiN
6043-0005	TNMA-43NV	1/2	6 TPI Max.	.005~.008	60	.187"	.202"	Uncoated

TPMC THREADING INSERTS 10-Degree Rake, Precision Ground

- 60° "V"-threading.
- 10° Rake angle.
- Double countersink thru hole.
- TiN coated.





10 PC PER PACKAGE

Item#	Insert No.	I.C.	Pitch	Radiu R	Thread Degree	Groove Width
6043-1375	TPMC-32NV	3/8	8 TPI Max.	.003~.005	60	.125"
6043-1500	TPMC-43NV	1/2	6 TPI Max.	.005~.008	60	.187"
6043-1625	TPMC-54NV	5/8	4 TPI Max.	.005~.008	60	.250"

For Grade & Breaker Information Page 130

TNMC GROOVING CARBIDE INSERTS

TNMC

- Right hand on two sides.
- Neutral rake angle.
- Double countersink thu hole.
- TiN coated.

TiN Coated **Limited Supply!**



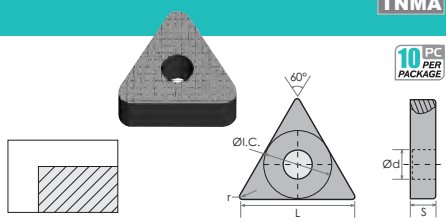
Item#	Insert No.	Pitch	I.C. (In)	Pitch	Groove Width (In)	Groove Depth (In)
6043-0632	TNMC-32NGR031	8 TPI Max.	0.375	8 TPI Max.	.031	.075
6043-0633	TNMC-32NGR062	8 TPI Max.	0.375	8 TPI Max.	.062	.150
6043-0634	TNMC-32NGR094	8 TPI Max.	0.375	8 TPI Max.	.094	.150
6043-0635	TNMC-32NGR125	8 TPI Max.	0.375	8 TPI Max.	.125	.150
6043-0643	TNMC-43NGR062	6 TPI Max.	0.500	6 TPI Max.	.062	.125
6043-0644	TNMC-43NGR094	6 TPI Max.	0.500	6 TPI Max.	.094	.150
6043-0645	TNMC-43NGR125	6 TPI Max.	0.500	6 TPI Max.	.125	.210
6043-0646	TNMC-43NGR156	6 TPI Max.	0.500	6 TPI Max.	.156	.210
6043-0647	TNMC-43NGR187	6 TPI Max.	0.500	6 TPI Max.	.187	.210
6043-0654	TNMC-54NGR250	4 TPI Max.	0.625	4 TPI Max.	.250	.210

TNMA TRIANGLE - NEGATIVE RAKE CARBIDE INSERTS

TNMA

11° Relief Angle, Flat Top Insert

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6002-6332	TNMA-332	TNMA160408	3/8	5/8	3/16	0.15	.0315	XAC849
6002-6333	TNMA-333	TNMA160412	3/8	5/8	3/16	0.15	.0472	XAC849
6002-6432	TNMA-432	TNMA220408	1/2	7/8	3/16	13/64	.0315	XAC849



10 PC PER PACKAGE

TNMA TRIANGLE - NEGATIVE RAKE CARBIDE INSERTS

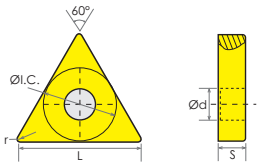
TNMG

- Triangle with chipbreaker
- 0° relief angle

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r
6002-0001	TNMG-221	TNMG110304	1/4	7/16	1/8	.093	.0157
6002-0002	TNMG-222	TNMG110308	1/4	7/16	1/8	.093	.0315
6002-0011	TNMG-321	TNMG160404	3/8	5/8	1/8	0.15	.0157
6002-0012	TNMG-322	TNMG160408	3/8	5/8	1/8	0.15	.0315
6002-0013*	TNMG-323	TNMG160412	3/8	5/8	1/8	0.15	.0472
6002-0021	TNMG-431	TNMG220404	1/2	7/8	3/16	13/64	.0157
6002-0022	TNMG-432	TNMG220408	1/2	7/8	3/16	13/64	.0315
6002-0023	TNMG-433	TNMG220412	1/2	7/8	3/16	13/64	.0472
6002-0024	TNMG-434	TNMG220416	1/2	7/8	3/16	13/64	.0630

TiN (C5) COATED





10 PC PER PACKAGE

*Limited Supply

TNMG TRIANGLE - NEGATIVE RAKE CARBIDE INSERTS

TNMG

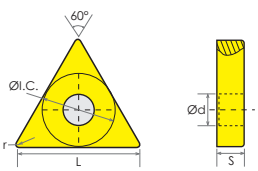
0° Relief Angle, Molded Chipbraker

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6002-3323	TNMG-323	TNMG160412	3/8	5/8	1/8	0.15	.0472	XAB749
6002-3431	TNMG-431	TNMG220404	1/2	7/8	3/16	13/64	.0157	XAB749
6002-3432	TNMG-432	TNMG220408	1/2	7/8	3/16	13/64	.0315	XAB749
6002-3433	TNMG-433	TNMG220412	1/2	7/8	3/16	13/64	.0472	XAB749
6002-3434	TNMG-434	TNMG220416	1/2	7/8	3/16	13/64	.0630	XAB749
6002-2543	TNMG-543	TNMG270612	5/8	1.08	1/4	1/4	.0472	XAB749
6002-2544	TNMG-544	TNMG270616	5/8	1.08	1/4	1/4	.0630	XAB749



Limited Supply!

10 PC PER PACKAGE



TNMG/DF TRIANGLE - NEGATIVE RAKE CARBIDE INSERTS

TNMG-DF

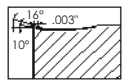
DF - For Steel Finishing

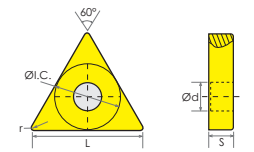
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6001-9331	TNMG-331-DF	TNMG160404DF	3/8	5/8	3/16	0.15	.0157	XAB849
6001-9332	TNMG-332-DF	TNMG160408DF	3/8	5/8	3/16	0.15	.0315	XAB849
6001-9333	TNMG-333-DF	TNMG160412DF	3/8	5/8	3/16	0.15	.0472	XAB849
6001-9432	TNMG-432-DF	TNMG220408	1/2	7/8	3/16	13/64	.0315	XAB849
6001-9433	TNMG-433-DF	TNMG220412DF	1/2	7/8	3/16	13/64	.0472	XAB849



10 PC PER PACKAGE

Limited Supply!





For Grade & Breaker Information Page 130

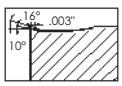
TNMG/DF BLACK DIAMOND CARBIDE INSERTS

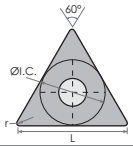
TNMG-DF

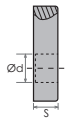
DF - For Steel Finishing

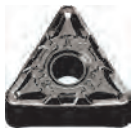
TiCNAI COATED

Limited Supply!









10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6036-0331	TNMG-331-DF	TNMG160404DF	3/8	5/8	3/16	0.15	.0157	XAB848
6036-0332	TNMG-332-DF	TNMG160408DF	3/8	5/8	3/16	0.15	.0315	XAB848
6036-0333	TNMG-333-DF	TNMG160412DF	3/8	5/8	3/16	0.15	.0472	XAB848
6036-0432	TNMG-432-DF	TNMG220408	1/2	7/8	3/16	13/64	.0315	XAB848
6036-0433	TNMG-433-DF	TNMG220412DF	1/2	7/8	3/16	13/64	.0472	XAB848

TNMG/DM BLACK DIAMOND CARBIDE INSERTS

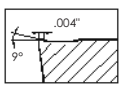
TNMG-DM

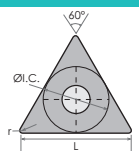
DM - For Steel Medium Machining

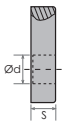
TiCNAI COATED

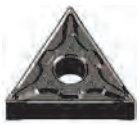
DM - Widely used chipbreaker is used for semi-finishing and finishing of steel and stainless steel.

*Limited Supply









10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6036-1222	TNMG-222-DM	TNMG110308DM	1/4	7/16	1/8	0.09	.0157	XAB748
6036-1331	TNMG-331-DM	TNMG160404DM	3/8	5/8	3/16	0.15	.0157	XAB748
6036-1332	TNMG-332-DM	TNMG160408DM	3/8	5/8	3/16	0.15	.0315	XAB748
6036-1333*	TNMG-333-DM	TNMG160412DM	3/8	5/8	3/16	0.15	.0472	XAB748
6036-1431*	TNMG-431-DM	TNMG220404DM	1/2	7/8	3/16	13/64	.0157	XAB748
6036-1432	TNMG-432-DM	TNMG220408DM	1/2	7/8	3/16	13/64	.0315	XAB748
6036-1433	TNMG-433-DM	TNMG220412DM	1/2	7/8	3/16	13/64	.0472	XAB748
6036-1434	TNMG-434-DM	TNMG220416DM	1/2	7/8	3/16	13/64	.0630	XAB748

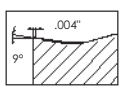
TNMG/DM TRIANGLE - NEGATIVE RAKE CARBIDE INSERTS

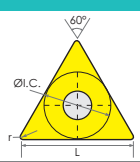
TNMG-DM

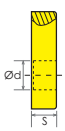
DM - For Steel Medium Machining

DM - Widely used chipbreaker is used for semi-finishing and finishing of steel and stainless steel.

Limited Supply!









10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6002-0222	TNMG-222-DM	TNMG110308DM	1/4	7/16	1/8	0.09	.0157	XAB749
6002-0331	TNMG-331-DM	TNMG160404DM	3/8	5/8	3/16	0.15	.0157	XAB749
6002-0332	TNMG-332-DM	TNMG160408DM	3/8	5/8	3/16	0.15	.0315	XAB749
6002-0333	TNMG-333-DM	TNMG160412DM	3/8	5/8	3/16	0.15	.0472	XAB749
6002-0431	TNMG-431-DM	TNMG220404DM	1/2	7/8	3/16	13/64	.0157	XAB749
6002-0432	TNMG-432-DM	TNMG220408DM	1/2	7/8	3/16	13/64	.0315	XAB749
6002-0433	TNMG-433-DM	TNMG220412DM	1/2	7/8	3/16	13/64	.0472	XAB749
6002-0434	TNMG-434-DM	TNMG220416DM	1/2	7/8	3/16	13/64	.0630	XAB749

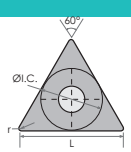
TNMG/EF - CARBIDE INSERTS

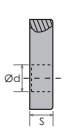
TNMG-EF

EF - For Stainless Steel, Highly Adhesive and Plastic Materials

EF Chip-Breaker specially designed rake angle and an inclined edge angle for machining stainless steel. The edges are sharp making the cutting light and smooth, getting a good control of the chips and obtaining a good surface quality, which makes it most suitable for ultra fine and fine machining of highly adhesive and plastic materials.







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6036-5331	TNMG-331-EF	TNMG160404EF	3/8	5/8	3/16	0.15	.0157	XAF798
6036-5332	TNMG-332-EF	TNMG160408EF	3/8	5/8	3/16	0.15	.0315	XAF798
6036-5333	TNMG-333-EF	TNMG160412EF	3/8	5/8	3/16	0.15	.0472	XAF798
6036-5432	TNMG-432-EF	TNMG220408EF	1/2	7/8	3/16	13/64	.0315	XAF798
6036-5433	TNMG-433-EF	TNMG220412EF	1/2	7/8	3/16	13/64	.0472	XAF798

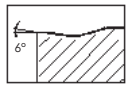
For Grade & Breaker Information Page 130

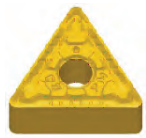
TNMG/PM TRIANGLE - NEGATIVE RAKE CARBIDE INSERTS

TNMG-PM

PM - Suitable for Mixed Production

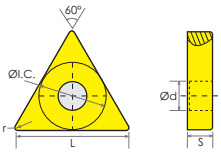
PM - With stronger cutting edge, it is better for intermittent cutting than -DM, with wider cutting zone of steel materials





10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) L	S	d	r	Grade
6002-1222	TNMG-222-PM	TNMG110308PM	1/4	7/16	1/8	0.09	.0157	XAB749
6002-1331	TNMG-331-PM	TNMG160404PM	3/8	5/8	3/16	0.15	.0157	XAB749
6002-1332	TNMG-332-PM	TNMG160408PM	3/8	5/8	3/16	0.15	.0315	XAB749
6002-1333	TNMG-333-PM	TNMG160412PM	3/8	5/8	3/16	0.15	.0472	XAB749
6002-1432	TNMG-432-PM	TNMG220408PM	1/2	7/8	3/16	13/64	.0315	XAB749
6002-1433	TNMG-433-PM	TNMG220412PM	1/2	7/8	3/16	13/64	.0472	XAB749
6002-1434	TNMG-434-PM	TNMG220416PM	1/2	7/8	3/16	13/64	.0630	XAB749



TNMG/EM TRIANGLE - NEGATIVE RAKE CARBIDE INSERTS

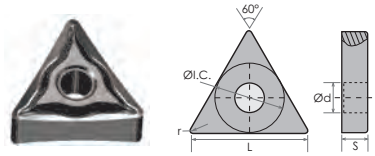
TNMG-EM

EM - Semi-Finishing Geometry. Stainless Steel Material

EM -Double-side chipbreaker with M-class tolerance serves to reduce cutting force and workpiece adhesion when machining stainless steel. Possesses higher feed and depth of cut capability than EF chipbreaker.

10 PC PER PACKAGE

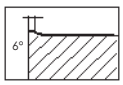
Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) L	S	d	r	Grade
6050-0331	TNMG-331-EM	TNMG160404EM	3/8	5/8	1/8	0.15	.0157	XAF795
6050-0332	TNMG-332-EM	TNMG160408EM	3/8	5/8	1/8	0.15	.0315	XAF795
6050-0432	TNMG-432-EM	TNMG220408EM	1/2	7/8	3/16	13/64	.0315	XAF795
6050-0433	TNMG-433-EM	TNMG220412EM	1/2	7/8	3/16	13/64	.0472	XAF795



TNMM TRIANGLE - NEGATIVE RAKE CARBIDE INSERTS

TNMM

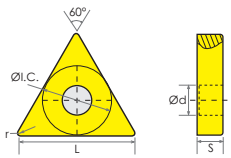
0° Relief Angle, Chipbreaker





10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) L	S	d	r	Grade
6002-5332	TNMM-332	TNMM160408	3/8	5/8	1/8	0.15	.0315	XAB749
6002-5432	TNMM-432	TNMM220408	1/2	7/8	3/16	13/64	.0315	XAB749
6002-5433	TNMM-433	TNMM220412	1/2	7/8	3/16	13/64	.0472	XAB749



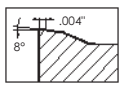
TNMM/DR TRIANGLE - NEGATIVE RAKE CARBIDE INSERTS

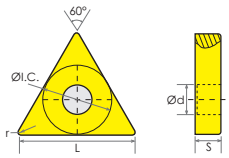
TNMM-DR

DR - For Light Roughing of Steel

DR - Special chip-breaker with high toughness cutting edge can reduce cutting force

Limited Supply!







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) L	S	d	r	Grade
6002-4432	TNMM-432-DR	TNMM220408DR	1/2	7/8	3/16	13/64	.0315	XAB649
6002-4433	TNMM-433-DR	TNMM220412DR	1/2	7/8	3/16	13/64	.0472	XAB649

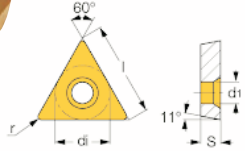
TPGB CARBIDE INSERTS 11° Positive Single Sided

TPGB

- TPGB for machinging short chip materials without chipbreaker.
- With countersunk hole.
- Fits popular boring bar & turning tool holders.

TiN COATED(C6)





10 PC PER PACKAGE

Item#	Insert No.	I.C.	Thick (In)	Hole (In)
6025-0251	TPGB-21.51	1/4"	.094	.118
6025-0252	TPGB-21.52	1/4"	.094	.118
6025-0321	TPGB-321	3/8"	.125	.125
6025-0322	TPGB-322	3/8"	.125	.125
6025-0431	TPGB-431	1/2"	.188	.220
6025-0432*	TPGB-432	1/2"	.188	.220

*Limited Supply

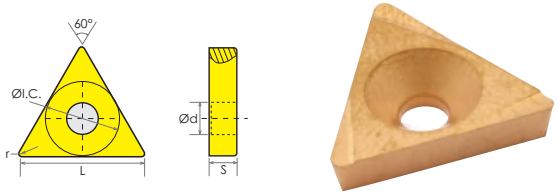
For Grade & Breaker Information Page 130

TPGC CARBIDE INSERTS, TRANGLE POSITIVE

TPGC

- Single sided with chipbreaker.
- 11° relief angle.
- Fully ground with countersink hole.
- Suitable for materials that create a short chip.

TiN (C5) COATED



10 PC PER PACKAGE

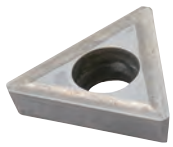
Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) T	R	Thru Hole
6025-0721	TPGC-221	TPGC110304	1/4	3/32	1/64	.118
6025-0722	TPGC-222	TPGC110308	1/4	3/32	1/32	.118
6025-0731	TPGC-321	TPGC160304	3/8	1/8	1/64	.125
6025-0732	TPGC-322	TPGC160308	3/8	1/8	1/32	.125

TPGH - POSITIVE RAKE CARBIDE INSERTS

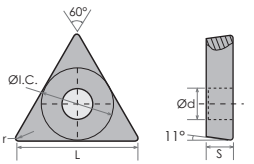
TPGH

- Single sided with chipbreaker.
- 11° relief angle.
- Suitable for turning, facing and boring.

GRADE C-2 FOR CAST IRON AND GENERAL PURPOSE
GRADE C-6 FOR ALL STEEL AND GENERAL PURPOSE



10 PC PER PACKAGE



Insert No. ASA	Insert No. ISO	I.C.	(Inch) S	r	Hole d	C-2 Item#	C-5 Item#	TiN-55 (C-6) Item#
TPGH-731	----------	7/32	3/32	1/64	.098	**6025-0010**	**2003-0010**	**2003-0020**
TPGH-21.51	TPGH110204	1/4	0.094	1/64	.110	**6025-0011**	**2003-0011**	**2003-0021**
TPGH-32.51	TPGH16T304	3/8	5/32	1/64	.173	**6025-0014**	**2003-0014**	**2003-0023**
TPGH-321	TPGH160304	3/8	1/8	1/64	.173	**---**	**6025-1321**	**6025-2321**
TPGH-322	TPGH160308	3/8	1/8	1/32	.173	**---**	**6025-1322**	**6025-2322**
TPGH-431	TPGH220404	1/2	3/16	1/64	.217	**6025-0031**	**6025-1431**	**6025-2431**
TPGH-432	TPGH220408	1/2	3/16	1/32	.217	**---**	**6025-1432**	**6025-2432**

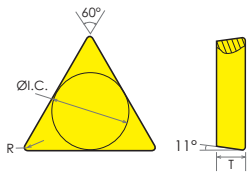
TPG - POSITIVE RAKE CARBIDE INSERTS

TPG

- Single sided without chipbreaker.
- 11° relief angle.
- Suitable for difficult to cut materials.

GRADE C-2 FOR CAST IRON AND GENERAL PURPOSE
GRADE C-6 FOR ALL STEEL AND GENERAL PURPOSE





10 PC PER PACKAGE

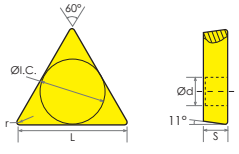
Insert No.	I.C.	(Inch) T	R	Uncoated C-2 Item#	Uncoated C-6 Item#	TiN Coated(C-6) Item#
TPG-21.51	1/4	.094	1/64	**---**	**---**	**6020-1121**
TPG-221	1/4	1/8	1/64	**6020-2221**	**6020-0221**	**6020-1221**
TPG-222	1/4	1/8	1/32	**6020-2222**	**6020-0222**	**6020-1222**
TPG-223	1/4	1/8	3/64	**6020-2223**	**6020-0223**	**6020-1223**
TPG-32.51	3/8	5/32	1/64	**----**	**----**	**6020-1122**
TPG-321	3/8	1/8	1/64	**6020-2321**	**6020-0321**	**6020-1321**
TPG-322	3/8	1/8	1/32	**6020-2322**	**6020-0322**	**6020-1322**
TPG-323	3/8	1/8	3/64	**6020-2323**	**6020-0323**	**6020-1323**
TPG-324	3/8	1/8	1/16	**6020-2324**	**6020-0324**	**6020-1324**
TPG-431	1/2	3/16	1/64	**6020-2431**	**6020-0431**	**6020-1431**
TPG-432	1/2	3/16	1/32	**6020-2432**	**6020-0432**	**6020-1432**
TPG-433	1/2	3/16	3/64	**6020-2433**	**6020-0433**	**6020-1433**
TPG-434	1/2	3/16	1/16	**6020-2434**	**6020-0434**	**6020-1434**

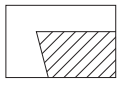
TPGN - POSITIVE RAKE CARBIDE INSERTS

TPGN



- Single sided without chipbreaker.
- 11° relief angle.





10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	r	Grade
6004-9221	TPGN-221	TPGN110304	1/4	7/16	1/8	.0157	XAB849
6004-9222	TPGN-222	TPGN110308	1/4	7/16	1/8	.0315	XAB849
6004-9332	TPGN-332	TPGN16408	3/8	15/32	5/32	.0315	XAB849
6004-9432	TPGN-432	TPGN220408	1/2	1/2	3/16	.0315	XAB849
6004-9433	TPGN-433	TPGN220412	1/2	1/2	3/16	.0472	XAB849
6004-9434	TPGN-434	TPGN220416	1/2	1/2	3/16	.0630	XAB849

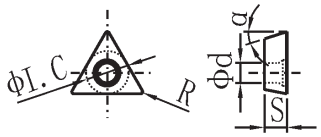
For Grade & Breaker Information Page 130

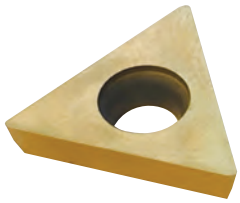
TPGW CARBIDE INSERT 11° Positive Single Sided

TPGW

- 11° clearance angle.
- Positive insert shape.
- Screw on style.
- Fits many popular boring bar & turning tool holders.
- For machining short chip materials without a chipbreaker.

TiN (C6) coated





NEW

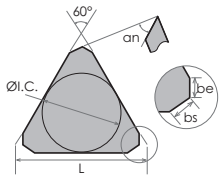
10 PC PER PACKAGE

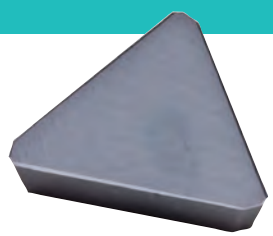
Item#	ASA Insert No.	ISO Insert No.	I.C.	Thickness S	(Inch) Corner Radius R	Hole Size d	Grade
6025-2152	TPGW-21.52	TPGW110208	0.250	.093	.0315	0.110	TiN(C6)
6025-0222	TPGW-222	TPGW110308	0.250	.125	.0315	0.110	TiN(C6)
6025-3321	TPGW-321	TPGW160304	0.375"	.125	.0157	0.173	TiN(C6)
6025-3322	TPGW-322	TPGW160308	0.375"	.125	.0315	0.173	TiN(C6)
6025-4432	TPGW-432	TPGW220408	0.500"	.187	.0315	0.217	TiN(C6)

TPKN CARBIDE MILL INSERTS

TPKN

11° Relief Angle. Milling Insert





10 PC PER PACKAGE

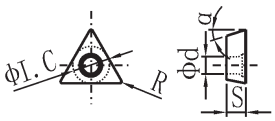
*Limited Supply

Item#	Insert No.	I.C.	L	bs	be	an	S	Grade
6010-5003	TPKN-1603PDR	3/8"	5/8"	0.047"	0.039"	15°	1/8"	XB970R
6010-5006	TPKN-1603PPR	3/8"	5/8"	0.047"	0.039"	11°	1/8"	XB970R
6010-5010*	TPKN-2204PDL	1/2"	7/8"	0.055"	0.028"	15°	3/16"	XB970R
6010-5011	TPKN-2204PDR	1/2"	7/8"	0.055"	0.028"	15°	3/16"	XB970R

TT/TPMM- POSITIVE RAKE CARBIDE INSERTS

TT/TPMM

- Single sided with chipbreaker.
- 11° relief angle.
- Suitable for turning, facing and boring.





10 PC PER PACKAGE

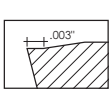
Insert No. ASA	Insert No. ISO	I.C.	(Inch) S	R	d	C-2 Item#	C-5 Item#	TiN Coated(C-6) Item#
TPMM-321	TPMM160304	3/8	1/8	1/64	.150	**6026-0321**	**6026-1321**	**6026-2321**
TPMM-322	TPMM160308	3/8	1/8	1/32	.150	**6026-0322**	**6026-1322**	**6026-2322**
TPMM-431	TPMM220404	1/2	3/16	1/64	.203	**6026-0431**	**6026-1431**	**6026-2431**
TPMM-432	TPMM220408	1/2	3/16	1/32	.203	**6026-0432**	**6026-1432**	**6026-2432**

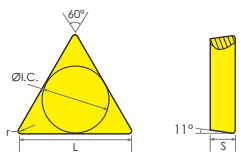
TPMR - POSITIVE RAKE CARBIDE INSERTS

TRMR

- Single sided with chipbreaker.
- 11° relief angle.
- Suitable for semi finish cuts where chip control is required.

Limited Supply!







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	r	Grade
6005-0221	TPMR-221	TPMR110304	1/4	7/16	1/8	.0157	XAB849
6005-0222	TPMR-222	TPMR110308	1/4	7/16	1/8	.0315	XAB849
6005-0321	TPMR-321	TPMR160304	3/8	5/8	1/8	.0157	XAB849
6005-0322	TPMR-322	TPMR160308	3/8	5/8	1/8	.0315	XAB849
6005-0323	TPMR-323	TPMR160312	3/8	5/8	1/8	.0472	XAB849

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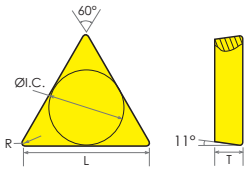
TPU CARBIDE INSERTS WITHOUT HOLE

TPU

C-6 for all steel and general purpose
TiN Coated for high heat & wear resistance on alloys, stainless steel & ductile iron

10 PC PER PACKAGE

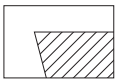


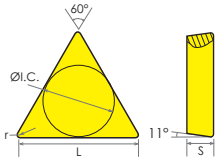


Insert No. ASA	Insert No. ISO	(Inch) I.C.	(Inch) T	(Inch) R	C-6 Item#	TiN Coated(C-6) Item#
TPU-322	TPU160308	3/8	1/8	1/32	**6023-0322**	**6023-1322**
TPU-323	TPU160312	3/8	1/8	3/64	**6023-0323**	**6023-1323**

TPUN - POSITIVE RAKE CARBIDE INSERTS WITHOUT HOLE

TPUN







10 PC PER PACKAGE

*Limited Supply

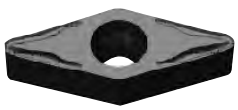
Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) L	(Inch) S	r	Grade
6005-2321	TPUN-321	TPUN160304	3/8	5/8	1/8	.0157	XAC849
6005-2322*	TPUN-322	TPUN160308	3/8	5/8	1/8	.0315	XAC849
6005-2323*	TPUN-323	TPUN160312	3/8	5/8	1/8	.0472	XAC849
6005-2432	TPUN-432	TPUN220408	1/2	7/8	3/16	.0157	XAC849
6005-2433	TPUN-433	TPUN220412	1/2	7/8	3/16	.0315	XAC849
6005-2434*	TPUN-434	TPUN220416	1/2	7/8	3/16	.0472	XAC849

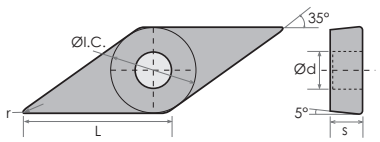
VBMT/EM 35° DIAMOND- POSITIVE RAKE CARBIDE INSERTS

VBMT-EM

EM - Semi-Finishing Geometry. Stainless Steel Material

EM - Double-side chipbreaker with M-class tolerance serves to reduce cutting force and workpiece adhesion when machining stainless steel. Possesses higher feed and depth of cut capability than EF chipbreaker.





10 PC PER PACKAGE

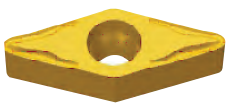
Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) L	(Inch) S	d	r	Grade
6059-0221	VBMT-0221-EM	VBMT110304EM	1/4	.017	1/8	0.11	.0157	XAF795
6059-0222	VBMT-0222-EM	VBMT110308EM	1/4	.017	1/8	0.11	.0315	XAF795

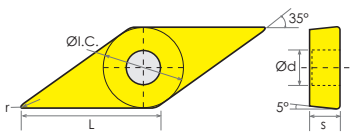
VBMT/HM 35° DIAMOND - POSITIVE RAKE CARBIDE INSERTS

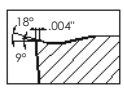
VBMT-HM

HM - Medium Geometry. Periphery Ground Insert. Mixed Production

HM - With sharp wave cutting edge to reduce cutting force, it is the first choice for semi-finishing of internal holes and allows chips to flow smoothly.







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) S	d	r	Grade
6005-2331	VBMT-331-HM	VBMT160404HM	3/8	3/16	.17	.0157	XAB749
6005-2332	VBMT-332-HM	VBMT160408HM	3/8	3/16	.17	.0315	XAB749

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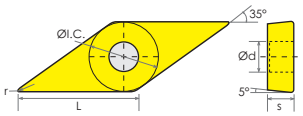
VBMT/HR 35° DIAMOND - POSITIVE RAKE CARBIDE INSERTS

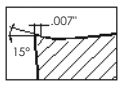
VBMT-HR

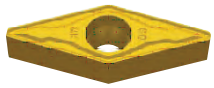
HR - Roughing Geometry. Mixed Production

HR - With tough cutting edge, used for roughing/machining of internal holes and intermittent machining of work-piece with irregular surface.

Limited Supply!







10 PC PER PACKAGE

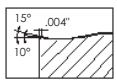
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6005-3331	VBMT-331-HR	VBMT160404HR	3/8	5/8	3/16	0.17	.0157	XAB749
6005-3332	VBMT-332-HR	VBMT160408HR	3/8	5/8	3/16	0.17	.0315	XAB749

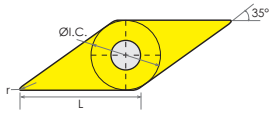
VNMG/DF 35° DIAMOND - NEGATIVE RAKE CARBIDE INSERTS

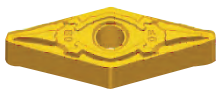
VNMG-DF

DF - For Steel Finishing

Limited Supply!







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	S	d	r	Grade
6002-7331	VNMG-331-DF	VNMG160404DF	3/8	5/8	3/16	0.15"	.0157"	XAB849
6002-7332	VNMG-332-DF	VNMG160408DF	3/8	5/8	3/16	0.15"	.0315"	XAB849

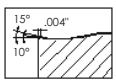
VNMG/DF 35° BLACK-DIAMOND CARBIDE INSERTS

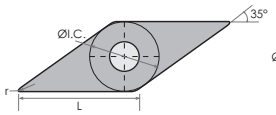
VNMG-DF

DF - For Steel Finishing

TiCNAI COATED

Limited Supply!







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	S	d	r	Grade
6038-0331	VNMG-331-DF	VNMG160404DF	3/8	5/8	3/16	0.15"	.0157"	XAB848
6038-0332	VNMG-332-DF	VNMG160408DF	3/8	5/8	3/16	0.15"	.0315"	XAB848

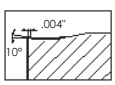
VNMG/DM 35° DIAMOND - NEGATIVE RAKE CARBIDE INSERTS

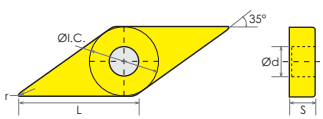
VNMG-DM

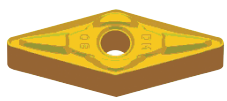
DM - For Steel Medium Machining

DM - Widely used chipbreaker is used for semi-finishing and finishing of steel and stainless steel.

Limited Supply!







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	S	d	r	Grade
6002-8332	VNMG-332-DM	VNMG160408DM	3/8	5/8	3/16	0.15"	.0315"	XAB749
6002-8333	VNMG-333-DM	VNMG160412DM	3/8	5/8	3/16	0.15"	.0472"	XAB749

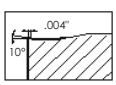
VNMG/DM 35° BLACK-DIAMOND CARBIDE INSERTS

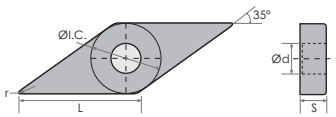
VNMG-DM

DM - For Steel Medium Machining

DM - Widely used chipbreaker is used for semi-finishing and finishing of steel and stainless steel.

TiCNAI COATED







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	S	d	r	Grade
6038-1332	VNMG-332-DM	VNMG160408DM	3/8	5/8	3/16	0.15"	.0315"	XAB748
6038-1333	VNMG-333-DM	VNMG160412DM	3/8	5/8	3/16	0.15"	.0472"	XAB748

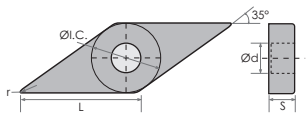
For Grade & Breaker Information Page 130

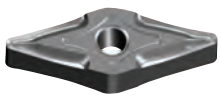
VNMG/EF 35° - CARBIDE INSERTS

VNMG-EF

EF - For Stainless Steel, Highly Adhesive and Plastic Materials

EF Chip - Breaker specially designed rake angle and an inclined edge angle for machining stainless steel. The edges are sharp making the cutting light and smooth, getting a good control of the chips and obtaining a good surface quality, which makes it most suitable for ultra fine and fine machining of highly adhesive and plastic materials.





10 PC PER PACKAGE

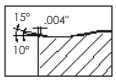
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	S	d	r	Grade
6038-5332	VNMG-332-EF	VNMG160408EF	3/8	5/8	3/16	0.15"	.0315"	XAF798
6038-5333	VNMG-333-EF	VNMG160412EF	3/8	5/8	3/16	0.15"	.0472"	XAF798

VNMG/EM 35° DIAMOND- NEGATIVE RAKE CARBIDE INSERTS

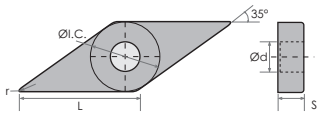
VNMG-EM

EM - Semi-Finishing Geometry. Stainless Steel Material

EM - Double-side chipbreaker with M-class tolerance serves to reduce cutting force and workpiece adhesion when machining stainless steel. Possesses higher feed and depth of cut capability than EF chipbreaker.







10 PC PER PACKAGE

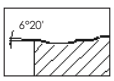
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6051-0331	VNMG-331-EM	VNMG160404EM	3/8	5/8	3/16	0.15	.0157	XAF795
6051-0332	VNMG-332-EM	VNMG160408EM	3/8	5/8	3/16	0.15	.0315	XAF795

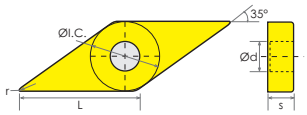
VNMG/PM 35° - CARBIDE INSERTS

VNMG-PM

PM - Suitable for Mixed Production

PM - With stronger cutting edge, it is better for intermittent cutting than -DM, with wider cutting zone of steel materials





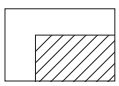


10 PC PER PACKAGE

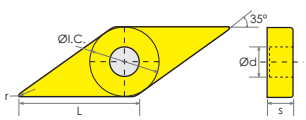
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6002-9331	VNMG-331-PM	VNMG160404PM	3/8	5/8	3/16	0.15	.0157	XAB749
6002-9332	VNMG-332-PM	VNMG160408PM	3/8	5/8	3/16	0.15	.0315	XAB749
6002-9333	VNMG-333-PM	VNMG160412PM	3/8	5/8	3/16	0.15	.0472	XAB749

VNMG-TiN-COATED - CARBIDE INSERTS

- Double sided with chipbreaker
- 35° relief angle
- Used for turning and finishing on a wide range of materials.







10 PC PER PACKAGE

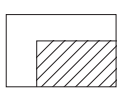
*Limited Supply

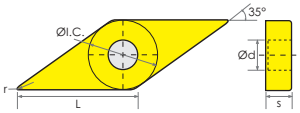
TiN (C5) COATED

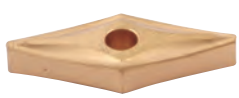
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	S	d	r	Grade
6038-6332*	VNMG-332	VNMG160408	3/8	5/8	3/16	0.15	.0157"	TiN(C-5)
6038-6432	VNMG-432	VNMG220408	1/2	7/8	3/16	13/64	.0315"	TiN(C-5)
6038-6433	VNMG-433	VNMG220412	1/2	7/8	3/16	13/64	.0472"	TiN(C-5)

VNMS-TiN(C5) - CARBIDE INSERT

- Double sided with chipbreaker
- 35° relief angle
- Used for turning and finishing on a wide range of materials.







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	S	d	r	Grade
6040-1332	VNMS-332	VNMS160408	3/8	5/8	3/16	0.15"	.0315"	TiN(C-5)

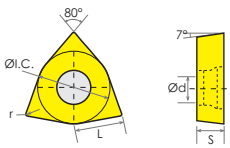
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WCMT 80° TRIGON CARBIDE DRILLING INSERTS

WCMT

- Trigon 80° drilling insert.

Positive Rake. Chipbreaker





10 PC PER PACKAGE

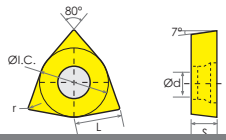
Item#	Insert No.	I.C.	L	S	d	r	Grade
2002-0130	WCMT050308	5/16"	0.21"	1/8"	.126"	.0315"	TiN(C6)
2002-0126	WCMT06T304	3/8"	0.26"	5/32"	.173"	.0157"	TiN(C6)
2002-0128	WCMT06T308	3/8"	0.26"	5/32"	.173"	.0315"	TiN(C6)

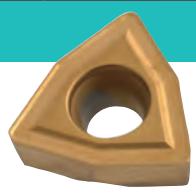
WCMX 80° TRIGON CARBIDE DRILLING INSERTS

WCMX

- Trigon 80° drilling insert.

Positive Rake. Chipbreaker





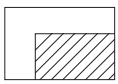
10 PC PER PACKAGE

Item#	Insert No.	I.C.	L	S	d	r	Grade
6015-0001	WCMX030208-53	7/32"	0.15"	3/32"	7/64"	.0315"	XAF799
6015-0004	WCMX040208R-53	1/4"	0.17"	3/32"	.122"	.0315"	XAF799
6015-0005	WCMX050308R-53	5/16"	0.21"	1/8"	1/8"	.0315"	XAF799
6015-0008	WCMX06T308R-53	3/8"	0.26"	5/32"	.146"	.0315"	XAF799

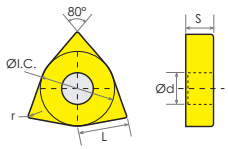
WNMA 80° TRIGON - NEGATIVE RAKE CARBIDE DRILLING INSERTS

WNMA

- Used for negative tool holders & boring bars.
- Trigon 80° drilling insert.
- No chipbreaker.
- 0° relief angle.







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	S	d	r	Grade
6003-1431	WNMA-431	WNMA080404	1/2"	0.343"	3/16"	13/64"	.0157"	XAC849
6003-1433	WNMA-433	WNMA080412	1/2"	0.343"	3/16"	13/64"	.0472"	XAC849

WNMG/DF 80° TRIGON BLACK DIAMOND COATED CARBIDE DRILLING INSERTS

WNMG-DF

DF - For Finishing Geometry. Steel Materials

DF - Double-side chipbreaker with M-class tolerance for finish machining carbon and alloy steels.

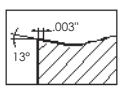
TiCNAI COATED

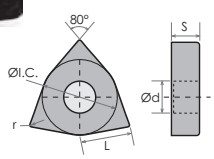


10 PC PER PACKAGE

*Limited Supply

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6039-0332	WNMG-332-DF	WNMG060408DF	3/8	0.256	0.187	0.15	.0315	XAB848
6039-0333	WNMG-333-DF	WNMG060412DF	3/8	0.256	0.187	0.15	.0472	XAB848
6039-0431*	WNMG-431-DF	WNMG080404DF	1/2	0.343	3/16	13/64	.0157	XAB848





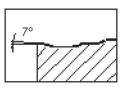
WNMG/DM 80° TRIGON BLACK DIAMOND COATED CARBIDE INSERTS

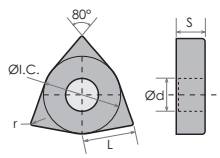
WNMG-DM

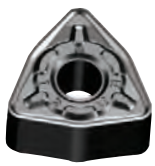
DM - For Steel Medium Machining

DM - Widely used chipbreaker is used for semi-finishing and finishing of steel and stainless steel.

TiCNAI COATED







10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6039-1431	WNMG-431-DM	WNMG080404DM	1/2	0.343	3/16	13/64	.0157	XAB748
6039-1432	WNMG-432-DM	WNMG080408DM	1/2	0.343	3/16	13/64	.0315	XAB748

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WNMG/DR 80° TRIGON - CARBIDE INSERTS

WNMG-DR

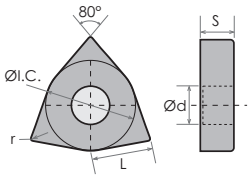
DR - For Light Roughing of Steel



DR - Special chip-breaker with high toughness cutting edge can reduce cutting force

10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6052-1332	WNMG-332-DR	WNMG060408DR	3/8	0.256	3/16	0.15	.0315	XAB748
6052-1432	WNMG-432-DR	WNMG080408DR	1/2	0.343	3/16	13/64	.0315	XAB748
6052-1433	WNMG-433-DR	WNMG080412DR	1/2	0.343	3/16	13/64	.0472	XAB748



WNMG/EF 80° TRIGON- CARBIDE INSERTS

WNMG-EF

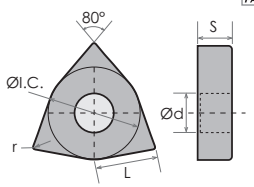
EF - For Stainless Steel, Highly Adhesive and Plastic Materials



EF Chip-Breaker specially designed rake angle and an inclined edge angle for machining stainless steel. The edges are sharp making the cutting light and smooth, getting a good control of the chips and obtaining a good surface quality, which makes it most suitable for ultra fine and fine machining of highly adhesive and plastic materials.

10 PC PER PACKAGE

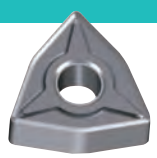
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6039-5431	WNMG-431-EF	WNMG080404EF	1/2	0.343	3/16	13/64	.0157	XAF798
6039-5432	WNMG-432-EF	WNMG080408EF	1/2	0.343	3/16	13/64	.0315	XAF798



WNMG/EM 80° TRIGON- NEGATIVE RAKE CARBIDE INSERTS

WNMG-EM

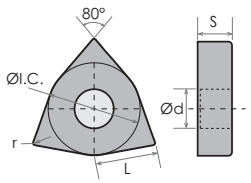
EM - Semi-Finishing Geometry. Stainless Steel Material



EM -Double-side chipbreaker with M-class tolerance serves to reduce cutting force and workpiece adhesion when machining stainless steel. Possesses higher feed and depth of cut capability than EF chipbreaker.

10 PC PER PACKAGE

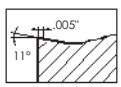
Item#	ASA Insert No.	ISO Insert No.	I.C.	L	(Inch) S	d	r	Grade
6052-0332	WNMG-332-EM	WNMG060408EM	3/8	0.256	0.187	0.15	.0315	XAF795
6052-0432	WNMG-432-EM	WNMG080408EM	1/2	0.343	3/16	13/64	.0315	XAF795
6052-0433	WNMG-433-EM	WNMG080412EM	1/2	0.343	3/16	13/64	.0472	XAF795



WNMG/PM 80° TRIGON - NEGATIVE RAKE CARBIDE INSERTS

WNMG-PM

PM - Suitable for Mixed Production



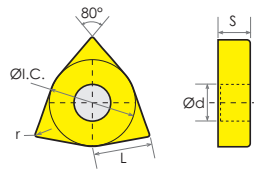


PM - With stronger cutting edge, it is better for intermittent cutting than -DM, with wider cutting zone of steel materials

Limited Supply!

10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) S	d	r	Grade
6003-0332	WNMG-332-PM	WNMG060408PM	3/8	3/16	0.15	.0315	XAL749
6003-0431	WNMG-431-PM	WNMG080404PM	1/2	3/16	13/64	.0157	XAL749
6003-0432	WNMG-432-PM	WNMG080408PM	1/2	3/16	13/64	.0315	XAL749
6999-0001	WNMG-433-PM	WNMG080412PM	1/2	3/16	13/64	.0472	XAB649

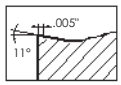


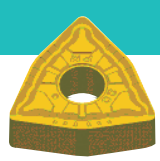
WNMG 80° TRIGON - NEGATIVE RAKE CARBIDE INSERTS

WNMG

0° Relief Angle

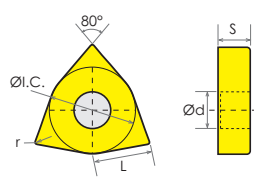
TiN (C-5) Coated





10 PC PER PACKAGE

Item#	ASA Insert No.	ISO Insert No.	I.C.	(Inch) S	d	r	Grade
6052-2331	WNMG-331	WNMG060404	3/8	3/16	0.15	.0157	TiN(C5)
6052-2332	WNMG-332	WNMG060408	3/8	3/16	0.15	.0315	TiN(C5)
6052-2432	WNMG-432	WNMG080408	1/2	3/16	13/64	.0315	TiN(C5)
6052-2433	WNMG-433	WNMG080412	1/2	3/16	13/64	.0472	TiN(C5)



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DIGITAL MACHINE SCALES

ELECTRONIC MACHINE SCALES

- Can be installed on almost any surface, offering the user precise linear measurement capability.
- LCD readout with push button control for in/mm conversion
- Absolute zero setting
- Scale body is hardened stainless steel.
- Two mounting brackets are included
- Standard SR 44, 1.55V battery included.
- With fitted case.

Limited Supply!



INCH/METRIC
.0005" RESOLUTION

Size	Horizontal Item#	Vertical Item#
6"/150mm	**4100-4006**	**4100-4036**
8"/200mm	**4100-4008**	**4100-4038**
12"/300mm	**4100-4012**	**4100-4042**

STANDARD DIGITAL READOUT SCALES

- Compatible with our LCD Digital Display Units with Mini USB plugs. Not for use with a PC.
- Two mounting brackets are included.
- On/Off button.
- In/mm conversion.
- Absolute zero setting.
- Standard CR2032, 3V battery included.

.0005"/.01MM RESOLUTION





HORIZONTAL

Item#	Size	Accuracy
3129-0214	4"/100mm	±0.001"/0.02mm
3129-0216	6"/150mm	±0.0012"/0.03mm
3129-0218	8"/200mm	±0.0012"/0.03mm
3129-0220	12"/300mm	±0.0012"/0.03mm



VERTICAL

Item#	Size	Accuracy
3129-0234	4"/100mm	±0.001"/0.02mm
3129-0236	6"/150mm	±0.0012"/0.03mm
3129-0240	12"/300mm	±0.0012"/0.03mm

LCD DIGITAL DISPLAY UNITS

- Remote Digital Display Units for connection to our compatible digital scales with Mini USB Socket.
- Large, easy to read backlit LCD displays millimetres and Inches.
- Any axis can be set to read Positive or Negative in either direction.
- Fitted with 1.9m long data cables with Mini USB Plug.
- Powered by 2x AAA batteries or 6V DC Power Supply (Both are included).
- Switched Backlight.
- Zero in any position.
- Hold function.
- Magnetic Back.

Display Dimensions:
1 Axis: 104x62x20mm
3 Axis: 130x85x20mm











Item#	Discription
3129-0201	1-Axis Display Unit-USB
3129-0203	3-Axis Display Unit-USB

2 IN 1 DRAWBAR HAMMER/WRENCH

- Hammer head made from brass
- 2 in 1 drawbar tools



Limited Supply!



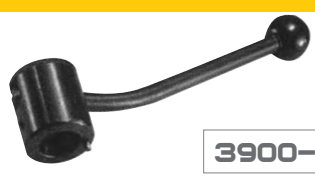
3129-0010
3/4" Hex Shape, OAL: 11.4"

3129-0011
13mm Hex Shape, OAL: 7-3/4"

QUICK INDEXING QUILL FEED HANDLE

- Speeds up all operations and allows to move the handle into any position.
- For mill with 1" diameter hub.
- Quick flick of wrist retracts index plate pin of quill.
- Spring loaded pin activates quill speed.

1" DIA. HUB



3900-0201

QUILL STOP

- Increase productivity-reduce cost.
- For Bridgeport, any other mill with 1/2"~20 stop rod.
- Rapid depth setting on quill.
- Fast on-off clip action.
- Rigid clamping.



3900-0200 Shown

3900-0199

3900-0200

DISPLAY CONSOLE FOR GLASS SCALE ENCODERS

.0002"/.005MM RESOLUTION



3-Axis Display
3129–0253

General Functions:
- Inch/mm Conversion.
- Zero Reset.
- Preset Dimension.
- 1/2 Distance Mode to aid Centre Finding.
- Absolute and Incremental coordinate display modes.
- Recall Memorised Position.
- Mechanical Zero & Workpiece Zero.
- Shrink Function: Shrinkage allowance can be set to compensate for casting or moulding shrinkage.
- Pitch Circle Diameter (PCD) Function: The console will output X and Y coordinates for each hole.

Lathe Functions:
- Tool Compensation and Tool Number.
- Diameter or Radius Reading.

Calculator Functions:
- Math Functions: Add, Subtract, Multiply, Divide.
- Trig Functions: SIN, COS, TAN, SIN-1, COS-1, TAN-1, X2, v, p (pi).
- Axis position can be transferred to calculator as an operator.
- Result can be transferred back to an axis.

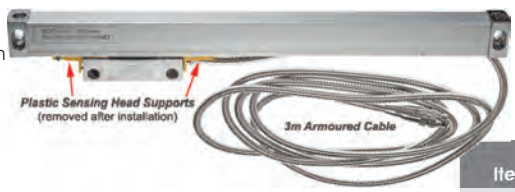
Display Console Specifications:
- Resolution: .0002"/0.005mm (5 Microns).
- Display: 8 Digit LED.
- Response Speed: 60m/min.
- Error: ±1 Count.
- Power: 110-250VAC 50-60Hz.
- Operating Temperature Range: 0-40°C.
- Supplied with mounting arm.
- **Connector: 7 pin DIN (screw locking)**



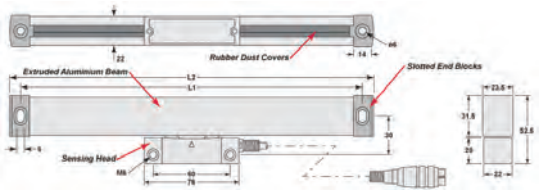
OPTICAL LINEAR SCALES

NEW

- Grating Pitch: 0.001"/0.02mm
- Accuracy: ±0.0005"/0.01mm (200C1000mm)
- Reference Marks: 1 ref. mark every 2"/50mm
- Max Traversing Speed: 60m/minute
- Output Signal: TTL
- **Connector: 7 pin DIN (screw locking)**
- Operating Temperature: 0-45°C.







IP 53

.0002"/.005MM RESOLUTION

Item#	Size	L1 (mm)	L2
3129-0256	6"/150mm	264	281
3129-0262	12"/300mm	414	431
3129-0264	14"/350mm	464	481
3129-0270	16"/400mm	514	531
3129-0268	20"/500mm	614	631
3129-0274	30"/800mm	914	931
3129-0278	35"/900mm	1014	1031

Pro-Series HEAVY DUTY 150 LBS. POWER TABLE FEEDS

- Complete with all hardware.
- 110V/ 60Hz/ 1 PH power supply.
- Adjustable table speeds.
- 150 lbs torque guaranteed.
- Rapid speed switch.

MADE IN TAIWAN

HHIP PRO-SERIES



for ***Bridgeport***® type mills

Bridgeport BRAND REQUIRES MODIFICATION

X-Axis (Longitudinal Feed)	Y-Axis (Cross Feed)	Z-Axis (Knee Feed)
3129–0150	3129–0156	3129–0157

Replacement Plastic Gear (Item #3129-0001)

QUICK QUILL FEED (Z-Axis) ADAPTER -Driven by Power Drill

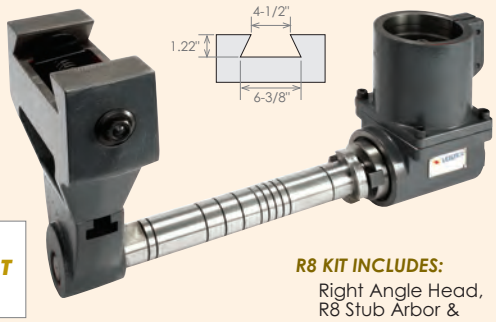
- Works with 1/2" power drill speeds up quill (knee) operation function as a power feed
- Fits most mill with 5/8" diameter hub
- Heavy duty made, hardened steel
- Flats cut on shaft for stronger power drill grip

3129–0015



Pro-Series R8 RIGHT ANGLE ATTACHMENT KIT

- Suitable for most mills
- your vertical mill to a horizontal mill
- Designed to simplify right angle work by reducing the need for special tooling and complex fixtures
- For use on your R8 spindle with 3-3/8" overall diameter
- Max. speed: 2000 RPM

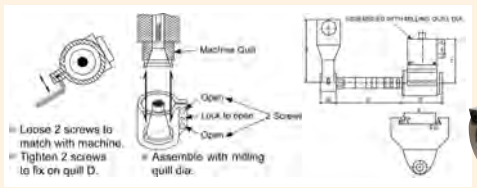


MADE IN TAIWAN

HHIP PRO-SERIES

R8 KIT WITH HORIZONTAL SUPPORT
3012-1018

R8 KIT INCLUDES:
Right Angle Head, R8 Stub Arbor & Drawbar Extension Socket





R8 ANGLE HEAD KIT
3012-1008



Pro-Series SCREW JACKS

- Ideal for setup work where fine adjustment may be required to level work piece or as a replacement for a step block when using a clamp kit.
- Acme threads
- Manufactured from toughened steel



NEW

MADE IN TAIWAN

Item#	Adjustable Range	Body Dia.	W.T. (lbs)
3901-0072	1.57~2.17"	1.5"	0.7
3901-0073	2.76~3.74"	1.5"	1.0
3901-0074	3.94~5.91"	2.0"	2.5

MILLING MACHINE DRAW BARS

for *Bridgeport*® mills



Double Life Model

Item#	Description	Threaders	OAL
3900-0205	For Step Pulley	7/16"~20	21-1/8"
3900-0207	For Variable Speed	7/16"~20	24-3/16"

"LITTLE GIANT" STYLE JACK SCREW SETS

- For leveling work on planer beds and upright drills or for setting up machinery

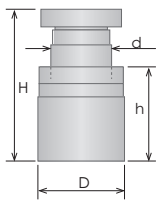


Item#	Lift Range	Set
3900-0260	1-1/2 to 2-1/4"	6
3900-0266	2-1/4 to 3-3/8"	6

ADJUSTABLE SCREW JACKS

NEW

- Ideal for setup work where fine adjustment may be required to level work piece or as a replacement for a step block when using a clamp kit.
- Acme threads
- Made from high quality tool steel.





Item#	Adjustable Range	H	h	d	D
3901-0076	23-30mm	30	23	M16	34
3901-0077	40-60mm	60	40	M16	34
3901-0078	70-100mm	100	70	Tr30x4	50
3901-0079	100-140mm	140	100	Tr30x4	50

MACHINIST'S JACK

- Tested lifting capacity- approximately 1000 lbs.
- Made of heavy cast steel.
- Adjustable screw and tilting swivel head.
- Adjustable pin and lock nut for permanent positioning.
- 3-4" Range, 1" height adjustment,

3900-0070



NEOPRENE MACHINERY LEVELING MOUNTS

NEW

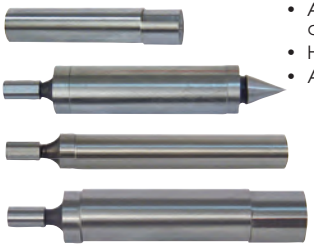
- The simplicity of up 5/8"leveling with a single bolt per location while providing shock and vibration isolation solves many problems.
- Friction is developed by the neoprene element.
- Eliminating the need for bolting to the floor.
- Typical applications are punch presses, brakes, shears, lathers, milling machines and injection molding macines.

Item#	Capacity (Lbs.)	Steel Cap Dia.(mm)	Height (mm)	Leveling Bolt(mm)
3129-0300	880	50	23	M10x40
3129-0304	1100	80	24	M10x100
3129-0308*	1320	100	26	M10x120
3129-0310	2200	120	32	M12x100
3129-0314	4400	160	37	M16x120

*Limited Supply



MICRO EDGE FINDERS & SET



- Accurately locates the starting point for all types of machine work and jig boring
- Hardened and ground all over
- Accuracy .0002"

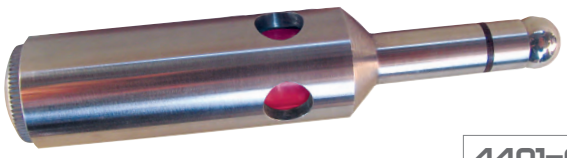
4PC SET
4401-0048
4401-0029, 4401-0030, 4401-0032, 4401-0041

Item#	Style	End	Shank Dia	Tip Dia
4401-0029	Edge & Edge	Double	1/2"	.20/.50"
4401-0030	Edge	Single	3/8"	0.200"
4401-0031	Edge	Single	1/2"	0.200"
4401-0032	Edge	Single	1/2"	0.500"
4401-0040	Edge & Center	Double	3/8"	0.200"
4401-0041	Edge & Center	Double	1/2"	0.200"

ELECTRONIC SHORT SHANK EDGE FINDER

- Quickly locates work edges
- Save time positioning
- One piece construction for strength and accuracy within 0.005mm/ 0.0002"
- Highly visible LED lights
- Precision ground on all surfaces

SPECIFICATIONS
Ball diameter.....0.394"
Shank diameter.....0.750"
Overall length.....3.875"



4401-0038

REPLACEMENT BATTERY SR 44 (ITEM #4102-0030)

WIGGLER OR CENTER FINDER SET

- The original snap-in ball and socket wiggler
- for accurately locating working points on drill press, milling and other machines

SET INCLUDE:
- Snap-in holder, needle point, disc point & ball shaft

5 PC SET
4401-0045



CENTER GAGES

- Graduated in 14ths and 20ths on one side and 24ths and 32nds on the other
- Micro-fine graduations
- Accuracy meets Federal Specifications.







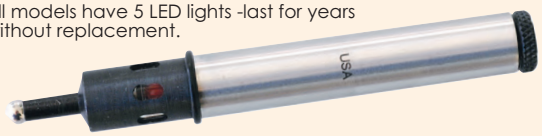
Whitworth or English Standard 55°
4901-0061

Standard 60°
4901-0060

Standard 60°
4901-0059

ELECTRONIC EDGE FINDERS

- Will locate work surfaces quickly and easily at almost any angle.
- B40 "beeps" when stylus meets conductive metal surface. Great for blind and deep applications.
- All models have 5 LED lights -last for years without replacement.
- 12 V batteries included
- Repeatability +/- .0002"
- Precision ground on all surfaces

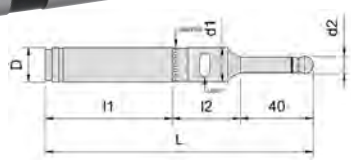


Item#	Style	Shank	Stylus Break-Away	Beep
4401-0034	B20	3/4"	.200"	No
4401-0035	B40	3/4"	.400"	Yes

Pro-Series ELECTRONIC EDGE FINDERS

- Will locate work surfaces quickly and easily at almost any angle.
- Red pilot will be lighted when the ball touch the working edge.
- High sensitive positional sensor.
- Supplied with wooden case.
- Battery: 2 x LR1,1.5V





MADE IN TAIWAN

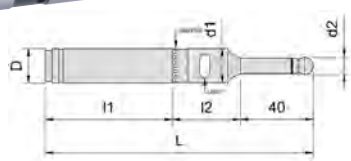
Item#	Shank	Ball Dia.	OAL
4401-0036	20mm	10mm	6.20"
4401-0037	32mm	10mm	6.20"

Pro-Series ELECTRONIC AUDIBLE EDGE FINDER

NEW

- Unit will sound at the same time when the red lamp lights up.
- Accuracy within +/- .005mm/ .0002"
- LED light
- Battery: 1 x UM #5 (12V)





MADE IN TAIWAN

Item#	Shank	Ball Dia.	OAL
4401-0047	3/4"	.394"	6.2"
4401-0049	20mm	.394"	6.2"

DRILL PRESS CENTER FINDER

- Accurately and quickly locates center on round workpieces
- Satin chrome finish.
- Place tool in drill chuck or collet and line up pointer with line scribed on shaft.



4401-0027

R8 COLLETS & ACCESSORIES

Pro-Series R8 ROUND COLLET SET

- Guaranteed T.I.R : < 0.0005" .
- Made of high grade tool steel.
- Hardened and precision ground.
- Internally Threaded: 7/16" -20

HHIP PRO-SERIES



13 PC SET
3900-0701
1/8 ~ 7/8 by 16ths

R8 ROTATING COLLET HOLDER

- Easily mounts anywhere for quick accessibility.
- Hold 11 R8 collet.
- Made of durable ABS material.

3900-1608



R8 ROUND COLLETS & SETS (Inch)

- Made of high grade tool steel.
- Hardened.
- Precision ground to close tolerance.
- Internally threaded: 7/16" -20



11 PC SET
3900-0007
1/8 ~ 3/4 by 16ths

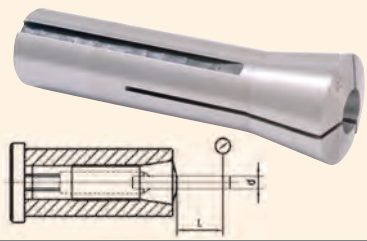
NEW

6 PC SET
3900-0006
1/8 ~ 3/4 by 8ths

7 PC SET
3900-0010
1/8~3/4 by 8ths Plus 3/16

23 PC SET
3900-0009
1/16 ~ 3/4 by 32nds

d	L(mm)	Run out
1/32-1/16	6.35	0.0007"
1/16-1/8	12.70	0.0007"
1/8-3/8	25.40	0.0007"
3/8-5/8	38.10	0.0007"
5/8-7/8	50.80	0.0007"



Item#	Size (Inch)	Item#	Size (Inch)
3900-0008	1/16	3900-0814	1/2
3900-0801	3/32	3900-0815	17/32
3900-0802	1/8	3900-0816	9/16
3900-0803	5/32	3900-0817	19/32
3900-0804	3/16	3900-0818	5/8
3900-0805	7/32	3900-0819	21/32
3900-0806	1/4	3900-0820	11/16
3900-0807	9/32	3900-0821	23/32
3900-0808	5/16	3900-0822	3/4
3900-0809	11/32	3900-0823	25/32
3900-0810	3/8	3900-0824	13/16
3900-0811	13/32	3900-0825	27/32
3900-0812	7/16	3900-0826	7/8
3900-0813	15/32	3900-0827	1

12PC R8 COLLET RACK



HOLDS 12PC R8 COLLETS

3900-0016



- Easy side mount with two screws.
- Open, close cover protects collets from debris.

R8 ROUND COLLETS & SET (Metric)

NEW

- Made of high grade tool steel.
- Hardened.
- Precision ground to close tolerance.
- Internally threaded: 7/16" -20



10 PC SET
3903-0006
3,4,5,6,8,10,12,14,18,20mm

Item#	Size (mm)	Item#	Size (mm)
3903-0102	2	3903-0122	12
3903-0104	3	3903-0124	13
3903-0106	4	3903-0126	14
3903-0108	5	3903-0128	15
3903-0110	6	3903-0130	16
3903-0112	7	3903-0132	17
3903-0114	8	3903-0134	18
3903-0116	9	3903-0136	19
3903-0118	10	3903-0138	20
3903-0120	11		

R8 COLLET & TOOL TRAY

- This convenient tray will cut down set up and tool changing time.
- Operator works more organized.
- Easy to install, drill and tap two holes in the base casting 1" below the degree ring.



3900-1601

Pro-Series R8 END MILL HOLDERS

- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- **Thread of Drawbar End: R8- 7/16" -20**
- Premium hardened & all ground body for extended tool life.



MAX. RPM: 8,000
T.I.R. ≤ .0002"
SUPERIOR FINISH

Item#	Size
3901-0100	1/8"
3901-0101	3/16"
3901-0102	1/4"
3901-0103	5/16"
3901-0104	3/8"
3901-0105	7/16"
3901-0106	1/2"

Item#	Size
3901-0107	5/8"
3901-0109	3/4"
3901-0110	7/8"
3901-0111	1"
3901-0113	1-1/4"
3901-0114	1-1/2"

Pro-Series R8 DRILL CHUCK ARBORS

- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Premium hardened & all ground body for extended tool life.
- **Thread of Drawbar End: R8- 7/16" -20**



MAX. RPM: 8,000
T.I.R. ≤ .0002"
SUPERIOR FINISH
R8 TO JT

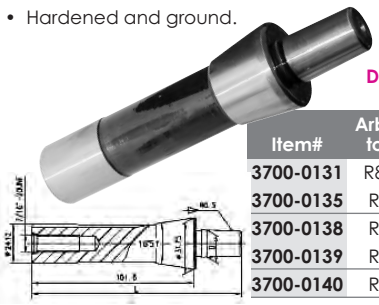
Item#	Arbor Taper to Chuck
3701-0131	R8 to JT33
3701-0135	R8 to JT2
3701-0138	R8 to JT3
3701-0139	R8 to JT4
3701-0140	R8 to JT6

R8 TO JACOBS DRILL CHUCK ARBORS

- Hardened and ground.

for ***Bridgeport***® type mills

DRAWBAR END THREAD: 7/16" -20



Item#	Arbor Taper to Chuck	D (mm)	L (mm)
3700-0131	R8 to JT33	15.85	132
3700-0135	R8 to JT2	14.199	128
3700-0138	R8 to JT3	20.599	137
3700-0139	R8 to JT4	28.55	148
3700-0140	R8 to JT6	17.17	132

48PC R8 COLLET RACK

- Baked enamel paint finish.
- Hangs on wall or machine, or sets on a shelf or work bench.

3900-1605



HOLDS 48PC R8 COLLETS

R8 END MILL HOLDERS & SETS

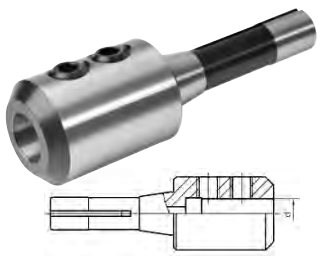
- Hardened and ground.
- For Bridgeport type milling machines.
- For double and single end mill (single end mill only for sizes over 5/8").

DRAWBAR END THREAD: 7/16" -20



5 PC SET
3900-1005
3/16, 3/8, 1/2, 5/8, 3/4"

8 PC SET
3900-1008
3/16, 3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4"



Item#	Size d
3900-0100	1/8"
3900-0101	3/16"
3900-0112	1/4"
3900-1211	5/16"
3900-0102	3/8"
3900-0121	7/16"
3900-0103	1/2"
3900-0104	5/8"
3900-0105	3/4"
3900-0106	7/8"
3900-0107	1"
3900-0108	1-1/4"
3900-0109	1-1/2"

3PC BORING TOOL COMBO SETS

KIT INCLUDES:
BORING HEAD, SHANK, C6 CARBIDE TIPPED BORING BAR SET

- **BORING HEAD:** Bar holder moves freely and smoothly. Design assures superior rigidity for chatter-free boring and precise hole size accuracy. Hardened and ground adjusting screw designed for long lasting and trouble free use.



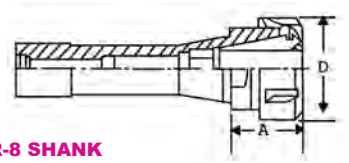
Item#	Head Size	Shank Taper	Shank To Head	Boring Bar	Tool Capacity
1001-0105	2"	3MT	7/8"~20	1/2"-9pc	Up to 1/2"
1001-0106	2"	R8	7/8"~20	1/2"-9pc	Up to 1/2"
1001-0107	3"	R8	1-1/2"~18	3/4"-12pc	Up to 3/4"

R8 SHANK ER COLLET CHUCKS & TOOLING

R8 SHANK ER COLLET CHUCKS



- Made of high grade tool steel.
- Hardened and precision ground.
- Meets or exceeds Federal specifications.
- **Thread of Drawbar End: 7/16" -20**



R-8 SHANK

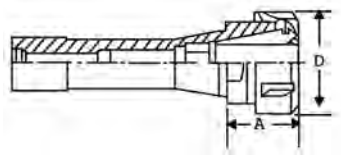
Item#	Type	Nut Style	(Inch) A	D
3900-5061	ER-16	Hex	1.50	1.10
3900-5066	ER-32	Spanner	157	1.97
3900-5069	ER-40	Spanner	2.76	2.48

Pro-Series R8 Shank ER Collet Chucks



- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Premium hardened & all ground body for extended tool life.
- **Thread of Drawbar End: R8- 7/16" -20**

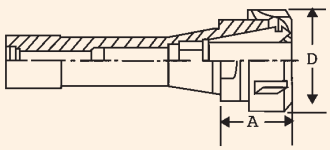
R-8 SHANK
MAX. RPM: 8,000
T.I.R. ≤ .0002"
SUPERIOR FINISH



Item#	No.	Nut Style	(Inch) A	D
3901-5061	ER-16	Hex	1.50	1.10
3901-5063	ER-20	Hex	1.50	1.38
3901-5064	ER-25	Spanner	1.57	1.66
3901-5066	ER-32	Spanner	157	1.97
3901-5069	ER-40	Spanner	2.76	2.48

R8 SHANK ER SPRING COLLET CHUCK SETS

- High precision collet chuck system suitable for all milling and drilling applications.
- Unique self-releasing system.
- Wide holding range.
- With fitted case.
- Accuracy to .0005".



R-8 SHANK



ER-16

- *11PC SET INCLUDES*
  9-Collet
  1/16, 3/32, 1/8, 3/16, 7/32, 1/4, 5/16, 11/32 & 3/8"
  1-Collet Chuck
  1-Wrench
  1-Wrench

ER-32

- *8PC SET INCLUDES*
  6-Collet
  1/4, 5/16, 3/8, 1/2, 5/8 & 3/4"
  1-Collet Chuck
  1-Wrench
- *14PC SET INCLUDES*
  12-Collet
  1/16, 3/32, 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8 & 13/16"
  1-Collet Chuck
  1-Wrench

ER-40

- *10PC SET INCLUDES*
  8-Collet
  1/8, 1/4, 3/8, 1/2, 5/8, 3/4, 7/8 & 1"
  1-Collet Chuck
  1-Wrench
- *17PC SET INCLUDES*
  15-Collet
  1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16 & 1"
  1-Collet Chuck
  1-Wrench

Item#	No.	Nut Style	Set	(Inch) A	D	Drawbar Thread
3900-0501	ER-16	Hex	11	1.50	1.10	7/16-20
3900-0507	ER-32	Spanner	8	1.57	1.97	7/16-20
3900-0508	ER-32	Spanner	14	157	1.97	7/16-20
3900-0004	ER-40	Spanner	10	2.76	2.48	7/16-20
3900-0005	ER-40	Spanner	17	2.76	2.48	7/16-20

R8 INTEGRAL SHANK PRECISION KEYLESS DRILL CHUCKS

- Integrated design maximizes rigidity & accuracy.
- Integral R8 shank is more compact than a combined drill chuck and arbor and eliminates the chuck slipping on its arbor.
- Keyless, self tightening design.

R-8 SHANK



T.I.R. ≤ .0025"

Item#	Clamping Capacity	Brand	Origin	T.I.R.
3701-1501	0~1/2"	HHIP	China	.0025"
3701-1626	1/64~5/8"	HHIP	China	.0025"



Max. T.I.R. ≤ .002"

Item#	Clamping Capacity	Brand	Origin	T.I.R.
3701-1500	0~1/2"	VERTEX	Taiwan	.0020"
3701-1625	1/8~5/8"	VERTEX	Taiwan	.0020"

*** With Tighting Wrench Included.**

Pro-Series R8 SHELL END MILL HOLDERS

- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Premium hardened & all ground body for extended tool life.



MAX. RPM: 8,000
T.I.R. ≤ .0002"
SUPERIOR FINISH

for ***Bridgeport***® type mills

DRAWBAR END THREAD: 7/16" -20

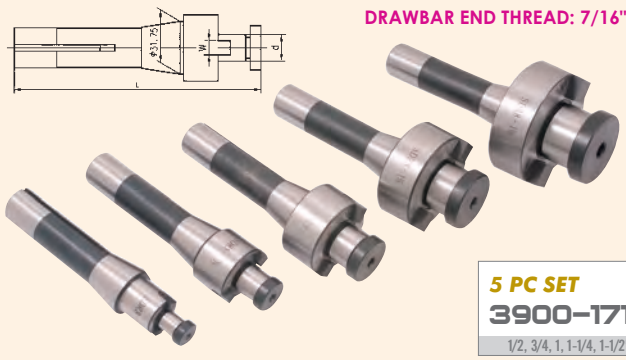
Item#	Dia. for Bore in Shell End Mill	Dia. Range of Std. End Mill
3901-1302	3/4"	1-1/4 to 2-1/2"
3901-1304	1"	2-1/4 to 2-3/4"
3901-1306	1-1/4"	3 to 3-1/2"
3901-1308	1-1/2"	4 to 5"

R8 SHELL END MILL HOLDERS

- Hardened and ground.

for ***Bridgeport***® type mills

DRAWBAR END THREAD: 7/16" -20



5 PC SET
3900-1710
1/2, 3/4, 1, 1-1/4, 1-1/2"

INDIVIDUALS

Item#	d	W (mm)	L (mm)	Dia. Range of Std. End Mill
3900-1711	1/2"	6.35	150	1-1/4 to 1-1/2"
3900-1712	3/4"	7.94	154	1-1/4 to 2-1/2"
3900-1713	1"	9.53	155	2-1/4 to 2-3/4"
3900-1714	1-1/4"	12.70	156	3 to 3-1/2"
3900-1715	1-1/2"	15.88	163	4 to 5"

SLOTTING SAW ARBORS

- For saw blades upto 3/16" thick



3900-0144 Shown



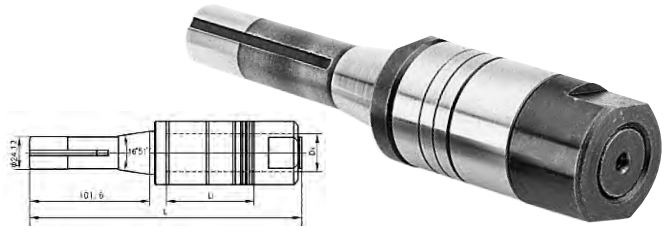
3900-0145 Shown

Item#	Shank	OAL	For Saw Hole Size
3900-0144	R8	5-3/32"	1/2, 5/8, 3/4, 7/8 & 1"
3900-0145	1/2"	2-9/16"	1/2, 5/8, 3/4, 7/8 & 1"

STUB MILLING MACHINE ARBORS

for ***Bridgeport***® type milling machines

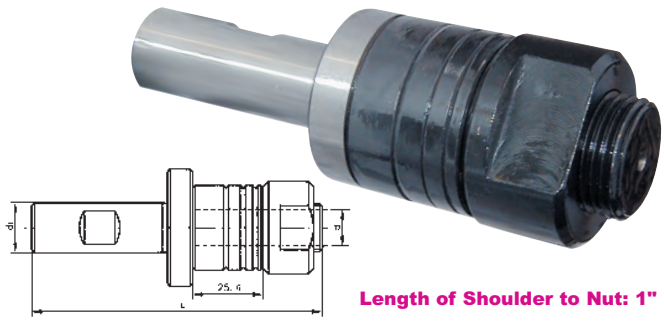
- Hardened and precision ground.



Item#	Shank	Dia. of Arbor	Length Shoulder to Nut
3900-0110	R8	1"	2"
3900-0111	R8	1-1/4"	2"

STRAIGHT SHANK STUB MILLING MACHINE ARBORS

- Fit into standard end mill adapters
- Furnished with standard keyways and left hand arbor nut



Length of Shoulder to Nut: 1"

Item#	Shank d1 (Inch)	Dia. of Arbor d (Inch)	L (Inch)
3900-0156	1/2	1/2	4.0
3900-0157	1/2	5/8	4.0
3900-0158	1/2	3/4	4.2
3900-0159	3/4	1/2	4.3
3900-0160	3/4	5/8	4.3
3900-0161	3/4	3/4	4.4
3900-0162	3/4	7/8	4.4
3900-0163	3/4	1	4.7
3900-0164	3/4	1-1/4	4.7
3900-0115	1	3/4	4.7
3900-0116	1	1	5.6

CIRCULAR SAW ARBORS

- 1/2" SHANK
- Up to 3/16" thickness
- Steel, heat treated shank



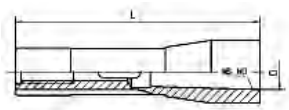
INDIVIDUALS

Item#	OD Flange	For Saw Hole Size
3900-0147	1/2"	1/4"
3900-0148	5/8"	3/8"
3900-0149	3/4"	1/2"

3 PC SET
3900-0150
1/4,3/8,1/2" Hole Sized

R8 TO MORSE TAPER SLEEVES

- Made of high grade tool steel.
- Hardened and precision ground.
- **Thread of Drawbar End: R8- 7/16" -20**



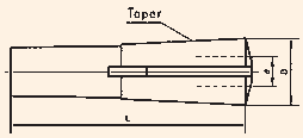

Item#	Description	D (mm)	L (mm)
3900-1812	R8 to MT2	17.78	127
3900-1813	R8 to MT3	23.825	153
3900-1814	R8 to MT4	31.267	240

MORSE TAPER COLLETS & SETS

- Morse taper: external.
- Made of high grade tool steel.
- Hardened and precision ground to close tolerance.



Drawbar End Threads:
MT2: 3/8" ~ 16
MT3: 3/8" ~ 16



MT3, 7PC SET
3900-0893
1/8~3/4" x 8THS & 3/16"

MT2, 7PC SET
3900-0850
1/8~1/2" x 16THS

MT3 SHANK

Item#	Hole Dia.	(mm) D	L
3900-0855	1/8"	24.1	86
3900-0859	3/16"	24.1	86
3900-0863	1/4"	24.1	86
3900-0865	5/16"	24.1	86
3900-0867	3/8"	24.1	86
3900-0875	7/16"	24.1	86
3900-0883	1/2"	24.1	86
3900-0887	5/8"	24.1	86
3900-0889	11/16"	24.1	86
3900-0891	3/4"	24.1	86

MT2 SHANK

Item#	Hole Dia.	(mm) D	L
3900-0837	1/8"	18	68
3900-0839	3/16"	18	68
3900-0841	1/4"	18	68
3900-0843	5/16"	18	68
3900-0845	3/8"	18	68
3900-0847	7/16"	18	68
3900-0849	1/2"	18	68

MORSE TAPER EXTENSION SOCKETS

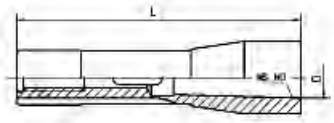
- For adapting tools with Morse taper shanks to machines having smaller, same or larger Morse taper spindle.



Item#	Inside Taper	Outside Taper
3900-1845	MT3	MT2
3900-1852	MT4	MT3
3900-1872	MT5	MT4

Pro-Series R8 TO MORSE TAPER SLEEVES

- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Premium hardened & all ground body for extended tool life.
- **Thread of Drawbar End: R8- 7/16" -20**

MAX. RPM: 8,000
T.I.R. ≤ .0002"
SUPERIOR FINISH

Item#	Description	D (mm)	L (mm)
3901-1874	R8 to MT2	17.78	127
3901-1876	R8 to MT3	23.825	153
3901-1878	R8 to MT4	31.267	240

MORSE TAPER (MT) SLEEVES

- Used to convert spindles to larger or smaller tapers and extend the spindles of drill presses, radial drills, boring mills and turret lathes.



