

BEST*T***OO**L®



Catalog

**Workholding Tools
Shop Supplies
Machinery**

www.chinabestools.com

Welcome to BESTOOL !

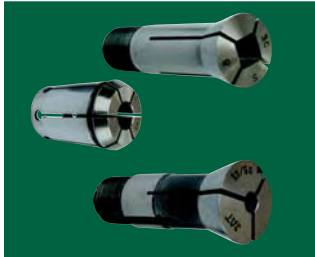
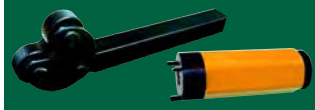
We will try to be best supplier from China in Measuring Tools, Cutting Tools, Machinery and Accessories evaluated by customers.

Why should you choose BESTOOL?

Quality:	Top quality, try to be error free
Delivery:	Speed up our delivery and ship in time
Cost:	Competitive prices with market
Service:	Quick response to any questions and provide value added services

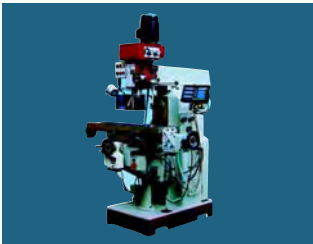


INDEX



C1-C2	NC Tool Holder with shank to DIN69880
C3-C4	American Quick Change Tool Post and Holders
C5	KDK Style Quick Change Tool Posts & Holders
C5-C6	40-Position Quick Change Tool Posts & Holders
C6-C7	Italian Quick Change Tool Posts & Sets
C8	Knurling Tools
C8	Collet Stops
C8	Collet Wrenches
C9-C14	5C, R8, 3C, 3AT Collets
C14	Collet Stands
C15	TG Series Single Angle Collets
C16	DA Series Double Angle Collets
C17	EOC Collets
C18-C21	ER Collets, ER Collet Chucks & Sets
C22-C24	DIN 6343 Clamping Collets
C25	Tool Holder Bushings
C26-C28	End Mill Holders
C29-C39	CNC End Mill Holders
C39	Retention Knobs
C40-C41	Milling Machine Arbors
C41-C43	Adaptors, Sockets, Sleeves
C43	Reversing Type Tapping Heads
C44	Expanding Arbors, Mandrels
C45-C46	Boring Heads and Shank
C46-C47	Lathe Centers
C48-C49	Drill Chucks
C50	Drill Chuck Arbors
C50-C51	Collet Fixture
C51	End Mill and Drill Sharpener
C51	H&V Tool Locking Fixtures
C52	Punch Former
C53	Indexing Fixtures
C54-C55	Rotary Tables
C55	Milling & Drilling and Sliding Tables
C56-C57	Box Parallels and Angle Plates
C58	Magnetic Chucks
C59-C61	Lathe Chucks and Back Plates
C62-C68	Clamping Tools and Kits
C69-C70	Toggle Clamps
C71-C77	Vises
C78	Jacks and Stops
C79-C86	Deburring Tools
C86-C87	Steel Stamps
C87-C89	Punches
C90-C93	Pliers, Wrenches, Drivers and Sockets

INDEX



C94	Pin Vise, Doweling Jig, Hole Saw Arbors
C95	Screw Extractors, Hacksaw Blades & Magnetic Mirror & Pen
C96	Battery and Chargers
C97	Pneumatic Tools
C98	Spray Guns
C99	Manifolds
C100	Air Compressors
C101-C102	Magnifier Lamps
C102	Working Lights
C103	Spotlights
C104-C105	Roller and Ball Stands
C106-C110	Hand Pallet Trucks
C110-C111	Lift Tables
C112	Platform Trucks
C112	Toolholder Cart
C113	Carts, Tool Chest and Cabinets
C114	Manual Hoists
C115	Geared Trolleies and Beam Clamps
C116,C121	Pullers
C117	Hoists and Frame
C118-C121	Hydraulic Jacks
C122	Lifter and Carriers
C123	Arbor Presses, Punches and Notchers
C124	Sheet Metal Cutter
C124-C125	Compact Benders
C125	Rolls
C126	Power Feed and Part Washers
C127-C128	Shears, Brakes and Slitters
C129-C130	Grinders
C130-C132	Sanders
C132	Log Splitters
C132-C135	Saws
C134-C135	Planner, Jointer and Wood Lathe
C135	Dust Collectors
C136	Dovetail Jigs
C137	Drill Presses
C138	Metal Cutting Saws
C139	Lathes
C140-C142	Milling & Drilling Machines
C143	Surface Grinder
C143	Shock Proof Machine Mounts

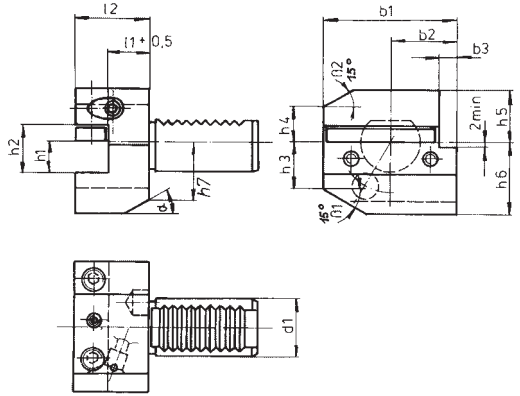
NC Tool Holders with Shank to DIN69880

The product is essential machine tool accessories for working center of CNC machine. German DIN69880 norm, it features developed structure, high accuracy, convenient and alternative etc. It can satisfy the needs of turning, drilling, boring and milling etc. With various tool holders and allocate different types tool and accessory.

**Form B1,
with Square Crossholding Fixture,
Right Hand, Short**



**Form B2,
with Square Crossholding Fixture,
Left Hand, Short**

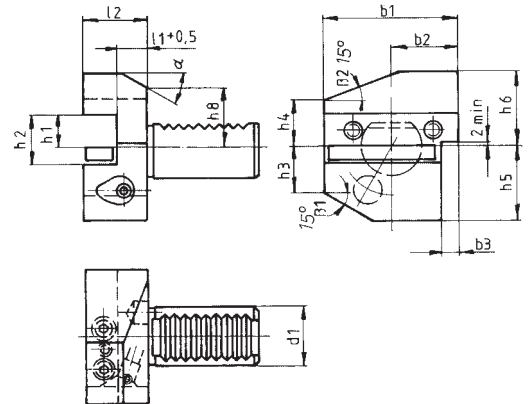


d1	h1	h2	h3	h4	h5	h6	h7	b1	b2	b3	l1	l2	Weight (kg)	Form B1 Order No.	Form B2 Order No.
16	12	17	15	15	20	22	19	42	23	5	13	24	0.420	950-8011	950-8021
20	16	22	19	19	25	30	23	55	30	7	16	30	0.550	950-8012	950-8022
30	20	29	26	22	28	38	30	70	35	10	22	40	1.290	950-8013	950-8023
40	25	34	35	30	32.5	48		85	42.5	12.5	22	44	2.280	950-8014	950-8024
50	32	41	42	35	35	60		100	50	16	30	55	3.900	950-8015	950-8022

**Form B3,
with Square Crossholding Fixture
Overhead, Right Hand, Short**



**Form B4,
with Square Crossholding Fixture
Overhead, Left Hand, Short**

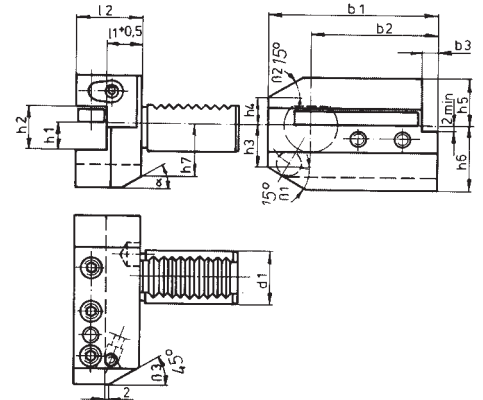


d1	h1	h2	h3	h4	h5	h6	h8	b1	b2	b3	l1	l2	Weight (kg)	Form B3 Order No.	Form B4 Order No.
16	12	17	15	15	20	22	19	42	23	5	13	24	0.450	950-8031	950-8041
20	16	22	19	19	25	30	23	55	30	7	16	30	0.590	950-8032	950-8042
30	20	29	26	22	35	38	28	70	35	10	22	40	1.330	950-8033	950-8043
40	25	34	35	30	42.5	48		85	42.5	12.5	22	44	2.340	950-8034	950-8044
50	32	41	42	35	50	60		100	50	16	30	55	4.200	950-8035	950-8042

**Form B5,
with Square Crossholding
Fixture, Left Hand, Long**



**Form B6,
with Square Crossholding
Fixture, Left Hand, Long**



d1	h1	h2	h3	h4	h5	h6	h7	b1	b2	b3	L1	L2	Weight (kg)	Form B5 Order No.	Form B6 Order No.
16	12	17	15	15	20	22	19	58	39	5	13	24	0.400	950-8051	950-8061
20	16	22	19	19	25	30	23	75	50	7	16	30	0.720	950-8052	950-8062
30	20	29	26	22	35	38	30	100	65	10	22	40	1.730	950-8053	950-8063
40	25	34	35	30	32.5	48	-	118	75.5	12.5	22	44	2.880	950-8054	950-8064
50	32	41	42	35	35	60	-	130	80	16	30	55	5.000	950-8055	950-8065

NC Tool Holders with Shank to DIN69880

The product is essential machine tool accessories for working center of CNC machine.

German DIN69880 norm, it features developed structure, high accuracy, convenient and alternative etc. It can satisfy the needs of turning, drilling, boring and milling etc. With various tool holders and allocate different types tool and accessory.

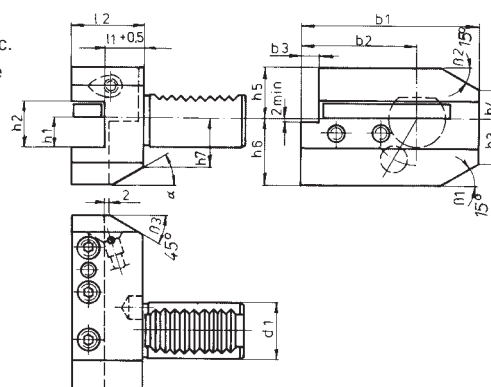
Form B7,

with Square Crossholding Fixture
Overhead, Right Hand, Long



Form B8,

with Square Crossholding Fixture
Overhead, Left Hand, Long



d1	h1	h2	h3	h4	h5	h6	h8	b1	b2	b3	L1	L2	Weight (kg)	Form B7 Order No.	Form B8 Order No.
16	12	17	15	15	20	22	19	58	39	5	13	24	0.540	950-8071	950-8081
20	16	22	19	19	25	30	23	75	50	7	16	30	0.800	950-8072	950-8082
30	20	29	26	22	35	38	30	100	65	10	22	40	1.840	950-8073	950-8083
40	25	34	35	30	42.5	48	-	118	75.5	12.5	22	44	3.160	950-8074	950-8084
50	32	41	42	35	50	60	-	130	80	16	30	55	5.320	950-8075	950-8082