4 PC SET
3900-1850
MT1-MT2, MT2-MT3, MT3-MT4, MT4-MT5

INDIVIDUALS

Item#	Inside Taper	Outside Taper
3900-1843	MT1	MT2
3900-1841	MT1	MT3
3900-1842	MT2	MT3
3900-1844	MT2	MT4
3900-1848	MT3	MT4
3900-1849	MT3	MT5
3900-1853	MT4	MT5
3900-1856	MT5	MT6

MORSE TAPER DRILL CHUCK ARBORS



Hardened & Ground

MT TO JT

Item#	Arbor Taper to Chuck
3700-0111	MT1 to JT0
3700-0112	MT1 to JT1
3700-0113	MT1 to JT33
3700-0115	MT2 to JT1
3700-0151	MT2 to JT2
3700-0149	MT2 to JT3
3700-0117	MT2 to JT4
3700-0150	MT2 to JT6
3700-0152	MT2 to JT33
3700-0153	MT3 to JT33
3700-0154	MT3 to JT2

Item#	Arbor Taper to Chuck
3700-0155	MT3 to JT3
3700-0159	MT3 to JT4
3700-0156	MT3 to JT6
3700-0160	MT4 to JT3
3700-0161	MT4 to JT4
3700-0157	MT4 to JT33
3700-0120	MT4 to JT5
3700-0158	MT4 to JT6
3700-0123	MT5 to JT3
3700-0124	MT5 to JT4

MORSE TAPER END MILL HOLDERS

- For single end mills.
- **Drawbar End Thread**
  MT2- 3/8" - 16
  MT3- 3/8" - 16
  MT4- 1/2" - 13



Item#	Shank Taper	Hole Dia.
3900-1217	MT2	3/16"
3900-1212	MT2	1/4"
3900-1215	MT2	3/8"
3900-1214	MT2	1/2"
3900-0127	MT3	3/16"
3900-0128	MT3	3/8"
3900-0129	MT3	1/2"

Item#	Shank Taper	Hole Dia.
3900-0130	MT3	5/8"
3900-0131	MT3	3/4"
3900-0132	MT3	7/8"
3900-0133	MT3	1"
3900-0140	MT4	1"
3900-0141	MT4	1-1/4"
3900-0142	MT4	1-1/2"

Pro-Series MORSE TAPER END MILL HOLDERS

- For single end mills.
- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Balanced to 8,000 RPM
- Tolerance: .0006" Max.
- Hardness: HRC 50~52
- Thread Tolerance Class: 4H-Class
- **Drawbar End Thread**
  MT2- 3/8"~16
  MT3- 3/8"~16
  MT4- 1/2"~13

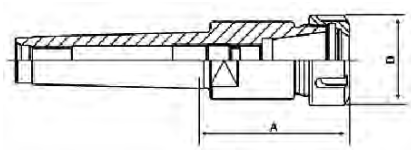


Item#	Shank Taper	Hole Dia.
3901-1210	MT2	3/16"
3901-1212	MT2	1/4"
3901-1214	MT2	3/8"
3901-1216	MT2	1/2"
3901-1226	MT3	3/16"
3901-1227	MT3	1/4"
3901-1228	MT3	3/8"
3901-1229	MT3	1/2"

Item#	Shank Taper	Hole Dia.
3901-1230	MT3	5/8"
3901-1231	MT3	3/4"
3901-1232	MT3	7/8"
3901-1233	MT3	1"
3901-1240	MT4	1"
3901-1241	MT4	1-1/4"
3901-1242	MT4	1-1/2"

MT SHANK ER COLLET CHUCKS

- Made of high grade tool steel.
- Hardened and precision ground.
- Meets or exceeds Federal specifications.



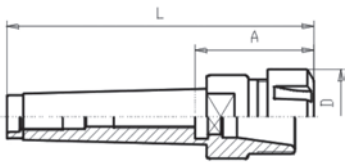


Item#	Shank	Type	Nut Style	Drawbar End	A (mm)	D (mm)
3900-5072	MT2	ER-20	Hex	3/8"~16	43	34
3900-5073	MT2	ER-25	Spanner	3/8"~16	47	42
3900-5077	MT3	ER-32	Spanner	3/8"~16	70	50
3900-5078	MT3	ER-40	Spanner	3/8"~16	80	63
3900-5079	MT4	ER-40	Spanner	5/8"~11	82	63

Pro-Series MT MORSE TAPER ER COLLET CHUCKS

- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Premium hardened & all ground body for extended tool life.

MAX. RPM: 8,000
T.I.R. ≤ .0002"
SUPERIOR FINISH





Item#	Shank	Type	Nut Style	Drawbar End	A (mm)	D (mm)
3901-5073	MT2	ER-25	Spanner	3/8"~16	47	42
3901-5078	MT3	ER-32	Spanner	**1/2"~13**	70	50

MORSE TAPER ER SPRING COLLET CHUCK SETS

- High precision collet chuck system suitable for all milling and drilling applications.
- Unique self-releasing system.
- Wide holding range.
- With fitted case.
- Accuracy to .0005".

ER-25	*ER-32*	*ER-40*
• *12PC SET INCLUDES* 10-Collet 3/32, 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16 & 5/8" 1-Collet Chuck 1-Wrench	• *14PC SET INCLUDES* 12-Collet 1/16, 3/32, 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8 & 13/16" 1-Collet Chuck 1-Wrench	• *17PC SET INCLUDES* 15-Collet 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16 & 1" 1-Collet Chuck 1-Wrench

- **Drawbar End Thread**
  MT2- 3/8"~16
  MT3- 3/8"~16
  MT4- 1/2"~13







Item#	No.	Chuck Shank	Nut Style	Set
3900-0502	ER-25	MT2	Spanner	12
3900-0503	ER-32	MT3	Spanner	14
3900-0531	ER-40	MT3	Spanner	17
3900-0504	ER-40	MT4	Spanner	17

Morse Taper INTEGRAL SHANK PRECISION KEYLESS DRILL CHUCKS

- Integrated design maximizes rigidity & accuracy.
- Integral shank is more compact than a combined drill chuck and arbor and eliminates the chuck slipping on its arbor.
- Keyless, self tightening design.

MT SHANK



T.I.R. ≤ .0025"

Item#	Brand	Morse Taper	Clamping Capacity	Drawbar End	T.I.R.	Origin
3701-2490	HHIP	2	1/64~5/16"	3/8~16	.0025"	CHINA
3701-2499	HHIP	3	1/64~1/2"	1/2~13	.0025"	CHINA
3701-2502	HHIP	4	1/64~1/2"	5/8~11	.0025"	CHINA
3701-2624	HHIP	3	1/64~5/8"	1/2~13	.0025"	CHINA
3701-2627	HHIP	4	1/64~5/8"	5/8~11	.0025"	CHINA



T.I.R. ≤ .0020"

Item#	Brand	Morse Taper	Clamping Capacity	Drawbar End	T.I.R.	Origin
3701-2500	VERTEX	3	0~1/2"	1/2~13	.0020"	Taiwan
3701-2501	VERTEX	4	0~1/2"	5/8~11	.0020"	Taiwan
3701-2625	VERTEX	3	1/8~5/8"	1/2~13	.0020"	Taiwan
3701-2626	VERTEX	4	1/8~5/8"	5/8~11	.0020"	Taiwan

*** Vertex Hook Tightening Wrench Included**

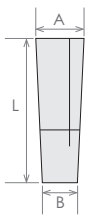
Brown & Sharpe TAPER ROUND COLLETS

- Made of high grade tool steel.
- Precision ground and hardened.



≤ .0008" TIR

Taper	A	B	L	Drawbar End
#7	0.725"	0.600"	3.00"	3/8"~16
#9	1.067"	0.900"	4.00"	1/2"~13



#7 TAPER COLLETS

Item#	Size
3900-0970	1/8"
3900-0972	3/16"
3900-0973	1/4"
3900-0974	5/16"
3900-0975	3/8"
3900-0976	7/16"
3900-0977	1/2"

#7, 7 PC SET
3900-0979
1/8 ~ 1/2 by 16ths

#9, 11 PC SET
3900-0985
1/8 ~ 3/4 by 16ths

#9 TAPER COLLETS

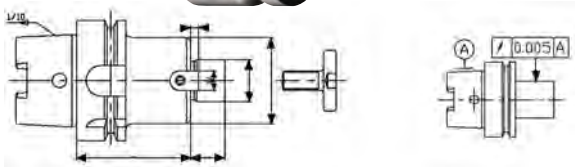
Item#	Size
3900-0989	1/8"
3900-0990	3/16"
3900-0991	1/4"
3900-0992	5/16"
3900-0993	3/8"
3900-0994	7/16"
3900-0995	1/2"
3900-0996	9/16"
3900-0997	5/8"
3900-0998	11/16"
3900-0999	3/4"

Pro-Series HSK FACE MILL HOLDERS

- Blanced to G2.5, 25,000 RPM.
- Made from high grade alloy steel.

MADE IN TAIWAN





Item#	Taper	Bore Dia.	Projection Gage Line to Nose End
3901-6040	HSK63A	1"	60mm
3901-6044	HSK63A	1-1/4"	60mm
3901-6048	HSK63A	1-1/2"	60mm

Pro-Series HSK ER COLLET CHUCKS

- Blanced to G2.5, 25,000 RPM.
- Made from high grade alloy steel.

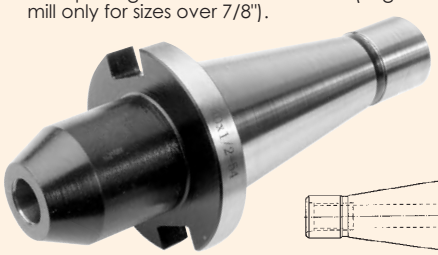
MADE IN TAIWAN



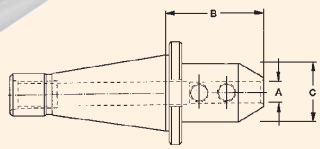
Item#	Taper	Collet Series	Projection Gage Line to Nose End	OAL
3901-6010	HSK63A	ER-32	80mm	112mm
3901-6030	HSK100A	ER-32	100mm	150mm

NMTB 30 & 40 TAPER END MILL HOLDERS

- For milling machines having 30-40 standard taper spindles.
- Hardened and precision ground.
- Accepts single and double end mills. (single end mill only for sizes over 7/8").



Drawbar End:
#30- 1/2" -13
#40- 5/8" -11



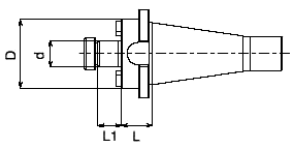
Bore A	Taper 30 Item#	B	C	Taper 40 Item#	B	C
3/16	3900-1690	1.75"	0.75"	3900-1700	2.31"	0.75"
1/4	3900-1683	1.75"	0.79"	3900-1718	2.31"	0.79"
5/16	3900-1691	1.75"	0.87"	3900-1701	2.31"	0.87"
3/8	3900-1692	1.75"	1.00"	3900-1702	2-5/16	1
1/2	3900-1693	1.75"	1.38"	3900-1703	2-5/16	1-3/8
5/8	3900-1694	1.75"	1.43"	3900-1704	2-5/16	1-5/8
3/4	3900-1695	2.25"	1.89"	3900-1705	2-5/16	1-7/8
7/8	3900-1696	2.50"	2.01"	3900-1706	3.19"	1.93"
1	3900-1697	2.69"	2.36"	3900-1707	2-11/16	2
1-1/4	3900-1698	3.62"	2.48"	3900-1708	2-29/32	2-3/8
1-1/2				3900-1709	3.95"	2.99"
2				3900-2711	3.95"	4.95"

NMTB 30 & 40 TAPER SHELL END MILL HOLDERS

- For shell end mills and indexable face mills.
- Heat treated and precision ground.
- Perfectly concentric to prevent runout of your cutting tools.



Drawbar End: #30- 1/2" -13
#40- 5/8" -11



Bore d	Taper 30 Item#	L	(Inch) D	L1	Taper 40 Item#	L	(Inch) D	L1
3/4"	3900-0742	1.31	1.93	0.67	3900-1742	0.87	1.93	0.67
1"	3900-0743	1.31	2.38	0.67	3900-1743	1.31	2.38	0.67
1-1/4"	3900-0744	1.44	2.88	0.67	3900-1744	1.50	2.88	0.67
1-1/2"	3900-0745	2.00"	3.00"	0.94	3900-1745	2.00"	3.00"	0.94"
2"	3900-0746	2.50"	3.86	0.94	3900-1746	2.50"	3.86"	0.94"

NMTB 30 & 40 TAPER TO JACOBS ARBORS

- Hardened and precision ground.



Drawbar End: #30- 1/2" -13
#40- 5/8" -11

Jacob Taper	Taper 30 Item#	Taper 40 Item#
JT2	3900-1762	3900-1772
JT3	3900-1763	3900-1773
JT33	3900-1764	3900-1774
JT6	3900-1766	3900-1776

SHELL END MILL HOLDER SCREWS

- Replacement screw for shell end mill holders.



Bore	Thread	D (mm)	L (mm)	Item#
1/2"	1/4"~28	16.7	21	3900-0761
3/4"	3/8"~24	22.2	27	3900-0764
1"	1/2"~20	30.2	33	3900-0767
1-1/4"	5/8"~18	38.1	39	3900-0770
1-1/2"	3/4"~16	47.6	45	3900-0773
2"	1"~14	63.1	52	3900-0777

SPINDLE TAPER WIPERS

- For all 30,40 & 50 tapers
- Maintains spindle accuracy and rigid contact
- Multiple usage on tool holder tapers NMTB, CAT and BT

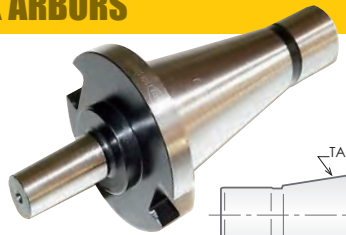


Item#	Taper#
7016-0013	30
7016-0014	40
7016-0015	50

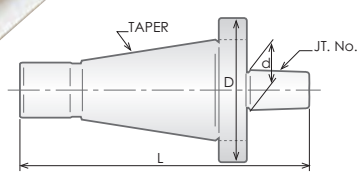
Pro-Series NMTB 30 & 40 TAPER TO JACOBS DRILL CHUCK ARBORS

- Made of 20CrMnTi alloy steel.
- Electrolysis nickel coating.
- Hardened and precision ground.

Drawbar End: #30- 1/2" -13
#40- 5/8" -11



≤ .0002" TIR



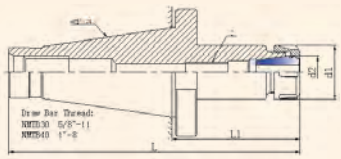
Jacob Taper	Taper 30 Item#	D	(mm) d	L	Taper 40 Item#	D	(mm) d	L
JT2	3901-1702	31.75	14.2	113	3901-1712	44.45	14.2	141
JT3	3901-1703	31.75	20.6	123	3901-1713	44.45	20.6	150
JT33	3901-1704	31.75	15.85	122	3901-1714	44.45	15.85	145
JT6	3901-1706	31.75	17.17	122	3901-1716	44.45	17.17	145

NMTB SHANK ER COLLET CHUCKS & TOOLING

Pro-Series NMTB 30-40 SHANK ER COLLET CHUCKS

- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Tolerance: .0003" Max.

SUPERIOR FINISH & CRAFTSMANSHIP

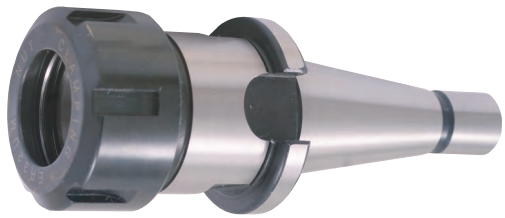




Item#	Shank	Type	Nut Style	L	(mm) L1	d1	Drawbar End
3901-5083	#30	ER-32	Spanner	128.4	60	50	1/2"~13
3901-5084	#30	ER-40	Spanner	138.4	70	63	1/2"~13
3901-5088	#40	ER-16	Hex	138.4	45	28	5/8"~11
3901-5090	#40	ER-32	Spanner	153.4	60	50	5/8"~11
3901-5091	#40	ER-40	Spanner	163.4	70	63	5/8"~11

NMTB 30-40 SHANK ER COLLET CHUCKS

- Made of high grade tool steel.
- Hardened and precision ground.
- Meets or exceeds Federal specifications.



Item#	Shank	Type	Nut Style	Drawbar End
3900-5083	#30	ER-32	Spanner	1/2"~13
3900-5084	#30	ER-40	Spanner	1/2"~13
3900-5088	#40	ER-16	Hex	5/8"~11
3900-5090	#40	ER-32	Spanner	5/8"~11
3900-5091	#40	ER-40	Spanner	5/8"~11

NMTB30 & 40 TAPER ER COLLET CHUCK SETS

- High precision collet chuck system suitable for all milling and drilling applications.
- Unique self-releasing system.
- Wide holding range.
- With fitted case.
- Accuracy to .0005".

ER-32	ER-40	
• *14PC SET INCLUDES* 12-Collet 1/16, 3/32, 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8 & 13/16" 1-Collet Chuck 1-Wrench	• *10PC SET INCLUDES* 8-Collet 1/8, 1/4, 3/8, 1/2, 5/8, 3/4, 7/8 & 1" 1-Collet Chuck 1-Wrench	• *17PC SET INCLUDES* 15-Collet 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16 & 1" 1-Collet Chuck 1-Wrench





Item#	Chuck Shank	No.	Nut Style	Gage Length	Set
3900-5300	#30	ER-32	Spanner	2.36"	14
3900-0505	#40	ER-32	Spanner	2.75"	14
3900-5301	#30	ER-40	Spanner	2.75"	17
3900-0538	#40	ER-40	Spanner	2.36"	10
3900-0540	#40	ER-40	Spanner	2.36"	17

NMTB TAPER INTEGRAL PRECISION KEYLESS DRILL CHUCKS

- Integrated design maximizes rigidity & accuracy.
- Integral shank is more compact than a combined drill chuck and arbor and eliminates the chuck slipping on its arbor.
- Keyless, self tightening design.



T.I.R. ≤ .0022"

Item#	Brand	Clamping Capacity	Shank	T.I.R.	Origin
3701-3001	HHIP	0~1/2"	#30	.0022"	CHINA
3701-3011	HHIP	0~1/2"	#40	.0022"	CHINA
3701-3015	HHIP	0~5/8"	#40	.0022"	CHINA



Max. T.I.R. ≤ .002"

Item#	Brand	Clamping Capacity	Shank	T.I.R.	Origin
3701-3500	VERTEX	0~1/2"	#40	.0020"	TAIWAN
3701-3625	VERTEX	1/8~5/8"	#40	.0020"	TAIWAN

*** Vertex Tightening Wrench Included**

PRECISION DIAL Z-AXIS SETTERS

- Efficient to set "0" point with built in dial indicator.
- Positioning accuracy and repeatability: 0.0004".
- Height: 2" or 4" (with mag base)
- Setter Dimension: 1.45" (square) x 2" (height).



4401–0050



With Mag Base
4401–0051

Pro-Series DIAL Z-AXIS SETTER

- Efficient to set "0" point with built in dial indicator.
- Positioning accuracy and repeatability: 0.0002" .
- With magnetic base.
- Dimension: 2" (square) x 4" (height).

4401–0062



Pro-Series Z-Axis HEIGHT PRE-SETTER

- Base with magnet
- 50mm height
- Reading 0-50-0
- Accuracy: 0.01mm
- Weight: 2.6 lbs.
- Checking bar & case included.

MADE IN TAIWAN

4401–0054



Pro-Series DIAL Z-AXIS SETTERS

- Efficient to set "0" point with built in dial indicator.
- Positioning accuracy and repeatability: 0.0005" .
- Dimension: 2" (square) x 2" (height).
- With fitted wooden case.



With Magnet
4401–0064



Without Magnet
4401–0063

Pro-Series OPTICAL HEIGHT PRE-SETTER

- Magnetic base
- 50mm height
- Red lamp illuminates when touched by ferrous material

4401–0052

MADE IN TAIWAN



CNC TOOL CARTS

- Heavy gauge
- Angled tray
- Durable nylon inserts
- Adjustable tool holder
- Fits tools styles: BT, CAT V-Flange and NMTB

Limited Supply!

TRUCK ONLY

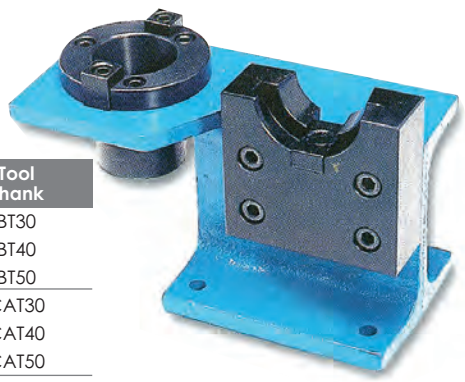
#40 TAPER HOLD 48 TOOLS
8072–4048



Dimension(WxLxH): 18 x 35 x 35"

HORIZONTAL/VERTICAL CNC TOOL HOLDER TIGHTENING FIXTURES

- 2 positions
- For mounting on worktable or cart.
- Quick and easy way to set tool holders horizontal or vertical



*Limited Supply

Item#	Tool Shank
3900-4080	BT30
3900-4081	BT40
3900-4082*	BT50
3900-4083	CAT30
3900-4084	CAT40
3900-4085	CAT50

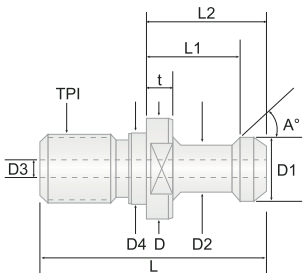
RETENTION KNOBS

Style 1, RETENTION KNOBS-BT 40

- Heat treated alloy steel.
- All dimensions in accordance to ANSI specifications for CAT holders and MAS specifications for BT holders.







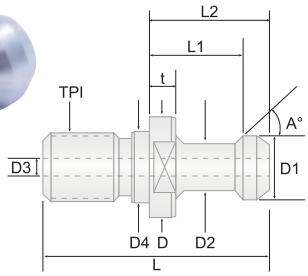
Item#	Machine Taper	Thru Coolant	Thread T.P.I.	Angle A.	Knob Dia. D1 (Inch/mm)	Neck Dia. D2 (Inch/mm)	Hole Dia. D3 (Inch/mm)	Pilot Dia. D4 (Inch/mm)	Dia. D (Inch/mm)	OAL L (Inch/mm)	Shoulder L1 (Inch/mm)	Shoulder L2 (Inch/mm)
3900-5392	BT40	YES	M16x2.0	45°	0.591/15	0.394/10	0.150/3.8	0.669/17	0.906/23	2.374/60.3	1.102/28	2.421/61.5
3900-5393	BT40	YES	M16x2.0	60°	0.591/15	0.394/10	0.150/3.8	0.669/17	0.906/23	2.374/60.3	1.102/28	2.421/61.5
3900-5503	BT40	N/A	M16x2.0	45°	0.591/15	0.394/10	N/A	0.669/17	0.906/23	2.374/60.3	1.102/28	2.421/61.5
3900-5504	BT40	N/A	M16x2.0	60°	0.591/15	0.394/10	N/A	0.669/17	0.906/23	2.374/60.3	1.102/28	2.421/61.5

Style 1, RETENTION KNOBS-BT 50

- SNCM 21 alloy steel hardened to HRC 52~56°
- All dimensions in accordance to ANSI specifications for CAT holders and MAS specifications for BT holders.







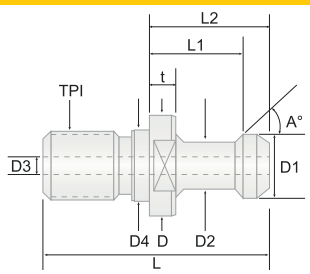
Item#	Machine Taper	Thru Coolant	Thread T.P.I.	Angle A.	Knob Dia. D1 (Inch/mm)	Neck Dia. D2 (Inch/mm)	Hole Dia. D3 (Inch/mm)	Pilot Dia. D4 (Inch/mm)	Dia. D (Inch/mm)	OAL L (Inch/mm)	Shoulder L1 (Inch/mm)	Shoulder L2 (Inch/mm)
3900-5397	BT50	YES	M24x3.0	45°	0.906/23	0.669/17	0.268/6.8	0.984/25	1.496/38	3.346/85	1.378/35	3.937/100
3900-5508	BT50	N/A	M24x3.0	45°	0.906/23	0.669/17	0.268/6.8	0.984/25	1.496/38	3.346/85	1.378/35	3.937/100

Style 1, RETENTION KNOBS-CAT 40

- Heat treated alloy steel hardened to HRC 52~56°.
- ANSI/AMSE B5.50-1994







Item#	Machine Taper	Thru Coolant	Thread T.P.I.	Angle A.	Knob Dia. D1 (Inch/mm)	Neck Dia. D2 (Inch/mm)	Hole Dia. D3 (Inch/mm)	Pilot Dia. D4 (Inch/mm)	Dia. D (Inch/mm)	OAL L (Inch/mm)	Shoulder L1 (Inch/mm)	Shoulder L2 (Inch/mm)
3900-5485	CAT40	N/A	M16x2.0	45°	0.591/15	0.394/10	N/A	0.669/17	0.906/23	2.244/57	0.984/25	2.362/60
3900-5486	CAT40	N/A	M16x2.0	60°	0.591/15	0.394/10	N/A	N/A	0.906/23	2.244/57	0.984/25	2.362/60
3900-5491	CAT40	N/A	5/8~11	60°	0.591/15	0.394/10	N/A	N/A	0.906/23	2.244/57	0.984/25	2.362/60
3900-5528	CAT40	N/A	5/8~11	45°	0.591/15	0.394/10	N/A	N/A	0.906/23	2.244/57	0.984/25	2.362/60
3900-5529	CAT40	YES	5/8~11	45°	0.591/15	0.394/10	0.150/3.8	N/A	0.906/23	2.244/57	0.984/25	2.362/60
3900-5533	CAT40	YES	5/8~11	60°	0.591/15	0.394/10	0.150/3.8	N/A	0.906/23	2.244/57	0.984/25	2.362/60
3900-5539	CAT40	YES	M16x2.0	45°	0.591/15	0.394/10	0.150/3.8	0.669/17	0.906/23	2.244/57	0.984/25	2.362/60
3900-5541	CAT40	YES	M16x2.0	60°	0.591/15	0.394/10	0.150/3.8	N/A	0.906/23	2.244/57	0.984/25	2.362/60

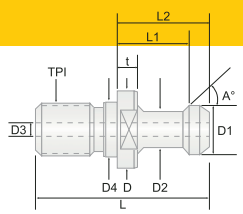
Retention Knob Safety!

Retention knobs are not intended to last forever. Your Safety Program must include Retention Knob Inspections. Knobs must be visually inspected for damage and checked for tightness every time the tool in the holder is changed. Every 2 or 3 years, depending on use, knobs should be removed from the holder and Magnetic Particle inspected. Any Retention Knobs showing indications of cracking must be discarded. If your machine is in a crash, or releases a tool prematurely., this is an indication that either the Retention Knob Fingers. Finger Guide, Belleville Washers in the Spindle, or the Retention Knob is damaged. The machine tool should not be used until inspected by Maintenance Personnel. In this case all the Retention Knobs in the machine should be checked for cracks or damage immediately.

Style 1, RETENTION KNOBS-CAT 50

- Heat treated alloy steel hardened to HRC 52~56°.
- ANSI/AMSE B5.50-1994



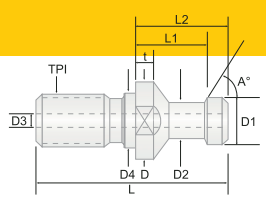


Item#	Machine Taper	Thru Coolant	Thread T.P.I.	Angle A.	Knob Dia. D1 (Inch/mm)	Neck Dia. D2 (Inch/mm)	Hole Dia. D3 (Inch/mm)	Pilot Dia. D4 (Inch/mm)	Dia. D (Inch/mm)	OAL L (Inch/mm)	Shoulder L1 (Inch/mm)	Shoulder L2 (Inch/mm)
3900-5493	CAT50	N/A	1~8	60°	0.906/23	0.669/17	N/A	N/A	1.496/38	3.094/78.6	1.386/35.2	3.937/100
3900-5535	CAT50	N/A	1~8	45°	0.906/23	0.669/17	N/A	N/A	1.496/38	3.094/78.6	1.386/35.2	3.937/100
3900-5536	CAT50	YES	1~8	45°	0.906/23	0.669/17	0.451/11.45	N/A	1.496/38	3.094/78.6	1.386/35.2	3.937/100

Style 2, RETENTION KNOBS-ISO 40A

- Heat treated alloy steel.
- All dimensions in accordance to ISO/DIS7388/2-1984A specifications.



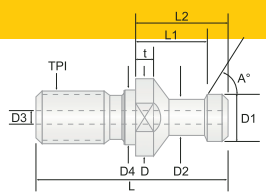


Item#	Machine Taper	Thru Coolant	Thread T.P.I.	Angle A.	Knob Dia. D1 (Inch/mm)	Neck Dia. D2 (Inch/mm)	Hole Dia. D3 (Inch/mm)	Pilot Dia. D4 (Inch/mm)	Dia. D (Inch/mm)	OAL L (Inch/mm)	Shoulder L1 (Inch/mm)	Shoulder L2 (Inch/mm)
3900-5376	ISO40A	N/A	M16x2.0	15°	0.748/19	0.551/14	N/A	0.669/17	0.906/23	2.126/54	0.787/20	1.575/40
3900-5381	ISO40A	YES	M16x2.0	15°	0.748/19	0.551/14	0.276/7	0.669/17	0.906/23	2.126/54	0.787/20	1.575/40

Style 2, RETENTION KNOBS-CAT 50

- Heat treated alloy steel hardened to HRC 52~56°.
- ANSI/AMSE B5.50-1994



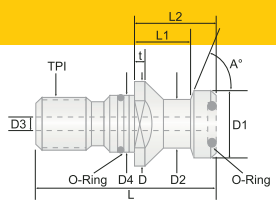


Item#	Machine Taper	Thru Coolant	Thread T.P.I.	Angle A.	Knob Dia. D1 (Inch/mm)	Neck Dia. D2 (Inch/mm)	Hole Dia. D3 (Inch/mm)	Pilot Dia. D4 (Inch/mm)	Dia. D (Inch/mm)	OAL L (Inch/mm)	Shoulder L1 (Inch/mm)	Shoulder L2 (Inch/mm)
3900-5378	CAT50	YES	M24x3.0	15°	1.102/28	0.827/21	0.451/11.45	0.984/25	1.417/36	2.913/74	0.984/25	1.575/40

Style 3, RETENTION KNOBS-ISO 50A

- Heat treated alloy steel.
- All dimensions in accordance to ISO/DIS7388/2-1984A specifications.



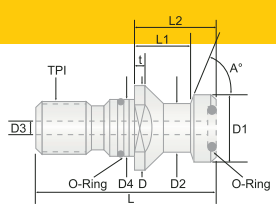


Item#	Machine Taper	Thru Coolant	Thread T.P.I.	Angle A.	Knob Dia. D1 (Inch/mm)	Neck Dia. D2 (Inch/mm)	Hole Dia. D3 (Inch/mm)	Pilot Dia. D4 (Inch/mm)	Dia. D (Inch/mm)	OAL L (Inch/mm)	Shoulder L1 (Inch/mm)	Shoulder L2 (Inch/mm)
3900-5373	ISO50A	YES	M24x3.0	45°	1.102/28	0.827/21	0.451/11.45	0.984/25	1.417/36	2.913/74	0.984/25	1.575/40

Style 3, RETENTION KNOBS-CAT 50

- Heat treated alloy steel hardened to HRC 52~56°.
- ANSI/AMSE B5.50-1994





Item#	Machine Taper	Thru Coolant	Thread T.P.I.	Angle A.	Knob Dia. D1 (Inch/mm)	Neck Dia. D2 (Inch/mm)	Hole Dia. D3 (Inch/mm)	Pilot Dia. D4 (Inch/mm)	Dia. D (Inch/mm)	OAL L (Inch/mm)	Shoulder L1 (Inch/mm)	Shoulder L2 (Inch/mm)
3900-5383	CAT50	N/A	M24x3.0	15°	1.142/29	0.768/19.5	0.445/11.3	0.984/25	1.417/36	2.567/65.2	0.692/17.58	1.811/46

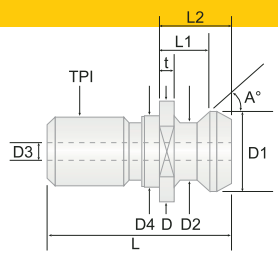
RETENTION KNOBS

Style 4, RETENTION KNOBS-ISO 40B

- Heat treated alloy steel.
- All dimensions in accordance to ISO/DIS7388/2-1984A specifications.







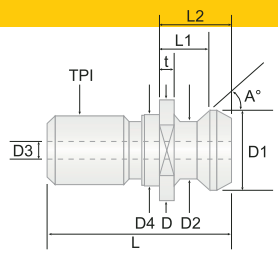
Item#	Machine Taper	Thru Coolant	Thread T.P.I.	Angle A.	Knob Dia. D1 (Inch/mm)	Neck Dia. D2 (Inch/mm)	Hole Dia. D3 (Inch/mm)	Pilot Dia. D4 (Inch/mm)	Dia. D (Inch/mm)	OAL L (Inch/mm)	Shoulder L1 (Inch/mm)	Shoulder L2 (Inch/mm)
3900-5372	ISO40B	YES	M16x2.0	45°	0.748/19	0.512/13	0.276/7	0.669/17	0.906/23	1.752/44.5	0.433/11	1.181/30

Style 4, RETENTION KNOBS-BT 40

- Heat treated alloy steel.
- All dimensions in accordance to ANSI specifications for CAT holders and MAS specifications for BT holders.







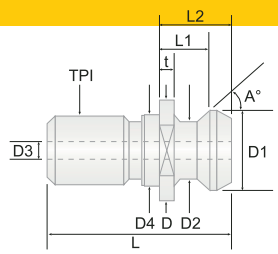
Item#	Machine Taper	Thru Coolant	Thread T.P.I.	Angle A.	Knob Dia. D1 (Inch/mm)	Neck Dia. D2 (Inch/mm)	Hole Dia. D3 (Inch/mm)	Pilot Dia. D4 (Inch/mm)	Dia. D (Inch/mm)	OAL L (Inch/mm)	Shoulder L1 (Inch/mm)	Shoulder L2 (Inch/mm)
3900-5497	BT40	YES	M16x2.0	45°	0.740/18.8	0.490/12.45	0.315/8	0.669/17	0.866/22	1.736/44.1	0.551/14	1.22/31

Style 4, RETENTION KNOBS-BT 50

- Heat treated alloy steel hardened to HRC 52~56°.
- All dimensions in accordance to ANSI specifications for CAT holders and MAS specifications for BT holders.







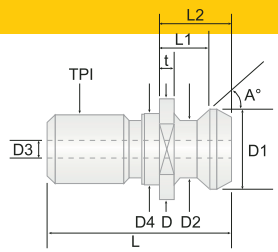
Item#	Machine Taper	Thru Coolant	Thread T.P.I.	Angle A.	Knob Dia. D1 (Inch/mm)	Neck Dia. D2 (Inch/mm)	Hole Dia. D3 (Inch/mm)	Pilot Dia. D4 (Inch/mm)	Dia. D (Inch/mm)	OAL L (Inch/mm)	Shoulder L1 (Inch/mm)	Shoulder L2 (Inch/mm)
3900-5499	BT50	YES	M24x3.0	45°	1.140/28.95	0.820/20.83	0.394/10	0.984/25	1.457/37	2.567/65.2	0.692/17.58	1.969/50

Style 4, RETENTION KNOBS-ISO 50B

- Heat treated alloy steel.
- All dimensions in accordance to ISO/DIS7388/2-1984A specifications.







Item#	Machine Taper	Thru Coolant	Thread T.P.I.	Angle A.	Knob Dia. D1 (Inch/mm)	Neck Dia. D2 (Inch/mm)	Hole Dia. D3 (Inch/mm)	Pilot Dia. D4 (Inch/mm)	Dia. D (Inch/mm)	OAL L (Inch/mm)	Shoulder L1 (Inch/mm)	Shoulder L2 (Inch/mm)
3900-5374	ISO50B	YES	M24x3.0	45°	1.142/29	0.768/19.5	0.445/11.3	0.984/25	1.417/36	2.583/65.6	0.692/17.58	1.969/50

Retention Knob Safety!

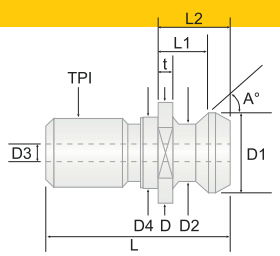
Retention knobs are not intended to last forever. Your Safety Program must include Retention Knob Inspections. Knobs must be visually inspected for damage and checked for tightness every time the tool in the holder is changed. Every 2 or 3 years, depending on use, knobs should be removed from the holder and Magnetic Particle inspected. Any Retention Knobs showing indications of cracking must be discarded. If your machine is in a crash, or releases a tool prematurely., this is an indication that either the Retention Knob Fingers. Finger Guide, Belleville Washers in the Spindle, or the Retention Knob is damaged. The machine tool should not be used until inspected by Maintenance Personnel. In this case all the Retention Knobs in the machine should be checked for cracks or damage immediately.

Style 4 RETENTION KNOBS-CAT 40

- Heat treated alloy steel hardened to HRC 52~56°.
- ANSI/AMSE B5.50-1994







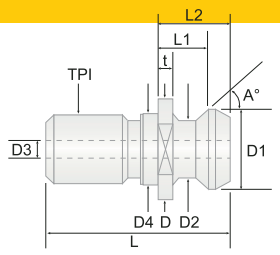
Item#	Machine Taper	Thru Coolant	Thread T.P.I.	Angle A.	Knob Dia. D1 (Inch/mm)	Neck Dia. D2 (Inch/mm)	Hole Dia. D3 (Inch/mm)	Pilot Dia. D4 (Inch/mm)	Dia. D (Inch/mm)	OAL L (Inch/mm)	Shoulder L1 (Inch/mm)	Shoulder L2 (Inch/mm)
3900-5512	CAT40	N/A	5/8~11	45°	0.740/18.79	0.488/12.4	N/A	N/A	0.886/22.5	1.535/39	0.433/11	1.26/32
3900-5513	CAT40	N/A	M16x2.0	45°	0.740/18.79	0.486/12.34	N/A	N/A	0.886/22.5	1.535/39	0.433/11	1.26/32
3900-5520	CAT40	YES	5/8~11	45°	0.740/18.79	0.486/12.34	0.276/7	N/A	0.886/22.5	1.496/38	0.433/11	1.24/31.5
3900-5521	CAT40	YES	M16x2.0	45°	0.740/18.79	0.486/12.34	0.276/7	N/A	0.937/23.8	1.496/38	0.433/11	1.24/31.5

Style 4, RETENTION KNOBS-CAT 50

- Heat treated alloy steel hardened to HRC 52~56°.
- ANSI/AMSE B5.50-1994







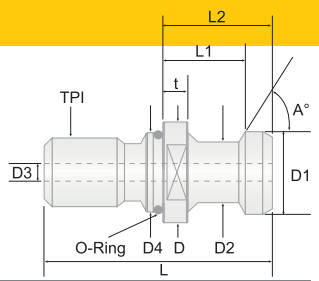
Item#	Machine Taper	Thru Coolant	Thread T.P.I.	Angle A.	Knob Dia. D1 (Inch/mm)	Neck Dia. D2 (Inch/mm)	Hole Dia. D3 (Inch/mm)	Pilot Dia. D4 (Inch/mm)	Dia. D (Inch/mm)	OAL L (Inch/mm)	Shoulder L1 (Inch/mm)	Shoulder L2 (Inch/mm)
3900-5492	CAT50	N/A	1~8	45°	1.140/28.95	0.820/20.83	N/A	N/A	1.417/36	2.307/58.6	0.692/17.58	1.969/50
3900-5519	CAT50	N/A	M24X3.0	45°	1.140/28.95	0.820/20.83	N/A	N/A	1.437/36.5	2.307/58.6	0.692/17.58	1.969/50
3900-5522	CAT50	YES	1~8	45°	1.140/28.95	0.820/20.83	0.451/11.45	N/A	1.43736.5	2.307/58.6	0.692/17.58	1.969/50
3900-5524	CAT50	YES	M24x3.0	45°	1.140/28.95	0.820/20.83	0.451/11.45	N/A	1.43736.5	2.307/58.6	0.692/17.58	1.969/50

Style 5, RETENTION KNOBS-ISO 40A

- Heat treated alloy steel.
- All dimensions in accordance to ISO/DIS7388/2-1984A specifications.







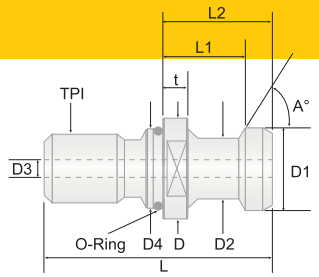
Item#	Machine Taper	Thru Coolant	Thread T.P.I.	Angle A.	Knob Dia. D1 (Inch/mm)	Neck Dia. D2 (Inch/mm)	Hole Dia. D3 (Inch/mm)	Pilot Dia. D4 (Inch/mm)	Dia. D (Inch/mm)	OAL L (Inch/mm)	Shoulder L1 (Inch/mm)	Shoulder L2 (Inch/mm)
3900-5371	ISO40A	YES	M16x2.0	45°	0.748/19	0.551/14	0.276/7	0.669/17	0.906/23	1.752/44.5	0.433/11	1.181/30

Style 5, RETENTION KNOBS-BT 50

- SNCM 21 alloy steel hardened to HRC 52~56°
- All dimensions in accordance to ANSI specifications for CAT holders and MAS specifications for BT holders.







Item#	Machine Taper	Thru Coolant	Thread T.P.I.	Angle A.	Knob Dia. D1 (Inch/mm)	Neck Dia. D2 (Inch/mm)	Hole Dia. D3 (Inch/mm)	Pilot Dia. D4 (Inch/mm)	Dia. D (Inch/mm)	OAL L (Inch/mm)	Shoulder L1 (Inch/mm)	Shoulder L2 (Inch/mm)
3900-5398	BT50	YES	M24x3.0	60°	0.906/23	0.669/17	0.236/6	0.984/25	1.496/38	3.346/85	1.378/35	3.937/100

CAT40 TOOL HOLDERS

CAT 40 "V" FLANGE END MILL HOLDERS

INCH

RETENTION KNOB THREAD: 5/8" ~11

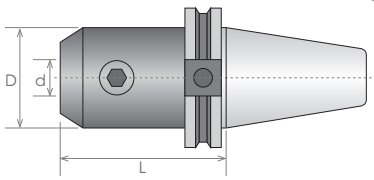
Item#	Bore Dia. d	Gage Depth L	Nose Dia. D	Item#	Bore Dia. d	Gage Depth L	Nose Dia. D
3900-4101	3/16	1.38	0.68	3900-4111	1/2	2.50	1.25
3900-4102	3/16	2.50	0.68	3900-4112	1/2	4.72	1.38
3900-4103	1/4	1.38	0.88	3900-4113	5/8	1.75	1.75
3900-4104	1/4	2.50	0.88	3900-4114	5/8	2.50	1.50
3900-4105	5/16	1.38	1	3900-4115	5/8	3.94	1.62
3900-4106	5/16	2.50	1	3900-4116	3/4	1.75	1.75
3900-4107	3/8	1.38	1	3900-4117	3/4	2.50	1.75
3900-4108	3/8	2.50	1	3900-4118	3/4	3.94	1.75
3900-4191*	7/16	1.38	1.25	3900-4120	7/8	3.94	2
3900-4109	7/16	2.50	1.25	3900-4123	1	3.94	2
3900-4110	1/2	1.75	1.75	3900-4125	1-1/4	3.94	2.62

*Limited Supply

- For CNC machines having CAT 40 taper spindles
- "V" flange end mill adapter
- Hardened and precision ground

T.I.R. ≤ .0002"



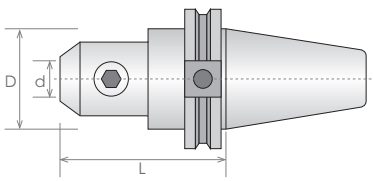


Pro-Series CAT 40 HIGH SPEED, BALANCED END MILL HOLDERS



- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Balanced to 15,000 RPM
- Tolerance: .0003" Max.

T.I.R. ≤ 0.01mm



SUPERIOR FINISH & CRAFTSMANSHIP

Item#	Bore Dia. d	Gage Length L	Nose Dia. D
3900-7721	3/16	2.5"	0.69"
3900-7724	1/4	3.0"	0.78"
3900-7727	5/16	3.0"	0.88"
3900-7730	3/8	3.0"	1"
3900-7736	1/2	3.0"	1.25"
3900-7740	5/8	3.0"	1.5"
3900-7745	3/4	3.0"	1.75"
3900-7749	7/8	3.5"	1.88"
3900-7751	1	4.0"	2"
3900-7756	1-1/4	4.6"	2.5"
3900-7760	1-1/2	4.5"	2.5"

CAT 40 "V" FLANGE DRILL CHUCK ARBORS

- For CNC machines having CAT 40 taper spindles
- Hardened and precision ground
- Gage depth: 1.772"

RETENTION KNOB THREAD: 5/8" -11



Item#	CAT Taper#	Jacobs No.
3900-4205	40	JT33
3900-4207	40	JT6
3900-4208	40	JT4
3900-4209	40	JT3
3900-4206	40	JT2

Pro-Series CAT 40 "V" FLANGE DRILL CHUCK ARBORS

- For CNC machines having CAT 40 taper spindles
- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Gage depth: 1.772"

RETENTION KNOB THREAD: 5/8"~11

MAX. RPM: 8,000
T.I.R. ≤ .0002"
SUPERIOR FINISH



Item#	Jacobs No.
3901-4205	JT33
3901-4206	JT2
3901-4207	JT6

Pro-Series ULTRA PRECISION KEYLESS DRILL CHUCKS W/ INTEGRAL CAT 40 SHANKS

- Integrated design maximizes rigidity & accuracy.
- Integral shank is more compact than a combined drill chuck and arbor and eliminates the chuck slipping on its arbor.
- Keyless, self tightening design.
- **Tightening wrench included.**

BRAND: VERTEX **Max. T.I.R. ≤ .002"**

Item#	Clamping Capacity	Shank
3701-0500	1/64~1/2"	CAT-40
3701-0625	1/8~5/8"	CAT-40

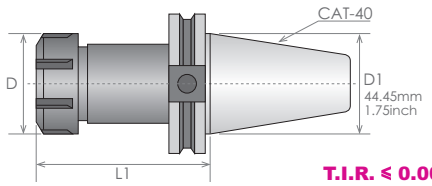


MADE IN TAIWAN

CAT 40 ER COLLET CHUCKS

- For CNC machines having CAT 40 taper spindles.
- Hardened and precision ground.

CAT-40 **(DRAWBAR END: 5/8" ~11)**



T.I.R. ≤ 0.005mm



Item#	Type	Collet Range	Nut Style	Nut Dia. D	Gage Depth L1
3900-4362	ER-16	0.019~0.406"	Hex	1.1"	2.5"
3900-4361	ER-16	0.019~0.406"	Hex	1.1"	3.5"
3900-2028	ER-20	0.040~0.511"	Hex	1.4"	2.75"
3900-2039	ER-20	0.040~0.511"	Hex	1.4"	4.00"
3900-2528	ER-25	0.040~0.629"	Spanner	1.7"	2.75"
3900-2539	ER-25	0.040~0.629"	Spanner	1.7"	4.00"
3900-4369	ER-32	0.078~0.787"	Spanner	2.0"	3.2"
3900-4364	ER-32	0.078~0.787"	Spanner	2.0"	4.00"
3900-4028	ER-40	0.120~1.020"	Spanner	2.5"	2.75"
3900-4039	ER-40	0.120~1.020"	Spanner	2.5"	4.00"

CAT 50 ER COLLET CHUCKS

- For CNC machines having CAT 50 taper spindles.
- Hardened and precision ground.

CAT-50 **(DRAWBAR END: 1"~8)**

T.I.R. ≤ .0002"



Limited Supply!

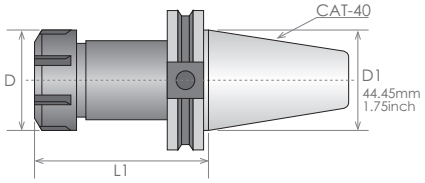
Item#	Type	Nut Style	Collet Range	Gage Depth
3900-4386	ER-16	Hex	0.019~0.406"	2.76"
3900-4390	ER-32	Spanner	0.078~0.787"	2.76"
3900-4396	ER-40	Spanner	0.120~1.020"	3.15"

Pro-Series HIGH SPEED, BALANCED CAT 40 ER COLLET CHUCKS

- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Balanced to 18,000 RPM
- Tolerance: .0003" Max.

SUPERIOR FINISH & CRAFTSMANSHIP

T.I.R. ≤ 0.005mm

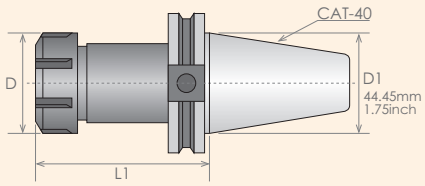




Item#	Type	Nut Style	Nut Dia. D	Gage Length, L1
3900-2060	ER-16	Hex	1.1"	2.76"
3900-2061	ER-16	Hex	1.1"	4.00"
3900-2065	ER-20	Hex	1.4"	4.00"
3900-2069	ER-25	Spanner	1.7"	4.00"
3900-2073	ER-32	Spanner	2.0"	2.76"

ER SPRING COLLET & CAT 40 CHUCK SETS

- High precision collet chuck system suitable for all milling and drilling applications.
- Unique self-releasing system.
- Wide holding range.
- With fitted case.
- Accuracy to .0005".





ER-16	ER-25	ER-32	ER-40
• 12PC SET INCLUDES 10-Collet 1/32, 1/16, 3/32, 1/8, 3/16, 7/32, 1/4, 5/16, 11/32 & 3/8" 1-Collet Chuck 1-Wrench	• 17PC SET INCLUDES 15-Collet 1/16, 3/32, 1/8, 3/16, 7/32, 1/4, 5/16,11/32, 3/8,13/32, 7/16, 1/2, 17/32, 9/16 & 5/8" 1-Collet Chuck 1-Wrench	• 20PC SET INCLUDES 18-Collet 3/32, 1/8, 3/16, 7/32, 1/4, 5/16, 11/32, 3/8, 13/32, 7/16, 1/2, 17/32, 9/16, 5/8, 21/32,11/16, 23/32 & 3/4" 1-Collet Chuck 1-Wrench	• 25PC SET INCLUDES 23-Collet 1/8, 3/16, 7/32, 1/4, 5/16, 11/32, 3/8, 13/32, 7/16, 1/2, 17/32, 9/16, 5/8, 21/32, 11/16, 3/4, 25/32, 13/16, 27/32, 7/8, 15/16, 31/32 & 1" 1-Collet Chuck 1-Wrench

Item#	Type	Nut Style	Set	Nut Dia. D	Gage Length L1
3900-4016	ER-16	Hex	12	1.1"	2.50"
3900-4025	ER-25	Spanner	17	1.7"	2.75"
3900-4032	ER-32	Spanner	20	2.0"	3.20"
3900-4040	ER-40	Spanner	25	2.5"	2.75"

PRECISION KEYLESS DRILL CHUCKS WITH INTEGRAL CAT 40 SHANKS

- Integrated design maximizes rigidity & accuracy.
- Integral shank is more compact than a combined drill chuck and arbor and eliminates the chuck slipping on its arbor.
- Keyless, self tightening design.

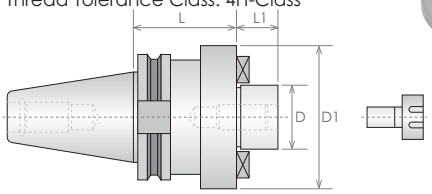
T.I.R. ≤ .0025"

Item#	Clamping Capacity	Shank
3701-3501	1/64~1/2"	CAT-40
3701-3626	1/64~5/8"	CAT-40



Pro-Series CAT 40 "V" FLANGE SHELL END MILL HOLDERS

- For CNC machines having CAT 40 taper spindles.
- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Balanced to 8,000 RPM
- Tolerance: .0002" Max.
- Material: 42 CrMo
- Hardness: HRC 50~52
- Thread Tolerance Class: 4H-Class





RETENTION KNOB THREAD: 5/8" -11

Item#	Dia. for Bore in Shell End Mill D	D1	Gage Length L	Bore Thread
3901-4255	3/4"	1.69"	1.5"	3/8"~24
3901-4257	1"	2.19"	2.06"	1/2"~20
3901-4259	1-1/4"	2.75"	2.21"	5/8~18
3901-4261	1-1/2"	3.81"	2.21"	3/4"~16

SHELL END MILL HOLDER SCREWS

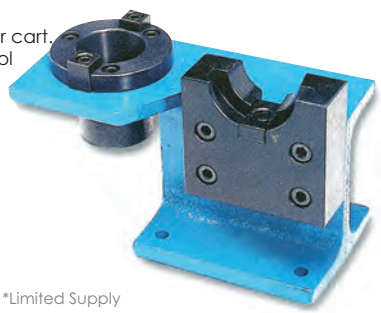
- Replacement screw for shell end mill holders.



Bore	Thread	D (mm)	L (mm)	Item#
1/2"	1/4"~28	16.7	21	3900-0761
3/4"	3/8"~24	22.2	27	3900-0764
1"	1/2"~20	30.2	33	3900-0767
1-1/4"	5/8"~18	38.1	39	3900-0770
1-1/2"	3/4"~16	47.6	45	3900-0773
2"	1"~14	63.1	52	3900-0777

HORIZONTAL/VERTICAL CNC TOOL HOLDER TIGHTENING FIXTURES

- 2 positions
- For mounting on worktable or cart.
- Quick and easy way to set tool holders horizontal or vertical



Item#	Tool Shank
3900-4080	BT30
3900-4081	BT40
3900-4082*	BT50
3900-4083	CAT30
3900-4084	CAT40
3900-4085	CAT50

*Limited Supply

PRECISION BORING SHANKS

NEW

- Use for boring heads.
- Made of high grade tool steel.
- Hardened and ground.

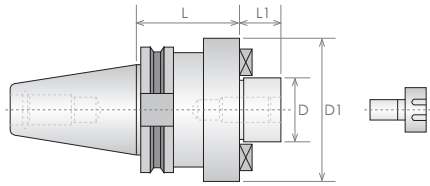


1-1/2" ~ 18 MOUNTING THREAD

Item#	Taper of Shank	Draw Bar End
1001-0440	CAT40	5/8"~11

CAT 40 "V" FLANGE SHELL END MILL HOLDERS

- CAT 40 Shell End Mill Holder.
- For CNC machines having CAT 40 taper spindles.
- Hardened and precision ground.



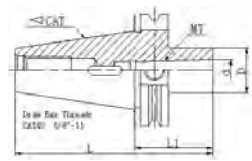


RETENTION KNOB THREAD: 5/8" -11

Item#	Dia. for Bore in Shell End Mill D	D1	Gage Length L	L1	Bore Thread
3900-4255	3/4"	1.5"	1.50"	0.69"	3/8"~24
3900-4257	1"	2.0"	2.00"	0.69"	1/2"~20
3900-4259	1-1/4"	2.5"	2.19"	0.69"	5/8~18
3900-4261	1-1/2"	3.0"	2.19"	0.94"	3/4"~-16

CAT 40 "V" FLANGE MORSE TAPER ADAPTERS

- For CNC machines having CAT 40 taper spindles
- Hardened and precision ground





RETENTION KNOB THREAD: 5/8" ~11

Item#	CAT Taper#	Morse Taper No.	Gage Depth L1	D	OAL L
3900-4305	40	MT2	2.375"	1.26"	5.2"
3900-4307	40	MT3	3.000"	1.57"	5.6"
3900-4309	40	MT4	2.562"	1.89"	6.6"

Pro-Series SELF CENTERING CNC VISE

- Suitable for 4/5 axis CNC machines
- Repeat clamping tolerance +/- 0.0004"/ 0.01mm
- Material: FCD 60, high tension cast iron slide way has hardness of HRC 450
- Interchangeable jaw heat treatment to HRC 55°.
- Lock down force to keep work piece from lifting.
- Swivel base 8" diameter x 22mm thickness
- Clamping Capacity: 1.77~5.51"

MADE IN TAIWAN



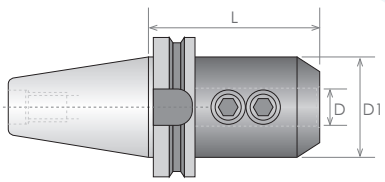
SWIVEL BASE INCLUDED!!

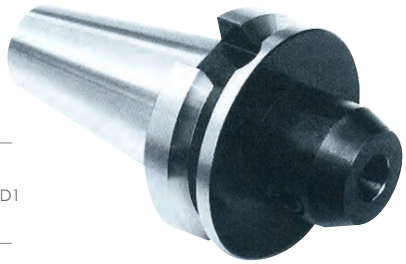
Item#	Jaw Width	Jaw Depth	Jaw Openning	Vise Height	OAL
3900-2220	2.36"	0.95"	3.94"	3.15 (w/o base)	7.3"

BT 30 & 40 END MILL HOLDERS

- For CNC machines having BT taper spindles.
- Concentricity .0002".
- All critical surfaces are hardened and precision ground.

Draw Bar Thread: BT30 M12x1.75
BT40 M16x2.00





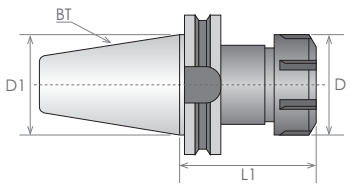
BT30 Item#	Bore Dia. D	Gage Depth L	Nose Dia. D1
3900-4233	1/4"	2.36"	1.06"
3900-4234	5/16"	2.36"	1.18"
3900-4235	3/8"	2.36"	1.26"
3900-4236	1/2"	2.36"	1.38"

BT40 Item#	Bore Dia. D	Gage Depth L	Nose Dia. D1
3900-4274	1/4"	1.97"	1.06"
3900-4276	5/16"	1.97"	1.18"
3900-4278	3/8"	2.48"	1.26"
3900-4280	1/2"	2.48"	1.38"
3900-4282	5/8"	2.48"	1.61"
3900-4284	3/4"	2.48"	1.75"
3900-4286	1"	2.48"	2.17"
3900-4288	1-1/4"	2.48"	2.44"

BT 30 & 40 ER COLLET CHUCKS

- For CNC machines having BT taper spindles.
- Concentricity .0003".
- All critical surface are hardened and precision ground.

Draw Bar Thread: BT30 M12x1.75
BT40 M16x2.00





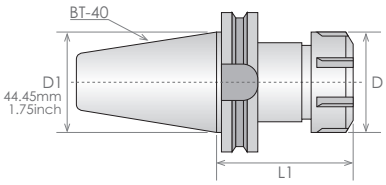
BT30 Item#	Type	Collet Range	Nut Style	Nut Dia. D	Gage Depth L
3900-7554	ER-16	0.019~0.406"	Hex	1.1"	2.76"
3900-7558	ER-20	0.040~0.511"	Hex	1.4"	2.76"
3900-7562	ER-25	0.040~0.629"	Spanner	1.7"	2.76"
3900-7566	ER-32	0.078~0.787"	Spanner	2.0"	2.76"
3900-7570	ER-40	0.120~1.020"	Spanner	2.5"	3.15"

BT40 Item#	Type	Collet Range	Nut Style	Nut Dia. D	Gage Depth L1
3900-7604	ER-16	0.019~0.406"	Hex	1.1"	2.48"
3900-7608	ER-20	0.040~0.511"	Hex	1.4"	2.76"
3900-7612	ER-25	0.040~0.629"	Spanner	1.7"	2.36"
3900-7618	ER-32	0.078~0.787"	Spanner	2.0"	2.76"
3900-7624	ER-40	0.120~1.020"	Spanner	2.5"	2.76"

Pro-Series HIGH SPEED, BALANCED BT 40 ER COLLET CHUCKS

- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Balanced to 18,000 RPM
- Tolerance: .0003" Max.
- M16x2.0 drawbar

SUPERIOR FINISH & CRAFTSMANSHIP





Item#	No.	Nut Style	Nut Dis. D	Gage Length L
3900-8604	ER-16	Hex	1.1"	2.76"
3900-8608	ER-20	Hex	1.4"	2.76"
3900-8618	ER-32	Spanner	2.0"	2.76"
3900-8620	ER-32	Spanner	2.0"	4"

Pro-Series BT-40 METRIC ER COLLET CHUCK SETS

NEW

- High precision collet chuck system suitable for all milling and drilling applications.
- Unique self-releasing system.
- Wide holding range.
- With fitted case.
- Accuracy to .0004", G6.3,15,000RPM.

ER-32

- *10PC SET INCLUDES*
  8-Collet: 4 ,5, 6, 8, 10, 12, 16 & 20mm
  1-Collet Chuck
  1-Wrench

ER-25

- *10C SET INCLUDES*
  8-Collet: 4, 5, 6, 8, 10, 12, 14 & 16mm
  1-Collet Chuck
  1-Wrench





Item#	No.	Nut Style	Chuck Shank	Gage Length	Set
3901-5101	ER-25	Spanner	BT40	3.94"	10
3901-5108	ER-32	Spanner	BT40	2.75"	10

Pro-Series BORING BT SHANKS

- Made of 20CrMnTi alloy steel.
- Electrolysis nickel coating.
- Superior craftsmanship.

HARDENED & GROUND

1-1/2" ~ 18 MOUNTING THREAD



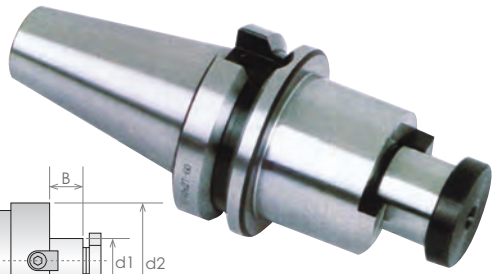
NEW

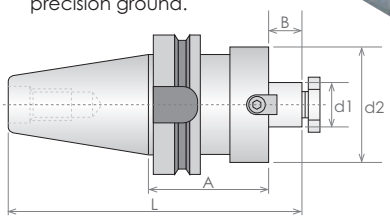
Item#	Taper of Shank	Draw Bar
1001-1084	BT40	M16x2.00

BT 30 & 40 TOOLING

BT 40 SHELL END MILL HOLDERS

- For CNC machines having BT taper spindles.
- Concentricity .0002".
- All critical surfaces are hardened and precision ground.





BT40 (INCH BORE DIAMETER)

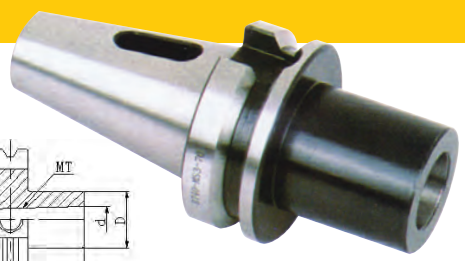
Item#	Bore Dia. d1 (Inch)	Gage Depth A (mm)	d2 (mm)	Arbor Thread
3900-4237	7/8	60	40	M16
3900-4238	1	60	48	M16
3900-4239	1-1/4	60	58	M16
3900-4240	1-1/2	60	70	M16

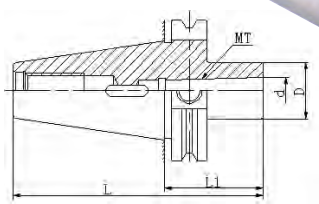
BT40 (METRIC BORE DIAMETER)

Item#	Bore Dia. d1 (mm)	Gage Depth A (mm)	d2 (mm)	Arbor Thread
3900-4241	22	45	40	M16
3900-4245	27	60	48	M16
3900-4250	32	60	58	M16
3900-4253	40	75	70	M16

BT 30 & 40 TO MORSE TAPER ADAPTORS

- For CNC machines having BT taper spindles.
- All critical surfaces are hardened and precision ground.
- Concentricity .0002".





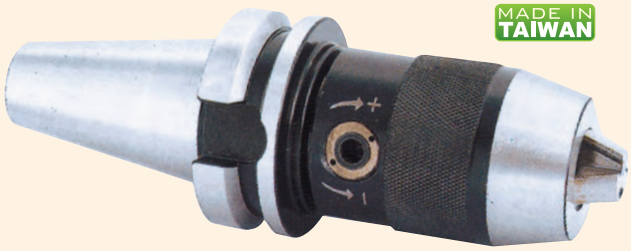
Item#	BT Taper	MT Taper	Gage Depth L1 (Inch)	D (Inch)	L (Inch)
3900-8701	30	MT2	2.36	1.26	4.3
3900-8702	30	MT3	3.15	1.58	5.0
3900-8705	40	Mt2	1.97	1.26	4.5
3900-8708	40	MT3	2.76	1.58	5.3
3900-8710	40	MT4	3.54	1.89	6.1

Pro-Series BT-40 HI-TORQUE INTEGRATED KEYLESS DRILL CHUCKS

- Reinforce torque design to increase more clamping power.
- Integrated design maximizes rigidity & accuracy
- Right turn and left turn allowable.
- Maximum T.I.R. does not exceed .002".
- Max. speed 6000 RPM.
- Supplied with wrench.

BT-40 TAPER

MADE IN TAIWAN



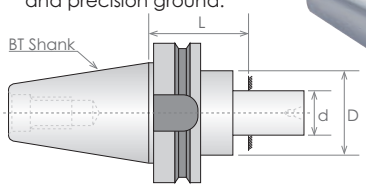
BRAND: VERTEX

Item#	Clamping Range
3701-2650	.02~1/2"
3701-2662	.12~5/8"

BT 30 & 40 TO JT DRILL CHUCK ARBORS

- For CNC machines having BT taper spindles.
- Concentricity .0002".
- All critical surfaces are hardened and precision ground.





Item#	BT Taper	JT Taper	Gage Depth L (Inch)	D (Inch)	OAL (Inch)
3900-4194	30	2	1.77	1.18	4.6
3900-4195	30	3	1.77	1.38	4.9
3900-4196	30	4	1.77	1.58	5.3
3900-4197	30	6	1.77	1.18	3.7
3900-4198	30	33	1.77	1.18	3.7
3900-4199	40	2	1.77	1.18	5.2
3900-4200	40	3	1.77	1.38	5.6
3900-4201	40	4	1.77	1.58	6.0
3900-4202	40	6	1.77	1.18	5.4
3900-4203	40	33	1.77	1.18	5.4

BT SHANK INTEGRAL ULTRA PRECISION KEYLESS DRILL CHUCKS

- Integrated design maximizes rigidity & accuracy.
- Integral shank is more compact than a combined drill chuck and arbor and eliminates the chuck slipping on its arbor.
- Keyless, self tightening design.

Item#	Brand	Clamping Capacity	Shank	Origin
3701-1050	VERTEX	1/64~1/2"	BT30	TAIWAN
3701-1054	VERTEX	1/64~1/2"	BT40	TAIWAN
3701-1062	VERTEX	1/8~5/8"	BT40	TAIWAN
3701-3503	HHIP	1/64~1/2"	BT40	CHINA
3701-3628	HHIP	1/64~5/8"	BT40	CHINA



Max. T.I.R. ≤ 0.002"

5C ER-32 COLLET CHUCK

- 5C-ER32 collet chuck Milling Chuck Holder.
- Made with DIN6499B (0.0005") Run-Out Tolerance.
- Holding all ER32 collets.
- Drawbar : 5C collet standard.
- Hardened and precision Groud.
- Half-moon Spanner included.

3900-5099



COLLET RACK-5C, ER32

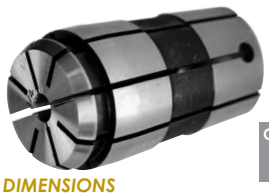
- Holds 8 collets 5C, ER32 or others.
- Supplied with mounting hardware.
- 4 mounting holes: 3.5" & 5.5" apart.
- Made from durable ABS material, heavy duty.

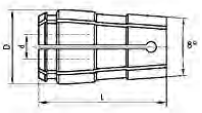


3900-1609

TG SINGLE ANGLE COLLETS

- Features a full 1/64" range of collapse
- Made of high grade tool steel.
- Precision ground and hardened.





COLLET MUST BE ASSEMBLED INTO NOSEPIECE BEFORE INSERTING INTO CHUCK

DIMENSIONS

TG SERIES	D	L	CAPACITY
75	1.062"(27mm)	1.844"(46.9mm)	1/16~3/4"
100	1.375"(35mm)	2.375"(60.5mm)	3/32~1"

Item#	TG 75 Size(Inch)
3900-1206*	1/8
3900-1207*	3/16
3900-1208*	1/4
3900-1216*	3/8
3900-1220*	7/16
3900-1226*	1/2

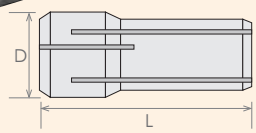
Item#	TG 100 Size(Inch)
3900-1304*	1/16
3900-1306*	3/32
3900-1308	1/8
3900-1310*	5/32
3900-1312	3/16
3900-1314*	7/32
3900-1316	1/4
3900-1318*	9/32
3900-1320	5/16
3900-1322*	11/32
3900-1324	3/8
3900-1326*	13/32
3900-1328	7/16
3900-1330*	15/32
3900-1332	1/2
3900-1334*	17/32
3900-1336	9/16
3900-1338*	19/32
3900-1340	5/8
3900-1342*	21/32
3900-1344	11/16
3900-1346*	23/32
3900-1348	3/4
3900-1350*	25/32
3900-1352	13/16
3900-1354*	27/32
3900-1356	7/8
3900-1358*	29/32
3900-1360	15/16
3900-1362*	31/32
3900-1364	1

*Limited Supply

DA SERIES-DOUBLE ANGLE COLLETS

- Full 1/32" range of collapse. For example, 100 series, 1/8" capacity will grip a drill 3/32" diameter securely and accurately.
- Concentric within 0.0005" TIR at collet nose assembled with chuck.
- Self release for rapid easy operation.





	DA-100	DA-180	DA-200	DA-300
D	0.769"	1.035"	0.539"	0.375"
L	1.440"	1.620"	1.18"	1.00"

Size (Inch)	DA-300 Item#	DA-200 * Item#	DA-100 * Item#	DA-180 * Item#
3/64	3900-4311	----------	3900-4410	3900-4811
1/16	3900-4312	3900-4210	3900-4411	3900-5810
5/64	3900-4313	3900-4211	3900-4412	3900-4813
3/32	3900-4314	3900-4212	3900-4413	3900-4814
7/64	3900-4315	3900-4213	3900-4414	3900-4815
1/8	3900-4316	3900-4214	3900-4415	3900-4816
9/64	3900-4317	3900-4215	3900-4416	3900-4817
5/32	3900-4318	3900-4216	3900-4417	3900-4818
11/64	3900-4319	3900-4217	3900-4418	3900-4819
3/16	3900-4320	3900-4218	3900-4119	3900-4820
13/64	3900-4321	3900-4219	3900-4420	3900-4821
7/32	3900-4322	3900-4220	3900-4121	3900-5822
15/64	3900-4323	3900-4221	3900-4122	3900-5823
1/4	3900-4324	3900-4222	3900-4423	3900-4824
17/64		3900-4223	3900-4124	3900-4825
9/32		3900-4224	3900-4425	3900-5826
19/64		3900-4225	3900-4126	3900-5827
5/16		3900-4226	3900-4127	3900-4828
21/64		3900-4227	3900-4128	3900-5829
11/32		3900-4228	3900-4429	3900-4830
23/64		3900-4229	3900-4430	3900-4831
3/8		3900-4230	3900-4431	3900-4832
25/64			3900-4432	3900-4833
13/32			3900-4433	3900-4834
27/64			3900-4134	3900-4950
7/16			3900-4135	3900-4836
29/64			3900-4136	3900-5837
15/32			3900-4137	3900-4838
31/64			3900-4138	3900-4939
1/2			3900-4139	3900-4940
33/64			3900-4140	3900-4941
17/32			3900-4441	3900-4942
35/64			3900-4442	3900-4943
9/16			3900-4443	3900-4944
37/64				3900-4945
19/32				3900-4946
39/64				3900-4947
5/8				3900-4848
41/64				3900-4859
21/32				3900-4850
43/64				3900-4851
11/16				3900-4852
45/64				3900-4953
23/32				3900-4955
47/64				3900-4956
3/4				3900-4957

*Limited Supply

ER COLLETS & SETS

Pro-Series HIGH ACCURACY ER SPRING COLLETS-AA GRADE 5 MICRON

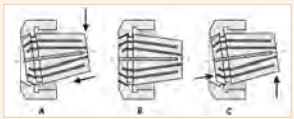
Series	Major Dia.	Overall Length
ER-16	.670"	1.052"
ER-20	.830"	1.230"
ER-32	1.300"	1.578"



- Made of high grade SUJ2 steel.
- Hardened and precision ground 44-48HRC.
- Exceeds Federal specifications.
- Inside diameter ground to reach mirrow finish increased grip force.
- Surface treated to reduce rust and improve hardness.
- Cyrogentic treatment to significiantely increase wear resistance.

Size/Range	ER-16 Item#	ER-20 Item#	ER-32 Item#
1/32" (.02~.04)	3901-5150		
1/16" (.04~.08)	3901-5151	3901-5180	3901-5239
3/32" (.08~.12)	3901-5152	3901-5181	3901-5240
1/8" (.12~.16)	3901-5153	3901-5182	3901-5241
3/16" (.16~.20)	3901-5154	3901-5183	3901-5242
7/32" (.20~.236)	3901-5155	3901-5184	3901-5243
1/4" (.236~.275)	3901-5156	3901-5185	3901-5244
5/16" (.275~.316)	3901-5157	3901-5186	3901-5245
11/32" (.316~.354)	3901-5158	3901-5187	3901-5246
3/8" (.354~.393)	3901-5159	3901-5188	3901-5247
13/32" (.393~.433)		3901-5189	3901-5248
7/16" (.433~.472)		3901-5190	3901-5249
1/2" (.472~.511)		3901-5191	3901-5250
17/32" (.511~.551)			3901-5251
9/16" (.551~.590)			3901-5252
5/8" (.590~.629)			3901-5253
21/32" (.629~.669)			3901-5254
11/16" (.669~.708)			3901-5255
23/32" (.708~.748)			3901-5256
3/4" (.748~.787)			3901-5257
25/32" (.748~.787)			3901-5258
13/16" (.787~.826)			3901-5259

Collet must be assembled into collet chuck nut before inserting into collet chuck !



RUNOUT ≤ .0002"/.005MM
SUPERIOR FINISH

AA GRADE TOLERANCE: 5 MICRON



INCH, ER-16
12 PC SET
3901-5320
1/32~3/8" BY 32ND

INCH, ER-20
14 PC SET
3901-5334
3/32~1/2" BY 32ND

INCH, ER-32
18 PC SET
3901-5355
1/8~3/4" (1/8,5/32,3/16,7/32,1/4,9/32,5/16,11/32, 3/8,7/16,15/32,1/2,9/16,19/32,5/8,11/16,23/32,3/4)

METRIC,ER-16
12 PC SET
3901-5325
1~10mm
(1, 1.5, 2, 2.5, 3,4,5,6,7,8,9,10)

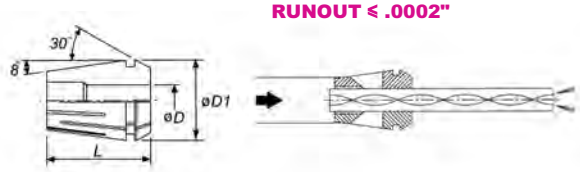
METRIC, ER-20
14 PC SET
3901-5338
1~13mm
(1, 1.5, 2,3,4,5,6,7,8,9,10,11,12,13)

METRIC, ER-32
18 PC SET
3901-5358
3~20mm BY 1MM

ER32 SPRING COLLETS-COOLANT THRU.

- Designed for use with cylindrical shank tools (no flats). Cutting tool should be inserted the full length of the collet. If these conditions are not met, coolant leakage may result.
- Collets meet DIN 6499B.

Series	Major Dia.	Overall Length
ER-32	1.300"	1.578"



RUNOUT ≤ .0002"



MADE IN TAIWAN

Item#	Size	Collapse Range
3900-5542	3/16	.16~ .20"
3900-5543	7/32	.20~.236"
3900-5544	1/4	.236~.275"
3900-5545	5-16	.275~.316"
3900-5546	11/32	.316~.354"
3900-5547	3/8	.354~.393"

Item#	Size	Collapse Range
3900-5548	13/32	.393~.433"
3900-5549	7/16	.433~.472"
3900-5550	1/2	.472~.511"
3900-5551	17/32	.511~.551"
3900-5552	9/16	.551~.590"
3900-5553	5/8	.590~.629"

Item#	Size	Collapse Range
3900-5554	21/32	.629~.669"
3900-5555	11/16	.669~.708"
3900-5556	23/32	.708~.748"
3900-5557	3/4	.748~.787"
3900-5558	25/32	.748~.787"

PRECISION ER SPRING COLLETS

- Made of high grade tool steel.
- Hardened and precision ground.
- Meets or exceeds Federal specifications.

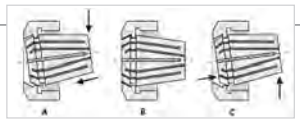
Series	Major Dia.	Overall Length
ER-11	.453"	.709"
ER-16	.670"	1.052"
ER-20	.830"	1.230"

Series	Major Dia.	Overall Length
ER-25	1.020"	1.390"
ER-32	1.300"	1.578"
ER-40	1.620"	1.810"



Size/Range	ER-11 Item#	ER-16 Item#	ER-20 Item#	ER-25 Item#	ER-32 Item#	ER-40 Item#
1/32" (.02~.04)	3900-5142	3900-5150				
1/16" (.04~.08)	3900-5143	3900-5151	3900-5180	3900-5210	3900-5239	
3/32" (.08~.12)	3900-5144	3900-5152	3900-5181	3900-5211	3900-5240	
1/8" (.12~.16)	3900-5145	3900-5153	3900-5182	3900-5212	3900-5241	3900-5270
3/16" (.16~.20)	3900-5146	3900-5154	3900-5183	3900-5213	3900-5242	3900-5271
7/32" (.20~.236)	3900-5147	3900-5155	3900-5184	3900-5214	3900-5243	3900-5272
1/4" (.236~.275)	3900-5148	3900-5156	3900-5185	3900-5215	3900-5244	3900-5273
5/16" (.275~.316)		3900-5157	3900-5186	3900-5216	3900-5245	3900-5274
11/32" (.316~.354)		3900-5158	3900-5187	3900-5217	3900-5246	3900-5275
3/8" (.354~.393)		3900-5159	3900-5188	3900-5218	3900-5247	3900-5276
13/32" (.393~.433)			3900-5189	3900-5219	3900-5248	3900-5277
7/16" (.433~.472)			3900-5190	3900-5220	3900-5249	3900-5278
1/2" (.472~.511)			3900-5191	3900-5221	3900-5250	3900-5279
17/32" (.511~.551)				3900-5222	3900-5251	3900-5280
9/16" (.551~.590)				3900-5223	3900-5252	3900-5281
5/8" (.590~.629)				3900-5224	3900-5253	3900-5282
21/32" (.629~.669)					3900-5254	3900-5283
11/16" (.669~.708)					3900-5255	3900-5284
23/32" (.708~.748)					3900-5256	3900-5293
3/4" (.748~.787)					3900-5257	3900-5285
25/32" (.748~.787)					3900-5265	3900-5286
13/16" (.787~.826)					3900-5263	3900-5287
27/32" (.826~.866)						3900-5288
7/8" (.866~.905)						3900-5289
15/16" (.905~.984)						3900-5290
31/32" (.944~.984)						3900-5291
1" (.984~1.02)						3900-5292

Collet must be assembled into collet chuck nut before inserting into collet chuck !



SETS

9 PC SET	10 PC SET	12 PC SET	15 PC SET	18 PC SET	24 PC SET
3900-5164	3900-5165	3900-5205	3900-5235	3900-5267	3900-5299
1/32~9/32" By 32nd	1/32~3/8", All Sizes Above	1/16~1/2", All Sizes Above	1/16~5/8", All Sizes Above	3/32~3/4" Only	1/8~1", All Sizes Above

METRIC, ER SPRING COLLET SETS

NEW

- Made of high grade tool steel.
- Hardened and precision ground.
- Meets or exceeds Federal specifications.

12 PC SET, ER-32
3903-5260
3,4,5,6,8,10,12,14,15,16,18&20mm



10 PC SET, ER-25
3903-5230
3,4,5,6,8,10,12,14,15&16mm

ER-32 SPRING COLLET SETS

- Made of high grade tool steel.
- Hardened and precision ground.
- Meets or exceeds Federal specifications.



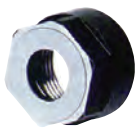
6 PC SET	11 PC SET	18 PC SET
3900-5166	3900-5168	3900-5267
1/8~3/4" By 8ths	1/8~3/4" By 16ths	3/32~3/4" Only

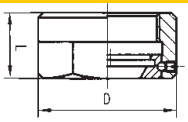
ER COLLET CHUCK NUTS

TYPE A HEX ER CHUCK NUTS



Type A





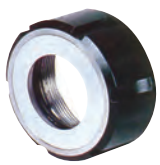
Type A (Bearing Type)

Fits	Thread	D (mm)	L (mm)	Type A Item#	Type A Item#
ER-11	M14 x 0.75	19	11.3	3900-0614	3900-0654
ER-16	M22 x 1.50	28	17.5	3900-0616	3900-0656
ER-20	M25 x 1.50	35	19	3900-0620	3900-0660

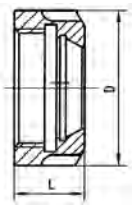
TYPE KM & UM SPANNER ER CHUCK NUTS



Type UM



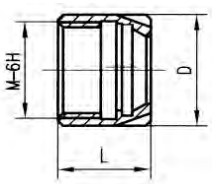
Type KM(Bearing Type)



Fits	Thread	D (mm)	L (mm)	Type UM Item#	Type KM Item#
ER-25	M32 X 1.50	42	20	3900-0625	3900-0645
ER-32	M40 X 1.50	50	22.5	3900-0632	3900-0647
ER-40	M50 X 1.50	63	25.5	3900-0640	3900-0649
ER-50	M64 X 2.00	78	35.5	3900-0642	3900-0651

ER CHUCK NUTS-Mini-Castle Nut
FOR MINI TYPE SHANKS ONLY





Fits	Item#	Thread	D(mm)	L (mm)
ER-8 Mini	3900-0671	M10 x 0.75	12	12
ER-11 Mini	3900-0673	M13 x 0.75	16	12
ER-16 Mini	3900-0675	M19 x 1.00	22	18
ER-20 Mini	3900-0677	M24 x 1.00	28	19
ER-25 Mini	3900-0679	M30 x 1.00	35	20

ER CHUCK CASTLE WRENCHES-Mini
FOR MINI NUTS

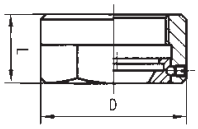
- Castle Wrench.



Fits	Item#	Open B (mm)	OAL L (mm)
ER-8 Mini	3900-0606	7.5	70
ER-11 Mini	3900-0607	11	90
ER-16 Mini	3900-0608	15	110
ER-20 Mini	3900-0609	19.5	120
ER-25 Mini	3900-0610	25	130

Pro-Series TYPE A 18,000 RPM ER CHUCK NUTS

- **Balanced to 18,000 RPM**
- Tolerance: .0003" Max.
- Material: 42 CrMo
- Hardness: HRC 50~52
- Thread Tolerance Class: 4H-Class

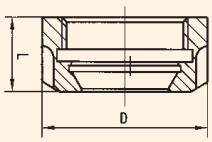




Item#	Fits	Thread	D (mm)	L (mm)
3900-0685	ER-11	M14 x 0.75	19	11.3
3900-0686	ER-16	M22 x 1.50	28	17.5

Pro-Series TYPE UM 18,000 RPM ER CHUCK NUTS

- **Balanced to 18,000 RPM**
- Tolerance: .0003" Max.
- Material: 42 CrMo
- Hardness: HRC 50~52
- Thread Tolerance Class: 4H-Class





Item#	Fits	Thread	D (mm)	L (mm)
3900-0688	ER-16	M22x1.5	32	17
3900-0689	ER-20	M25x1.5	35	19
3900-0690	ER-25	M32 X 1.50	42	20
3900-0691	ER-32	M40 X 1.50	50	22.5
3900-0692	ER-40	M50 X 1.50	63	25.5
3900-0693	ER-50	M64 X 2.00	78	35.5

Pro-Series TYPE KM 18,000 RPM ER CHUCK NUTS

- **Balanced to 18,000 RPM**
- Tolerance: .0003" Max.
- Material: 42 CrMo
- Hardness: HRC 50~52
- Thread Tolerance Class: 4H-Class

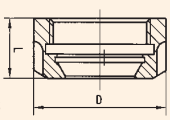


Type KM(Bearing Type)

Item#	Fits	Thread	D (mm)	L (mm)
3900-0695	ER-25	M32x1.5	42	22.5
3900-0696	ER-32	M40x1.5	50	26
3900-0697	ER-40	M50x1.5	63	29

Pro-Series TYPE M 18,000 RPM ER CHUCK NUTS

- **Balanced to 18,000 RPM**
- Tolerance: .0003" Max.
- Material: 42 CrMo
- Hardness: HRC 50~52
- Thread Tolerance Class: 4H-Class





Mini Type

Item#	Fits	Thread	D (mm)	L (mm)
3900-0680	ER-11	M13x.75	16	12
3900-0681	ER-16	M19x1.0	22	18
3900-0682	ER-20	M24x1.0	28	19

ER CHUCK HEX WRENCHES FOR TYPE A NUT

- For hex ER chuck nuts.



Item#	Fits	Open B (mm)	OAL L (mm)
3900-0591	ER-11	17	110
3900-0593	ER-16	25	110
3900-0592	ER-20	30	160

ER CHUCK SPANNER HOOK WRENCHE FOR TYPE KM&UM NUT

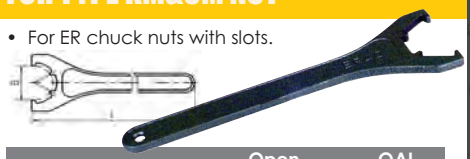
- For ER chuck nuts with slots.



Item#	Fits	Open (mm)	OAL L (mm)
3900-0594	ER-25	38-42	168
3900-0595	ER-32	45-52	190
3900-0596	ER-40	55-63	210
3900-0599	ER-50	78-85	240

ER CHUCK SLOTTED WRENCHES FOR TYPE KM&UM NUT

- For ER chuck nuts with slots.



Item#	Fits	Open B (mm)	OAL L (mm)
3900-0601	ER-25	37	210
3900-0602	ER-32	45	250
3900-0603	ER-40	58	290
3900-0605	ER-50	72	350

ER COLLET RACKS

- Holds ER collets.
- Heavy duty gage steel.
- Supplied with mounting hardware.

NEW



ER-20 Shown



ER-32 Shown

Item#	TYPE	HOLD COLLET	FOOTPRINT
3900-5171	ER-11	13	110x160mm
3900-5172	ER-16	8	110x180mm
3900-5174	ER-20	12	160x185mm
3900-5175	ER-25	15	180x300mm
3900-5176	ER-32	11	180x400mm
3900-5178	ER-40	15	250x360mm

ER COLLET RACKS

- Holds ER collets.
- Made from heavy duty gage steel.
- Supplied with mounting hardware.

NEW



ER-32 Shown

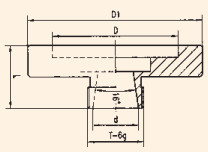


ER-20 Shown

Item#	TYPE	HOLD COLLET	FOOTPRINT
3900-8671	ER-11	12	70x100mm
3900-8672	ER-16	12	80x110mm
3900-8676	ER-20	12	100x140mm
3900-8680	ER-25	15	130x190mm
3900-8684	ER-32	20	200x260mm
3900-8688	ER-40	24	245x360mm

ER COLLET FIXTURES-Plain Back

- Mount to your choice of backplate for using on a lathe or could be used as a fixture on a milling table.
- Concentricity: .04mm/ .00016"





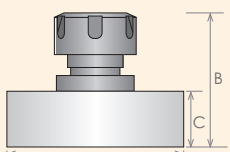


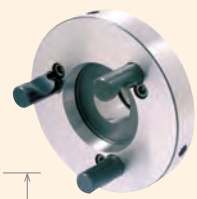
Item#	Type	D1	(mm) D	L	No. of Bolt Hole	Bolt Hole Size
3901-5016	ER-16	45	22	25	4	5
3901-5025	ER-25	102	52	36	3	M10
3901-5032	ER-32	80	55	42	3	M6
3901-5033	ER-32	100	72	42	3	M8
3901-5036	ER-40	100	72	42	3	M8
3901-5038	ER-40	132	100	42	3	M10

ER-40 COLLET CHUCK FIXTURE-Direct Mount

- Mount to D1 spindle of lathe.
- Concentricity .0002"

NEW







Item#	Type	D	Mount	B	C
3901-5041	ER-40	125mm	D1-3	54.9mm	23mm
3901-5042	ER-40	125mm	D1-4	54.9mm	23mm

HEX / SQUARE ER COLLET BLOCKS

- Block Dimension: 1-3/4 x 1-3/4 x Height.
- For fast set-ups on CNC machines.
- For parallel, square or hex shapes as well as for cross hole drilling at 60°, 90° or 120°.
- Made of tool steel hardened and ground to .0005" flatness, squareness and parallelism.
- Through hole allows for long parts to be machined.
- May be used standing upright.
- Uses standard ER collets.
- ER nut included.

NEW



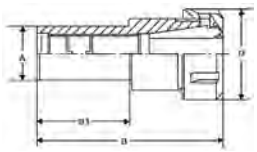


Item#	Shape	ER Collet	Block Height
3900-5123	Square	ER-25	2.7
3900-5124	Square	ER-32	2.8
3900-5125	Square	ER-40	3.2
3900-5127	Hex	ER-25	2.7
3900-5128	Hex	ER-32	2.8
3900-5129	Hex	ER-40	3.2

ER COLLET CHUCKS

ER COLLET STRAIGHT SHANKS





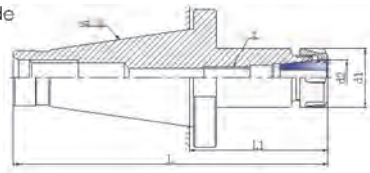
- Precision made with 0.0008" T.I.R.
- For heavy duty jobs.

Item#	Shank AxB1	Type	Capacity	Nut Style	(mm) B	(mm) D
3900-5106	5/8x2-1/2"	ER-11	.02~.275"	Hex	88.9	19
3900-7692	16mmx4"	ER-11	.02~.275 "	Hex	127	19
3900-5107	3/4x2-1/2"	ER-11	.02~.275 "	Hex	88.9	19
3900-5108	3/4x4"	ER-11	.02~.275 "	Hex	127	19
3900-5109	3/4x2-1/2"	ER-16	.02~.393"	Hex	103.5	28
3900-5110	3/4x4"	ER-16	.02~.393"	Hex	141.6	28
3900-5111	3/4x6"	ER-16	.02~.393"	Hex	192.4	28
3900-7694	20mmx4"	ER-16	.02~.393"	Hex	141.6	28
3900-5112	3/4x2-1/2"	ER-20	.04~.511"	Hex	104	34
3900-5116	3/4x4"	ER-20	.04~.511"	Hex	142.1	34
3900-5113	3/4x6"	ER-20	.04~.511"	Hex	192.9	34
3900-5115	3/4x2"	ER-25	.04~.629"	Spanner	101.8	42
3900-5114	3/4x4"	ER-25	.04~.629"	Spanner	152.6	42
3900-5118	1x2"	ER-32	.08~.787"	Spanner	101.5	50
3900-5122	1-1/4x6"	ER-32	.08~.787"	Spanner	201.5	50

NMTB 30-40 SHANK ER COLLET CHUCKS



- Made of high grade tool steel.
- Hardened and precision ground.
- Meets or exceeds Federal specifications.



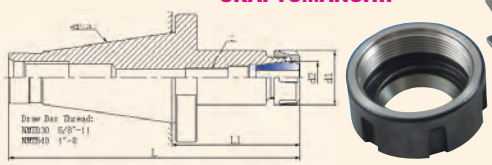
Item#	Shank	Type	Nut Style	L	(mm) L1	d1	Drawbar End
3900-5083	#30	ER-32	Spanner	128.4	60	50	1/2"~13
3900-5084	#30	ER-40	Spanner	138.4	70	63	1/2"~13
3900-5088	#40	ER-16	Hex	138.4	45	28	5/8"~11
3900-5090	#40	ER-32	Spanner	153.4	60	50	5/8"~11
3900-5091	#40	ER-40	Spanner	163.4	70	63	5/8"~11

Pro-Series NMTB 30-40 SHANK ER COLLET CHUCKS

- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Tolerance: .0003" Max.

SUPERIOR FINISH & CRAFTSMANSHIP



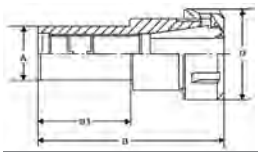


Item#	Shank	Type	Nut Style	L	(mm) L1	d1	Drawbar End
3901-5083	#30	ER-32	Spanner	128.4	60	50	1/2"~13
3901-5084	#30	ER-40	Spanner	138.4	70	63	1/2"~13
3901-5088	#40	ER-16	Hex	138.4	45	28	5/8"~11
3901-5090	#40	ER-32	Spanner	153.4	60	50	5/8"~11
3901-5091	#40	ER-40	Spanner	163.4	70	63	5/8"~11

Pro-Series STRAIGHT SHANK, BALANCED ER COLLET CHUCKS

- Made of 20CrMnTi alloy steel.
- Electrolysis nickel coating.
- Premium hardened & all ground body for extended tool life.



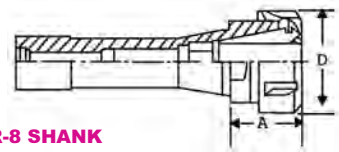


MAX. RPM: 18,000
T.I.R. ≤ .0003"
SUPERIOR FINISH

Item#	No.	Shank Ax B1	Nut Style	B	(mm) D
3900-2080	ER-11	5/8X2-1/2	Hex	3.457"	19
3900-2082	ER-11	3/4X4"	Hex	4.957"	19
3900-2083	ER-16	3/4x2-1/2"	Hex	4.087"	28
3900-2084	ER-16	3/4x4"	Hex	5.587"	28
3900-2085	ER-16	3/4x6"	Hex	7.587"	28
3900-2086	ER-20	3/4X2-1/2"	Hex	4.476"	34
3900-2088	ER-20	3/4X4"	Hex	5.976"	34
3900-2089	ER-20	3/4X6"	Hex	7.976"	34
3900-2091	ER-25	3/4X2"	Spanner	4.232"	42
3900-2092	ER-25	3/4X4"	Spanner	6.232"	42
3900-2094	ER-32	1X2"	Spanner	4.252"	50
3900-2095	ER-32	1X4"	Spanner	6.252"	50

R-8 SHANK ER COLLET CHUCKS

- Made of high grade tool steel.
- Hardened and precision ground.
- Meets or exceeds Federal specifications.
- **Thread of Drawbar End: 7/16" -20**



R-8 SHANK

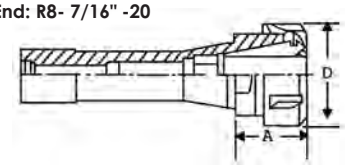


Item#	Type	Nut Style	(Inch) A	D
3900-5061	ER-16	Hex	1.50	1.10
3900-5066	ER-32	Spanner	157	1.97
3900-5069	ER-40	Spanner	2.76	2.48

Pro-Series R-8 Shank ER Collet Chucks

- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Premium hardened & all ground body for extended tool life.
- **Thread of Drawbar End: R8- 7/16" -20**

R-8 SHANK
MAX. RPM: 8,000
T.I.R. ≤ .0002"
SUPERIOR FINISH



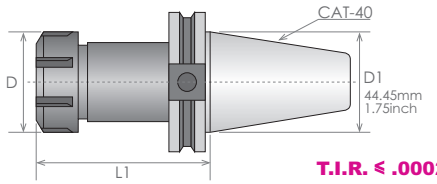


Item#	No.	Nut Style	(Inch) A	D
3901-5061	ER-16	Hex	1.50	1.10
3901-5063	ER-20	Hex	1.50	1.38
3901-5064	ER-25	Spanner	1.57	1.66
3901-5066	ER-32	Spanner	157	1.97
3901-5069	ER-40	Spanner	2.76	2.48

CAT 40 ER COLLET CHUCKS

- For CNC machines having CAT 40 taper spindles.
- Hardened and precision ground.

CAT-40 (DRAWBAR END: 5/8" ~11)



T.I.R. ≤ .0002"



Item#	Type	Collet Range	Nut Style	Nut Dia. D	Gage Depth L1
3900-4362	ER-16	0.019~0.406"	Hex	1.1"	2.5"
3900-4361	ER-16	0.019~0.406"	Hex	1.1"	3.5"
3900-2028	ER-20	0.040~0.511"	Hex	1.4"	2.75"
3900-2039	ER-20	0.040~0.511"	Hex	1.4"	4.00"
3900-2528	ER-25	0.040~0.629"	Spanner	1.7"	2.75"
3900-2539	ER-25	0.040~0.629"	Spanner	1.7"	4.00"
3900-4369	ER-32	0.078~0.787"	Spanner	2.0"	3.2"
3900-4364	ER-32	0.078~0.787"	Spanner	2.0"	4.00"
3900-4028	ER-40	0.120~1.020"	Spanner	2.5"	2.75"
3900-4039	ER-40	0.120~1.020"	Spanner	2.5"	4.00"

CAT 50 ER COLLET CHUCKS

- For CNC machines having CAT 50 taper spindles.
- Hardened and precision ground.

CAT-50 (DRAWBAR END: 1"~8)

T.I.R. ≤ .0002"



Limited Supply!

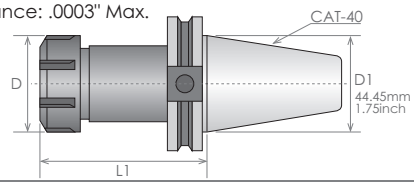
Item#	Type	Nut Style	Collet Range	Gage Depth
3900-4386	ER-16	Spanner	0.019~0.406"	2.76"
3900-4390	ER-32	Spanner	0.078~0.787"	2.76"
3900-4396	ER-40	Spanner	0.120~1.020"	3.15"

Pro-Series HIGH SPEED, BALANCED CAT 40 ER COLLET CHUCKS

- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Balanced to 18,000 RPM
- Tolerance: .0003" Max.

SUPERIOR FINISH & CRAFTSMANSHIP

T.I.R. ≤ 0.005mm



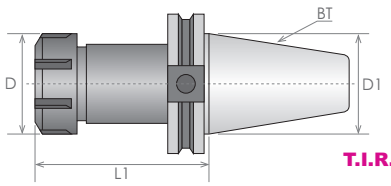


Item#	No.	Nut Style	Nut Dia. D	Gage Length, L1
3900-2060	ER-16	Hex	1.1"	2.76"
3900-2061	ER-16	Hex	1.1"	4.00"
3900-2065	ER-20	Hex	1.4"	4.00"
3900-2069	ER-25	Spanner	1.7"	4.00"
3900-2073	ER-32	Spanner	2.0"	2.76"

BT 30 & 40 ER COLLET CHUCKS

- For CNC machines having BT taper spindles.
- Concentricity .0003".
- All critical surface are hardened and precision ground.

Draw Bar Thread: BT30 M12x1.75
BT40 M16x2.00



T.I.R. ≤ .0002"



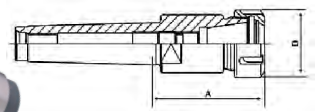
BT30 Item#	Type	Collet Range	Nut Style	Nut Dia. D	Gage Depth L1
3900-7554	ER-16	0.019~0.406"	Hex	1.1"	2.76"
3900-7558	ER-20	0.040~0.511"	Hex	1.4"	2.76"
3900-7562	ER-25	0.040~0.629"	Spanner	1.7"	2.76"
3900-7566	ER-32	0.078~0.787"	Spanner	2.0"	2.76"
3900-7570	ER-40	0.120~1.020"	Spanner	2.5"	3.15"

BT40 Item#	Type	Collet Range	Nut Style	Nut Dia. D	Gage Depth L1
3900-7604	ER-16	0.019~0.406"	Hex	1.1"	2.48"
3900-7608	ER-20	0.040~0.511"	Hex	1.4"	2.76"
3900-7612	ER-25	0.040~0.629"	Spanner	1.7"	2.36"
3900-7618	ER-32	0.078~0.787"	Spanner	2.0"	2.76"
3900-7624	ER-40	0.120~1.020"	Spanner	2.5"	2.76"

MT SHANK ER COLLET CHUCKS



- Made of high grade tool steel.
- Hardened and precision ground.
- Meets or exceeds Federal specifications.



T.I.R. ≤ .0002.5"

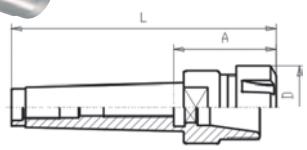
Item#	Shank	Type	Nut Style	A (mm)	D (mm)	Drawbar End
3900-5072	MT2	ER-20	Hex	43	34	3/8"~16
3900-5073	MT2	ER-25	Spanner	47	42	3/8"~16
3900-5077	MT3	ER-32	Spanner	70	50	3/8"~16
3900-5078	MT3	ER-40	Spanner	80	63	3/8"~16
3900-5079	MT4	ER-40	Spanner	82	63	5/8"~11

Pro-Series MT MORSE TAPER ER COLLET CHUCKS



MAX. RPM: 8,000
T.I.R. ≤ .0002"
SUPERIOR FINISH

- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Premium hardened & all ground body for extended tool life.



Item#	Shank	Type	Nut Style	Drawbar End	A (mm)	D (mm)
3901-5073	MT2	ER-25	Spanner	3/8"~16	47	42
3901-5078	MT3	ER-32	Spanner	1/2"~13	70	50

ER COLLET CHUCK SETS

ER SPRING COLLET CHUCK SETS

NEW

- High precision collet chuck system suitable for all milling and drilling applications.
- Unique self-releasing system.
- Wide holding range.
- With fitted case.
- Accuracy to .0005".













ER-11

- **9PC SET INCLUDES**
  7-Collet:
  1/16, 3/32, 1/8, 3/16, 7/32, 1/4&5/16"
  1-Collet Chuck
  1-Wrench

ER-16

- **11PC SET INCLUDES**
  9-Collet
  1/16, 3/32, 1/8, 3/16, 7/32, 1/4, 5/16, 11/32 & 3/8"
  1-Collet Chuck
  1-Wrench

ER-25

- **10PC SET INCLUDES**
  8-Collet
  4, 5, 6, 8, 10, 12, 14 & 16mm
  1-Collet Chuck
  1-Wrench
- **12PC SET INCLUDES**
  10-Collet
  3/32, 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16 & 5/8"
  1-Collet Chuck
  1-Wrench
- **17PC SET INCLUDES**
  15-Collet
  1/16, 3/32, 1/8, 3/16, 7/32, 1/4, 5/16,11/32, 3/8,13/32, 7/16, 1/2, 17/32, 9/16 & 5/8"
  1-Collet Chuck
  1-Wrench

ER-32

- **8PC SET INCLUDES**
  6-Collet
  1/4, 5/16, 3/8, 1/2, 5/8 & 3/4"
  1-Collet Chuck
  1-Wrench
- **10PC SET INCLUDES**
  8-Collet
  4, 5, 6, 8, 10, 12, 16 & 20mm
  1-Collet Chuck
  1-Wrench
- **14PC SET INCLUDES**
  12-Collet
  1/16, 3/32, 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8 & 13/16"
  1-Collet Chuck
  1-Wrench
- **20PC SET INCLUDES**
  18-Collet
  3/32, 1/8, 3/16, 7/32, 1/4, 5/16, 11/32, 3/8, 13/32, 7/16, 1/2, 17/32, 9/16, 5/8, 21/32,11/16, 23/32 & 3/4"
  1-Collet Chuck
  1-Wrench

ER-40

- **10PC SET INCLUDES**
  8-Collet
  1/8, 1/4, 3/8, 1/2, 5/8, 3/4, 7/8 & 1"
  1-Collet Chuck
  1-Wrench
- **17PC SET INCLUDES**
  15-Collet
  1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16 & 1"
  1-Collet Chuck
  1-Wrench
- **25PC SET INCLUDES**
  23-Collet
  1/8, 3/16, 7/32, 1/4, 5/16, 11/32, 3/8, 13/32, 7/16, 1/2, 17/32, 9/16, 5/8, 21/32, 11/16, 3/4, 25/32, 13/16, 27/32, 7/8, 15/16, 31/32 & 1"
  1-Collet Chuck
  1-Wrench

Item#	No.	Set	Size Range	Chuck Shank	Nut Style	Gage Length
3900-1172	ER-11	9	1/16~5/16"	1/2"	Hex	---
3900-1174	ER-11	9	1/16~5/16"	3/4x2-1/2"	Hex	---
3900-1176	ER-11	9	1/16~5/16"	3/4x2-1/2"	Mini	---
3900-1177	ER-11	9	1/16~5/16"	3/4x4"	Mini	---
3900-1178	ER-11	9	1/16~5/16"	3/4x6"	Mini	---
3900-1672	ER-16	11	1/16~3/8"	3/4"x4"	Hex	---
3900-0501	ER-16	11	1/16~3/8"	R8	Hex	---
3900-4014	ER-16	11	1/16~3/8"	CAT40	Hex	2.75"
3900-2573	ER-25	17	1/16~5/8"	3/4"x2-1/2"	Spanner	---
3900-0502	ER-25	12	3/32~5/8"	MT2	Spanner	1.85"
3901-5101	ER-25	10	4~16mm	BT40	Spanner	2.75"
3900-4023	ER-25	17	1/16~5/8"	CAT40	Spanner	2.75"
3900-7530	ER-32	20	3/32~3/4"	3/4"x4"	Spanner	---
3900-0507	ER-32	8	1/4~3/4"	R8	Spanner	---

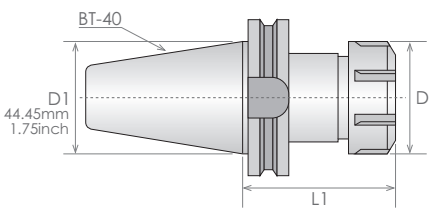
Item#	No.	Set	Size Range	Chuck Shank	Nut Style	Gage Length
3900-0508	ER-32	14	1/16~13/16"	R8	Spanner	---
3900-0503	ER-32	14	1/16~13/16"	MT3	Spanner	2.75"
3900-5300	ER-32	14	1/16~13/16"	#30	Spanner	2.36"
3900-0505	ER-32	14	1/16~13/16"	#40	Spanner	2.75"
3901-5108	ER-32	10	4~20mm	BT40	Spanner	2.75"
3900-4029	ER-32	20	3/32~3/4"	CAT40	Spanner	3.20"
3900-7538	ER-40	17	1/8~1"	3/4x3"	Spanner	---
3900-0004	ER-40	10	1/8~1"	R8	Spanner	2.76"
3900-0005	ER-40	17	1/8~1"	R8	Spanner	2.76"
3900-0531	ER-40	17	1/8~1"	MT3	Spanner	3.15"
3900-0504	ER-40	17	1/8~1"	MT4	Spanner	2.75"
3900-5301	ER-40	17	1/8~1"	#30	Spanner	2.36"
3900-0538	ER-40	10	1/8~1"	#40	Spanner	2.36"
3900-0540	ER-40	17	1/8~1"	#40	Spanner	2.36"
3900-4042	ER-40	25	1/8~1"	CAT40	Spanner	2.75"

Pro-Series HIGH SPEED, BALANCED BT 40 ER COLLET CHUCKS

- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Balanced to 18,000 RPM
- Tolerance: .0003" Max.
- M16x2.0 drawbar

SUPERIOR FINISH & CRAFTSMANSHIP





Item#	No.	Nut Style	Nut Dis. D	Gage Length L1
3900-8604	ER-16	Hex	1.1"	2.76"
3900-8608	ER-20	Hex	1.4"	2.76"
3900-8618	ER-32	Spanner	2.0"	2.76"
3900-8620	ER-32	Spanner	2.0"	4"

Pro-Series ER SPRING COLLET CHUCK SETS

- High precision collet chuck system suitable for all milling and drilling applications.
- Unique self-releasing system.
- Wide holding range.
- With fitted metal case.
- Accuracy to .0005".

SUPERIOR CRAFTSMANSHIP





Max. T.I.R. ≤ 0.0005"

ER-11

- **9PC SET INCLUDES**
  7-Collet: 1/16, 3/32, 1/8, 3/16, 7/32, 1/4&5/16"
  1-Collet Chuck
  1-Wrench

ER-16

- **11PC SET INCLUDES**
  9-Collet: 1/16, 3/32, 1/8, 3/16, 7/32, 1/4, 5/16, 11/32 & 3/8"
  1-Collet Chuck
  1-Wrench

ER-32

- **20PC SET INCLUDES**
  18-Collet
  3/32, 1/8, 3/16, 7/32, 1/4, 5/16,11/32, 3/8, 13/32, 7/16, 1/2, 17/32, 9/16, 5/8, 21/32,11/16, 23/32 & 3/4"
  1-Collet Chuck
  1-Wrench

ER-25

- **12PC SET INCLUDES**
  10-Collet
  3/32, 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16 & 5/8"
  1-Collet Chuck
  1-Wrench

- **17PC SET INCLUDES**
  15-Collet
  1/16, 3/32, 1/8, 3/16, 7/32, 1/4, 5/16,11/32, 3/8,13/32, 7/16, 1/2, 17/32, 9/16 & 5/8"
  1-Collet Chuck
  1-Wrench



ER-40

- **17PC SET INCLUDES**
  15-Collet
  1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16 & 1"
  1-Collet Chuck
  1-Wrench

- **25PC SET INCLUDES**
  23-Collet
  1/8, 3/16, 7/32, 1/4, 5/16, 11/32, 3/8, 13/32, 7/16, 1/2, 17/32, 9/16, 5/8, 21/32, 11/16, 3/4, 25/32, 13/16, 27/32, 7/8, 15/16, 31/32 & 1"
  1-Collet Chuck
  1-Wrench

Item#	No.	Set	Size Range	Chuck Shank	Nut Style	Gage Length
3900-1173	ER-11	9	1/16~5/16"	1/2"	Hex	---
3900-1175	ER-11	9	1/16~5/16"	3/4x8"	Hex	---
3900-4016	ER-16	11	1/16~3/8"	CAT40	Hex	2.50"
3900-1675	ER-16	11	1/16~3/8"	3/4x6"	Hex	---
3900-4025	ER-25	12	3/32~5/8"	CAT40	Spanner	2.75"
3900-2575	ER-25	17	1/16~5/8"	3/4x4"	Spanner	---
3900-4032	ER-32	20	3/32~3/4"	CAT40	Spanner	3.20"
3900-7532	ER-32	20	3/32~3/4"	3/4x4"	Spanner	---
3900-4040	ER-40	25	1/8~1"	CAT40	Spanner	2.75"
3900-7540	ER-40	17	1/8~1"	3/4x3"	Spanner	---

ER COLLET RACKS

NEW

- Holds ER collets.
- Heavy duty gage steel.
- Supplied with mounting hardware.



ER-20 Shown



ER-32 Shown

Item#	TYPE	HOLD COLLET	FOOTPRINT
3900-5171	ER-11	13	110x160mm
3900-5172	ER-16	8	110x180mm
3900-5174	ER-20	12	160x185mm
3900-5175	ER-25	15	180x300mm
3900-5176	ER-32	11	180x400mm
3900-5178	ER-40	15	250x360mm

ER COLLET RACKS

NEW

- Holds ER collets.
- Made from heavy duty steel.
- Supplied with mounting hardware.



ER-32 Shown



ER-20 Shown

Item#	TYPE	HOLD COLLET	FOOTPRINT
3900-8671	ER-11	12	70x100mm
3900-8672	ER-16	12	80x110mm
3900-8676	ER-20	12	100x140mm
3900-8680	ER-25	15	130x190mm
3900-8684	ER-32	20	200x260mm
3900-8688	ER-40	24	245x360mm

KEYLESS DRILL CHUCKS

PRECISION KEYLESS DRILL CHUCKS WITH INTEGRAL SHANKS

- Integrated design maximizes rigidity & accuracy.
- Integral shank is more compact than a combined drill chuck and arbor and eliminates the chuck slipping on its arbor.



T.I.R. ≤ .0025"

Item#	Clamping Capacity	Shank
3701-1501	0~1/2"	R8
3701-1626	1/64~5/8"	R8
3701-2490	1/64~5/16"	MT2
3701-2499	1/64~1/2"	MT3
3701-2502	1/64~1/2"	MT4
3701-2624	1/64~5/8"	MT3
3701-2627	1/64~5/8"	MT4
3701-3501	1/64~1/2"	CAT40
3701-3626	1/64~5/8"	CAT40
3701-3503	1/64~1/2"	BT40
3701-3628	1/64~5/8"	BT40

Pro-Series ULTRA PRECISION KEYLESS DRILL CHUCKS W/ INTEGRAL SHANKS

- Integrated design maximizes rigidity & accuracy.
- Integral shank is more compact than a combined drill chuck and arbor and eliminates the chuck slipping on its arbor.
- Keyless, self tightening design.



Max. T.I.R. ≤ .002"

BRAND: VERTEX

Item#	Clamping Capacity	Shank
3701-0500	1/64~1/2"	CAT40
3701-0625	1/8~5/8"	CAT40
3701-1050	1/64~1/2"	BT30
3701-1054	0~1/2"	BT40
3701-1062	1/8~5/8"	BT40
3701-1500	0~1/2"	R8
3701-1625	1/8~5/8"	R8
3701-2500	0~1/2"	MT3
3701-2501	0~1/2"	MT4
3701-2625	1/8~5/8"	MT3
3701-2626	1/8~5/8"	MT4
3701-3500	0~1/2"	#40NMTB
3701-3625	1/8~5/8"	#40NMTB

HEAVY DUTY KEYLESS DRILL CHUCKS

- Self-tightening design.
- No chuck key required.
- Hardened tool steel to insure accuracy and extended chuck life.
- Can be used on a wide variety of machinery.
- Solid steel body.

TAPER MOUNTED

0~1/2", JT33
3700-0210



Item#	Capacity	Taper Mount
3700-0204	0~3/8"	JT2
3700-0207	0~3/8"	JT33
3700-0210	1/32~1/2"	JT33
3700-0212	1/32~1/2"	JT2
3700-0213	1/32~1/2"	JT6
3700-0215	1/8~5/8"	JT6

ULTRA PRECISION KEYLESS DRILL CHUCKS

- Super heavy duty ultra precision.
- Closer tolerances assure excellent runout accuracy.
- Normal gripping power when hand tightened and double the torque when used with spanner wrench.
- Especially suitable for CNC machines.

HHIP PRO-SERIES

TAPER MOUNTED

0~1/2", JT33
3700-0255



Item#	Capacity (Inch)	Accuracy (Inch)	Taper Mount	Body Dia.
3700-0250	1/32~3/8	.0024	JT2	1.65"
3700-0251	1/32~3/8	.0024	JT33	1.65"
3700-0252	1/32~1/2	.0024	JT2	1.89"
3700-0255	1/32~1/2	.0024	JT33	1.89"
3700-0257	1/32~1/2	.0024	JT6	1.89"
3700-0259	1/32~5/8	.0028	JT6	2.09"

1/8" JT0 KEYLESS DRILL CHUCK



- Precision made with highest T.I.R.
- Ultra smooth bearings.

0~1/8"/0~3MM
3700-0002

SENSITIVE HAND DRILL FEED

- 1/2" diameter hardened and precision ground straight shank x 0JT.
- Grasp free turning ring and feed drill.
- Spring loaded 3/4" travel fits any drill, mill, lathe or jig borer.
- Reduces small drill breakage.
- Suitable for drills (.008-5/32")
- TIR: .002"



JT0
3700-0001



Drill Chuck Not Included

3PC PIN CHUCK SET

- Holds small drills firmly.
- Ensures complete collet length.
- Overall length: 2-1/2"
- Shank size: 1/4"

Includes:
(3) Collets - capacity: 0 - 1/32", 1/32 - 1/16", 1/16 - 3/32"



3700-0501

4PC PIN VISE SET

- Hollow handle for long wire or rods.



Includes:
Ranges: 0~.055", .025~.075", .045~.125", .110~.187"

3700-0505

STAINLESS STEEL KEYLESS DRILL CHUCKS

- Made of stainless steel(Anti-Rust).
- Acid resistance.
- Recommended for EDM machines and for use in the food & marine industries.

MADE IN TAIWAN



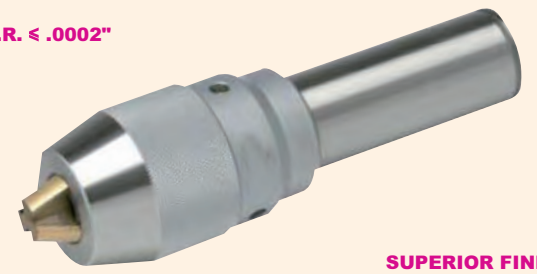
Limited Supply!

Item#	Clamping Range	Taper Mount
3700-0265	1/64~1/8"	JT0
3700-0267	1/64~1/4"	JT1

Pro-Series STRAIGHT SHANK INTEGRATED KEYLESS DRILL CHUCKS

- Integrated design maximizes rigidity & accuracy
- Electrolysis nickel coating.
- Supplied with wrench.

T.I.R. ≤ .0002"



SUPERIOR FINISH

Item#	Clamping Range	Shank Dimension
3701-4500	1/64~1/2"	5/8x2.4"
3701-4502	1/64~1/2"	3/4x3.2"
3701-4625	1/64~5/8"	5/8x2.4"
3701-4627	1/64~5/8"	3/4x3.2"

WRENCHES FOR KEYLESS DRILL CHUCKS

Hook wrench for keyless drill chucks



Item#	Fit Chuck Size	Taper Mount
3700-0291	0~5/16"	JT1
3700-0292	0~3/8"	JT2, JT33
3700-0293	0~1/2"	JT33, JT6
3700-0294	1/8~5/8"	JT3, JT6

DRILL CHUCKS

Pro-Series PRECISION DRILL CHUCKS-With Key



- Super precison durable with strong body.
- The nut and jaws are AISI-52100 (bearing steel) and heat treated.
- The taper is precision ground for improved precision.
- Accuracy: 0.0032".
- Supplied with chuck key.

MADE IN TAIWAN

Item#	Capacity	Taper Mount
3701-0100	1/64~1/4"	JT1
3701-0108	1/64~1/2"	JT33
3701-0110	1/64~1/2"	JT6
3701-0115	1/32~5/8"	JT3
3701-0120	1/8"~3/4"	JT4

LIVE MT2 TO JT33 ROTATING TAILSTOCK CHUCK ADAPTER



- This is a "live" drill chuck adapter with smooth, sealed bearing for the tailstock.
- Use it to mate with any JT33 drill chuck and support small diameter work where a live center is not practical.
- The shank is 2 Morse taper. The drill chuck taper is JT33.

NEW

3901-4910



* Drill Chuck Not Included

Pro-Series DRILL CHUCKS



- Precision made with the highest T.I.R.
- For heavy duty jobs.
- Supplied with chuck key.

RUNOUT: .005"
TAPER MOUNTED

1/2", JT33
3700-0083

Item#	Capacity	Taper Mount
3700-0081	1/32~3/8"	JT2
3700-0083	1/32~1/2"	JT33
3700-0084	1/32~1/2"	JT6
3700-0085	1/8~5/8"	JT3
3700-0086	1/8~5/8"	JT33
3700-0087	1/8~5/8"	JT6
3700-0089	3/16~3/4"	JT3

4-IN-1 MASTER DRILL CHUCK KEYS



- Convenient one-key can open different chucks.
- Fits most popular chucks.

3070-0048
For SIZE: K1,K2,K3,K4

3070-0481
For SIZE: K5,K6,K7,K8

BUDGET DRILL CHUCKS



- Accuracy and strong gripping force.
- For portable, bench or floor type drill press.
- Supplied with chuck key.

TAPER MOUNTED

Item#	Capacity	Taper Mount
3700-0100	1/32~3/8"	JT2
3700-0102	1/32~1/2"	JT33
3700-0103	1/32~1/2"	JT6
3700-0105	1/8~5/8"	JT3
3700-0106	1/32~5/8"	JT33
3700-0108	3/16~3/4"	JT3

1/2", JT33
3700-0102

BALL BEARING DRILL CHUCKS



NEW

- Extra heavy duty.
- Anti-thrust ball bearing to increase the grip power with high speed drilling.
- All parts hardened and precision ground.
- Ultra smooth with ball bearing.
- Supplied with chuck key.

RUNOUT: .0032"

Item#	Capacity	Taper Mount
3700-1091	1/32~3/8"	JT2
3700-1092	1/32~1/2"	JT6
3700-1093	1/32~1/2"	JT33
3700-1094	1/32~1/2"	JT3
3700-1095	1/32~5/8"	JT3
3700-1097	1/32~3/4"	JT4

STAINLESS STEEL DRILL CHUCKS- With Key



- Made of stainless steel(Anti-Rust).
- Acid resistance.
- Recommended for EDM machines and the food & marine industries.

Item#	Capacity	Taper Mount	Key Size
3700-0301	1/64~5/32"	JT0	T0-3S
3700-0302	1/64~1/4"	JT1	T1-3S
3700-0309	1/64~3/8"	JT2S	T2-3S



REPLACEMENT KEY

Item#	Key Size
3700-0311	T0-3S
3700-0312	T1-3S
3700-0313	T2-3S

REPLACEMENT DRILL CHUCK KEYS



Item#	Fits Chuck	(Inch) Pitot
3070-0042	1/4	.233
3070-0045	3/8	.233
3070-0049	1/2	.312
3070-0053	5/8	.312
3070-0057	3/4	.351

MORSE TAPER (MT) SLEEVES



- Used to convert spindles to larger or smaller tapers and extend the spindles of drill presses, radial drills, boring mills and turret lathes.

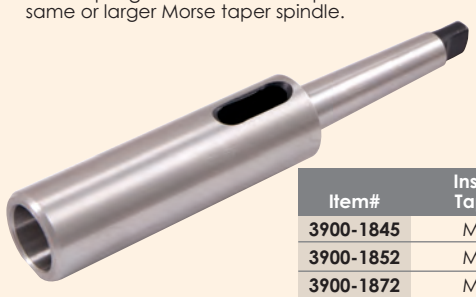
INDIVIDUALS

Item#	Inside Taper	Outside Taper
3900-1843	MT1	MT2
3900-1841	MT1	MT3
3900-1842	MT2	MT3
3900-1844	MT2	MT4
3900-1848	MT3	MT4
3900-1849	MT3	MT5
3900-1853	MT4	MT5
3900-1856	MT5	MT6

4 PC SET
3900-1850
MT1-MT2, MT2-MT3, MT3-MT4, MT4-MT5

MORSE TAPER EXTENSION SOCKETS

- For adapting tools with Morse taper shanks to machines having smaller, same or larger Morse taper spindle.



Item#	Inside Taper	Outside Taper
3900-1845	MT3	MT2
3900-1852	MT4	MT3
3900-1872	MT5	MT4

DRIFT/CENTER KEYS



- Fully drop-forged
- Used for knocking taper shank drills, reamers, etc. out of Morse taper sleeves.

INDIVIDUALS

Item#	Size for
3900-0261	MT1
3900-0262	MT2
3900-0263	MT3
3900-0264	MT4,5,6

4 PC SET
3900-0265

CHUCK WEDGE SETS

NEW



Item#	JT #
3700-0401	2
3700-0402	3
3700-0405	6&33

- For removing taper mount chucks from arbors or spindles.
- 2pc per set.

DRILL CHUCK ARBORS





Hardened & Ground

Straight TO JT

Item#	Arbor Taper to Chuck
3700-0111	MT1 to JT0
3700-0112	MT1 to JT1
3700-0113	MT1 to JT33
3700-0115	MT2 to JT1
3700-0151	MT2 to JT2
3700-0149	MT2 to JT3
3700-0117	MT2 to JT4
3700-0150	MT2 to JT6
3700-0152	MT2 to JT33
3700-0153	MT3 to JT33
3700-0154	MT3 to JT2
3700-0155	MT3 to JT3
3700-0159	MT3 to JT4
3700-0156	MT3 to JT6
3700-0160	MT4 to JT3
3700-0161	MT4 to JT4
3700-0157	MT4 to JT33
3700-0120	MT4 to JT5
3700-0158	MT4 to JT6
3700-0123	MT5 to JT3
3700-0124	MT5 to JT4

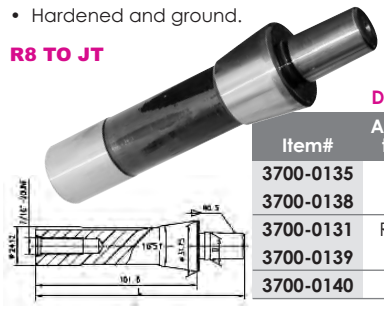
Item#	Arbor Taper to Chuck
3700-0162	1/2" to JT0
3700-0163	1/2" to JT1
3700-0164	1/2" to JT2
3700-0178	1/2" to JT3
3700-0165	1/2" to JT6
3700-0170	1/2" to JT33
3700-0166	5/8" to JT2
3700-0171	5/8" to JT33
3700-0167	3/4" to JT2
3700-0168	3/4" to JT3
3700-0172	3/4" to JT33
3700-0180	3/4" to JT4
3700-0181	3/4" to JT6
3700-0185	5/8" to JT1
3700-0187	5/8" to JT3
3700-0189	5/8" to JT6
3700-1721	7/8" to JT33
3700-0191	1" to JT2
3700-0174	1" to JT33
3700-0193	1" to JT4
3700-0173	1-1/4" to JT33
3700-0175	1-1/2" to JT33
3700-0176	1-3/4" to JT33

R8 DRILL CHUCK ARBORS

- Hardened and ground.

for ***Bridgeport***® type mills

R8 TO JT



DRAWBAR END THREAD: 7/16" -20

Item#	Arbor Taper to Chuck	D (mm)	L (mm)
3700-0135	R8 to JT2	14.199	128
3700-0138	R8 to JT3	20.599	137
3700-0131	R8 to JT33	15.85	132
3700-0139	R8 to JT4	28.55	148
3700-0140	R8 to JT6	17.17	132

Pro-Series R8 DRILL CHUCK ARBORS

- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Premium hardened & all ground body for extended tool life.
- **Thread of Drawbar End: R8- 7/16" -20**



MAX. RPM: 8,000
T.I.R. ≤ .0002"
SUPERIOR FINISH
R8 TO JT

Item#	Arbor Taper to Chuck
3701-0131	R8 to JT33
3701-0135	R8 to JT2
3701-0138	R8 to JT3
3701-0139	R8 to JT4
3701-0140	R8 to JT6

DRILL CHUCK ARBORS

Pro-Series NMTB 30 & 40 TAPER TO JACOBS DRILL CHUCK ARBORS

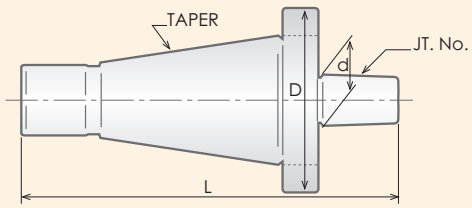
- Made of high grade alloy steel

≤ .0002" TIR

Drawbar End: #30- 1/2" -13
#40- 5/8" -11



- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating



Taper 30

Item#	Jacob Taper	D	(mm) d	L
3901-1702	JT2	31.75	14.2	113
3901-1703	JT3	31.75	20.6	123
3901-1704	JT33	31.75	15.85	122
3901-1706	JT6	31.75	17.17	122

Taper 40

Item#	Jacob Taper	D	(mm) d	L
3901-1712	JT2	44.45	14.2	141
3901-1713	JT3	44.45	20.6	150
3901-1714	JT33	44.45	15.85	145
3901-1716	JT6	44.45	17.17	145

NMTB 30 & 40 TAPER TO JACOBS ARBORS



Drawbar End: #30- 1/2"~13
#40- 5/8"~11

Jacob Taper	*Taper 30* Item#	*Taper 40* Item#
JT2	3900-1762	3900-1772
JT3	3900-1763	3900-1773
JT33	3900-1764	3900-1774
JT6	3900-1766	3900-1776

BT 30 & 40 TO JT DRILL CHUCK ARBORS

- For CNC machines having BT taper spindles.
- Concentricity .0002".
- All critical surfaces are hardened and precision ground.



Item#	BT Taper	JT Taper	Gage Depth (Inch)	OAL (Inch)
3900-4194	30	2	1.77	4.6
3900-4195	30	3	1.77	4.9
3900-4196	30	4	1.77	5.3
3900-4197	30	6	1.77	3.7
3900-4198	30	33	1.77	3.7
3900-4199	40	2	1.77	5.2
3900-4200	40	3	1.77	5.6
3900-4201	40	4	1.77	6.0
3900-4202	40	6	1.77	5.4
3900-4203	40	33	1.77	5.4

CAT 40 "V" FLANGE DRILL CHUCK ARBORS

- For CNC machines having CAT 40 taper spindles
- Hardened and precision ground
- Gage depth: 1.772"



RETENTION KNOB THREAD: 5/8" -11

Item#	CAT Taper#	Jacobs No.
3900-4205	40	JT33
3900-4207	40	JT6
3900-4208	40	JT4
3900-4209	40	JT3
3900-4206	40	JT2

Pro-Series CAT 40 "V" FLANGE DRILL CHUCK ARBORS

- For CNC machines having CAT 40 taper spindles
- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Gage depth: 1.772"



RETENTION KNOB THREAD: 5/8"~11

MAX. RPM: 8,000
T.I.R. ≤ .0002"
SUPERIOR FINISH

Item#	Jacobs No.
3901-4205	JT33
3901-4206	JT2
3901-4207	JT6

VERTEX R8 3 Inch UNIVERSAL BORING & FACING HEAD SET

NEW

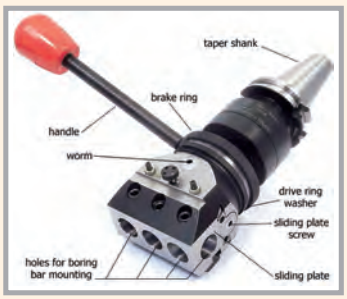
- Main part of the universal boring head is the body (1), in which the tool slide (3) moves on dovetail guideways. The tool slide is provided with holes for accommodation of tools and tool holders (4). In boring holes or turning extenal cylindrical surfaces, the tool is adjusted with the aid of the graduated dial for fine setting of tool slide (5), one division of which means a change in diameter of bored hole by .0005". On the types rapid adjustment of the tool slide (3) can be produced by rotating the graduated dial for quick adjustment of the tool slide (2). During recessing, turning of front or rear facings or similar jobs calling for automatic transverse feed movement to the tool slide, the preselected feed movement to the tool slide is engaged with the aid of the engagement ring (6). After setting of tool, the automatic transverse feed movement to the tool slide is started by braking fo the brake ring (7), by means of the handle (8). The cluth (9) provides for tripping of the automatic feed movement when cutting resistance increases or when the trip dog is approached. Mechanism of the boring heads has a lubrication circuit delivering oil from two lubricators to all friction surfaces. All parts are hardend and working surfaces are ground.



- *Set Includes:*
  - 1 - Boring Head
  - 1 - R8 Shank
  - 4 - Carbide Tipped Boring Bars
  - 1 - BP-21 Adapter
  - 2 - Adapter (Hold 1/4" Square Tool Bit)
  - 2 - Clamping Sleeve
  - 1 - Stop Rod
  - 1 - HSS 1/4" Square Tool Bit
  - 3 - Allen Wrenches
  - 1 - Fitted Carry Case

GRADUATION: 0.01MM

Boring Range: 5~250mm Dia.
1001-6008





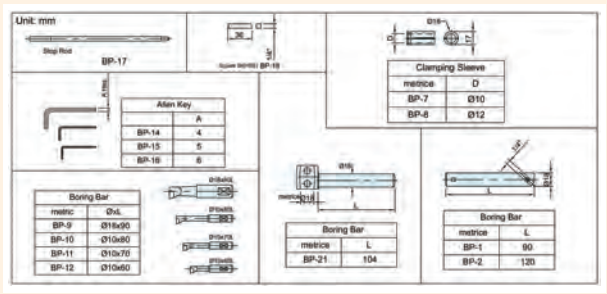
SPECIFICATION (mm)

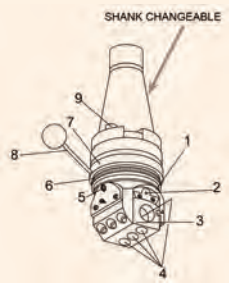
Actual Size	Overing Bar Hole Size	Boring Bar Hole Size	Center Dist. Between Holes	Cross Hole Dia.	Offset
78	100	18	23	18	15

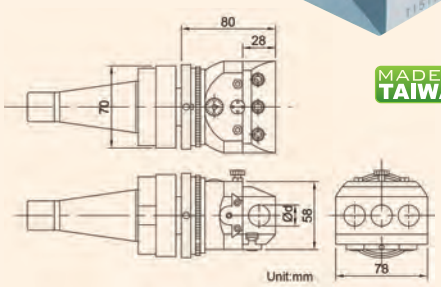












MADE IN TAIWAN

STFCR, SCLPR, STFPR INDEXABLE BORING BARS

- **STFCR-Right hand**, screw-held boring bar accepts positive 7^0 clearance triangular inserts.
- **SCLPR-Right hand**, screw-held boring bar accepts positive 11^0 clearance 80^0 carbide inserts.
- **STFPR-Right hand**, screw-held boring bar accepts positive 11^0 clearance triangular inserts.

STFCR



SCLPR



STFPR



Item#	Boring Bar Style	Shank	(mm) Min. Bore	OAL	Use Insert	Screw	Torx Wrench
1009-1018	S18S-SCLPR09	18	22	250	CPMT09T304	M4 x 8	T15
1004-3018	S18S-STFCR16	18	22	250	TCMT16T304	M4 x 8	T15
1021-1018	S18S-STFPR16	18	22	250	TPMT16T304	M4 x 8	T15

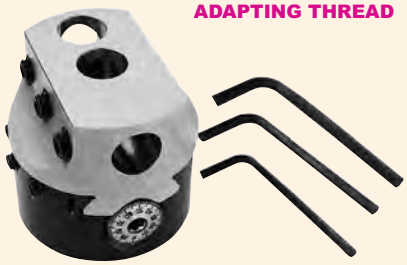
NEW

BORING HEADS & SETS

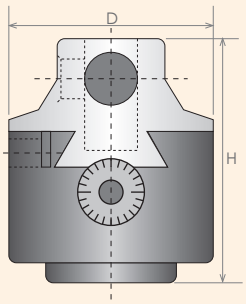
BORING HEADS

- Bar holder moves freely and smoothly.
- Design assures superior rigidity for chatter-free boring and precise hole size accuracy.
- Hardened and ground adjusting screw designed for long lasting and trouble free use.
- Threaded back for adapting to boring shank.

GRADUATION .0005"



ADAPTING THREAD





Item#	Head Dia. D	Head Ht H	Adapting Threads	Tool Capacity	Max. Offset	Boring Bar Hole Size	Shaft Hole Diameter	Dia of Boring
1001-0101	2"	2-7/16	1-1/2"~18	Up to 1/2"	5/8"	1/2	1/2	3/8~5.0
1001-1011	2"	2-7/16	7/8"~20	Up to 1/2"	5/8"	1/2	1/2	3/8~5.0
1001-0102	3"	3-5/32	1-1/2"~18	Up to 3/4"	1"	3/4	3/4	1/2~9.0
1001-0103	4"	3-1/2	1-1/2"~18	Up to 1"	1-5/8"	1	1	5/8~15.0

PRECISION BORING HEAD SHANKS

NEW

- Use for boring heads.
- Made of high grade tool steel.
- Hardened and ground.









7/8" ~ 20 MOUNTING THREAD

Item#	Taper of Shank	End Type
1001-0090	R8	Draw Bar
1001-0080	MT2	Draw Bar
1001-0431	MT3	Draw Bar
1001-0050	#30NMTB	Draw Bar
1001-0052	#40NMTB	Draw Bar
1001-0056	Straight 1/2"	
1001-0058	Straight 3/4"	
1001-0060	Straight 1"	
1001-0062	Straight 1-1/4"	

DRAWBAR END THREAD

- R8- 7/16" -20
- MT2- 3/8" -16
- MT3- 3/8" -16
- MT4- 1/2" -13
- #30- 1/2" -13
- #40- 5/8" -11
- #50- 1"-8

1-1/2" ~ 18 MOUNTING THREAD

Item#	Taper of Shank	End Type
1001-0089	R8	Draw Bar
1001-0081	MT2	Draw Bar
1001-0085	MT3	Draw Bar
1001-0086*	MT3	Tang End
1001-0068	#30NMTB	Draw Bar
1001-0069	#40NMTB	Draw Bar
1001-0070	#50NMTB	Draw Bar
1001-0072	Straight 1/2"	
1001-0073	Straight 5/8"	
1001-0074	Straight 3/4"	
1001-0076	Straight 1"	
1001-0077	Straight 1-1/4"	
1001-0078	Straight 1-1/2"	
1001-0079	Straight 2"	
1001-0440	CAT40	

* LIMITED SUPPLY

BORING TOOL COMBO SETS

- BORING HEAD: Bar holder moves freely and smoothly. Design assures superior rigidity for chatter-free boring and precise hole size accuracy. Hardened and ground adjusting screw designed for long lasting and trouble free use.

KIT INCLUDES:

BORING HEAD, SHANK,
C6 CARBIDE TIPPED BORING
BAR SET







Item#	Head Size	Shank Taper	Shank To Head	Boring Bar	Tool Capacity
1001-0105	2"	3MT	7/8"~20	1/2"/9pc	Up to 1/2"
1001-0106	2"	R8	7/8"~20	1/2"/9pc	Up to 1/2"
1001-0107	3"	R8	1-1/2"~18	3/4"/12pc	Up to 3/4"

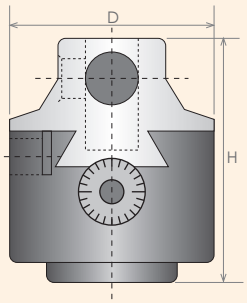
Pro-Series BORING HEADS

- Direct reading dial screw.
- Bar holder moves freely and smoothly.
- Design assures superior rigidity for chatter-free boring and precise hole size accuracy.
- Made of 20CrMnTi alloy steel.
- Electrolysis nickel coating.
- Threaded back for adapting to boring shank.

SUPERIOR CRAFTSMANSHIP
HARDENED & GROUND

ADAPTING THREAD GRADUATION .0005" .001"/ 0-50 READING







Item#	Head Size, D	Adapting Threads	Tool Capacity	Max. Offset	Head OAL, H	Borng Bar Hole Size	Shaft Hole Diameter	Diameter of Boring
1001-1020	2"	1-1/2"~18	Up to 1/2"	5/8"	2-7/16	1/2	1/2	3/8~5.0
1001-1021	2"	7/8"~20	Up to 1/2"	5/8"	2-7/16	1/2	1/2	3/8~5.0
1001-1023	3"	1-1/2"~18	Up to 3/4"	1"	3-5/32	3/4	3/4	1/2~9.0
1001-1026	4"	1-1/2"~18	Up to 1"	1-5/8"	3-1/2	1	1	5/8~15.0

Pro-Series BORING SHANKS

- Made of 20CrMnTi alloy steel.
- Electrolysis nickel coating.
- Superior craftsmanship.

DRAWBAR END THREAD
- R8: 7/16" -20
- MT3: 1/2" -13





HARDENED & GROUND



7/8" ~ 20 MOUNTING THREAD

Item#	Taper of Shank	End Type
1001-1090	R8	Draw Bar
1001-1431	MT3	Draw Bar

1-1/2" ~ 18 MOUNTING THREAD

Item#	Taper of Shank	End Type
1001-1080	MT3	Draw Bar
1001-1084	BT40	Draw Bar
1001-1089	R8	Draw Bar

BORING TOOL SETS

- Rugged design allows excellent rigidity for chatter-free boring.
- Head features a threaded back for multiple shanks exchangeable.
- **Set complete with Boring Head, Boring Shank, Carbide Tipped Boring Bars& L-shape Hex Wrenches.**
- Dial on head with 0.0005" graduation for accurate hole sizing.
- Fitted durable carry case included.



1001-5937 Shown



1001-5937 Shown

	2" HEAD	3" HEAD
Boring Head Thread	7/8"-20 T.P.I.	1-1/2"-18 T.P.I.
Offset	5/8"	3/4"
Crosshole	1/2"	3/4"
Shank Thread		
(Drawbar End)R8	7/16"-20 UNC	7/16"-20 UNC
(Drawbar End)MT2	3/8"-16 UNC	
(Drawbar End)NT40		5/8"-11 UNC
Mini. Boring Diameter	0.394"	0.394"
Max. Boring Diameter	5.906"	7.874"
Max. Boring Depth	1.970"	3.150"

Item#	Boring Head (Dia.)	Shank	No. of Boring Bar	Boring Bar Hole Size
1001-5935	2"	R8	9	1/2"
1001-5937	2"	MT2	9	1/2"
1001-5940	3"	R8	12	3/4"
1001-5942	3"	NT/NMTB 40	12	3/4"

Pro-Series BORING TOOL SETS

- Wide bearing surface provides super accuracy.
- Rugged design allows excellent rigidity for chatter-free boring.
- Head features a threaded back for multiple shanks exchangeable.
- Set complete with Boring Head, Boring Shank, Boring Bars, Adapters and L-shape Hex Wrenches.
- Dial on head with 0.0005" graduation for accurate hole sizing.
- Fitted durable carry case included.

HHIP PRO-SERIES MADE IN TAIWAN



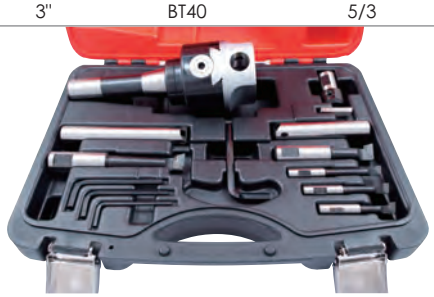
3800-5935 Shown



Item#	Boring Head (Dia.)	Shank	No. of Boring Bar/Adapter	Boring Bar Hole Size	N.W. (lbs.)
3800-5935	2"	R8	2/1	1/2"	5
3800-5940	3"	R8	5/3	3/4"	10
3800-5942	3"	NT/NMTB 40	5/3	3/4"	11
3800-5943	3"	BT40	5/3	3/4"	11



3800-5940 Shown





GRADUATION .0005"
READING .0005"/0-100



3800-5942 Shown

SPECIFICATION

2" HEAD

Boring Head Thread	1-1/2-18" T.P.I.
Offset	5/8"
Crosshole	1/2"
Shank Thread (Drawbar End) R8	7/16"-20 UNC
Mini. Boring Diameter	0.394"
Max. Boring Diameter	5.906"
Max. Boring Depth	1.970"
Boring Bars Size	1/2"
Adapter 1 (Hold 3/8" Boring Bar)	None
Adapter 2 (Hold 1/4"x1.2" Square Tool Bit)	Ø1/2"xØ3/4"x3.5"
Adapter 3 (Hold 1/4"x1.2" Square Tool Bit)	None
Adapter 4 (Hold 1/4"x1.2" Square Tool Bit)	None



3800-5943 Shown

3" HEAD

Boring Head Thread	1-1/2"-18 T.P.I.
Offset	3/4"
Crosshole	3/4"
Shank Thread (Drawbar End): R8	7/16"-20 UNC
NT 40	5/8"-11 UNC
BT40	M16x2.0
Mini. Boring Diameter	0.394"
Max. Boring Diameter	7.874"
Max. Boring Depth	3.150"
Boring Bars Size	3/8" & 3/4"
Adapter 1 (Hold 3/8" Boring Bar)	Ø3/4" x Ø3/8" x 2"
Adapter 2 (Hold 1/4"x1.2" Square Tool Bit)	None
Adapter 3 (Hold 1/4"x1.2" Square Tool Bit)	Ø3/4" x 3.5"
Adapter 4 (Hold 1/4"x1.2" Square Tool Bit)	Ø3/4" x 4.7"

R8 BORING TOOL SETS
-WITH INDEXABLE BORING BARS







NEW



- Indexable boring bars take TC_21.5 C6 carbide inserts(included).
- Head features a threaded back for multiple shanks exchangeable.
- **Set complete with Boring Head, Boring Shank, Indexable Boring Bars, Torx & L-shape Hex Wrenches.**
- Fitted carry case included.
- A micrometer lead screw provides 0.001" direct reading accuracy and ease of adjusting.
- 1 DIV = 0.001 meaning **on the 0-50 dial**, when turning the dial by 1 division/graduation, the boring head's travel is 0.001" in radius movement, 0.002" in diameter movement; **on the 0-100 dial**, when turning the dial by 1 division/graduation, the boring head's travel is 0.0005" in radius movement, 0.001" in diameter movement.

Item#	Boring Head (Dia.)	Shank	No. of Boring Bar	Boring Bar Hole Size
1001-0201	2"	R8	4	1/2"
1001-0205	3"	R8	8	3/4"

C6 GRADE: carbide for steel and alloy steel

	2" HEAD	3" HEAD
Graduations	0.001"/0-50	0.0005"/0-100
Boring Head Thread	1-1/2"-18 T.P.I.	1-1/2"-18 T.P.I.
Offset	5/8"	1"
Crosshole	1/2"	3/4"
Shank Thread (Drawbar End)	7/16"-20 UNC	7/16"-20 UNC
Mini. Boring Diameter	0.394"	0.394"
Max. Boring Diameter	5.906"	7.874"
Max. Boring Depth	1.970"	3.150"

BORING BAR SET INCLUDED

Set	Shank	Min. Bore	(Inch) OAL	Bore Depth	Use Insert	Use Torx Wr.	Use Screw	Item #
4	1/2	7/16	2-3/4	1-1/4	TCMT21-51	T-8	M2.5x5.0	1001-0704
		7/16	3-5/8	2-1/8				
		1/2	3	1-1/2				
		1/2	4	2-1/2				
8	3/4	7/16	3-3/8	1-3/8	TCMT21-51	T-8	M2.5x5.0	1001-0708
		7/16	4-1/4	2-1/4				
		1/2	3-5/8	1-5/8				
		1/2	4-5/8	2-5/8				
		9/16	3-7/8	1-7/8				
		9/16	5	3				
		11/16	4-1/4	2-1/4				
		11/16	5-1/2	3-1/2				

Pro-Series OFFSET BORING TOOL SETS

- Rugged construction for smooth and chatter-free boring.
- Heat treated parts made from SCM steel.
- Feeding quantity cutting will proceed 0.0008" at every scale of 0.0004".
- Set complete with Boring Head, Boring Shank, Boring Bars, Adapters and L-shape Hex Wrenches.
- Dial on head with 0.0005" graduation for accurate hole sizing.
- Fitted durable carry case included.

OPTIONAL NT40 SHANK
3800-5951



OPTIONAL R8 SHANK
3800-5950



SPECIFICATION

Boring Head Shank Hole.....M36
Offset.....1.1"
Crosshole.....3/4"
Shank Thread (Drawbar End):
R8.....7/16"-20 UNC
NT 40.....5/8"-11 UNC
Mini. Boring Diameter.....0.197"
Max. Boring Diameter.....9.840"
Max. Boring Depth.....3.540"
Boring Bars Size.....3/8" & 3/4"
Adapter 1 (Hold 3/8" Boring Bar).....Ø3/4" x Ø3/8" x 2"
Adapter 2 (Hold 1/4"x1.2" Square Tool Bit).....Ø3/4" x 3.5"
Adapter 3 (Hold 1/4"x1.2" Square Tool Bit).....Ø3/4" x 4.7"











NEW



3800-5945 Shown

MADE IN TAIWAN

HHIP PRO-SERIES

Item#	Boring Head (Dia.)	Shank	No. of Boring Bar/Adapter	Boring Bar Hole Size	N.W. (lbs.)
3800-5945	3.3"	R8	5/3	3/4"	11
3800-5947	3.3"	NT/NMTB 40	5/3	3/4"	12

CLAMPING KITS

58PC Pro-Series STEEL CLAMPING KITS

- Fits all Bridgeport type milling machines.
- Made of powered casting steel for stronger strength.
- All parts heat treated.
- Plastic rack included.

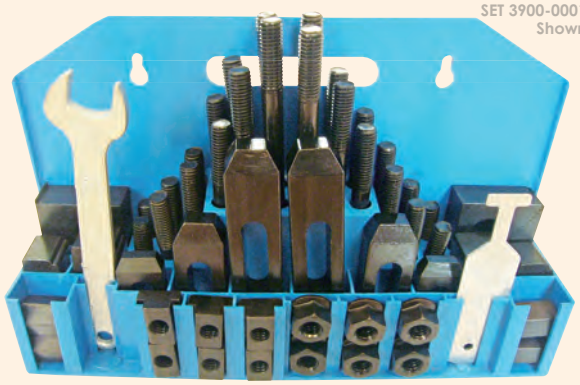
HHIP PRO-SERIES

5/8" T-Slot
3900-0001

Item#	Table Slot	Stud Size
3900-2110	3/8"	5/16"~18
3900-0002	1/2"	3/8"~16
3900-2112	7/16"	3/8"~16
3900-0001	5/8"	1/2"~13
3900-0003	3/4"	5/8"~11

Each Kit Contains						
24	4	6	6	6	12	1
Studs 4 of ea. 3", 4", 5", 6", 7", 8" long	Coupling units	Flange nuts	Forged steel step clamps 2 ea. based on stud sets	T-Nuts	Steel step blocks	Wall rack

SET 3900-0001 Shown



T- SLOT CLEANER & WRENCH INCLUDED WITH 3900-0001

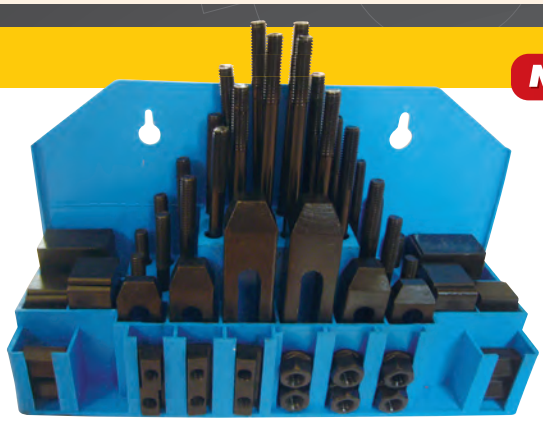
58PC Ultra Quality STEEL CLAMPING KITS

NEW

- **Manufactured at world class factory that produces highest quality US bands.**
- Made of IC45e steel for stronger strength.
- All parts are case hardend or heat treated to HRC30~40.

Item#	Table Slot	Stud Size
3901-0002	7/16"	3/8"~16
3901-0006	5/8"	1/2"~13

Each Kit Contains						
24	4	6	6	6	12	1
Studs 4 of ea. 3", 4", 5", 6", 7", 8" long	Coupling units	Flange nuts	Forged steel step clamps 2 ea. based on stud sets	T-Nuts	Steel step blocks	Wall rack



5PC Ultra Quality STEEL CLAMPING SETS

NEW

- **Manufactured at world class factory that produces highest quality US bands.**
- Made of IC45e steel for stronger strength.
- All parts are case hardend or heat treated to HRC30~40.

EACH KIT CONTAINS: Step Clamp, Step Block, Stud, T-slot Nut & Flange Nut.

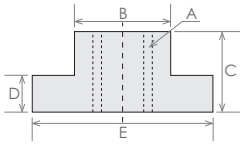


Item#	Table Slot	Stud Size	(Inch) Clamp Length	Clamp Height
3901-0301	3/8	5/16~18	4	3
3901-0302	7/16	3/8~16	4	3
3901-0304	0.54	1/2~13	6	3
3901-0307	5/8	1/2~13	6	3
3901-0311	11/16	5/8~11	6	4.5
3901-0314	3/4	5/8~11	6	4.5

Pro-Series T - SLOT NUTS

- Heat treated steel.
- Black oxide finish.
- Case hardened.
- 1040 Steel.





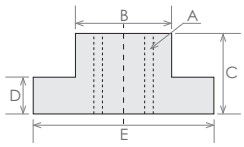
Item#	B (In)	Thread A	C (In)	D (In)	E (In)	Length (In)
3900-1201	3/8	5/16"~18	1/2	3/16	5/8	7/8
3900-1202	7/16	3/8"~16	1/2	7/32	11/16	7/8
3900-1203	1/2	3/8"~16	1/2	9/32	7/8	7/8
3903-1214	9/16	3/8"~16	5/8	11/32	7/8	1-1/8
3900-1204	9/16	1/2"~13	5/8	11/32	1	1-1/8
3900-1205	5/8	1/2"~13	5/8	11/32	1-1/8	1-1/8
3903-1217	11/16	1/2"~13	3/4	7/16	1-1/8	1-1/4
3903-1218	11/16	5/8"~11	3/4	7/16	1-1/4	1-1/4
3900-1213	3/4	5/8"~11	3/4	15/32	1-1/4	1-1/4
3903-1220	13/16	5/8"~11	1	9/16	1-1/4	1-1/2
3903-1221	13/16	3/4"~10	1	9/16	1-1/4	1-1/2
3900-1209	7/8	3/4"~10	1	9/16	1-1/2	1-1/2
3903-1223	1	3/4"~10	1	5/8	1-5/8	1-3/4
3903-1224	1-1/16	3/4"~10	1-1/8	11/16	1-5/8	2
3900-1210	1	7/8"~9	1	5/8	1-5/8	1-3/4
3903-1226	1-1/16	1"~8	1-1/8	11/16	1-5/8	2

Pro-Series T - SLOT NUTS-Metric Thread

NEW

- Heat treated steel.
- Black oxide finish.
- Case hardened.
- 1040 Steel.





Item#	B (mm)	Thread A	C (mm)	D (mm)	E (mm)	Length (mm)
3903-1236	7.7	M6	9.5	4.5	14	15
3903-1238	9.7	M8	12	6	15	18
3903-1240	11.7	M10	14	7	21	22
3903-1242	13.7	M12	16	8	22	27
3903-1244	15.7	M14	18	8.5	25	28
3903-1246	17.7	M16	20	10	28	30
3903-1248	19.7	M18	24	10.5	32	32
3903-1250	21.7	M20	28	13	36	36
3903-1252	23.7	M22	32	15	40	40
3903-1254	27.7	M24	36	16	44	44

METRIC CLAMPING STUDS

- Made of alloy steel and heat treated.
- Black oxide finished.

NEW

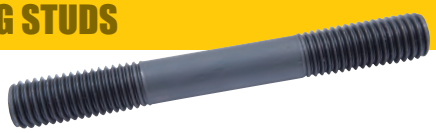


Item#	Stud Thread	Overall Length
3436-5001	M8X1.25	75
3436-5008	M10X1.25	100
3436-5010	M10X1.25	150
3436-5013	M12X1.75	75
3436-5014	M12X1.75	100
3436-5015	M12X1.75	125
3436-5016	M12X1.75	150
3436-5017	M12X1.75	175
3436-5018	M12X1.75	200
3436-5022	M14X2.00	150

Item#	Stud Thread	Overall Length
3436-5026	M16X2.00	100
3436-5028	M16X2.00	150
3436-5030	M16X2.00	200
3436-5033	M18X2.50	150
3436-5037	M20X2.50	100
3436-5038	M20X2.50	125
3436-5039	M20X2.50	150
3436-5040	M20X2.50	175
3436-5041	M20X2.50	200
3436-5047	M22X2.50	200
3436-5052	M24X3.00	200

INCH CLAMPING STUDS

- Made of alloy steel and heat treated.
- Black oxide finished.

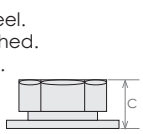


Item#	Stud Thread	Overall Length
3421-3984	1/4~20	2
3421-4008	1/4~20	3
3421-4024	1/4~20	4
3436-3250	5/16~18	2
3436-3276	5/16~18	3
3436-3292	5/16~18	4
3436-3318	3/8~16	2
3436-3334	3/8~16	3
3436-3359	3/8~16	4
3436-3375	3/8~16	5
3436-3391	3/8~16	6
3436-3409	3/8~16	7
3436-3417	3/8~16	8
3436-3425	1/2~13	2
3436-3441	1/2~13	3
3436-3466	1/2~13	4
3436-3490	1/2~13	5
3436-3516	1/2~13	6
3436-3524	1/2~13	7
3436-3532	1/2~13	8
3436-3540	1/2~13	9
3436-3581	5/8~11	3
3436-3607	5/8~11	4
3436-3623	5/8~11	5
3436-3649	5/8~11	6

Item#	Stud Thread	Overall Length
3436-3656	5/8~11	7
3436-3664	5/8~11	8
3436-3672	5/8~11	9"
3436-3680	5/8~11	10
3436-3698	5/8~11	12
3436-3706	3/4~10	3
3436-3722	3/4~10	4
3436-3748	3/4~10	5
3436-3763	3/4~10	6
3436-3771	3/4~10	7
3436-3789	3/4~10	8
3436-3797	3/4~10	10
3436-3805	3/4~10	12
3436-3813	7/8~9	4
3436-3821	7/8~9	5
3436-3839	7/8~9	6
3436-3847	7/8~9	8
3436-3854	7/8~9	10
3436-3862	7/8~9	12
3436-3870	1~8	4
3436-3888	1~8	5
3436-3896	1~8	6
3436-3904	1~8	8
3436-3912	1~8	10
3436-3920	1~8	12

FLANGED NUTS

- Heat treated steel.
- Black oxide finished.
- Case hardened.



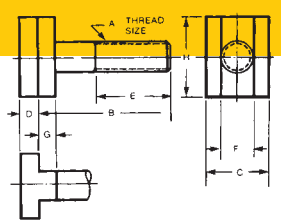


Item#	Thread A	B (Inch)	C (Inch)	K (Inch)
3900-1221	5/16"~18	11/16	9/32	1/2
3900-1222	3/8"~16	3/4	9/32	9/16
3900-1224	1/2"~13	1-5/32	1/2	7/8
3900-1225	5/8"~11	1-5/16	5/8	15/16
3900-1228	3/4"~10	1-1/2	21/32	1-1/8
3900-1227	7/8"~9	1-3/4	3/4	1-5/16

T - SLOT BOLTS

- Forged steel with milled T-slot guide
- Black oxide finish.
- Heat treated to HRC 36-40.





Item#	T-Slot F (In)	Thread (A)	Length Under Head B (In)	Thread Length E
3900-1270	1/2	1/2"~13	2	1
3900-1272	1/2	1/2"~13	3	1-1/2
3900-1274	1/2	1/2"~13	4	1-1/2
3900-1275	1/2	1/2"~13	5	2
3900-1279	5/8	5/8"~11	2-1/2	1-1/4
3900-1280	5/8	5/8"~11	3	1-1/2
3900-1281	5/8	5/8"~11	3-1/2	1-1/2
3900-1282	5/8	5/8"~11	4	1-1/2
3900-1283	5/8	5/8"~11	5	1-1/2
3900-1284	5/8	5/8"~11	6	1-1/2
3900-1285	5/8	5/8"~11	8	3
3900-1289	3/4	3/4"~10	3	1-1/4
3900-1291	3/4	3/4"~10	4	1-1/2
3900-1292	3/4	3/4"~10	5	1-1/2
3900-1298	1	1"~8	4	2
3900-1299	1	1"~8	6	2-1/2

COUPLING NUTS

- Case hardened.
- Black oxide finish.



Item#	Thread	Hex	Height
3900-1181	1/4"~20	1/2	5/8
3900-1183	5/16"~18	9/16	7/8
3900-1185	3/8"~16	11/16	1
3900-1187	1/2"~13	7/8	1-1/4
3900-1189	5/8"~11	1-1/16	1-3/4
3900-1191	3/4"~10	1-1/4	1-7/8
3900-1193	7/8"~9	1-7/16	2-1/4
3900-1195	1"~8	1-5/8	2-1/2

HEAVY DUTY HEX NUTS

Limited Supply!

- Case hardened.
- Black oxide finish.



Item#	Thread	Hex	Height
3421-3885	1/4"~20	7/16	7/32
3421-3893	5/16"~18	1/2	17/64
3421-3901	3/8"~16	9/16	21/64
3421-3919	1/2"~13	3/4	7/16
3421-3927	5/8"~11	15/16	35/64
3421-3935	3/4"~10	1-1/8	41/64
3421-3943	7/8"~9	1-5/16	3/4
3421-3950	1"~8	1-1/2	55/64

CLAMPING KITS & CLAMP SETS

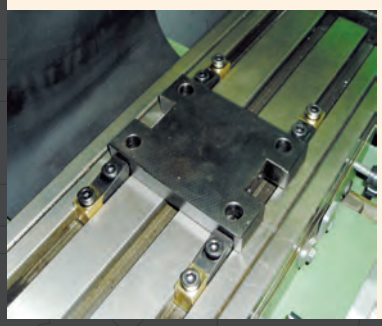
Pro-Series 4PC T-SLOT CLAMPING KITS

- Special made downward force for holding thin or small workpiece
- Used for milling, drilling and EDM with T-slot table
- Kit includes: 4 pc of t-slot, clamping pieces and bolts
- Quick and easy setting with hex key wrench
- Made of tool steel hardened
- With fitted wooden case

4PC KIT

Item#	Table Slot
3900-0314	7/16"
3900-0315	1/2"
3900-0316	5/8"
3900-0317	3/4"





MADE IN TAIWAN



ADJUSTABLE CLAMPING ASSEMBLIES

- One piece assembly allows quick set-up on mill tables with T-slot.
- Instant height adjustment.
- Attached brass shims protect machine table and workpiece

PRICED PER EACH



Item#	T-slot Bolt T-slot	Clamping (Stud x Length)	Clamping Range	Each Width
3900-0301	3/8"	3/8"-16 x 3"	Up to 1-3/4"	1-1/4"
3900-0302	1/2"	1/2"-13 x 4"	Up to 2-1/16"	1-5/8"
3900-0303	5/8"	5/8"-11 x 5"	Up to 3"	1-7/8"

METRIC BALL PLUNGER



- Body Material: 12L14Steel
- Ball Material: 302 Stainless Steel
- Smallest and lightest spring loaded device
- Side-load tolerant
- Controlled end forces
- Screwdriver installation

Item #	Thread	Dimension (mm) d (Ball Dia.)	L	End Forces(lbs.) Inital	Final
8017-0100	M4x0.70	2.5	9	2	4.9
8017-0102	M6x1.00	3.5	13	4.9	14
8017-0104	M8x1.25	5.0	15	7	19
8017-0108	M10x1.50	6.0	16	8	24
8017-0112	M12x1.75	8.0	22	9	29

T-SLOT CLEANER

- Fits most of Bridgeport type mill tables.



7016-0030

T-SLOT CLAMPING KIT



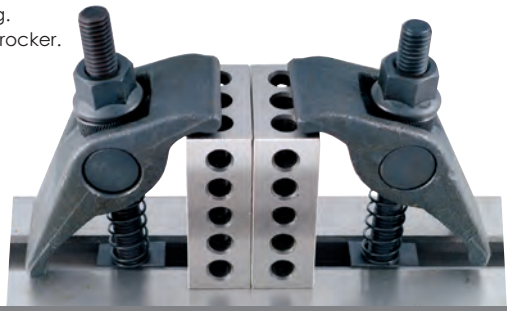
- Quick and easy setting with hex key wrench
- Used for working table with 5/8" T-slot
- Made of tool steel hardened.
- **Kit includes:** 4 pc of t-nuts, 6 pc of clamps, 2 pc of hex keys.
- With fitted case

5/8 T-NUT(1/2"~13)
3900-0318

HEAVY DUTY HOLD-DOWN CLAMP SETS

- One piece forged steel heads, fully heat treated.
- Allows quick set-up on mill table with T-slot.
- Instant height adjustment.
- Self-positioning.
- Hinged swivel rocker.

PRICED AND SOLD BY PAIR



Item#	T-slot	Size of Head	Clamping Range	Load Limit (lbs)
3900-0306	5/8"	4.4 x 1.8"	Up to 3"	16,000
3900-0307	3/4"	5.0 x 2.1"	Up to 4"	18,000
3900-0312	7/8"	6.0 x 2.3"	Up to 5"	24,000

HEAVY DUTY C - CLAMPS

- Very strong frame with hardened threads.
- Industrial grade.

4 PC SET
3, 4, 6, 8"
7030-0010





INDIVIDUALS

Item#	Size
7030-0001	3"
7030-0002	4"
7030-0004	6"
7030-0005	8"
7030-0006	10"

HORIZONTAL Toggle CLAMPS
-Flanged Base

- All parts die stamped from solid steel.
- Plastic hand grip for safety & convenience.
- Double plated to avoid rust.
- Carbon steel rivet for durability.

Holding Capacity: 27Kg
Hand Moves: 80°
Bar Moves: 90°

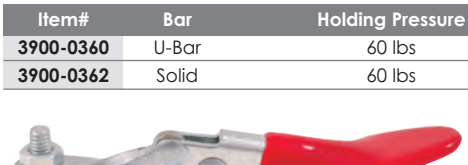


3900-0360 Shown



U-Bar
Weight: 29G

Item#	Bar	Holding Pressure	Mfr. #
3900-0360	U-Bar	60 lbs	201
3900-0362	Solid	60 lbs	201A



3900-0362 Shown



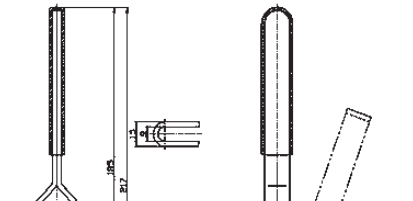
Solid Bar
Weight: 28G



VERTICAL Toggle CLAMPS
-Flanged Base, U-Bar

- All parts die stamped from solid steel.
- Plastic hand grip for safety & convenience.
- Double plated to avoid rust.
- Carbon steel rivet for durability.