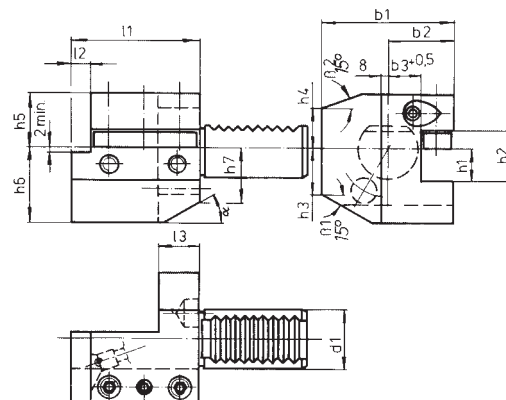
Form C1,

with Longitudinal Square Holding
Fixture, Right Hand



Form C2,

with Longitudinal Square Holding
Fixture, Left Hand



d1	h1	h2	h3	h4	h5	h6	h7	b1	b2	b3	L1	L2	L3	Weight (kg)	Form C1 Order No.	Form C2 Order No.
16	12	17	15	15	20	22	19	43	24	13	44	5	20	0.730	950-8111	950-8121
20	16	22	19	19	25	30	23	52	27	13	55	7	30	0.880	950-8112	950-8122
30	20	29	26	22	35	38	30	70	35	17	70	10	30	1.790	950-8113	950-8123
40	25	34	35	30	32.5	48	-	85	42.5	20.5	85	12.5	30	3.120	950-8114	950-8124
50	32	41	42	35	35	60	-	100	50	25.5	100	16	40	5.370	950-8115	950-8122

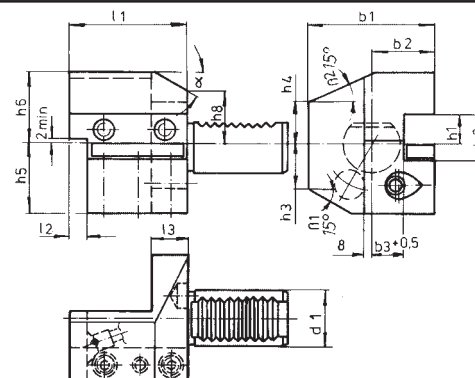
Form C3,

with Longitudinal Square Holding
Fixture Overhead, Right Hand



Form C4,

with Longitudinal Square Holding
Fixture Overhead, Left Hand



d1	h1	h2	h3	h4	h5	h6	h7	b1	b2	b3	L1	L2	L3	Weight (kg)	Form C3 Order No.	Form C4 Order No.
16	12	17	15	15	20	22	19	43	24	13	44	5	20	0.780	950-8131	950-8141
20	16	22	19	19	25	30	23	52	27	13	55	7	30	1.000	950-8132	950-8142
30	20	29	26	22	35	38	30	76	35	17	70	10	30	2.120	950-8133	950-8143
40	25	34	35	30	32.5	48	-	85	42.5	20.5	85	12.5	30	3.380	950-8134	950-8144
50	32	41	42	35	35	60	-	100	50	25.5	100	16	40	6.200	950-8135	950-8142

Quick Change Tool Posts & Tool Holders

Piston Type Tool Post Sets

Each set consists of one piston type tool post and one of each of 5 tool holders:

- #1: Boring & Facing.
- #2: Boring, Turning & Facing.
- #4: Boring, Heavy duty.
- #7: Universal Parting Blade.
- #10: Knurling, Facing & Turning.



Tool Post Series	Swing	Set Order No.
100(AXA)	Up To 12"	951-1100
200(BXA)	10-15"	951-1200
300(CXA)	13-18"	951-1300
400(CA)	14-20"	951-1400

Wedge Type Tool Post Sets

Each set consists of one piston type tool post and one of each of 5 tool holders:

- #1: Boring & Facing.
- #2: Boring, Turning & Facing.
- #4: Boring, Heavy duty.
- #7: Universal Parting Blade.
- #10: Knurling, Facing & Turning.

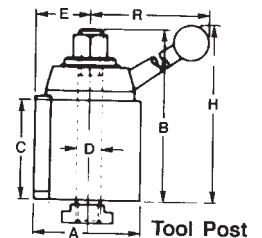


Tool Post Series	Swing	Set Order No.
100(AXA)	Up To 2"	951-1111
200(BXA)	10-15"	951-1222
300(CXA)	13-18"	951-1333
400(CA)	14-20"	951-1444

Quick Change Lathe Tool Posts

Features:

- All working parts hardened & ground.
- Maximum rigidity for chatter-free performance.
- No time wasted with shims.
- Holders fit "ALORRIS" & "YUASA" tool posts.
- Increases productivity of all lathe operations.
- Completely sealed for maintenance free operation.
- Change tools in seconds.

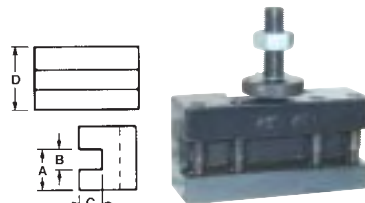


Tool Post Series	Width A	B	C	Overall D	Height E	Fits Lathe H	R	Size	Piston Type Order No.	Wedge Type Order No.
100	2-1/2"	3-7/8"	2-1/4"	9/16"	1-3/8"	4-11/16"	5-3/4"	12"	950-1100	950-1111
200	3	4-5/8	2-3/4	5/8	1-5/8	5-9/16	7-5/16	10-1	950-1200	950-1222
300	3-1/2	5-1/8	3	3/4	1-7/8	6-1/8	7-7/8	13-18	950-1300	950-1333
400	4	6-1/4	3-5/8	7/8	2-1/8	7	9	14-20	950-1400	950-1444

#1, Turning & Facing Holders

Features:

- Takes various sizes of bits.
- Turning and facing tools can be locked in together.
- Save time and labor when changing operations.

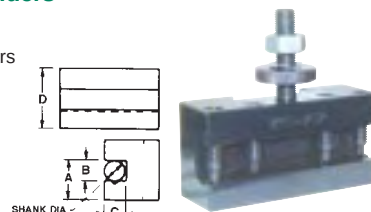


Series	A	B	C	D	Tool Bit	Order No.
100(AXA)	15/16"	1/2"	7/16"	1-1/2"	3/16-1/2"	950-1101
200(BXA)	1-1/8	5/8	1/2	1-3/4	1/4-5/8	950-1201
300(CXA)	1-7/16	3/4	5/8	2-1/8	1/2-3/4	950-1301
400(CA)	1-11/16	1	3/4	2-1/2	1/2-1	950-1401

#2, Boring, Turning & Facing Holders

Features:

- "V" groove holds round shank boring bars and tools as well as square tool bits.

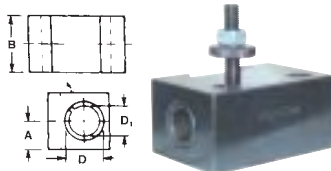


Series	A	B	C	D	Tool Bit	Shank	Order No.
100(AXA)	15/16"	1/2"	7/16"	1-1/2"	3/16-1/2"	7/16"	950-1102
200(BXA)	1-1/8	5/8	1/2	1-3/4	1/4-5/8	1/2	950-1202
300(CXA)	1-7/16	3/4	5/8	2-1/8	1/2-3/4	3/4	950-1302
400(CA)	1-11/16	1	3/4	2-1/2	1/2-1	13/16	950-1402

#4, Heavy Duty Boring Holders

Features:

- Equipped with a split bushing to accommodate a boring bar of smaller dia.
- It grips with extreme rigidity, cuts smoothly without chatter.
- Holders supplied with split bushing.

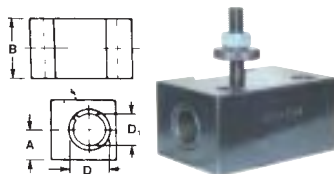


Series	A	B	Inside D	D1	Order No.
100(AXA)	3/4	1-1/2	3/4	5/8	950-1104
200(BXA)	3/4	1-3/4	1	3/4	950-1204
300(CXA)	1	2	1	3/4	950-1304
400(CA)	1-3/8	2-3/4	1-1/4	1	950-1404

#41, Heavy Duty Boring Holders

Features:

- Equipped with a split bushing to accommodate a boring bar of smaller dia.
- It grips with extreme rigidity, cuts smoothly without chatter.
- Holders supplied with split bushing.

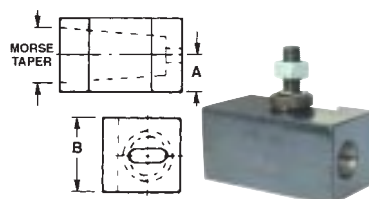


Series	A	B	Inside D	D1	Order No.
100(AXA)	7/8	1-3/4	1	3/4	950-1141
200(BXA)	1	2	1-1/4	1	950-1241
300(CXA)	1-1/8	2-1/4	1-1/4	1	950-1341
400(CA)	1-3/8	2-3/4	1-1/2	1-1/4	950-1441

#5, Morse Taper Holders

Features:

- Drills with carriage by using power feed instead of tail stock
- Easily centered.
- For 2,3 and 4 Morse Taper drills.

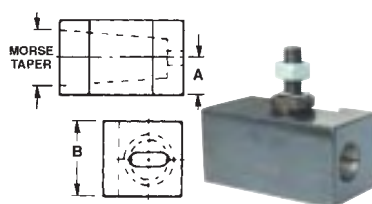


Series	A	B	Taper Hole Size	Order No.
100(AXA)	3/4	1-1/2	MT2	950-1105
200(BXA)	7/8	1-3/4	MT2	950-1205
300(CXA)	1	2	MT3	950-1305
400(CA)	1-1/4	2-1/2	MT3	950-1405

#53, Morse Taper Holders

Features:

- Drills with carriage by using power feed instead of tail stock
- Easily centered.
- For 2,3 and 4 Morse Taper drills.

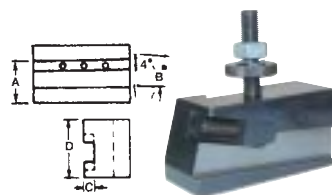


Series	A	B	Taper Hole Size	Order No.
100(AXA)	3/4	1-1/2	MT3	950-1153
200(BXA)	7/8	1-3/4	MT3	950-1253
300(CXA)	1-1/16	2-1/8	MT4	950-1353
400(CA)	1-1/4	2-1/2	MT4	950-1453

#7, Universal Parting Blade Holders

Features:

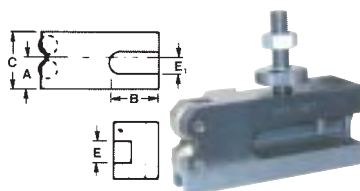
- For bevel as well as T-cut blades.
- Absence of vibration prevents breaking blades.



Series	A	B	C	D	Height	Order No.
100(AXA)	13/16	1/2	13/16	1-1/2	1/2	950-1107
200(BXA)	1	11/16	13/16	1-3/4	11/16	950-1207
300(CXA)	1-3/16	3/4	13/16	2	3/4	950-1307
400(CA)	1-7/16	7/8	1/4	2-1/2	7/8	950-1407

#10, Knurling, Facing & Turning Holders

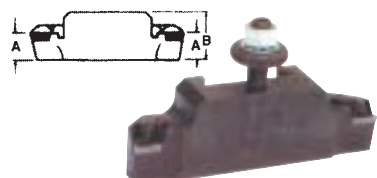
- For turning and facing as knurling.
- Supplied with a set of high speed precision round lapped medium diamond knurls.
- Dimensions 3/4x3/8x1/4"



Series	A	B	C	E	E1	Tool Bit	Order No.
100(AXA)	7/8"	2-1/2"	1-6/19"	1/2"	3/8"	3/16-1/2"	950-1110
200(BXA)	1	2-5/8	1-3/4	5/8	1/2	1/4-5/8	950-1210
300(CXA)	1-3/16	3-1/8	2	3/4	5/8	1/2-3/4	950-1310
400(CA)	1-7/16	3-3/4	2-1/2	1	3/4	1/2-1	950-1410

#16, Combination Facing & Turning Holders For Carbide Triangular Inserts

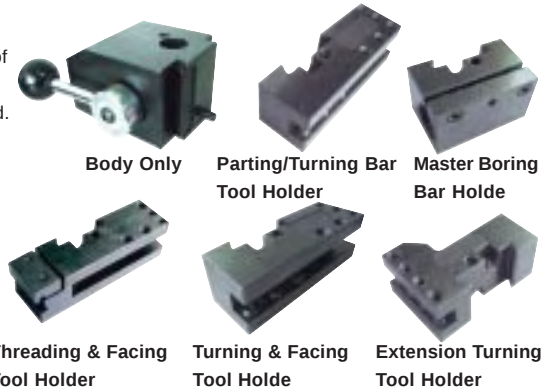
Accommodates standard triangular positive rake inserts. Unique design permits both right hand and left hand turning and facing. Supplied with carbide shims to protect the holder. Inserts not included.