Holding Capacity: 200Kg
Weight: 420G
Hand Moves: 64°
Bar Moves: 110°





Item#	Bar	Holding Pressure	Mfr. #
3900-0339	U-bar	440 lbs	11412

VERTICAL Toggle CLAMPS
-Flanged Base, U-Bar

- All parts die stamped from solid steel.
- Plastic hand grip for safety & convenience.
- Double plated to avoid rust.
- Carbon steel rivet for durability.

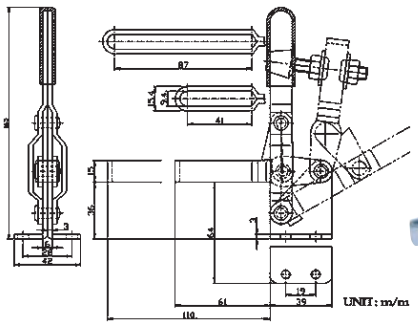
Holding Capacity: 185Kg
Hand Moves: 46°
Bar Moves: 95°

3900-0334 Shown

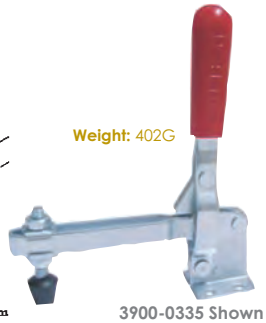


Weight: 370G

Item#	Bar	Holding Pressure	Bar Length	Mfr. #
3900-0334	U-bar	400 lbs	41mm	101-D
3900-0335	U-bar	400 lbs	87mm	101-E



Weight: 402G



3900-0335 Shown

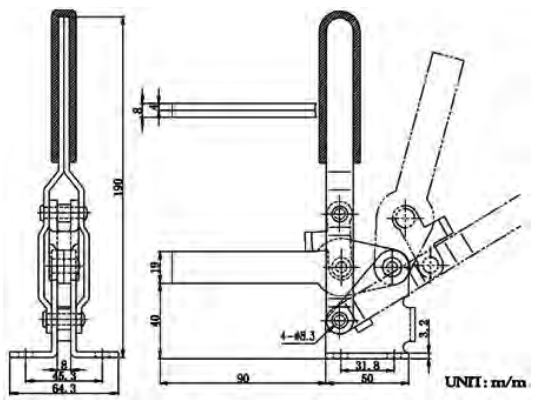
VERTICAL Toggle CLAMPS
-Open Bar, U-Bar

- All parts die stamped from solid steel.
- Plastic hand grip for safety & convenience.
- Double plated to avoid rust.
- Carbon steel rivet for durability.

Holding Capacity: 335Kg
Weight: 635G
Hand Moves: 59°
Bar Moves: 106°



3900-0341 Shown



Item#	Base	Holding Pressure	Mfr. #
3900-0341	Flanged	750 lbs	12265
3900-0342	Straight	750 lbs	12270

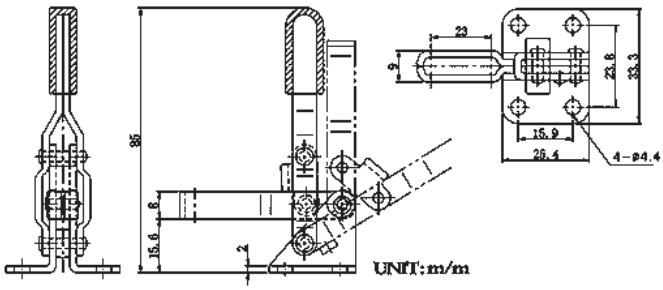
HIGH QUALITY TOGGLE CLAMPS

VERTICAL Toggle CLAMPS
-Flanged Base, U-Bar

- All parts die stamped from solid steel.
- Plastic hand grip for safety & convenience.
- Double plated to avoid rust.
- Carbon steel rivet for durability.

Holding Capacity: 48Kg
Weight: 70G
Hand Moves: 57°
Bar Moves: 101°





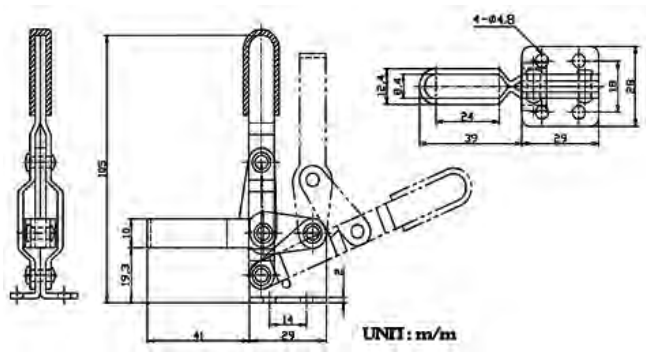
Item#	Bar	Holding Pressure	Mfr. #
3900-0330	U-bar	110 lbs	101-A

VERTICAL Toggle CLAMPS
-Flanged Base, U-Bar

- All parts die stamped from solid steel.
- Plastic hand grip for safety & convenience.
- Double plated to avoid rust.
- Carbon steel rivet for durability.

Holding Capacity: 100Kg
Weight: 118G
Hand Moves: 64°
Bar Moves: 90°





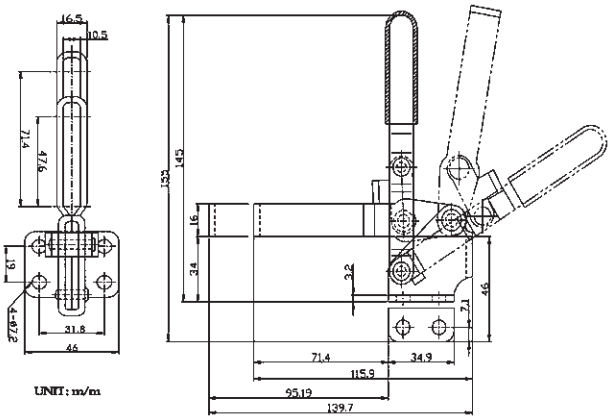
Item#	Bar	Holding Pressure	Mfr. #
3900-0336	U-bar	220 lbs	102-B

VERTICAL Toggle CLAMPS
-Flanged Base, U-Bar

- All parts die stamped from solid steel.
- Plastic hand grip for safety & convenience.
- Double plated to avoid rust.
- Carbon steel rivet for durability.

Holding Capacity: 227Kg
Weight: 346G
Hand Moves: 60°
Bar Moves: 100°





Item#	Bar	Holding Pressure	Mfr. #
3900-0344	U-bar	500 lbs	12130

SPINDLE ASSEMBLIES

- For use with our toggle clamps
- Zinc plated.
- Black neoprene spindle cap (except where noted)





3900-0356 Shown

Item#	Screw Size	Used on Clamp Item#
3900-0350	M5 x 40mm	101-A
3900-0351	M6 x 45mm	102-B, 201-B
3900-0352	M10 x 90mm	12265, 12270, 200-W, 200-WL
3900-0353	M8 x 60mm	101-D, 101-E, 12130, 203-F, 203-FL,225-D
3900-0356	M10 x 50mm (steel head)	304-E, 305-E
3900-0357	M8 x 50mm (steel head)	11412, 304-C, 305-C, 302-F, 36020
3900-0358	M4 x 20mm	201, 201-A
3900-0359	M12 x 50mm (steel head)	304-H, 305-H

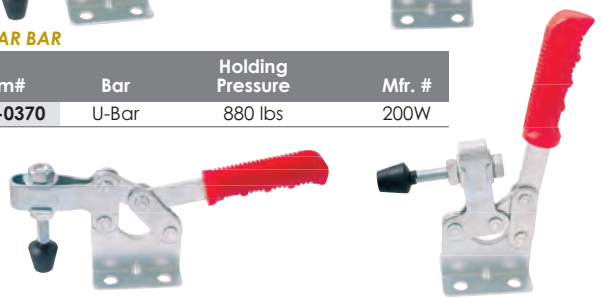
HORIZONTAL Toggle CLAMP
-Flanged Base, U-Bar

- All parts die stamped from solid steel.
- Double plated to avoid rust.
- Plastic hand grip for safety & convenience.
- Carbon steel rivet for durability.



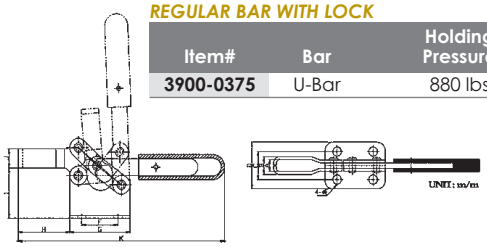
REGULAR BAR

Item#	Bar	Holding Pressure	Mfr. #
3900-0370	U-Bar	880 lbs	200W



REGULAR BAR WITH LOCK

Item#	Bar	Holding Pressure	Mfr. #
3900-0375	U-Bar	880 lbs	220WH



Hand Moves: 80°
Bar Moves: 90°

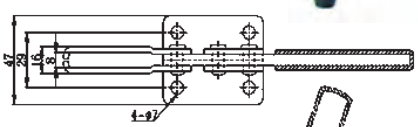
A	B	C	D	E	F	G	H	I	J	K	L
14	20.5	30	51	10	42	70	59	54	20.5	230	3.2

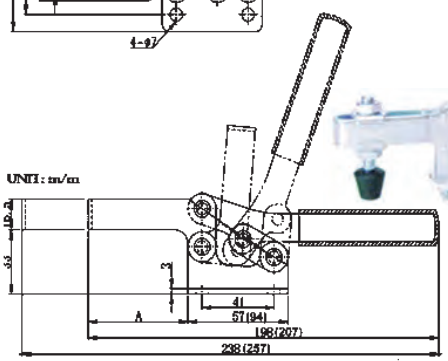
HORIZONTAL Toggle CLAMPS
-Flanged Base, U-Bar

- All parts die stamped from solid steel.
- Double plated to avoid rust.
- Plastic hand grip for safety & convenience.
- Carbon steel rivet for durability.



3900-0369
Shown







3900-0368
Shown

Hand Moves: 62°
Bar Moves: 95°

Item#	Bar	A	Holding Pressure	Mfr. #
3900-0368	U-bar	2.24"	500 lbs	203-F
3900-0369	Long U-Bar	3.70"	500 lbs	203-FL

HORIZONTAL Toggle CLAMPS
-Flanged Base, Long U-Bar

- All parts die stamped from solid steel.
- Double plated to avoid rust.
- Plastic hand grip for safety & convenience.
- Carbon steel rivet for durability.



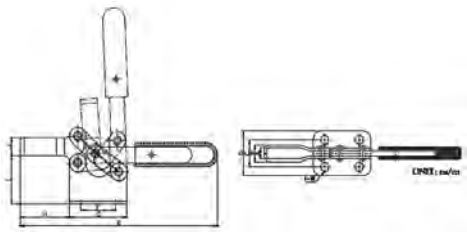


Item#	Bar	Holding Pressure	Mfr. #
3900-0377	Long U-Bar	880 lbs	220-WHL





Item#	Bar	Holding Pressure	Mfr. #
3900-0372	Long U-Bar	880 lbs	200WL



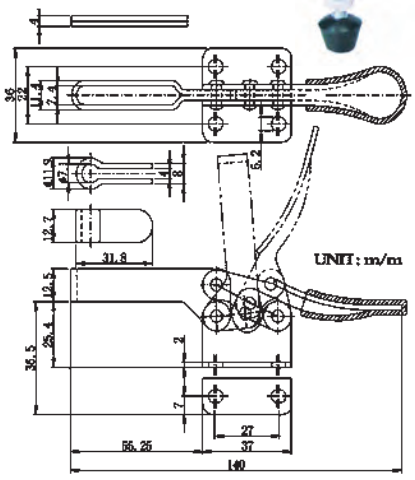
Hand Moves: 80°
Bar Moves: 90°

A	B	C	D	E	F	G	H	I	J	K	L
14	20.5	30	51	10	42	70	110	54	20.5	280	3.2

HORIZONTAL Toggle CLAMPS
-Flanged Base, U-Bar

- All parts die stamped from solid steel.
- Double plated to avoid rust.
- Plastic hand grip for safety & convenience.
- Carbon steel rivet for durability.





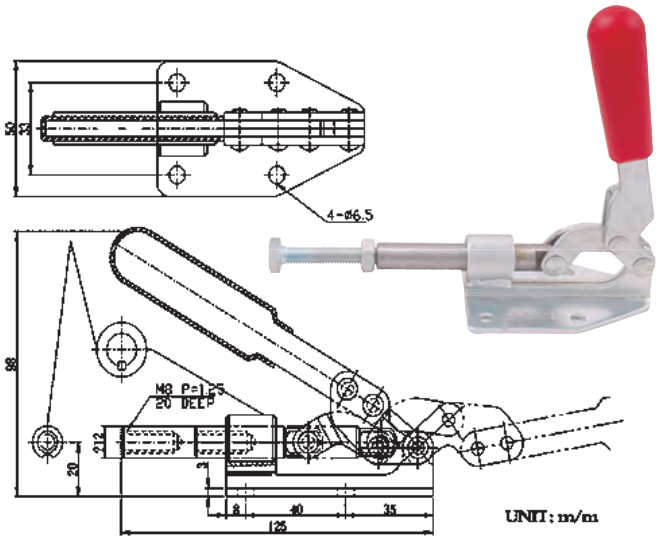
Hand Moves: 60°
Bar Moves: 85°

Item#	Bar	Holding Pressure	Mfr. #
3900-0365	U-bar	200 lbs	201B

HIGH QUALITY TOGGLE CLAMPS

PUSH/PULL TOGGLE CLAMP

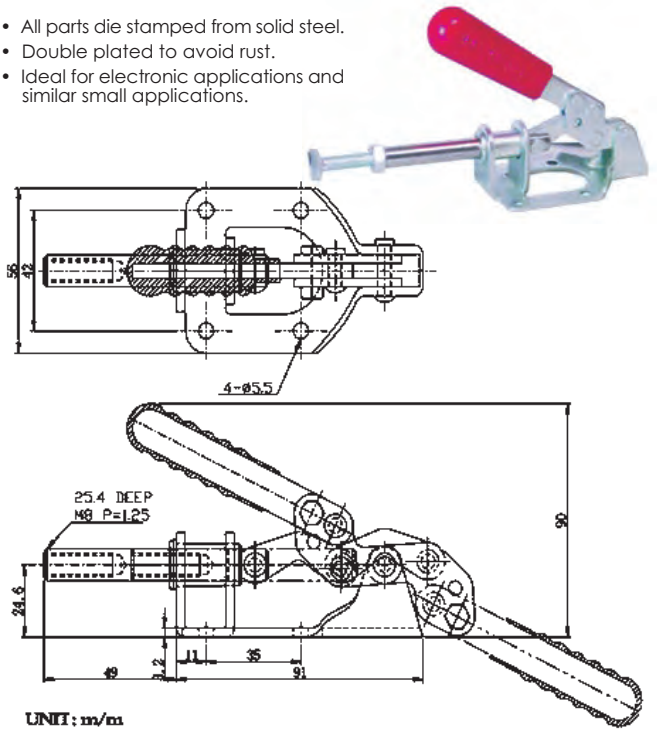
- All parts die stamped from solid steel.
- Double plated to avoid rust.
- Ideal for electronic applications and similar small applications.



Item#	Handle Move	Holding Capacity	Plunger Travel	Mfr. #
3900-0397	144°	400 lbs	30mm	36020

PUSH/PULL TOGGLE CLAMP

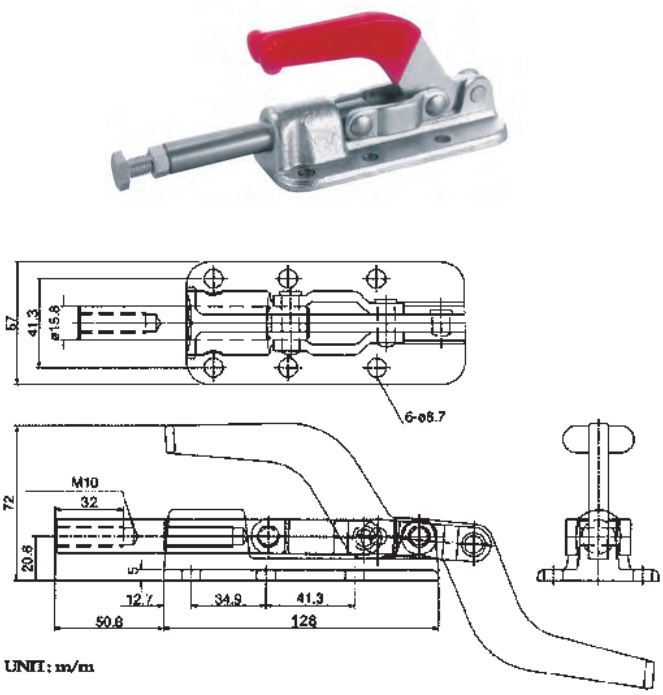
- All parts die stamped from solid steel.
- Double plated to avoid rust.
- Ideal for electronic applications and similar small applications.



Item#	Handle Move	Holding Capacity	Plunger Travel	Mfr. #
3900-0398	180°	300 lbs	32mm	302-F

HEAVY DUTY PUSH/PULL TOGGLE CLAMP

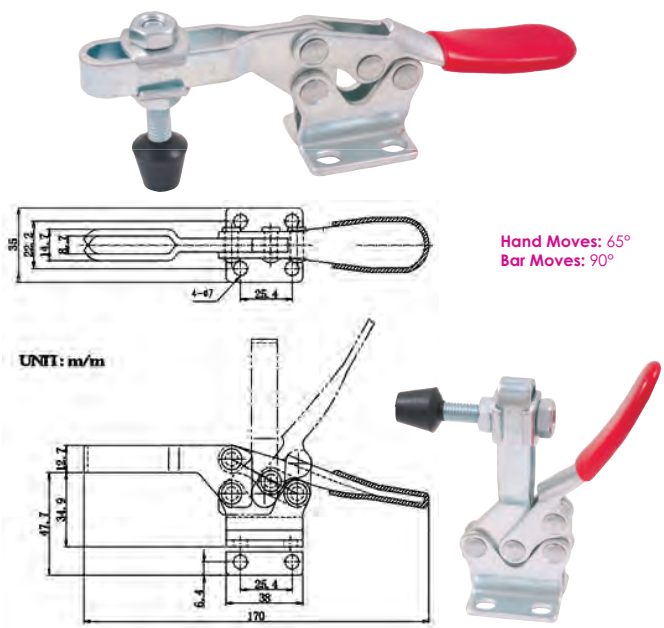
- All parts die stamped from solid steel.
- Double plated to avoid rust.
- Ideal for electronic applications and similar small applications.



Item#	Handle Move	Holding Capacity	Plunger Travel	Mfr. #
3900-0399	180°	2500 lbs	50mm	36330

HORIZONTAL Toggle CLAMPS
-Flanged Base, U-Bar

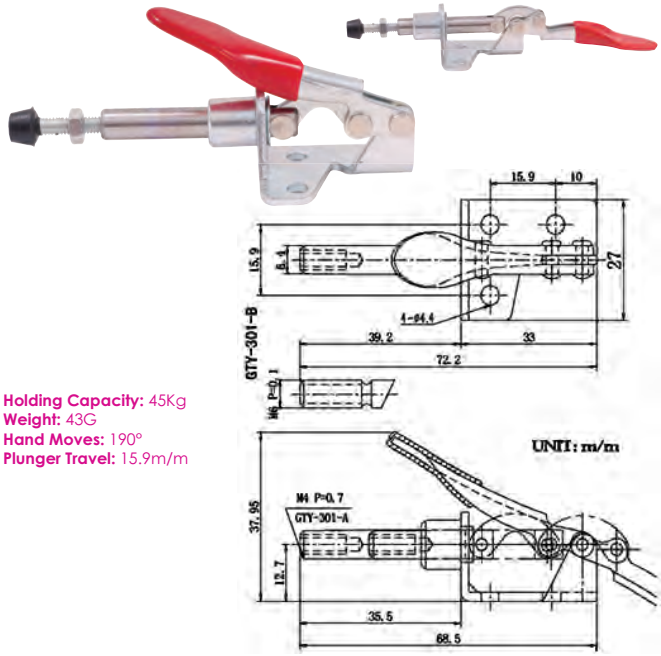
- All parts die stamped from solid steel.
- Double plated to avoid rust.
- Plastic hand grip for safety & convenience.
- Carbon steel rivet for durability.



Item#	Bar	Holding Pressure	Mfr. #
3900-0380	U-bar	500 lbs	225-D

PUSH/PULL Toggle CLAMPS-Straight Line Action

- All parts die stamped from solid steel.
- Double plated to avoid rust.
- Plastic hand grip for safety & convenience.
- Carbon steel rivet for durability.

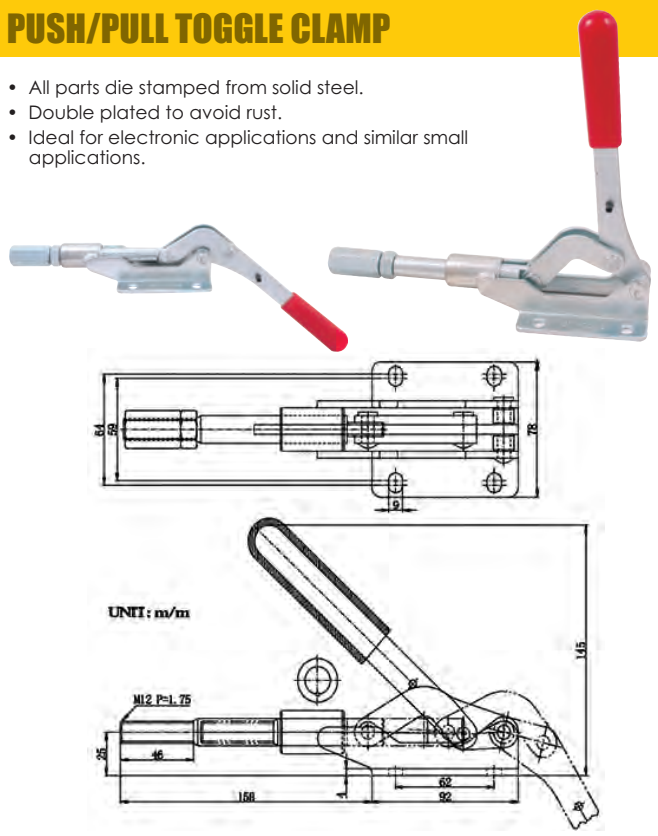


Holding Capacity: 45Kg
Weight: 43G
Hand Moves: 190°
Plunger Travel: 15.9m/m

Item#	Handle Move	Holding Capacity	Plunger Travel	Mfr. #
3900-0385	180°	100 lbs	5/8"	301-A

PUSH/PULL TOGGLE CLAMP

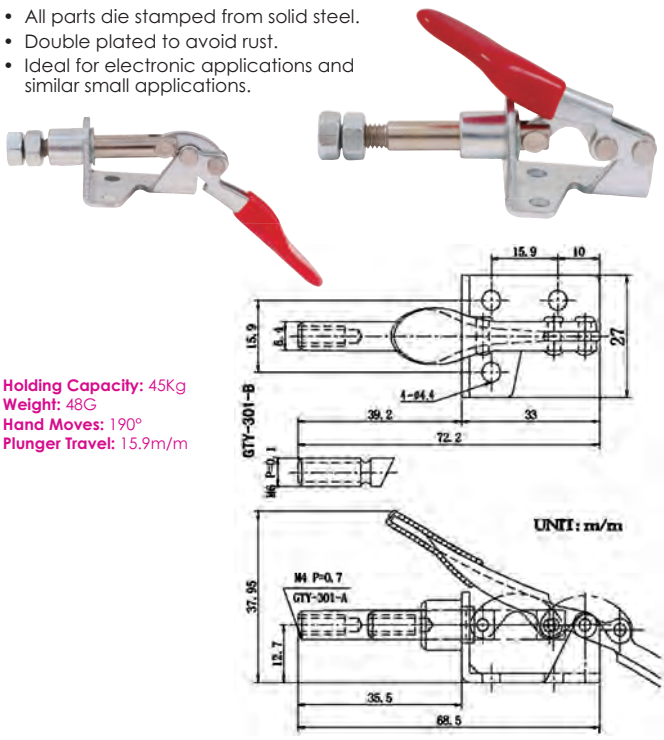
- All parts die stamped from solid steel.
- Double plated to avoid rust.
- Ideal for electronic applications and similar small applications.



Item#	Handle Move	Holding Capacity	Plunger Travel	Mfr. #
3900-0395	190°	100 lbs	50mm	303-E

STRAIGHT LINE TOGGLE ACTION CLAMP

- All parts die stamped from solid steel.
- Double plated to avoid rust.
- Ideal for electronic applications and similar small applications.

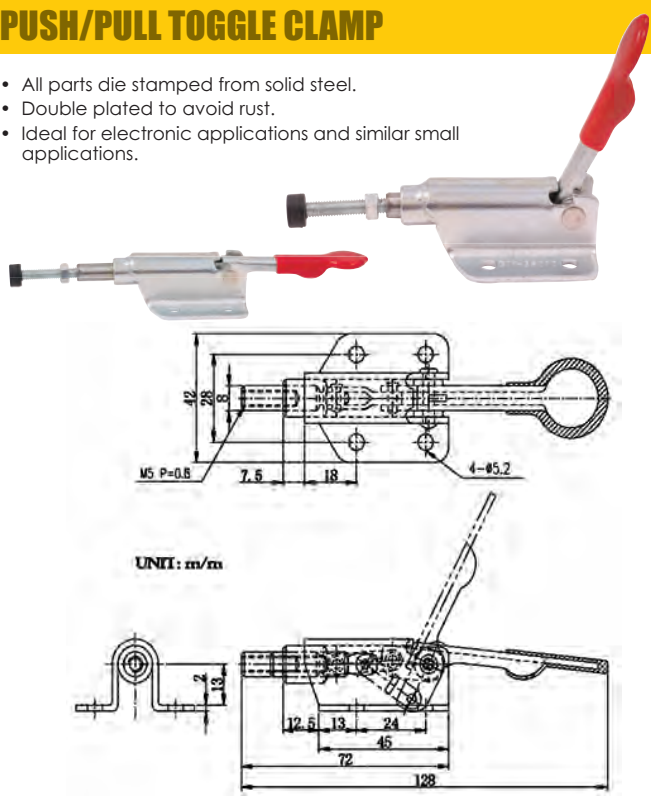


Holding Capacity: 45Kg
Weight: 48G
Hand Moves: 190°
Plunger Travel: 15.9m/m

Item#	Holding Capacity	Plunger Travel	Mfr. #
3900-0386	100 lbs	5/8"	301-B

PUSH/PULL TOGGLE CLAMP

- All parts die stamped from solid steel.
- Double plated to avoid rust.
- Ideal for electronic applications and similar small applications.

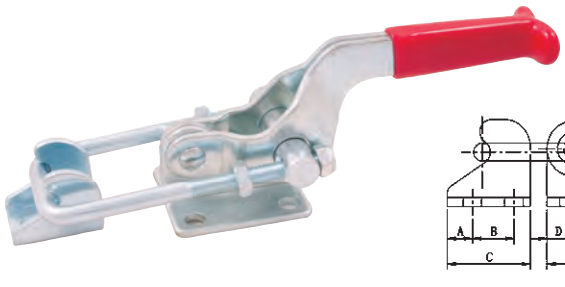


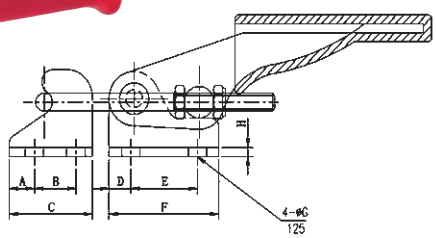
Item#	Handle Move	Holding Capacity	Plunger Travel	Mfr. #
3900-0396	64°	110 lbs	10mm	36070

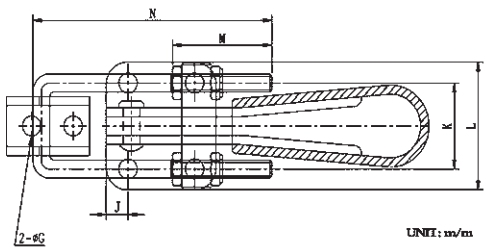
HIGH QUALITY TOGGLE CLAMPS

PULL ACTION LATCH TOGGLE CLAMP

- All parts die stamped from solid steel.
- Double plated to avoid rust.
- Ideal for electronic applications and similar small applications.





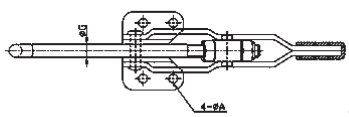


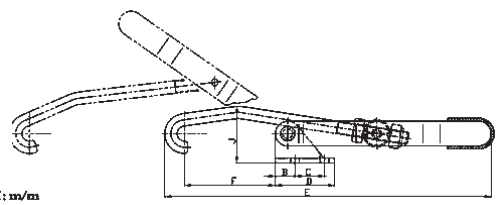
Item#	Holding Capacity	Mfr. #	A	B	C	D	E	F	G	H	I	J	K	L	M	N
3900-0402	350 lbs	40323	6	9.9	19.8	5.2	15.9	26.2	4.4	2	29.3	5.2	19	28.2	24	57
3900-0403	660 lbs	431	6.8	11.5	25.4	6.4	19	39.7	6.7	3.2	41.3	6.35	31.6	44.5	38	90
3900-0404	1980 lbs	40341	9.5	19.1	38.1	9.5	41.3	60.3	8.6	4	70	9	38	53.5	52	125

HOOK TYPE PULL ACTION CLAMP

- Excellent for many types of latching operations.
- With base bolted or welded in place, unit can be use for latching pressure vessels, etc.
- Pull bar is threaded for convenient adjustment
- Furnished with red vinyl grip





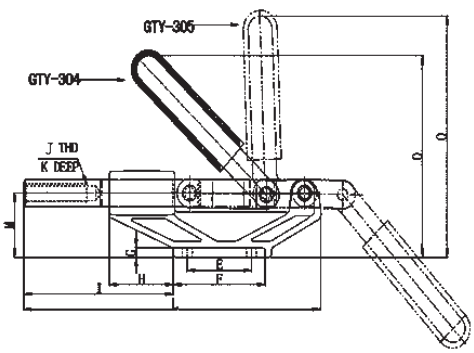


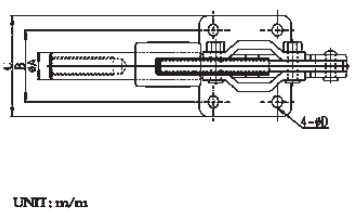
Item#	Holding Capacity	Mfr. #	A	B	C	D	E	F	G	H	L	J
3900-0408	380 lbs	451	5.6	12.7	19	38.1	217	54.88	8	48	33.2	36.5
3900-0409	750 lbs	40371	8.7	-	31.8	47.6	286	79.4	9.5	65.7	48.2	57.3

DELUXE PUSH/PULL

- All parts die stamped from solid steel.
- Plastic hand grip for safety & convenience.
- Double plated to avoid rust.
- Carbon steel rivet for durability.







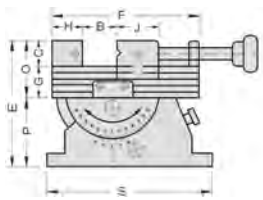
Item#	Handle Move	Mfr. #	Holding Capacity	A	B	C	D	E	F	G	H	I	J	K	L	M	O	Stroke
3900-0388	45°	304-C	500 lbs	12.7	41.1	57.2	6.7	35	52.4	4.8	20.6	52.4	M8P=1.25	30.2	125.4	25.4	74.6	32
3900-0389	90°	305-C	500 lbs	12.7	41.1	57.2	6.7	35	52.4	4.8	20.6	52.4	M8P=1.25	30.2	125.4	25.4	90.5	32
3900-0390	45°	304-E	800 lbs	16	41.1	57.2	8.3	41.1	58.8	4.8	31.8	81	M10P=1.5	39.2	158.8	31.8	98.4	42
3900-0391	90°	305-E	800 lbs	16	41.1	57.2	8.3	41.1	58.8	4.8	31.8	81	M10P=1.5	39.2	158.8	31.8	122.8	42
3900-0392	45°	304-H	1500 lbs	19.2	50.8	72	8.3	50.8	72	6.4	50.8	120.8	M12P=1.75	49.2	238.2	50.8	133.4	60
3900-0393	90°	305-H	1500 lbs	19.2	50.8	72	8.3	50.8	72	6.4	50.8	120.8	M12P=1.75	49.2	238.2	50.8	171.6	60

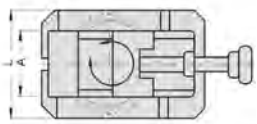
Pro-Series UNIVERSAL MOVEMENT VISE

- This fixture is composed of two parts: namely a precision vise and a swivel angle plate base.
- Vise is capable of revolving 360° horizontally with 3' graduation engraved and ±45° vertical with 3' graduation engraved.
- L-wrench included for locking vise horizontal at any position.
- Vertical angle can be adjusted with fine adjustable knob.
- Hardened and precision ground. Provides a tolerance of 0.0004" Parallelism and Squareness.
- Unique universal movement for precision grinding, machining,boring and various applications.

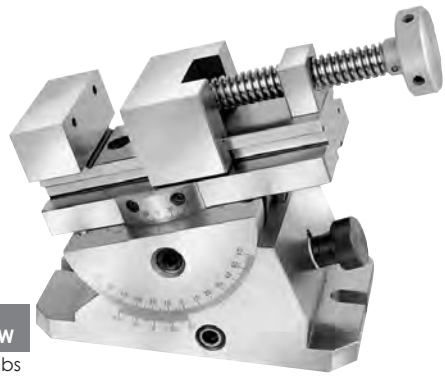
HHIP PRO-SERIES

MADE IN TAIWAN





2-3/4" Jaw Width
3900-2621



Jaw Width	Jaw Depth	Jaw Opening	(Inch) A	B	C	E	F	G	H	J	L	P	S	N.W
2-3/4	1.18	3.15	3.75	3.15	1.18	5.39	6.3	1.3	1.3	1.8	4.33	2.95	7.09	31 lbs

PRECISION SINE VISES

- Hardened and precision ground. provides a tolerance of .0004" for both parallelism and squareness.
- Sine range: 6~60°.
- Jaw can be opened or closed without unbolting from work surface.



Item#	Jaw Width	Jaw Depth	Jaw Opening	Center to Center	Base Size
3900-2603	2"	1"	2-5/8"	4.00"	5-3/8"x2"
3900-2605	3"	1-1/4"	4"	4.00"	7-5/8"x3"

MINI PRECISION TILT/SWIVEL VISE

- Hardened and precision ground tool steel.
- Horizontal swivel movement 360°.
- Vertical swivel movement 90° graduation in degrees for quick setting.
- Base has slots for clamping on the mill table.



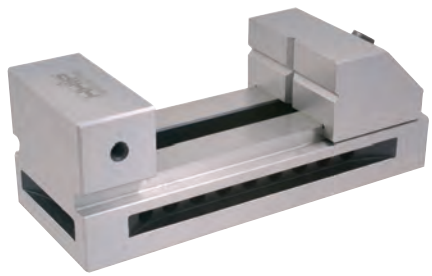
3900-2625

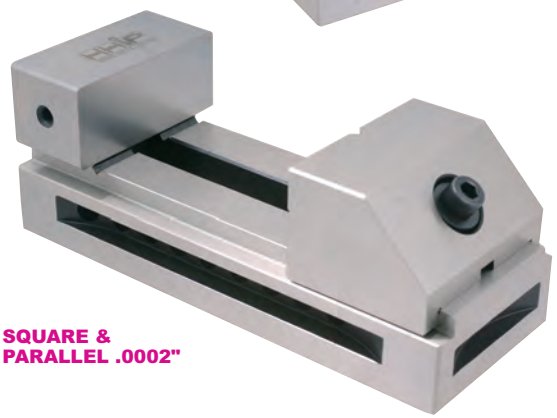
Jaw Width	Jaw Height	Jaw Opening	OAL Height	Footprint
2-1/4"	25/32"	17/32"	3.7"	4.65x2.60"

ULTRA PRECISION TOOLMAKER'S VISES

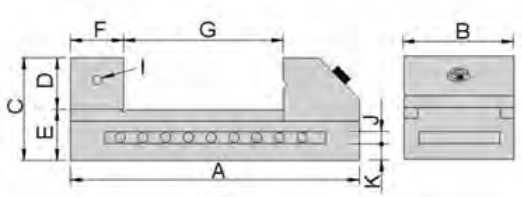
- Hardened and precision ground, HRC55~60°.
- The "no-rise" jaw construction exerts a continual downward pressure to the jaw, eliminating tilting & lifting.
- Jaw can be opened and closed without unbolting from work surface.
- Torlerance within .00012"(Parallelism), .0002" (Squareness).

HHIP PRO-SERIES





SQUARE & PARALLEL .0002"



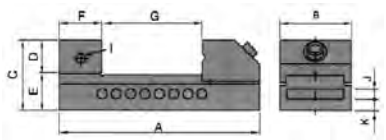
Item#	Jaw Width B	A	C	D	E	F	G	I	J	K
3900-2012	50	150	53	25	28	30	0-80	M6	8	8
3900-2013	73	190	70	35	35	35	0-100	M6	10	12
3900-2003	88	235	80	40	40	40	0-130	M8	12	14

STAINLESS STEEL TOOLMAKER'S VISE

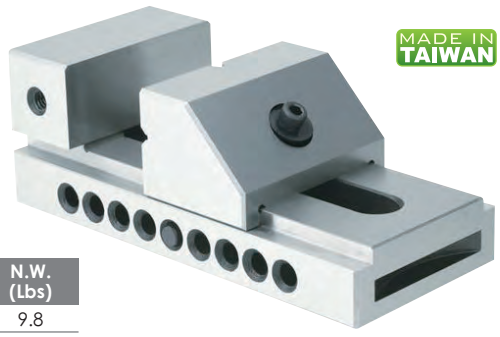
STAINLESS STEEL VISE - Screwless Type

- Hardened and precision ground.
- Made of stainless steel specially for EDM, grinding and other application which is sensitive to rust.

SQUARE & PARALLEL .0002"



2-3/4" JAW
3900-2001



MADE IN TAIWAN

Jaw Width B	Jaw Depth D	Jaw Openning G	Vise Height C	Vise Length A	E	F	N.W. (Lbs)
2.87"	1.38"	3.94"	2.68"	7.48"	1.3"	1.38"	9.8

EDM STAINLESS STEEL TOOL VISE

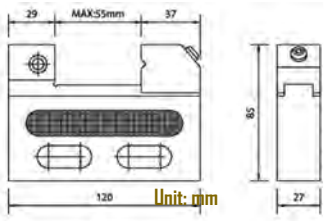
NEW

- Material: SUS 440.
- Hardness: HRC 52~56°
- Used for wire cutter with high erosion resistance.
- N.W. : 2.3 Lbs.

SQUARENESS & PARALLELISM < +/- 0.0001"/Per 4"

1" JAW
3900-2007

MADE IN TAIWAN

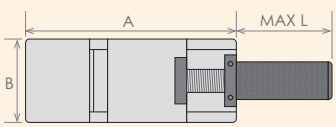


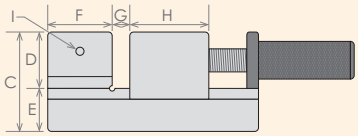


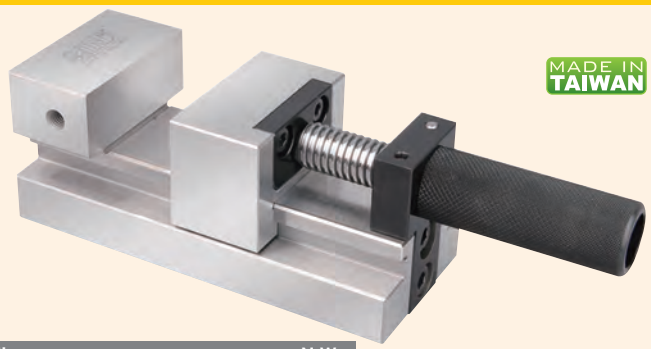
STAINLESS STEEL TOOLMAKERS VISE - 1-3/4" Jaw Width

- Hardened and ground.
- Made of stainless steel specially for EDM, grinding and other application which is sensitive to rust.
- Hardness: 48~55°

SQUARE & PARALLEL: .00012"







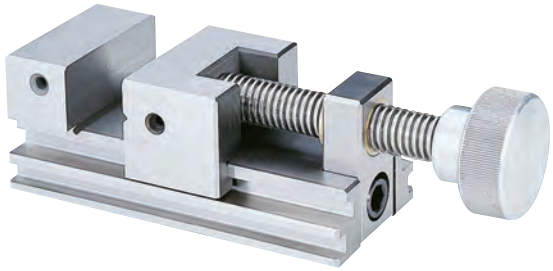
MADE IN TAIWAN

Item#	Jaw Width B	Jaw Depth D	Jaw Openning G	Vise Height C	Vise Length A	E	F	H	I	N.W. (Lbs)
3900-2004	1-3/4"	0.79"	0~1.97"	1.77	4.33"	0.98"	0.98"	0.94"	M5	3.8

SCREW ROD DESIGN LOCKS TIGHT TO HOLD SMALL WORKPIECE.

STAINLESS STEEL VISES-Screw Type

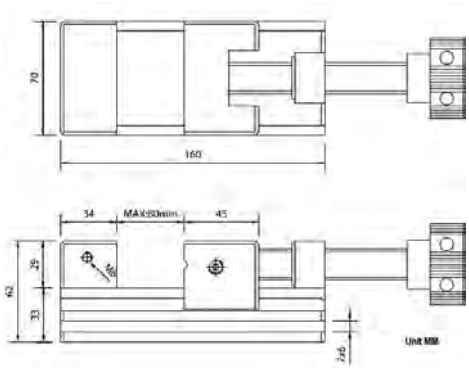
- Hardened and precision ground.
- Made of stainless steel specially for EDM, grinding and other application which is sensitive to rust.



MADE IN TAIWAN

SQUARE & PARALLEL .0002"

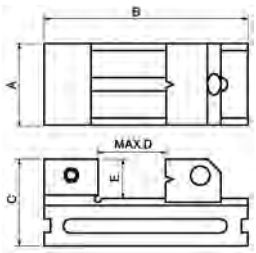
2-3/4" Jaw Width
3900-2005



PRECISION SCREWLESS VISES

- With V-Groove
- Oil hardened.
- Precision ground.
- Rapid positioning notches.
- .00025" square and parallel.



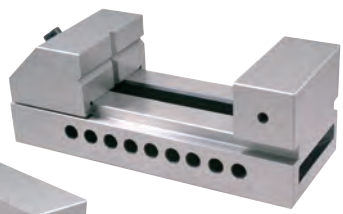


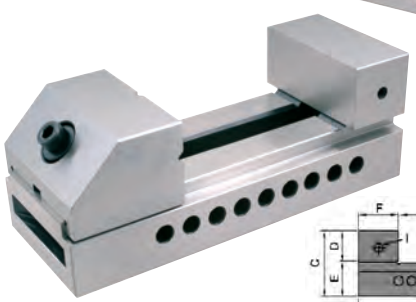
Item#	Jaw Width A	Jaw Depth E	Jaw Opening D	Vise Ht. C	OAL B
3900-0020	1"	3/8"	1"	1.2"	2-5/8"
3900-0022	2"	1-1/4"	2.25"	2.0"	6"
3900-0024	3"	1-5/8"	4"	3.2"	7-5/8"

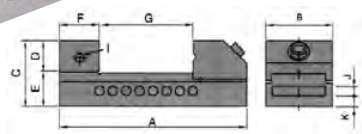
TOOLMAKER'S VISES-Without Slot

- Hardened and precision ground.
- No clamping slot.
- Ground "V" way in sliding jaw.

SQUARE & PARALLEL .0002"



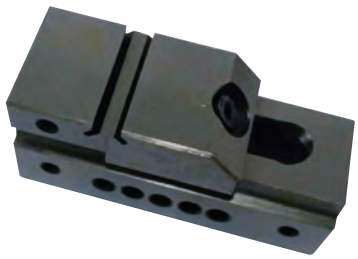




Item#	Jaw Width B	Jaw Depth D	Jaw Opening G	A	C	N.W. Lbs.
3900-0122	2"	1.00"	2.4"	5.3"	2"	4.0
3900-0123	3"	1.38"	3.8"	7.3"	3"	9.5

1" TOOLMAKER'S VISE

- Hardened and precision ground,
- The "no-rise" jaw construction exerts a continual downward pressure to the jaw, eliminating tilting & lifting
- Jaw can be opened and closed without unbolting from work surface.
- **With step jaws.**



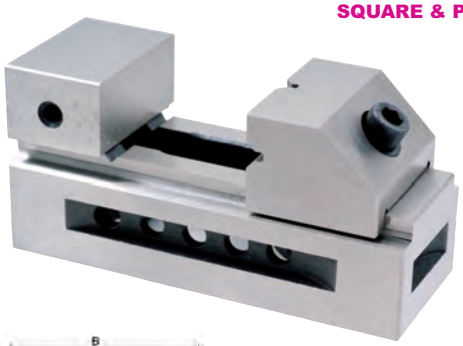
SQUARE & PARALLEL .0002"

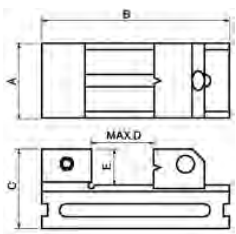
Item#	Jaw Width	Jaw Depth	Jaw Opening	OAL
3900-0124	1"	0.5"	1"	2.6"

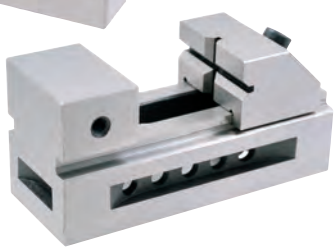
38mm TOOLMAKER'S VISE

- Hardened and precision ground,
- The "no-rise" jaw construction exerts a continual downward pressure to the jaw, eliminating tilting & lifting
- Jaw can be opened and closed without unbolting from work surface.
- **No step jaws.**
- **1.5" jaw width.**

SQUARE & PARALLEL .0002"



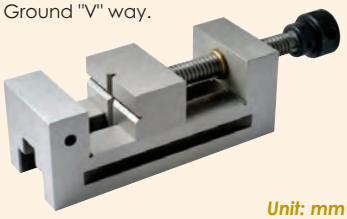


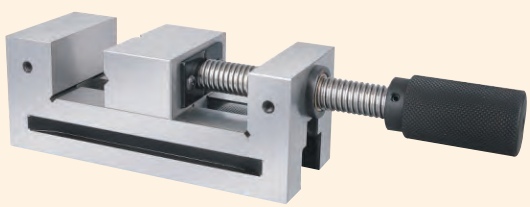


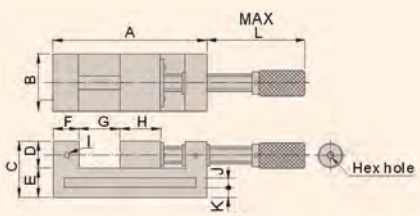
Item#	Jaw Width A	Jaw Depth E	Jaw Opening D	Vise Ht. C	OAL B
3900-0125	38mm	20mm	40mm	48mm	100mm

PRECISION TOOLMAKER'S VISES-Screw Type

- All surfaces are hardened (52~58 HRC)and precision ground square and parallel to accuracy of +/- .0002".
- Clamping slots are provided and jaws are easily replaced.
- Ground "V" way.







Unit: mm

Item#	Jaw Width	A	B	C	D	E	F	G	H	I	J	L	N.W.
3900-0067	2"	156	48	52	25	27	25	0-63	34	M6	8	125	5.1 lbs
3900-0251	3"	190	73	73	35	38	35	0-76	45	M6	10	151	12.1 lbs
3900-0068	4"	255	98	82	40	42	40	0-120	50	M8	12	196	24.2 lbs

DRILL PRESS VISES

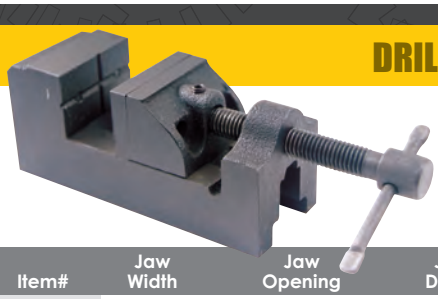
DRILL PRESS VISES



- Four slots for easy clamping to tables.
- Body and slide made of selected cast iron.
- Guiding groove controls the parallel movement and rigidity of moveable jaw.
- Replaceable steel jaws.
- Handle adjusts to any angle.

Item#	Jaw Width	Jaw Opening	Jaw Depth
3900-0177	3"	3"	1"
3900-0174	4"	4"	1-3/8"
3900-0175	5"	5"	1-1/2"
3900-0176	6"	6"	1-5/8"

DRILL PRESS VISES



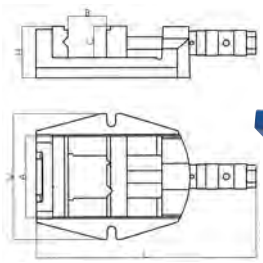
- Grooved jaw

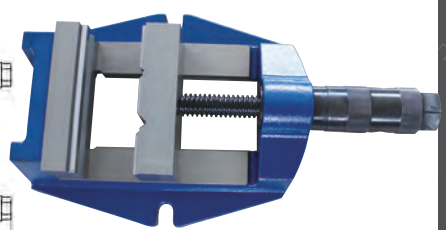
Item#	Jaw Width	Jaw Opening	Jaw Depth	OAL
3900-1730	1-1/2"	1-1/2"	1"	5-1/4"
3900-1731	2-1/2"	2-1/2"	1-1/2"	7-1/2"
3900-1732	3-1/2"	3-1/2"	1-3/4"	9-1/4"

5" SUPER DUTY DRILL/MILL VISE

NEW

- Made of top grade strong stress relieved casting.
- Quick action handle with hex end for strong force tightning.
- All working surfaces are ground and hardened.
- Grooved jaws.





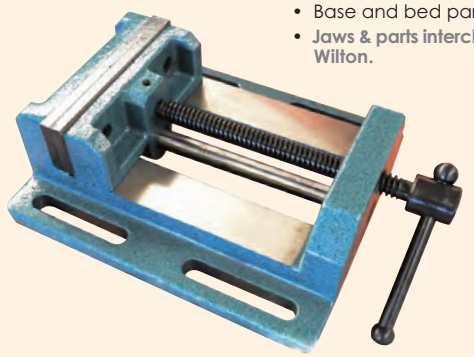
3900-0180

Unit: mm

Jaw Width A	Jaw Opening B	Jaw Depth C	OAL L	Base Width W	Height H	W.t. (Lbs.)
125	90	50	**350**	200	82	23

Pro-Series LOW PROFILE DRILL PRESS VISES

- Low profile clearance provides increased working room on machine table.
- Hardened V-groove jaws hold round shapes in either vertical or horizontal position.
- Slip handle allows for easy turning and added leverage body and slide are made of selected fine grain cast iron.
- Four slots for secure mounting to machine table.
- Base and bed parallel to 0.001".
- Jaws & parts interchangeable with Wilton.

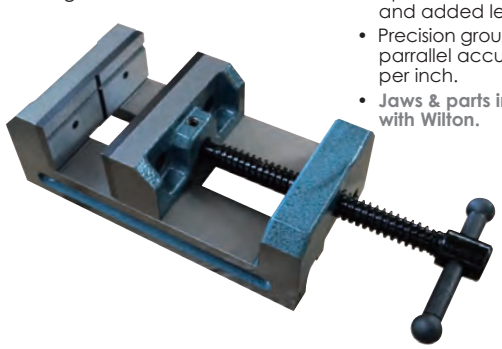


NEW

Item#	Jaw Width	Jaw Opening	Throat Depth	W.T. (Lbs.)
3901-0173	3"	3"	1-1/8	9
3901-0174	4"	4"	1-3/4	12
3901-0176	6"	6"	2	32
3901-0178	8"	8"	2	51

Pro-Series INDUSTRIAL DRILL PRESS VISES

- Precision machined on 4 sides, can be used on base, sides or end.
- Body & slide are made of selected fine grain cast iron.
- Hardened steel V-groove jaws hold round shapes in both vertical or horizontal position.
- Slip handle allows for easy turning and added leverage.
- Precision ground for square and parrallel accuracy to +/- 0.001" per inch.
- Jaws & parts interchangeable with Wilton.

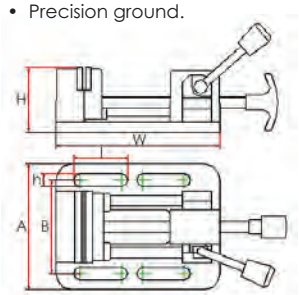


NEW

Item#	Jaw Width	Jaw Opening	Jaw Depth	W.t. (Lbs.)
3901-0184	4"	4"	1.5"	9.5
3901-0186	6"	6"	2.0"	35

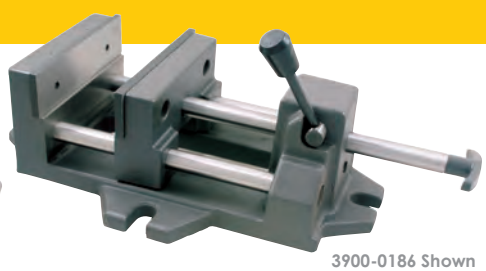
Pre-Series QUICK SLIDE DRILL PRESS VISES

- Made of high grade strong stress relieved iron casting.
- The 4&6" have 1/2" lugs on each side for mounting.
- The 3" features 1/2" slots for mounting.
- Precision ground.





3900-0183 Shown



3900-0186 Shown

Item#	Jaw Width	Jaw Opening	Jaw Depth	(mm) A	B	H	W	h	l
3900-0183	3"	3	1	140	104	72	183	14	60
3900-0184	4"	4	1-1/2	152	126	90	308	14	--
3900-0186	6"	6	1-7/8	230	192	109	368	18	--

Pro-Series ANGLE DRILL PRESS VISES - With Base

- Full 90° adjustment, horizontal to vertical.
- Two bolt lugs on base for setting on machine table.
- One grooved and on plain jaw plate.
- Swivel base providing 360° rotation.





NEW



Item#	Jaw Width	Jaw Opening	Jaw Depth	W.t. (Lbs.)
3901-1735	4"	4"	1.8"	38
3901-1737	6"	6"	2.1"	86

ANGLE DRILL PRESS VISES

- Full 90° adjustment, horizontal to vertical.
- Two bolt lugs on base for setting on machine table.
- One grooved and one plain jaw plate.
- Swivel base model providing 360° rotation, 5/8" keyway and two bolt slots for locating and mounting on machine table.



3900-0017 Shown



3900-1735 Shown



Item#	Jaw Width	Swivel Base	Jaw Opening	Jaw Depth	OAL
3900-0017	3-1/2"	No	3-1/4"	1-1/2"	9-3/4"
3900-1735	3-1/2"	Yes	3-1/4"	1-1/2"	9-3/4"
3900-1737	4-1/2"	Yes	3-5/8"	1-5/8"	11-1/2"

DELUXE TILT VISES

Item#	Jaw Width	Jaw Depth	Jaw Opening
3900-2683	3"	1-3/8"	3"
3900-2684	4"	1-5/8"	4"





- Full 90° horizontal to vertical adjustment.
- Base with multi-bolt slots for working table setting.
- One side of vise with angle dial and another side with lock knob very convenient for angle set-up.
- Strong cast iron with rail for secure angle adjustment.

SUPER CROSS SLIDE VISES

- Suitable for clamping soft materials such as aluminum, copper, etc.
- Secures firmly on drill press table and moves similar to vertical mill.
- Accurate positioning in two directions(crossed).
- Each dial is graduated in .1mm increments for precise adjustments and easily adjusts to 0.
- Ball crank handles are solid and balanced.
- Feed screws have precision cut acme threads.
- Dial in 1mm increments.
- High grade cast body.
- Heat treated steel jaws.
- **Jaws interchangeable with Wilton.**

Item#	Jaw Width	Jaw Depth	Cross Travel	(Inch) Jaw Opening	Longitudinal Travel	W.T. lbs.
3901-2703	3	1.38	3	3	5	16
3901-2704	4	1.81	4	4	5	20
3901-2705	5	1.97	5	5	6	41
3901-2706	6	2.09	6	6	8	60
3901-2708	8	2.09	8	8	8	77

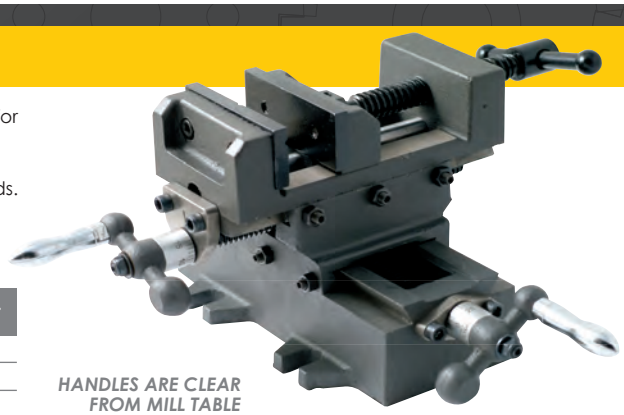


NEW

Pre-Series X-Y CROSS SLIDE VISES

- Suitable for clamping soft materials such as aluminum, copper, etc.
- Secures firmly on drill press table and moves similar to vertical mill.
- Accurate positioning in two directions(crossed).
- Each dial is graduated in .1mm increments for precise adjustments and easily adjusts to 0.
- Ball crank handles are solid and balanced.
- Feed screws have precision cut acme threads.
- High grade cast body.
- Heat treated steel jaws.

Item#	Jaw Width	Jaw Depth	Cross Travel	Jaw Opening	Longitudinal Travel	W.T. lbs.
3900-2703	3"	1-1/8"	3"	2.80"	5"	17
3900-2704	4"	1-7/16"	4"	3.80"	6"	21
3900-2706	6"	1-11/16"	6"	5.80"	8"	63

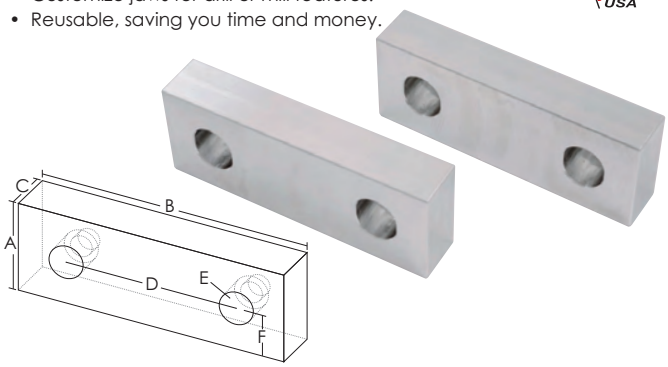


HANDLES ARE CLEAR FROM MILL TABLE

VISE JAWS

ALUMINUM VISE JAWS

- Fits ***Kurt Anglock***™ & similar precision milling machine vises.
- Perfect for easy and quick set-ups,reducing down time.
- Customize jaws for drill or mill features.
- Reusable, saving you time and money.

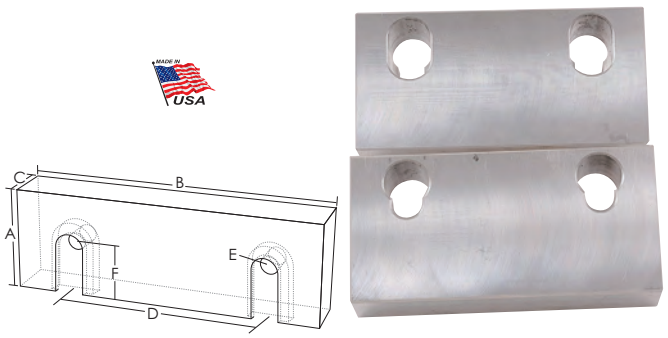


Item#	Vise Size	Height A	Length B	Hole Space D	Screw Size E	Hole Dist. F	Width C
3900-2180	4"	1-3/4	4	2-1/2	3/8	.687	3/4
3900-2184	4"	2	5	2-1/2	3/8	.687	1
3900-2187	6"	2	6	No Hole	---	---	1
3900-2188*	6"	2	6	3-7/8	1/2	.937	1

* Top/Bottom REVERSIBLE

QUICK LOCK VISE JAWS

- Fits ***Kurt Anglock***™ & similar precision milling machine vises.
- Easy and quick set-ups.
- Machinable vise jaws for drill or mill features.
- Price is for set of 2 jaws.



Item#	Vise Size	Height A	Length B	Hole Space D	Screw Size E	Hole Dist F	Width C	Material
3900-2191	4"	2	4	2-1/2	3/8	.687	1	Alum.
3900-2193	6"	2	6	3-7/8	1/2	.937	1	Alum.
3900-2194	6"	3	6	3-7/8	1/2	.937	1	Alum.
3900-2195	6"	3	6	3-7/8	1/2	.937	2	Alum.

UNIVERSAL VISE JAWS WITH WORK STOP

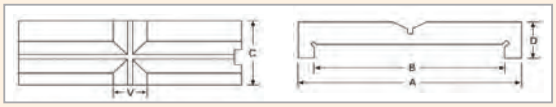
- Multi-function V-shape jaw can hold workpiece at horizontal and vertical position.
- Made of high grade tool steel hardened and precision ground.
- Squareness and Parallelism: 0.0002".
- Will fits vise jaw with same or similar width.
- Two set screws for attached to vise and one long set screw used as work stop.

MADE IN TAIWAN





NEW



Item#	Fit Vise	Dimension (mm) A	B	C	D	V	W.T. (lbs)
3900-2164	4"	145	110	49	38	32	3.5
3900-2165	5"	175	140	49	39	32	4.0
3900-2166	6"	190	160	53	40	32	4.8
3900-2167	8"	245	210	76	42	32	9.0

Pro-Series PRISMA VISE JAWS

- Multi-function V-shape jaw can hold round and square workpiece.
- Made of high grade tool steel hardened and precision ground.
- Squareness and Parallelism: 0.0002".

Item#	Fit Vise	Height	Length	Width	Screw Size	Hole Space
3900-2168	VK-4	1.42"	4.1"	.38"	M8	2.66"
3900-2169	VK-5	1.50"	5.2"	.38"	M8	3.15"
3900-2170	VK-6	1.69"	6.0"	.38"	M10	3.55"
3900-2171	VK-8	2.48"	8.0"	.49"	M10	4.72"

Limited Supply!



FOR "Vertex" K-TYPE VISE

Pro-Series PRISMA VISE JAWS-For Kurt Vise

- Multi-function V-shape jaw can hold round and square workpiece.
- Made of high grade tool steel hardened and precision ground.
- Squareness and Parallelism: 0.0002".
- Fits "Kurt" vises & American standard milling machine vises.



Item#	Fit Vise	Height	(Inch) Length	Screw Size	Hole Space
3900-2175	4	1.42	4.1	3/8	2.500
3900-2176	5	1.50	5.2	3/8	2.500
3900-2177	6	1.69	6.0	1/2	3.875
3900-2178	8	2.48	8.0	5/8	4.750

REPLACEMENT VISE HANDLES



1/2" Hex Hub	9/16" Hex Hub	3/4" Hex Hub
3900-2137	3900-2138	3900-2139

QUICKIE VISE HANDLES

- Fits All Vises 3/4" Hex
- Speed up opening and closing of machine vises.
- Provides faster and more efficient production.
- Short turning radius for clamping of more delicate parts.
- Machined anodized aluminum.



SINGLE 3900-2107



DOUBLE 3900-2108

MAGNETIC VISE JAWS



- Soft jaws with magnetic inserts for easy mounting and holding on your vises
- Protect your work piece against scratching and nicking
- Grooves ensure tight holding of different shapes of work piece

SOLD BY PAIR

Item#	Jaw Width	Material
3900-2145	4"	Aluminum
3900-2147	5"	Aluminum
3900-2149	6"	Aluminum
3900-2155	4"	Brass

2-3/4" SELF CENTERING CNC VISE

- Suitable for 4/5 axis CNC machines
- **Repeat clamping tolerance +/- 0.0004"/ 0.01mm**
- Material: FCD 60, high tension cast iron slide way has hardness of HRC 450.
- Interchangeable jaw heat treatment to HRC 55°.
- Lock down force to keep work piece from lifting.
- Swivel base 8" diameter x 22mm thickness
- Clamping Capacity: 1.77~5.51"

MADE IN TAIWAN



SWIVEL BASE INCLUDED!!

Item#	Jaw Width	Jaw Depth	Jaw Openning	Vise Height	OAL
3900-2220	2.36"	0.95"	3.94"	3.15 (w/o base)	7.3"

VISE SPEED HANDLE

- Designed for 6" milling vise.
- Speed up the clamping force of vise.
- Fits most milling vises.

3900-0202

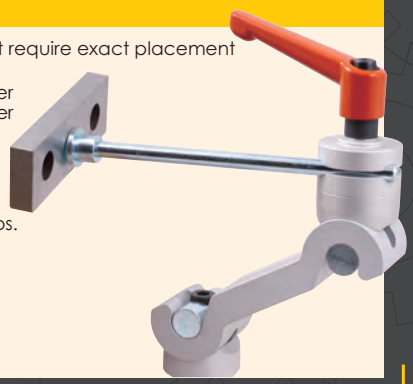


3/4" Hex Hub

Pro-Series MULTI AXIS WORK STOP 5/8 IN TABLE SLOTS

- For use with repetitive jobs that require exact placement in the vise.
- 5 Axis Adjustment, 1/4" diameter x 6" length stop rod, locking lever can be positioned at 360 degrees.
- T nut fits 5/8" table slots.
- Height 8", Length 8"
- Capacity-approximately 700 lbs.

3900-2118



UNIVERSAL WORK STOP

- Serves as a rigid stop for milling set-up.
- Made of hardened tool steel.
- Use with vises, angle plates, jigs, etc.
- Column: 5/8 x 6-1/4".
- Base: 5/8 x 2 x 4-3/8".
- Rod: 3/8 x 10".

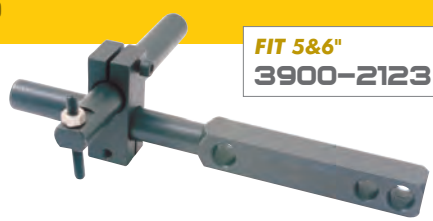


3900-2125

MILL VISE STOP

- Fits the most popular machine vises.
- Bolt-on design, requires no modification to vise.
- Will work in left or right hand location.

FIT 5&6" 3900-2123



VISE WORK STOP

- To fit angle lock type vises.
- Single thumb screw tightens clamp to vise jaw.
- Two ground pins on both sides of clamp.
- Easily mounts to the top of most vise jaws.
- 7/8" capacity.

3900-2120



QUICK CLAMP WORK STOP

- Fits mill vises with 1/2-1" jaws
- steel body 1" wide x .38" height
- Very handy for small parts that do not require the full length
- Clamps quickly & easily to the top of existing hard jaws or soft jaws

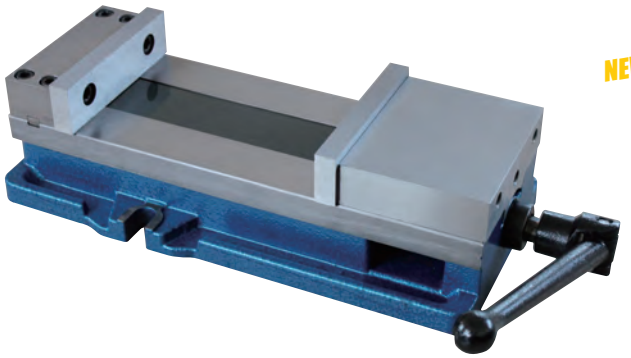
3900-2131



Pro-Series 6" PRECISION MILLING VISE -W/ 8.6" Jaw Opening

NEW

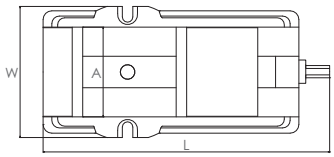
- Precision ground to accuracy to .0004" on parallelism and .0008" on squareness.
- Lock down design secures the movable jaw, preventing it from lifting upwards.
- Angle-Tight Positive-Lock style-jaws are interchangeable with American Standard vises.

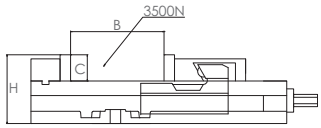


NEW DESIGN!

6" VISE
3900-2246

OPTIONAL BASE
Fit Vise 6"
3900-2236





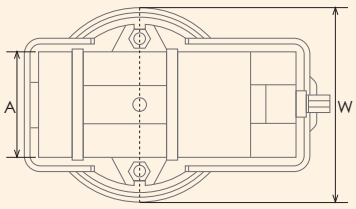
Item#	Jaw Width	Jaw Opening	G.W. (LBS.)	(Inch) A	B	C	L	W	H
3900-2246	6"	8.6"	75	6	8.6	1.77	19.5	9.2	4.65

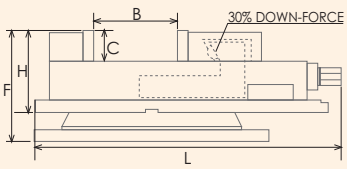
Pro-Series HEAVY DUTY MILLING VISES

NEW

- Precision ground to accuracy.
- Full 360° swivel base with graduation included.
- Used in milling, shaping and drilling machines.
- Lock down design secures the movable jaw, preventing it from lifting upwards.
- Angle-Tight Positive-Lock style-jaws are interchangeable with American Standard vises.

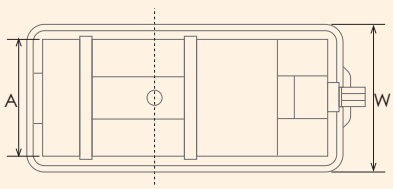
HHIP PRO-SERIES

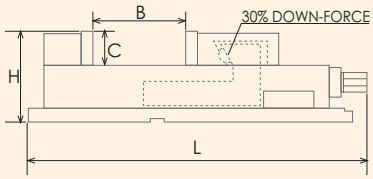






3900-2103 Shown







Jaw Width A	Jaw Openning B	Jaw Height C	(Inch) OAL L	Width of Swiv Base W	Width of Vise Base W1	Vise Height H	Height with Base F	G.W. (LBS.)	VISE ONLY Item#	VISE W/SWIV. BASE Item#
3	3.74	0.980	10.20	6.70	4.7	2.76	3.74	15/22	3900-2223	3900-2104
4	5.31	1.181	12.80	8.70	6.3	3.54	4.72	25/40	3900-2224	3900-2102
5	5.71	1.575	14.37	8.70	---	3.94	5.12	48		3900-2101
6	7.87	1.932	18.70	11.0	9.1	4.53	5.91	68/86	3900-2226	3900-2103
8	9.25	1.969	20.90	16.1	--	4.92	7.87	130		3900-2106
8	8	2.360	23.42	15.6	--	5.90	7.80	163		3900-2105



3900-2133 Shown

SPARE JAWS & MOVEABLE JAW BLOCK

Fit Vise	Jaws (Set of 2) Item#	Jaw Block Item#
3"	3900-2133	3900-2140
4"	3900-2134	3900-2141
6"	3900-2136	3900-2142



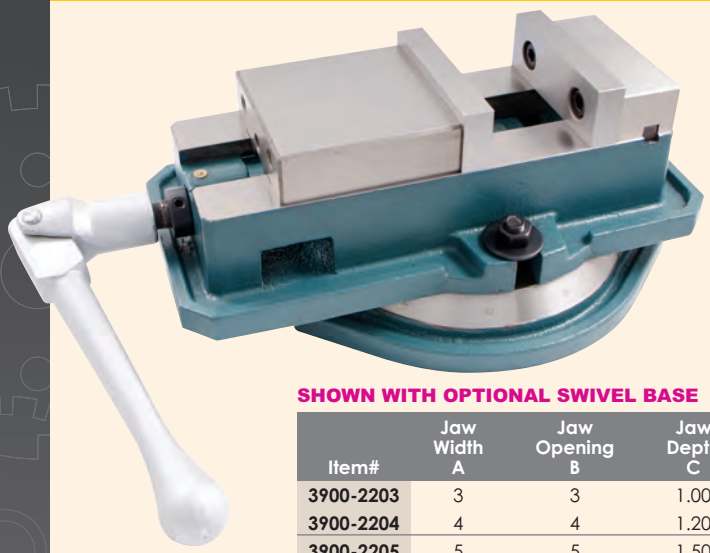
3900-2140 Shown



OPTIONAL BASE

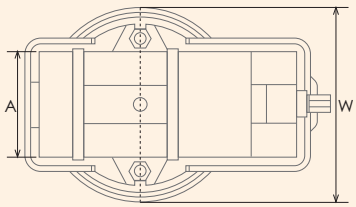
Item#	Fit Vise	Width of Base
3900-2233	3"	6.7"
3900-2234	4"	8.7"
3900-2236	6"	11.0"

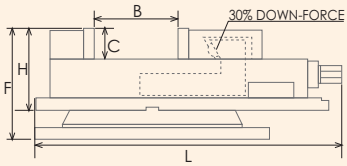
Ultra-Series ANGLE-TIGHT POSITIVE-LOCK MILLING VISES



- Super precision ground to accuracy. High quality.
- Totally enclosed heat treated screw.
- Smooth operation, high repeatability.
- Angle-Tight Positive-lock style-lock down type jaws.
- Jaws interchangeable with American standard vises.

OPTIONAL
Swivel Base for 6" Vise
3900–2207
W.T. 29 lbs.





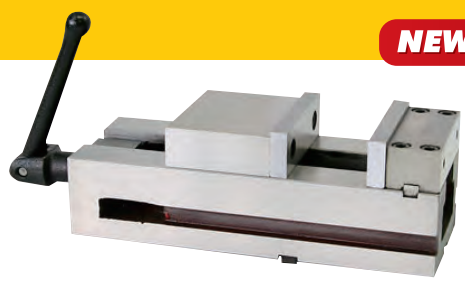
SHOWN WITH OPTIONAL SWIVEL BASE

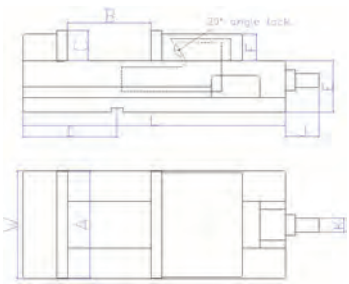
Item#	Jaw Width A	Jaw Opening B	Jaw Depth C	(Inch) OAL L	Vise Ht H	Ht W/Base F	W	W/Swivel Base	W.T. (lbs.)
3900-2203	3	3	1.00	11.00	3-5/32	4-9/32	7-9/32	Yes	28
3900-2204	4	4	1.20	13.50	3-37/64	5-1/32	9-7/32	Yes	52
3900-2205	5	5	1.50	17.30	4-1/16	5-9/16	9-49/64	Yes	71
3900-2206	6	7.5	1.95	21.00	4-27/32	----	---	No	86

SUPER-LOCK VISE FOR NC/CNC MACHINES

NEW

- Lock down type.
- Ideal for all types of milling, grinding, drilling and tapping application in multiple vise set-ups.
- **Flatness of all sides to .001" guaranteed.**
- Mounting in 3 modes: upright, left and right side.
- **Both sides parallel to each other to .0005" per 4".**
- Up to 3000 N clamping force.



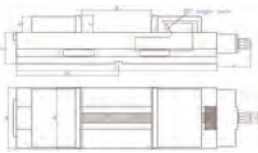




Item#	Jaw Width (inch/mm)	A	B	C	D	(Inch) E	F	J	K	L	Base W	O	N.W. Lbs.
3900-0170	3.15/80	3.15	3.15	0.94	3.15	1.97	0.87	1.22	0.44	8.27	3.18	**1.77**	18
3900-1719	3.94/100	3.94	4.15	1.26	4.05	2.36	1.14	1.34	1.44	10.43	3.97	**2.50**	23
3900-0171	4.92/125	4.92	5.10	1.57	3.93	2.52	1.47	1.42	0.55	11.85	4.96	**2.99**	40
3900-0172	6.30/160	6.30	7.32	1.73	5.51	3.03	1.65	1.93	0.75	15.39	6.33	**3.88**	64

TWIN - LOCK PRECISION CNC MILLING VISES -Self Centering

- Precision clamping force per jaw set.
- Precision ground on all sides, can be mounted vertically or horizontally.
- Bed hardened to RC 45 or higher to resist wear.
- Reversible hardened jaw plates for standard or, stepped part holding.
- Reduces the tool changes per job by 50%.
- Uses the same machine space as conventional vises limited to half the part holding capacity.
- Top mounted center block can be removed easily for larger parts application.



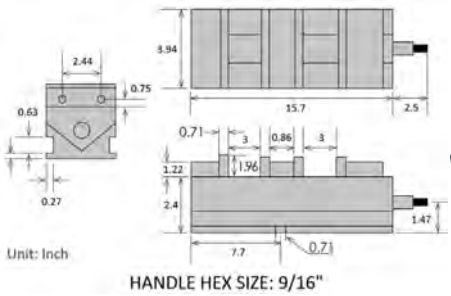
Data Without Center Jaw

Item#	Jaw Width	(Inch) A	B	N.W. Lbs.
3900-1722	3.94/100mm	3.94	7.87	36
3900-0173	6.30/160mm	6.30	10.43	95

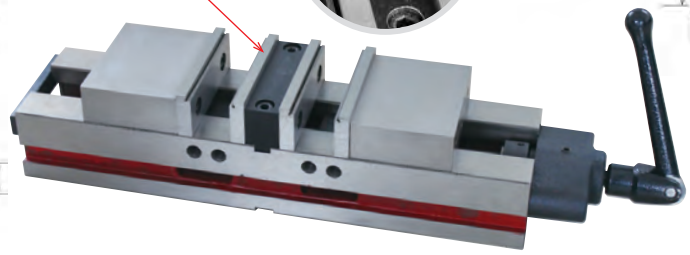
4" Jaw Width
3900–1722
45 LBS.

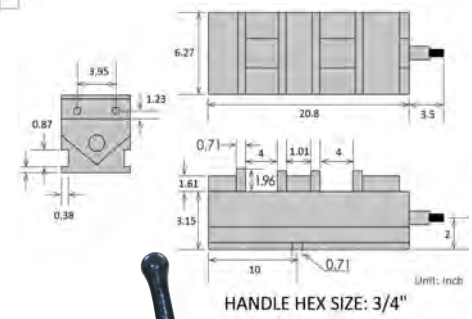
Top Mount Removable Jaw





HANDLE HEX SIZE: 9/16"





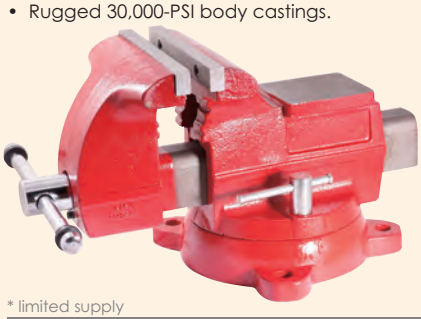
HANDLE HEX SIZE: 3/4"

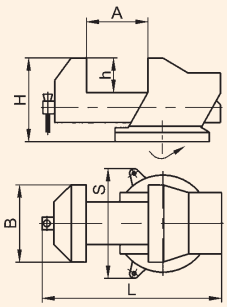
6" Jaw Width
3900–0173
109 LBS.

BENCH & MILL VISES

WILTON STYLE MACHINE VISES

- Built-in pipe jaws.
- Locking swivel base.
- Rugged 30,000-PSI body castings.





* limited supply

Item#	Jaw Width B	Jaw Opening A	(Inch) Height H	Min. OAL L	S	h	W.T. (Lbs.)
3900-2514	4-1/2	4	6.52	10.50	5.20	2.60	19
3900-2515	5-1/2	5	7.60	12.76	6.22	3.19	29
3900-2516	6-1/2	5-1/2	8.75	14.63	7.09	3.92	39
3900-2518*	8	7-1/2	10.19	18.09	11.62	4.45	79

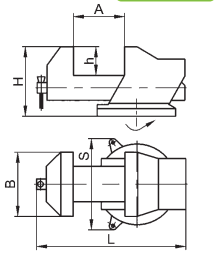
Pro-Series MACHINIST'S STEEL VISE

NEW

- 360° swivel base or double lock down to keep stationary in any position.
- Self-centering, hardened steel pipe jaws, holds up to 6" pipe safely and securely.
- Straight line pull guaranteeing a lifetime spindle and nut.
- Cast steel body.

MADE IN TAIWAN





Item#	Jaw Width B	Jaw Opening A	(Inch) Height H	Min. OAL L	S	h	G.W. (Lbs.)
3900-2511	6	5.9	7.2	16.5	9	3.1	31
3900-2513	8	7.8	8.0	19.7	9.4	3.4	40

5" MULTI-PURPOSE ROTATING VISE

- Full 360° rotational jaws.
- Machine cut parallel jaws-large and strong.
- Unique "V" jaws provides 4 point holding power.
- Swivel base.

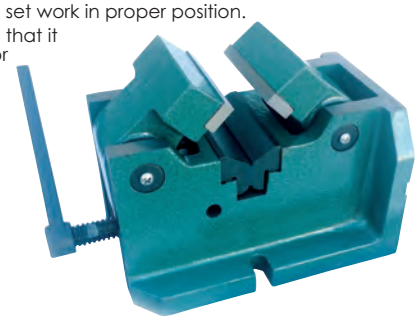
Head Swivels 360°



Item#	Jaw Width	Jaw Open	Pipe Jaw Open	"V" Jaw Open
3900-0259	5"	4"	3"	4"

HORIZONTAL/VERTICLE MACHINE VISE - for Holding Shafts and Round Parts

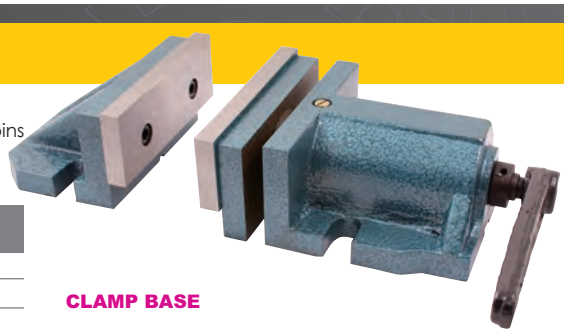
- 4" wide hardened steel replaceable jaws.
- Capacity 3/8" to 2-1/2" round parts.
- Work rests on V-block made of hardened and ground tool steel.
- Adjustable sliding rod to set work in proper position.
- Vise ends are ground so that it can be used vertically or horizontally.



4 INCH
3900-1720
50 Lbs.

2 PC QUICK CLAMP MILL VISES

- Work locates directly on bed for rigidity
- Mechanical type, actuated by Acme screw riding in bronze nut and guided by two H&G pins
- Quarter-turn handle clamps work firm enough for heaviest cuts
- Vise handle included

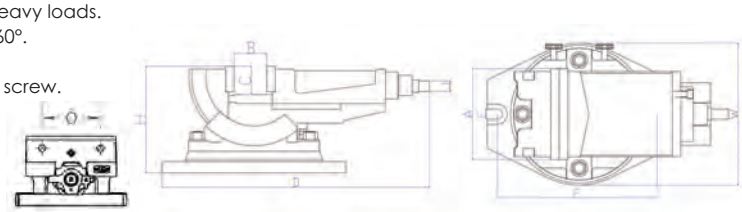


Item#	Jaw Width	Depth of Jaws	Key Slot Width	Min. T-Slot	Clamp	W.t.
3900-1726	6"	3"	11/16"	2-1/4~2-3/4"	3/8"	32 lbs
3900-1728	8"	4"	13/16"	2-3/4~3-3/4"	1/2"	58 lbs

CLAMP BASE

2-WAY SWIVEL MOVEMENT ANGLE VISES

- Positive locking to withstand heavy loads.
- Horizontal swivel movement 360°.
- Vertical swivel movement 90°.
- Totally enclosed acme thread screw.
- Hardened and ground jaws.
- Vises supplied with plain jaws.
- Base T-slot width: 0.71"
- Vise handle included.



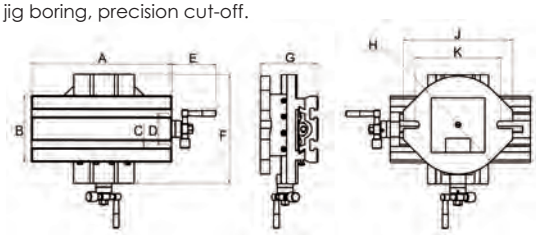


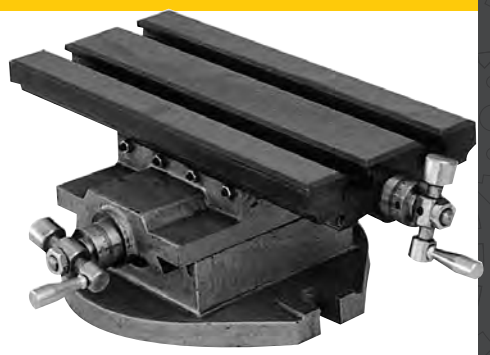
Item#	Jaw Width	A	B	C	(Inch) D	E	F	J	W	H	O	W.t. Lbs.
3900-0018	3.94/100mm	3.94	3.15	1.69	15.55	0.55	8.78	0.55	7.24	6.18	**2.36**	54
3900-0015	4.92/125mm	4.92	3.94	1.81	18.89	0.55	9.96	0.67	8.78	6.73	**3.15**	61
3900-0019	6.30/160mm	6.30	4.92	1.97	21.85	0.71	11.34	0.67	10.04	7.48	**2.76**	89

5-1/2 X 12" COMPOUND SLIDE TABLE

- A heavy, rugged slide used in positioning, milling, drilling, microscope viewing and staging.
- Adjustable bases for heavy loads, small jig boring, precision cut-off.
- T-slot Width: 5/8"

3900-0027





Unit: Inch

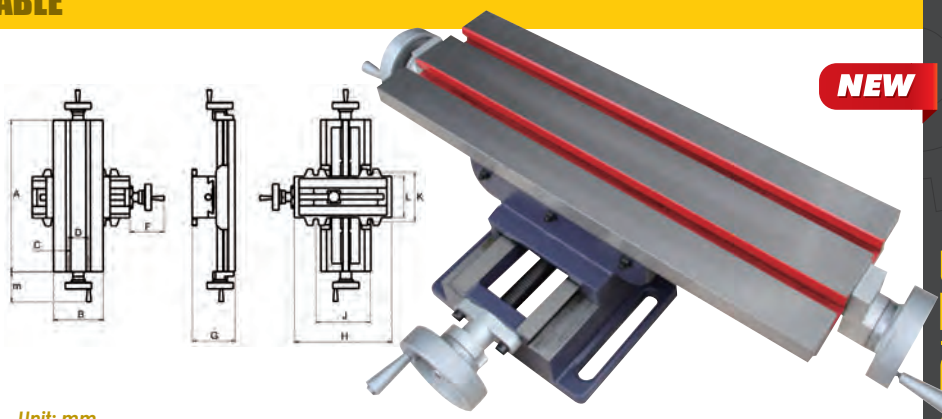
A	B	C	D	E	F	G	H	J	K	X Travel	Y Travel	N.W.
12	5.5	5/8	2.5	3	9	4.5	8	9	7.6	8	5	40 Lbs.

6 x 18-1/2" COMPOUND MILLING TABLE

- Solid cast iron construction.
- Features 12" of longitudinal travel and 7-1/2" of transverse travel, adjustable gibs, dovetailed ways, dependable Acme screws, vernier scales and 9/16" T-slots.

3900-2728

NEW

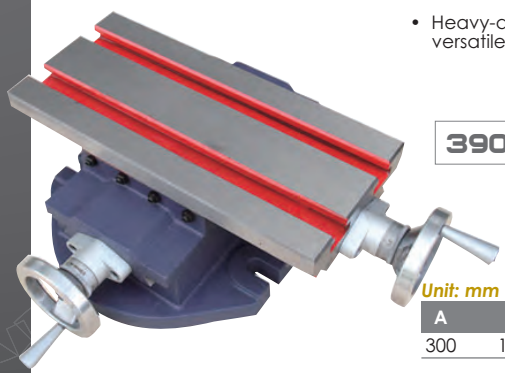


SPECIFICATION	
Table Size	18-1/2 x 6"
Table Height	5-1/4"
Footprint	8 x 10-1/2"
T-Slot	9/16"
Mounting Slot	1/2"(2-1/4" on center)
Wt (lbs)	58

Unit: mm

A	B	C	D	E	F	G	H	J	K	L	X Travel	Y Travel
473	156	14	62.5	94	108	134	305	170	152	130	270	120

5-1/2 x 12" COMPOUND SLIDE TABLE

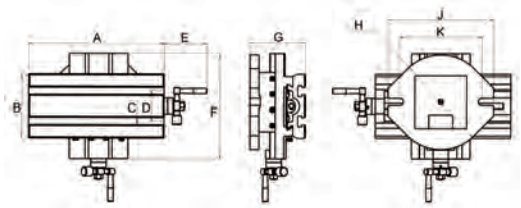


- Heavy-duty compound slide table features 8" of longitudinal and 5" of transverse travel for versatile milling and drilling. Features 5-1/2" x 12" table, 5/8" slots, and adjustable gibs.

NEW

3900-2718

SPECIFICATION	
Table Size	12x5-1/2"
Table Height	5"
T-Slot	5/8"
Wt (lbs)	38



Unit: mm

A	B	C	D	E	F	G	H	J	K	X Travel	Y Travel	NW/GW
300	140	16	65	300	232	123	208	234	182	180	100	17/18kg

8 x 12" PRECISION COMPOUND MILLING TABLE

- X - Y axes sliding table
- Solid, cast iron construction
- Adjustable gibs to maintain accuracy
- Rotary dials graduated in .001" increments

SPECIFICATION	
Table Size	12" x 7-7/8"
Table Height	5-1/2"
Table OAL	20"
T-Slot	7/16"
Travel (X,Y)	7-7/8"
Wt (lbs)	84

3900-2720



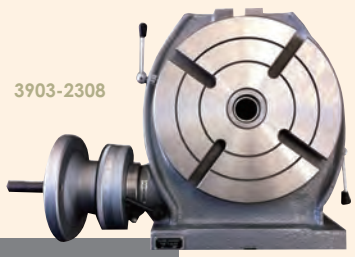
Pro-Series Low Profile HORIZONTAL & VERTICAL PRECISION ROTARY TABLES

NEW

- High precision bearing surfaces insure ultra-smooth rotation.
- Superior grade meehanite castings provide the ultimate rigidity.
- All rotary tables are precision ground to meet the most exacting requirements and are individually supplied with a certificate of inspection.
- The engraved graduations are both crisp and clear, eliminating erroneous readings.
- Low profile design minimizes machine capacity losses without sacrificing work load capacity.
- T-slots are machined within acceptable tolerances.
- Worm gear is is easily disengaged for free rotation.
- Long life and continued accuracy is assured by a convenient adjustment to compensate for wear.
- All rotary table parts are strategically positioned for easy access.
- The one piece worm and shaft are hobbed from a solid alloy steel.
- Extra deep coolant channel
- 10 second vernier reading
- Dual positive action locks
- Graduated 360 degrees
- Gear drive immersed in oil
- 90:1 gear ratio


3903-2306


3903-2310


3903-2308


3903-2312

DIVIDING PLATES INTERCHANGEABLE WITH Phase II

Item#	Table Size (Dia.)	Center Hole	Center Height Vert (In.)	Number of T-slots	T-slot Width (In.)	G.W. (lbs.)
3903-2306	6"	2M.T.	4.93	4	0.390	51
3903-2308	8"	3M.T.	5.98	4	0.465	70
3903-2310	10"	3M.T.	6.75	6	0.465	102
3903-2312	12"	4M.T.	8.25	6	0.545	170

SPECIFICATIONS	VARIATION MAX.
CLAMPING SURFACE FLATNESS	0.0006"
CYLINDER CENTER BORE TIR	0.0008"
TAPER CENTER BORE TIR	0.0008"
SURFACE TO BASE PARALLELISM	0.0008"
SURFACE TO ANGLE FACE SQUARENESS	0.0004"
SURFACE TO CENTER SLOT SQUARENESS	0.0008"

DIVIDING PLATES-For Phase II Style Rotary Tables



NEW

SET I
Plate A - 34,37,38,39,41,43,44,50,52,56,61
Plate B - 46,47,49,51,53,54,57,58,59,62,64

- **Set includes: index plates, crank handle & washer.**

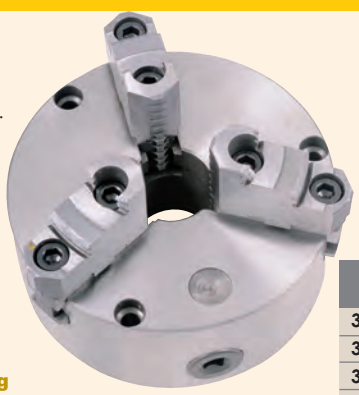
Item#	Fits Rotary Table (Dia.)	Plate Include
3900-2401	6, 8, 10,12"	SET I

3-JAW FRONT-MOUNT SELF-CENTER CHUCKS FOR ROTARY TABLES

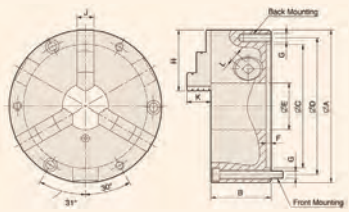
- Plain back.
- Made of high quality steel.
- Hardened and ground.
- Lathe chuck wrench supplied.

TOP JAWS REVERSIBLE

Front mount chucks are designed to be used with rotary tables and other devices where back mounting chucks can not be used.


SQUARE & PARALLEL .0002"





Item#	Chuck Size A	D	(Inch) C	B	Center Hole E	Mount Thread G Front	Back
3900-3430	6"	5.51	4.92	2.60	1.575	M8X70	M8X25
3900-3432	8"	6.93	6.30	3.00	2.559	M10X80	M10X30
3900-3434	10"	8.82	7.87	3.42	3.150	M12X85	M12X35
3900-3436	12"	11.26	10.24	3.86	3.937	M16X100	M16X40

4" SUPER RAPID INDEXER

- Simple and rapid operation
- 4" 3-jaw chuck give a big range clamping capacity
- 24 position index (15° increments)
- 1° table scale for angle indexing
- Center hole 1.18" dia.
- Horizontal and vertical operation
- 2 sets of jaws (Internal & External).

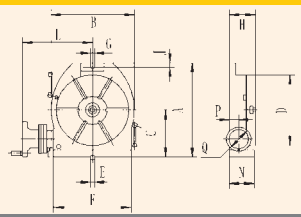
3900-2414
241 Lbs.



Pro-Series HORIZONTAL/VERTICAL ROTARY TABLES

- 10 second vernier reading.
- Gear ratio 90:1.
- One rotation of handle equals 4° on collar.

MADE IN TAIWAN





Style for 6,8,10,12" Shown



3900-2314 Shown

Unit: Inch

Item#	Table Size D	Height-over-all H	Height-over-all A	Center Hole	Center Height C	Number of T-slots	T-Slot Size	N	B	G.W. (lbs.)
3900-2314	4.3"	2.8	5.4	2M.T.	3.3	3	.43	2.3	4.7	17
3900-2316	6"	3.1	8.1	2M.T.	3.9	3	.43	3.1	6.4	28
3900-2328	8"	4.1	10.4	3M.T.	5.3	3	.55	3.9	8.6	60
3900-2330	10"	4.5	12.6	3M.T.	6.5	6	.55	4.2	10.9	83
3900-2332	12"	5.3	15.3	4M.T.	7.7	6	.63	4.8	13.0	134

Pro-Series DIVIDING PLATES

- **Suitable for Pro-Series rotary tables.**
- **Set includes: index plates, crank handle, 3pc screw, sector & U washer.**

Item#	Fits Rotary Table (Dia.)	Plate Include
3900-2390	4 & 6"	SET I
3900-2392	8"	SET II
3900-2394	10 & 12"	SET II
3900-2396	6 & 8" (Super Spacer)	SET II

SET II

Plate A - 26, 30, 34, 38, 41, 44, 47, 51, 57, 28, 32, 37, 39, 43, 46, 49, 53, 59

Plate B - 62, 67, 71, 77, 81, 87, 91, 97, 63, 69, 73, 83, 89, 93, 99

SET I

Plate A - 15, 16, 17, 18, 19, 20

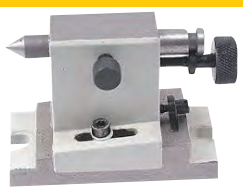
Plate B - 21, 23, 27, 29, 31, 33

Plate C - 37, 39, 41, 43, 47, 49



ADJUSTABLE TAILSTOCKS

Item#	Fits Table	Origin	Center Height
3900-2406	4"	China	2.75"
3900-2407	4-6"	Taiwan	3.2-4.3"
3900-2409	6 & 8"	Taiwan	4.5~5.7"
3900-2402	8 & 10"	China	5.5~7.5"
3900-2411	8, 10 &12"	Taiwan	5.2~8.1"
3900-2403	12"	China	7.5~9.0"



3900-2402 & 3900-2403 Shown



3900-2409 & 3900-2411 Shown

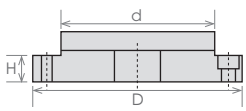


3900-2407 Shown

FLANGES

- For front mount.
- For adaptering a chuck to rotary table.
- Compatible for Pro-Series rotary tables, holes pattern may need to be modified for non Pro-Series.

MADE IN TAIWAN





Item#	Fit Chuck Size	Used For Table (Dia.)	(Inch) D	d	H
3900-2352	5	6 & 8	5.43	3.94	0.787
3900-2355	6	8 & 10	6.69	5.12	0.827
3900-2358*	7	10 &12	7.68	6.10	0.945
3900-2360	8	12	8.27	6.30	0.945

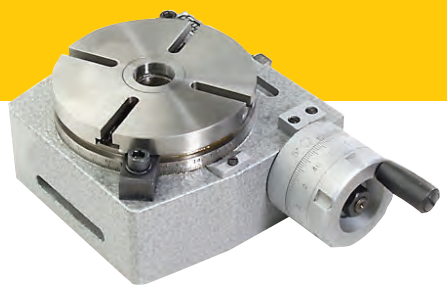
* Limited Supply

4" HORIZONTAL/VERTICAL ROTARY TABLE & DIVIDING PLATE

- 10 second vernier reading.
- One rotation of handle equals 4° on collar.
- Center height: 2.75"
- Gear ratio 72:1.
- Center Hole: 2MT
- Number of T-slot: 4

SPECIFICATION	
Vernier Reading	10 seconds
Squareness	0.0008"
Base Parallelism (face to face)	0.0004"
Taper(MT2) center bore Concentricity	0.0008"
Clamping surface flatness	0.0006"





DIVIDING PLATE
3900-2400

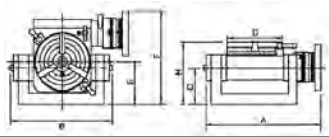
- This set consists of one plate with a set of 10 holes. This allows you to divide a circle into 1/2 degree increments. You can divide a circle into the following number of divisions 2, 3, 4, 5, 6, 8, 9, 10, 12, 15, 16, 18, 20, 24, 30, 36, 40, 45, 48, 60, 72, 80, 90, 120, 144, 180, 240, 360, 720.

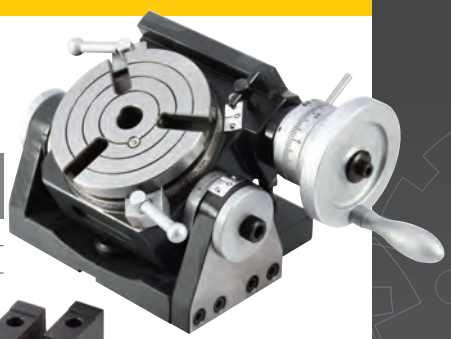
4" ROTARY TABLE
3900-2304

TILTING ROTARY TABLES

Pro-Series UNIVERSAL TILTING ROTARY TABLES

Tailstock and Dividing Plates are optional





Unit: Inch

Item#	Table Size G	Height-over-all H	F	Center Hole	Center Height E	OAL A	B	C	Number of T-slots	T-Slot Size	G.W. (lbs.)
3900-2338	4.3	4.61"	6.97"	2M.T.	3.15"	9.0	8.0	2.68	3	0.433	30
3900-2340	8	6.97"	11.14"	3M.T.	5.55"	16.9	17.0	4.37	3	0.551	110

- Highly rigid in the market
- Tilting 0-90° from horizontal to vertical position Lock setting with 2 screws
- 90:1 ratio worm is hardened and ground
- The work table is graduated a full 360° and micro collar is in steps of 2' min.

MADE IN TAIWAN

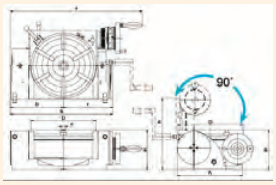


Pro-Series 6" UNIVERSAL TILTING ROTARY TABLE

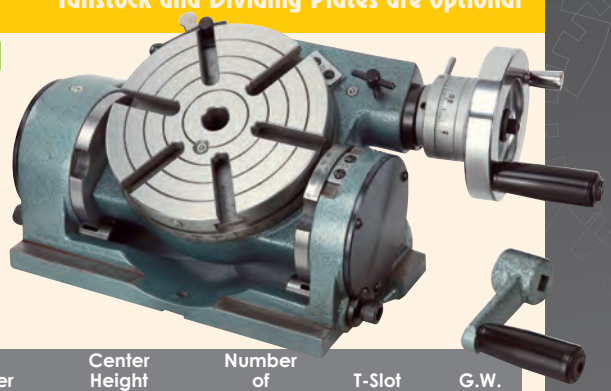
Tailstock and Dividing Plates are optional

MADE IN TAIWAN

- Tilting by rigid & strong design, 2 supports & rigid clamping system construction.
- Tilting angle can be adjusted by worm & worm gear system.
- Accurate and built for use in milling , boring and other machines.
- Indexing, facing and other application can be done rapidly with extreme precision.
- Worm shafts are hardened and precision ground.
- Indexing can be done with optional dividing plates.



SPECIFICATION	
TILTING	Per One Handle Rotation...6° Vernier Reading .....1' Scale of Micro Collar.....5'
TABLE	Per One Handle Rotation...4° Scale of Micro Collar.....2' Vernier Reading.....20" Gear Ration.....1:90



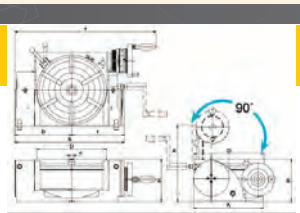
Unit: Inch

Item#	Table Size D	Height-over-all H	h	Mounting Surface A	B	a	OAL b	c	Center Hole	Center Height (vertically)	Number of T-slots	T-Slot e	G.W. (lbs.)
3900-2346	6"	4.53	6.50	7.1	10.6	15	5.6	4.9	2M.T.	3.54	6	0.433	52

TSK SERIES 10" TILTING ROTARY TABLE

- 10 second vernier reading.
- Gear ratio 90:1.
- Dual positive action locks
- Low profile
- gear drive immersed in oil
- maximum cumulative spacing error: 45 seconds





3900-2315
182 Lbs.

Table Dia.	Tilting Height	Range	Center Height	Hole	T-slot	Base
10"	8"	90°	5-1/2"	3MT	1/2"	10 x 12"

SPECIFICATION	
Squareness (surface to angle face)	.....0.0004"
Squareness (surface to center slot)	.....0.0008"
Parallelism (surface to base)	.....0.0008"
Cylindrical enter bore Concentricity	.....0.0008"
Taper center bore Concentricity	.....0.0008"
Clamping surface flatness	.....0.0006"

HEAVY DUTY TILTING TABLES

- Supplied complete with crank handle.
- Range 0-80° (40° each side).
- Has 2 screws for locked settings.
- Graduated in degrees for quick setting purposes.
- Heavy duty casting and precision ground with three T-slots.
- Set at any angle with indexer.
- Convex movement.

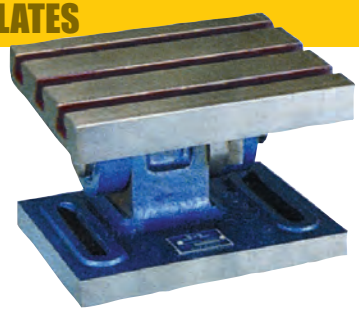




Item#	Size	Height	T-Slot	Wt. (Lbs)
3501-0001	7x5"	3-3/4"	1/2"	21
3501-0002	10x7"	5"	1/2"	50
3501-0003	15x10"	6-1/2"	1/2"	130

SWIVEL ANGLE PLATES

- Adjustable range 0-90°.
- High grade casting with rugged construction.
- Machined "T" slots.
- 2-screw lock setting.
- Working surfaces are hardened and ground.



Item#	Size	Height	T-Slot	Wt. (Lbs)
3501-0012	5 x 6"	4"	1/2"	18
3501-0014	6 x 8"	5"	1/2"	29
3501-0016	8 x 10"	6"	9/16"	45
3501-0018	10 x 12"	7"	5/8"	80

Pro-Series SUPER 6" & 8" ROTARY INDEXING FIXTURE

- Designed for milling, drilling, jig boring, and many other shop applications.
- Hardened and ground 24 position index plate (15° increments).
- 360° satin chrome graduated ring with 10 second adjustable vernier plate insures accurate readings.
- Each unit is equipped with 6 masking plates for fast and simple indexing of 2, 3, 4, 6, 8 and 12 divisions.
- Complete with 3-jaw chuck and faceplate.

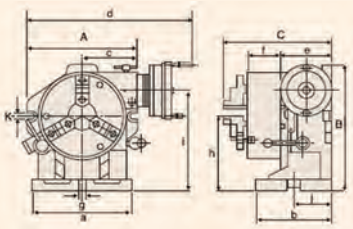


FACE PLATE SHOWN



MADE IN TAIWAN

SPECIFICATION	
Max. Individual Spacing Error	25 seconds
Vernier Reading	10 seconds
Squareness (table base to chuck 90°)	0.0008"
Base Parallelism (face to face)	0.0004"
Mounting Flange Concentricity	0.0008"
Chuck Concentricity	0.0005"



Unit: Inch

Item#	Table Size	Face Plate	Chuck Center Hole	A	B	C	a	b	d	e	f	g	Center Height h	i	j	k	Number of T-slots	T-Slot Size	G.W. (lbs.)
3900-2318	6	8	1-23/32	9.84	9.37	8.15	7.17	5.5	16	4.41	2.6	.63	4.8	7.52	3.15	.63	6	0.433	98
3900-2321	8	10	2-15/32	12.6	11.57	9.27	9.06	6.3	19	4.99	3.0	.63	6.1	9.24	3.74	.79	6	0.551	177

Pro-Series ADJUSTABLE TAILSTOCKS
-For 6&8" Rotary Indexing Fixture



MADE IN TAIWAN

Fits 6" Indexing Spacer
3900-2409
4.5 - 5.7" Center Height

Fits 8" Indexing Spacer
3900-2411
5.125 - 8.07" Center Height

Pro-Series DIVIDING PLATES
-For 6&8" Rotary Indexing Fixture

- Suitable for Pro-Series rotary tables.
- Set includes: index plates, crank handle, 3pc screw, sector & U washer.

MADE IN TAIWAN



SET INCLUDES:

Plate A - 26, 30, 34, 38, 41, 44, 47, 51, 57, 28, 32, 37, 39, 43, 46, 49, 53, 59

Plate B - 62, 67, 71, 77, 81, 87, 91, 97, 63, 69, 73, 83, 89, 93, 99

Fits 6&8" Indexing Spacer
3900-2396

Pro-Series REPLACEMENT PARTS
-FOR 8" INDEXING FIXTURE (Vertex Brand)



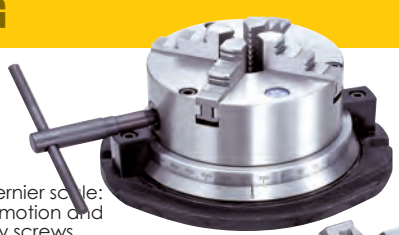
Worm Metal
YV-300CSA



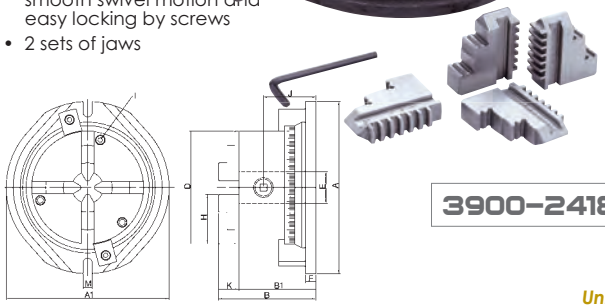
Worm Gear
Y300CS

Pro-Series 8" 4 JAW ROTARY CHUCK-SELF CENTERING

MADE IN TAIWAN



- 360 degrees vernier scale: smooth swivel motion and easy locking by screws
- 2 sets of jaws



3900-2418

Unit: mm

A	A1	B	B1	D	E	F	H	I	J	K	M	W.t.
305	270	159	125	200	65	20	86	3-M10	75	34	18	67 lbs

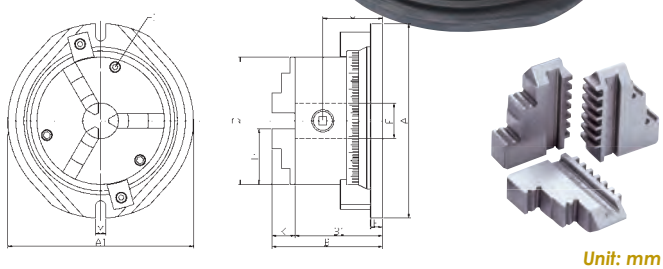
Pro-Series 6" 3 JAW ROTARY CHUCK-SELF CENTERING

MADE IN TAIWAN

- 360 degrees vernier scale: smooth swivel motion and easy locking by screws
- 2 sets of jaws

3900-2416





Unit: mm

A	A1	B	B1	D	E	F	H	I	J	K	M	W.t.
245	233	139	110	160	45	15	70	3-M8	69	29	14	40 lbs

SEMI - UNIVERSAL DIVIDING HEAD SETS

- Provides high accuracy with little backlash for a smooth rotation.
- Features easy indexing of divisions from 2 to 50 and most numbers up to 380.
- 3 dividing plates enable you to use different sizes (included).
- Adjustable tailstock allows you to work on various size workpieces (included).
- Ruggedly constructed of hardened and ground worm gear.
- Set also includes head, center and backplate for mounting 3-jaw chuck.



DIVIDING PLATE A B C

Numbers of Hole							
	Plate A	15	16	17	18	19	20
	Plate B	21	23	27	29	31	33
	Plate C	37	39	41	43	47	49

7-1/2" SWING
3800-5810
55 Lbs.

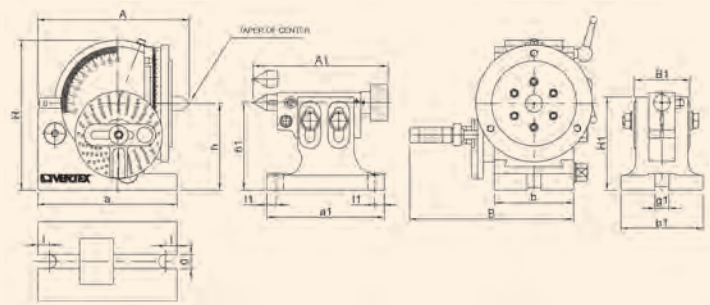
10" SWING
3800-5812
80 Lbs.

HHIP PRO-SERIES



OPTIONAL FRONT-MOUNT 3-JAW CHUCK

Chuck Size	Item#
4"	3800-5820
5"	3800-5821
6"	3800-5822



SPECIFICATION	ITEM 3800-5810	ITEM 3800-5812
Swing:	7-1/2"	10"
Center Height(h):	3-15/16"	5-3/64"
Hole Through Spindle(dia.):	0.709"	0.787"
Spindle Taper:	2MT	3MT
A/B/H	7.44"/5.52"/6.30"	11.34"/6.14"/8.66"
a/b	6.30"/3.58"	8.16"/4.48"
Optional 3-Jaw Chuck:	4"/5"	5"/6"
Tailstock Dimension: (A1xb1xH1)	6.6"x3.3"x4.3"	7.5"x4.3"x5.4"
a1/B1	5.13"/3.16"	5.91"/3.16"
g=g1	33/64"	5/8"

UNIVERSAL DIVIDING HEAD SET

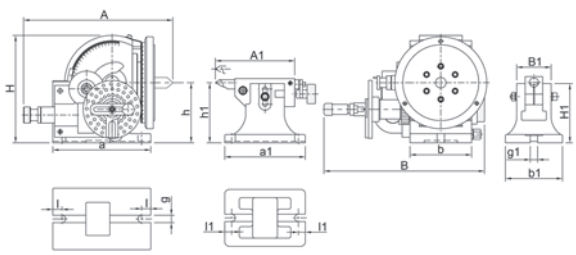
HHIP PRO-SERIES



- Ideal for easy indexing of divisions from 2 to 50 and most numbers from 52 to 380.
- Designed for all types of gear cutting.
- Worm and spindle are hardened and ground.
- Features spiral machining capability.
- Allows you to divide in any angle by the direct, indirect or differential methods with unique dividing head.
- Ratio between worm and worm gear: 40:1
- Features threaded spindle nose and 24 hole dividing plates with easy conversion to fast, direct indexing on numbers 2, 3, 4, 6, 8, 12, and 24.
- Complete set includes Dividing Head, Adjustable Tailstock, 3 Dividing Plates, 12 gears with 2 arms for differential indexing or transmitting machine table feed to worm shaft for spiral cutting.

10-1/2" SWING
3800-5815
180 Lbs.

MADE IN TAIWAN



DIVIDING PLATE A B C

Numbers of Hole							
	Plate A	15	16	17	18	19	20
	Plate B	21	23	27	29	31	33
	Plate C	37	39	41	43	47	49

MAX. VARIATION
True Running Center:.....0.0006"
True Running of Inside Taper of Dividing Spindle Measured at Spindle Nose:.....0.0006"
Alignment of Dividing Head & Tailstock Vertical & Horizontal Plane:.....0.0008"

SPECIFICATION
Swing:.....10-1/2"
Center Height (h):.....5.22"
Hole Through Spindle (dia.):....0.945"
Spindle Taper:.....4MT
A/B/H.....14.37" /10.71" /9.29"
a/b.....8.39" /5.28"
Optional 3-Jaw Chuck:.....6"/8"
Tailstock Dimension (A1xb1xH1):.....10.0" x 4.9" x 5.5"
a1.....6.89"
g=g1.....0.63"



OPTIONAL FRONT MOUNT CHUCKS
6" 3-Jaw Chuck(Item #3800-5822)
8" 3-Jaw Chuck(Item #3800-5823)

Pro-Series 10-1/2" SEMI-UNIVERSAL DIVIDING HEAD SET-WITHOUT CHANGING GEAR

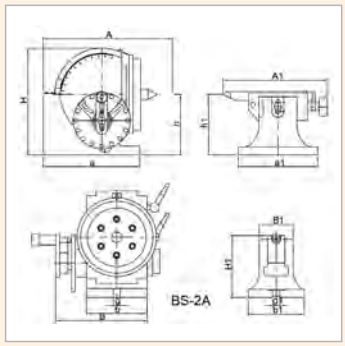
- Ideal for easy indexing of divisions from 2 to 50 and most numbers from 52 to 380.
- Designed for all types of gear cutting.
- Worm and spindle are hardened and ground.
- Features spiral machining capability.
- Allows you to divide in any angle by the direct, indirect or differential methods with unique dividing head.
- Ratio between worm and worm gear: 40:1
- Features threaded spindle nose and 24 hole dividing plates with easy conversion to fast, direct indexing on numbers 2, 3, 4, 6, 8, 12, and 24.

- **Set Includes:**
  A tail stock, a set of dividing plate, a set of carrier clamp, a 3-Jaw plate and a cener.

NEW







NEW STYLE!
INCREASE PRODUCTIVITY!
SAVE TIME-NO NEED TO CHANGE GEARS!

HHIP PRO-SERIES

MADE IN TAIWAN

BS-2A
10-1/2" SWING
3800-5814
106 Lbs.

MAX. VARIATION	
True Running Center:	0.0006"
True Running of Inside Taper of Dividing Spindle Measured at Spindle Nose:	0.0006"
Alignment of Dividing Head & Tailstock Vertical & Horizontal Plane:	0.0008"

SPECIFICATION	
Swing:	10-1/2"
Center Height (h):	5.22"
Hole Through Spindle (dia.):	0.945"
Spindle Taper:	MT4
A/B/H	11.22" /7.95" /9.33"
a/b	8.39" /5.28"
Optional 3-Jaw Chuck:	6"/8"
Tailstock Dimension (A1xb1xH1):	8.6" x 4.8" x 5.5"
a1	6.89"
g=g1	0.63"



OPTIONAL FRONT MOUNT CHUCKS
6" 3-Jaw Chuck(Item #3800-5822)
Machine To Adapter Plate To Fit.
8" 3-Jaw Chuck(Item #3800-5823)
Fits on Dividing Head-No Machining Required.

DIVIDING PLATE A B C

Numbers of Hole							
	Plate A	15	16	17	18	19	20
	Plate B	21	23	27	29	31	33
	Plate C	37	39	41	43	47	49

Pro-Series 3-JAW FRONT-MOUNT SELF-CENTER CHUCKS, PLAIN BACK

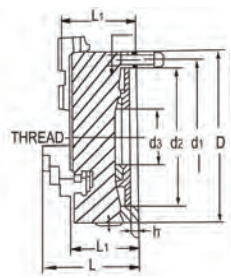
NEW

- Easily mount on table, dividing head, fixture, or indexer.
- Lathe chuck wrench supplied.

HHIP PRO-SERIES

MADE IN TAIWAN









Front mount chucks are designed to be used with rotary tables dividing head and other devices where back mounting chucks can not be used.

With One Set of External Jaws & Internal Jaws

Brand: VERTEX

Item#	Chuck Size D (Inch/mm)	d1	(Inch) d2	Center Hole d3	L	L1	h	Thread Z-d	Gripping Range O.D. (mm)	Gripping Range I.D.(mm)
3800-5819	3/80	2.60	2.17	0.63	2.6	2.0	0.138	3-M6	2~70	24~64
3800-5820	4/100	3.31	2.83	0.87	2.9	2.2	0.138	3-M8	3~90	32~84
3800-5821	5/130	4.53	3.94	1.18	3.1	2.2	0.138	3-M8	3~110	35~100
3800-5822	6/160	5.59	5.12	1.77	3.7	2.6	0.197	3-M10	3~160	48~150
3800-5823	8/200	7.09	6.50	2.75	4.3	3.0	0.197	3-M12	4~180	56~170
3800-5824	10/250	8.86	8.11	3.15	4.7	3.2	0.197	3-M12	6~220	70~250

COLLET INDEX FIXTURES

HIGH PRECISION 5C COLLET INDEXERS-Horizontal & Vertical

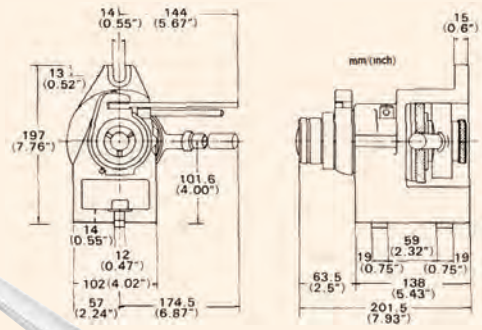
- Utilizes 5C collets.
- Spindle is manufactured with tapered seat in body frame.
- Lever operated collet closer with 100:1 leverage ratio.
- Front mounted ratchet control for rapid indexing.
- Index plate has 24 index locations (15° increments) that may be masked off for greater variety in applications).
- Single lever design.



Optional Tailstock(Adj. 4-6"):
3900-2407

**DIVIDING SPINDLE CONCENTRICITY:
MAX. VARIATION .0002"**







NEW

Threaded spindle is hardened and ground
(2-1/4"~8 TPI)

SPECIFICATIONS	VARIATION MAX.
Dividing spindle concentricity	0.0002"
Cylindrical center bore (per 1") concentricity	0.0008"
Spindle center line parallelism	0 .0008"
Base to face squareness	0.0008"
Center slot to dividing spindle concentricity	0.0008"
Lateral offset of center slot to dividing spindle	0.0008"

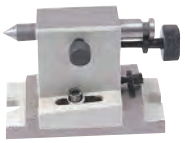
3900–1607

Pro-Series Quality
3903–1607

**Pro-Series PARTS
ARE INTERCHANGEABLE WITH PHASE II**

HIGH PRECISION 5C INDEXING SPIN JIGS

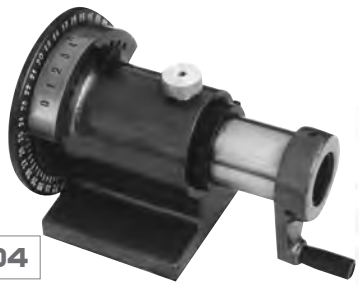
- Uses 5C Collets, 1 1/8" max. capacity. Extends the capabilities of Drill Presses, Surface Grinders, and Milling Machines. Vernier reads to 10 minute accuracy, .0004" ground lapped; 2" travel for flute grinding. Simple 1° indexing. Hardened and ground spindle. Index plate has 36 hole circle. Spindle run out within .0005"(T.I.R). Spindle lock & hole for tightening collet. Plate graduated by 10 to 360.
- Index plate with 36 holes for direct indexing in 10° steps and is marked in 5° increments.
- Base size: 5x5"
- Weight: 20 lbs.



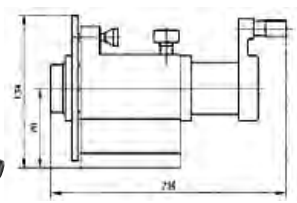
Optional Tailstock:
3900-2406

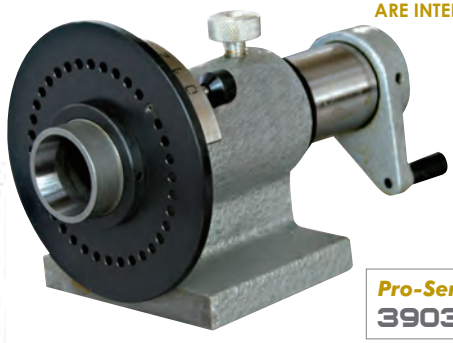
NEW

**Pro-Series PARTS
ARE INTERCHANGEABLE
WITH PHASE II**



CENTER HEIGHT: 2.76"



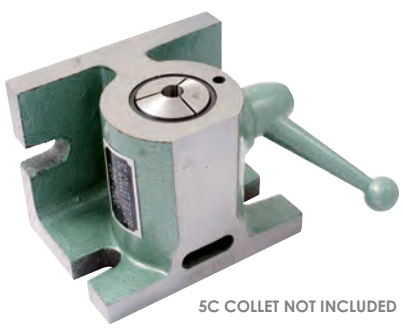


3900–1604

Pro-Series Quality
3903–1604

5C H/V ANGLE COLLET FIXTURE

- For any standard 5C collet
- Horizontal or vertical position.
- Lever movement to open or close collet.
- Base Size (horizontal): 5 x 4"
- Base Size (vertical): 5 x 3-5/8"
- Height (H/V): 3-5/8" /4"



5C COLLET NOT INCLUDED



3900–1625

HEX / SQUARE ER COLLET BLOCKS

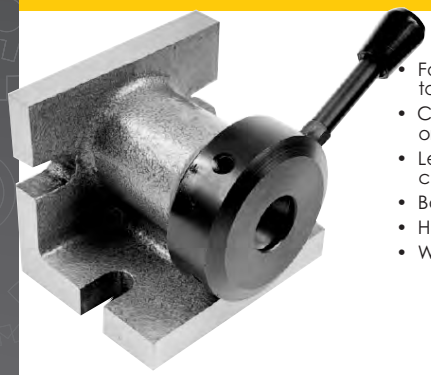
- Block Dimension: 1-3/4 x 1-3/4 x Height.
- For fast set-ups on CNC machines.
- For parallel, square or hex shapes as well as for cross hole drilling at 60°, 90° or 120°.
- Made of tool steel hardened and ground to .0005" flatness, squareness and parallelism.
- Through hole allows for long parts to be machined.
- May be used standing upright.
- Uses standard ER collets.
- ER nut included.



NEW

Item#	Shape	ER Collet	Block Height
3900-5123	Square	ER-25	2.7
3900-5124	Square	ER-32	2.8
3900-5125	Square	ER-40	3.2
3900-5127	Hex	ER-25	2.7
3900-5128	Hex	ER-32	2.8
3900-5129	Hex	ER-40	3.2

5C H/V COLLET FIXTURE



- For any standard 5C collet up to 1-1/8".
- Can be used in either horizontal or vertical position.
- Lever movement to open or close collet.
- Base Size: 4-1/4" x 4-1/4".
- Height: 4-1/4".
- W.T.: 12 lbs

3900-1621

ANGLE END MILL GRINDING FIXTURE

- This fixture takes 5C round collets for grinding end mill 1/16" ~ 1-1/8" .
- Shell mills can easily be held with straight shank arbors.
- Solid negative ball stops with 15° spacing fast & easy set-ups.
- Can be used for grinding 2-3-4-6-8 and 12 flute end mills.
- Clearance & relief angels are built into the base.
- Solid 2-1/2" X 4-1/2" base bottom ground for sure contact.
- Black oxide finish.
- 5C collet not included.

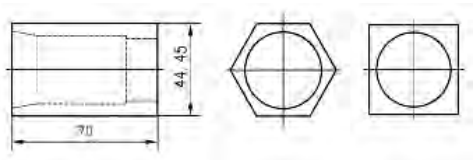
3600-0056

5C COLLET IS NOT INCLUDED



HEX & SQUARE COLLET BLOCK SET

- Capacity for standard 5C collets: 1/16" ~1-1/16".
- Overall Dimensions: 1-3/4" x 1-3/4" x 3-1/4".
- For fast set-ups on milling machines, lathes, surface grinders & drill presses.
- For parallel, square or hex shapes as well as for cross hole drilling at 60°, 90° or 120°.
- Made of tool steel hardened and ground to .0005" flatness, squareness and parallelism.



5 PC INCLUDES:

Square, Hex, Quick Acting Rings & Lever collet closer cam operated.

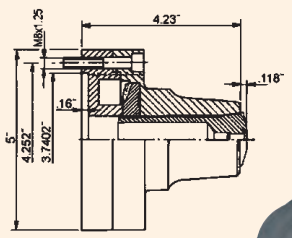
5 PC SET
3900-1620



5C 5 INCH COLLET CHUCKS

- Designed for use with 5C collets
- Used for turning, facing, boring, grinding and milling on center lathes and grinding machines
- Key-operated scroll provides a uniform distortion-free clamping of workpieces and low collet exchange times
- Chuck wrench included

T.I.R <0.0006"



Item#	Spindle	Bolt Circle	Studs Included	Dia. of Studs
3900-4714	Plain Back	4.252"	--	---
3900-4715	D1-4	3.252"	3	5/8
3900-4717	D1-5	3.252"	6	3/4
3900-4716	D1-6	5.252"	6	7/8
3900-4718	D1-8	6.748"	6	1

NEW



Collet Not Included



3900-4715 Shown

SPECIFICATION	
Chuck Size	5"
Collet capacity	1/16-1-1/8"
Weight	Approx. 13 lbs
Max. RPM	6,000

5C COLLETS & ACCESSORIES

30PC 5C COLLET RACK

- Baked enamel paint finish.
- Hangs on wall or machine, or sets on a shelf or work bench.

3900-1602



HOLDS 30PC 5C COLLET **FOOTPRINT: 12x9"**

8PC COLLET RACK

- Holds 8 collets 5C, ER32 or others.
- Made from durable ABS material, heavy duty.
- Supplied with mounting hardware.
- 4 mounting holes: 3.5" and 5.5" apart.

3900-1609



5C EXPANDING COLLETS & SET

- Size Range: 0.250" - 1.937" .
- Fits any standard 5-C spindle.
- Concentricity within .0005" .
- Shoulder widths within .001".
- Effective expansion up to .006".
- Head : 1" length.
- Machinable.

INDIVIDUALS

Item#	Size
3900-1627	.250~.468" (#1)
3900-1628	.437~.800" (#2)
3900-1629	.750~1.437" (#3)
3900-1630	.750~1.937" (#4)

4 PC SET
3900-1606
INCLUDES:#1,2,3 & 4



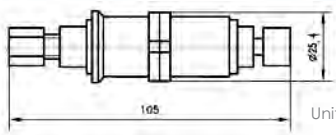
EASILY MACHINED

5C COLLET STOP W/TIPS (UNIVERSAL)

- Speeding up repeat machining cycle.
- Includes: 5C Collet Stop, 2 Spring Ejector Tips & 2 Static tips.
- Tips size under 1/4" & 5/8" diameter.

3900-1616

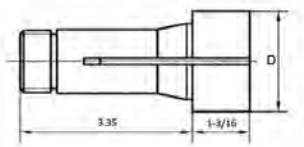




Unit: mm

5C CLUTCH COLLETS (STEP)

- One-piece construction
- Spring-tempered to allow easy workpiece loading and removal
- Easily machined
- Fits all 5C closers and fixtures
- 1-3/16" head thickness



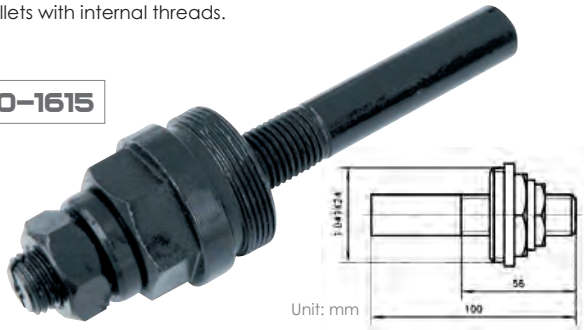
Item#	Size D
3900-1632	2"
3900-1633	3"
3900-1634	4"
3900-1635	5"
3900-1636	6"



5C ADJUSTABLE COLLET STOP

- Fully threaded adjustment screw.
- Fits collets with internal threads.
- Thread size: 3/8" - 24.

3900-1615



Unit: mm

5C ER-32 COLLET CHUCK

- 5C-ER32 collet chuck Milling Chuck Holder.
- Made with DIN6499B (0.0005") Run-Out Tolerance.
- Holding all ER32 collets.
- Drawbar : 5C collet standard.
- Hardened and precision Groud.
- Half-moon Spanner included.

3900-5099



5C COLLET WRENCH

- Simplifies insertion and removal of collets on the spindle noses of CNC turning machines.
- Steel head with comfort handle

3900-1617



5C ROUND COLLETS & SETS

NEW

- Made of high grade tool steel.
- Internal and external threaded.
- Hardened and precision ground.

9 PC SET, Metric
3903-0012
4 to 20mm by 2mm

14 PC SET, Metric
3903-0014
12 to 25mm by 1mm

24 PC SET, Metric
3903-0016
3 to 26mm by 1mm





6 PC SET, Inch
3900-0012
1/8~3/4 by 8ths

17 PC SET, Inch
3900-0013
1/16~1-1/16 by 16ths

33 PC SET, Inch
3900-0014
1/16~1-1/16 by 32nds

69 PC SET, Inch
3900-1112
1/16~1-1/8 by 64ths

Item#	Size (Inch)	Item#	Size(Inch)
3900-0011	1/16	3900-1136	39/64
3900-1101	5/64	3900-1137	5/8
3900-1102	3/32	3900-1138	41/64
3900-1103	7/64	3900-1139	21/32
3900-1104	1/8	3900-1140	43/64
3900-1105	9/64	3900-1141	11/16
3900-1106	5/32	3900-1142	45/64
3900-1107	11/64	3900-1143	23/32
3900-1108	3/16	3900-1144	47/64
3900-1109	13/64	3900-1145	3/4
3900-1110	7/32	3900-1146	49/64
3900-1111	15/64	3900-1147	25/32
3900-1113	1/4	3900-1148	51/64
3900-1114	17/64	3900-1149	13/16
3900-1115	9/32	3900-1150	53/64
3900-1116	19/64	3900-1151	27/32
3900-1117	5/16	3900-1152	55/64
3900-1118	21/64	3900-1153	7/8
3900-1119	11/32	3900-1154	57/64
3900-1120	23/64	3900-1155	29/32
3900-1121	3/8	3900-1156	59/64
3900-1122	25/64	3900-1157	15/16
3900-1123	13/32	3900-1158	61/64
3900-1124	27/64	3900-1159	31/32
3900-1125	7/16	3900-1160	63/64
3900-1126	29/64	3900-1161	1
3900-1127	15/32	3900-1162	1-1/64
3900-1128	31/64	3900-1163	1-1/32
3900-1129	1/2	3900-1164	1-3/64
3900-1130	33/64	3900-1165	1-1/16
3900-1131	17/32	3900-1166	1-5/64
3900-1132	35/64	3900-1167	1-3/32
3900-1133	9/16	3900-1168	1-7/64
3900-1134	37/64	3900-1169	1-1/8
3900-1135	19/32		

Pro-Series 5C ROUND COLLET SET

- **Guaranteed T.I.R: <0.0005".**
- Made of high grade tool steel.
- Hardened and precision ground.
- Internal and external threaded.

HHIP PRO-SERIES



15 PC SET
3900-1170
1/8 ~ 1 by 16ths

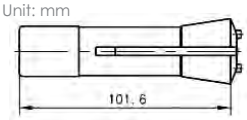
5C EMERGENCY COLLETS



1/16"

- Used for holding soft or delicate work pieces without marring surfaces.
- Internal and external threaded.

Unit: mm



Item#	Material
3900-1611	Steel
3900-1612	Brass
3900-1613	Nylon

5C PRECISION SQUARE COLLETS

SQUARE



- Made of high grade tool steel.
- Hardened and precision ground.
- Internal and external threaded.

Item#	Size (Inch)
3900-1564	1/8
3900-1566	3/16
3900-1568	1/4
3900-1570	5/16
3900-1572	3/8
3900-1574	7/16
3900-1576	1/2
3900-1578	9/16
3900-1580	5/8
3900-1582	11/16
3900-1584	3/4

5C PRECISION HEX COLLETS

- Made of high grade tool steel.
- Hardened and precision ground.
- Internal and external threaded.

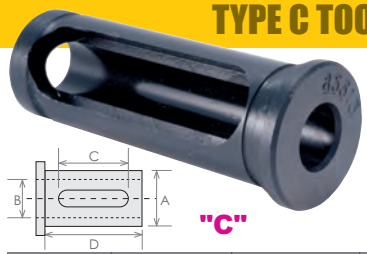
HEX



Item#	Size (Inch)
3900-1517	1/8
3900-1518	3/16
3900-1520	1/4
3900-1522	5/16
3900-1524	3/8
3900-1526	7/16
3900-1528	1/2
3900-1530	9/16
3900-1532	5/8
3900-1534	11/16
3900-1536	3/4
3900-1538	13/16
3900-1540	7/8

TOOL HOLDER BUSHINGS

TYPE C TOOL HOLDER BUSHINGS



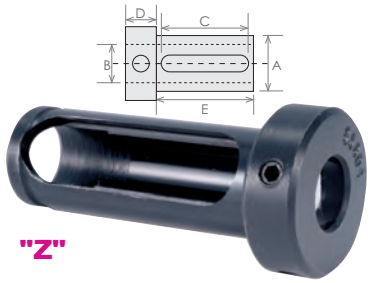
"C"

- Made of high quality tool steel.
- Tool Holder Bushing for universal use on all CNC turning machines to adapt a wide variety of boring bars, drills, reamers and shank type tools.
- Hardened and precision ground to highest concentricity.

Item#	A O.D.	B I.D.	C Slot Length	D
3900-1911		1/4		
3900-1912		5/16		
3900-1913	3/4"	3/8	1-7/8"	2-1/4"
3900-1914		1/2		
3900-1915		1/4		
3900-1916		5/16		
3900-1917	1"	3/8	2-3/8"	2-3/4"
3900-1918		1/2		
3900-1919		5/8		
3900-2910		3/4		
3900-2911		3/8		
3900-2912		1/2		
3900-2913		5/8		
3900-2914	1-1/4"	3/4	2-7/8"	3-1/4"
3900-2915		7/8		
3900-2916		1		
3900-2917		3/8		
3900-2918		1/2		
3900-2919		5/8		
3900-2920	1-1/2"	3/4	3"	3-3/8"
3900-2921		7/8		
3900-2922		1		
3900-2923		1-1/4		
3900-2924		1/2		
3900-2925		5/8		
3900-2926	1-3/4"	3/4	3-1/8"	3-1/2"
3900-2927		7/8		
3900-2928		1		
3900-2929		1-1/4		
3900-2930		1-1/2		
3900-2931		1/2		
3900-2932		5/8		
3900-2933		3/4		
3900-2938	2"	7/8	3-5/8"	4"
3900-2934		1		
3900-2935		1-1/4		
3900-2936		1-1/2		
3900-2937		1-3/4		

TYPE Z TOOL HOLDER BUSHINGS

- Made of high quality tool steel
- Tool Holder Bushing for all type of N/C-CNC turning centers, turret lathes and chucks
- The elongated slots give the user a complete interchangeability with all brands of equipment
- Hardened and precision ground to highest concentricity.



"Z"

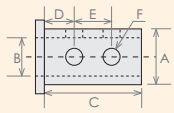
Item#	A O.D.	B I.D.	C Slot Length	E	D
3900-1921		1/4			
3900-1922		5/16			
3900-1923	1"	3/8	2-3/8"	2-3/4"	1/2"
3900-1924		1/2			
3900-1925		5/8			
3900-1926		3/4			
3900-3911		3/8			
3900-3912		1/2			
3900-3913		5/8			
3900-3914	1-1/4"	3/4	2-5/8"	3"	5/8"
3900-3915		7/8			
3900-3916		1			
3900-3917		3/8			
3900-3918		1/2			
3900-3919		5/8			
3900-3920	1-1/2"	3/4	2-7/8"	3-1/4"	3/4"
3900-3921		7/8			
3900-3922		1			
3900-3923		1-1/4			
3900-3924		1/2			
3900-3925		5/8			
3900-3926		3/4			
3900-3927	1-3/4"	7/8	3-1/8"	3-1/2"	3/4"
3900-3928		1			
3900-3929		1-1/4			
3900-3930		1-1/2			
3900-3931		1/2			
3900-3932		5/8			
3900-3933		3/4			
3900-3934	2"	7/8	3-3/8"	3-3/4"	3/4"
3900-3935		1			
3900-3936		1-1/4			
3900-3937		1-1/2			
3900-3938		1-3/4			

TYPE J TOOL HOLDER BUSHINGS



"J"

- Made of high quality tool steel Tool Holder.
- Hardened and precision ground to highest concentricity.



- Bushing has clearance holes so that you can clamp directly on the tool with set screws for positive alignment of the cutting edge of the tool.

Item#	A O.D.	B I.D.	C	E	D	F
3900-1901		1/4				
3900-1902		5/16				
3900-1903	3/4"	3/8	1-1/2"	13/16"	3/8"	3/8"
3900-1904		1/2				
3900-1905		3/8				
3900-1906		1/2				
3900-1907	1"	5/8	1-3/4"	7/8"	7/16"	5/8"
3900-1908		3/4				
3900-1909		3/8				
3900-1910		1/2				
3900-4911		5/8				
3900-4912	1-1/4"	3/4	2-1/8"	1"	5/8"	5/8"
3900-4913		7/8				
3900-4914		1				
3900-4917		3/8				
3900-4918		1/2				
3900-4919		5/8				
3900-4920	1-1/2"	3/4	2-1/2"	1-1/8"	11/16"	7/8"
3900-4921		7/8				
3900-4922		1				
3900-4923		1-1/4				
3900-4924		1/2				
3900-4925		5/8				
3900-4926		3/4				
3900-4927	1-3/4"	7/8	3"	1-1/4"	3/4"	7/8"
3900-4928		1				
3900-4929		1-1/4				
3900-4930		1-1/2				
3900-4931		1/2				
3900-4932		5/8				
3900-4933		3/4				
3900-4934	2"	7/8	3-1/2"	1-1/2"	3/4"	1"
3900-4935		1				
3900-4936		1-1/4				
3900-4937		1-1/2				
3900-4938		1-3/4				

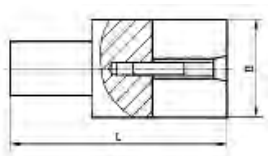
EXPANDING ARBORS & SET

OPERATON:

- Chuck arbor in machine to be used.
- Tighten expanding screw so that arbor expands .005".
- Machine arbor to length and size required.
- Loosen expanding screw.
- Position part on arbor and tighten expanding screw.

IMPROVED QUALITY

8 PC SET
3902-4006





SET INCLUDES:

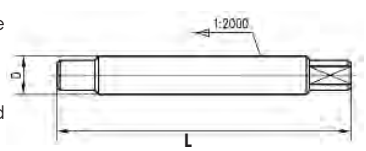
- (8) Sizes 1/4 to 1-1/4" arbors with alloy wrenches in a handy wooden stand.

INDIVIDUAL ARBORS

Item#	Size, D	Length, L
3902-4016	1/4"	3"
3902-4018	3/8"	3"
3902-4020	1/2"	3"
3902-4022	5/8"	3"
3902-4024	3/4"	4"
3902-4026	7/8"	4"
3902-4028	1"	4"
3902-4030	1-1/4"	4"

LATHE AND OD GRINDER MANDRELS
Designed For Setting-Up Accurately Bored Or Reamed Blanks And Castings

- Standard taper: .0005" per 1".
- Sizes under 1" are .0005" undersize on smaller end.
- Sizes 1-1/16" to 3" are .001" undersized on smaller end.
- Made of tool steel hardened and ground.



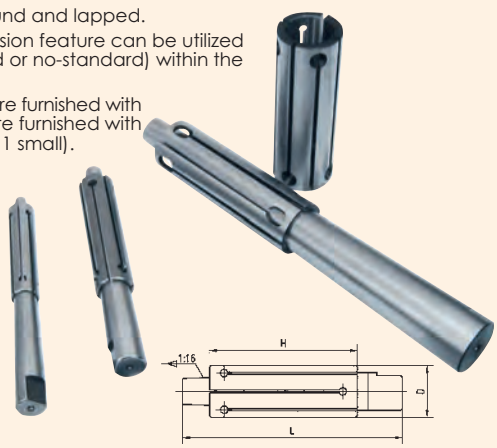


Unit: Inch

Dia. D	OAL L	Item#	Dia. D	OAL L	Item#	Dia. D	OAL L	Item#	Dia. D	OAL L	Item#
1/8	2-1/2	3902-2008	19/32	5-1/2	3902-2038	1-1/16	7-1/4	3902-2104	1-5/8	9-1/2	3902-2140
5/32	3	3902-2010	5/8	5-1/2	3902-2040	1-3/32	7-1/2	3902-2106	1-11/16	9-3/4	3902-2144
3/16	3	3902-2012	21/32	5-3/4	3902-2042	1-1/8	7-1/2	3902-2108	1-3/4	10	3902-2148
7/32	3-3/4	3902-2014	11/16	5-3/4	3902-2044	1-5/32	7-3/4	3902-2110	1-13/16	10-1/4	3902-2152
1/4	3-3/4	3902-2016	23/32	6	3902-2046	1-3/16	7-3/4	3902-2112	1-7/8	10-1/2	3902-2156
9/32	4	3902-2018	3/4	6	3902-2048	1-7/32	8	3902-2114	1-15/16	10-3/4	3902-2160
5/16	4	3902-2020	25/32	6-1/4	3902-2050	1-1/4	8	3902-2116	2	11	3902-2200
11/32	4-1/4	3902-2022	13/16	6-1/4	3902-2052	1-9/32	8-1/4	3902-2118	2-1/8	11-1/2	3902-2208
3/8	4-1/4	3902-2024	27/32	6-1/2	3902-2054	1-5/16	8-1/4	3902-2120	2-1/4	12	3902-2216
13/32	4-1/4	3902-2026	7/8	6-1/2	3902-2056	1-11/32	8-3/4	3902-2122	2-3/8	12	3902-2224
7/16	4-1/4	3902-2028	29/32	6-3/4	3902-2058	1-3/8	8-1/2	3902-2124	2-1/2	12-1/2	3902-2232
15/32	5	3902-2030	15/16	6-3/4	3902-2060	1-7/16	8-3/4	3902-2128	2-5/8	12-1/2	3902-2240
1/2	5	3902-2032	31/32	7	3902-2062	1-15/32	9	3902-2130	2-3/4	13	3902-2248
17/32	5-1/4	3902-2034	1	7	3902-2100	1-1/2	9	3902-2132	2-7/8	13	3902-2256
9/16	5-1/4	3902-2036	1-1/32	7-1/4	3902-2102	1-9/16	9-1/4	3902-2136	3	13	3902-2300

EXPANDING MANDRELS & SETS

- Made of high grade tool steel
- Precision ground and heat treated for maximum concentricity and holding power.
- Center holes are ground and lapped.
- The automatic expansion feature can be utilized on any bore (standard or no-standard) within the range of the mandrel.
- Sizes up t 1" capacity are furnished with 1 sleeve: larger sizes are furnished with 2 sleeves (1 large and 1 small).
- Arbors are tapered , sleeves are flexible and size is obtained by moving sleeve along arbor.
- A range from 1/2" thru 2" by .0001" can be covered by a total of 8 mandrels.



REPLACEMENT SLEEVES AVAILABLE !

EXPANDING MANDREL SETS

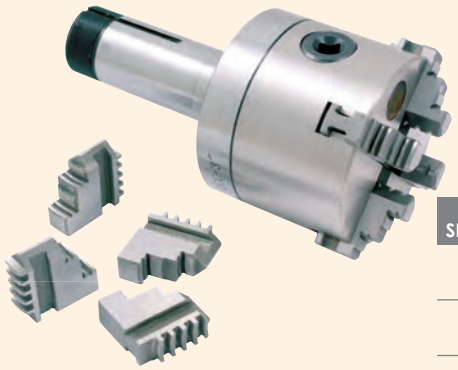
Item#	Size Range (D)	No. of Mandrels
3902-3070	1/2 ~ 1"	5
3902-3072	1 ~ 2"	3
3902-3074	1/2 ~ 2"	8
3902-3076	2~2-3/4"	3
3902-3078	2-3/4~3-3/4"	3

INDIVIDUAL EXPANDING MANDRELS

Item#	Size Range D	Length of Arbor (L)	Length of Sleeve (H)	Sleeves Furnished
3902-3050	1/2~9/16"	5"	2-1/2"	1
3902-3052	9/16~21/32"	6"	2-3/4"	1
3902-3054	21/32~3/4"	7"	2-3/4"	1
3902-3056	3/4~7/8"	7"	3-1/4"	1
3902-3058	7/8~1"	7"	3-1/4"	1
3902-3060	1~1-1/4"	9"	4"	2
3902-3062	1-1/4~1-1/2"	9"	4"	2
3902-3064	1-1/2~2"	11-1/2"	5"	2

5C & MT SHANK LATHE CHUCKS & ACCESSORIES

5C MOUNT SELF-CENTERING LATHE CHUCKS



- Quick set up in fixtures and 5C spindles.
- Supplied with chuck wrench.
- T.I.R. 0.0006".
- Chuck jaws are self centering, scroll type.
- 5C adapter with standard internal and external threads.

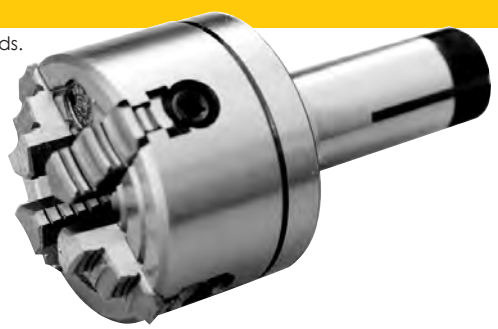
2 SETS OF SOLID STEEL JAWS (INTERNAL AND EXTERNAL)

Item#	Chuck Size	Jaw
3900-4701	3"	3-Jaw
3900-4710	3"	4-Jaw
3900-4702	4"	3-Jaw
3900-4711	4"	4-Jaw

SPECIFICATION	Chuck Size	Outside Diameter (Clamp Range)	Inside Diameter (Jam Range)	Hole thru. 5C Adapter	Hole throu. Chuck
3-JAW	3"	0.079~2.480"	0.964~2.756"	0.75"	0.630"
	4"	0.079~3.150"	1.181~3.543"	0.75"	0.866"
4-JAW	3"	.062~2.50"	.700~2.50"	0.75"	0.800"
	4"	.062~3.00"	.900~3.50"	0.75"	0.950"

5C 4-JAW INDEPENDENT LATHE CHUCKS

- Quick set up in fixtures and 5C spindles.
- Supplied with 1 set of reversible jaws.
- T.I.R. 0.0006".
- 5C adapter with standard internal and external threads.
- Supplied with chuck wrench.



3", 4 JAW
3900-4712

4", 4 JAW
3900-4713

Chuck Size	Outside Diameter (Clamp Range)	Inside Diameter (Jam Range)	Hole thru. 5C Adapter	Hole throu. Chuck
3"	.062~2.50"	.700~2.50"	0.75"	0.63"
4"	.062~3.00"	.900~3.50"	0.75"	0.86"

2MT MORSE TAPER SHANK 3 & 4-JAW SELF-CENTERING CHUCKS

- Steel body-hardened and ground scroll and pinions
- Hardened and ground MT spindle
- Supplied with chuck wrench.
- 3/8-16 threaded drawbar.
- 2 MT shank.
- T.I.R. 0.0006".

2 SETS OF SOLID STEEL JAWS (INTERNAL AND EXTERNAL)



3900-4706 SHOWN

3", 3 JAW
3900-4706

3", 4 JAW
3900-4707

5C MOUNTS FOR 3&4 JAW LATHE CHUCKS
-5C Adapter with Standard Internal & External Threads

- 5C adapter body.
- 3 hole chuck mounting pattern is pre-drilled.
- Hardened and ground.



3 Inch
3900-4703

4 Inch
3900-4704

CHUCK WRENCHES/KEYS

- Made of high quality tool steel.
- Hardened & tempered.
- Heavy duty construction.



STANDARD



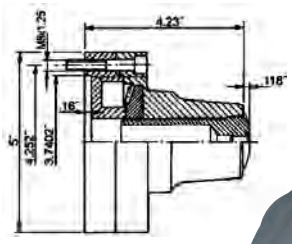
SELF-EJECT

Square Head Size	Standard Item#	Self-Eject Item#
1/4"	3900-4865	
5/16"	3900-4866	3900-4857
3/8"	3900-4867	3900-4853
7/16"	3900-4868	
1/2"	3900-4869	3900-4855
9/16"	3900-4870	
5/8"	3900-4871	
11/16"	3900-4872	
3/4"	3900-4873	

5C 5 INCH COLLET CHUCKS

- Designed for use with 5C collets
- Used for turning, facing, boring, grinding and milling on center lathes and grinding machines
- Key-operated scroll provides a uniform distortion-free clamping of workpieces and low collet exchange times
- Chuck wrench included

T.I.R <0.0006"





NEW



D1-4 SHOWN

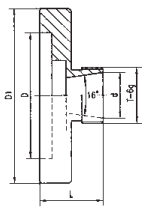
Item#	Spindle	Bolt Circle	Studs Included	Dis. of Studs
3900-4714	Plain Back	4.252"	--	---
3900-4715	D1-4	3.252"	3	5/8
3900-4717	D1-5	3.252"	6	3/4
3900-4716	D1-6	5.252"	6	7/8
3900-4718	D1-8	6.748"	6	1

SPECIFICATION
Chuck Size.....5"
Collet capacity.....1/16-1-1/8"
Weight.....Approx. 13 lbs
Max. RPM.....6,000

ER COLLET FIXTURES

- Mount to your choice of backplate for using on a lathe or could be used as a fixture on a milling table.
- Concentricity .0016"



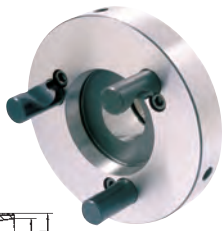




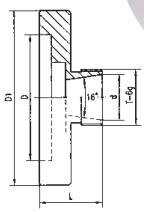
Item#	Type	No. of Bolt Hole	Bolt Hole Circle (mm)	Bolt Hole Size	D1 (mm)	D (mm)	L (mm)
3901-5016	ER-16	4	35	5mm	45	22	25
3901-5025	ER-25	3	75	M10	102	52	36
3901-5032	ER-32	3	66	M6	80	55	42
3901-5033	ER-32	3	84	M8	100	72	42
3901-5036	ER-40	3	84	M8	100	72	42
3901-5038	ER-40	3	115	M10	132	100	42

ER-40 COLLET CHUCK FIXTURE (Direct Mount)

- Concentricity .0008"
- 5" diameter.
- Easily mount to lathe with D1 spindle.
- Accepts ER-40 collets.







NEW

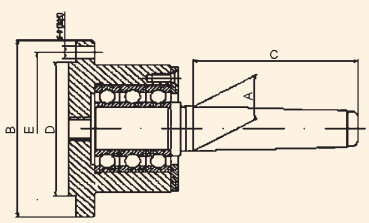
D1-3 Mount
3901-5041

D1-4 Mount
3901-5042

Item#	Mount	No. of Stud	Dia. of Stud	D1 (mm)	D (mm)	L (mm)
3901-5041	D1-3	3	9/16"	125	54	42
3901-5042	D1-4	3	5/8"	125	64	42

REVOLVING TAILSTOCK BACKPLATES

- Used for calibrate or support workpiece during processing.
- Three ball bearings for heavy duty load and relativly high speed.
- 3 hole chuck mounting pattern is pre-drilled.





NEW

LATHE CHUCK OPTIONAL



Item#	Shank Taper	A	Fits Lathe Chuck	B	(mm) C	D	E	Max Load (lbs)	T.I.R. (Inch)	Speed RPM
3900-6022	MT2	17.78	3"	80	64	55	66	1100	.0002	4000
3900-6021	MT2	17.78	4"	100	64	72	84	1100	.0002	2500
3900-6023	MT3	23.83	3"	80	81	55	66	1760	.0002	4000
3900-6026	MT3	23.83	4"	100	81	72	84	1760	.0002	2500
3900-6024	MT4	31.27	4"	100	103	72	84	2200	.0002	2500
3900-6025	MT5	44.40	5"	125	130	95	108	3300	.0004	2000
3900-6030	MT4	31.27	5"	125	103	95	108	2200	.0004	2000
3900-6031	MT5	44.40	6"	160	130	130	142	3300	.0004	1500

SPECIFICATIONS & LATHE CHUCK MOUNTING DIMENSIONS

LATHE CHUCK MOUNTING TYPES

American Standard "A" Series Spindle

- X Dimension refers to outside diameter of spindle nose.

Spindle	**A5**	**A6**	**A7**
X=	3-1/4	4-3/16	5-1/2
Spindle	**A11**	**A15**	**A20**
X=	7-3/4	11-1/4	16-1/4

Camlock "D"Series Spindle

- X Dimension refers to outside diameter of spindle nose.

Spindle	**D1-3**	**D1-4**	**D1-5**
X=	3-5/8	4-5/8	5-3/4
Spindle	**D1-6**	**D1-8**	**D1-11**
X=	7-1/8	8-7/8	11-3/4

Long Taper Key Drive "L" Series Spindle

- X Dimension refers to largest portion of taper.

Spindle	**L00**	**L0**	**L1**
X=	2-3/4	3-1/4	4-1/8
Spindle	**L2**	**L3**	
X=	5-1/4	6-1/2	

Threaded Series Spindle

- X Dimension refers to major diameter of thread.

X= **Dia.(inch) - Pitch**

3/4~16	1~10	2-1/4~8
1/2~24	1-1/2~8	2-3/8~6
1/2~20	1-3/4~8	2-3/4~8
1~8		

BACK PLATE MOUNTING INSTRUCTIONS

Chuck Mounting Information: Using Semi-Finished Plates - For Standard Flat Back Lathe Chucks:

NOT for "Adjustable Run-Out" models (see separate instructions). When using a Chuck Adapter Plate to mount a flat back lathe chuck:

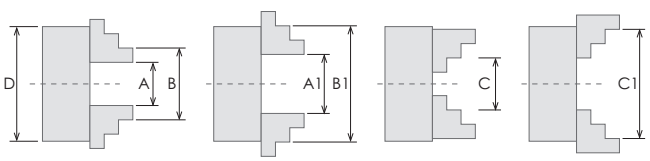
1. The lathe must be levelled with a precision level, this assures machining accuracy.
2. Adapter plate or chuck plate is to be mounted on lathe spindle.
3. A skim facing cut across the full face of the adaptor must be made. This assures that the face is at 90*to the centerline of the lathe spindle.
4. The chuck plate has a boss onto which the recess in back of the chuck must mount. Turn the boss to fit tightly into the chuck body. The accuracy of this operation is directly relative to best results.
5. Turn the O.D. of chuck plate to match the chuck - not always the same size of the chuck body, especially with 4 jaw independent chucks.
6. In most cases the chuck has threaded holes in the chuck body, to accept mounting bolts, or the chuck plate has threaded holes, for chucks having through holes in the body for front insertion. In some instances it may be necessary to transfer hole locations and drill clearance holes.
7. "A" type adaptors come in two versions: A-1 has two bolt circles(inner & outer), A-2 has a single outer bolt circle of tapped holes. The chuck adaptor is fastened to spindle separately, then the chuck is fastened to the plate.
8. Lathes having threaded spindle noses follow similar procedures 1 thru 6.

Chuck Mounting Information: Using Zero-Set Mounting Plates:

This type of chuck is designed so that the chuck body can be moved by utilizing adjusting screws. A ground pin is held firmly in the chuck mounted on the lathe. The pin is trammed with a test indicator and the adjusting screws used to correct the run-out. The design of the chuck adaptor permits the chuck adjusting screws to contact an extended boss on the plate, facilitating adjustment. These adaptors are to be "zeroed in" prior to actually mounting the chuck by taking a skim facing cut across the flange. All other dimensions should be compared to the back of the specific chuck and machined accordingly, if necessary. Once the mounted chuck has been "zeroed-in" in all respects, the chuck must be "locked" into the adjusted position. Double check with ground pin and test indicator.

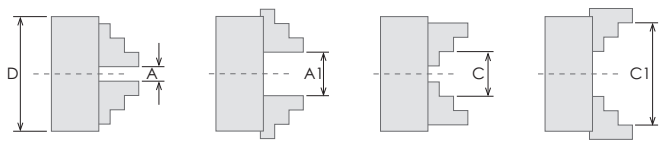
LATHE CHUCK CLAMPING RANGE

Self-Centering Chucks



Chuck Size Inch/MM	Internal Jaw Clamping Range A-A1 (MM)	Internal Jaw Jamming Range B-B1 (MM)	External Jaw Clamping Range C-C1 (MM)
3/80	2-22	25-70	22-63
4/100	2-30	30-90	30-80
5/125	2.5-40	38-125	38-110
6/160	3-55	50-160	55-145
8/200	4-85	65-200	65-200
10/250	6-110	80-250	90-250
12/315	10-140	95-315	100-315
15/400	15-210	120-400	120-400
20/500	25-280	150-500	150-500

Independent Chucks



Chuck Size Inch/MM	Internal Jaw Clamping Range A-A1 (MM)	External Jaw Clamping Range C-C1 (MM)
3/80	5-35	35-80
4/100	6-45	40-100
5/125	7-57	48-125
6/160	8-80	50-160
8/200	10-100	63-200
10/250	15-130	80-250
12/315	20-170	100-315
15/400	25-250	118-400
20/500	35-300	120-500

3 & 6 JAW ZERO-SET SELF-CENTERING LATHE CHUCKS [Plain Back]

- Semi-Steel
- Run true "0" set.
- Made of high grade tool steel.
- Hardened and ground to the highest T.I.R. 0.0005" repeatability.
- Two piece top & master jaws are American standard tongue & groove.
- 2pc top Jaws can be reversed for clamping and jamming.
- 6-jaw models provide increased gripping force with less jaw distortion

T.I.R. <0.0005"

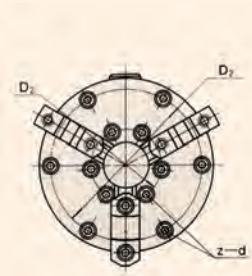
OPPOSING ADJUSTING SCREWS FOR "DEAD TRUE" ACCURACY

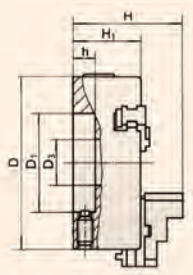


.0005" REPEATABILITY ON DUPLICATE PARTS



FINE ADJUSTMENT • PLAIN BACK







3-Jaw

Item#	Chuck Dia. D	D1	D2	(Inch) Center Hole D3	H	H1	h	z-d	Max. RPM	Wt. (lbs)
3900-4576	6	3.125	5.343	1.535	3.88	2.32	0.689	1/4-20	3,400	19
3900-4578	8.27	4.750	7.500	2.264	5.21	3.12	0.752	3/8-16	3,100	50
3900-4580	10	6.374	4.375	2.835	6.06	3.49	0.803	7/16-14	2,700	70
3900-4582	12	7.905	5.250	3.268	6.57	3.98	0.803	1/2-13	2,200	116

WORKINGHOLDING CAPACIIES

Chuck Dia.	OD Min.	OD Max.	ID Min.	ID Max.
6	0.125	6.00	1.875	5.75
8.27	0.200	8.25	2.125	6.75
10	0.500	9.36	2.937	8.72
12	0.500	11.31	3.281	10.13

6-Jaw

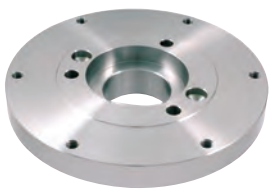
Item#	Chuck Dia. D	D1	D2	(Inch) Center Hole D3	H	H1	h	z-d	Max. RPM	Wt. (lbs)
3900-4560	6	3.125	5.343	1.535	3.88	2.32	0.689	1/4-20	2,500	19
3900-4561	8.27	4.750	7.500	2.264	5.21	3.12	0.752	3/8-16	2,200	50
3900-4562	10	6.374	4.375	2.835	6.06	3.49	0.803	7/16-14	1,900	74
3900-4563	12	7.905	5.250	3.268	6.57	3.98	0.803	1/2-13	1,500	140

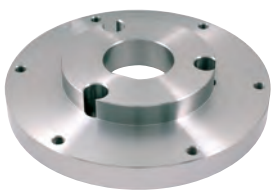
Chuck Dia.	OD Min.	OD Max.	ID Min.	ID Max.
6	0.200	6.00	1.875	5.75
8.27	0.425	8.25	2.125	6.75
10	0.625	9.36	2.937	8.72
12	0.775	11.31	3.281	10.13

ZERO-SET MOUNTING PLATES, A-Mount

FOR ZERO-SET 3&6 JAW CHUCKS

- Designed for easy installation.
- Zero-set recessed design minimizes overhang.
- All Zero-set mountings are interchangeable on the same size chuck.





A-MOUNT- American Standard Flange Nose.

Item#	Chuck Size	Spindle
3900-4900	6	A-5
3900-4901	6"	A-6
3900-4902	8"	A-5
3900-4903	8"	A-6
3900-4905	10"	A-5
3900-4906	10"	A-6
3900-4907	10"	A-8

ZERO-SET MOUNTING PLATES, D-Mount

FOR ZERO-SET 3&6 JAW CHUCKS

- Designed for easy installation.
- Zero-set recessed design minimizes overhang.
- All Zero-set mountings are interchangeable on the same size chuck.





D-MOUNT-Camlock

Item#	Chuck Size	Spindle
3900-5606	6"	D-4
3900-5607	8"	D-4
3900-5608	8"	D-6
3900-5610	10"	D-5
3900-5611	10"	D-6
3900-5612	10"	D-8
3900-5618	12"	D-8
3900-5619	12"	D-6
3900-5621	12"	D-11

3 JAW, PLAIN BACK LATHE CHUCKS

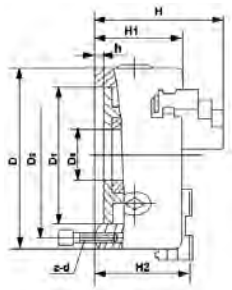
3-JAW (TOP REVERSIBLE JAWS) SELF-CENTER CHUCKS-PLAIN BACK



- Made of high quality steel.
- Hardened and ground.
- Lathe chuck wrench supplied.