Series	A	B	Inserts		Rake	Order No.
			I.C.	Thick		
100(AXA)	7/8"	1-3/8"	3/8"	1/8	Pos.	950-1116
200(BXA)	1	1-3/4	3/8	1/8	Pos.	950-1216
300(CXA)	1-3/16	2	3/8	1/8	Pos.	950-1316
400(CA)	1-1/2	2-1/4	1/2	3/16	Pos.	950-1416

KDK Style Quick Change Tool Posts & Holders

- The rigidity increases the life of your tools.
- Camlock-positive of tool setting.
- One turn of carriage or cross feed dial will permit changing of tools, allowing substantial saving of valuable time.
- Handle is broached for different position on cam-holders are made of steel, hardened and ground.
- Five holders will hold nine tools with 24 combinations allowing operator to handle most any job.
- Has adjustment screw allowing the use of tool bits upside down.



Quick Change Tool Holder Sets

Set Include:

- Body
- Parting/Turning Bar Tool Holder
- Threading & Facing Tool Holder
- Turning & Facing Tool Holder
- Extension Turning Tool Holder
- Master Boring Bar Holder

Series	Recommended Lathe Swing(In.)	Center Ht.(In.)	Order No.
100	12 to 16	1.000 & Up	951-3300
150	15 to 18	1.250 & Up	951-3200

Quick Change Tool Posts & Holders

Part name	1.000" & Up 12 to 16" Swing			1.250" & Up 15 to 18" Swing		
	Mfr's#	Bit Cap. (In.)	Order No.	Mfr's#	Bit Cap. (In.)	Order No.
Body Only	100		950-3300	150		950-3200
Turning & Facing Tool Holder	101	1/2	950-3301	151	5/8	950-3201
Threading & Facing Tool Holder	102	1/2	950-3302	152	5/8	950-3202
Extension Turning Tool Holder	103	1/2	950-3303	153	5/8	950-3203
Parting/Turning Bar Tool Holder	104	1/8W x 11/16H	950-3304	154	1/8W x 7/8H	950-3204
Master Boring Bar Holder	105	1"hole	950-3305	155	1-1/4	950-3205

40-Position Quick Change Tool Posts & Holders

The best designed Quick Change Tool Post & Holder system in the industry for its accuracy, rigidity and productivity now at affordable price!

- Wear-free, tear-free, and maintenance-free.
- Adjust tool to 40 different positions indicated by a marked position dial (index every 9°)
- Fully interchangeable with other brand 40-position quick change tool post & holder.
- Heat-treated and precision-ground for very accurate repeatability.
- Change tools in seconds.
- Adjust height of cutting edge easily and accurately.
- Reground tools without removal from holder-setting unchanged.

40-Position Quick Change Tool Post Sets

Tool Post Series	Lathe Swing	Sets Order No.
A0	Up to 10" (120-220mm)	950-2705
A1	6-13" (150-300mm)	950-2710
E5	10-18" (200-400mm)	950-2715
B2	13-20" (300-500mm)	950-2722
C3	18-30" (400-700mm)	950-2725
D1	30" up (600-1000mm)	950-2730

Each set includes:
1 Tool Post
3 "D" Holders
1 "B" Holder



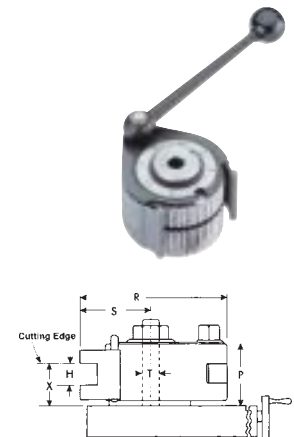
40-Position Quick Change Tool Posts

Size of Tool Post	Lathe Swing	Max. Driving Power (HP)	R Max.	S Max.	P	T	H	XMin.	X Max.	Post Only Order No.
A0	Up to 10" (120-220mm)	1.5"	2.99"	1.36"	1.26"	0.51"	0.51"	0.79"	1.18"	950-2100
A1	6-13" (150-300mm)	3	4.13	2.07	1.83	0.79	0.83	1.18	1.61	950-2200
E5	10-18" (200-400mm)	6	5.14	2.57	2.30	0.79	0.94	1.37	2.04	950-2300
B2	13-20" (300-500mm)	9	6.00	2.95	2.68	1.26	1.00	1.46	2.25	950-2400
C3	18-30" (400-700mm)	18	7.90	3.62	3.90	1.57	1.26	1.86	3.43	950-2500
D1	30" up (600-1000mm)	27	9.49	4.80	4.53	1.57	1.61	2.44	4.56	950-2600

"A" Cut-Off Tool Holder

Series	Blade Width	Holder Length	Order No.
A1	13/32"	3-5/32"	950-2401
E5	5/8"	4"	950-2402
B2	5/8"	4-3/4"	950-2403
D1	3/4"	6"	950-2404

Series	Blade Width (mm)	Holder Length (mm)	Order No.
A0	10	50	540-0040
A1	10	75	540-0140
E5	10	100	540-0240
B2	16	120	540-0340
C2	18.5	150	540-0440



40-Position Quick Change Tool Posts & Holders

"B" Boring, Turning & Facing Holders

Facing Holder			
Series	Height (mm)	Length (mm)	Order No.
A0	12	50	540-0020
A1	18	80	540-0120
A1	16	80	540-0121
A1	20	90	540-0122
E5	30	100	540-0220
B2	32	130	540-0320
C3	32	160	540-0421
C3	40	160	540-0422
D1	50	180	540-0520
D1	63	180	540-0521



Facing Holder			
Series	Height	Length	Order No.
A0	15/32"	2"	950-2201
A1	3/4"	3-5/32"	950-2202
E5	1-3/16"	4"	950-2203
B2	1-1/4"	5-1/8"	950-2204
C3	1-1/4"	6-5/16"	950-2205
C3	1-5/8"	6-5/16"	950-2206
D1	2"	7-3/32"	950-2207

"L" Bushings for Drill & Boring Bar Holders



Bushings Hole			
Series	Diameters	Taper	Order No.
A1	1-3/16"	MT1	950-2501
A1	1-3/16"	MT2	950-2502
E5	1-3/16"	MT2	950-2503
E5	1-5/8"	MT3	950-2504
B2	1-5/8"	MT3	950-2505
B2	1-5/8"	MT4	950-2506
C3	1-5/8"	MT3	950-2507
C3	1-5/8"	MT4	950-2508
C3	2"	MT4	950-2509
D1	2-1/2"	MT5	950-2510

Bushing			
Series	Dia.	Hole	Order No.
A1	30	MT1	540-0151
A1	30	MT2	540-0152
E5	30	MT2	540-0251
E5	40	MT3	540-0252
B2	40	MT3	540-0351
B2	40	MT4	540-0352
C3	40	MT3	540-0451
C3	40	MT4	540-0452
C3	50	MT4	540-0453
D1	63	MT5	540-0550

"D" Turning and Facing Holders



Facing Holder			
Series	Height	Length	Order No.
A0	15/32"	2"	950-2101
A1	3/4"	3-5/32"	950-2102
E5	3/4"	4"	950-2103
E5	1"	4"	950-2104
B2	1"	4-3/4"	950-2105
B2	1"	5-1/2"	950-2106
B2	1-1/4"	4-3/4"	950-2107
B2	1-1/4"	5-1/2"	950-2108
C3	1-1/4"	6"	950-2109
C3	1-1/4"	6-11/16"	950-2110
C3	1-5/8"	6"	950-2111
C3	1-5/8"	6-11/16"	950-2112
C3	1-3/4"	6-11/16"	950-2113
D1	1-5/8"	7-3/32"	950-2114
D1	2"	7-3/32"	950-2115
D1	2-1/2"	7-3/32"	950-2116

Facing Holder			
Series	Height (mm)	Length (mm)	Order No.
A0	12	50	540-0010
A1	20	80	540-0110
A1	16	75	540-0111
A1	16	80	540-0112
A1	16	90	540-0113
A1	20	75	540-0114
A1	20	90	540-0115
E5	20	100	540-0211
E5	25	100	540-0212
B2	25	120	540-0311
B2	25	140	540-0312
B2	32	120	540-0313
B2	32	140	540-0314
C3	32	150	540-0411
C3	32	170	540-0412
C3	40	150	540-0413
C3	40	170	540-0414
C3	45	170	540-0415
D1	40	180	540-0511
D1	50	180	540-0512
D1	63	180	540-0513

"S" Drill & Boring Bar Holders



Facing Holder			
Series	Height	Length	Order No.
A0	19/32"	2"	950-2301
A1	1-3/16"	3-5/32"	950-2302
E5	1-3/16"	4"	950-2303
E5	1-5/8"	4"	950-2304
B2	1-5/8"	4-3/4"	950-2305
C3	1-5/8"	6"	950-2306
C3	2"	6"	950-2307
D1	2-1/2"	7-3/32"	950-2308

Facing Holder			
Series	Height (mm)	Length (mm)	Order No.
A0	15	50	540-0030
A1	30	80	540-0130
A1	20	90	540-0131
E5	30	100	540-0231
E5	40	100	540-0232
B2	40	120	540-0330
C3	40	150	540-0431
C3	50	150	540-0432
D1	63	180	540-0530

Quick Change Tool Posts & Sets

It is composed of the cutter-cartridge body and the tool-holder for various cutting tools for processing works like cylindrical facing, end facing, cutting, knurling, drilling, enlarging boring and reaming, etc. The height of tools can be regulated and positioned relative to the centerline of machine spindle. It features external tool-mounting, tool-matching, quick tool-changing, great precision in positing and great hardness etc.

Quick Change Tool Post Sets

Each set Includes:

- 1 Tool Post
- 3 Tool-holders of flat section
- 1 Tool-holder with V-seat for round tools
- 2 Standard spanners



Lathe		Sets
Size	Swing	Order No.
MK	Up to 7"	951-5100
M	7-10"	951-5200
A	10-14"	951-5300
B	14-18"	951-5400
C	18-24"	951-5500
D	Over	951-5600
E	Over	951-5700
F	Over	951-5800

Quick Change Tool Posts & Sets continued

The quick change tool post is a major spare part of the ordinary lathes. It is composed of the cutter-cartridge body and the tool-holder for various cutting tools for processing works like cylindrical facing, end facing, cutting, knurling, drilling, enlarging boring and reaming, etc. The height of tools can be regulated and positioned relative to the centerline of machine spindle. It features external tool-mounting, too-matching, quick tool-changing, great precision in positing and great hardness etc.



Quick Change Tool Posts

Post Series	Lathe Swing	Dimensions of Turret Body	Max. Height Square and Rec. Tools	Max. Dia. of Round Tool	Taper Shank	Max. Adjusting Tool Holder	Order No.
M	7-10"	2-3/4x2-3/4x1-3/4	5/8	1/2	1	1/2	950-5200
501-AR-AP	10-12"						950-5250
A	10-14"	3-7/8x3-7/8x2-3/8	3/4	5/8	2	9/16	950-5300
501-BR-BP	12-15"						950-5350
B	14-18"	5x5x3-3/8	1-1/8	13/16	3	15/16	950-5400
C	18-24"	5-5/8x5-5/8x3-3/4	1-1/4	15/16	4	1	950-5500
D	Over	6-7/8x6-7/8x4-3/4	1-1/2	1-1/4	4	1-1/2	950-5600

Quick Change Tool Holders & Accessories

Series	Description	M Order No.	AR-AP Order No.	A Order No.	BR-BP Order No.	B Order No.	C Order No.	D Order No.
502 (201)	Flat-Seat Tool Holder	950-5221	950-5271	950-5321	950-5371	950-5421	950-5521	950-5621
503 (202)	V-Tool Holder	950-5222	950-5272	950-5322	950-5372	950-5422	950-5522	950-5622
504 (203)	Morse Taper Tool Holder	950-5223	950-5273	950-5323	950-5373	950-5423	950-5523	950-5623
550 (217)	Parting-off Blade Holder	950-5217	950-5267	950-5317	950-5367	950-5417	950-5517	950-5617
540 (216)	Boring Bar Tool Holder	950-5216	950-5266	950-5316	950-5366	950-5416	950-5516	950-5616
505 (204)	Eccentric Clamp Pin	950-5224	950-5274	950-5324	950-5374	950-5424	950-5524	950-5624
506 (205)	Tenon	950-5225	950-5275	950-5325	950-5375	950-5425	950-5525	950-5625
(212)	Clamping Block Spring		950-5262	950-5312	950-5362	950-5412	950-5512	
508 (213)	Dowel Pin	950-5213	950-5263	950-5313	950-5313	950-5413	950-5513	950-5613
509 (210)	Screw Stud	950-5210	950-5260	950-5310	950-5360	950-5410	950-5510	950-5610
510 (206)	Height Adj. Screw	950-5206	950-5256	950-5306	950-5356	950-5406	950-5506	950-5606
(218)	Boring Bar Locking Screw	950-5218	950-5268	950-5318	950-5368	950-5418	950-5518	950-5618
(220)	Prong Locking Screw	950-5220	950-5270	950-5320	950-5370	950-5420	950-5520	950-5620
(219)	Parting-off Blade Locking Prong	950-5219	950-5269	950-5319	950-5369	950-5419	950-5519	950-5619
511 (209)	Short Screw	950-5209	950-5259	950-5309	950-5359	950-5409	950-5509	950-5609
515 (215)	T-Key For Set Screws	950-5215	950-5265	950-5315	950-5365	950-5415	950-5515	950-5615
516 (214)	Hexagon Wrench	950-5214	950-5264	950-5314	950-5364	950-5414	950-5514	950-5614
513 (207)	Extractor	950-5207	950-5257	950-5307	950-5357	950-5407	950-5507	950-5607
512 (208)	Long Screw	950-5208	950-5258	950-5308	950-5358	950-5408	950-5508	950-5608
(211)	Extractor Screw	950-5211	950-5261	950-5311	950-5361	950-5411	950-5511	950-5611

Knurling Tools

Single Knurling Tool

- Complete with medium cut high speed steel knurl best suited for shorter work
- Holder size: 4" x 1/2 x 1/2
- Diameter: 3/4"
- Width: 1/4"
- Hole size: 1/4"
- 2 Knurls

Order No. 250-1740



Self-Adjusting Pivot Head

- For precise alignment to the working part.
- Holder size: 4" x 1/2 x 1/2
- Diameter: 3/4"
- Width: 3/8"
- Hole size: 1/4"
- 2 Knurls

Order No. 250-1732



5C Collet Stops

Fits any 5C collet. Supplied with threaded rod. Hardened for long life. Black oxide

Order No. 239-9051

Converts standard 1" capacity lathe collets into solid stop or spring ejector stop collets without alteration of the standard collets.

Order No. 239-9052



5C & 16C Collet Stops

- 5C collet stop include one each of 1/8, 1/2, 3/4 & 1" Stop rod, and one Collet Rod.
- 16C collet stop include one 1" Stop Rod and one Collet Rod.



Description	Order No.
5C Collet Stop	209-2799
16C Collet Stop	209-2807

Collet Wrenches

- Simplifies installing and removing a collet in your CNC lathe.
- Made with a steel head and fins for strength.



Collet Type	Fins	Order No.
3J	4	239-0003
5C	3	239-0005
R8	3	239-0008
16C	3	239-0016

R8 Round Collets

- Made of high grade steel.
- Hardened and precision ground.
- Internal thread 7/16"-20.



Size	Economy	Premium
	Order No.	.0005" T.I.R
1/16"	231-4704	231-4904
3/32"	231-4706	231-4906
1/8"	231-4708	231-4908
5/32"	231-4710	231-4910
3/16"	231-4712	231-4912
7/32"	231-4714	231-4914
1/4"	231-4716	231-4916
9/32"	231-4718	231-4918
5/16"	231-4720	231-4920
11/32"	231-4722	231-4922
3/8"	231-4724	231-4924
13/32"	231-4726	231-4926
7/16"	231-4728	231-4928
15/32"	231-4730	231-4930
1/2"	231-4732	231-4932
17/32"	231-4734	231-4934
9/16"	231-4736	231-4936
19/32"	231-4738	231-4938
5/8"	231-4740	231-4940
21/32"	231-4742	231-4942
11/16"	231-4744	231-4944
23/32"	231-4746	231-4946
3/4"	231-4748	231-4948
25/32"	231-4750	231-4950
13/16"	231-4752	231-4952
27/32"	231-4754	231-4954
7/8"	231-4756	231-4956
1"	231-4764	231-4964

Size	Economy	Premium
	Order No.	0.0005mm T.I.R
2mm	231-4802	231-4602
3mm	231-4803	231-4603
4mm	231-4804	231-4604
5mm	231-4805	231-4605
6mm	231-4806	231-4606
7mm	231-4807	231-4607
8mm	231-4808	231-4608
9mm	231-4809	231-4609
10mm	231-4810	231-4610
11mm	231-4811	231-4611
12mm	231-4812	231-4612
13mm	231-4813	231-4613
14mm	231-4814	231-4614
15mm	231-4815	231-4615
16mm	231-4816	231-4616
17mm	231-4817	231-4617
18mm	231-4818	231-4618
19mm	231-4819	231-4619
20mm	231-4820	231-4620
21mm	231-4821	231-4621
22mm	231-4822	231-4622
23mm	231-4823	231-4623
24mm	231-4824	231-4624

Sets

Range	No. Of Pieces	Economy Order No.	Premium Order No.
1/8-3/4" by 8ths	6	231-0006	231-5006
1/8" to 7/8" by 8ths	7	231-0007	231-5007
1/8-3/4" by 16ths	11	231-0011	231-5011
1/16" to 3/4" by 16ths	12	231-0012	231-5012
1/8" to 7/8" by 16ths	13	231-0013	231-5013
1/16" to 7/8" by 16ths	14	231-0014	231-5014
1/8 to 3/4" by 32nds	21	231-0021	231-5021
1/16-3/4" by 32ths	23	231-0023	231-5023
1/8" to 7/8" by 32nds	25	231-0025	231-5025
1/16" to 7/8" by 32nds	27	231-0027	231-5027
1/8" to 3/4" by 16ths plus 7/8"	12	231-0112	231-5112
1/16" to 1" by 1/32"	28	231-0128	231-5128
2mm to 20mm by 1mm	19	231-0019	231-5019

5C Round Collets

- Made of high grade steel.
- Hardened and precision ground.
- Internal thread 1.041"-24, external thread 1.242"-20.
- The economy grade collet complies with cardboard case, premium grade complies with plastic case.



Size	Premium .0005" T.I.R		Size	Premium .0005" T.I.R	
	Economy Order No.	Order No.		Economy Order No.	Order No.
1/32"	230-4102	230-4902	37/64"	230-4137	230-4937
3/64"	230-4103	230-4903	19/32"	230-4138	230-4938
1/16"	230-4104	230-4904	39/64"	230-4139	230-4939
5/64"	230-4105	230-4905	5/8"	230-4140	230-4940
3/32"	230-4106	230-4906	41/64"	230-4141	230-4941
7/64"	230-4107	230-4907	21/32"	230-4142	230-4942
1/8"	230-4108	230-4908	43/64"	230-4143	230-4943
9/64"	230-4109	230-4909	11/16"	230-4144	230-4944
5/32"	230-4110	230-4910	45/64"	230-4145	230-4945
11/64"	230-4111	230-4911	23/32"	230-4146	230-4946
3/16"	230-4112	230-4912	47/64"	230-4147	230-4947
13/64"	230-4113	230-4913	3/4"	230-4148	230-4948
7/32"	230-4114	230-4914	49/64"	230-4149	230-4949
15/64"	230-4115	230-4915	25/32"	230-4150	230-4950
1/4"	230-4116	230-4916	51/64"	230-4151	230-4951
17/64"	230-4117	230-4917	13/16"	230-4152	230-4952
9/32"	230-4118	230-4918	53/64"	230-4153	230-4953
19/64"	230-4119	230-4919	27/32"	230-4154	230-4954
5/16"	230-4120	230-4920	55/64"	230-4155	230-4955
21/64"	230-4121	230-4921	7/8"	230-4156	230-4956
11/32"	230-4122	230-4922	57/64"	230-4157	230-4957
23/64"	230-4123	230-4923	29/32"	230-4158	230-4958
3/8"	230-4124	230-4924	59/64"	230-4159	230-4959
25/64"	230-4125	230-4925	15/16"	230-4160	230-4960
13/32"	230-4126	230-4926	61/64"	230-4161	230-4961
27/64"	230-4127	230-4927	31/32"	230-4162	230-4962
7/16"	230-4128	230-4928	63/64"	230-4163	230-4963
29/64"	230-4129	230-4929	1"	230-4164	230-4964
15/32"	230-4130	230-4930	1-1/64"	230-4301	230-4971
31/64"	230-4131	230-4931	1-1/32"	230-4302	230-4972
1/2"	230-4132	230-4932	1-3/64"	230-4303	230-4973
33/64"	230-4133	230-4933	1-1/16"	230-4304	230-4974
17/32"	230-4134	230-4934	1-5/64"	230-4305	230-4975
35/64"	230-4135	230-4935	1-3/32"	230-4306	230-4976
9/16"	230-4136	230-4936	1-7/64"	230-4307	230-4977
			1-1/8"	230-4308	230-4978

Size	Premium 0.005mm T.I.R.		Size	Premium 0.005mm T.I.R.	
	Economy Order No.	Order No.		Economy Order No.	Order No.
2mm	230-4202	230-9202	1.5mm	230-3015	229-3015
3mm	230-4203	230-9203	2.5mm	230-3025	229-3025
4mm	230-4204	230-9204	3.5mm	230-3035	229-3035
5mm	230-4205	230-9205	4.5mm	230-3045	229-3045
6mm	230-4206	230-9206	5.5mm	230-3055	229-3055
7mm	230-4207	230-9207	6.5mm	230-3065	229-3065
8mm	230-4208	230-9208	7.5mm	230-3075	229-3075
9mm	230-4209	230-9209	8.5mm	230-3085	229-3085
10mm	230-4210	230-9210	9.5mm	230-3095	229-3095
11mm	230-4211	230-9211	10.5mm	230-3105	229-3105
12mm	230-4212	230-9212	11.5mm	230-3115	229-3115
13mm	230-4213	230-9213	12.5mm	230-3125	229-3125
14mm	230-4214	230-9214	13.5mm	230-3135	229-3135
15mm	230-4215	230-9215	14.5mm	230-3145	229-3145
16mm	230-4216	230-9216	15.5mm	230-3155	229-3155
17mm	230-4217	230-9217	16.5mm	230-3165	229-3165
18mm	230-4218	230-9218	17.5mm	230-3175	229-3175
19mm	230-4219	230-9219	18.5mm	230-3185	229-3185
20mm	230-4220	230-9220	19.5mm	230-3195	229-3195
21mm	230-4221	230-9221	20.5mm	230-3205	229-3205
22mm	230-4222	230-9222	21.5mm	230-3215	229-3215
23mm	230-4223	230-9223	22.5mm	230-3225	229-3225
24mm	230-4224	230-9224	23.5mm	230-3235	229-3235
25mm	230-4225	230-9225	24.5mm	230-3245	229-3245
26mm	230-4226	230-9226	25.5mm	230-3255	229-3255
27mm	230-4227	230-9227	26.5mm	230-3265	229-3265
28mm	230-4228	230-9228	27.5mm	230-3275	229-3275
29mm	230-4229	230-9229	28.5mm	230-3285	229-3285
30mm	230-4230	230-9230	29.5mm	230-3295	229-3295