TOP JAWS REVERSIBLE





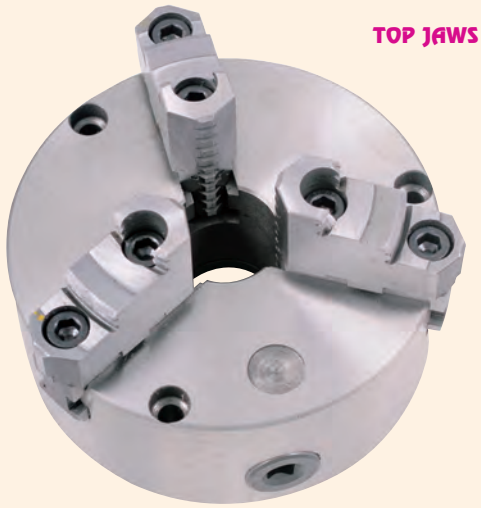
Item#	Sizes D	D1	D2	(Inch) h	A	Z-d	Center Hole	Max. RPM	T.I.R.
3900-3401	6"	5.12	5.60	0.20	2.5	3-M8	1.575	2500	.003
3900-3402	8"	6.50	7.09	0.20	3.0	3-M10	2.559	2000	.004
3900-3403	10"	8.10	8.90	0.20	3.3	3-M12	3.150	1600	.004
3900-3412	12"	10.70	11.66	0.24	4.2	3-M16	3.937	1200	.005
3900-3415	15"	12.80	13.78	0.24	4.3	3-M16	5.320	1000	.005
3900-3420	20"	17.32	18.31	0.24	5.0	6-M16	8.268	800	.006

See page 202 & 203 for back plates

3-JAW FRONT-MOUNT (TOP REVERSABLE JAWS) SELF-CENTER CHUCKS-PLAIN BACK

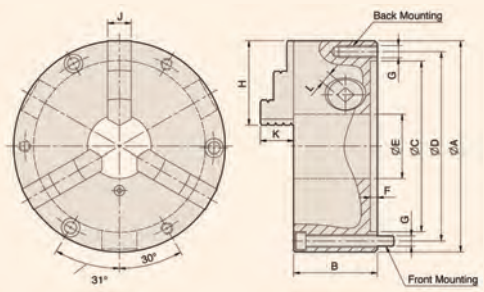
- Easily mount on table, fixture, or indexer.
- Made of high quality steel.
- Hardened and ground.
- Lathe chuck wrench supplied.

SQUARE & PARALLEL .0002"



TOP JAWS REVERSIBLE





Front mount chucks are designed to be used with rotary tables and other devices where back mounting chucks can not be used.

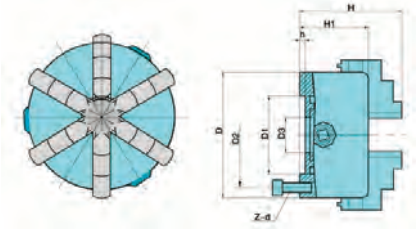
Item#	Chuck Size A	D	(Inch) C	B	Center Hole,E	G	Max. RPM	T.I.R.
3900-3430	6"	5.51	5.12	2.60	1.575	3-M8	2500	.003
3900-3432	8"	6.93	6.30	3.00	2.559	3-M10	2000	.004
3900-3434	10"	8.82	7.87	3.42	3.150	3-M12	1600	.004
3900-3436	12"	11.26	10.24	3.86	3.937	3-M16	1200	.005

6-JAW SELF-CENTERING LATHE CHUCKS-PLAIN BACK

- Excellent for holding and machining THIN walled workpieces.
- Made of high grade Semi-steel.
- Self centering jaws, hardened and precision ground.
- 1 set of mounting screws included.
- Adjusting wrench supplied.
- .003" T.I.R
- One set of internal solid jaws.

PLAIN BACK





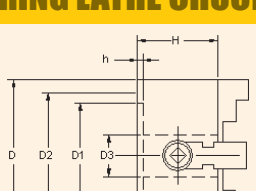


Item#	D	D1	D2	(Inch) h	H1	H	Z-d	Center Hole D3
3900-4551	4	2.83	3.3	0.14	2.0	3.5	3-M8	1.02
3900-4555	6	5.15	5.6	0.20	2.6	4.6	3-M8	1.65
3900-4558	8	6.50	7.1	0.20	3.0	5.0	3-M10	2.56

3-JAW SELF-CENTERING LATHE CHUCKS, PLAIN BACK

- Body made of high quality semi-steel.
- Hardened and ground.
- Lathe chuck wrench supplied.

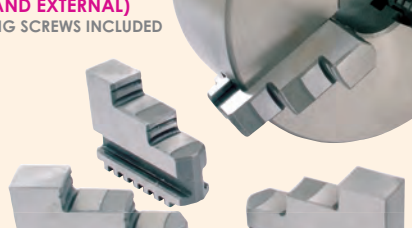
PLAIN BACK





2 SETS OF HARD JAWS (INTERNAL AND EXTERNAL)
1 SET OF MOUNTING SCREWS INCLUDED





Item#	Sizes D	(Inch) D1	D2	h	H	Z-d	Center Hole	Max. RPM	T.I.R
3900-0031	3"	2.17	2.6	0.14	1.97	3-M6	0.630	4000	.003
3900-0032	4"	2.83	3.3	0.14	2.36	3-M8	0.866	3500	.003
3900-0033	5"	3.94	4.17	0.14	2.36	3-M8	1.181	3000	.003
3900-0035	6"	5.15	5.6	0.20	2.56	3-M8	1.575	2500	.003
3900-0037	8"	6.50	7.1	0.20	2.95	3-M10	2.559	2000	.004
3900-0038	10"	8.11	8.9	0.20	3.15	3-M12	2.756	1600	.004
3900-0040	12"	10.71	11.65	0.48	3.54	3-M16	3.937	1200	.005

Pro-Series 3-JAW FRONT-MOUNT SELF-CENTER CHUCKS, PLAIN BACK

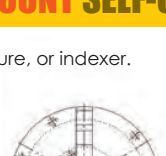
- Easily mount on table, dividing head, fixture, or indexer.
- Lathe chuck wrench supplied.

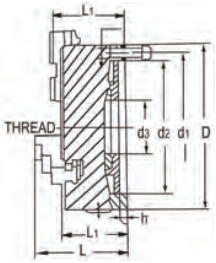
HHIP PRO-SERIES

MADE IN TAIWAN

Front mount chucks are designed to be used with rotary tables dividing head and other devices where back mounting chucks can not be used.

With One Set of External Jaws & Internal Jaws









Brand: VERTEX

Item#	Chuck Size D (Inch/mm)	(Inch) d1	d2	Center Hole d3	L	L1	h	Thread Z-d	Gripping Range O.D. (mm)	I.D.(mm)
3800-5819	3/80	2.60	2.17	0.63	2.6	2.0	0.138	3-M6	2~70	24~64
3800-5820	4/100	3.31	2.83	0.87	2.9	2.2	0.138	3-M8	3~90	32~84
3800-5821	5/130	4.53	3.94	1.18	3.1	2.2	0.138	3-M8	3~110	35~100
3800-5822	6/160	5.59	5.12	1.77	3.7	2.6	0.197	3-M10	3~160	48~150
3800-5823	8/200	7.09	6.50	2.75	4.3	3.0	0.197	3-M12	4~180	56~170
3800-5824	10/250	8.86	8.11	3.15	4.7	3.2	0.197	3-M12	6~220	70~250

STEEL HARD INTERNAL & EXTERNAL JAW SETS [For K11 Lathe Chucks]

- Set includes 3pcs
- Fits most of 3-jaw self-centering lathe chucks with replaceable **internal & external** jaws.

FOR 3-JAW CHUCKS



External Jaws Shown

EXTERNAL SET

Item#	Fits Chuck Size
3900-4730	3"
3900-4732	4"
3900-4734	5'
3900-4736	6"
3900-4738	8"

INTERNAL SET

Item#	Fits Chuck Size
3900-4740	3"
3900-4742	4"
3900-4744	5'
3900-4746	6"
3900-4748	8"



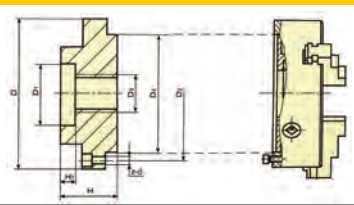
NEW

Internal Jaws Shown

6" 3-JAW SELF-CENTERING LATHE CHUCKS - THREADED DIRECT MOUNT

- Made of high quality semi-steel.
- Hardened and precision ground.
- Wrench is included.

2 SETS OF HARD JAWS (INTERNAL AND EXTERNAL)
1 SET OF MOUNTING SCREWS INCLUDED







NEW



Item#	Sizes D	Back Plate Thread D3	(Inch) D1	D2	D4	H	H1	Chuck Center Hole-d	Max. RPM	T.I.R
3900-4722	6"	1-1/2"-8	1.55	5.6	130	40	13	3x15mm(Dia.)	2500	.003
3900-4724	6"	2-1/4"-8	2.34	5.6	130	40	17.5	3x15mm(Dia.)	2500	.003

THREADED & BLANK BACKPLATES (NO BOLT HOLE) FOR LATHE CHUCKS

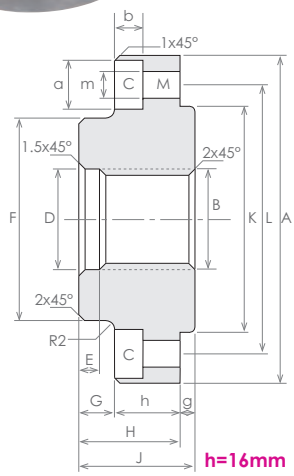


- Made of high grade casting steel.

NO BOLT HOLE
MACHINING REQUIRED BEFORE
MOUNTING TO ENSURE CONCENTRICITY

For 3&4-Jaw Chucks

Item#	Chuck Size D	Thread Z-d	Body Diameter A	Thread B	Reg Dia D	Reg Len E	Hub Dia F	(mm) Hub Len G	Boss Len g	Face Len H (G+h)	All Len J (g+H)	Boss Dia K
3900-3304	4"	1"~8	100	1"-8	1"	5	56	10	3	26	29	72
3900-3306	4"	M39x4	100	M39x4	40mm	10	56	24	3	40	43	72
3900-3305	4"	None	100	None	10mm	10	56	24	3	40	43	72
3900-3308	5"	1"~8	130	1"~8	1"	5	56	10	4	26	30	100
3900-3309	5"	1"~10	130	1"~10	1"	6.35	56	10	4	26	30	100
3900-3311	6"	1"~8	160	1"~8	1"	10	56	10	4	26	30	130
3900-3312	6"	1"~10	160	1"~10	1"	NONE	56	10	4	26	30	130
3900-3313	6"	None	160	UNTHREADED	NONE	10	75	24	4	40	44	130
3900-3315	6"	1-1/2"~8	160	1-1/2"~8	1-1/2"	10	56	14	4	30	34	130
3900-3322	6"	2-1/4"~8	160	2-1/4"~8	2-1/4"	10	75	16	4	32	36	130
3900-3339	6"	M39 x 4	160	M39X4	40mm	10	56	24	4	40	44	130
3900-3324	8"	1-1/2"~8	200	1-1/2"~8	1-1/2"	10	56	24	6.35	40	46.35	124.46
3900-3326	8"	2-1/4"~8	200	2-1/4"~8	2-1/4"	10	75	24	6.35	40	46.35	124.46
3900-3340	8"	None	200	NONE	NONE	10	75	24	6.35	40	46.35	124.46



h=16mm

THREADED BACKPLATES (With Bolt HOLE) FOR LATHE CHUCKS

- Fits most plain back chucks.
- Made of high grade casting steel.
- Assembly instructions included.

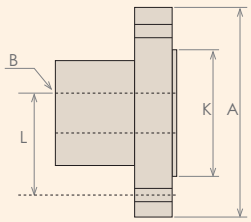
THREADED MOUNT





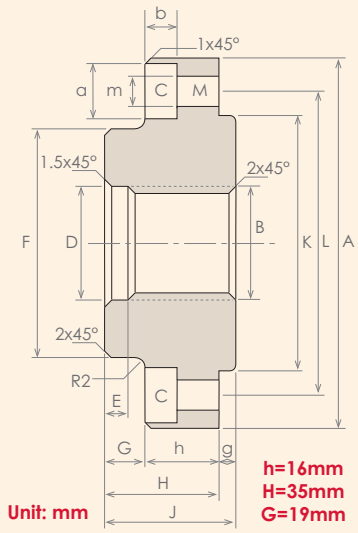
For 3-Jaw Chucks

Item#	Chuck Size D
3900-3107	3
3900-3108	3
3900-3109	3
3900-3110	3
3900-3111	3
3900-3112	3
3900-3210	4
3900-3211	4
3900-3212	4
3900-3215	4



For 4-Jaw Chucks

Item#	Chuck Size D
3900-4129	3
3900-4130	3
3900-4131	3
3900-4132	3
3900-4133	3
3900-4141	4
3900-4142	4
3900-4143	4



h=16mm
H=35mm
G=19mm

Unit: mm

Item#	Chuck Size	Body Diameter A	Thread B	Bolt Hole C	Reg Dia D	Reg Len E	Hub Dia F	Boss Len g	All Len J (g+H)	Boss Dia K(mm/Inch)	Bolt Cir L (mm/Inch)	Bolt M	a	b	m
3900-3107	3"	80	3/4"~16	3	3/4"	4	50	3	38	55.5/2.2	66/2.6	M6	12	8	6.5
3900-3108	3"	80	1/2"~24	3	1/2"	4	50	3	38	55.5/2.2	66/2.6	M6	12	8	6.5
3900-3109	3"	80	1/2"~20	3	1/2"	4	50	3	38	55.5/2.2	66/2.6	M6	12	8	6.5
3900-3110	3"	80	1"~8	3	1"	5	50	3	38	55.5/2.2	66/2.6	M6	12	8	6.5
3900-3111	3"	80	1"~10	3	1"	5	50	3	38	55.5/2.2	66/2.6	M6	12	8	6.5
3900-3112	3"	80	1-1/2"~8	3	1-1/2"	6	50	3	38	55.5/2.2	66/2.6	M6	12	8	6.5
3900-4129	3"	80	1/2"~20	4	1/2"	4	50	3	38	55.5/2.2	66/2.6	M6	12	8	6.5
3900-4130	3"	80	3/4"~16	4	3/4"	4	50	3	38	55.5/2.2	66/2.6	M6	12	8	6.5
3900-4131	3"	80	1"~8	4	1"	5	50	3	38	55.5/2.2	66/2.6	M6	12	8	6.5
3900-4132	3"	80	1"~10	4	1"	5	50	3	38	55.5/2.2	66/2.6	M6	12	8	6.5
3900-4133	3"	80	1-1/2"~8	4	1-1/2"	6	50	3	38	55.5/2.2	66/2.6	M6	12	8	6.5
3900-3210	4"	100	1"~8	3	1"	5	66	3.5	38.5	72.5/2.9	84/3.3	M8	14	9	8.5
3900-3211	4"	100	1"~10	3	1"	5	66	3.5	38.5	72.5/2.9	84/3.3	M8	14	9	8.5
3900-3212	4"	100	1-1/2"~8	3	1-1/2"	6	66	3.5	38.5	72.5/2.9	84/3.3	M8	14	9	8.5
3900-4141	4"	100	1"~8	4	1"	5	66	3.5	38.5	72.5/2.9	84/3.3	M8	14	9	8.5
3900-4142	4"	100	1"~10	4	1"	5	66	3.5	38.5	72.5/2.9	84/3.3	M8	14	9	8.5
3900-4143	4"	100	1-1/2"~8	4	1-1/2"	6	66	3.5	38.5	72.5/2.9	84/3.3	M8	14	9	8.5
3900-3215	4"	100	M39x4	3	1-1/2"	5	66	3.5	38.5	72.5/2.9	84/3.3	M8	14	9	8.5

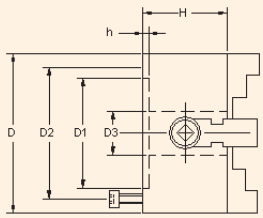
4-JAW INDEPENDENT LATHE CHUCKS-PLAIN BACK





PLAIN BACK

- Body made of high quality semi-steel.
- Hardened and ground.
- 1 set of mounting screws included.
- Reversible individual adjusting jaws.
- Adjusting wrench supplied.

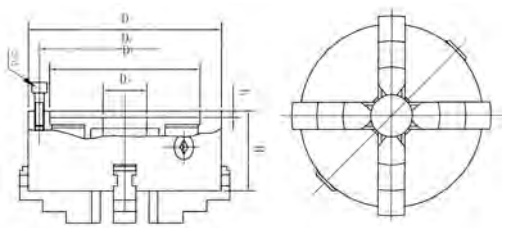


Designed to grip round or odd shaped work.

Item#	Sizes D	D1	D2	(Inch) h	H	Z-d	Center Hole
3900-0413	3"	2.17	2.60	0.12	1.65	3-M6	0.630
3900-0414	4"	2.83	3.30	0.14	2.13	4-M8	0.866
3900-0415	5"	3.74	4.25	0.18	2.21	4-M8	1.180
3900-0041	6"	2.56	3.74	0.20	2.56	4-M10	1.772
3900-0042	8"	3.15	4.41	0.24	2.95	4-M10	2.205
3900-0043	10"	4.33	5.12	0.24	3.15	4-M12	3.150
3900-0046	12"	5.51	6.50	0.24	3.54	4-M16	3.543
3900-0048	16"	7.87	8.94	0.39	4.13	4-M16	3.937

4-JAW SCROLL CHUCKS-SELF-CENTERING-PLAIN BACK

- Made of high grade tool steel.
- Universal scroll chucks.
- 2 sets of solid jaws included (ID &OD).
- Chuck wrench included.





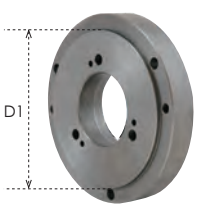
PLAIN BACK



Item#	Chuck Size D	D1	D2	(Inch) h	H1	Z-d	Center Hole D3	T.I.R.
3900-0423	3	2.165	2.598	.14	2.62	3-M6	0.630	.003
3900-0424	4	2.835	3.307	.14	2.93	3-M8	0.787	.003
3900-0425	5	3.740	4.252	.18	3.07	3-M8	1.260	.003
3900-0426	6	5.118	5.591	.20	3.70	3-M8	1.654	.003
3900-0428	8	6.495	7.087	.20	4.29	3-M10	2.165	.004

A , D & L MOUNT SEMI-MACHINED CHUCK ADAPTERS (BACK PLATES)

- Back plates for universal chucks
- Plain-back chucks require the adapter plate to be machined before mounting to ensure concentricity

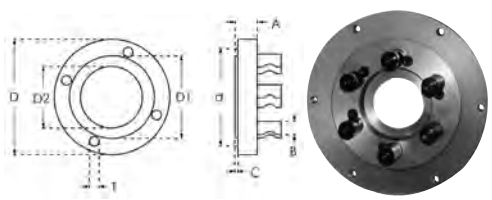




A-MOUNT

A-MOUNT

Item#	Chuck Size	Spindle	D1
3900-4839	6"	A1-4	5.177"
3900-4840	6"	A1-5	5.177"
3900-4841	8-1/4"	A1-5	6.555"
3900-4842	8-1/4"	A1-6	6.555"
3900-4843	10"	A1-6	8.189"
3900-4844	10"	A1-8	8.189"
3900-4845	12"	A1-6	10.315"
3900-4846	12"	A1-8	10.315"



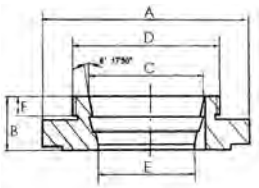
D-MOUNT

D-MOUNT

Item#	Chuck Size,D	Spindle	Recess D1
3900-4822	6"	D-3	2.125"
3900-4823	6"	D-4	2.501"
3900-4826	8"	D-3	2.125"
3900-4827	8"	D-4	2.501"
3900-4898	8"	D-5	3.251"
3900-4829	8"	D-6	4.188"
3900-4835	10"	D-6	4.188"
3900-4837	10"	D-8	5.501"
3900-4891	12"	D-6	4.188"
3900-4892	12"	D-8	5.501"
3900-4895	15"	D-11	7.751"

MADE OF HIGH GRADE CASTING STEEL

L-MOUNT





L-MOUNT

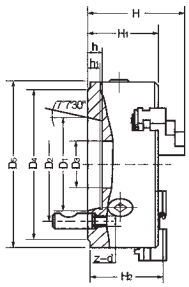
Item#	Chuck Size A	Spindle	Thread T-UNS3 D	B
3900-4847	6"	L-00	3-3/4~6	2.13"
3900-4849	8-1/4"	L-00	3-3/4~6	2.13"

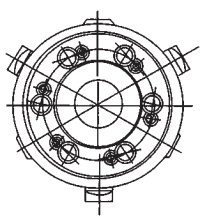
3-JAW, TYPE D1, DIRECT MOUNT SELF CENTERING SCROLL CHUCKS

- Direct Mounting chuck with Camlock Nose.
- Body made of high grade semi-steel.
- Top jaws are reversible.
- Self centering jaws, hardened and precision ground.
- Lathe chuck wrench supplied.

D-MOUNT









SPINDLE NOSE DIMENSIONS

Spindle Nose	D-3	D-4	D-6	D-8	D-11
Dia.	2.13"	2.50"	4.19"	5.50"	7.75"

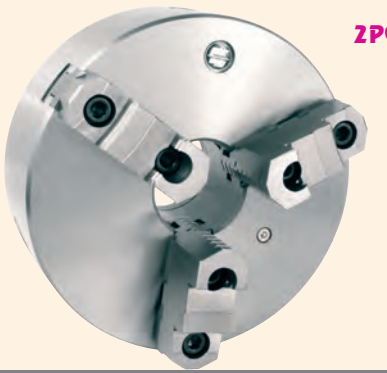
2PC TOP REVERSIBLE HARD JAWS

Item#	Chuck Dia. D5	To Fit Spindle	Max. RPM	T.I.R.	Studs B.C. D2	Studs Included	Dia. of Stud	Center Hole D3	D1	H	H1	h	Z-d	G.W. (Lbs)
3900-4605	6"	D1-3	2500	.003	2.780	3	9/16	1.575	2.130	4.5	3.0	0.512	M10x1	23
3900-4606	6"	D1-4	2500	.003	3.252	3	5/8	1.575	2.130	4.5	3.0	0.512	M10x1	23
3900-4607	8"	D1-4	2000	.004	3.252	3	5/8	2.362	2.500	5.3	3.4	0.630	M10x1	45
3900-4609	8"	D1-5	2000	.004	3.252	6	3/4	2.560	2.500	5.3	3.4	0.630	M10x1	45
3900-4608	8"	D1-6	2000	.004	5.252	6	7/8	2.362	4.188	5.3	3.4	0.630	M16x1.5	45
3900-4630	10"	D1-5	1600	.004	3.252	6	3/4	3.145	4.188	6.0	3.9	0.709	M10x1	75
3900-4631	10"	D1-6	1600	.004	5.252	6	7/8	3.145	4.188	6.0	3.9	0.709	M20x1.5	75
3900-4610	10"	D1-8	1600	.004	6.748	6	1	2.750	5.500	6.0	3.9	0.709	M20x1.5	75
3900-4615	12"	D1-6	1200	.005	5.252	6	7/8	3.937	4.188	6.7	4.2	0.709	M20x1.5	130
3900-4612	12"	D1-8	1200	.005	6.748	6	1	3.937	5.500	6.7	4.2	0.709	M20x1.5	130
3900-4617	15"	D1-8	1100	.005	9.252	6	1	5.315	5.500	6.7	4.6	0.709	M22x1.5	225
3900-4616	15"	D1-11	1100	.005	9.252	6	1-3/16	5.315	5.500	6.7	4.6	0.709	M22x1.5	225

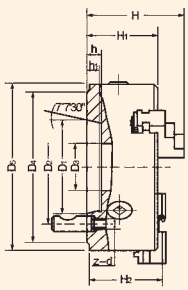
Larger sizes available

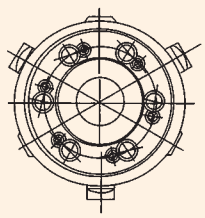
Pro-Series 3-JAW, TYPE D1, DIRECT MOUNT SELF CENTERING SCROLL CHUCKS

- Semi-steel body.
- Direct mount self-centering scroll chucks.
- American standard two piece top reversible tongue & groove Jaws.
- All guide ways & bearing surfaces are precisely ground.
- Pinions are hardened & ground
- Scroll plate is dropped forged of fine alloy steel and case fully hardened. Thread flanks are ground on both sides for smooth operation.



2PC TOP REVERSIBLE HARD JAWS





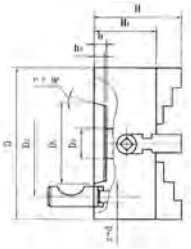
AMERICAN STANDARD



Item#	Chuck Dia. D5	To Fit Spindle	Max. RPM	T.I.R.	Studs B.C. D2	Studs Included	(Inch) Dia. of Stud	Center Hole D3	D1	H	H1	h	Z-d	G.W. (Lbs)
3900-8005	5"	D1-4	3200	.003	3.252	3	5/8	1.260	2.501	4.33	2.76	0.512	M10x1	11
3900-8008	6"	D1-3	3000	.003	2.780	3	9/16	1.654	2.125	4.90	3.21	0.512	M10x1	20
3900-8009	6"	D1-4	3000	.003	3.252	3	5/8	1.654	2.501	4.90	3.21	0.512	M10x1	20
3900-8013	8"	D1-3	2500	.003	2.780	3	9/16	2.028	2.125	5.35	3.58	0.512	M10x1	42
3900-8014	8"	D1-4	2500	.003	3.252	3	5/8	2.165	2.501	5.35	3.58	0.512	M10x1	42
3900-8015	8"	D1-5	2500	.003	4.126	6	3/4	2.165	3.251	5.35	3.58	0.563	M12x1	42
3900-8016	8"	D1-6	2500	.003	5.252	6	7/8	2.165	4.188	5.35	3.58	0.563	M16x1.5	42
3900-8020	10"	D1-5	2000	.003	4.126	6	3/4	2.992	3.251	6.16	4.08	0.563	M12x1	71
3900-8021	10"	D1-6	2000	.003	5.252	6	7/8	2.992	4.188	6.16	4.08	0.630	M16x1.5	71
3900-8022	10"	D1-8	2000	.003	6.748	6	1	2.992	5.501	6.16	4.08	0.709	M20x1.5	71
3900-8024	12"	D1-6	1500	.0035	5.252	6	7/8	4.055	4.188	6.88	4.64	0.630	M16x1.5	112
3900-8025	12"	D1-8	1500	.0035	6.748	6	1	5.354	5.501	6.88	4.64	0.709	M20x1.5	112
3900-8028	15"	D1-8	1000	.004	6.748	6	1	5.354	5.501	7.70	5.06	0.709	M20x1.5	223
3900-8030	15"	D1-11	1000	.004	9.252	6	1-3/16	5.906	7.751	7.70	5.06	0.787	M22x1.5	223

4 - JAW CAMLOCK SPINDLES "D-1" LATHE CHUCKS (Direct Mount)

- Direct Mounting chuck with Camlock Nose.
- Body made of high grade semi-steel.
- Jaws are individually adjustable, allowing firm gripping of odd shaped work.
- Hardened and precision ground reversible jaws.
- With T-wrench.



D-MOUNT





SPINDLE NOSE DIMENSIONS

Spindle Nose Dia.	D-3	D-4	D-6	D-8
	2.13"	2.50"	4.19"	5.50"

Item#	Chuck Dia. D	To Fit Spindle	Studs B.C. D2	Studs Included	Dia. of Stud	(Inch) Center Hole D3	D1	H	H1	h	Z-d	G.W. (Lbs)
3900-4808	8"	D1-4	3.346	3	5/8	2.165	2.500	4.2	3.0	0.518	M10x1	37
3900-4810	10"	D1-6	5.252	6	7/8	2.953	4.190	4.7	3.2	0.630	M16x1.5	52
3900-4809	12"	D1-6	5.252	6	7/8	3.740	4.188	5.3	3.6	0.630	M16x1.5	100
3900-4812	12"	D1-8	6.748	6	1	3.740	5.500	5.3	3.6	0.709	M20x1.5	101
3900-4878	16"	D1-8	6.748	6	1	4.921	5.500	5.6	3.7	0.709	M20x1.5	140

Pro-Series 4-JAW INDEPENDENT D1, DIRECT MOUNT LATHE CHUCKS

STANDARD ACCESSORIES

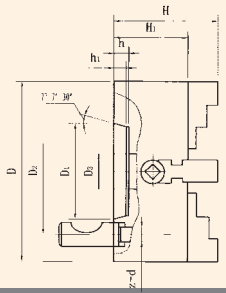
- 1 set of American Standard reversible jaws.
- 1 T-wrench
- 2 Hex keys
- 2 eye bolts for chucks 10" & up
- 1 set of mounting bolts.

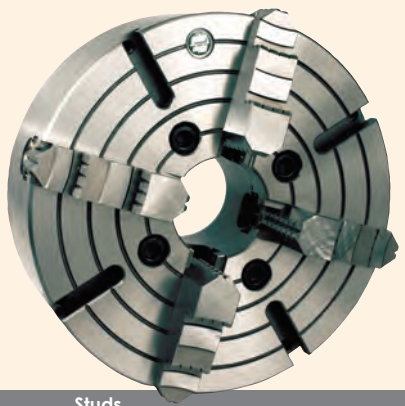
- Semi-steel body.
- Hard solid reversible jaws.

10" & Up Include T-slot

AMERICAN STANDARD

DESIGNED TO GRIP ROUND OR ODD SHAPED WORK







3900-8110 Shown

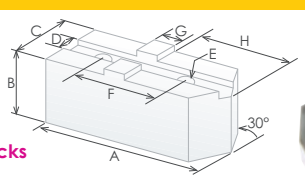


Item#	Chuck Dia. D	To Fit Spindle	Studs B.C. D2	Studs Included	Dia. of Stud	(Inch) Center Hole D3	D1	H	H1	h	Z-d
3900-8110	8"	D1-4	3.252	3	5/8	2.205	2.501	4.33	2.95	0.512	M10x1
3900-8111	8"	D1-5	4.126	6	3/4	2.205	3.251	4.33	2.95	0.590	M12X1
3900-8113	10"	D1-5	4.126	6	3/4	2.953	4.188	4.70	3.35	0.630	M16x1.5
3900-8114	10"	D1-6	5.252	6	7/8	2.953	4.188	4.70	3.35	0.630	M16x1.5
3900-8118	12"	D1-6	5.252	6	7/8	2.953	4.188	5.70	3.74	0.630	M16x1.5
3900-8122	12"	D1-8	6.748	6	1	3.740	5.501	5.70	3.74	0.709	M20x1.5
3900-8126	16"	D1-8	6.748	6	1	4.921	5.501	6.10	4.13	0.709	M20x1.5
3900-8130	20"	D1-11	9.252	6	1-3/16	4.921	7.751	7.07	4.72	0.787	M22X1.5

Larger sizes available

TaiKi 3PC SET SOFT STEEL JAWS AMERICAN STANDARD TONGUE & GROOVE

- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Jaws can be hardened
- Set includes 3 pcs





FOR USE ON: Buck, Bison, Cushman, Huron, PBA, Yuasa & Rohm Chucks

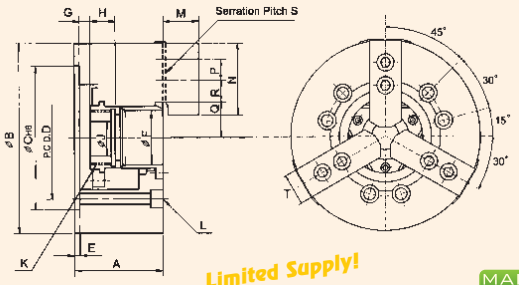
Chuck Size	CRITICAL DIMENSIONS Groove Width D	Tongue Width G	Screw Size E	Hole Space F	Tongue to Front H	Tongue Position C	Width Inch A	Length Inch B	Height Inch	Item #
6	0.313	1/2	5/16	1.500	0.866	Offset	1-1/4	2-7/8	1-1/4	**3900-4756**
8	0.313	1/2	3/8	1.750	1.329	Offset	1-1/4	3-3/4	1-1/4	**3900-4758**
10	0.500	3/4	1/2	2.125	1.220	Offset	1-1/4	4-1/8	1-1/4	**3900-4760**
12	0.500	3/4	1/2	2.500	1.398	Offset	1-9/16	4-15/16	2-1/8	**3900-4762**

TaiKi 3 JAW CNC POWER CHUCKS (Direct Mount)

Interchangeable with Kitagawa B200 series chucks • Chuck adaptor suit to spindle nose A2 • Serrations Pitch 1.5mm X 60°

- Approx. 20% higher speed, gripping force and larger bore when compared to conventional chucks.
- Made from high grade alloy steel. All sliding surfaces are hardened and ground for accurate actual running and long service repeatability.
- **Standard Equipment:** Chuck comes fitted with chuck adaptor and includes mounting bolts, T-nuts and jaw mounting bolts.





Limited Supply!

MADE IN TAIWAN

Item#	Chuck Size	Chuck Dia. (mm)	Thru-hole Dia.	Plunger Strok (mm)	Jaw Strok Diameter (mm)	Max. Draw Bar Pull Force (kgf)	Max. Gripping Force (kgf)	Max. Speed RPM	Max. Hydraulic Pressure (kgf/cm²)	Mount Spindle	Cross to Kitagawa
3900-4585	5"	135	1.299"	10	5.4	1750	3600	7000	29	A2-4	B-205A4
3900-4586	6"	169	1.772"	12	5.5	2200	5800	6000	28	A2-5	B-206A5
3900-4588	8"	210	2.047"	16	7.4	3400	8500	4800	26	A2-6	B-208A6
3900-4590	10"	254	2.953"	19	8.8	4300	11000	4200	27	A2-8	B-210A8
3900-4592	12"	304	3.583"	23	10.6	5500	14400	3000	27	A2-8	B-212A8

DIMENSIONS (mm)

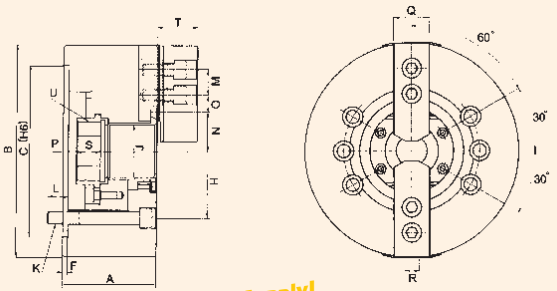
Chuck Size	A	B	C	D	E	F	G Max.	G Min.	H	J	K	L	M	N	P	Q Max.	Q Min.	R Max.	R Min.	T
5"	65	135	110	82.55	4	33	1.0	-9.0	20	12	M40x1.5	3-M10	26	54	14	26.5	23.80	19.5	6.0	23
6"	81	169	140	104.78	5	45	11.0	-1.0	19	20	M55x2.0	6-M10	31	73	20	32.0	29.25	24.0	7.5	31
8"	91	210	170	133.35	5	52	14.5	-1.5	20.5	30	M60x2.0	6-M12	37	95	25	38.7	35.00	30.0	10.5	35
10"	100	254	220	171.45	5	75	8.5	-10.5	25	45	M85x2.0	6-M16	42	110	30	51.0	46.60	34.5	12.0	40
12"	123	304	220	171.45	5	91	8.0	-15.0	28	50	M100x2.0	6-M16	48	129	30	61.3	56.00	46.5	12.0	48

TaiKi 2 JAW CNC POWER CHUCKS (Direct Mount)

Interchangeable with Kitagawa BT200 series chucks • Chuck adaptor suit to spindle nose A2 • Serrations Pitch 1.5mm X 60°

- Optmum for gripping irregular shaped works.
- Approx. 20% higher speed, gripping force and larger bore when compared to conventional chucks.
- Made from high grade alloy steel. All sliding surfaces are hardened and ground for accurate actual running and long service repeatability.
- **Standard Equipment:** Chuck comes fitted with chuck adaptor and includes mounting bolts, T-nuts and jaw mounting bolts. Also included blank drawnut and mounting wrench.





Limited Supply!

MADE IN TAIWAN

Item#	Chuck Size	Chuck Dia. (mm)	Thru-hole Dia.	Plunger Strok (mm)	Jaw Strok Diameter (mm)	Max. Draw Bar Pull Force (kgf)	Max. Gripping Force (kgf)	Max. Speed RPM	Max. Hydraulic Pressure (kgf/cm²)	Mount Spindle	Cross to Kitagawa
3900-4597	5"	135	1.299"	10	5.4	1050	2960	7000	24.3	A2-4	BT-205
3900-4598	6"	169	1.772"	12	5.5	1450	3800	6000	18.9	A2-5	BT-206
3900-4599	8"	210	2.047"	16	7.4	2250	5600	4800	18.4	A2-6	BT-208
3900-4600	10"	254	2.953"	19	8.8	3667	7400	4200	18.4	A2-8	BT-210

DIMENSIONS (mm)

Chuck Size	A	B	C (H6)	F	H	J	K	L	M	N Max.	N Min.	O Max.	O Min.	P Max.	P Min.	Q	R	S	T	U
5"	65	135	110	4	82.55	33	4-M10	14	14	26.5	23.80	19.5	6.0	1.0	-9.0	23	10	15.0	26	M40x1.5
6"	81	169	140	5	104.78	45	6-M10	16	20	32.0	29.25	24.0	7.5	11.0	-1.0	31	12	15.0	31	M55x2.0
8"	91	210	170	5	133.35	52	6-M12	20	25	38.7	35.00	30.0	10.5	14.5	-1.5	35	14	16.5	37	M60x2.0
10"	100	254	220	5	17.45	75	6-M16	22	30	51.0	46.60	34.5	12.0	12.0	-10.5	40	16	20.0	42	M85x2.0

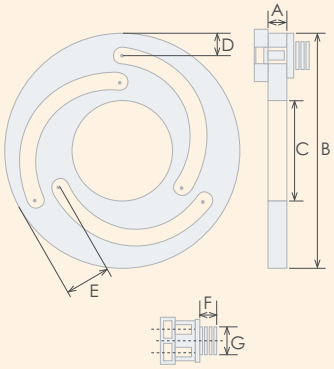
TaiKi JAW BORING RINGS For Boring Soft & Round Jaws

How to install:

1. Place the jaw boring ring over our chuck and locate the bring ring pins in the counterbore of your chuck jaws
2. Turn the jaw boring ring until snug
3. Activate your jaws
   - The jaw boring ring will apply equal pressure on all jaws, allowing for a consistent bore.

- Since no discs or bungs are used to clamp jaws, through boring of jaws is possible.
- Attaches to front of jaws without tools, compensating for "jaw lift".
- Suitable for CNC lathe.
- Ideal for machining soft jaws.
- Applies equal pressure on all jaws.

MADE IN TAIWAN





Item#	Chuck Size	Dimension (Inch) A	B	C	D	E	F	G
3900-4649	4"	.47	4.5	1.34	.47	1.10	.35	.51
3900-4650	5"	.47	5.5	2.36	.47	1.10	.35	.51
3900-4651	6"	.47	6.6	3.15	.47	1.26	.35	.65
3900-4654	8"	.47	8.6	4.53	.59	1.42	.35	.73
3900-4656	10"	.47	10.2	5.91	.67	1.57	.35	.73
3900-4658	12"	.59	12.4	7.40	.83	1.97	.35	.96
3900-4660	15"	.79	15.0	9.06	.91	2.05	.63	1.22

TaiKi TL-JAW BORING RINGS For Boring Soft & Round Jaws

- Suitable for CNC lathe.
- Ideal for machining soft jaws.
- Attaches to front of jaws without tools, compensating for "jaw lift".
- Applies equal pressure on all jaws.
- Since no discs or bungs are used to clamp jaws, through boring of jaws is possible.

6, 8, 10"
3900-4668

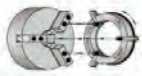


How to install:

1. Place the jaw boring ring over our chuck and locate the bring ring pins in the counterbore of your chuck jaws
2. Turn the jaw boring ring until snug
3. Activate your jaws
   - The jaw boring ring will apply equal pressure on all jaws, allowing for a consistent bore.



1. Set the jaws for the required job. The diameter of the jaws must be set smaller than the part diameter.



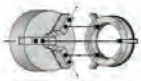
2. adjust the Boring Rings to fit into the bolt holes of the soft jaws. Then, rotate the body of the Boring Rings until sung, pulling the jaws rigid in the opposite direction of the clamping force(away from the part to be held).



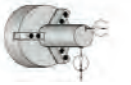
3. Lock the chuck. Jaws must be locked in the direction of the part to be held. The soft jaws will then be held rigidly by the Boring Rings as if holding the part.



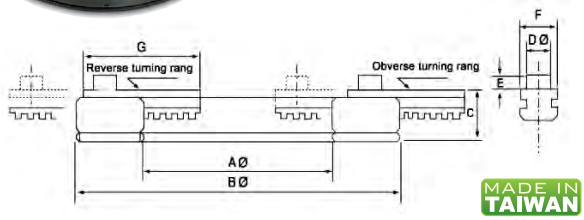
4. Machine the diameter desired. The bore diameter must be precise with the diameter of the part to be held.



5. Remove the Boring Rings. Unlock the chuck opposite th the locking direction.



6. Chuck the part. If these steps are followed correctly, the part will be true within . 0002" T.I.R.



MADE IN TAIWAN

Item#	Chuck Size	Dimension (Inch) A	B	C	D(dia)-E	F-G	Jaw Stroke (ea.)	Max. Speed (RPM)
3900-4666	5,6,8"	3.94	6.7	1.02	.512~.28	.748~2.4	7.4	800
3900-4668	6,8,10"	4.92	7.9	1.02	.642~.32	.748~2.4	7.4	700
3900-4669	8,10,12"	6.30	9.8	1.22	.720~.32	.945~3.2	8.5	600

TaiKi JAW NUTS & SCREWS

FOR USE ON: Kitagawa, Samchully, Strong, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks



Chuck Size Inch	CRITICAL DIMENSIONS Heel Height M	Groove Width D	Screw Size	Hole Space F	Nut Height B	Nut Width A	Nut Length C	Jaw Nut (set of 3) Item#	Screw Item#
5	0.197	0.393 (10mm)	M8x20	0.551	0.571	0.551	0.965	3900-4780	3900-4796
6	0.295	0.472 (12mm)	M10x25	0.787	0.728	0.689	1.417	3900-4781	3900-4797
6	0.276	0.472 (12mm)	M10x25	0.787	0.866	0.689	1.437	3900-4788	3900-4797
8	0.335	0.551 (14mm)	M12x30	0.984	0.807	0.807	1.831	3900-4782	3900-4798
8	0.394	0.551 (14mm)	M12x30	0.984	1.024	0.807	1.890	3900-4789	3900-4798
8	0.394	0.629 (16MM)	M12X30	1.181	0.807	0.807	1.890	3903-4782	3900-4798
10	0.335	0.629 (16mm)	M12x30	1.181	0.846	0.886	2.008	3900-4783	3900-4798
10	0.394	0.629 (16mm)	M12x30	1.181	1.024	0.886	2.165	3900-4790	3900-4798
10	0.394	0.629 (16mm)	M12x30	0.984	0.846	0.886	2.008	3903-4786	3900-4798
12	0.453	0.827 (21mm)	M16x40	1.181	1.102	1.102	2.185	3900-4784	3900-4799
12	0.531	0.709 (18mm)	M14x40	1.181	1.319	1.043	2.185	3900-4791	3900-4800
15	0.650	0.866 (22mm)	M20x60	1.693	1.791	1.319	3.150	3900-4786	3900-4801
15	0.748	1.004 (25.5mm)	M20x55	1.693	1.535	1.378	3.150	3900-4793	3900-4802
15	0.654	0.945 (24mm)	M16x40	1.181	1.719	1.280	2.363	3900-4795	3900-4799

TaiKi SOFT JAWS 1.5 mm x 60 Degree Serrations

- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Jaws can be hardened
- Set includes 3 pcs



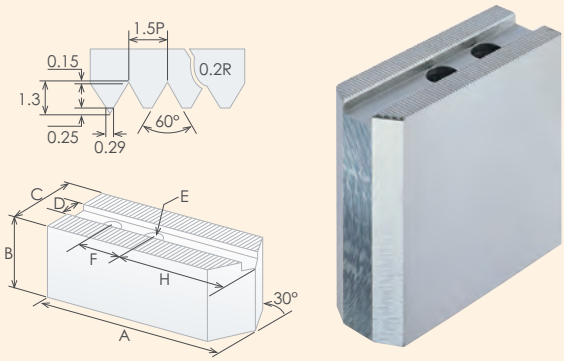
FOR USE ON: Kitagawa, Samchully, Strong, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks

Chuck Size	CRITICAL DIMENSIONS Groove Width D	Screw Size E	Hole Space F	Hole to Front H	Width Inch C	Length Inch A	Height Inch B	STEEL (set of 3) Item #	ALUMINUM (set of 3) Item #
4	0.394 (10mm)	5/16 (M8)	0.551 (14mm)	1-1/16	0.91	2.00	0.91	3900-4684	3900-4764
6	0.472 (12mm)	3/8 (M10)	0.787 (20mm)	1-1/2	1.22	2.87	1.18	3900-4686	3900-4766
8	0.551 (14mm)	1/2 (M12)	0.984 (25mm)	1.811	1.38	3.74	1.46	3900-4688	3900-4768
10	0.630 (16mm)	1/2 (M12)	1.181 (30mm)	1.969	1.57	4.33	1.65	3900-4690	3900-4770
12	0.710 (18mm)	0.55 (M14)	1.181 (30mm)	2.362	1.89	5.08	1.89	3900-4692	3900-4772
12	0.827 (21mm)	0.63 (M16)	1.181 (30mm)	2.362	1.89	5.08	1.89	3900-4693	3900-4773
15	0.866 (22mm)	0.787 (M20)	1.690 (43mm)	3.346	2.44	6.50	2.44	3900-4695	3900-4775
15	1.003 (25.5mm)	0.787 (M20)	1.690 (43mm)	3.346	2.44	6.50	2.44	3900-4696	3900-4776

TaiKi SOFT STEEL JAWS EXTRA HEIGHT 1.5mm x 60 Deg Serrations

FOR USE ON: Kitagawa, Samchully, Strong, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks

- Extra-height jaws are suitable for longer workpiece, such as 4" length workpiece will need jaws with over 3" height which will increase the acuracy and stability of production process.
- Supplies maximum concentricity on finish turning operations.
- Price is for a set of 3 jaws.
- Jaws can be hardened.
- Can be bored or turned to fit workpiece.

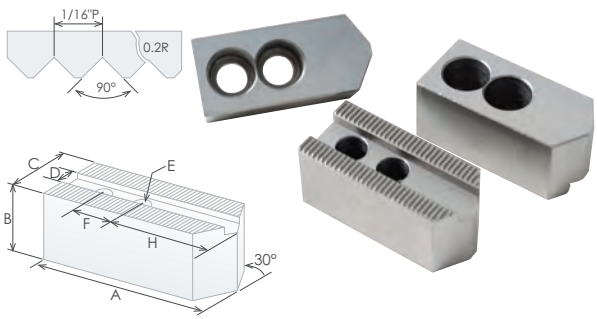


Chuck Size	CRITICAL DIMENSIONS Groove Width D	Screw Size E	Hole Space F	Hole to Front H	Jaw Width C	Jaw Length A	Jaw Height B	(set of 3) Item #
6	0.472 (12mm)	3/8 (M10)	0.787 (20mm)	1-1/2	1.22	2.87	2.36 (60mm)	3900-5656
6	0.472 (12mm)	3/8 (M10)	0.781 (20mm)	1-1/2	1.22	2.87	3.15 (80mm)	3900-5658
8	0.551 (14mm)	1/2 (M12)	0.984 (25mm)	1.811	1.38	3.74	2.36 (60mm)	3900-5660
8	0.551 (14mm)	1/2 (M12)	0.984 (25mm)	1.811	1.38	3.74	3.15 (80mm)	3900-5662
8	0.551 (14mm)	1/2 (M12)	0.984 (25mm)	1.811	1.38	3.74	3.94 (100mm)	3900-5663
10	0.630 (16mm)	1/2 (M12)	1.181 (30mm)	1.969	1.57	4.33	2.36 (60mm)	3900-5665
10	0.630 (16mm)	1/2 (M12)	1.181 (30mm)	1.969	1.57	4.33	3.15 (80mm)	3900-5667
10	0.630 (16mm)	1/2 (M12)	1.181 (30mm)	1.969	1.57	4.33	3.94 (100mm)	3900-5668
12	0.710 (18mm)	0.55 (M14)	1.181 (30mm)	2.362	1.89	5.08	3.15 (80mm)	3900-5670
12	0.710 (18mm)	0.55 (M14)	1.181 (30mm)	2.362	1.89	5.08	3.94 (100mm)	3900-5672

TaiKi SOFT STEEL JAWS 1/16" x 90 Degree Serrations

- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Jaws can be hardened, steel material SAE1045
- Set includes 3 pcs

FOR USE ON: SMW Autoblok, Rohm, Pratt Burnerd & Other Chucks



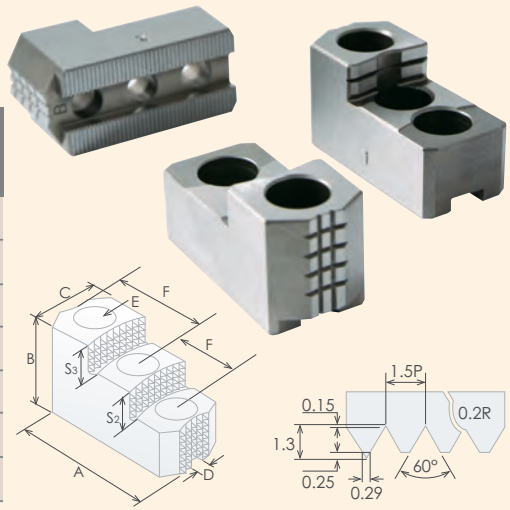
Chuck Size	CRITICAL DIMENSIONS Groove Width D	Screw Size E	Hole Space F	Hole to Front H	Width Inch C	Length Inch A	Height Inch B	(set of 3) Item #
6	0.669 (17mm)	12mm	0.875 (22mm)	1.417	1.22	2.87	1.18	3900-4642
8	0.669 (17mm)	12mm	0.875 (22mm)	1.929	1.38	3.74	1.46	3900-4644
10	0.669 (17mm)	12mm	0.875 (22mm)	2.283	1.57	4.33	1.65	3900-4646
12	0.827 (21mm)	16mm	1.102 (28mm)	2.520	1.89	5.08	1.89	3900-4648

TaiKi BEST-GRIP HARD STEEL JAWS 1.5 mm x 60 Degree Serrations

FOR USE ON: Kitagawa, Samchully, Strong, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks

- Supplies maximum concentricity on finish turning operations
- Set includes 3 pcs

Chuck Size	CRITICAL DIMENSIONS Groove Width D	Screw Size E	Hole Space F	No. of Holes	No. of Steps	Step Height S2	Step Height S3	Width Inch C	Length Inch A	Height Inch B	(set of 3) Item#
6	0.472 (12mm)	M10	0.787 (20mm)	3	1	0	0.47	1.22	2.64	1.42	**3900-4671**
8	0.551 (14mm)	M12	0.984 (25mm)	3	2	0.47	0.47	1.38	3.39	2.01	**3900-4673**
10	0.630 (16mm)	M12	1.181 (30mm)	3	2	0.55	0.55	1.57	3.94	2.13	**3900-4675**
12	0.709 (18MM)	M14	1.181 (30mm)	3	1	0	0.79	1.97	4.45	2.05	**3900-4677**
12	0.827 (21mm)	M16	1.181 (30mm)	3	1	0	0.79	1.97	4.45	2.05	**3900-4678**
15	0.866 (22MM)	M20	1.693 (43mm)	3	2	0.73	0.73	2.44	5.63	3.39	**3900-4680**
15	1.005 (25.5MM)	M20	1.693 (43mm)	3	2	0.73	0.73	2.44	5.63	3.39	**3900-4681**

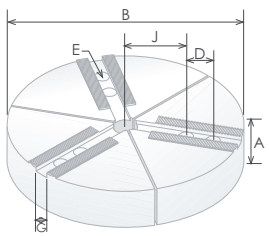


TaiKi SOFT ROUND/PIE JAWS 1.5mm x 60 Deg Serrations

FOR USE ON: Kitagawa, Samchully, Strong, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks

- Round jaws allow for complete gripping of workpiece.
- Can be machined to fit workpiece.
- Set includes 3 pcs
- Ideal for thin-walled or irregular shaped workpieces.
- Stee jaws can be hardened.







STEEL JAWS

Chuck Size	CRITICAL DIMENSIONS Groove Width G	Screw Size E	Hole Space D	Hole to Front J	Pie Dia. B	Thru Hole	Jaw Height A	(set of 3) Item #
6-5/8"	0.472 (12mm)	M10	0.787 (20mm)	1.949	6.65	0.948	1.58	**3900-5686**
8"	0.551 (14mm)	M12	0.984 (25mm)	2.008	7.87	0.948	1.97	**3900-5688**
10"	0.63 (16mm)	M16	1.181 (30mm)	2.559	9.84	0.948	1.97	**3900-5690**
12"	0.827 (21mm)	M16	1.181 (30mm)	3.189	11.81	0.948	1.97	**3900-5692**

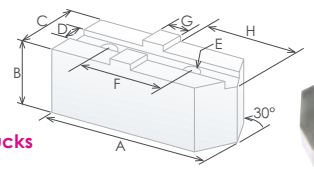
ALUMINUM JAWS

Chuck Size	CRITICAL DIMENSIONS Groove Width G	Screw Size E	Hole Space D	Hole to Front J	Pie Dia. B	Thru Hole	Jaw Height A	(set of 3) Item #
6-5/8"	0.472 (12mm)	M10	0.787 (20mm)	1.949	6.65	0.948	1.58	**3900-5695**
8"	0.551 (14mm)	M12	0.984 (25mm)	2.008	7.87	0.948	1.97	**3900-5697**
10"	0.63 (16mm)	M16	1.181 (30mm)	2.559	9.84	0.948	1.97	**3900-5700**
12"	0.827 (21mm)	M16	1.181 (30mm)	3.189	11.81	0.948	1.97	**3900-5702**

TaiKi 3PC SET SOFT STEEL JAWS AMERICAN STANDARD TONGUE & GROOVE

- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Jaws can be hardened
- Set includes 3 pcs

FOR USE ON: Buck, Bison, Cushman, Huron, PBA, Yuasa & Rohm Chucks





Chuck Size	CRITICAL DIMENSIONS Groove Width D	Tongue Width G	Screw Size E	Hole Space F	Tongue to Front H	Tongue Position C	Width Inch A	Length Inch B	Height Inch	Item #
6	0.313	1/2	5/16	1.500	0.866	Offset	1-1/4	2-7/8	1-1/4	**3900-4756**
8	0.313	1/2	3/8	1.750	1.329	Offset	1-1/4	3-3/4	1-1/4	**3900-4758**
10	0.500	3/4	1/2	2.125	1.220	Offset	1-1/4	4-1/8	1-1/4	**3900-4760**
12	0.500	3/4	1/2	2.500	1.398	Offset	1-9/16	4-15/16	2-1/8	**3900-4762**

KDK STYLE 6PC TOOL POST & HOLDERS SETS

- Interchangeable with KDK same series.
- All working parts hardened and ground.
- **Lathe Swing:**
  12~16"(100 Series),
  15~18" (150 Series),
  18~24"(200 Series)
- **Lock Down Bolt Diameter:**
  7/16"(100 Series) ,
  5/8" (150 Series),
  3/4" (200 Series)

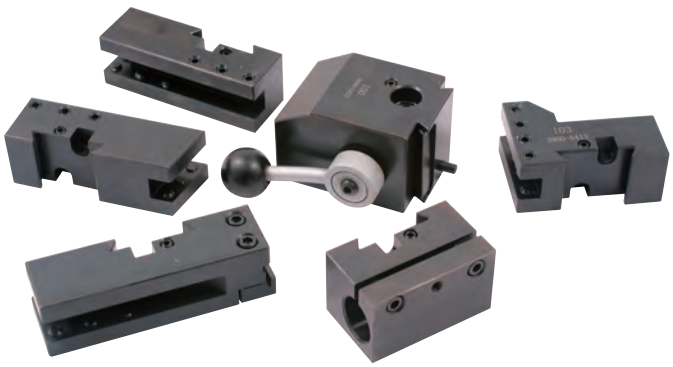
KDK-0 SERIES COMMING SOON!

#100 Series Set
3900-5425

#150 Series Set
3900-5426

#200 Series Set
3900-5427

6pc/set Includes
Holders:
No. 1 - Turning & Facing
No. 2 - Threading & Facing
No. 3 - Extension Turning Bar
No. 4 - Parting Bar
No. 5 - Master Bar For Boring Bars
Tool Post: KDK Body



T-slot nut & mounting bolt not included.

KDK STYLE 100, 150, 200 TOOL POSTS

- Interchangeable with KDK same series.
- All working parts hardened and ground.
- **Lathe Swing:**
  12~16"(100 Series), 15~18" (150 Series),
  18~24"(200 Series)
- **Lock Down Bolt Diameter:**
  7/16"(100 Series), 5/8" (150 Series),
  3/4" (200 Series)

KDK-0 SERIES COMMING SOON!

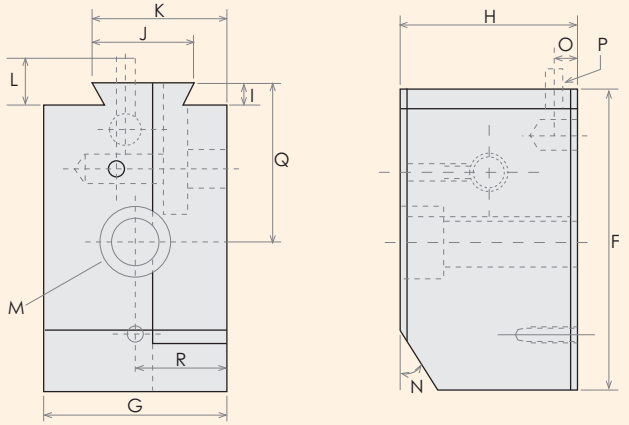
#100 Series Post
3900-5423

#150 Series Post
3900-5457

#200 Series Post
3900-5458

T-slot nut & mounting bolt not included.

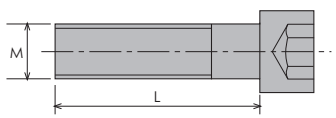


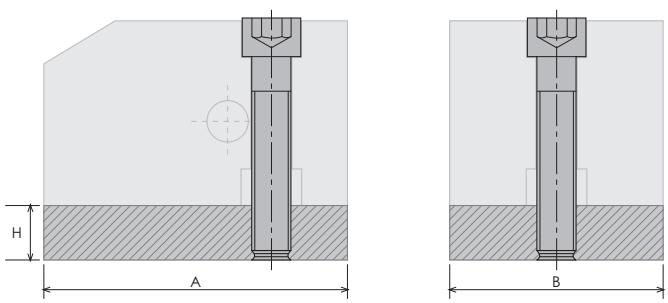


Body No.	(Inch) F	G	H	I	J	K	L	M	N	O	P	Q	R
100	3.50	2.50	2.25	.312	1.750	2.215	.687	7/16	30°	.331	1/4	.875	1.375
150	4.37	2.50	2.25	.312	1.750	2.215	.687	5/8	30°	.331	5/16	2.312	1.250
200	5.00	2.87	3.00	.312	1.750	2.215	.687	3/4	30°	.331	5/16	2.562	1.437

T-NUT BLANKS AND SCREW BOLTS FOR KDK STYLE TOOL POSTS

- T-nut blank can be machined to fit.





Item#	Fits Post No.	Blank Dimensions (Thick. H x B x A)	Bolt Thread M x L
3900-5436	100	1/2 x 1-1/2 x 2-1/4"	7/16-20UNF x 2.17"
3900-5437	100	5/8 x 2-1/4 x 2-3/4"	7/16-20UNF x 2.32"
3900-5438	100	3/4 x 2-1/2 x 3"	7/16-20UNF x 2.44"
3900-5439	150	5/8 x 2-1/4 x 2-3/4"	5/8-18UNF x 2.09"
3900-5440	150	3/4 x 2-1/2 x 3"	5/8-18UNF x 2.17"
3900-5441	150	7/8 x 2-1/2 x 3-1/2"	5/8-18UNF x 2.36"
3900-5442	150	1 x 3 x 4-1/2"	5/8-18UNF x 2.36"
3900-5443	200	7/8 x 2-1/2 x 3-1/2"	3/4-16UNF x 2.95"
3900-5444	200	1 x 3 x 4-1/2"	3/4-16UNF x 2.95"
3900-5445	200	1-1/2 x 4 x 5"	3/4-16UNF x 3.54"

5C COLLET BAR KDK STYLE 119 TOOL HOLDER

- No. 119 holder is for KDK-100, 150 & 200 quick change tool post.
- Assures the simplicity of preset quick change tools to all 5 C collet jobs.
- For lathes having 1" Center Height or more.
- Spanner Wrench and Lock Ring included.
- All working parts hardened and ground.

Holder No. 119
3900-5419



Replaement Ring Nut & Wrench (Item#3900-5420)

TURNING AND FACING BAR COMBINATION KDK STYLE 101, 151, 201 TOOL HOLDERS



ALL BARS INTERCHANGEABLE ON 100, 150 & 200 BODY

- Interchangeable with KDK same series tool holders.
- All working parts hardened and ground.

NEW

Item#	Holder No.	W.T. (lbs.)	Tool Bit Capacity	Lathe Swing
3900-5411	101	1.8	1/2"	12~16"
3900-5451	151	3.3	5/8"	15~18"
3900-5431	201	4.5	3/4"	18~24"
3900-5448	201-1	4.1	1"	18~24"

THREADING AND FACING BAR COMBINATION KDK STYLE 102, 152, 202 TOOL HOLDERS



ALL BARS INTERCHANGEABLE ON 100, 150 & 200 BODY

- Interchangeable with KDK same series tool holders.
- All working parts hardened and ground.

NEW

Item#	Holder No.	W.T. (lbs.)	Tool Bit Capacity	Lathe Swing
3900-5412	102	2.0	1/2"	12~16"
3900-5452	152	4.0	5/8"	15~18"
3900-5432	202	4.8	3/4"	18~24"
3900-5449	202-1	4.4	1"	18~24"

EXTENSION TURNING BAR COMBINATION KDK STYLE 103, 153, 203 TOOL HOLDERS

- Interchangeable with KDK same series tool holders.
- All working parts hardened and ground.

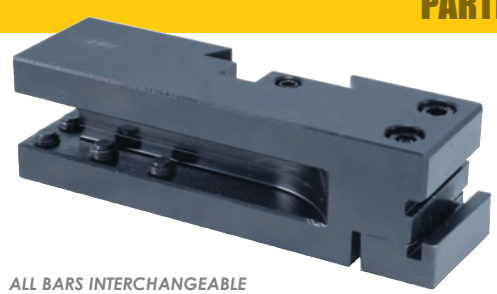
Item#	Holder No.	W.T. (lbs.)	Tool Bit Capacity	Lathe Swing
3900-5413	103	1.8	1/2"	12~16"
3900-5453	153	3.3	5/8"	15~18"
3900-5433	203	4.5	3/4"	18~24"
3900-5450	203-1	4.0	1"	18~24"



ALL BARS INTERCHANGEABLE ON 100, 150 & 200 BODY

NEW

PARTING BAR COMBINATION KDK STYLE 104, 154, 204 TOOL HOLDERS



ALL BARS INTERCHANGEABLE ON 100, 150 & 200 BODY

- Interchangeable with KDK same series tool holders.
- All working parts hardened and ground.

NEW

Item#	Holder No.	W.T. (lbs.)	Tool Bit Capacity (Thick. x Width)	Lathe Swing
3900-5414	104	2.3	1/8X11/16"	12~16"
3900-5454	154	4.3	1/8X7/8"	15~18"
3900-5434	204	5.0	1/8X1-1/8"	18~24"

MASTER BAR FOR BORING BARS KDK STYLE 105, 155, 205 TOOL HOLDERS

- Interchangeable with KDK same series tool holders.
- All working parts hardened and ground.

Item#	Holder No.	W.T. (lbs.)	Boring Bar Capacity	Lathe Swing
3900-5415	105	1.5	1" Hole	12~16"
3900-5455	155	3.8	1-1/4" Hole	15~18"
3900-5435	205	5.3	1-1/2" Hole	18~24"
3900-5429	205-1-3/4	8.1	1-3/4" Hole	18~24"
3900-5430	205-2	7.8	2" Hole	18~24"



ALL BARS INTERCHANGEABLE ON 100, 150 & 200 BODY

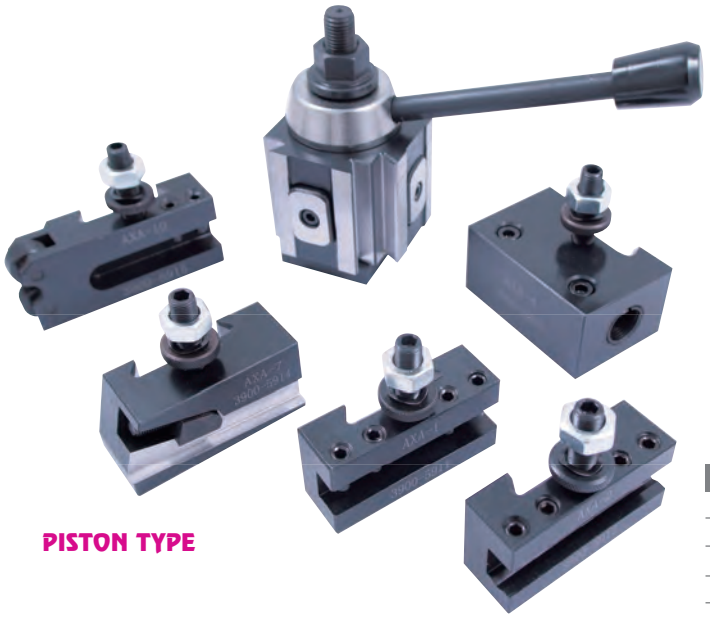
NEW

QUICK CHANGE TOOL POST SETS

6PC QUICK-CHANGE TOOL POST SETS (Piston Type)

- Interchangeable with Aloris® and DORIAN® same series tool holders.
- All working parts hardened and ground.
- Completely sealed for maintenance-free operation.
- Increases productivity of all lathe operations.
- T-nut can be machined to fit.

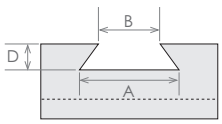
HHIP PRO-SERIES



PISTON TYPE

BXA Series
3900–5920

Interchangeable with ***Aloris***® and ***DORIAN***® same series



Dimension of Dovetails

6pc/set Includes
Holders:
No. 1 - Turning & Facing;
No. 2 - Boring, Turning & Facing
No. 4 - Boring, Heavy Duty;
No. 7 - Universal parting blade
No.10 - Knurling, Facing & Turning
Tool Post: Piston Type

Series	Item#	A	B	D	Swing Capacity
AXA	**3900-5910**	1.64"	1.37"	0.383"	**up to 12"**
BXA	**3900-5920**	1.65"	1.41"	0.411"	**10~15"**
CXA	**3900-5230**	2.16"	1.68"	0.565"	**13~18"**
CA	**3900-5260**	2.62"	2.21"	0.493"	**14~20"**

6PC QUICK-CHANGE TOOL POST SETS (Wedge Type)

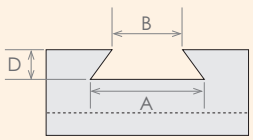
- Interchangeable with Aloris® and DORIAN® same series tool holders.
- All working parts hardened and ground.
- Completely sealed for maintenance-free operation.
- Increases productivity of all lathe operations.
- Precision design to assure repetitive accuracy.
- T-nut can be machined to fit.

HHIP PRO-SERIES

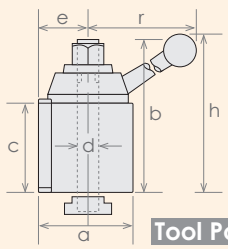
CXA Series
3900–5130

Interchangeable with ***Aloris***® and ***DORIAN***® same series

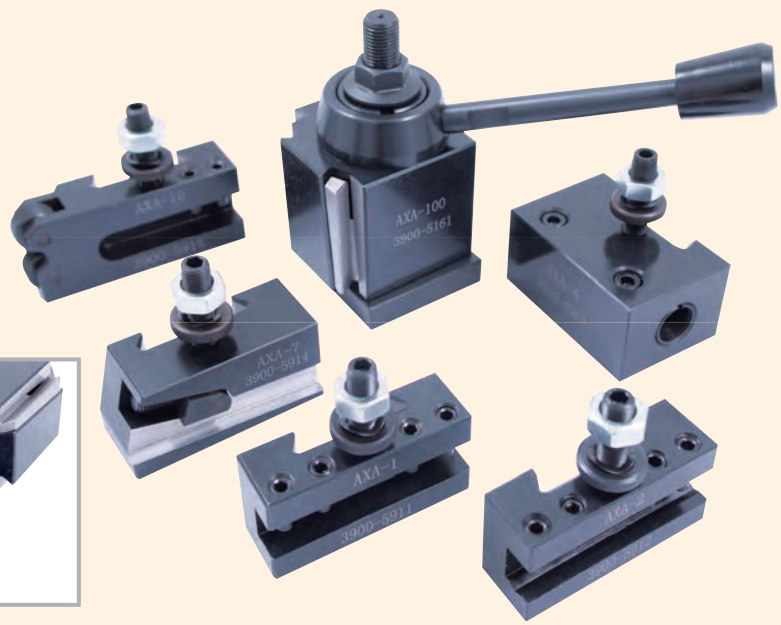
WEDGE TYPE



Dimension of Dovetails



Tool Post



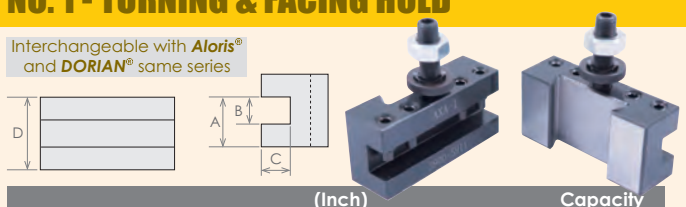


6pc/set Includes
Holders:
No. 1 - Turning & Facing;
No. 2 - Boring, Turning & Facing
No. 4 - Boring, Heavy Duty;
No. 7 - Universal parting blade
No.10 - Knurling, Facing & Turning
Tool Post: Wedge Type

Series	Item#	A	B	D	a	b	c	d	e	h	r	Swing Capacity
0XA	**3900-5100**	1.10"	0.92"	.257"	1-3/4	2-3/4	1-9/16	3/8	7/8	3-1/4	3-7/8	**up to 8"**
AXA	**3900-5105**	1.64"	1.37"	.383"	2-1/2	3-7/8	2-1/4	9/16	1-3/8	4-11/16	5-3/4	**up to 12"**
BXA	**3900-5120**	1.65"	1.41"	.411"	3	4-5/8	2-3/4	5/8	1-5/8	5-9/16	7-5/16	**10~15"**
CXA	**3900-5130**	2.16"	1.68"	.565"	3-1/2	5-1/8	3	3/4	1-7/8	6-1/8	7-7/8	**13~18"**
CA	**3900-5140**	2.62"	2.21"	.493"	4	6-1/4	3-5/8	7/8	2-1/8	7	9	**14~20"**
DA	**3900-5160**	3.25"	2.72"	.600"	5	7-5/8	4-5/8	7/8	2-11/16	8-1/4	10-7/8	**17~48"**

NO. 1 - TURNING & FACING HOLD

Interchangeable with **Aloris®** and **DORIAN®** same series



Item#	Series	A	(Inch) B	C	D	Capacity Tool Bit
3900-5461	0XA	5/8	1/2	5/16	1	Up to 1/2
3900-5911	AXA	15/16	1/2	7/16	1-1/2	3/16~1/2
3900-5261	BXA	1-1/8	5/8	1/2	1-3/4	1/4~5/8
3900-5231	CXA	1-7/16	3/4	5/8	2-1/8	1/2~3/4
3900-5941	CA	1-11/16	1	3/4	2-1/2	1/2~1
3900-6001	DA	3-3/16	1-1/4	1	3-1/8	3/4~1-1/4

NO. 2 - BORING, TURNING & FACING HOLDERS

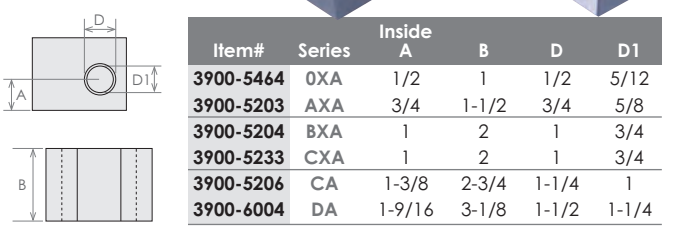
Interchangeable with **Aloris®** and **DORIAN®** same series



Item#	Series	A	(Inch) B	C	D	Capacity Tool Bit	Shank
3900-5462	0XA	5/8	1/2	5/16	1	Up to 1/2	7/24
3900-5912	AXA	15/16	1/2	7/16	1-1/2	3/16~1/2	7/16
3900-5262	BXA	1-1/8	5/8	1/2	1-3/4	1/4~5/8	1/2
3900-5232	CXA	1-7/16	3/4	5/8	2-1/8	1/2~3/4	3/4
3900-5942	CA	1-11/16	1	3/4	2-1/2	1/2~1	13/16
3900-6002	DA	3-3/16	1-1/4	1	3-1/8	3/4~1-1/4	1

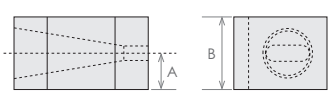
NO. 4- HEAVY DUTY BORING HOLDERS

Interchangeable with **Aloris®** and **DORIAN®** same series



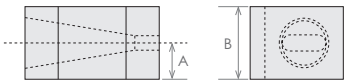
Item#	Series	Inside A	B	D	D1
3900-5464	0XA	1/2	1	1/2	5/12
3900-5203	AXA	3/4	1-1/2	3/4	5/8
3900-5204	BXA	1	2	1	3/4
3900-5233	CXA	1	2	1	3/4
3900-5206	CA	1-3/8	2-3/4	1-1/4	1
3900-6004	DA	1-9/16	3-1/8	1-1/2	1-1/4

NO. 53, 54, 55 - MORSE TAPER HOLDER FOR DRILLING



Item#	Series	Taper Hole	A	B
3900-5258	AXA	MT 3	3/4	1-1/2
3900-5228	BXA	MT 3	7/8	1-3/4
3900-5238	CXA	MT 4	1-1/16	2-1/8
3900-5948	CA	MT 4	1-1/4	2-1/2

NO. 5 - MORSE TAPER HOLDER FOR DRILLING



Item#	Series	Taper Hole	A	B
3900-5226	0XA	MT2	1/2	1-1/4
3900-5917	AXA	MT 2	3/4	1-1/2
3900-5227	BXA	MT 2	7/8	1-3/4
3900-5237	CXA	MT 3	1	2
3900-5947	CA	MT 3	1-1/4	2-1/2
3900-6005	DA	MT 4	1-9/16	3-1/8

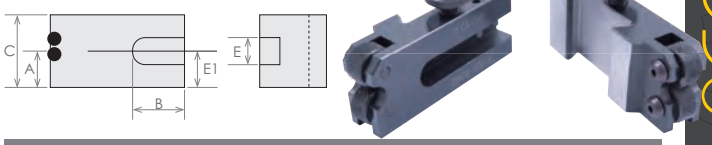
NO. 7 - UNIVERSAL PARTING BLADE HOLDERS



Item#	Series	A	B	C	D
3900-5467	0XA	13/16	1/2	1/8	1
3900-5468	0XA	5/8	1/2	1/8	1
3900-5914	AXA	13/16	1/2	3/16	1-1/2
3900-5264	BXA	1	11/16	3/16	1-3/4
3900-5234	CXA	1-3/16	3/4	3/16	2
3900-5944	CA	1-7/16	7/8	1/4	2-1/2
3900-6007	DA	1-3/4	1-1/8	1/4	2-3/4

See page 107 & 255 for blades and replacement screws

NO. 10 - KNURLING, TURNING AND FACING HOLDERS



Item#	Series	A	B	(Inch) C	E	E1	Capacity Tool Bit
3900-5470	0XA	1/2	1-3/4	1-1/8	7/16	3/8	Up to 1/2
3900-5915	AXA	7/8	2-1/2	1-9/16	1/2	3/8	3/16~1/2
3900-5225	BXA	1	2-5/8	1-3/4	5/8	1/2	1/4~5/8
3900-5236	CXA	1-3/16	3-1/8	2	3/4	5/8	1/2~3/4
3900-5946	CA	1-7/16	3-3/4	2-1/2	1	3/4	1/2~1
3900-6010	DA	1-7/8	4-1/2	3-1/8	1-1/4	1	1/2~1-1/4

NO. 16E - THREADING CUT FOR TRIANGULAR CARBIDE INSERTS



- Unique design allows you to use both sides for threading cut.
- Supplied with fully adjustable carbide chip breaker and carbide shims.
- Two triangular carbide inserts included.



Interchangeable with **Aloris®** and **DORIAN®** same series

Item#	Series	Description
3900-5259	AXA	Holder w/carbide inserts
6004-6031		TCMT-32.51 Carbide Insert

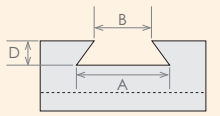
QUICK CHANGE TOOL POSTS & BLADES

QUICK-CHANGE TOOL POSTS (Wedge Type)

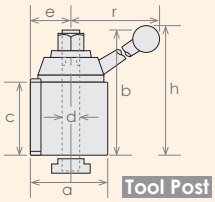
- All working parts hardened and ground.
- Completely sealed for maintenance-free operation

HHIP PRO-SERIES

Interchangeable with *Aloris*® and *DORIAN*® same series



Dimension of Dovetails



Tool Post





WEDGE TYPE

Series	Item#	A	B	D	a	b	c	d	e	h	r	Swing Capacity
0XA	3900-5460	1.10"	0.92"	.257"	1-11/16	2-19/32	1-1/2	3/8	15/16	3-9/64	3-27/32	up to 8"
AXA	3900-5161	1.64"	1.37"	.383"	2-1/2	3-7/8	2-1/4	9/16	1-3/8	4-11/16	5-3/4	up to 12"
BXA	3900-5121	1.65"	1.41"	.411"	3	4-5/8	2-3/4	5/8	1-5/8	5-9/16	7-5/16	10~15"
CXA	3900-5131	2.16"	1.68"	.565"	3-1/2	5-1/8	3	3/4	1-7/8	6-1/8	7-7/8	13~18"
CA	3900-5141	2.62"	2.21"	.493"	4	6-1/4	3-5/8	7/8	2-1/8	7	9	14~20"

Replacement Screws
-For Aloris Type Turning & Facing Holders

- Replace worn or lost hold down screws.





FITS TURNING&FACING HOLDERS

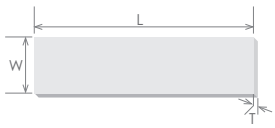
Item#	Series	Size
3900-5472	0XA	M6X16
3900-5919	AXA	M8X20
3900-5476	BXA	M8X30
3900-5478	CXA	M10X28
3900-5480	CA	M12X32
3900-5482	DA	M12X32

FITS #7 HOLDERS

Item#	Series	Size
3900-5473	0XA	M6X48
3900-5474	0XA-T	M6X48
3900-5475	AXA	M8X70
3900-5477	BXA	M8X82
3900-5479	CXA	M10X93
3900-5481	CA	M10X104
3900-5483	DA	M10X134

CUT-OFF BLADES, BEVELED

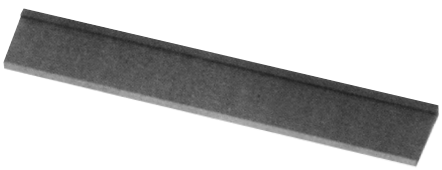


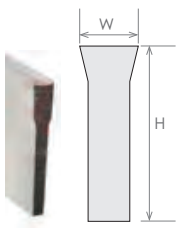


(Inch) Size(TxWxL)	HSS Item#	5% COBAL Item#
3/32 x 1/2 x 4-1/2	2000-1002	2000-1102
3/32 x 5/8 x 5	2000-1003	2000-1106
1/8 x 1/2 x 4-1/2	2000-1000	2000-1110
1/8 x 3/4 x 5	2000-1004	2000-1114
1/8 x 7/8 x 6	2000-1005	2000-1118

PARALLEL TYPE CUT-OFF BLADES

- Parallel style blades have continuous width of cutting edge throughout length of blade.
- Used with Aloris, DORIAN & KDK type quick-change tool holders.





- **M2 HIGH SPEED STEEL** A fine general purpose ground tool bits show exceptional result on mild steel, alloys and tool steels. This tool bit makes a superior finishing tool.