5C Round Collet Sets

No. of Pieces	Descriptions	Economy Order No.
6	1/8" to 3/4" by 8ths	230-4006
8	1/8" to 1" by 8ths	230-4008
15	1/8" to 1" by 16ths	230-4015
16	1/8" to 1-1/16" by 16ths	230-4016
17	1/16" to 1-1/16" by 16ths	230-4017
18	1/16" to 1-1/8" by 16ths	230-4018
29	1/8" to 1" by 32nds	230-4029
30	1/8" to 1-1/32" by 32nds	230-4030
31	1/8" to 1-1/6" by 32nds	230-4031
33	1/16" to 1-1/16" by 32nds	230-4033
35	1/16" to 1-1/8" by 32nds	230-4035
57	1/8" to 1" by 64ths	230-4057
64	1/16" to 1-3/64" by 64ths	230-4064
65	1/16" to 1-1/16" by 64ths	230-4065
69	1/16" to 1-1/8" by 64ths	230-4069
9	4mm to 20mm by 2mm	230-4009
14	12mm to 25mm by 1mm	230-4014

No. of Pieces	Descriptions	Premium Order No.
8	1/8" to 1" by 8ths	230-5008
15	1/8" to 1" by 16ths	230-5015
16	1/8" to 1-1/16" by 16ths	230-5016
17	1/16" to 1-1/16" by 16ths	230-5017
18	1/16" to 1-1/8" by 16ths	230-5018
29	1/8" to 1" by 32nds	230-5029
30	1/8" to 1-1/32" by 32nds	230-5030
31	1/8" to 1-1/6" by 32nds	230-5031
32	32PC/set from 2mm to 25mm	230-5032
33	1/16" to 1-1/16" by 32nds	230-5033
35	1/16" to 1-1/8" by 32nds	230-5035
57	1/8" to 1" by 64ths	230-5057
64	1/16" to 1-3/64" by 64ths	230-5064
65	1/16" to 1-1/16" by 64ths	230-5065
69	1/16" to 1-1/8" by 64ths	230-5069

R8 Square Collets

- Internal thread 7/16"-20.



Size	Economy Order No.	Premium Order No.
1/8"	530-7208	530-8208
5/32"	530-7210	530-8210
3/16"	530-7212	530-8212
1/4"	530-7216	530-8216
9/32"	530-7218	530-8218
5/16"	530-7220	530-8220
11/32"	530-7222	530-8222
3/8"	530-7224	530-8224
13/32"	530-7226	530-8226
7/16"	530-7228	530-8228
15/32"	530-7230	530-8230
1/2"	530-7232	530-8232
17/32"	530-7234	530-8234
9/16"	530-7236	530-8236

Size	Economy Order No.	Premium Order No.
3mm	530-7030	530-8030
4mm	530-7040	530-8040
5mm	530-7050	530-8050
5.5mm	530-7055	530-8055
6mm	530-7060	530-8060
7mm	530-7070	530-8070
8mm	530-7080	530-8080
9mm	530-7090	530-8090
9.5mm	530-7095	530-8095
10mm	530-7100	530-8100
11mm	530-7110	530-8110
12mm	530-7120	530-8120
13mm	530-7130	530-8130
13.5mm	530-7135	530-8135
14mm	530-7140	530-8140

R8 Square Collet Set

4pcs 1/8" to 1/2" by 8ths

Order No.530-7004

R8 Emergency Collets

- Can be drilled, bored or machined with a H.S.S Tool Bit.
- Face & Pilot Hole are soft to Permit machining to your requirement.
- Internal thread 7/16"-20.



Type	Order No.
R8 steel	231-4395
R8 brass	231-4396
R8 nylon	231-4397

R8 Hex Collets

- Internal thread 7/16"-20.



Size	Order No.
1/8"	530-6208
5/32"	530-6210
3/16"	530-6212
1/4"	530-6216
9/32"	530-6218
5/16"	530-6220
11/32"	530-6222
3/8"	530-6224
13/32"	530-6226
7/16"	530-6228
15/32"	530-6230
1/2"	530-6232
17/32"	530-6234
9/16"	530-6236
19/32"	530-6238
5/8"	530-6240
21/32"	530-6242
11/16"	530-6244
23/32"	530-6246
3/4"	530-6248
25/32"	530-6250

Size	Order No.
3mm	530-6030
4mm	530-6040
5mm	530-6050
6mm	530-6060
7mm	530-6070
8mm	530-6080
9mm	530-6090
10mm	530-6100
11mm	530-6110
12mm	530-6120
13mm	530-6130
13.5mm	530-6135
14mm	530-6140
15mm	530-6150
16mm	530-6160
17mm	530-6170
17.5mm	530-6175
18mm	530-6180
19mm	530-6190
20mm	530-6200

R8 Hex Collet Set

6pcs 1/8" to 3/4" by 8ths

Order No.530-6006

5C Emergency Collets

- Face & pilot hole are soft to permit machining to your requirements.
- Can be drilled, bored or machined with a HSS tool bit.
- Internal thread 1.041"-24, external thread 1.242"-20.



Type	Order No.
5c steel	230-4395
5c brass	230-4396
5c nylon	230-4397

5C Square Collets

- Made of high grade steel.
- Hardened and precision ground.
- Internal thread 1.041"-24, external thread 1.242"-20.

6Pcs/set

1/8-3/4" by 8ths

Order No.530-4252

11Pcs/set

1/8-3/4 by 16ths

Order No.530-4256



17Pcs/set

3mm to 19mm by 1mm

Order No.530-4917

Premium .0005" T.I.R			Premium Economy 0.0005mm T.I.R		
Size	Economy Order No.	Order No.	Size	Order No.	Order No.
1/8"	530-4208	530-3208	3mm	530-4030	530-3030
5/32"	530-4210	530-3210	4mm	530-4040	530-3040
3/16"	530-4212	530-3212	5mm	530-4050	530-3050
7/32"	530-4214	530-3214	5.5mm	530-4055	530-3055
1/4"	530-4216	530-3216	6mm	530-4060	530-3060
9/32"	530-4218	530-3218	7mm	530-4070	530-3070
5/16"	530-4220	530-3220	8mm	530-4080	530-3080
11/32"	530-4222	530-3222	9mm	530-4090	530-3090
3/8"	530-4224	530-3224	9.5mm	530-4095	530-3095
13/32"	530-4226	530-3226	10mm	530-4100	530-3100
7/16"	530-4228	530-3228	11mm	530-4110	530-3110
15/32"	530-4230	530-3230	12mm	530-4120	530-3120
1/2"	530-4232	530-3232	13mm	530-4130	530-3130
17/32"	530-4234	530-3234	13.5mm	530-4135	530-3135
9/16"	530-4236	530-3236	14mm	530-4140	530-3140
19/32"	530-4238	530-3238	15mm	530-4150	530-3150
5/8"	530-4240	530-3240	16mm	530-4160	530-3160
21/32"	530-4242	530-3242	17mm	530-4170	530-3170
11/16"	530-4244	530-3244	17.5mm	530-4175	530-3175
23/32"	530-4246	530-3246	18mm	530-4180	530-3180
3/4"	530-4248	530-3248	19mm	530-4190	530-3190

5C Hex Collets

- Made of high grade steel.
- Hardened and precision ground.
- Internal thread 1.041"-24, external thread 1.242"-20.

7 Pcs/set

1/8" to 7/8" by 8ths

Order No.530-4360

13 Pcs/set

1/8" to 7/8" by 16ths

Order No.530-4364



20 Pcs/set

3mm to 22mm by 1mm

Order No.530-5920

Premium .0005" T.I.R			Premium 0.0005mm T.I.R		
Size	Economy Order No.	Order No.	Size	Order No.	Order No.
1/8"	530-4308	530-4408	3 mm	530-5030	530-2030
5/32"	530-4310	530-4410	4 mm	530-5040	530-2040
3/16"	530-4312	530-4412	5 mm	530-5050	530-2050
7/32"	530-4314	530-4414	6 mm	530-5060	530-2060
1/4"	530-4316	530-4416	7 mm	530-5070	530-2070
9/32"	530-4318	530-4418	8 mm	530-5080	530-2080
5/16"	530-4320	530-4420	9 mm	530-5090	530-2090
11/32"	530-4322	530-4422	10 mm	530-5100	530-2100
3/8"	530-4324	530-4424	11 mm	530-5110	530-2110
13/32"	530-4326	530-4426	12 mm	530-5120	530-2120
7/16"	530-4328	530-4428	13 mm	530-5130	530-2130
15/32"	530-4330	530-4430	13.5 mm	530-5135	530-2135
1/2"	530-4332	530-4432	14 mm	530-5140	530-2140
17/32"	530-4334	530-4434	15 mm	530-5150	530-2150
9/16"	530-4336	530-4436	16 mm	530-5160	530-2160
19/32"	530-4338	530-4438	17 mm	530-5170	530-2170
5/8"	530-4340	530-4440	17.5 mm	530-5175	530-2175
21/32"	530-4342	530-4442	18 mm	530-5180	530-2180
11/16"	530-4344	530-4444	19 mm	530-5190	530-2190
23/32"	530-4346	530-4446	20 mm	530-5200	530-2200
3/4"	530-4348	530-4448	20.5 mm	530-5205	530-2205
25/32"	530-4350	530-4450	21 mm	530-5210	530-2210
13/16"	530-4352	530-4452	22 mm	530-5220	530-2220
27/32"	530-4354	530-4454			
7/8"	530-4356	530-4456			

5C Expanding Collets

- Fit any standard 5C Spindle.
- Precision ground.
- Head Length: 1".
- Overall Length: 114mm.
- Soft head for easy machining.
- Internal thread 1.041"-24, external thread 1.242"-20.



Descriptions	Order No.
.25" to .468"x1" (#1)	230-4451
.437" to .800"x1" (#2)	230-4452
.750 to 1.437"x1" (#3)	230-4453
.750 to 1.935"x1" (#4)	230-4454
4Pcs/set 1/4" to 1-15/16" with wooden stand	230-4450

Descriptions	Order No.
.750-1.43", 1.5x1.5(head dia.x thickness)	230-4421
.750-1.437", 1.5x2"(head dia.x thickness)	230-4422
.750-1.437", 1.5x2.5"(head dia.x thickness)	230-4423
.750-1.437", 1.5x3"(head dia.x thickness)	230-4424
.750 to 1.937", 2x1.5"(head dia.x thickness)	230-4426
.750 to 1.937", 2x2.0"(head dia.x thickness)	230-4427
.750 to 1.937", 2x2.5"(head dia.x thickness)	230-4428
.750 to 1.937", 2x3.0"(head dia.x thickness)	230-4429
.750 to 2.437", 2.5x1.0"(head dia.x thickness)	230-4431
.750 to 2.437", 2.5x1.5"(head dia.x thickness)	230-4432
.750 to 2.437", 2.5x3.0"(head dia.x thickness)	230-4433
.750 to 2.437", 2.5x2.5"(head dia.x thickness)	230-4434
.750 to 2.437", 2.5x3.0"(head dia.x thickness)	230-4435
.750 to 2.937", 3X1"(head dia.x thickness)	230-4437
.750 to 2.937", 3X1.5"(head dia.x thickness)	230-4438
.750 to 2.937", 3X2"(head dia.x thickness)	230-4439
.750 to 2.937", 3X2.5"(head dia.x thickness)	230-4440
.750 to 2.937", 3X3"(head dia.x thickness)	230-4441
.750 to 3.937", 4X1"(head dia.x thickness)	230-4444
.750 to 3.937", 4X1.5"(head dia.x thickness)	230-4445
.750 to 3.937", 4X2"(head dia.x thickness)	230-4416
.750 to 3.937", 4X2.5"(head dia.x thickness)	230-4447
.750 to 3.937", 4X3"(head dia.x thickness)	230-4448

5C Fixture Mounts

- A lathe tool for use in place of face plate fixture.
- Internal thread 1.041"-24, external thread 1.242"-20.
- Quick mounting and dismounting.
- Repeat accuracy.
- Soft head for easy machining.
- Heat treated tool shank.
- Precision ground all over.
- Black oxide finish.



Head Dia.	Head Length	Order No.
2"	1"	230-4460
2"	2"	230-4461
2"	3"	230-4462
3"	1"	230-4463
3"	2"	230-4464
3"	3"	230-4465
4"	1"	230-4466
4"	3"	230-4467
5"	1"	230-4468
6"	1"	230-4469
4"	2"	230-4470

5C Collet Block Sets

- A simple and effective short jig, for machinist parallel, square or hex shapes as well as for cross hole drilling at 60°, 90° or 120°.
- Made of hardened tool steel.
- Overall dimensions: 1-3/4" x 1-3/4" x 3".
- Ground to .0005" flatness, squareness and parallelism +/- 0.0005".
- Capacity: 1/6" through 1-1/8".
- Standard nut closer and cam operated, quick-acting closer can be used on both square and hex blocks.



4Pcs/set

Order No. 235-7050

Individuals

Descriptions	Order No.
lever operated closer	235-7051
nut closer	235-7052
square block	235-7054
hex block	235-7056

Cutter Grinder Collets



- M20x2.0 Thread.

Size	Order No.	Size	Order No.
1/8"	230-5308	3mm	230-5403
3/16"	230-5312	5mm	230-5405
1/4"	230-5316	6mm	230-5406
5/16"	230-5320	8mm	230-5408
3/8"	230-5324	10mm	230-5410
7/16"	230-5328	11mm	230-5411
1/2"	230-5332	13mm	230-5413
9/16"	230-5336	14mm	230-5414
5/8"	230-5340	16mm	230-5416

5C Cluth Collets

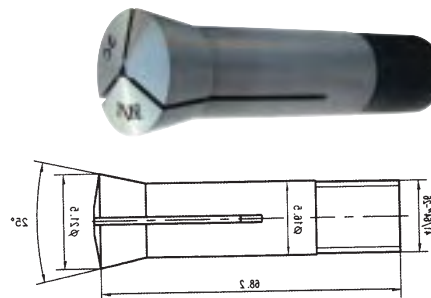
- Applied for machining to specific requirements.
- Soft head type featured 3 thickness.
- Internal thread 1.041"-24, external thread 1.242"-20.



Head Dia.	1" Thickness Order No.	1-1/8" Thickness Order No.	1-3/16" Thickness Order No.
2"	230-4362	230-4372	230-4382
3"	230-4363	230-4373	230-4383
4"	230-4364	230-4374	230-4384
5"	230-4365	230-4375	230-4385
6"	230-4366	230-4376	230-4386

3C Round Collets

- 41/64"-26 External Thread.



Size	Order No.	Size	Order No.	Size	Order No.
3/64"	232-4703	7/32"	232-4714	25/64"	232-4725
1/16"	232-4704	15/64"	232-4715	13/32"	232-4726
5/64"	232-4705	1/4"	232-4716	27/64"	232-4727
3/32"	232-4706	17/64"	232-4717	7/16"	232-4728
7/64"	232-4707	9/32"	232-4718	29/64"	232-4729
1/8"	232-4708	19/64"	232-4719	15/32"	232-4730
9/64"	232-4709	5/16"	232-4720	31/64"	232-4731
5/32"	232-4710	21/64"	232-4721	1/2"	232-4732
11/64"	232-4711	11/32"	232-4722	33/64"	232-4733
3/16"	232-4712	23/64"	232-4723	17/32"	232-4734
13/64"	232-4713	3/8"	232-4724	35/64"	232-4735
				9/16"	232-4736

Size	Order No.	Size	Order No.
1 mm	232-6010	7.5mm	232-6075
1.5 mm	232-6015	8mm	232-6080
2 mm	232-6020	8.5mm	232-6085
2.5 mm	232-6025	9mm	232-6090
3 mm	232-6030	9.5mm	232-6095
3.5 mm	232-6035	10mm	232-6100
4 mm	232-6040	10.5mm	232-6105
4.5 mm	232-6045	11mm	232-6110
5 mm	232-6050	11.5mm	232-6115
5.5 mm	232-6055	12mm	232-6120
6 mm	232-6060	12.5mm	232-6125
6.5 mm	232-6065	13mm	232-6130
7 mm	232-6070		

3C Square Collets

- 41/64"-26 External Thread.



Size	Order No.
1/8"	232-6208
5/32"	232-6210
3/16"	232-6212
7/32"	232-6214
1/4"	232-6216
9/32"	232-6218
5/16"	232-6220
11/32"	232-6222
3/8"	232-6224

Size	Order No.
3mm	232-6230
4mm	232-6240
5mm	232-6250
5.5mm	232-6255
6mm	232-6260
7mm	232-6270
8mm	232-6280
9mm	232-6290

3C Hex Collets

- 41/64"-26 External Thread.



Size	Order No.
1/8"	232-7008
5/32"	232-7010
3/16"	232-7012
7/32"	232-7014
1/4"	232-7016
9/32"	232-7018
5/16"	232-7020
11/32"	232-7022
3/8"	232-7024
13/32"	232-7026
7/16"	232-7028

Size	Order No.
3mm	232-7030
4mm	232-7040
5mm	232-7050
5.5mm	232-7055
6mm	232-7060
7mm	232-7070
8mm	232-7080
9mm	232-7090
10mm	232-7100
11mm	232-7110
12mm	232-7120

3C Step Collets

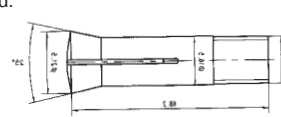
- Soft head for machining to specific requirements.
- 41/64"-26 External Thread.



Head Dia.	Thickness	Order No.
2"	1"	230-5521
2"	1-1/8"	230-5522
2"	1-1/4"	230-5523
3"	1"	230-5531
3"	1-1/8"	230-5532
3"	1-1/4"	230-5533

3AT Round Collets

- .637"-26 External Thread.



Size	Order No.	Size	Order No.	Size	Order No.
3/64"	232-4803	13/64"	232-4813	23/64"	232-4823
1/16"	232-4804	7/32"	232-4814	3/8"	232-4824
5/64"	232-4805	15/64"	232-4815	25/64"	232-4825
3/32"	232-4806	1/4"	232-4816	13/32"	232-4826
7/64"	232-4807	17/64"	232-4817	27/64"	232-4827
1/8"	232-4808	9/32"	232-4818	7/16"	232-4828
9/64"	232-4809	19/64"	232-4819	29/64"	232-4829
5/32"	232-4810	5/16"	232-4820	15/32"	232-4830
11/64"	232-4811	21/64"	232-4821	31/64"	232-4831
3/16"	232-4812	11/32"	232-4822	1/2"	232-4832

Size	Order No.	Size	Order No.	Size	Order No.
1mm	232-4010	5.5mm	232-4055	10mm	232-4100
1.5mm	232-4015	6mm	232-4060	10.5mm	232-4105
2mm	232-4020	6.5mm	232-4065	11mm	232-4110
2.5mm	232-4025	7mm	232-4070	11.5mm	232-4115
3mm	232-4030	7.5mm	232-4075	12mm	232-4120
3.5mm	232-4035	8mm	232-4080	12.5mm	232-4125
4mm	232-4040	8.5mm	232-4085	13mm	232-4130
4.5mm	232-4045	9mm	232-4090		
5mm	232-4050	9.5mm	232-4095		

3AT Square Collets

- .637"-26 External Thread.



Size	Order No.
1/8"	232-4208
5/32"	232-4210
3/16"	232-4212
7/32"	232-4214
1/4"	232-4216
9/32"	232-4218
5/16"	232-4220
11/32"	232-4222
3/8"	232-4224

Size	Order No.
3mm	232-4230
4mm	232-4240
5mm	232-4250
5.5mm	232-4255
6mm	232-4260
7mm	232-4270
8mm	232-4280
9mm	232-4290

3AT Hex Collets

- .637"-26 External Thread.



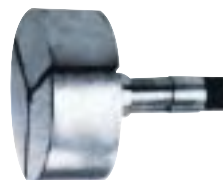
Size	Order No.
1/8"	232-5008
5/32"	232-5010
3/16"	232-5012
7/32"	232-5014
1/4"	232-5016
9/32"	232-5018
5/16"	232-5020
11/32"	232-5022
3/8"	232-5024
13/32"	232-5026
7/16"	232-5028

Size	Order No.
3mm	232-5030
4mm	232-5040
5mm	232-5050
5.5mm	232-5055
6mm	232-5060
7mm	232-5070
8mm	232-5080
9mm	232-5090
10mm	232-5100
11mm	232-5110
12mm	232-5120

3AT Step Collets

- .637"-26 External Thread.

Soft head
For machining to specific requirements.



Head Dia.	Thickness	Order No.
2"	1"	230-5621
2"	1-1/8"	230-5622
2"	1-1/4"	230-5623
3"	1"	230-5631
3"	1-1/8"	230-5632
3"	1-1/4"	230-5633

Morse Taper Round Collets

Morse Taper	D(mm)	L(mm)
MT1	12.2	57
MT2	18	68
MT3	24.1	86
MT4	31.5	108



Morse Taper 1, 1/4"-20 Internal Thread

Size	Order No.	Size	Order No.
1/16"	230-4401	2mm	230-4412
1/8"	230-4402	3mm	230-4413
3/16"	230-4403	4mm	230-4414
1/4"	230-4404	6mm	230-4416
5/16"	230-4405	8mm	230-4418

Morse Taper 2, 3/8"-16 Internal Thread

Size	Order No.	Size	Order No.
1/8"	230-4508	2mm	230-5202
3/16"	230-4512	3mm	230-5203
1/4"	230-4516	5mm	230-5205
5/16"	230-4520	6mm	230-5206
3/8"	230-4524	10mm	230-5210
7/16"	230-4528	11mm	230-5211
1/2"	230-4532	12mm	230-5212

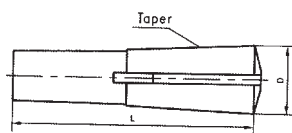
Morse Taper 3, 1/2"-13 Internal Thread

Size	Order No.	Size	Order No.
1/8"	230-4608	3mm	230-5103
3/16"	230-4612	5mm	230-5105
1/4"	230-4616	6mm	230-5106
5/16"	230-4620	8mm	230-5108
3/8"	230-4624	10mm	230-5110
7/16"	230-4628	11mm	230-5111
1/2"	230-4632	13mm	230-5113
9/16"	230-4636	14mm	230-5114
5/8"	230-4640	16mm	230-5116
11/16"	230-4644	17mm	230-5117
3/4"	230-4648	18mm	230-5118

Morse Taper 4, 5/8"-11 Internal Thread

Size	Order No.	Size	Order No.
1/8"	230-4708	3mm	230-4803
3/16"	230-4712	5mm	230-4805
1/4"	230-4716	6mm	230-4806
5/16"	230-4720	8mm	230-4808
3/8"	230-4724	10mm	230-4810
7/16"	230-4728	11mm	230-4811
1/2"	230-4732	13mm	230-4813
9/16"	230-4736	14mm	230-4814
5/8"	230-4740	16mm	230-4816
11/16"	230-4744	17mm	230-4817
3/4"	230-4748	18mm	230-4818
13/16"	230-4752	20mm	230-4820
7/8"	230-4756	22mm	230-4822
15/16"	230-4760	24mm	230-4824
1"	230-4764	25mm	230-4825