Parallel Style	Width W (In)	Height H (In)	Length (In)	HSS Item#
P2	3/32	1/2	4-1/2	2000-6020
P2N	5/64	1/2	4-1/2	2000-6022
P3S	1/8	1/2	4-1/2	2000-6025
P3N	3/32	11/16	5	2000-6030
P3	1/8	11/16	5	2000-6035
P3W	1/8	3/4	5	2000-6050
P4	5/32	11/16	5	2000-6055
P5	3/16	7/8	6	2000-6064
P5X	1/8	7/8	6	2000-6065
P5N	5/32	7/8	6	2000-6066

See page 107 for Cobalt & more sizes

RETROFIT GTN CUT-OFF AND GROOVING BLADES

FOR GROOVING, PARTING-OFF AND CHAMFERING



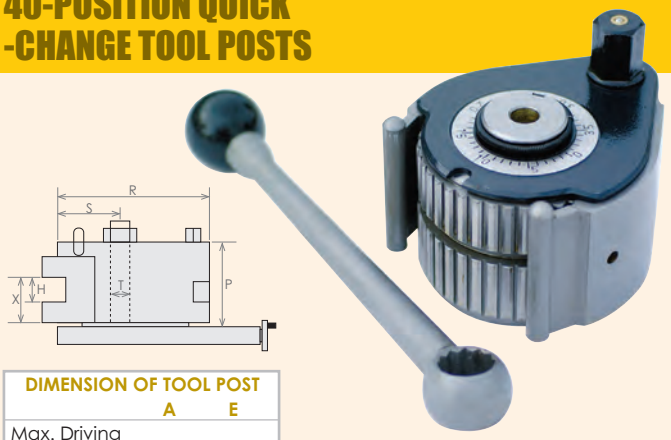
INSERT IS NOT INCLUDED

See page 141 for inserts

- Used on Aloris and DORAIN Type Quick-Change Tool Holders
- High performance rates. No more re-grinding. Insert indexability.
- Also can use GTL, GTR inserts.

Item#	Fits Holder	HSS Blade Reference	Blade Height	Cutting Width	Overall Length	Use Insert
3900-5971	AXA-7	P2	1/2	.087 & .093"	4-11/32	GTN/R/L 2
3900-5973	BXA-7	P3N	11/16	.087 & .093"	4-11/32	GTN/R/L 2
3900-5975	BXA-7	P3, T3	11/16	.120"	4-11/32	GTN/R/L 3
3900-5977	CXA-7	P3W	3/4	.120"	4-11/32	GTN/R/L 3
3900-5979	CA-7	P5X	7/8	.120"	5-29/32	GTN/R/L 3
3900-5981	CA-7	P5N	7/8	.160"	5-29/32	GTN/R/L 4

40-POSITION QUICK -CHANGE TOOL POSTS



DIMENSION OF TOOL POST	A	E
Max. Driving Power (HP)	3	6
R Maximum	4.13"	5.14"
S Maximum	2.07"	2.57"
P	1.83"	2.30"
T	0.79"	0.79"
H	0.83"	0.94"
X Minimum	1.18"	1.37"
X Maximum	1.61"	2.04"

All Holders Are Interchangeable With Most of 40-Position Tool Post A, E & B

Item#	Series	Swing
3900-5310	A	6~13"
3900-5320	E	10~18"

40-POSITION QUICK-CHANGE TOOL HOLDERS

All Holders Are Interchangeable With Most of 40-Position Tool Post A, E & B



HOLDER A

HOLDER A - Cut-off			
Fit Post	Item#	Fits Blade Width	Holder Length
A	3900-5391	0.41"	3.16"
E	3900-5327	0.63"	4.00"
B	3900-5332	0.63"	4.75"



HOLDER B

HOLDER B - Boring, Turning & Facing			
Fit Post	Item#	Max. Holding Dia.	Holder Length
A	3900-5304	0.75"	3.54"
E	3900-5321	1.00"	4.00"
B	3900-5331	1.00"	5.00"



HOLDER D

HOLDER D - Turing & Facing			
Fit Post	Item#	Max Holding Height	Holder Length
A	3900-5305	0.75"	3.54"
E	3900-5322	0.75"	4.00"
B	3900-5335	1.25"	5.50"



HOLDER S

HOLDER S - Heavy-Duty Boring & Drilling			
Fit Post	Item#	Holder Hole Dia.	Holder Length
A	3900-5306	1-3/16"	3.16"
E	3900-5323	1-5/8"	4.00"
B	3900-5336	1-5/8"	4.75"



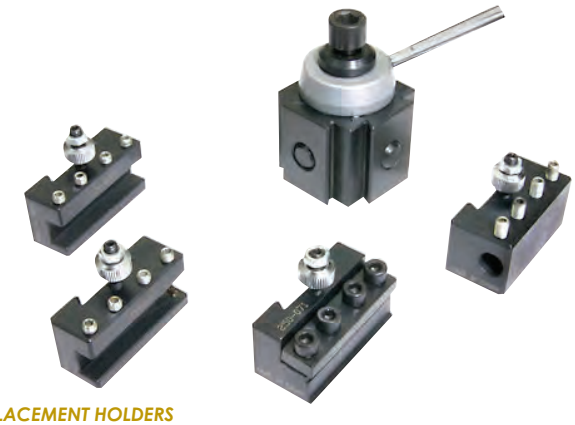
BUSHINGS For Holder S			
Fit Post	Item#	Taper	Holder Hole Dia.
A	3900-5307	MT1	1-3/16"
A	3900-5308	MT2	1-3/16"
E	3900-5326	MT2	1-3/16"
E	3900-5324	MT3	1-5/8"
B	3900-5338	MT3	1-5/8"
B	3900-5339	MT4	1-5/8"

5PC HOBBY QUICK-CHANGE TOOL POST & HOLDER SET

- This piston type tool post set has maximum rigidity and provide chatter free performance
- Post completely sealed for maintenance free operation
- Made from high quality, heat treated tool steel
- Designed to fit the popular 7" machines
- Will fit 7x10, 7x12 and 7x14 mini lathes

Swing Capacity up to 8"
3900-5349

KIT INCLUDES
Tool post,2 turning tool holders, 1 boring tool holder and 1 cut-off blade holder, 1 T-nut.



REPLACEMENT HOLDERS

Item#	Description.
3900-5345	Turning Holder, Hold up to 3/8" Shank
3900-5346	Boring Holder, Hold up to 3/8" Shank
3900-5347	Cut-Off Blade Holder ,Blade up to 1/2" Tall

5PC MINI QUICK-CHANGE TOOL POST & HOLDER KIT

- Fits 7x10, 7x12 and 7x14 mini lathes
- No tools required to change tools
- Made of aluminum

Aluminum
3900-5350

ACCEPT
- **Turning Holder: 1/4-3/8" Shank**
- **Boring Holder: 3/8" Shank**
- **Cut-off Blade Holder: 1/2"**



KIT INCLUDES
Tool post, Mounting hardware, Two turning tool holders, a boring tool holder and a cut-off blade holder

MORSE TAPER TAILSTOCK TURRETS

- Taper: Morse Taper.
- Fill tool socket with 5/8" diameter.
- Head Diameter: 2-1/2".
- Will save time quick change machining operation within seconds.



Item#	Taper	Drawbar End
3900-4910	MT 2	3/8"~16
3900-4909	MT 3	3/8"~16

LIVE MT2 TO JT33 ROTATING TAILSTOCK CHUCK ADAPTER

- This is a "live" drill chuck adapter with smooth, sealed bearing for the tailstock.
- Use it to mate with any JT33 drill chuck and support small diameter work where a live center is not practical.
- The shank is 2 Morse taper. The drill chuck taper is JT33.



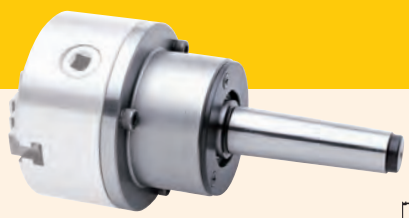
NEW

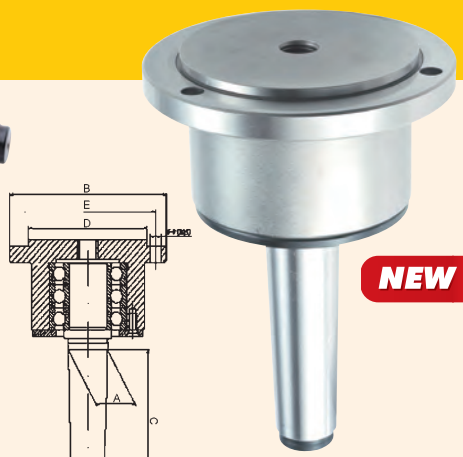
3901-4910

* Drill Chuck Not Included

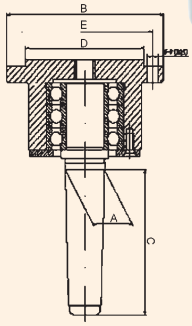
REVOLVING TAILSTOCK BACKPLATES
For Lathe Chucks

- Used for calibrate or support workpiece during processing.
- Three ball bearings for heavy duty load and relativly high speed.
- 3 hole chuck mounting pattern is pre-drilled.





NEW



LATHE CHUCK OPTIONAL

Item#	Shank Taper	A	B	(mm) C	D	E	Max Load (lbs)	T.I.R. (Inch)	Speed RPM
3900-6022	MT2	17.78	80	64	55	66	1100	.0002	4000
3900-6021	MT2	17.78	100	64	72	84	1100	.0002	2500
3900-6023	MT3	23.83	80	81	55	66	1760	.0002	4000
3900-6026	MT3	23.83	100	81	72	84	1760	.0002	2500
3900-6024	MT4	31.27	100	103	72	84	2200	.0002	4000
3900-6025	MT5	44.40	125	130	95	108	3300	.0004	3500
3900-6030	MT4	31.27	125	103	95	108	2200	.0004	4000
3900-6031	MT5	44.40	160	130	130	142	3300	.0004	3500

2MT MORSE TAPER SHANK
3 & 4-JAW SELF-CENTERING CHUCKS

- Steel body-hardened and ground scroll and pinions
- Hardened and ground MT spindle
- Supplied with chuck wrench.
- 3/8-16 threaded drawbar.
- 2 MT shank.
- T.I.R. 0.0006".

3", 3 JAW
3900-4706

3", 4 JAW
3900-4707

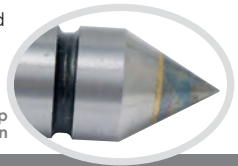
2 SETS OF SOLID STEEL JAWS (INTERNAL AND EXTERNAL)



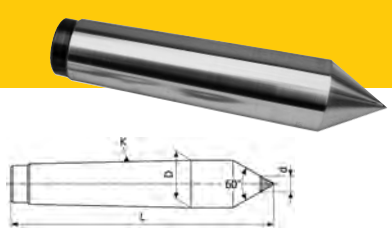
3900-4706 SHOWN

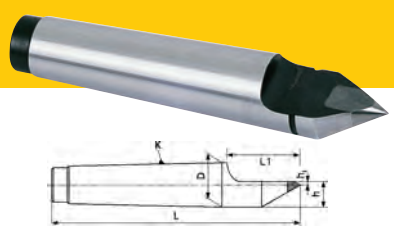
DEAD CENTERS
-Full, Half, Steel Or With Carbide Tip

- Made of tool steel, hardened and ground.
- +/- .0002" TIR



Carbide Tip Shown



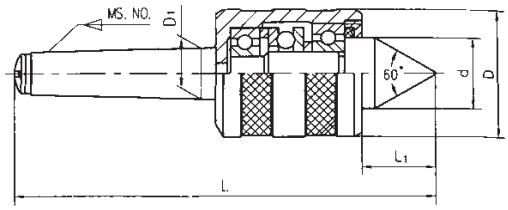


Morse Taper	(mm) h1	h	d	D	L1	L	Accuracy	Full Point Steel Item#	Full Point Carbide Tipped Item#	Half Point Steel Item#	Half Point Carbide Tipped Item#
1 MT	1.5	5.5	8	12.065	35	80	0.01	3900-5051	3900-5056	3900-6051	3900-6056
2 MT	2	6	8	17.78	43	100	0.01	3900-5062	3900-5057	3900-6052	3900-6057
3 MT	3	9	12	23.825	57	125	0.01	3900-5063	3900-5058	3900-6053	3900-6058
4 MT	5	12.5	15	31.267	70	160	0.01	3900-5064	3900-5059	3900-6054	3900-6059
5 MT	7	16	18	44.399	90	200	0.01	3900-5065	3900-5060	3900-6055	3900-6060

ECONOMY LIVE CENTERS

- Central spindle is made of hardened alloy steel and ground for high accuracy.
- Precision high quality bearings, combination of ball bearing and thrust bearing.
- Dustproof seal on the front end.





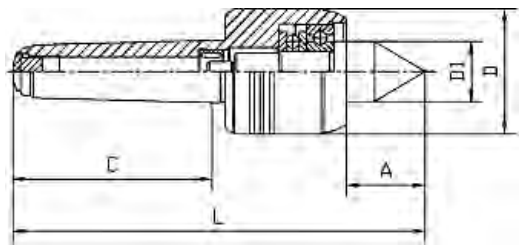
Item#	Morse Taper	d	D	(Inch) D1	L1	OAL	Accuracy Load	Radial Load (N)	Max. RPM
3900-5001	1	.71	1.3	.475	.79	4.33	.0004	900	4000
3900-5002	2	.98	1.8	.700	1.02	5.71	.0004	1500	3500
3900-5003	3	1.10	2.1	.938	1.18	6.69	.0004	2000	3000
3900-5004	4	1.26	2.4	1.231	1.37	8.10	.0004	3200	2500
3900-5005	5	1.77	3.0	1.748	1.77	10.0	.0006	6300	2000
3900-5006	6	2.95	4.9	2.494	2.70	14.25	.0006	10000	1200

MEDIUM DUTY LIVE CENTERS

- With 60° included angle.
- Made of hardened steel and ground to high accuracy.
- The central spindle lengthened to reduce vibration.
- Two special designed high-quality ball bearing and thrust bearings.
- Complete protection of bearings from the ingress of coolant, dirt or swart.
- Slim body design.



CONCENTRICITY WITHIN .0002"

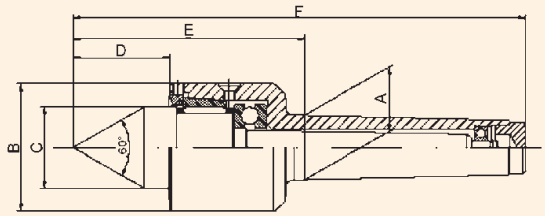


Item#	Morse Taper	d1	D	(Inch) A	C	L	Load Rate lbs.	Max. RPM
3900-5029	2	0.86	1.65	1.12	4.58	5.70	330	3500
3900-5030	3	0.90	1.86	1.12	5.73	6.85	660	3000
3900-5040	4	1.02	2.17	1.25	6.95	8.20	990	2500
3900-5041	5	1.38	2.70	1.90	8.60	10.50	1760	2000

SUPER DUTY, HIGH PERFORMANCE LIVE CENTERS

- Combination of needle roller, thrust ball and deep groove ball bearings.
- Central spindle is made of hardened alloy steel and ground.
- Oil filler in the head for maintain the internal bearings to extend the life time.

CONCENTRICITY WITHIN .0002"



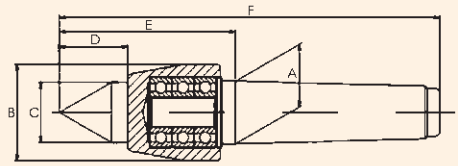


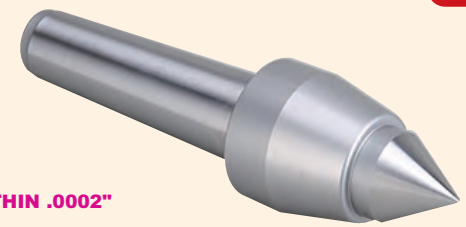
Item#	Morse Taper	(mm) A	B	C	D	E	F	Load Rate lbs.	Max. RPM
3900-6074	2	17.78	36	22	26	68.5	126	660	5500
3900-6075	3	23.83	47	30	35	93.0	166	880	4500
3900-6076	4	31.27	55	35	40	104.0	197	2640	4000
3900-6078	5	44.40	70	45	51	134.5	246	4400	3000

SMALL HEAD LIVE CENTERS-REVOLVING BODY STYLE

- Revolving body turn vs commen head turns.
- The center adopts the combinatin of deep groove ball bearings.
- Small head can be used in different processing demands.
- Applicable to medium high speed light load applications.
- The head ismade of alloy steel and hardened to HRC 58~62
- Dustproof sealed.

NEW





CONCENTRICITY WITHIN .0002"

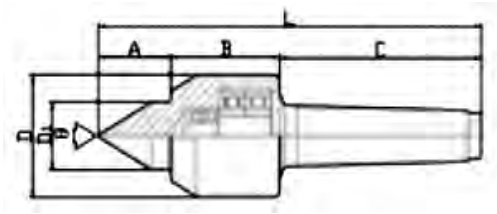
Item#	Morse Taper	A	B	(mm) C	D	E	F	Radial Load (lbs.)	Max. RPM
3900-6101	1	12.07	32	16	21	54.5	108	88	4000
3900-6102	2	17.78	40	22	26	68	132	264	3500
3900-6103	3	23.83	45	26	32	83	164	550	3000
3900-6104	4	31.27	48	30	34	93.5	188	770	2500
3900-6105	5	44.40	68	45	50	118.5	248	1100	2000

LIVE CENTERS-REVOLVING BODY STYLE

- One piece central spindle and revolving body is made of hardened alloy steel and ground for high accuracy.
- Precision high quality bearings, combination of ball bearing and thrust bearing.
- Dustproof sealed.

CONCENTRICITY WITHIN .0002"



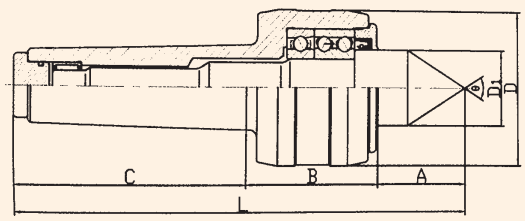


Item#	Morse Taper	A	B	(mm) C	D	D1	L	Accuracy Load	Radial Load (lbs.)	Max. RPM
3900-6093	3	33	56	88	53	28	177	.0002"	700	6000
3900-6094	4	40	60	108	63	35	211	.0002"	1200	5000
3900-6095	5	50	62	138	73	45	250	.0003"	1800	3000

ULTRA PRECISION, HEAVY DUTY LIVE CENTERS

- Triple bearing design.
- Machined from one piece of forging, hardened and precisely ground.
- Accuracy: less or equal .0002" TIR.
- Ultra precision radial bearing reduces run out to minimum after much use.





CONCENTRICITY WITHIN .0002"

Item#	Morse Taper	A	B	(mm) C	D	D1	L	Load Rate lbs.	Max. RPM
3900-6082	2	**31**	48	69	46	20	147	770	6300
3900-6083	3	**39**	55	86	53	30	180	1200	5000
3900-6084	4	**42**	62	108	63	32	208	1760	3800
3900-6085	5	**49**	71	136	83	40	256	4400	3000

7PC MULTI-SHAPE LIVE CENTER SETS

- Made of high grade tool steel hardened and ground.
- Precision needle bearings used for high accuracy with long life.
- Accuracy guaranteed to 0.0012~0.0039" at center head.
- Less heat is generated due to spring plate used.
- Complete with fitted case.

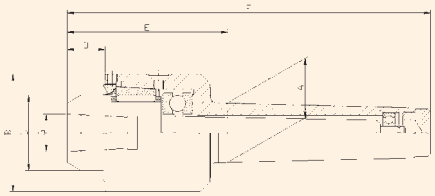


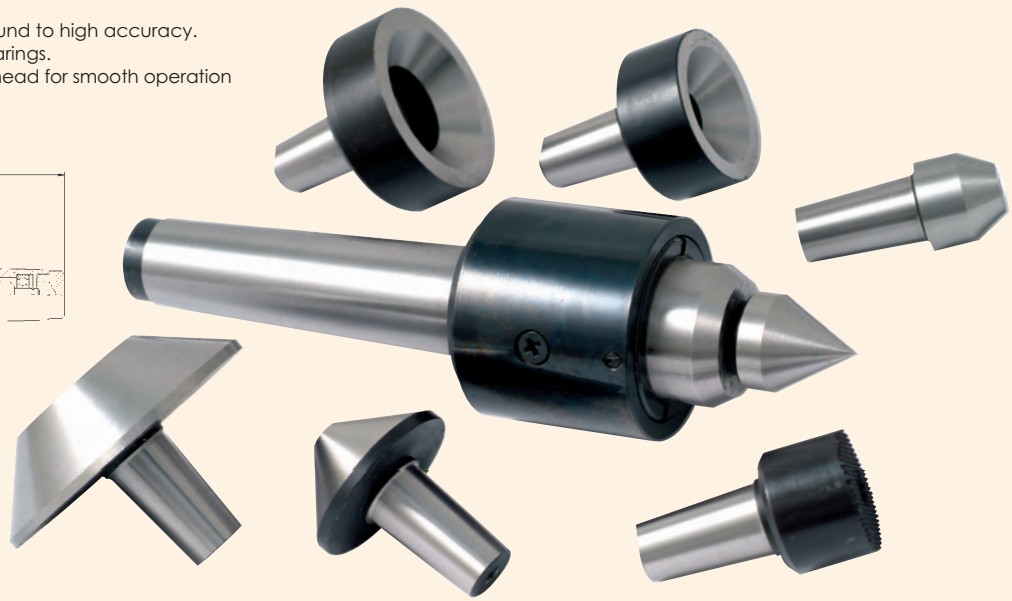
Item#	Morse Taper	Thrust Load lbs.
3900-5020	MT2	650
3900-5021	MT3	900
3900-5022	MT4	1200
3900-5023	MT5	1600

SET INCLUDES:
MORSE TAPER LIVE CENTER,
7 INTERCHANGEABLE TIPS, WRENCH

INTERCHANGEABLE POINT LIVE CENTER KITS

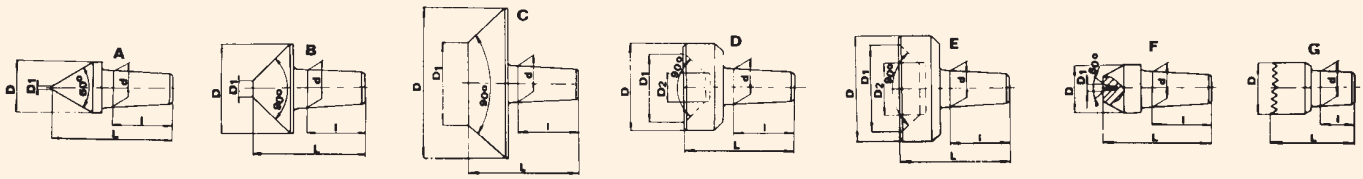
- Used for CNC machines.
- Fine adjustment for better grip.
- Made of hardened tool steel and ground to high accuracy.
- Two special designed high-quality bearings.
- Can be lubricated through a hole on head for smooth operation and longer bearings life.
- Heat treated to HRC 60.





KIT INCLUDES
- Live Center Body
- 3 of Bull Nose Point
- 2 of Cone Shape Point
- 1 Serrated Point
- 1 Wrench Tool

Item#	Morse Taper	A	B	C	(mm) D	E	F	G	Load Rate kg	RPM	Accuracy
3900-5052	2	17.780	36	22	10.5	68.5	110	10	300	5500	0.01
3900-5053	3	23.825	47	30	15	93	145	15	400	4500	0.01
3900-5054	4	31.267	55	35	16	104	172	20	1200	4000	0.01
3900-5055	5	44.399	70	45	20	134.5	216	25	2000	3000	0.02

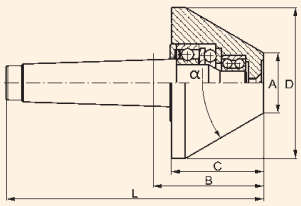


Unit: Inch

Morse Taper	d	l	A D	A D1	A L	B D	B D1	B L	C D	C D1	C L	D D	D D1	D D2	D L	E D	E D1	E D2	E L	F D	F D1	F L	G D	G L
2	.380	.630	.60	--	1.51	1.13	.201	1.38	1.73	0.80	1.40	1.12	0.77	.22	1.40	1.52	1.10	.55	1.39	.59	.06	1.38	.88	1.38
3	.590	.984	.79	.019	1.97	1.42	.236	1.77	2.48	1.30	1.77	1.42	1.10	.47	1.77	1.77	1.50	.87	1.77	.79	.10	1.77	.98	1.77
4	.784	1.181	.98	.019	2.36	1.77	.393	2.09	2.76	1.38	2.09	1.77	1.46	.67	2.09	2.48	2.09	1.18	2.09	.98	.20	2.09	1.26	2.09
5	.984	1.496	1.26	.039	2.87	2.20	.551	2.56	3.15	1.50	2.56	2.20	1.73	.79	2.56	2.78	2.36	1.42	2.56	1.26	.20	2.56	1.77	2.56

HEAVY DUTY BULL NOSE LIVE CENTERS

- Bull nose live centers are typically used in applications where the center hole is a large bore or when the application calls for the machining of pipe or other cylindrical components such as hydraulic cylinders. manufacturers of power generation components, and pipe manufacturers.
- Bull nose live centers are constructed with larger bearings to carry these heavy loads.
- The strength and alignment of the fully supported bull nose head provides longer center life.
- The rigidity of this live center helps dampen vibration and resist chatter.





NEW

Item#	Morse Taper	A	D	(Inch) B	α	L	Load Rate Lbs.	Drawbar Threads
3900-5010	MT2	**0.50**	**2.49**	1.42	70°	5.37	440	3/8~16
3900-5007	MT2	**1.26**	**4.00**	3.27	75°	5.79	660	3/8~16
3900-5011	MT3	**0.75**	**3.10**	1.66	70°	6.75	440	3/8~16
3900-5015	MT3	**1.25**	**4.00**	2.06	75°	7.15	880	3/8~16
3900-5008	MT3	**1.25**	**5.00**	2.40	75°	7.65	880	3/8~16
3900-5009	MT3	**1.38**	**6.00**	4.06	75°	7.24	1320	3/8~16
3900-5014	MT4	**1.25**	**4.00**	2.06	75°	8.11	1760	5/8~11
3900-5012	MT4	**1.37**	**5.05**	2.45	75°	7.60	1760	5/8~11
3900-4998	MT4	**1.38**	**6.00**	4.11	75°	8.15	1760	5/8~11
3900-4999	MT4	**1.57**	**8.00**	4.82	75°	8.86	3520	5/8~11
3900-5000	MT4	**2.24**	**10.00**	5.96	75°	10.00	2640	5/8~11
3900-5016	MT5	**1.26**	**4.75**	2.40	75°	9.09	3000	3/4~16
3900-5013	MT5	**1.38**	**6.00**	3.20	75°	8.75	3000	3/4~16
3900-5017	MT5	**1.57**	**8.00**	4.84	75°	9.92	3000	3/4~16
3900-5018	MT5	**2.24**	**10.00**	5.96	75°	10.00	2640	3/4~16
3900-5019	MT6	**1.57**	**8.00**	4.25	75°	12.60	3500	1~8

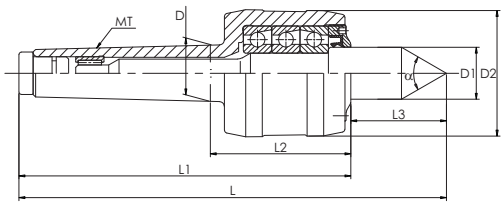
Pro-Series HIGH SPEED CNC LIVE CENTERS

NEW



- With 60° included angle.
- Designed for high speed on N/C lathe
- Point is high-carbon alloy steel and heat treated.
- Bearings permanently lubricated
- Body is hardened for extra strength and extra rigidity

≤ .0002" TIR

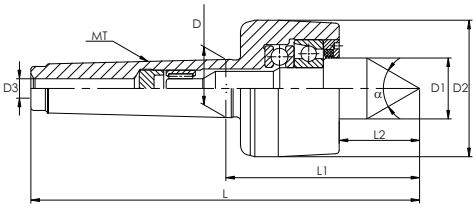


HHIP PRO-SERIES

Item#	Morse Taper	D	D1	D2	(Inch) α	L	L1	L2	L3	Max. RPM	W.t. lbs
3901-7002	2	0.700	0.71	1.7	60°	5.5	4.5	1.91	0.96	8000	1.9
3901-7003	3	0.938	0.87	2.1	60°	7.1	5.5	2.34	1.59	8000	2.9
3901-7004	4	1.231	1.10	2.5	60°	8.6	7.9	2.93	1.72	6000	4.6

Pro-Series MEDIUM-DUTY CNC LIVE CENTERS

- With 60° included angle.
- Designed for long life, medium duty on N/C lathe.
- Point is high-carbon alloy steel and heat treated.
- Bearings permanently lubricated.
- Body is hardened for extra strength and extra rigidity.





NEW

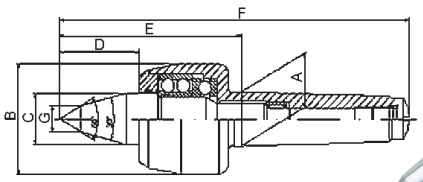
Item#	Morse Taper	D	D1	D2	(mm) α	L	L1	L2	Max. RPM	Load Rate Lbs.	W.t. lbs
3901-7013	3	23.83	24.8	56	60°	171	91	45	4000	660	2.2
3901-7014	4	31.27	28.0	63	60°	201	99	50	3000	1320	3.8
3901-7015	5	44.40	40.7	83	60°	265	135	73	2500	3300	8.8

≤ .0003" TIR

HHIP PRO-SERIES

PRECISION EXTENDED LIVE CENTERS

- Suitable for medium/high speed application
- Ball bearings construction
- Made of alloy steel and hardened to 58-62 RC
- Dustproof seal on the front end to prevent the entry of cutting fluid and dust





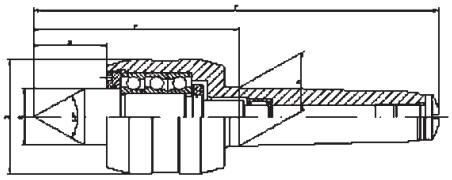
≤ .0002" TIR

Item#	Morse Taper	Nose Length	OAL	Max. RPM	Load Rate (Lbs)
3900-5024	2	1.16"	6.14"	5000	260
3900-5025	3	1.25"	7.25"	4000	660
3900-5026	4	1.44"	8.45"	3500	1100
3900-5027	5	1.78"	10.35"	2500	2200

HIGH SPEED CNC LIVE CENTERS

- With 60° included angle.
- Made of hardened tool steel and precision ground.
- Two special designed high-quality bearings.
- Complete protection of bearings from the ingress of coolant, dirt or swarf.
- Spindle heat treated to HRC 60.

≤ .0002" TIR





Type A



Type B

Morse Taper	Max. RPM	Load Rate Lbs.	Type A Item#	Type A Nose Length	Type A OAL	Type B Item#	Type B Nose Length	Type B OAL
3	6000	550	**3900-5037**	1.16"	6.5"	**3900-5047**	1.75"	7.3"
4	5000	880	**3900-5038**	1.48"	8.2"	**3900-5048**	2.00"	9.0"
5	4000	1760	**3900-5039**	1.81"	10.0"	**3900-5049**	2.50"	10.8"

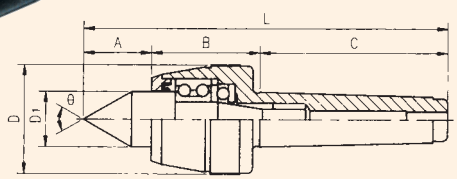
Pro-Series HIGH SPEED CNC LIVE CENTERS

- With 60° included angle.
- Designed for long life, high speed on N/C lathe
- Point is high-carbon alloy steel and heat treated.
- Bearings permanently lubricated
- Body is hardened for extra strength and extra rigidity

≤ .0002" TIR



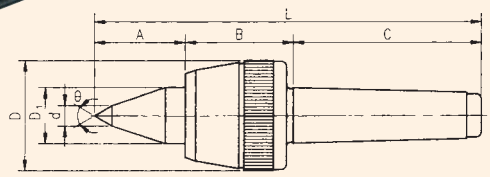
A TYPED
ACCURACY .0002"



HHIP PRO-SERIES



B TYPED
ACCURACY .0002"



MADE IN TAIWAN

Item#	Morse Taper	Type	A	B	C	D	(Inch) D1	b	OAL	d1	Load Rate lbs.	Max. RPM	W.t. lbs
3900-5033	3	A	1.54	2.17	3.39	2.09	1.18	---	7.09	0.47	200	4000	2.8
3900-5034	4	A	1.65	2.44	4.25	2.48	1.26	---	8.35	0.47	360	3000	4.8
3900-5035	5	A	2.24	2.80	5.35	3.27	1.57	---	10.40	0.71	800	2500	9.5
3900-5043	3	B	1.77	2.17	3.39	2.09	1.18	0.393	7.32	0.47	200	4000	2.8
3900-5044	4	B	2.05	2.44	4.25	2.48	1.26	0.472	8.74	0.47	360	3000	4.8
3900-5045	5	B	2.64	2.80	5.35	3.27	1.57	0.551	10.79	0.71	800	2500	9.7

Pro-Series PRECISION CONCENTRICITY CHECKER



- Suitable for measuring concentricity, roundness and deviation with high accuracy.
- Metal base can be easily attached a magnetic base
- Measuring Range: 0.059~0.980"/1.5~25 mm diameter.
- Device Dimension: 10.5 L x4.5 W x 5" H.
- Accuracy: 0.00008"/ 0.002mm.
- Max. length to hold a parts: 4"

4401-1001

MADE IN TAIWAN

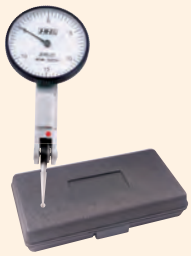


MINI UNIVERSAL MAG BASE
W/FINE ADJUSTMENT

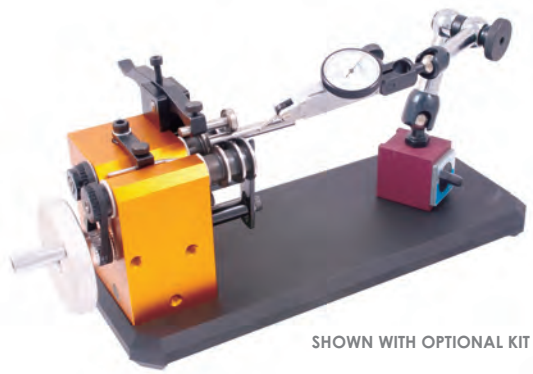


Accuracy: 0.00008"/ 0.002mm.

.0005 GRADUATION
0-0.03" RANGE TEST INDICATOR



Base&Indicator Kit
4400-0027
With Fitted Case

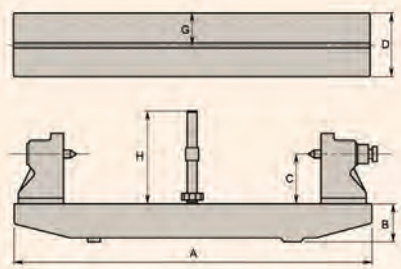


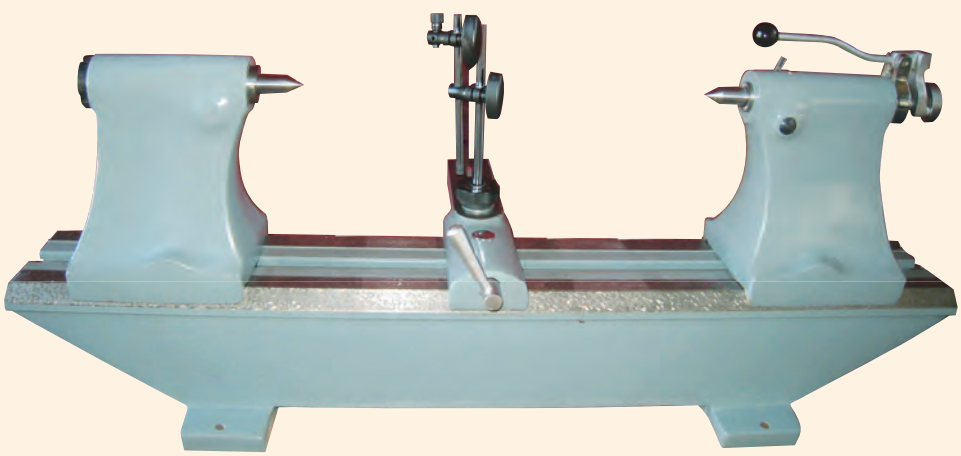
SHOWN WITH OPTIONAL KIT

HEAVY-DUTY PRECISION BENCH CENTERS

- Centers are hardened and precision ground.
- Quick-release centers.
- Hand scraped ways, adjustable gibes.
- MT2 live center.
- Heavy duty adjustable indicator holder included.
- Indicator holder included and accepts most of AGD indicators.
- Head stock can be adjusted lengthwise and locked securely with special lever type handle.

23.5"
(Center to Center)
4401-0024





Item#	OAL A	Center to Center	Max. Swing C	B	D	G	H	Accuracy Run-out	Weight (Lbs.)
4401-0023	36"	19"	5.25"	6.3"	5.5"	2.76"	7.9"	0.00015"	240
4401-0024	40"	23.5"	5.25"	6.3"	5.5"	2.76"	7.9"	0.00015"	440
4401-0025	56"	39"	8.50"	6.3"	5.5"	2.76"	7.9"	0.00018"	620

Pro-Series 2-WAY ULTRA PRECISION PUNCH FORMER

- FINE-TUNING function punch former has stronger compact structure for longer durability.
- Vertical & horizontal adjustment function is particularly suitable for oval punch grinding.
- V-block clamping can accurately stabilize workpiece and vertial fine-tuning can make setting center easy
- High precsion double bearings help achieve higher accuracy, rigidity and stability
- Stopper design in position slot allows for easy & precisely stabilizationfor polygonal punches
- Dust-proof and water resistance

3800-5007

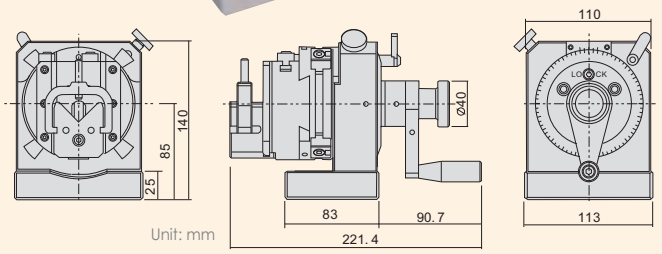
Punch Forming Applications



MADE IN TAIWAN



HHIP PRO-SERIES



SPECIFICATIONS	
Center Height	3.35 +/- 0.02", 85 +/- 0.5mm
Clamping Dia. Range of V-block	0.12~1.18"/ 3~ 30mm
Travel of V-block	1.77"/ 45mm
Slide plae horiztonal Movement	+/- 0.71"/18mm
Indexer Number of tooth & Accuracy	24, 15 deg. +/-10"
Clamping Accuracy (50mm)	0.0002"/ 0.005mm

ER COLLET PUNCH FORMER

- Clamps workpiece quickly and steadily when processing.
- Clamping diameter: .0787~.787".
- Utilized with ER32 spring collet.

3800-6808



INCLUDES: 7PC ER-32 COLLET
1/8, 1/4, 5/16, 3/8, 1/2, 5/8, 3/4

Pro-Series PRECISION PUNCH GRINDER

- Can be used on the surface of grinding machine for round punches (0.12" ~ 1.18" dia.).
- Punches can be ground by putting among three rollers of punch grinder without checking the center.
- Accuracy of Roller (Turning Right or Left): 0.0002"
- Accuracy of Point A (Turning): 0.000197"
- Accuracy of Point B (Turing): 0.00031"

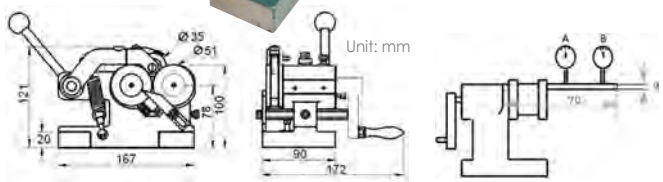
HHIP PRO-SERIES

3600-0037



MADE IN TAIWAN

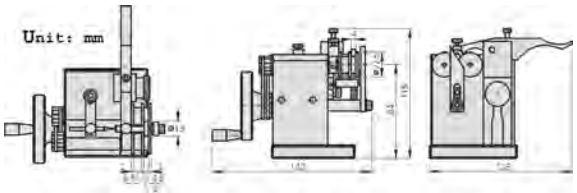
0.12~1.18" DIA. CAPACITY



Pro-Series PRECISION SMALL PUNCH GRINDER

- Punch grinder can be placed on the bed of surface grinder for automatic precision cylindrical grinding.
- Punch grinder rollers are used to adjust the workpiece before grinding.
- Workpiece is turned with a crank handle.

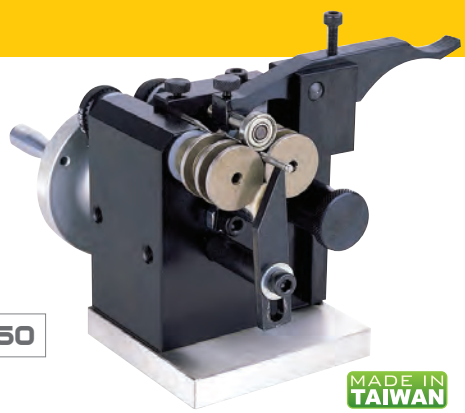
SPECIFICATION	
Accuracy of the rollers:	within 0.0002"
Diameter of punches can be ground:	0.020~0.236"/0.5~6.0mm
Net Weight:	6 lbs.



0.020~0.236" DIA. CAPACITY

HHIP PRO-SERIES

3800-5150



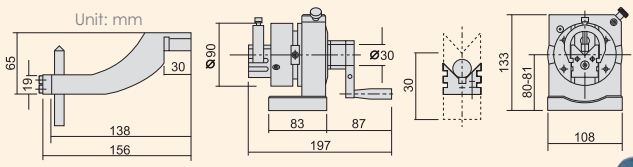
MADE IN TAIWAN

PUNCH FORMER & WHEEL DRESSERS

Pro-Series PUNCH FORMER & RADIUS DRESSER

- For concave and convex radius.
- Hardened tool steel construction.

3600-0371



HHIP PRO-SERIES

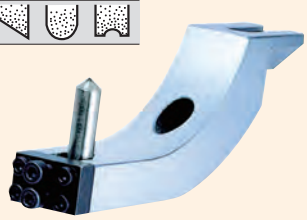
SPECIFICATION	
Max. dia. workpiece	1-1/4"
V-block	1-3/16"
Tangential travel (either side of center)	25/32"
V-block adjusting system	rack & pinion
Center height	3-1/2"
Indexing div	24 every 15L ±10 seconds
Roundness	0.0001"
Parallelism	within .0001" in 4"
Squareness	within .0002" in 4"
Graduation	360°
Max. Convex/Concave	1.89/3.94"
Min. Convex/Concave	0.012

Punch forming applications

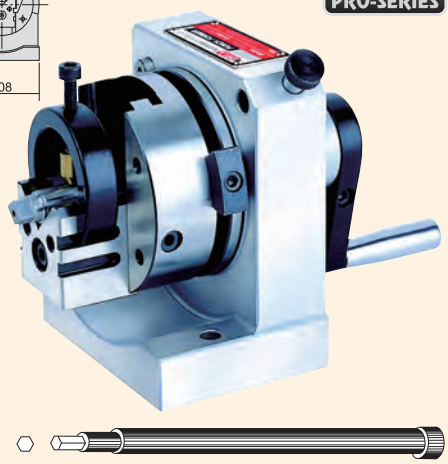


Grinding wheel dressing application





MADE IN TAIWAN



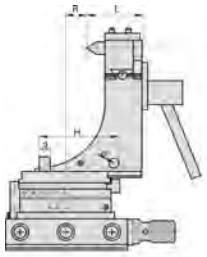
REPLACEMENT DIAMOND ON PAGE 267

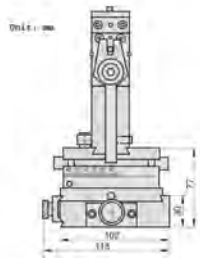
Pro-Series UNIVERSAL WHEEL DRESSER

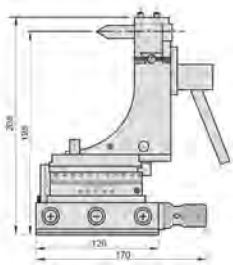
GRINDING WHEEL APPLICATIONS



- Adaptable on surface grinding machine and universal tool grinder for dressing grinding wheels into various shapes.
- Extremely accurate.







HOW TO CALCULATE

H = L = "0" R
H - Distance between two locating pins(as picture shows)
R - Radius of arc surface to be dressed
L - Distance from tip of diamond to base plate

To dress convex arc surface: H=L+R
To dress concave arc surface: H=L-R

MADE IN TAIWAN

HHIP PRO-SERIES

3800-5210

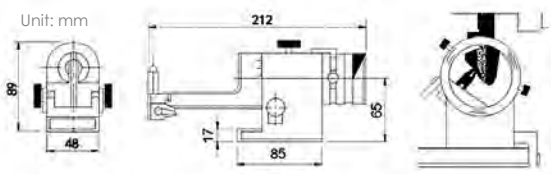


SPECIFICATION	
Center Height:	7.68"/195mm
Pin Diameter:	0.394"/10mm
Max. Swing Distance of Diamond Dresser:	±0.55"/14mm
Max. Wheel Diameter:	7.87"/200mm
Reading Accuracy of Turret Index:	5'
Max. Translation of Feed:	0.98"/25mm
Feed Graduations of Handle Scale:	0.0003"/0.01mm

REPLACEMENT DIAMOND ON PAGE 267

Pro-Series VISI - DRESS RADIUS AND ANGLE DRESSER

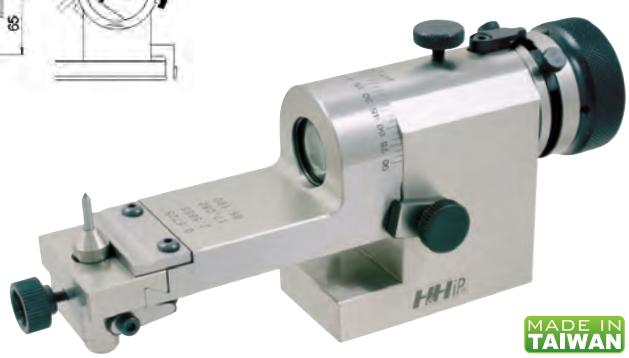
- 1° Vernier markings for dressing angles.
- Magnification through hole in the spindle, makes it possible to see how to dress the form on the grinding wheel.
- Dresser is tested and guaranteed for accuracy.



3900-0060

HHIP PRO-SERIES





MADE IN TAIWAN

SPECIFICATION	
Overall Height	4"
Length	8-1/4"
Swing Arm	180°
Max. Size Grinding Wheel	8"
Max. Outside Radius (on wheel approx..)	5/8"
Max. Inside Radius (on wheel approx..)	1"
Spindle	1" O.D.
Weight	11 lbs

REPLACEMENT DIAMOND ON PAGE 267

Pro-Series PRECISION SINE DRESSER

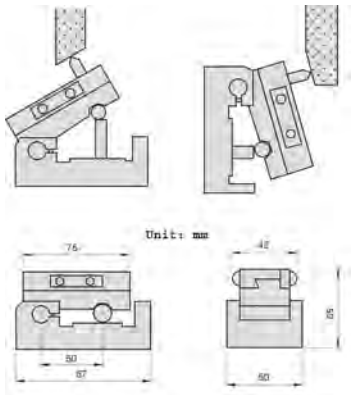
- Combination sine system and crossfeed for dressing grinding wheels at precise angles.

HHIP PRO-SERIES

3800-5240

SPECIFICATION	
Range of Angles:	0~60°
Distance of Rolls Center to Center:	2"
Accuracy:	within 0.0002"
Net Weight:	3.5 lbs.





USE 3/8" DIAMOND DRESSER (not included)

REPLACEMENT DIAMOND ON PAGE 267

Pro-Series RADIUS AND ANGLE DRESSER

- Perfect for outside, inside diameter and surface grinding operations.
- Extreme accuracy and versatility is assured with dual purpose knob for radii and angular movements.
- Unique design features a fast, easy and accurate radius setting with included setting gauge.
- Stop feature available for concave and convex radii.
- Lapped moving parts and adjustable gibs take up future wear.

GRINDING WHEEL APPLICATIONS

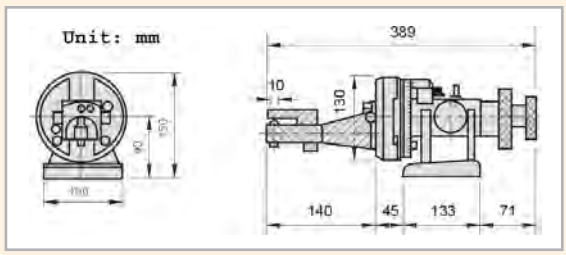


MADE IN TAIWAN

3800-5225

27 lbs.





SPECIFICATION	
Max. Diameter of Wheel:	12"
Convex Radii:	0~2.36"
Concave Radii:	0~5.90"
Tangent Travel Either Side of Center:	1.95"
Center Line of Dresser:	3.40"
Resolution of Vernier Reading:	6'
Overall Length:	15.30"
Overall Height:	5.90"
Net Weight (lbs.):	27

REPLACEMENT DIAMOND ON PAGE 267

MAX. VARIATION	
Face Plate to Dresser Arm Squareness (per 2"):	0.0005"
Face Plate to Base Squareness:	0.0006"
Center Runout of Dovetail Groove to Wheel Center:	0.0006"

Pro-Series RADIUS AND ANGLE DRESSER

GRINDING WHEEL APPLICATIONS



3800-5227

26 lbs.

MADE IN TAIWAN



Limited Supply!

REPLACEMENT DIAMOND ON PAGE 267

- Positive setting of the diamond to absolute center with the special gauge included with the dresser.
- Simple, fast, accurate redius setting; no height gauge or other set-up aids required. Radius is set on the grinder by measuring over the two pins or by inserting a gauge block, as shown, for direct reading. Inside or outside radius is determined simply by sliding the dowel pin to the right for concave and to the left for convex.
- 4x90 o graduation in full 360 ocircle. 6 minute vernier reading.
- One push-pull type knob for radius and angle control and for safer and faster operations.
- ACCURACY, extremely close tolerances are held in the manufacture of this tool, assured by hardening and precision grinding of all critical parts. Ways are chrome hardened.
- ECONOMY, set-up & dressing time reduced to a bare minimum due to simplicy.

SPECIFICATION	
Max. Diameter of Wheel:	10"
Convex Range:	0.8R~40R
Concave Range:	0~40R
Max. Wheel Extending Diameter:	14.8"
Overall Length:	13"
Overall Height:	6.3"
Net Weight (lbs.):	26

DIAMOND WHEEL BRAKE TRUING DRESSER

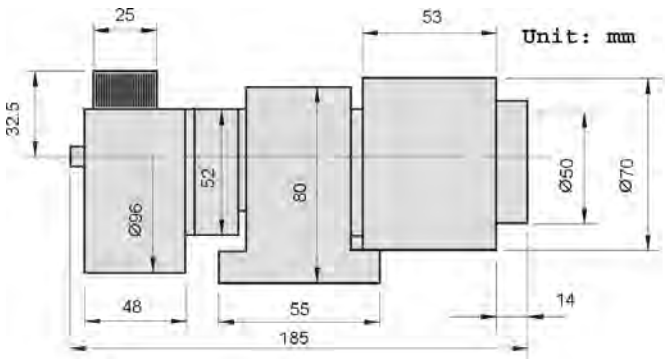
- For truing diamond and CBN wheels.
- Provides continuous contact between diamond wheel and workpieces.
- Designed for truing cup and peripheral wheels on machines with a horizontal and vertical spindle.
- Rigid structure with durable life.

3800-5250

HHIP PRO-SERIES

MADE IN TAIWAN





Replacement Grinding Wheel(3x1x1/2")(Item #3800-5252)

VM CONVEX RADIUS DIAMOND DRESSERS

- Concentric radius tools
- Special octahedron diamonds for fine work

3/8 X 2" SHANK



GRADE AAA 90°
3900-0097

SINGLE POINT DIAMOND DRESSERS



Carat (Approx.)	3/8x3" Item#	7/16x3" Item#
1/4	3900-0072	3900-0082
1/3	3900-0073	3900-0083
1/2	3900-0074	3900-0084
3/4	3900-0075	3900-0085
1	3900-0079	3900-0090

Pro-Series MOTORISED BRAKE TRUING DRESSER

How To:

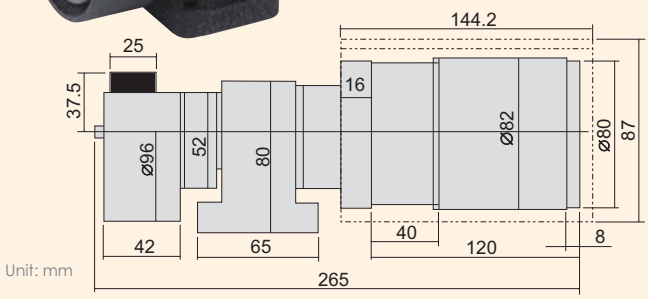
- Mount the device with it's wheel spindle parallel to the spindle of the straight wheel being trued. For cylinder or cup wheels, mount perpendicular to their spindle. The correct wheel specification is determined by the grit size and bond type of the diamond wheel being trued.
- Bring the diamond wheel and the truing wheel together until they almost touch. Turn on the diamond wheel (at normal grinding speed). At the point of contact, bring the two wheels together until they just touch. Be sure that the truing wheel is turning in the same direction as the diamond wheel. Switch on the Power Dresser.
- The Power Dresser device is always used dry. Traverse the Power Dresser back and forth at 30 to 60 inches per minute. Downfeed .0005" to .001" at the end of each traverse. The truing wheel should run off the diamond wheel after each traverse to avoid chipping the edges of the diamond wheel. During the last few passes, reduce the downfeed to .00025" per pass.
- When using the Power Dresser truing device, the only movement between the two wheels is traverse. Do not operate the work table on a rotary or reciprocating table traverse surface grinder.
- When the truing operation has been completed, there will be a smooth, continuous contact and firing throughout each traverse stroke. Visual inspection of the diamond section will show an even appearance around the wheel. A reading with a dial indicator will show no runout.

- THIS MOTORIZED POWER DRESSER IS DESIGNED FOR THE USE OF TRUING THE PERIPHERY AND THE FACE OF LARGER DIAMOND, CBN AND SUPERABRASIVE WHEELS. IT CAN BE MOUNTED ON ALMOST ANY GRINDING MACHINE USING EITHER A MAGNETIC CHUCK TABLE OR MOUNTED WITH SCREWS TO A FIXTURING DEVICE. CONSTRUCTED OF CAST IRON AND STEEL, IT IS VERY RUGGED AND DURABLE.
- For exceptionally good finishes,
- THIS DEVICE OPERATES AT 120 RPM
- Power Supply: 110V/60Hz/ I Phase
- Dimensions: 105" x 5"x 3.5"
- Net Weight: 13 lbs

3800-5251

MADE IN TAIWAN





CONVEX RADIUS DIAMOND DRESSERS



Item#	Radius
3900-0077	.125-.250"
3900-0078	.250" & Up

3/8 X 2" SHANK
OCTO STYLE

CONCAVE RADIUS DIAMOND DRESSERS



3/8 X 2" SHANK
GN STYLE

Item#	Radius
3900-0086	.010"
3900-0087	.015"
3900-0088	.020"

PERMANENT MAGNETIC SINE BAR

SPECIFICATION
Base Magnetic Power:.....8 lbs.
Parallelism:.....within 0.0001"
Squareness:.....within 0.0002"
Distance between Roll Centers:....2"
Rolls Accuracy:.....+ 0.00008"
Overall Length:.....3"

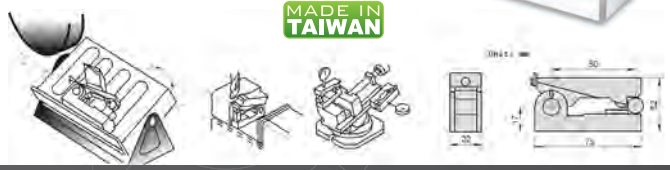
- Designed for any machine on angular testing.
- Magnetic base with permanent power pull
- Hardened and precision ground HRC 56~68.

HHIP PRO-SERIES

3800-5410

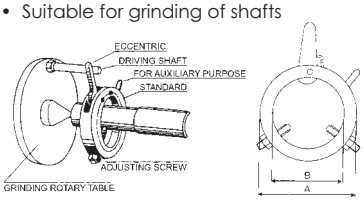


MADE IN TAIWAN



GRINDING DRIVING CARRIERS

- Suitable for grinding of shafts
- Easy attach and detach.
- Precision Steel Castings.





Item#	Capacity Diameter
2420-0014	.24~ .55"
2420-0024	.51~ .91"
2420-0033	.79~ .1.30"
2420-0042	1.22~ 1.65"

Sopko Style GRINDING WHEEL ADAPTER

- 1" diameter at large end of taper
- Hardened and ground
- Heat treated nuts
- For 1-1/4" I.D. wheels

MADE IN TAIWAN



Item#	Wheel Width	Thread
2420-0320	1/4~3/4	1-1/4"-16(LH)

Tatung-Okuma GRINDING MACHINE WHEEL ADAPTER

- Hardened and ground
- Heat treated nuts
- For 1-1/4" I.D. Wheels
- Adapter O.D.: 3"
- Balance adjustable
- Wheel width capacity: 1/4 to 3/4"
- 1" diameter at large end of taper hole 1-1/4"-16 thread
- Heat treated and precison ground

MADE IN TAIWAN



Item#	Wheel Width	Thread
2420-0350	1/4~3/4	LH

Pro-Series PARALLEL WHEEL DRESSER

NEW

- For dress/fix the flat shape grinding wheel.
- Smallest feed scale: 0.01mm.
- Slide movement 35mm
- Axial movement 58mm
- Smooth movement
- Use diamond pin: 10 mm diameter x 35mm Long

3800-5228



MADE IN TAIWAN

Diamond Pin 10mm(Dia.) x 35mm(L) (3900-0095)

ADJUSTABLE DRESSER

- Use on all grinding machines.
- Dress overall diameter and face of wheel.
- Max. Height: 7"
- Dress Width: Any size.



3900-0056

3/8" Shank Dresser Included

F450 GRINDING WHEEL ADAPTER

- F450 is used in cylinder of US standard grinding machines
- Hardened and ground.
- For 1-1/4" I.D. grinding wheels.
- Wheel width capacity: 1/4 to 3/4"
- 1" diameter at large end of taper hole





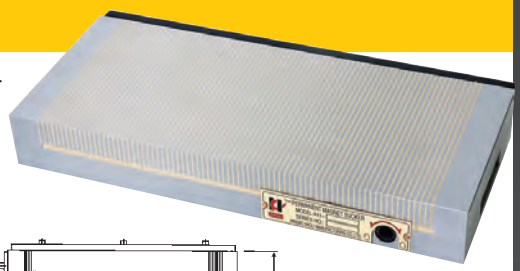
MADE IN TAIWAN

2420-0352

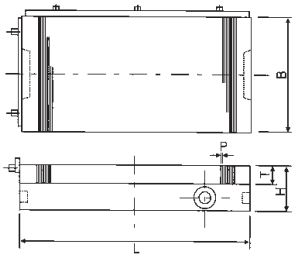
PERMANENT MAGNETIC CHUCKS

PERMANENT MAGNETIC CHUCKS-Standard Pole

- Can be used for processing various magnetic conduction work pieces.
- For surface grinder, tool grinder, EDM and other applications.
- Chucks are sealed and lubricated to be maintenance free.
- Magnetic force ON/OFF switch.
- Ceramic dense magnets for superior holding power.
- Removable handle.



Item#	Table Length L (mm)	Table Width B (mm)	Table Height H (mm)	T (mm)	P	Weight (lbs)
3402-0838	450	200	53	22	1+3	87
3402-0839	500	200	53	22	1+3	92
3402-0840	600	200	53	22	1+3	110
3402-0844	400	250	58	23	1+3	100
3402-0848	450	250	58	23	1+3	113
3402-0850	500	250	58	23	1+3	125
3402-0852	600	250	58	23	1+3	150
3402-0858	500	300	58	23	1+3	150
3402-0860	600	300	58	23	1+3	169



REGULAR POLE

NEW

Pro-Series PERMANENT MAGNETIC CHUCKS-Standard Pole

NEW

- Can be used for processing various magnetic conduction work pieces.
- For surface grinder, tool grinder, EDM and other applications.
- Chucks are sealed and lubricated to be maintenance free.
- Magnetic force ON/OFF switch.
- Ceramic dense magnets for superior holding power.
- Removable handle.

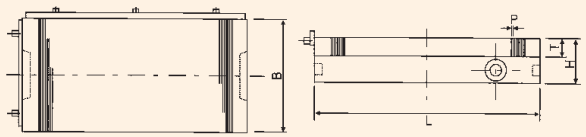
SIDE MAGNETIC FORCE 18KG, PLATE CENTER 26KG

SUIT FOR WORK PIECE THINCKNESS > 3MM LENGTH > 25MM



REGULAR POLE

Item#	Table Size	A	B	(mm) C	D	Pole P	G	E	H	Weight (lbs)
3402-1801	4 x 7"	100	175	146	20	8(2+6)	85	187	50	16
3402-1802	5 x 10"	125	250	206	20	8(2+6)	85	262	50	33
3402-1803	6 x 12"	150	300	256	20	8(2+6)	85	318	50	41
3402-1808	6 x 18"	150	450	406	20	8(2+6)	85	468	50	61



PERMANENT MAGNETIC CHUCKS-Fine Pole

- Can be used for processing various magnetic conduction work pieces.
- For surface grinder, tool grinder, EDM and other applications.
- Chucks are sealed and lubricated to be maintenance free.
- Ceramic dense magnets for superior holding power.
- Removable handle.

FINE POLE

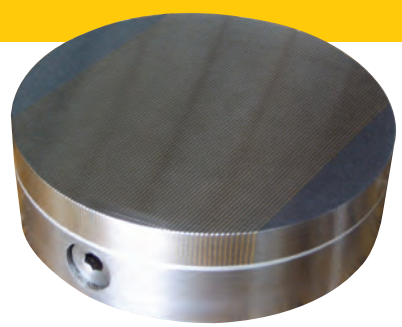


Item#	Table Size W x L	Pole Height	Table Height	Pole Spacing	W.T. (lbs)
3402-0801	4 x 7"	0.70"	1.60"	1/16 x 1/32"	19
3402-0802	5 x 10"	0.70"	1.60"	1/16 x 1/32"	35
3402-0803	6 x 12"	0.70"	1.60"	1/16 x 1/32"	47
3402-0804	6 x 18"	0.70"	1.60"	1/16 x 1/32"	65
3402-0806	8 x 18"	0.87"	1.97"	1/16 x 1/32"	130
3402-0807	8 x 20"	0.87"	1.97"	1/16 x 1/32"	140
3402-0805	8 x 22"	0.87"	1.97"	1/16 x 1/32"	150

FINE POLE ROUND MAGNETIC CHUCKS

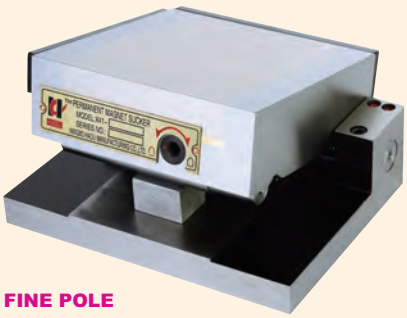
- Chucks are sealed and lubricated to be maintenance free.
- Ceramic permanent magnets for superior holding power.
- Bottom surface with tapped holes with counterbores for convenient mounting.
- Handle is removable for turning on/off magnet.

FINE POLE



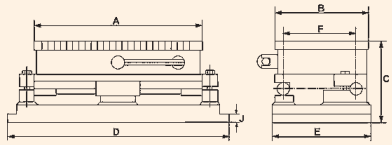
Item#	Size	Height	Pole Spacing	W.T. (lbs.)
3402-0822	6"	2-15/16	1/16 x 1/32"	18
3402-0824	8"	3-1/8	1/16 x 1/32"	29
3402-0828	12"	3-5/16	1/16 x 1/32"	65

FINE POLE MAGNETIC SINE PLATE



FINE POLE

- Ceramic dense permanent magnets plate provide extreme power up to 100 lbs.
- Fine pole spacing works for both thick and thin parts.
- Rigid angles lock strap capacity 0~60° (Accuracy 5" /per 15°).
- Hardened side and back rolls included.
- Made of high grade steel hardened to 55~62 RC and ground.
- Removable On/Off handle included.
- Gross Weight: 35 lbs.



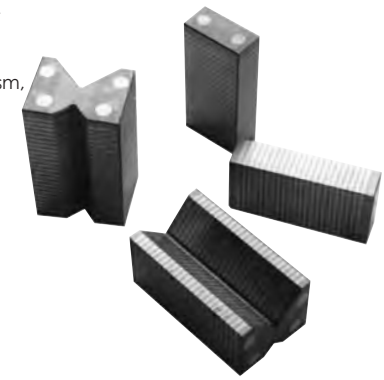
3402-0810

Size AxBxC	Rolls Center F	Pole Spacing	Square & Parallel	D	E
6 x 6 x 4"	100mm	1/16 x 1/32"	.0003"	8"	6"

MAGNETIC V-BLOCKS & PARALLELS

- Universal-holds in any direction on the magnetic chuck.
- Aluminum cast.
- Ground all over.
- Blocks transmit magnetism, they are not magnetic.

USE ON MAGNETIC CHUCK



V-BLOCK & PARALLELS KIT
3402-0013
Item 3402-0006 & 3402-0009

V-BLOCKS:
- 90° Vee Capacity: Small Vee-1/2" , Large Vee-2"

	Item#	Length	Width	Height
SINGLE 90° V-BLOCK	3402-0007	4-3/8"	2-3/8"	1-7/8"
MATCHED PAIR 90° V-BLOCK	3402-0006	2"	2-3/8"	1-7/8"
MATCHED PAIR PARALLELS	3402-0009	4"	2"	1"

6x6 ULTRA PRECISION SINE PLATE

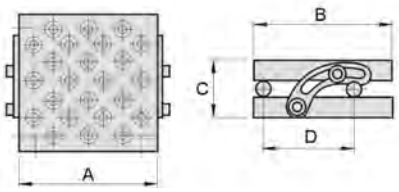


- Made of high grade tool steel hardened and precision ground HRC 55~58.
- Two hardened side rails and one locking strap included.

HHIP PRO-SERIES

3900-5526
MADE IN CHINA

3800-5526
MADE IN TAIWAN



SPECIFICATION

Capacity:	0~60°
Squareness:	within 0.0002"
Parallelism:	within 0.0002"
Center Distance of Rolls Accuracy:	within 0.0002"
Minute Angle Step on Gage Block Roll:	0.200"
Tapped holes:	1/4"-20 UNC
Size (B x A)	6" x 6"
Height (C)	2.36
Center Distance of Rolls (D)	5"
No. of Tapped Hole	24
Wt.(lbs.)	18

MAGNETIC CHUCK CONTROLLER

- Suitable for standard type of electric magnetic chucks
- Precisely adjust the magnetic force of electric magnetic chucks
- **Current capacity up to 5A**
- Demagnetizing Time: 6-15 seconds.
- Dimension: 8 Lx5.4 Wx 5" H
- **Input: AC 110V/I phase**
- **Output: DC 0-100V**
- Weight: 8 lbs.



3012-5483

MAGNETIC CHUCK CURRENT ADJUSTER

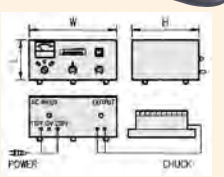
NEW

- Made for super powerful type of big electric magnetic chucks and could control two chucks at the same time.
- With current capacity of 20A, demagnetizing time is 8-15 seconds.
- Precisely adjust the magnetic force with indicate LED voltage and current.
- Built-in fan for radiating heat.
- Suitable for any kind of electric magnetic chucks.







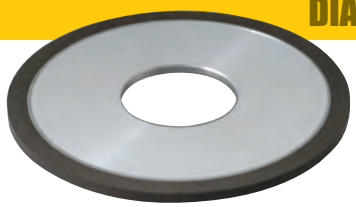


Item #	Input Voltage (Single Phase)	Output Voltage	W	L	H	W.T. (Lbs.)
3012-5484	220V AC	0-120V DC	15"	7.6"	11.5"	70

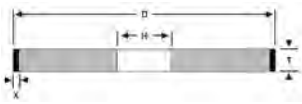
DIAMOND & CBN WHEELS

STRAIGHT STYLE DIAMOND & CBN WHEELS

STYLE D1A1



- 100% concentration.
- Arbor Hole: 1-1/4" (H)



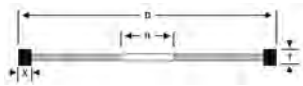
Wheel Diameter D	Wheel Thickness T	Diamond Depth X	Diamond (150 Grit) Item#	CBN (120 Grit) Item#
4"	1/16"	1/8"	2400-4062	2400-4063
4"	1/8"	1/8"	2400-4125	2400-4126
4"	1/4"	1/8"	2400-4250	2400-4251
5"	1/8"	1/8"	2400-5125	2400-5126
5"	1/4"	1/8"	2400-5250	2400-5251
6"	1/16"	1/8"	2400-6062	2400-6063
6"	1/8"	1/8"	2400-6125	2400-6126
6"	1/4"	1/8"	2400-6250	2400-6251
6"	3/8"	1/8"	2400-6375	2400-6376
6"	1/2"	1/8"	2400-6500	2400-6501
7"	1/4"	1/8"	2400-7250	2400-7251
7"	3/8"	1/8"	2400-7375	2400-7376
7"	1/2"	1/8"	2400-7500	2400-7501

D1A1R DIAMOND & CBN CUT-OFF WHEELS



- Arbor hole: 1-1/4" (H)

STYLE D1A1R



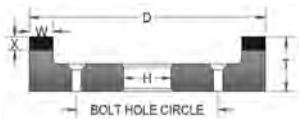
Wheel Diameter D	Thickness T	Diamond (150 Grit) Item#	CBN (120 Grit) Item#
4"	.035"	2401-4035	----------
5"	.035"	----------	2401-5036
6"	.035"	2401-6035	2401-6036
6"	.045"	2401-6045	2401-6046
8"	.045"	2401-8045	----------

6A2C DIAMOND & CBN PLAIN CUT WHEELS

- With countersunk bolt holes
- Mount on popular 6" carbide grinders
- Use for off-hand grinding on brazed tipped carbide single point turning tools.
- Back Thickness: 7/16"
- Arbor Hole : 1-1/4"(H)

STYLE 6A2C





75% CONCENTRATION

Wheel Diameter D	Wheel Thickness T	Diamond Width W	Diamond Depth X	Diamond (150 Grit) Item#	CBN (120 Grit) Item#
6"	3/4	1/2	1/16	2403-6502	----------
6"	3/4	3/4	1/16	2403-6752	----------
6"	3/4	1	1/16	2403-6998	2403-6999

100% CONCENTRATION

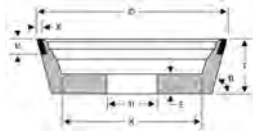
Wheel Diameter D	Wheel Thickness T	Diamond Width W	Diamond Depth X	Diamond (150 Grit) Item#	CBN (120 Grit) Item#
6"	3/4	3/4	1/8	2403-6500	2403-6501
6"	3/4	1	1/16	2403-6750	2403-6751

D11V9 FLARING CUP DIAMOND & CBN WHEELS



- 100% concentration.
- Arbor Hole: 1-1/4" (H)
- For tool and cutter applications including sharpening of end mills, reamers, milling cutters and broaches.

STYLE D11V9



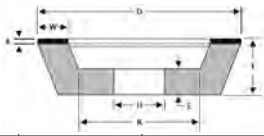
Wheel Diameter D	Wheel Thickness T	Diamond Depth X	Back Thick E	B	Diamond (150 Grit) Item#	CBN (120Grit) Item#
3-3/4"	1-1/2	1/8	3/8	70°	2404-4125	2404-4126
5"	1-3/4	1/16	1/2	70°	2404-5062	2404-5063
5"	1-3/4	1/8	1/2	70°	2404-5125	2404-5126

D11A2 FLARING CUP DIAMOND & CBN WHEELS



- 100% concentration.
- Arbor Hole: 1-1/4" (H)

STYLE D11A2



Wheel Diameter D	Wheel Thickness T	Diamond Depth X	Rim Width W	Back Thick E	Diamond (150 Grit) Item#	CBN (120 Grit) Item#
3"	7/8	1/8	3/8	3/8	2405-3875	2405-3876
4"	1-1/4	1/8	1/2	1/2	2405-4250	2405-4251
5"	1-3/4	1/8	3/8	1/2	2405-5275	2405-5276

D12V9 DIAMOND DISH WHEELS

- 75% concentration
- Arbor hole: 1-1/4" (H)
- Diamond Grit: 150

STYLE D12V9





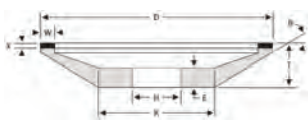
Wheel Diameter D	Wheel Thickness T	Diamond Depth X	Insert Length U	Back Thick E	B	Item#
4"	1/2	1/16	1/4	1/4	75°	2402-4062
4"	1/2	1/8	1/4	1/4	75°	2402-4125
6"	3/4	1/8	7/16	7/16	75°	2402-6125

D12A2 DISH DIAMOND & CBN WHEELS

- 100% concentration.
- Arbor Hole: 1-1/4" (H)

STYLE D12A2





Wheel Diameter D	Wheel Thickness T	Diamond Depth X	Rim Width W	E	B	Diamond (150 Grit) Item#	CBN (120 Grit) Item#
6"	1	1/8	3/16	1/2	30°	2406-6187	2406-6188
6"	1	1/8	1/4	1/2	30°	2406-6250	2406-6251
6"	1	1/8	3/8	1/2	30°	2406-6375	2406-6376

24" FLEXIBLE SHAFT HALOGEN LIGHT



- Powerful magnet base with bolt-on bracket.
- Flexible arm for any position adjustment.
- Halogen bulb included.
- Base can be mounted on any surface with bolts or screws.
- Power supply: 115V/ 60Hz/ 1 Phase.

BRIGHTNESS: 300 LUMENS

8401-0410

Spare Bulb(Item #8401-0411)

20" FLEXIBLE SHAFT HALOGEN LIGHT



- Powerful magnet base with On/Off switch
- Can be bolted on the table
- Power supply: 110v/60 hz/1 Phase 35 W

BRIGHTNESS: 300 LUMENS

8401-0415

Spare Bulb (Item 8401-0416)

25" LED WORKING LIGHT -On Magnetic Base



8401-0445

BRIGHTNESS: 250 LUMENS

- 18.5" gooseneck.
- Magnetic Base: 2-1/2x2" with On/Off switch, 150 lbs power pull.
- LED lights provide an excellent solution for heat intensive environment.
- Lasts 50 times longer than regular flashlights.
- 30 LED bulbs provides brighter and stronger natural light.
- Power Supply: 110V AC/ single phase.

22" LED WORKING LIGHT-Bolt On



- LED lights provide an excellent solution for heat intensive environment.
- 18" goose neck.
- Lasts 50 times longer than regular flashlights.
- 30 LED bulbs provides brighter and stronger natural light.
- Power Supply: 110V AC/ single phase.

8401-0443

BRIGHTNESS: 250 LUMENS

LED FLASH LIGHT W/MAGNETIC BASE



- Flexible shaft with universal movement.
- Max. reach: 8".
- Magnetic Base: 1-1/2" diameter, 25 lbs power pull.
- LED flash light can be removed from shaft.
- LED flash light requires 3xAAA battery.

8401-0440

BRIGHTNESS: 300 LUMENS

WORK LIGHT ON MAGNETIC BASE WITH FLEXIBLE ARM



8401-0050

MADE IN TAIWAN

- Powerful magnetic base with On/Off switch, holding power 180 lbs.
- Magnetic base dimension: 2-5/16 L x 2 W x 2" H
- Loc-line style flexible arm
- Use regular screw-on bulb(not included)
- Power Supply: 110V/1 Phase

8x LED LIGHT DESK TOP MAGNIFIER

BRIGHTNESS: 300 LUMENS

- 8x powerful magnifier in diopters
- Flexible arm any desired position adjustable
- Diameter of Visible Area: 5"
- Adjustable LED light with 300 LUX brightness, 2.5Watt.
- Power Supply: 110V/1 phase
- Furnished with 60" cord.

8070-0001





Replacement Bulb (8070-0004)

LAMP ON MAGNETIC BASE



- Powerful magnetic base with On/Off switch.
- Guaranteed power pull 130 lbs.
- Flexible arm for any position adjustment.
- 60 VA power rating.
- Power supply: 115V/ 60Hz/ 1 Phase.
- Uses regular screw-on bulb (not included).
- Base Dimension: 2-5/16" L x 2" W x 2" H

8401-0049

LED WORK LIGHTS

HALOGEN WORK LIGHT - WATERPROOF

- Totally enclosed lighting head provides well prevention for dust, coolant and lubricants.
- Efficient quartz halogen bulb (50W), great light output, soft illuminationg.
- Coil transformer built in base for directly connect to AC 110 V power .
- Furnished with 6 ft cord with plug.
- Full reach: 36"





Mounting Clamp
8401-0456



L Mounting Plate
8401-0455

CE CERTIFIED

MADE IN TAIWAN

BRIGHTNESS:
370~600 LUMENS

Work Light
8401-0452

HALOGEN MACHINE LAMP

- Waterproof and dustproof
- Suitable for all heavy-duty conditions subject to extreme effects by lubricant and coolant
- Lamp head made of lacquered aluminum
- Sturdy rod-arm with special joint and connection clamp in base
- Protective low voltage
- Regulation transformer 120V



Limited Supply!

8401-0417

BRIGHTNESS: 370~600 LUMENS

Spare Bulb 50W (Item #8401-0418)

5W WATERPROOF LED WORK LIGHTS

- LED lights (5 Watt) provide an excellent solution for heat sensitive environment.
- Lights head diameter: 2-3/8".
- Universal movement.
- 50,000 hours LED lifetime.
- Flux: 350Lm.
- Color temperature: 6500 K
- Power Supply: 110V AC/ 1 phase.
- Plug-in to turn on.

Bolt-On Mounting Plate:
2-3/8 x 2-3/8"



W/O Arm
Overall Height 8"
8401-0462

BRIGHTNESS:
350 LUMENS

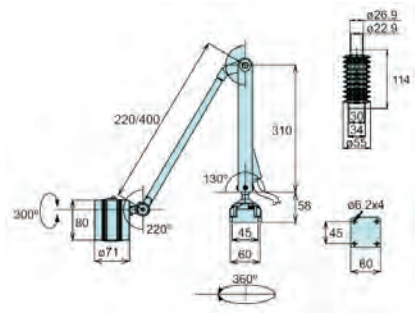
W/Swival Arm
Total 18" Length (8+9")
8401-0463

CONCENTRATE LED WORK LIGHTS-Bolt On

- Dust proof.
- Suitable for small CNC, engraving, sewing machine and heat sensitive environment.
- Flexible movement with folding arms.
- Built-in transformer
- Power consumption: 5.3W
- Input 110V AC, output 12V DC
- Sturdy rod-arm with special joint.

NEW





BRIGHTNESS: 330 LUMENS

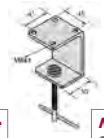
CE CERTIFIED

MADE IN TAIWAN

Item #	Arm Length Lxl	Use Bulb	W.T. Lbs.
8401-0481	220x310mm	6W	4.0
8401-0483	400x310mm	6W	4.5



L Mounting Plate
8401-0485



Mounting Clamp
8401-0486



Spare Bulb
8401-0488

7W WATERPROOF LED WORK LIGHT

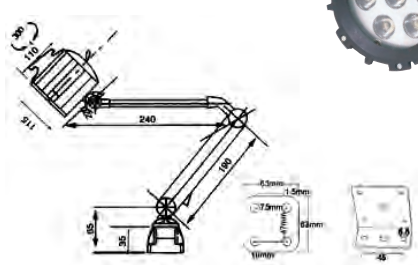
- LED lights (7 Watt) provide an excellent solution for heat sensitive environment.
- The head of light installed filter-able ultraviolet ray high temperature resisting glass and heat insulation structure
- Light head diameter: 4-3/8".
- Universal movement.
- 50,000 hours LED lifetime.
- Flux: 700Lm.
- Color temperature: 6500 K
- Power Supply: 110V AC/ 1 phase.
- Switch On/Off.

Bolt-On Mounting Plate:
2-3/8 x 2-3/8"

W/Swival Arm
Total 18" Length (8+9")
8401-0466

BRIGHTNESS: 700 LUMENS





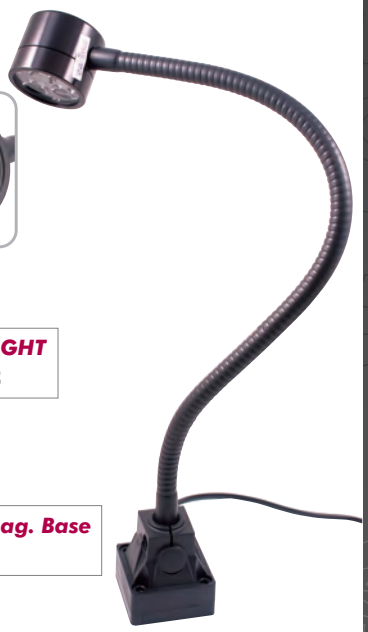
WATERPROOF LED WORKING LIGHTS

- LED lights provide an excellent solution for heat intensive environment.
- High Brightness with 330 Lumens
- Magnetic Base: 2 x2 " with 110 lbs power pull.
- 50,000 hours LED lifetime
- Arm Length: 20".
- Power Supply: 110V AC/ 1 phase.
- Bolt-On Mounting Plate: 2 x 2"

BRIGHTNESS: 330 LUMENS









Bolt on WORK LIGHT
8401-0448



Work Light on Mag. Base
8401-0449

WATERPROOF LED WORKING LIGHTS-Small Head

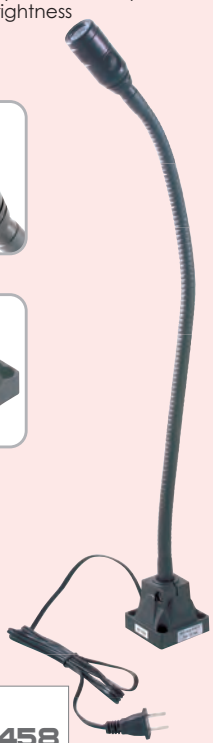
- LED lights (1.1 Watt) provide an excellent solution for heat sensitive environment.
- Small head (1.2" Diameter) with high brightness
- 50,000 hours LED lifetime
- Arm Length: 21.50".
- Power Supply: 110V AC/ 1 phase.