B&S Taper Collets



7#, 3/8"-16 Internal Thread

Size	Order No.	Size	Order No.
1/8"	230-1508	3mm	230-1573
3/16"	230-1512	5mm	230-1575
1/4"	230-1516	6mm	230-1576
5/16"	230-1520	8mm	230-1578
3/8"	230-1524	10mm	230-1580
7/16"	230-1528	11mm	230-1581
1/2"	230-1532	13mm	230-1583

9#, 1/2"-13 Internal Thread

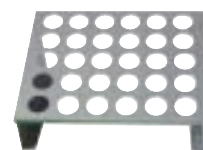
Size	Order No.	Size	Order No.
1/8"	230-1608	3mm	230-1673
3/16"	230-1612	5mm	230-1675
1/4"	230-1616	6mm	230-1676
5/16"	230-1620	8mm	230-1678
3/8"	230-1624	10mm	230-1680
7/16"	230-1628	11mm	230-1681
1/2"	230-1632	13mm	230-1683
9/16"	230-1636	14mm	230-1684
5/8"	230-1640	16mm	230-1686
11/16"	230-1644	17mm	230-1687
3/4"	230-1648	18mm	230-1688
		20mm	230-1690



21#

Size	Order No.	Size	Order No.
1/8"	230-1108	3mm	230-1173
3/16"	230-1112	5mm	230-1175
1/4"	230-1116	6mm	230-1176
5/16"	230-1120	8mm	230-1178
3/8"	230-1124	10mm	230-1180
7/16"	230-1128	11mm	230-1181
1/2"	230-1132	13mm	230-1183
9/16"	230-1136	14mm	230-1184
5/8"	230-1140	16mm	230-1186
11/64"	230-1144	17mm	230-1187
3/4"	230-1148	18mm	230-1188
13/64"	230-1152	20mm	230-1190
7/8"	230-1156	22mm	230-1192
15/16"	230-1160	24mm	230-1194
1"	230-1164	25mm	230-1195

Collet Stands



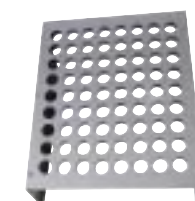
Hold 30 pcs 5C collets

Order No. 239-9530



R8 Collet Rack, hold 15 collets and tools

Order No. 239-9815



Hold 72 pcs 5C collets

Order No. 239-9572



R8 Collet Rack, hold 12 collets

Order No. 239-9812



Hold 14 piece R8 collets

Order No. 239-9814



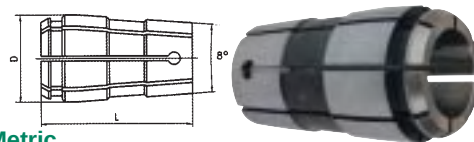
R8 Vertical Collet Rack, hold 48 collets

Order No. 239-9848

TG Series Single Angle Collets

TG Collet Dimensions

TG Series	Dia. D	Length L
75	1.062" /27mm	1.844"/46.9mm
100	1.379"/35mm	2.375"/60.5mm
150	2.001"/50.8mm	3.000"/76.2mm
200	2.671"/67.8mm	3.250"/82.55mm



TG75 Collets, Metric

Size	Order No.	Size	Order No.	Size	Order No.
1mm	204-8001	8mm	204-8016	14.5mm	204-8032
1.5mm	204-8002	8.5mm	204-8017	15mm	204-8033
2mm	204-8003	9mm	204-8018	15.5mm	204-8034
2.5mm	204-8004	9.5mm	204-8019	16mm	204-8036
3mm	204-8005	10mm	204-8021	16.5mm	204-8037
3.5mm	204-8006	10.5mm	204-8022	17mm	204-8038
4mm	204-8007	11mm	204-8023	17.5mm	204-8039
4.5mm	204-8008	11.5mm	204-8024	18mm	204-8041
5mm	204-8009	12mm	204-8026	18.5mm	204-8042
5.5mm	204-8011	12.5mm	204-8027	19mm	204-8043
6mm	204-8012	13mm	204-8028	19.5mm	204-8044
6.5mm	204-8013	13.5mm	204-8029	20mm	204-8046
7mm	204-8014	14mm	204-8031		

TG75 Collets, Inch

Size	Order No.	Size	Order No.	Size	Order No.
1/16"	204-8101	5/16"	204-8121	9/16"	204-8141
5/64"	204-8102	21/64"	204-8122	37/64"	204-8142
3/32"	204-8103	11/32"	204-8123	19/32"	204-8143
7/64"	204-8104	23/64"	204-8124	39/64"	204-8144
1/8"	204-8106	3/8"	204-8126	5/8"	204-8146
9/64"	204-8107	25/64"	204-8127	41/64"	204-8147
5/32"	204-8108	13/32"	204-8128	21/32"	204-8148
11/64"	204-8109	27/64"	204-8129	43/64"	204-8149
3/16"	204-8111	7/16"	204-8131	11/16"	204-8151
13/64"	204-8112	29/64"	204-8132	45/64"	204-8152
7/32"	204-8113	15/32"	204-8133	23/32"	204-8153
15/64"	204-8114	31/64"	204-8134	47/64"	204-8154
1/4"	204-8116	1/2"	204-8136	3/4"	204-8156
17/64"	204-8117	33/64"	204-8137	49/64"	204-8157
9/32"	204-8118	17/32"	204-8138	25/32"	204-8158
19/64"	204-8119	35/64"	204-8139		

TG100 Collets, Inch

Size	Order No.	Size	Order No.
1/64"	204-9901	33/64"	204-9933
1/32"	204-9902	17/32"	204-9934
3/64"	204-9903	35/64"	204-9935
1/16"	204-9904	9/16"	204-9936
5/64"	204-9905	37/32"	204-9937
3/32"	204-9906	19/32"	204-9938
7/64"	204-9907	39/64"	204-9939
1/8"	204-9908	5/8"	204-9940
9/64"	204-9909	41/64"	204-9941
5/32"	204-9910	21/32"	204-9942
11/64"	204-9911	43/64"	204-9943
3/16"	204-9912	11/16"	204-9944
13/64"	204-9913	45/64"	204-9945
7/32"	204-9914	23/32"	204-9946
15/64"	204-9915	47/64"	204-9947
1/4"	204-9916	3/4"	204-9948
17/64"	204-9917	49/64"	204-9949
9/32"	204-9918	25/32"	204-9950
19/64"	204-9919	51/64"	204-9951
5/16"	204-9920	13/16"	204-9952
21/64"	204-9921	53/64"	204-9953
11/32"	204-9922	27/32"	204-9954
23/64"	204-9923	55/64"	204-9955
3/8"	204-9924	7/8"	204-9956
25/64"	204-9925	57/64"	204-9957
13/32"	204-9926	29/32"	204-9958
27/64"	204-9927	59/64"	204-9959
7/16"	204-9928	15/16"	204-9960
29/64"	204-9929	61/64"	204-9961
15/32"	204-9930	31/32"	204-9962
31/64"	204-9931	63/64"	204-9963
1/2"	204-9932	1"	204-9964

TG100, Metric

Size	Order No.
1mm	204-0301
2mm	204-0302
3mm	204-0303
4mm	204-0304
5mm	204-0305
6mm	204-0306
7mm	204-0307
8mm	204-0308
9mm	204-0309
10mm	204-0310
11mm	204-0311
12mm	204-0312
13mm	204-0313
14mm	204-0314
15mm	204-0315
16mm	204-0316
17mm	204-0317
18mm	204-0318
19mm	204-0319
20mm	204-0320
21mm	204-0321
22mm	204-0322
23mm	204-0323
24mm	204-0324
25mm	204-0325

TG200

Size	Order No.
1"	204-0564
1-1/4"	204-0516
1-1/2"	204-0532
1-3/4"	204-0543
2"	204-0550

TG150 Collets, Inch

Size	Order No.	Size	Order No.
3/32"	204-0003	27/32"	204-0054
7/64"	204-0004	55/64"	204-0055
1/8"	204-0005	7/8"	204-0056
9/64"	204-0006	57/64"	204-0057
5/32"	204-0007	29/32"	204-0058
11/64"	204-0008	59/64"	204-0059
3/16"	204-0009	15/16"	204-0060
13/64"	204-0010	61/64"	204-0061
7/32"	204-0011	31/32"	204-0062
15/64"	204-0015	63/64"	204-0063
1/4"	204-0016	1"	204-0064
17/64"	204-0017	1-1/64"	204-0101
9/32"	204-0018	1-1/32"	204-0102
19/64"	204-0019	1-3/64"	204-0103
5/16"	204-0020	1-1/16"	204-0104
21/64"	204-0021	1-5/64"	204-0105
11/32"	204-0022	1-3/32"	204-0106
23/64"	204-0023	1-7/64"	204-0107
3/8"	204-0024	1-1/8"	204-0108
25/64"	204-0025	1-9/64"	204-0109
13/32"	204-0026	1-5/32"	204-0110
27/64"	204-0027	1-11/64"	204-0111
7/16"	204-0028	1-3/16"	204-0112
29/64"	204-0029	1-13/64"	204-0113
15/32"	204-0030	1-7/32"	204-0114
31/64"	204-0031	1-15/64"	204-0115
1/2"	204-0032	1-1/4"	204-0116
33/64"	204-0033	1-17/64"	204-0117
17/32"	204-0034	1-9/32"	204-0118
35/64"	204-0035	1-19/64"	204-0119
9/16"	204-0036	1-5/16"	204-0120
37/64"	204-0037	1-21/64"	204-0121
19/32"	204-0038	1-11/32"	204-0122
39/64"	204-0039	1-23/64"	204-0123
5/8"	204-0040	1-3/8"	204-0124
41/64"	204-0041	1-25/64"	204-0125
21/32"	204-0042	1-13/32"	204-0126
43/64"	204-0043	1-27/64"	204-0127
11/16"	204-0044	1-7/16"	204-0128
45/64"	204-0045	1-29/64"	204-0129
23/32"	204-0046	1-15/32"	204-0130
47/64"	204-0047	1-31/64"	204-0131
3/4"	204-0048	1-1/2"	204-0132
49/64"	204-0049	1-33/64"	204-0133
25/32"	204-0050	1-17/32"	204-0134
51/64"	204-0051	1-35/64"	204-0135
13/16"	204-0052	1-9/16"	204-0136
53/64"	204-0053		

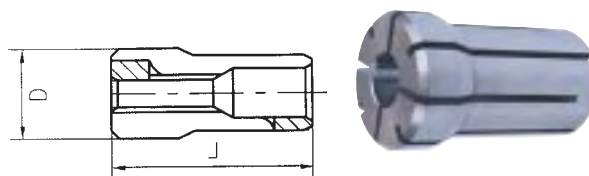
TG150 Collets, Metric

Size	Order No.
2mm	204-0202
3mm	204-0203
4mm	204-0204
5mm	204-0205
6mm	204-0206
7mm	204-0207
8mm	204-0208
9mm	204-0209
10mm	204-0210
11mm	204-0211
12mm	204-0212
13mm	204-0213
14mm	204-0214
15mm	204-0215
16mm	204-0216
17mm	204-0217
18mm	204-0218
19mm	204-0219
20mm	204-0220
21mm	204-0221
22mm	204-0222
23mm	204-0223
24mm	204-0224
25mm	204-0225
26mm	204-0226
27mm	204-0227
28mm	204-0228
29mm	204-0229
30mm	204-0230
31mm	204-0231
32mm	204-0232
33mm	204-0233
34mm	204-0234
35mm	204-0235
36mm	204-0236
37mm	204-0237
38mm	204-0238
39mm	204-0239
40mm	204-0240

DA Series-Double Angle Collets

- oncentric within 0.0005 TIR at collet nose assembled with chuck
- Self release for rapid, easy operation.