BRIGHTNESS: 110 LUMENS

NEW









Bolt on
8401-0458
Bolt-On Mounting Plate: 2-3/8 x 2-3/8"

With Mag. Base
8401-0459
Magnetic Base: 2-3/8 x 2-3/8" with 110 lbs power pull.

IP65 WATERPROOF HIGH FLUX LED MACHINE WORK LIGHTS

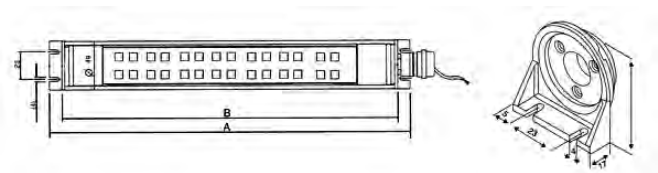
- Bright LED lights provide an excellent solution for heat sensitive environment.
- Color temperature: 6500 K.
- 50,000 hours LED lifetime.
- 4 slots (2 of each side) for bolt-on.
- Hardwire direct to your machine.

NEW









Item#	Input Voltage	Power	Length A/B(mm)	Flux Lm
8401-0477	24V	7.2 W	360/335	720
8401-0478	24V	11.2 W	560/535	1120
8401-0479*	110V	16.8 W	760/735	1680

***Plug Included**

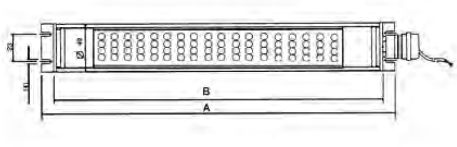
IP65 WATERPROOF LED MACHINE WORK LIGHTS

NEW

- LED lights provide an excellent solution for heat sensitive environment.
- Color temperature: 6500 K.
- 50,000 hours LED lifetime.
- 4 slots (2 of each side) for bolt-on.
- Hardwire direct to your machine.

24V VOLTAGE





Item#	Input Voltage	Power	Length A/B(mm)	Flux Lm
8401-0470	24V	3.5 W	250/225	33
8401-0471	24V	7 W	360/335	660
8401-0472	24V	10.5 W	560535	990
8401-0473	24V	14 W	760/735	1320

SAFETY SHIELDS & COOLANT SYSTEMS

MAGNETIC SAFETY SHIELD WITH ADJUSTABLE ARM



- Shield Size: 6 x 8"
- Reach: 12"
- Loc-Line style 3/4" hose, adjustable arm

4401–0516

SAFETY SHIELD W/MAGNETIC BASE

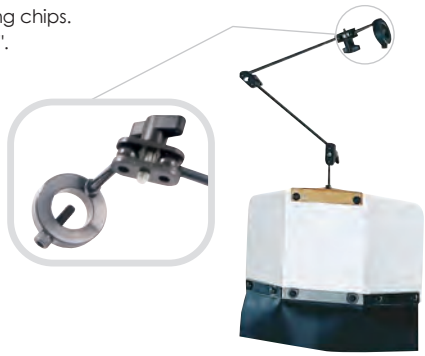


4401–0518

- Protects eyes from cutting chips
- Shield Dimension: 12 x 10"
- Magnetic base: 2.5 x 2 x 2".
- Permanent magnet with strong power pull 180 lbs..

SAFETY SHIELD W/UNIVERSAL ARM-Clamp On

- Protects eyes from cutting chips.
- Shield Dimension: 12 x 9".
- Maximum Reach: 21".
- Universal arm can be locked at any positions with 3 knobs.
- Clamp on a shaft or a round bar with 1" diameter or less.



4401–0519

SAFETY SHIELD W/DISC MAGNETIC BASE

- Protects eyes from cutting chips
- Universal movement.
- Positively locks all with unique locking mechanism.
- Shield Dimension: 12 x 8"
- Super power disc magnetic base: 2.6" dia. x 0.4" depth.



4401–0517

MULTI FUNCTION MIST COOLANT SYSTEMS

- Air adjustment valve.
- Fluid control allows for right mixture for every job.
- Flexable tube (18")puts mist right where it is needed.
- For boring, milling, grinding or drilling operations.
- Fits on a standard mag base's vertical post, supplied with set screw to hold location.





WITH MAG. BASE
8401–0195

MIST COOLANT
8401–0200

MIST COOLANT SPRAYER ON MAGNETIC BASE



- Air adjustment valve.
- Fluid control allows for right mixture for every job.
- Flexable Loc-Line style tube (17").
- For boring, milling, grinding or drilling operations.
- Magnetic base dimension: 2-5/16"L x 2"W x 2"H
- Magnetice Holding Power: 150 lbs

WITH MAG. BASE
8401–0196

INDUSTRIAL GRADE LED LAMP MAGNIFIER

- Light source LED, 390 Lums brightness.
- Lens Size: 7.5x6.0".
- Lens frame: 12x9".
- Lens material: glass.
- 3 diopter lens provides 1.75x magnification.
- Swing arm with 32" reach.
- Max. 2-1/2" adjustable bench clamp.
- Power On/Off switch.
- Power Supply: 115V.

NEW



BRIGHTNESS: 390 LUMENS

8401–0045

MAGNETIC BASE COOLANT HOSE ASSEMBLY



- 110 lbs magnetic pull.
- Two 1/4" dia. flexible coolant hoses.
- Either one can be shut off.
- On/ Off switchable magnetic base.

8401-0048

COOLANT HOSE ON MAGNETIC BASE



- Low profile magnetic base with 45 lbs power pull.
- Hose Length: 14" optimize coolant use and tool life.
- Shut off valve included.

Item #	Hose
8401-0060	Single
8401-0061	Dual

SINGLE STEEL HOSE MAGNETIC BASE COOLANT ASSEMBLY



- Magnetic power pull: 150 lbs.
- Steel flexable hose with metal nozzle.
- Shut off valve.
- Hose length (from valve to tip of nozzle):12.5"
- On/Off switchable magnetic base.

NEW

MADE IN TAIWAN

8401-0065





HAND ROTARY OIL PUMP



- Self priming.
- Delivers 3.5 gallons per minute.
- Maintenance free.
- Easy installation.

8080-0001

COOLANT TESTER-REFRACTOMETERS

- Accurately measures coolant concentration.
- Includes instructions.
- Optimize coolant use and tool life.
- Just a few drops needed for test.



Item#	Typical Coolant	Solution Measuring Range
8010-0018	Water Sol. or Synthetics	0~20%
8010-0019	Synthetics	0~15%
8010-0020	Water Soluble	0~30%

COOLANT PUMP KIT

- Portable and easy to use coolant device.
- Can be used on drilling, milling machines, small lathes and other equipment that needs cooling.
- Power supply: 110v/ 1 phase, 1/8 HP.
- Dimension: 15.5 L x10.5 W x 13" H.
- Weight: 18 lbs

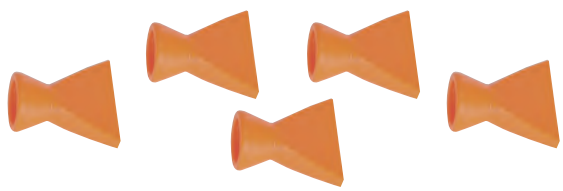
3 Gallon Kit
3012-8110





5PC FLARING NOZZLE KITS

- Interchangeable with LocLine.
- For flexable hose system.



1" Flare, 1/4"I.D.
8401-0205

1-1/2" Flare, 1/2" I.D.
8401-0225

ADJUSTABLE COOLANT HOSE SYSTEM

ADJUSTABLE COOLANT HOSE SYSTEM

Buy A Pack and Save !

1/4" MALE NPT VALVE KIT
5pc/pack
8401-0209

1/2" MALE NPT VALVE KIT
5pc/pack
8401-0229



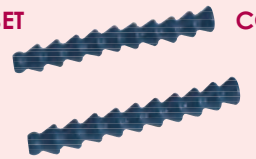
1/4" IN-LINE VALVE KIT
5pc/pack
8401-0210

1/2" IN-LINE VALVE KIT
5pc/pack
8401-0230



6" LENGTH, 1/4 COOLANT HOSE SET
2pc/pack
8401-0211

6" LENGTH, 1/2 COOLANT HOSE KIT
5pc/pack
8401-0231



1/4" I.D. COOLANT HOSE KIT, 7PC
8401-0251

INCLUDES:
1/16, 1/8 & 1/4" Nozzle
and 1/8 & 1/4" NPT Connector
6" x 2pc Coolant Hose

1/2" I.D. COOLANT HOSE KIT, 7PC
8401-0502

INCLUDES:
1/4, 3/8 & 1/2" Nozzle
and 1/2 & 3/8" NPT Connector
6" x 2pc Coolant Hose



1/4" I.D. COOLANT HOSE KIT, 7PC
8401-0253

INCLUDES:
1/16, 1/8 & 1/4" Nozzle
1" Flare Nozzle and 3/8 SAE Flare Nut Adapter
6" x 2pc Coolant Hose



1/4" "Y" FITTING KIT
5pc/pack
8401-0202

1/2" "Y" FITTING KIT
5pc/pack
8401-0222



1/4" ELBOW FITTING KIT
5pc/pack
8401-0203

1/2" ELBOW FITTING KIT
5pc/pack
8401-0223



4PC 90° 1/4" NOZZLE KIT
(1/16,1/8,1/4" & Spray Bar)
8401-0208

4PC 90° 1/2" NOZZLE KIT
(1/16,1/8,1/4" & Spray Bar)
8401-0228



3PC (1/16, 1/8 & 1/4") ROUND NOZZLE SET
8401-0204

3PC (1/4, 3/8 & 1/2") ROUND NOZZLE SET
8401-0224



NPT 1/4" CONNECTOR KIT
5pc/pack
For 1/4" hose
8401-0207

NPT 3/8" CONNECTOR KIT
5pc/pack
For 1/2" hose
8401-0227



NPT 1/8" CONNECTOR KIT
5pc/pack
For 1/4" hose
8401-0206

NPT 1/2" CONNECTOR KIT
5pc/pack
For 1/2" hose
8401-0226

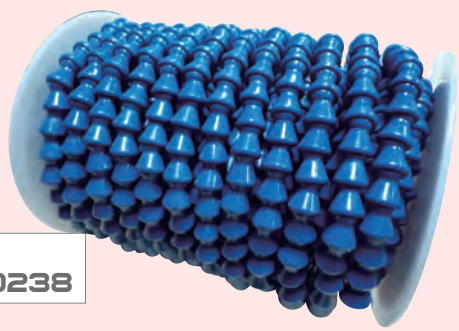


50FT BULK COOLANT HOSE COILS

1/2 INCH
8401-0240

1/4 INCH
8401-0220

3/8 INCH
8401-0238



COOLANT HOSE WRENCHES

- Use for easy assembly of coolant hoses.



HEAVY DUTY

1/4" Hose
8401-0504

1/2" Hose
8401-0506

Pistol Type AIR DUSTER BLOW GUN& KIT -Heavy Duty



7600-0190 Shown

7600-0190 Kit Includes: Blow gun and 2 tubes (5/8 & 4" Length)

- Body made of Alumium Casting for long lasting durability.
- Max. Working Pressure: 180 psi
- Comfort trigger design
- Quick coupling connector included

Kit with 2 Tubes
7600-0190

Gun with 5/8" Tube
7600-0191

Gun with 4" Tube
7600-0192

Pistol Type 12" TUBE AIR BLOW GUN -HEAVY DUTY



12" Long Tube
7600-0195

- Body made of Alumium Casting for long lasting durability.
- Max. Working Pressure: 180 psi
- Comfort trigger design
- Quick coupling connector included

AIR RECOIL HOSES

- Oil resistant and light weight.
- Safety yellow.
- Permanently coiled.
- Spring guarded end fitting to prevent kinked hose ends.





Limited Supply!

Item#	Size
7600-9725	1/4" x 25 ft.
7600-9726	3/8" x 25 ft.(swivel Head)

360 DEG. PNEUMATIC HOSE FITTING & COUPLING

- Made of Alumium Alloy
- Swivel 360 degree
- Max. Working Pressure: 140 psi
- Thread: 1/4 NPT x 1/4 NPT (Male x Female)

8401-0249



PISTON TYPE AIR BLOW GUNS



4"
7600-0179

Plastic Grip



13"
7600-0180

AIR BLOW GUN & SET

- SET INCLUDES:
  1 - Blow gun with rubber tip
  3 - Safety extension tubes
  1 - Male tip

BLOW GUN ONLY
7600-0169



5 PC SET
7600-0170

5PC 1/4" QUICK - COUPLER SET

- SET INCLUDES:
  1 - NTP female quick connector
  1 - NPT female/male stud
  3 - Male/male stud

7600-0171



18PC AIR SERVICE KIT

- 18 different versatile accessories made to improve the efficiency of air tools.

7600-0100

- KIT INCLUDES 1PC OF:
  Quick coupler
  Female connector
  Male connector
  Universal adapter
  Valve repair tool
  Safety nozzle
  Air gauge
  Blow gun
  Large bore
  Valve core
  Needle chuck
  Screw on chuck
  Tapered rubber tip
  High pressure nozzle
  Taper chuck
  Chuck adapter
  Dual tire chuck
  Power wire brush

Limited Supply!



Z-Limit ERGONOMIC, LOW NOISE 1/4" AIR DIE GRINDER

- Rubber molded cushion grip
- Air regulator on top
- Safety throttle lever
- Rear exhaust with silencer
- 360 degree swivel air inlet
- Low noise 79 dB(A)
- Free Speed: 20,000 RPM
- Air Inlet: 1/4" NPT
- Air Pressure: 90 PSI
- Air Consumption: 4 CFM
- Overall Length: 7-3/8"
- Hose Size: 3/8"
- Weight: 1.5 lbs

Z-Limit ULTRA-SERIES

7609-0903



MADE IN TAIWAN

1/4" HEAVY DUTY AIR DIE GRINDER

HHIP PRO-SERIES

- Heavy Duty.
- Built in Safety Lever to meet OSHA requirements.
- Variable speed throttle for positive speed control.
- Ball bearing construction for long tool life.
- Rear exhaust.

SPECIFICATIONS	
Speed (RPM)	22,000
Collet chuck	1/4"
Air inlet (NPT)	1/4"
Hose size (ID)	3/8"
Air-pressure (PSI)	90

7600-0911



MADE IN TAIWAN

EXTRA HEAVY DUTY AIR DIE GRINDER

- Variable speed throttle for positive speed control.
- Super heavy duty.
- Ball bearing construction
- Rear exhaust.

HHIP PRO-SERIES

1/4" DRIVE

Limited Supply!

7600-0903



SPECIFICATIONS	
Speed (RPM)	21,000
Collet chuck	1/4"
Air inlet (NPT)	1/4"
Hose size (ID)	3/8"
Air-pressure (PSI)	90
Air consumption (CFM)	3
Length	5-1/2"
Weight (lbs)	2.25

MADE IN TAIWAN

Z-Limit ERGONOMIC, LOW NOISE 1/4" MINI AIR DIE GRINDER

- Rubber molded cushion rip
- Air regulator on top
- safety throttle lever
- Rear exhaust with silencer
- Free speed: 25,000 RPM
- Low noise 79 dB
- Air inlet: 1/4 NPT
- Hose size: 3/8"
- Air Pressure: 90 PSI
- 360° swivel air inlet.
- Air Consumption: 4 CFM
- Overall Length: 6-1/4"
- Weight: 1 lbs.

Z-Limit ULTRA-SERIES

7609-0902



MADE IN TAIWAN

1/4" ECONOMY AIR DIE GRINDER

7600-0089

SPECIFICATIONS	
Speed (RPM)	22,000
Collet chuck	1/4"
Air inlet (NPT)	1/4"
Hose size (ID)	3/8"
Air Consumption	4 CFM
Air-pressure (PSI)	90
Overall Length	7-3/8"



1/4" MINI AIR DIE GRINDER

- Light weight construction
- Ball bearing construction
- Variable speed throttle

SPECIFICATIONS	
Speed (RPM)	22,000
Air Inlet (NPT)	1/4"
Collet chuck	1/4"
Length	4"



7600-0902

Z-Limit ERGONOMIC, LOW NOISE 1/4" AIR DIE GRINDER KIT

Z-Limit ULTRA-SERIES

- Rubber molded cushion grip
- Air regulator on top
- Safety throttle lever
- Rear exhaust with silencer
- 360 degree swivel air inlet
- Low noise 79 dB(A)
- Free Speed: 20,000 RPM
- Air Inlet: 1/4" NPT
- Hose Size: 3/8"
- Air Pressure: 90 PSI
- Air Consumption: 4 CFM
- Overall Length: 7-3/8"

Kit Includes:

- 1-Air Die Grinder
- 5-1/4" Shank Mounted Stone
- 5-1/8" Shank Mounted Stone
- 1-Fitted Blow Case



MADE IN TAIWAN

7609-0901

Z-Limit ERGONOMIC, LOW NOISE 1/4" ANGLE AIR DIE GRINDER

Z-Limit ULTRA-SERIES

- Rubber molded cushion grip
- Air regulator on top
- Safety throttle lever
- Rear exhaust with silencer
- 360 degree swivel air inlet
- Low noise 77 dB(A)
- Free Speed: 20,000 RPM
- Collet Size: 1/4"
- Air Inlet: 1/4" NPT
- Hose Size: 3/8"
- Air Pressure: 90 PSI
- Air Consumption: 4 CFM
- Overall Length: 6-11/16"
- Weight: 1.1 lbs

7609-0904

MADE IN TAIWAN



1/4" ECONOMY ANGLE AIR DIE GRINDER

- Collet size: 1/4".
- Air inlet: 1/4".
- I.D.air hose: 3/8".
- 90 PSI air pressure.
- 20,000 RPM speed.
- 4 CFM air consumption.
- Built in Safety Lever to meet OSHA requirements.

7600-0093



1/4" AIR DIE GRINDER VALUE SET

- Built in Safety Lever.
- Rear exhaust.



SET INCLUDES:
Die Grinder,
Male Connector,
5 Assorted Stones & Wrench

SPECIFICATIONS	
Speed (RPM)	22,000
Collet chuck	1/4"
Air inlet(NPT)	1/4"
Hose size(ID)	3/8"
Air Consumption	4 CFM
Air-pressure(PSI)	90
Overall Length	5-1/2"

7600-0090

1/4" ANGLE AIR DIE GRINDER

HHIP PRO-SERIES

- Built in Safety Lever to meet OSHA requirements.
- Collet size: 1/4".
- Air inlet: 1/4".
- I.D.air hose: 3/8".
- 90 PSI air pressure.
- 20,000 RPM speed.
- 4 CFM air consumption.

7600-0092

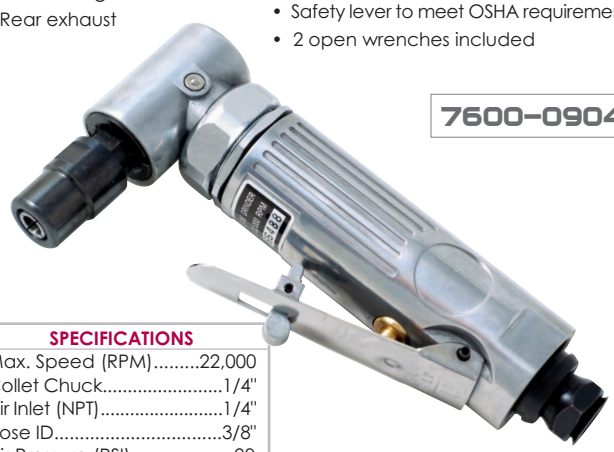


MADE IN TAIWAN

1/4" EXTRA HEAVY DUTY ANGLE AIR DIE GRINDER

- Whole metal body
- Ball bearing construction
- Rear exhaust
- Variable speed throttle for positive speed control
- Safety lever to meet OSHA requirements
- 2 open wrenches included

7600-0904



SPECIFICATIONS	
Max. Speed (RPM)	22,000
Collet Chuck	1/4"
Air Inlet (NPT)	1/4"
Hose ID	3/8"
Air Pressure (PSI)	90
Air Consumption(CFM)	4
Weight (lbs)	1.2

Limited Supply!

Pro-Series 1/8" MINI AIR DIE GRINDER

- Pen type is ideal for access to confined areas
- Operates at 54,000 RPM at 90 PSI
- Includes 1/8" collet, wrenches and quick connect coupler

HHIP PRO-SERIES

MADE IN TAIWAN

7600-0088



SPECIFICATIONS	
Free Speed (RPM)	54,000
Air Inlet (NPT)	1/4"
Collet chuck	1/8"
Air pressure (PSI)	90
Length	5-1/4"
Weight	1/4 lbs

SUPPLIED WITH WATER/OIL SEPARTOR

REPLACEMENT COLLETS

- Fits all air tools with same collet size

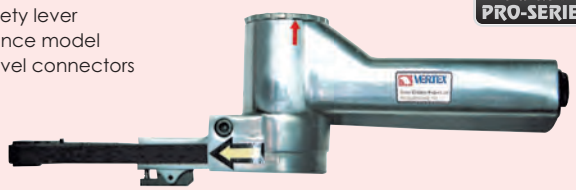
Item#	Chuck Size	Fits Air Tool
7600-1003	1/8"	1/8"
7600-1001	1/8"	1/4"
7600-1002	1/4"	1/4"



3/8 X 13" BELT SANDER

HHIP PRO-SERIES

- Safety lever
- Silence model
- Swivel connectors



MADE IN TAIWAN

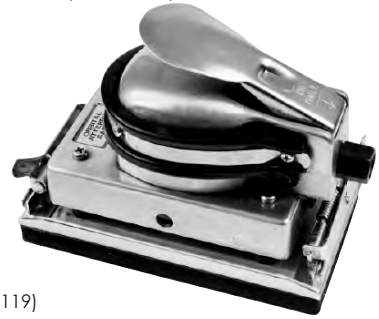
7600-0310

SPECIFICATIONS	
Motor Speed (RPM)	18,000
Hose size (ID)	3/8"
Sound level	83 dBA
Air consumption (CFM)	4
Abrasive belt size	10x330mm
Weight	2 lbs
Length	13"

AIR SANDER (Orbital Jitterbug Type)

- Constant orbital stroke for fine finishing.
- Dynamic counter weight for low vibration sanding.
- Automatic throttle release lever with positive stop action.
- Pad Size: 3-2/3" x 6-1/2".
- Speed: 8,000 RPM
- Air Inlet: 1/4" NPT.
- Hose Size: 3/8".
- Air Consumption: 5 CFM.
- Air Pressure: 90 PSI.

7600-0118



Replacement Pad (Item #7600-0119)

1/8" ECONOMY MINI AIR DIE GRINDER

SPECIFICATIONS	
Free Speed (RPM)	54,000
Air Inlet (NPT)	1/4"
Collet chuck	1/8"
Air pressure (PSI)	90
Length	5-1/4"
Weight	1/4 lbs



7600-0086

ABRASIVE CUT-OFF WHEEL MANDRELS

CAUTION: Never exceed maximum RPM rating. Always us a guard and comply with ANSI B7.1.



2PC ARBOR SET
3900-6376
1/4 & 3/8"

Item#	Arbor	Shank
3900-6250	1/4"	1/4"
3900-6375	3/8"	1/4"

1/2" DRIVE, AIR IMPACT WRENCH



- Bolt capacity.
- Maximum torque: 250ft/lbs.
- 90 PSI air pressure.
- 5 CFM air consumption.
- 7000 RPM speed.

7600-0942

Z-Limit PROFESSIONAL AIR IMPACT WRENCH

Z-Limit ULTRA-SERIES

- Push button on hand forward/reverse
- Rubber molded cushion rip
- Composite motor housing
- Pin clutch mechanism
- Working Torque: 50~650 ft/lbs
- Max. Torque: 1000 ft/lbs.
- Free Speed: 7000 RPM
- Air Inlet: 1/4 NPT
- Hose Size ID: 3/8"
- Air Consumption: 4 CFM
- Overall Length: 7.2"
- Weight: 4 lbs.
- Low noise 83 dB



Limited Supply!

MADE IN TAIWAN





1/2" DRIVE
7609-0942

Pro-Series 3/8" REVERSIBLE AIR DRILL

- Rubber molded cushion rip
- Rear exhaust with silencer
- Composite motor housing.
- Variable speed trigger
- Standard keyless chuck.
- Free speed: 2,000 RPM
- Chuck Size: 3/8"
- Spindle Thread: 3/8"-24
- Air Inlet: 1/4 NPT
- Hose Size (ID): 3/8"
- Air Pressure: 90 PSI
- Air Consumption: 4 CFM
- Overall Length: 7-5/8"
- Weight: 2.2 lbs.



Z-Limit ULTRA-SERIES

Limited Supply!

MADE IN TAIWAN

7609-0095

HEAVY DUTY 3/8" REVERSIBLE ANGLE AIR DRILL

- 90° angle head.
- Rear exhaust, low noise
- Forward and reverse knob.
- Variable speed lever.
- Standard keyed chuck.
- Free speed: 1,200 RPM
- Chuck Size: 3/8"
- Spindle Thread: 3/8"-24
- Air Inlet: 1/4 NPT
- Hose Size (ID): 3/8"
- Air Pressure: 90 PSI
- Air Consumption: 4 CFM
- Overall Length: 8"
- Weight: 2.5 lbs.

Limited Supply!



MADE IN TAIWAN

7609-0098



3/8" REVERSIBLE AIR DRILL (Pistol Type)

- Air Inlet: 1/4" NPT.
- Hose Size: 3/8".
- Air Consumption: 4 CFM.
- Air Pressure: 90 PSI.
- Free Speed: 2200 RPM.



7600-0095

AIR RATCHET WRENCHES

- Maximum torque: 50ft/lbs.
- 150 RPM speed.
- Air inlet: 1/4".
- 90 PSI air pressure.
- 4 CFM air consumption.
- Overall length: 10".



3/8" DRIVE
7600-0931

1/2" DRIVE
7600-0932

Z-Limit ERGONOMIC, LOW NOISE AIR RATCHET WRENCHES

Z-Limit ULTRA-SERIES

- Rubber molded cushion rip
- Rear exhaust with silencer
- Low noise 79 dB
- Free speed: 150 RPM
- Maximum torque: 60 ft/lbs
- Air inlet: 1/4 NPT
- Air Pressure: 90 PSI
- Air Consumption: 4 CFM
- Overall Length: 10-3/8"
- Weight: 2.8 lbs.

3/8" DRIVE
7609-0931

1/2" DRIVE
7609-0932

Limited Supply!



MADE IN TAIWAN

29PC JOBBER DRILL SETS

- Production grade
- Straight shank — **1/16~1/2" by 64ths**
- Right hand
- Supplied in metal drill index
- **COBALT** used for drilling in tough high tensile strength materials like stainless steel, titanium and inconel
- **TiN Coated** will improve the tool life and is used where elevated speeds & feeds are the objective. TiN provides high lubricity and facilitates chip flow which reduces heat and edge build-up.

M35 (5%) Cobalt
5000-0011

MADE IN USA

TiN Coated, HSS
5001-0029

TiN Coated, HSS
5000-0001



Black Oxide, HSS
5000-0002



PUSH TO CONNECT FITTINGS

PUSH TO CONNECT MALE TUBE FITTINGS

- Max. Air Pressure: 0-10 kgf/cm²
- Metal body, nickel plated
- Pre applied teflon thread sealant
- Temprature: -5~60 °C
- Push-in tube to connect

Limited Supply!



Item#	Tube OD	Pipe Thread	Overall Length (mm)
8401-0275	1/8	NPT 1/8	20
8401-0276	1/8	NPT 1/4	20
8401-0280	1/4	NPT 1/8	22
8401-0281	1/4	NPT 1/4	22
8401-0282	1/4	NPT 3/8	22
8401-0286	3/8	NPT 1/8	30
8401-0287	3/8	NPT 1/4	31
8401-0288	3/8	NPT 3/8	29

PUSH TO CONNECT MALE TUBE ELBOW FITTINGS

- Max. Air Pressure: 0-10 kgf/cm²
- Thermo plastic body, nickel plated metal thread side.
- Pre applied teflon thread sealant
- Temprature: -5~60 °C
- Push-in tube to connect

Limited Supply!



Item#	Tube OD	Pipe Thread	Length A (mm)	Length C (mm)
8401-0294	1/8	NPT 1/8	24.9	18
8401-0295	1/8	NPT 1/4	26.9	18
8401-0298	1/4	NPT 1/8	27.3	20
8401-0299	1/4	NPT 1/4	29.3	20
8401-0300	1/4	NPT 3/8	30.3	20
8401-0304	3/8	NPT 1/4	36.5	30.5
8401-0305	3/8	NPT 3/8	37.5	30.5

NPT SINTERED BRONZE EXHAUST MUFFLERS

- Max. Air Pressure: 0-10 kgf/cm²
- Metal body, nickel plated
- Temprature: -20~70°C
- Decibel Rating: 75.000

Limited Supply!



Item#	NPT Thread	Hex Size (mm)	Overall length
8401-0320	1/8	12	0.94"
8401-0321	1/4	16	1.23"
8401-0322	3/8	18	1.47"
8401-0323	1/2	24	1.72"

NPT SINTERED BRONZE EXHAUST MUFFLERS

- Exhaust & Intake mufflers
- Metal body, nickel plated Breather Vent
- Temprature: -20~70°C

Limited Supply!



Item#	NPT Thread	Hex Size (mm)	Overall length
8401-0328	1/8	12	0.45"
8401-0329	1/4	16	0.55"
8401-0330	3/8	18	0.65"
8401-0331	1/2	24	0.77"

4 WAY HAND OPERATED VALVES-ROTARY DISC TYPE

- Body made of Alumium Alloy
- Max. Working Pressure: 150 psi
- Number of Positions: 3
- Actuator Type: Lever/Detent

Limited Supply!



Item#	Inlet Size (Inch)	CV Rating
8401-0255	3/8	1.83
8401-0256	1/2	1.83

5 WAY HAND OPERATED VALVES-LEVER TYPE

- Body made of Alumium Alloy
- Max. Working Pressure: 120 psi
- Number of Positions: 2
- Actuator Type: Lever/Detent

Limited Supply!



Item#	Inlet Size (Inch)	Outlet Size (Inch)	CV Rating
8401-0260	1/4 NPT	1/4 (2) & 1/8 (2)	0.67

3 WAY MANUAL MECHANICAL VALVE

- Body made of Alumium Alloy
- Max. Air Working Pressure: 250 psi
- Number of Positions: 2

Limited Supply!



Item#	Inlet Size (Inch)	Outlet Size (Inch)	CV Rating
8401-0263	1/4 NPT	1/4 NPT	0.89

4&6 PORT STRAIGHT CONNECTION MANIFOLDS

- Body made of Alumium Alloy
- Max. Working Pressure: 120 psi
- Number of Positions: 2
- Inlet Size: 1/4 NPT
- Outlet Size: 1/4 NPT

Limited Supply!



Item#	Port	Width x Height	OAL
8401-0310	4	0.85 x 0.85"	5"
8401-0312	6	0.85 x 0.85"	7"

1 PC FILTER/REGULATOR UNIT WITH DRAIN



- Max. Working Pressure: 150 psi
- Max. tampreture: 70°C
- Manual drain type.
- Bowl Capacity: 25 ml (included)
- Pressure Gauge Included, 1/8 NPT mounting
- Dimensions: 2.5 x 3 x 7.4"

Heavy Duty!

Item#	Inlet Size (Inch)	Outlet Size (Inch)
7600-1755	1/8 NPT	1/8 NPT
7600-1756	1/4 NPT	1/4 NPT

1 PC FILTER/REGULATOR UNIT WITH DRAIN



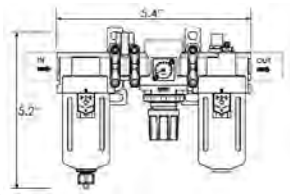
- Max. Working Pressure: 150 psi
- Max. tampreture: 70°C
- Manual drain type.
- Bowl Capacity: 25 ml (included)
- Pressure Gauge Included, 1/8 NPT mounting
- Dimensions: 2 x 3 x 6"

Clear Bowl

Item#	Inlet Size (Inch)	Outlet Size (Inch)
7600-1760	1/8 NPT	1/8 NPT
7600-1761	1/4 NPT	1/4 NPT

3PC FILTER/REGULATOR/LUBRICATOR UNITS

- Max. Working Pressure: 150 psi
- Max. tampreture: 70°C
- Manual drain type.
- Dimensions: 5.4 x 3 x 5.2"
- Bowl Capacity: 15 ml & 25 ml (included)
- Pressure Gauge Included, 1/8 NPT mounting



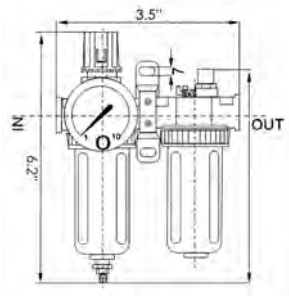


Item#	Inlet Size (Inch)	Outlet Size (Inch)
7600-1770	1/8 NPT	1/8 NPT
7600-1771	1/4 NPT	1/4 NPT

2PC FILTER/REGULATOR/LUBRICATOR UNITS

- Max. Working Pressure: 150 psi
- Max. tampreture: 70°C
- Manual drain type.
- Bowl Capacity: 25 ml (included)
- Pressure Gauge Included, 1/8 NPT mounts.
- Dimensions: 3.5 x 3 x 6.2"





Item#	Inlet Size (Inch)	Outlet Size (Inch)
7600-1765	1/8 NPT	1/8 NPT
7600-1766	1/4 NPT	1/4 NPT

LEATHER PALM GLOVES



- Full leather palm thumb
- Knuckle strap.
- Safety cuff.

PRICED AND SOLD BY DOZ.

8070-0009

HEAVY DUTY
8070-0007

SHOP APRON

- 14 oz. heavy denim apron
- 1 side pocket & 1 two part big pocket

28" Wide x 36" Long
8070-7004



ALL PURPOSE DUST MASKS

- Large filter area allows cool, easy breathing.
- Metal fibers nose clips to fit individual contour.
- Non - irritating.

50 PC PACK
8070-0101



5 POCKET SHOP APRON

- 2 large waist pockets.
- 1 long waist pocket.
- 2 big pencil pockets.
- Heavy duty demin.

24" Wide x 36" Long
8070-7005





7 WAY MIG WELDING PLIER

- Small serrated hole for mig tips.
- Flat surfaces for light hammering.
- Wire cutter for trimming mig wire.
- Spring loaded handle with heavy insulated grip for comfort.
- Needle nose grip wire for pulling
- Large serrated hole for nozzles.

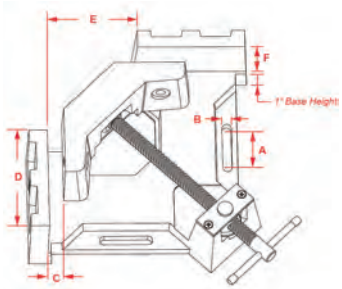


8080-0026

WELDER'S ANGLE VISES

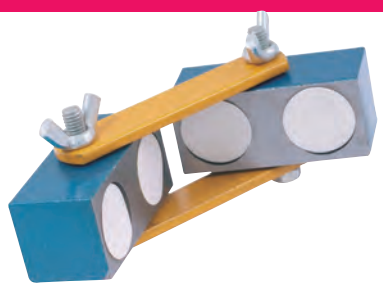
- Brass lead screw & nut.
- One piece structure.
- 90° angle





Item#	Jaw Length D	Jaw Height F	Jaw Opening C	A	B	E
3900-1724	4"	1-3/8	2-3/8	1.77"	0.51"	2.95"
3900-1725	5"	2-3/8	4	2.56"	0.59"	3.15"

MAGNETIC ADJUSTABLE LINK



- For welding and holding steel plates
- Easy angle adjustment using 2 bars with wing nuts
- Two strong magnets 2" long & 1" square

8138-0015

METAL SCRIBER

- Tempered and heat treated steel all over body, handle, and sharp tips.
- Long length handy for hard to reach holes.
- Knurled body for tight grip.

7600-4302

OAL: 9.50"



ITW DYKEM® DYKEM BRITE-MARK MARKERS

For Marking On Any Surface!



- Makes permanent marks on metal, rubber, plastic, glass, concrete, leather, stone, wood, vinyl and more
- Valve action mechanism prevents paint in barrel from drying when cap is left off
- heavy-duty aluminum barrel retains its shape
- Felt tips are replaceable to assure complete use of paint in each marker
- Drying time 25-35 seconds

Case Qty	Color	REGULAR LINE Item#	FINE LINE Item#
24	Blue	8030-8401	8030-8411
24	Black	8030-8402	8030-8413
24	White	8030-8403	8030-8418
24	Yellow	8030-8404	8030-8416
24	Orange	8030-8405	8030-8410
24	Red	8030-8406	8030-8412
24	Green	8030-8407	8030-8414
24	Silver	8030-8408	
24	Gold	8030-8409	

ITW DYKEM® DYKEM HI-SPOT BLUE

Hi-Spot is an intensely blue, soft uniform paste that spreads easily and evenly to show high spots on bearings, A thin coating may be left on the surface day in and day out, and will not dry. The film remains pliable and transferable and in condition for months.



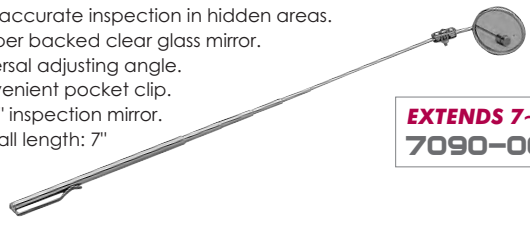
- Non-drying
- Non-hardening
- Transfers from one surface to another

NO AIR

.55 OZ. TUBE
8030-8355

TELESCOPIC INSPECTION MIRROR

- Fast, accurate inspection in hidden areas.
- Copper backed clear glass mirror.
- Universal adjusting angle.
- Convenient pocket clip.
- 1-1/4" inspection mirror.
- Overall length: 7"



EXTENDS 7~20"
7090-0001

SCRIBER W/ CLIP

- For marking or engraving on hard metal, glass, plastic, ceramic, jewelry, etc.
- Sharp tungsten steel tip.
- Convenient pocket clip and covered cap.
- Knurled body grip.

7600-0044



MAGNETIC CHIP RETRIVER

- Suitable for removing metal scraps in T-slot and holes or untouchable places.
- Picks up steel chips, fasteners, scrap and debris.
- To clean, pull the plunger and the collected metal falls off.
- Powerful rare earth clean-up tool.
- Tip diameter: 1/2"
- Overall Length: 15.8"

7016-1003



MADE IN TAIWAN

MAGNETIC CHIP COLLECTOR

- Suitable for collecting metal chips scattered on the floor or mixed in the medium.
- Simply offer the tool over the swarf etc and the powefull magnet will pick it up. To release squeeze the handle.
- Size: 4.4" Dia. x 7" H
- Weight: 4.2 lbs.

MADE IN TAIWAN

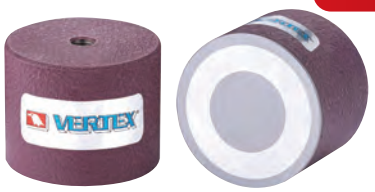
7016-1008



ALNICO POT MAGNETS

NEW

- Tapped hole in the center
- Made in Taiwan
- Magnetic circuit design for strong holding



Item #	Size(mm) Dia. x H	Hold Power	Tapped Hole	Wt. Lbs
4401-0820	30 x 25	40 lbs.	M6 x 1.00	0.26
4401-0822	40 x 30	66 lbs.	M8 x 1.25	0.57
4401-0824	50 x 40	110 lbs.	M8 x 1.25	1.20

MAGNET HOLDER

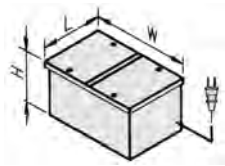
- Tapped hole in the center
- Made in Taiwan
- Strong holding power
- Useful



Item #	Size(mm) L x W x H	Hold Power	Tapped Hole	Wt. Lbs
4401-0816	26 x 60 x 25	44 lbs.	M6 x 1.0	0.70

HEAVY DUTY DEMAGNETIZER

- Demagnetizes tools such as dies, cutters and punches.
- Operates on 115V AC with on/off switch, 80 W.
- Table Size: 7.14" W x 5.00" L x 4.00 H

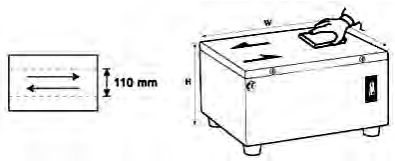


3401-0602



ECONOMY DEMAGNETIZER

- Demagnetizes tools such as dies, cutters and punches.
- 115 VAC with On and Off switch.
- Table Type.
- Table size: 6-3/4" x 4-1/4"
- Overall dimension: 8-3/4"L x 4-3/4"W x 3-1/4"H
- Weight: 11 lbs.



3401-0006



ELECTRICAL (P.V.C.) TAPE

3/4" x 60 FT.
8070-0015



PRICED AND SOLD BY 10PC/PACK

TEFLON TAPE

1/2" x 520 FT.
8070-0003



PRICED AND SOLD BY 10PC/PACK

5PC SNAP RING PLIER SET

- For internal rings of 3/8"-2" and external by a single pivot screw.



Limited Supply!

7019-0005

SET INCLUDES:
3PC STRAIGHT TIPS (6", 6", 8");
2PC 90° OFFSET TIPS (5-1/2", 7-1/2").

SHOP SUPPLIES & PUNCHES

NON-TOUCH DIGITAL TACHOMETER

- Photo-type analyzes reflected light from a rotating object for RPM reading.
- Microcomputer in the unit for fast and highly accurate measurement.
- Memory button can be used to recall the last, minimum and max. values during measuring processing.
- Auto zero adjustment.
- High resolution LCD: 0.1 RPM (5~999 RPM), 1 RPM (over 1000 RPM).
- Measuring Range: 5~99,999 RPM.
- Measuring Distance: 2~10" .
- Measuring Angle: < 60°.
- Power Supply: 4-AA battery (not included).
- Complete with carry case.



Limited Supply!

8070–0402

RATCHET DIGITAL READOUT COUNTER

- Reset knob.
- 5 digits.
- Base: 2-1/8 x 1-3/4".
- Height: 1-1/4".



3900–0203

HANDHELD 4 DIGIT COUNTER

- Chrome plated
- 2" Height x 1-3/4" Width
- Finger ring for easy handling
- Supplied with steel base



3900–0204

5" AUTO CENTER PUNCH

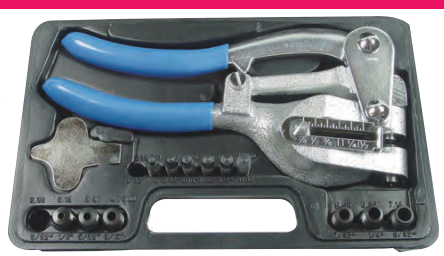


- No hammer required.
- Double spring loaded barrel.
- Special hardened alloy steel tip for instant marking.
- Knurled body.

8070–0482

17 PC POWER PUNCH KIT

- Complete w/ 7 sets of punches and dies.
- Common sizes: 3/32", 1/8", 5/32", 3/16", 7/32", 1/4", 9/32".
- Punches and dies hardened,to HRC 50~52.
- Pierces up to 16-gage metals. (steel, aluminum, brass, copper, plastic, etc.).
- Curved handles for a natural, balanced grip.
- Supplied with plastic carry case.



7070–0016

DELUXE HEAVY DUTY DIGITAL MULTIMETER

- 1" height digit LCD display.
- AC current 200mA/100µA, 20A/10 mA.
- AC voltage up to 750V/1 V.
- DC voltage up to 1000V/1V.
- DC current 200µA/100mA, 200mA/100µA, 20A/10mA.
- Data-held & diode test feature.
- LCD back light for dark places easy reading.
- Single standard 9-volt battery (not included).
- Resistance up to 200 mz
- Test leads.
- Logic test.
- Auto power off.



8070–0403

Limited Supply!

DIGITAL MULTIMETER

- Power: single standard 9V battery (not included).
- 200 mA range continuity indication.
- LCD display with max. 1999 reading.
- DC/AC voltage to 750V.



8070–0400

Limited Supply!

HEAVY DUTY TAPE MEASURE

- Made of heavy duty sheet metal steel.
- One inch wide blade.
- Hold up to 8' no break.
- Shows fraction by 8ths.
- Durable rubber outfit for easy grip





FRACTION SCALE

1" x 25 FT.
7020–0025

OPTICAL PUNCH SET

- This Optical Punch Set is indispensable when doing critical layout work. Just look down the magnifying lens and align the cross hairs with the mark on your workpiece. Replace the magnifier with the supplied punch and give it a tap.
- Set Includes a bull's eye and cross hair lens, a 150 degree and 60 degree center punch made of tempered steel and fitted case.



Punch Size: 3/8"
OAL: 2-3/4"
Pin Length: 2"



8600–4120

STEEL STAMP COMBO SETS



- Hardened to RC 59-61 at tip and tempered to RC 40 Rockwell at striking end.
- Made from carbon steel.
- Character style designed to give sharp clear impressions.
- Packed in durable box.
- Easy selection and storage.



SET INCLUDES:
Numbers (0-9), Letters (A-Z)



Item#	Size of Impression
8016-0002	1/8"
8016-0003	3/16"
8016-0004	1/4"
8016-0005	3/8"

Pro-Series 36PC NUMBER/LETTER STEEL STAMP KITS

- Sand blased surface finish.
- Kit consists of A-Z letters & 0-9 numbers.
- Made of high grade tool steel, each character is hardened and tempered to 60-62 HRC.
- Heavy duty plastic case.





Item#	Size of Impression
8016-0012	1/8"
8016-0013	3/16"
8016-0014	1/4"
8016-0015	3/8"

MACHINISTS' BENCH BLOCK

- Made from steel-hardened and ground
- A handy tool for holding work when driving pins, drilling, etc.
- The knurled side provides a good gripping surface
- V-groove across the face accommodates round and odd shaped stock
- Holes from 1/8 to 5/8 (3-16mm) diameter

3600-0042

3" Dia.x 1-1/2" H





8PC DRIVE PIN PUNCH SETS

- Tool steel heat treated, ground and polished.
- Knurled body.
- Complete with vinyl pouch.
- Overall length: 4"

8 PC SET INCLUDES:
1/16~1/4" by 32nds & 5/16"



8600-4107

8600-4106

5PC EXTRA-LONG DRIVE PIN PUNCH SETS

- Black nitrate finish.
- Alloy steel hardened on both ends.
- Finger grip knurled body.
- Pin length: 3-1/2".
- Overall length: 8".
- Complete with vinyl pouch.

5 PC SET INCLUDES:
1/8, 3/16, 1/4, 5/16 & 3/8"

8600-4103

8600-4104



8PC BRASS DRIVE PIN PUNCH SET

- Used in spark-free environments.
- Punch section centerless ground.
- Solid brass.
- Hexagonal body
- 4" length.
- Supplied in fitted case.

8600-4108



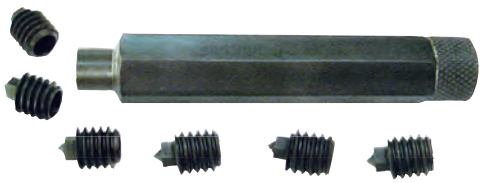
TRANSFER SCREW & PUNCH SETS

7 PC TRANSFER SCREW SETS

- More accurate than transfer punches. The fastest and most precise method of transferring threaded holes to mating parts. Great for tool and die work and in lay outs.

NEW

SET INCLUDES: Handle & 6 Screws



Inch

Item#	Thread
3601-0004	4-40
3601-0005	5-40
3601-0006	6-32
3601-0008	8-32
3601-0010	10-24
3601-0011	10-32
3601-0012	12-24
3601-0250	1/4"-20
3601-0312	5/16-18
3601-0375	3/8"-16
3601-0376	3/8"-24
3601-0438	7/16"-14
3601-0500	1/2"-13
3601-0501	1/2"-20

MM

Item#	Thread
3601-1003	M3x0.5
3601-1004	M4x0.7
3601-1005	M5x0.8
3601-1006	M6x1.00
3601-1008	M8x1.25
3601-1010	M10x1.50
3601-1012	M12x1.75

108 PC BLIND HOLE SPOTTER SET

- Fast, easy way to locate opposite centers. When holes do not extend through material(such as holes for dowel pins, perforating punches, etc.) Blind-hole spotters get the job done simply. Correct size spotter can be used in threaded, drilled or reamed holes.



8016-0108



INCLUDES:
1/8 to 21/32" by 32nds, 6pc each

16PC PRECISION PUNCH & CHISEL W/GAGE

- Drop forged, hardened, and tempered steel.
- Tempered and polished beveled cutting edge.

- **SET INCLUDES:**
  3-cold chisels,
  5-pin punches,
  5-center punches,
  2-prick punches,
  1-chisel punch gauge.

8016-0016



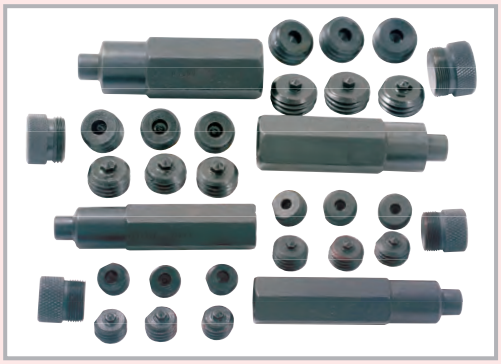
28PC TRANSFER SCREW COMBO SETS

- Convinent & economic combination of four sizes often used together.
- More accurate than transfer punches. The fastest and most precise method of transferring threaded holes to mating parts. Great for tool and die work and in lay outs.



SET INCLUDES:
4-Handle & 24 Screws(6pc each size)





NEW

Item#	Set Thread
3601-0510	1/4-20, 5/16-18, 3/8-16, 7/16-14
3601-0512	1/2-13, 5/8-11, 3/4-10, 9/16-12
3601-0514	10-24, 8-32, 6-32, 4-40
3601-0516	M3x0.5, M4x0.7, M5x0.8, M6x1.0
3601-0518	M6x1.0, M8x1.25, M10x1.50, M12x1.75
3601-0520	M14x2.00, M16x2.00, M20x2.50, M24x3.00

TRANSFER PUNCH SETS

- Undersize .0025" .
- Heat treated tempered tool steel for longer life.
- Black oxide finish.
- Used for transferring of threaded, drilled and tapped holes.

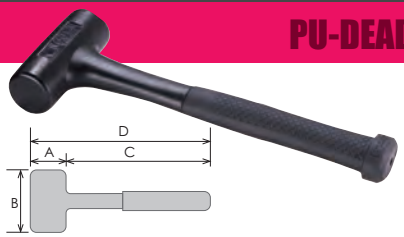


28 PC SET
8600-0041
3/32~1/2" by 64ths & 17/32"



33 PC SET
8600-0411
1/2~1" by 64ths

PU-DEAD BLOW HAMMERS



MADE IN TAIWAN

NEW

Item#	Size OZ	(mm) A	B	C	D
7080-0331	18	38	100	249	287
7080-0333	24	46	100	260	306
7080-0336	33	50	110	290	340
7080-0339	49	60	130	308	368

- Advanced Polyurethane (PU) material will not mar surfaces or absorb liquids.
- Basic: Steel structure and include steel shot.
- Absorbs shock from impact reduces rebound and maximizes force due to steel shot filled canisters.
- Grip is synthetic rubber improving grip and comfort.

DEAD BLOW HAMMERS

- Shot loaded interior produces a powerful driving force.
- Tough, durable polypropylene casting.
- Resistant to industrial chemicals.
- Non-marring, non-sparking.



Item#	Size (lbs.)	Head Dia.(In)	Overall Length
7080-0291	1	1-3/4	12"
7080-0292	2	2	13-1/2"
7080-0293	3	2-1/2	14-1/2"
7080-0294	4	3-1/2	15"

FIBERGLASS HANDLE BALL PEIN HAMMERS

Item#	Size (oz.)
7080-0021*	8
7080-0202*	12
7080-0020	16
7080-0023*	24
7080-0022*	32
7080-0231*	48



- Drop forged and fully polished.
- Hardened on striking face.
- Industrial grade.

*Limited Supply

FIBERGLASS HANDLE SLEDGE HAMMER

- Drop forged head and fully polished.
- Industrial grade.

3.3 LBS
7080-0133



Limited Supply!

FIBERGLASS HANDLE DRILLING HAMMER

- Drop forged head and fully polished.
- Industrial grade.

3.3 LBS
7080-0123

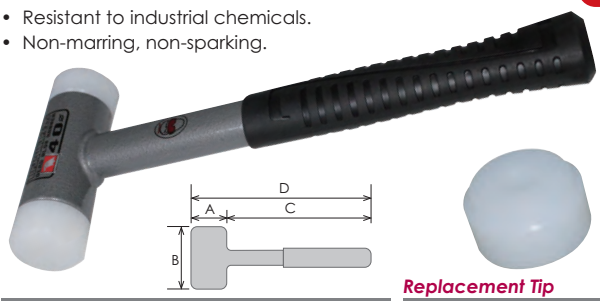


Limited Supply!

DEAD BLOW HAMMERS (UPE PLASTIC)

NEW

- Shot loaded interior produces a powerful driving force.
- UPE material strike faces.
- Resistant to industrial chemicals.
- Non-marring, non-sparking.



Replacement Tip

Item#	Size (OZ.)	Head Dia.(In)	Overall Length
7080-0302	16	1.2	11"
7080-0305	29	1.6	11.8"
7080-0308	46	2.2	12.6"

Item#	For Size (OZ.)
7080-0312	16
7080-0315	29
7080-0318	46

BRASS HAMMERS FIBERGLASS HANDLE

- Industrial grade.
- Non-Marring, non-sparking.
- Polished high purity brass heads.



Item#	Size (lbs.)	Head Dia.(In)	Overall Length
7080-0036	1	1-1/8	11-1/2"
7080-0037	1-1/2	1-1/4	12-1/2"
7080-0038	2	1-1/2	12-1/2"
7080-0039	3	1-5/8	15"

16 OZ CLAW HAMMER FIBERGLASS HANDLE

- Drop forged head and fully polished.
- Industrial grade.

7080-0002

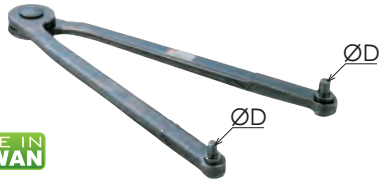


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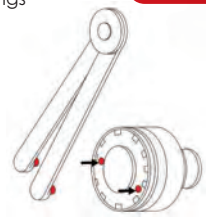
ADJUSTABLE FACE SPANNER WRENCHES

NEW

- Ideal for adjusting collars, lock nut rings & bearings
- Black finish.



MADE IN TAIWAN



Item #	Pin Hole Dia. D	(mm) Length	Adj. Range Bewteen Pins
7016-0040	3.0	7.5	7-40
7016-0042	4.0	7.3	11-60

WINDOW DIRECT READOUT TORQUE WRENCH

- Meets or exceeds ISO 6789, US Fed. GGG-W-686D & ANSI B107.14M.
- Chrome-vanadium ratchet gear (32 teeth) and fully heat treated handle.
- Patented unique pull-push system, micro-click & reversible.
- Dimension: Width of Head 1.4", Depth of Head 1.23", OAL 19.5"
- Release accuracy ±3%
- Push locking.
- Window scale design for easy reading.
- With fitted case.

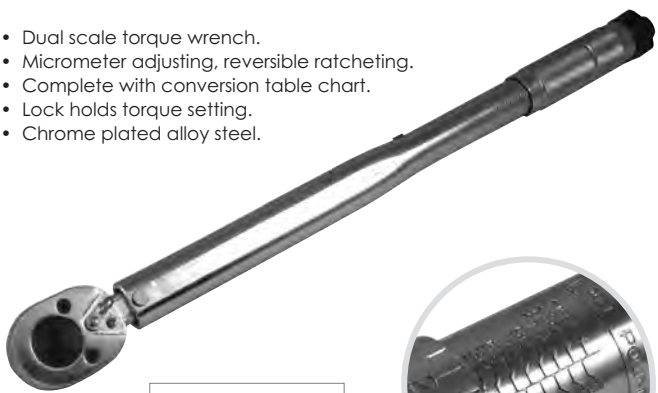
1/2" DRIVE



Item#	Drive Range	Graduation
7020-0151	1/2"20~150 ft/lbs (30-210Nm)	10ft/lbs

MICROMETER TORQUE WRENCHES

- Dual scale torque wrench.
- Micrometer adjusting, reversible ratcheting.
- Complete with conversion table chart.
- Lock holds torque setting.
- Chrome plated alloy steel.





1/2" DRIVE TORQUE RANGE
7020-0150
10-150 ft./lbs (1.4-20.7 m/kp)

9PC T-HANDLE TORX KEY SETS

- Industrial grade heat treated extrude S-2 alloy steel.
- PVC coated handles provide a non-slip grip.
- Arm reach: 7-1/2".
- Complete with vinyl pouch.





9 PC SET
7900-0001
T10, T15, T20, T25, T30, T40, T45, T50 & T55

COMBINATION WRENCHES

- Polished heads and raised panel.
- Forged steel.
- Open end and 15° offset box opening.



Inch

Item#	Size (Inch)
7023-1001	1/4
7023-1002	5/16
7023-1003	3/8
7023-1004	7/16
7023-1005	1/2
7023-1006	9/16
7023-1008	5/8
7023-1009	11/16
7023-1010	3/4
7023-1011	7/8
7023-1012	15/16
7023-1017	1
7023-1018	1-1/16
7023-1019	1-1/8
7023-1191	1-3/16
7023-1020	1-1/4
7023-1021	1-5/16
7023-1022	1-3/8
7023-1023	1-7/16
7023-1024	1-1/2
7023-1025	1-5/8
7023-1026	1-11/16
7023-1027	1-3/4
7023-1028	1-13/16
7023-1029	1-7/8
7023-1030	2
7023-1031	2-1/8
7023-1032	2-1/4
7023-1033	2-3/8
7023-1034	2-1/2

MM

Item#	Size (mm)
7023-2012	6
7023-2013	7
7023-2014	8
7023-2015	9
7023-2051	10
7023-2052	11
7023-2016	12
7023-2053	13
7023-2017	14
7023-2018	15
7023-2020	16
7023-2021	17
7023-2022	18
7023-2023	19
7023-2024	20
7023-2025	21
7023-2054	22
7023-2026	23
7023-2027	24
7023-2028	25
7023-2030	26
7023-2031	27
7023-2034	28
7023-2035	29
7023-2036	30
7023-2038	32
7023-2040	34
7023-2042	36

COMBINATION WRENCH SETS

- Forged chrome plated tool steel.
- All sets fully polished.
- With pouch.



14 PC SET
3/8~1-1/4"
7023-0005
3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, 1-1/4"

15 PC SET
6~24MM
7023-0006
6,7,8,9,10,11,12,13,14,15,17, 19,21,22,24mm

ADJUSTABLE HAND LEVER WAND KNOBS -Hex Head

- Handle Material: Plastic (KT)



Item#	Female Thread	Hex (mm)	Handle Length L
8017-0048	M6X1.5	14	1.65"
8017-0051	M8X1.25	14	2.83"
8017-0053	M10x1.5	16	3.62"

LEVER WAND KNOBS-Push to Screw On



- Handle Material: Plastic (KT)

Item#	Thread x Lenght	Handle Length (mm)
8017-0060	M6x20mm	43
8017-0061	M6x20mm	63
8017-0063	M6x30mm	43
8017-0064	M6x30mm	63
8017-0066	M6x45mm	43
8017-0070	M8x15mm	83
8017-0071	M8x30mm	63
8017-0073	M8x40mm	83
8017-0076	M10x20mm	83

METRIC BALL PLUNGER

- Body Material: 12L14Steel
- Ball Material: 302 Stainless Steel
- Smallest and lightest spring loaded device
- Side-load tolerant
- Controlled end forces
- Screwdriver installation



Item #	Thread	Dimension (mm) d (Ball Dia.)	L	End Forces(lbs.) Inital	Final
8017-0100	M4x0.70	2.5	9	2	4.9
8017-0102	M6x1.00	3.5	13	4.9	14
8017-0104	M8x1.25	5.0	15	7	19
8017-0108	M10x1.50	6.0	16	8	24
8017-0112	M12x1.75	8.0	22	9	29

Pro-Series TANG SCREW FOR DRAWBAR END HOLDERS



Tang for draw bar thread type holders

- Precision made from tool steel, hardened.
- Metric thread.

Item#	Morse Taper	Thread	Dimension (mm) D	L	11	12
3900-0790	MT2	M10x1.50	12	30	7	4
3900-0791	MT3	M12x1.75	17	40	12	4
3900-0792	MT4	M16x2.00	24	46	13	5

REVOLVING HANDLES

- Handle Material: Bakelite (KU)



Item#	Thread x Lenght	Handle Length (mm)	Handle Dia (mm)
8017-0080	M8x13mm	56	20
8017-0082	M8x13mm	76	22
8017-0085	M10x13mm	56	20
8017-0086	M10x13mm	76	22
8017-0087	M10x13mm	83	25

FLAT END HANDLES, REVOLVING

- Material: Steel
- Fits most movable handwheels



Item#	Thread	Dimensions (mm) D	L1	L
8017-0001	M10X1.5	23	16	100
8017-0002	3/8"-16	22	16	99

ELLIPSE END HANDLES, REVOLVING



- Material: Steel
- Fits most movable handwheels

Item#	Thread	Dimensions (mm) D	L1	L
8017-0010	M6x1.0	16	7	60
8017-0011	M8x1.25	20	9	80
8017-0012	M10x1.5	26	13	110
8017-0016	3/8"-16	25	13	99

KNOB HAND

- Material: KT plastic
- Thread: M8x1.25, 0.83" length
- Knob: 1.6" diameter, 2.6" Length.

8017-0042



BALL KNOBS



- Material: Bakelite (KU)

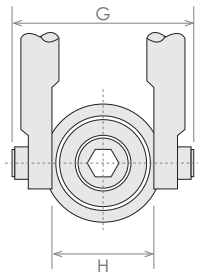
Item#	Diameter (mm)	Thread
8017-0030	25	M6
8017-0032	25	M8
8017-0033	38	M8
8017-0035	38	M10
8017-0037	38	M12
8017-0038	42	M12

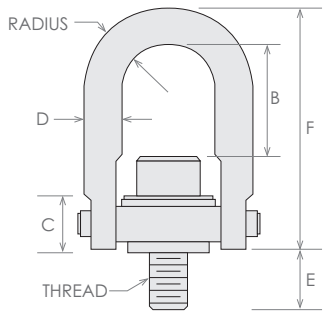
SAFETY SWIVEL HOIST RINGS

200% PROOF-LOAD TESTED AND CERTIFIED WITH TRACEABLE SERIAL NUMBER

- Swivels 360° - pivots 180°
- Material: Alloy Steel
- Safety factor: 5:1
- Finishi: Black Oxide (Also available: Cadmium Plated, Electroless Nickel Plated, Zinc Plated)
- Magnetic partical inspected.
- Certified heat treatment.
- Rated at 100% from 0° to 90°
- Fatigue tested to 20,000 cycle at 1.5 times the rated load
- Thread: Longer Projection and Fine Threads Available.
- Comforms to CE.
- **Meets or exceeds the requirements of ASME B30.26**







INCH THREAD

Rated Loads(Lbs)	Thread Size	A	C	D	E	Standard U-Bar Item#	B	F	G	H	Torque Ft/#	Wt. (Lbs)
600	1/4~20	0.43	0.71	3/8	0.54	**8004-6100**	1.27	2.67	1.84	1.00	6	0.3
800	5/16~18	0.43	0.71	3/8	0.54	**8004-6104**	1.27	2.67	1.84	1.00	7	0.3
1,000	3/8~16	0.43	0.71	3/8	0.54	**8004-6106**	1.27	2.67	1.84	1.00	12	0.3
2,500	1/2~13	0.70	0.93	1/2	1.07	**8004-6602**	1.84	3.77	2.58	1.49	28	1.0
2,500	1/2~13	0.88	1.22	3/4	0.78	**8004-6008**	2.31	4.78	3.52	1.99	28	2.6
4,000	5/8~11	0.88	1.22	3/4	1.03	**8004-6004**	2.18	4.78	3.52	1.99	60	2.6
5,000	3/4~10	0.88	1.22	3/4	1.03	**8004-6014**	2.06	4.78	3.52	1.99	100	3.0
7,000	3/4~10	1.40	1.71	1	1.54	**8004-6206**	3.06	6.52	5.14	3.00	100	7.0
8,000	7/8~9	1.40	1.71	1	1.04	**8004-6202**	2.93	6.52	5.14	3.00	160	7.0
10,000	1~8	1.40	1.71	1	1.29	**8004-6210**	2.81	6.52	5.14	3.00	230	7.5
10,000	1-1/8~7	1.40	1.71	1	2.29	**8004-6216**	2.69	6.52	5.14	3.00	230	7.5
10,000	1-1/8~8	1.40	1.71	1	2.29	**8004-6217**	2.69	6.52	5.14	3.00	230	7.5
15,000	1-1/4~7	1.75	2.11	1-1/4	1.89	**8004-6802**	4.12	8.73	6.50	3.76	470	14.0
20,000	1-3/8~6	2.00	2.40	1-1/2	2.50	**8004-6702**	5.50	10.20	7.46	4.31	540	23.0
24,000	1-1/2~6	2.25	2.81	1-3/4	3.20	**8004-6404**	6.41	12.47	8.55	4.87	800	34.0
24,000	1-3/4~5	2.25	2.81	1-3/4	3.20	**8004-6408**	6.16	12.47	8.55	4.87	800	34.0
30,000	2~4-1/2	2.25	2.81	1-3/4	3.20	**8004-6400**	5.91	12.47	8.55	4.87	800	36.0
50,000	2-1/2~4	3.00	4.09	2-1/4	4.00	**8004-7006**	8.03	16.87	11.67	6.52	2100	88.0

STAINLESS STEEL AVAILABLE.

METRIC THREAD

Rated Loads(Lbs)	Thread Size	A	C	D	E	Standard U-Bar Item#	B	F	G	H	Torque Ft/#	Wt. (Lbs)
400	M8x1.25	11	18	10	13	**8004-6912**	32	68	47	25	9	0.4
500	M10x1.50	11	18	10	18	**8004-6916**	30	68	47	25	16	0.4
1,050	M12x1.75	18	24	13	27	**8004-6608**	48	96	66	38	37	1.0
1,050	M12x1.75	22	30	19	19	**8004-6924**	60	121	89	51	37	2.5
1,050	M14x2.00	22	30	19	29	**8004-6928**	58	121	89	51	40	2.5
1,900	M16x2.00	22	30	19	29	**8004-6930**	56	121	89	51	80	2.7
2,150	M20x2.50	22	30	19	34	**8004-6936**	52	121	89	51	135	6.7
3,000	M20x2.50	36	43	25	32	**8004-6942**	78	166	131	76	135	7.0
4,200	M24x3.00	36	43	25	37	**8004-6948**	74	166	131	76	311	15.0
7,000	M30x3.50	45	54	32	42	**8004-6956**	106	222	165	95	637	15.0
7,000	M33x3.50	45	54	32	67	**8004-6960**	103	222	165	95	637	23.0
10,000	M33x3.50	50	62	38	58	**8004-6961**	140	259	189	109	637	35.0
11,000	M36x4.00	57	71	44	63	**8004-6966**	166	317	217	124	1085	36.0
12,500	M42x4.50	57	71	44	83	**8004-6968**	160	317	217	124	1085	38.0
13,500	M48x5.00	57	71	44	83	**8004-6970**	154	317	217	124	1085	38.0
13,500	M56x5.50	57	71	44	88	**8004-6973**	154	317	217	124	1085	38.0
22,300	M64x6.00	76	103	57	101	**8004-6972**	204	428	296	165	2847	86.0

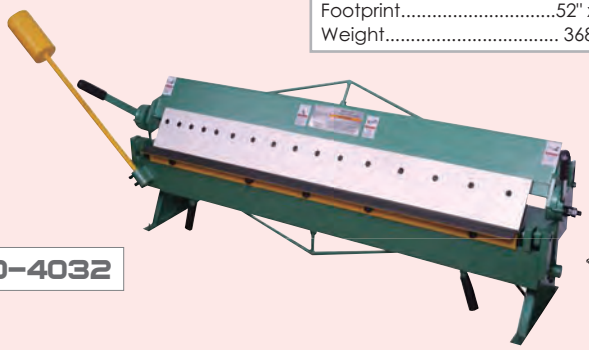
STAINLESS STEEL AVAILABLE.

48" PAN & BOX BRAKE

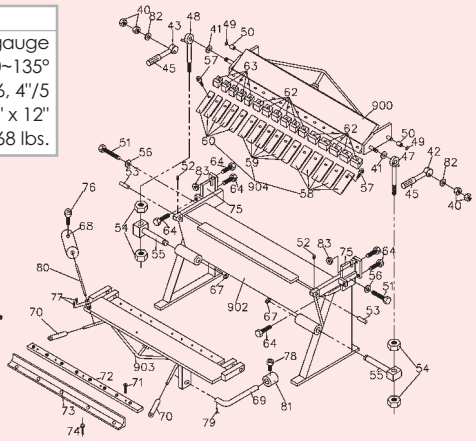
- 48" width is suitable for many metal forming operations.
- Hardened steel box fingers are easily removed or repositioned.
- Left and right beam control levers for easy operation.
- Large contour balanced brake handle for brake past 90° to 135°.
- Ruggedly built.

SPECIFICATIONS	
Capacity (mild steel)	16 gauge
Brake range	0~135°
No. of finger	2"/5, 3"/6, 4"/5
Footprint	52" x 12"
Weight	368 lbs.





8600-4032



3 - IN - 1 SHEET METAL MACHINES

- Heavy duty structure made of high grade tool steel and casting.
- A "little" slick sheet metal machine with 3 functions.
- Shear, Brake & Slip Roll all in one.
- Max. capacity in mild steel.
- Brake attachment comes with sectional fingers for forming various sized boxes.
- Rod and wire forming grooves: 3/32, 1/8, 5/32, 3/16, 7/32 & 1/4".
- Roll diameter: 1-1/2" with rigid mechanisms.
- Roller ground for ultra smooth rolling.
- Hinged roller cover for added safety and security.

Limited Supply!



12", 22 Gauge

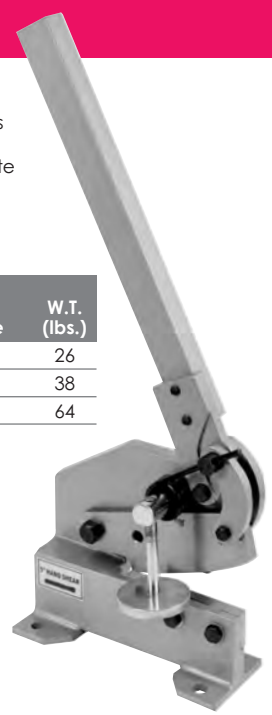
8600-4025

120 lbs.

BENCH METAL SHEARS

- Heavy duty structure.
- Can be used to cut sheet steel, steel bars and rods.
- Small and unique device for convenient site working.
- An adjustable hold-down clamp aids in securing material.

Item#	Blade Length	Capacity to Cut Round(Dia)	Plate	W.T. (lbs.)
8600-4001	5"	3/8"	1/8"	26
8600-4005	8"	1/2"	1/4"	38
8600-4012	12"	1/2"	1/8"	64





Replacement Blades

8" (Pair)(Item #8600-4006)

12" (Pair)(Item #8600-4013)

MINI UNIVERSAL BENDER

- Forms wire, flat metal and tubing into clamps, handles, brackets, hooks, coils and more
- Makes sharp angle bends up to 5/16" diameter rod and 1"x1/8" flat metal.
- Made of hardened tool steel.
- Mounts on a work bench or held in a vise.



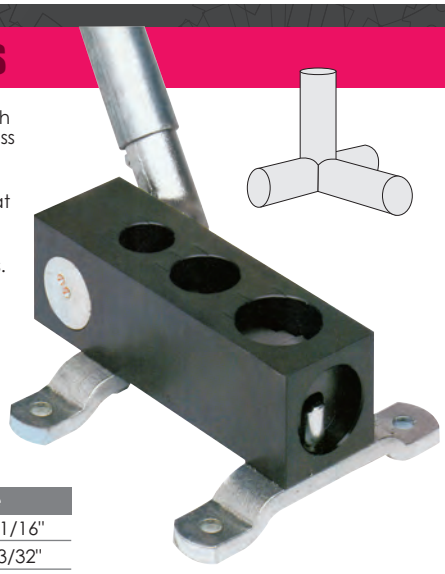
8600-4019

KIT INCLUDES:

3- Circle Pins (3/16", 1/4" & 1/2" Diameter)
1 of each: Circle Die (1" Diameter),
Form Pin Flower, Sharp Angle Die and Gauge

TUBE NOTCHERS

- Operated on tubes with up to .118" wall thickness for steel.
- Advantage for joining and welding of tubes at a 90° angle.
- One device covers several tube diameters.
- Horizontal and vertical operation.
- Suitable for double-connections.



Item#	Range
8600-4046	1-1/16 ~1-11/16"
8600-4047	1-7/8 ~ 2-13/32"

HEAVY DUTY TIE DOWN



- Heavy duty ratchet tie down.
- Quick automatic release.
- Safe and secure type.

Limited Supply!

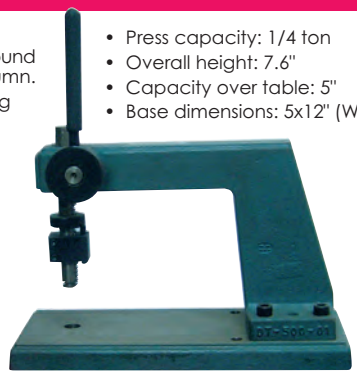
Item#	Size (W x L)	Capacity (lbs)
8010-0002	1" x 15 ft.	1,000
8010-0001	2" x 27 ft.	6,500

DEEP THROAT LEVER ARBOR PRESS

- Utilizes a 5/8" diameter precision ground ram, press consists of a ground cast iron base and separate column.
- The base consists of two mounting holes for1/4" socket cap screw.
- Throat clearance: 6"
- Adjustable down stop
- Up stroke limiter

- Press capacity: 1/4 ton
- Overall height: 7.6"
- Capacity over table: 5"
- Base dimensions: 5x12" (WxL)

1/4 TON
8600-0138



HEAVY DUTY BENCH GRINDERS

- Direct drive motor with no brushes or belts to adjust or replace
- Permanently lubricated motor bearings
- Adjustable shatter-resistant plastic eye shields
- Removable wheel covers for easier wheel changes

- Free speed: 3,500 RPM
- Adjustable tool rests
- Power: 110 V/ 1Phase
- 6' wire cord
- UL approved



Color May Vary

6", 1/2 HP
7600-0030

8", 3/4 HP
7600-0028

PEDESTAL STAND FOR BENCH GRINDERS

- For 6, 8 & 10" grinders
- Base for Grinder : 9-3/4 x 9-3/4"
- Overall height: 34"
- Weight: 22 Lbs.
- Coolant tank and adjustable tool tray.

8071-0034



Large Capacity 3TON ARBOR PRESS

NEW



- Ratcheted lever lowers the ram to provide up to 3 tons of force.
- Handwheel quickly advances the ram for initial positioning, and the ratcheted lever lowers the ram onto the object and can be set at a comfortable position for the user.
- Smooth action gears enable fine control over ram movement with the lever.
- Counterweight repositions the lever to the top after a downstroke to reduce strain and quickly prepare for the next task.
- Open base and slotted table plate provide support for solid objects as well as an outlet for arbors and similar items to pass through.

8600-3603

Ratchet leverage arbor press with handwheel and counterweight applies up to 3 tons of force to facilitate installation, removal, and pressing of items. The handwheel advances the ram for quick placement near the object being pressed. The ratcheted lever lowers the ram onto the object with more precision and control than the handwheel and can be set at a comfortable position for the user. The smooth action gears enable fine control over ram movement with the lever, and a counterweight repositions the lever to the top after a downstroke to reduce strain and quickly prepare for the next task.

The open base and slotted table plate provide support for solid objects as well as an outlet for arbors and shafts to pass through. The plate can be removed or rotated to one of its 5 openings of varying diameters depending on the requirements of the application. The ram cap can be adjusted using the included 0.008"- and 0.015"-thick shims to adjust the ram forwards and backwards and to compensate for wear. The set screw adjusts the ram sideways. Three 0.52"-dia. holes are located on the base to enable bench mounting. Mounting hardware is not included. Press is assembled.

Item#	Press (Ton)	Max. Working Dia.	Max. Working Ht.	Throat Depth	(Inch) Press Ht.	Base Width	Base Depth	Ram	Leverage Ratio	W.T. (lbs)
8600-3603	3	14	10-3/4	7	19	7-1/4	18	1-1/4	48:1	145

PEDESTAL FOR ARBOR PRESS

- This arbor press floor pedestal is used with the Dake Model1 or 1-1/2 (3 ton) arbor presses & our #8600-3603.
- Features slot to accomdate pieces that extend below the base.
- Anvil diameter word area 22-1/4".
- Weight: 70 lbs.
- Dimension(LxWxH): 12x21x36"

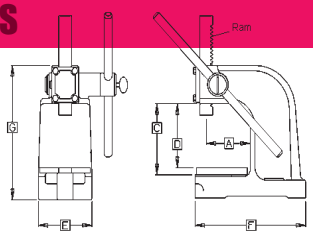
8600-3610

NEW

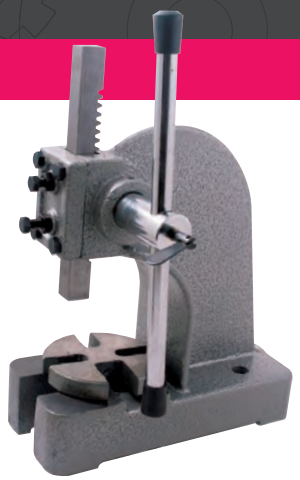


HEAVY DUTY ARBOR PRESSES

- Heavy duty frame.
- Precision made.
- 4 position steel anvil.
- Steel pinions.







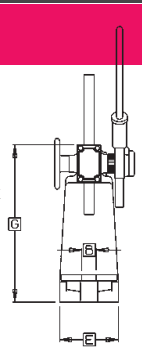
Item#	Press (Ton)	Max. A	Press Ht. G	Base ExF	Capacity Over Table C	Capacity Over Anvil D	Ram	W.T. (lbs)
8600-0031	1/2	3.25"	10"	4 X 9"	5"	4-1/2"	3/4"	24
8600-0032	1	4"	13"	5 x 11"	6"	5-1/4"	1"	35
8600-0033	2	6"	18"	6 x 16"	9.5"	8-1/2"	1-1/4"	91
8600-0035	5	9"	35"	11x27"	19"	18"	2"	360

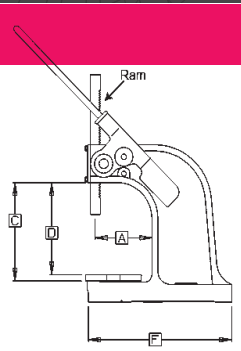
RATCHET LEVER ARBOR PRESSES





- Ratchet device permits lever to be used in most convenient position.
- Heavy-duty casting frame.
- 4-position anvil.
- Hand wheel advances ram to work quickly.





RATCHET TYPE

Item#	Capacity (Ton)	Height of Press G	Max. A	Arbor	Ram	Capacity Over Anvil D	Base E x F	W.T. (lbs)
8600-3301	2	18-1/2"	6"	1-7/8"	1/1/4"	8-1/2"	11.0x17.3"	86
8600-3401	3	21-1/2"	6"	1-3/4"	1-1/2"	12-5/8"	10.7x17.5"	132
8600-3501	5	35"	8.5"	2"	2"	15"	14.6x25.4"	440

RATCHETING GEARS & REPLACEMENT RINGS FOR ARBOR PRESSES

NEW

- Original replacement parts.
- Ring & ratcheting gear sold seperatly.
- Fits HHIP brand ratcheting arbor presses.

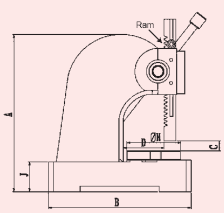


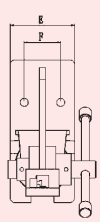


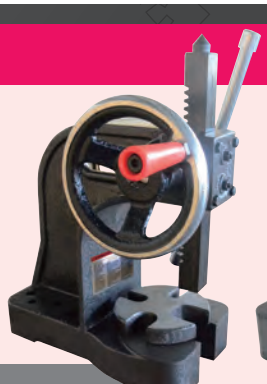
For Arbor Press Type	Ratcheting Gear Item#	Retaining Ring Item#
2 Ton	8600-3302	8600-3303
3 Ton	8600-3402	8600-3403
5 Ton	8600-3502	8600-3503

Pro-Series ARBOR PRESS

- For riveting, squeezing, punching, bending, and other pressing applications.
- Base drilled for mounting on bench or pedestal.
- Sturdy, cast-iron construction.
- Removable machined steel anvil provides accurate work suppport in four slot positions.
- Rugged steel ram is driven by machined pinion.
- Punches or tools may be added to the end of the ram with the aid of a magnetic insert.







1 TON Shown



3 TON Shown

Item#	Press (Ton)	High Speed Wheel	Max. D	Press Ht. A	Capacity Over Anvil C	Anvil Dia. H	Ram	B	E	J	W.T. (lbs)
8600-0130	1/2	No	3.3"	11"	4.6"	3-1/2	3/4"	9.5"	5	2	20
8600-0131	1	Yes	4"	14"	5.5"	4-1/2	1"	16"	8	2-1/8	33
8600-0132	2	No	6"	18"	8.52"	6-3/4	1-1/4"	18"	9-1/2	3-1/8	71
8600-0133	3	No	9"	36"	18"	6-3/4	1-1/2"	21"	10	4	105



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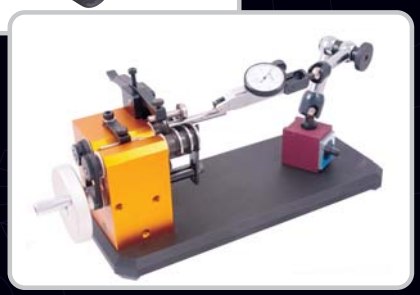
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