DA Series	D	L	Capacity Range
300	.375"	1.00"	1/32-1/4
200	.539"	1.18"	3/64-25/64
100	.769"	1.44"	3/64-9/16
180	1.035"	1.64"	3/64-3/4



Size	100DA Order No.	180DA Order No.	200DA Order No.	300DA Order No.
1/32"		159-0680		159-3020
3/64"	159-0000	159-0700	159-1140	159-3040
1/16"	159-0020	159-0720	159-1160	159-3060
5/64"	159-0040	159-0740	159-1180	159-3080
3/32"	159-0060	159-0760	159-1200	159-3100
7/64"	159-0080	159-0780	159-1220	159-3120
1/8"	159-0100	159-0800	159-1240	159-3140
9/64"	159-0120	159-0820	159-1260	159-3160
5/32"	159-0140	159-0840	159-1280	159-3180
11/64"	159-0160	159-0860	159-1300	159-3200
3/16"	159-0180	159-0880	159-1320	159-3220
13/64"	159-0200	159-0900	159-1340	159-3240
7/32"	159-0220	159-0920	159-1360	159-3260
15/64"	159-0240	159-0940	159-1380	159-3280
1/4"	159-0260	159-0960	159-1400	159-3300
17/64"	159-0280	159-0980	159-1420	
9/32"	159-0300	159-1000	159-1440	
19/64"	159-0320	159-1020	159-1460	
5/16"	159-0340	159-1040	159-1480	
21/64"	159-0360	159-1060	159-1500	
11/32"	159-0380	159-1080	159-1520	
23/64"	159-0400	159-1100	159-1540	
3/8"	159-0420	159-1120	159-1560	
25/64"	159-0440	159-1121	159-1580	
13/32"	159-0460	159-1122	159-1600	
27/64"	159-0480	159-1123	159-1620	
7/16"	159-0500	159-1124	159-1640	
29/64"	159-0520	159-1125	159-1660	
15/32"	159-0540	159-1126	159-1680	
31/64"	159-0560	159-1127	159-1700	
1/2"	159-0580	159-1128	159-1720	
33/64"	159-0600	159-1129	159-1740	
17/32"	159-0620	159-1130	159-1760	
35/64"	159-0640	159-1131	159-1780	
9/16"	159-0660	159-1132	159-1800	
37/64"		159-1133	159-1820	
19/32"		159-1134	159-1840	
39/64"		159-1135	159-1860	
5/8"		159-1136	159-1880	
41/64"		159-1137	159-1900	
21/32"		159-1138	159-1920	
43/64"		159-1139	159-1940	
11/16"		159-1141	159-1960	
45/64"		159-1142	159-1980	
23/32"		159-1143	159-2000	
47/64"		159-1144	159-2020	
3/4"		159-1145	159-2040	
49/64"		159-1146	159-2060	

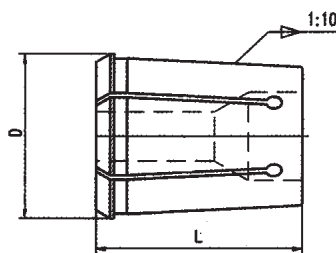
Size	100DA Order No.	180DA Order No.	200DA Order No.
1.5mm	159-5000	159-5560	159-5918
2.0mm	159-5020	159-5580	159-5920
2.5mm	159-5040	159-5600	159-5940
3.0mm	159-5060	159-5620	159-5960
3.5mm	159-5080	159-5640	159-5980
4.0mm	159-5100	159-5660	159-6000
4.5mm	159-5120	159-5680	159-6020
5.0mm	159-5140	159-5700	159-6040
5.5mm	159-5160	159-5720	159-6060
6.0mm	159-5180	159-5740	159-6080
6.5mm	159-5200	159-5760	159-6100
7.0mm	159-5220	159-5780	159-6120
7.5mm	159-5240	159-5800	159-6140
8.0mm	159-5260	159-5820	159-6160
8.5mm	159-5280	159-5840	159-6180
9.0mm	159-5300	159-5860	159-6200
9.5mm	159-5320	159-5880	159-6220
10.0mm	159-5340	159-5900	159-6240
10.5mm	159-5360		159-6260
11.0mm	159-5380		159-6280
11.5mm	159-5400		159-6300
12.0mm	159-5420		159-6320
12.5mm	159-5440		159-6340
13.0mm	159-5460		159-6360
13.5mm	159-5480		159-6380
14.0mm	159-5500		159-6400
14.5mm	159-5520		159-6420
15.0mm			159-6440
15.5mm			159-6460
16.0mm			159-6480
16.5mm			159-6500
17.0mm			159-6520
17.5mm			159-6540
18.0mm			159-6560
18.5mm			159-6580
19.0mm			159-6600
19.5mm			159-6620
20.0mm			159-6640

Collet Sets

Collet Series	No. of Pieces	Range	Order No.
100	29	1/8-9/16 by 64ths	159-1029
100	15	1/8-9/16 by 32ths	159-1015
180	41	1/8-3/4 by 64ths	159-1841
180	21	1/8-9/16 by 32ths	159-1821
200	17	1/8-3/8 by 64ths	159-2017
200	9	1/8-3/8 by 32ths	159-2009
300	9	1/8-1/4 by 64ths	159-3009
300	5	1/8-1/4 by 32ths	159-3005

EOC Collets

Type	D	L
16A/B	25.5	40
20A/B	29.8	45
25A/B	35.05	52
32A/B	43.7	60
40A/B	52.2	68
50A/B	63.8	80



A Type

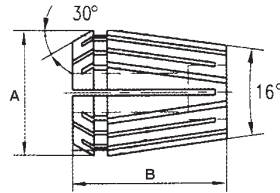


B Type

Type	16B	20B	25B	32B	40B	50B	Size	25A	32A	40A	50A
Size	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.		Order No.	Order No.	Order No.	Order No.
2mm	122-0502	122-1502	122-2502				2mm	204-5202			
3mm	122-0504	122-1504	122-2504				3mm	204-5203			
4mm	122-0506	122-1506	122-2506	122-3506			4mm	204-5204	204-5354		
5mm	122-0508	122-1508	122-2508	122-3508			5mm	204-5205	204-5355		
6mm	122-0510	122-1510	122-2510	122-3510	122-4510		6mm	204-5206	204-5356	204-5406	204-9456
7mm	122-0512	122-1512	122-2512	122-3512	122-4512		7mm	204-5207	204-5357	204-5407	204-9457
8mm	122-0514	122-1514	122-2514	122-3514	122-4514	122-5514	8mm	204-5208	204-5358	204-5408	204-9458
9mm	122-0516	122-1516	122-2516	122-3516	122-4516	122-5516	9mm	204-5209	204-5359	204-5409	204-9459
10mm	122-0518	122-1518	122-2518	122-3518	122-4518	122-5518	10mm	204-5210	204-5360	204-5410	204-9460
11mm	122-0520	122-1520	122-2520	122-3520	122-4520	122-5520	11mm	204-5211	204-5361	204-5411	204-9461
12mm	122-0522	122-1522	122-2522	122-3522	122-4522	122-5522	12mm	204-5212	204-5362	204-5412	204-9462
13mm	122-0524	122-1524	122-2524	122-3524	122-4524	122-5524	13mm	204-5213	204-5363	204-5413	204-9463
14mm	122-0526	122-1526	122-2526	122-3526	122-4526	122-5526	14mm	204-5214	204-5364	204-5414	204-9464
15mm	122-0528	122-1528	122-2528	122-3528	122-4528	122-5528	15mm	204-5215	204-5365	204-5415	204-9465
16mm	122-0530	122-1530	122-2530	122-3530	122-4530	122-5530	16mm	204-5216	204-5366	204-5416	204-9466
17mm		122-1532	122-2532	122-3532	122-4532	122-5532	17mm	204-5217	204-5367	204-5417	204-9467
18mm		122-1534	122-2534	122-3534	122-4534	122-5534	18mm	204-5218	204-5368	204-5418	204-9468
19mm		122-1536	122-2536	122-3536	122-4536	122-5536	19mm	204-5219	204-5369	204-5419	204-9469
20mm		122-1538	122-2538	122-3538	122-4538	122-5538	20mm	204-5220	204-5370	204-5420	204-9470
21mm			122-2540	122-3540	122-4540	122-5540	21mm	204-5221	204-5371	204-5421	204-9471
22mm			122-2542	122-3542	122-4542	122-5542	22mm	204-5222	204-5372	204-5422	204-9472
23mm			122-2544	122-3544	122-4544	122-5544	23mm	204-5223	204-5373	204-5423	204-9473
24mm			122-2546	122-3546	122-4546	122-5546	24mm	204-5224	204-5374	204-5424	204-9474
25mm			122-2548	122-3548	122-4548	122-5548	25mm	204-5225	204-5375	204-5425	204-9475
26mm				122-3550	122-4550	122-5550	26mm		204-5376	204-5426	204-9476
27mm				122-3552	122-4552	122-5552	27mm		204-5377	204-5427	204-9477
28mm				122-3554	122-4554	122-5554	28mm		204-5378	204-5428	204-9478
29mm				122-3556	122-4556	122-5556	29mm		204-5379	204-5429	204-9479
30mm				122-3558	122-4558	122-5558	30mm		204-5380	204-5430	204-9480
31mm				122-3560	122-4560	122-5560	31mm		204-5381	204-5431	204-9481
32mm				122-3562	122-4562	122-5562	32mm		204-5382	204-5432	204-9482
33mm					122-4564	122-5564	33mm			204-5433	204-9483
34mm					122-4566	122-5566	34mm			204-5434	204-9484
35mm					122-4568	122-5568	35mm			204-5435	204-9485
36mm					122-4570	122-5570	36mm				204-9486
37mm					122-4572	122-5572	37mm				204-9487
38mm					122-4574	122-5574	38mm				204-9488
39mm					122-4576	122-5576	39mm				204-9489
40mm					122-4578	122-5578	40mm				204-9490
41mm						122-5580	41mm				204-9491
42mm						122-5582	42mm				204-9492
43mm						122-5584	43mm				204-9493
44mm						122-5586	44mm				204-9494
45mm						122-5588	45mm				204-9495
46mm						122-5590	46mm				204-9496
47mm						122-5592	47mm				204-9497
48mm						122-5594	48mm				204-9498
49mm						122-5596	49mm				204-9499
50mm						122-5598	50mm				204-9500

ER Collets

- Unique 8° taper design affords highest gripping power.
- True double angle, for extreme concentricity.
- 16 Jaws giving powerful gripping and parallel clamping.
- A unique self-releasing system is built into the collet and clamping nut to eliminate cutting tools sticking in collets.



Type	A	B
ER11	11.5mm	18mm
ER16	17mm	27mm
ER20	21mm	31mm
ER25	26mm	35mm
ER32	33mm	40mm
ER40	41mm	46mm

Size	ER11 Order No.	ER16 Order No.	ER20 Order No.	ER25 Order No.	ER 32 Order No.	ER40 Order No.
1/32"	204-1102	204-1602				
3/64"	204-1103	204-1603	204-2003			
1/16"	204-1104	204-1604	204-2004	204-2504		
5/64"	204-1105	204-1605	204-2005	204-2505		
3/32"	204-1106	204-1606	204-2006	204-2506	204-3206	
7/64"	204-1107	204-1607	204-2007	204-2507	204-3207	
1/8"	204-1108	204-1608	204-2008	204-2508	204-3208	204-4008
9/64"	204-1109	204-1609	204-2009	204-2509	204-3209	204-4009
5/32"	204-1110	204-1610	204-2010	204-2510	204-3210	204-4010
11/64"	204-1111	204-1611	204-2011	204-2511	204-3211	204-4011
3/16"	204-1112	204-1612	204-2012	204-2512	204-3212	204-4012
13/64"	204-1113	204-1613	204-2013	204-2513	204-3213	204-4013
7/32"	204-1114	204-1614	204-2014	204-2514	204-3214	204-4014
15/64"	204-1115	204-1615	204-2015	204-2515	204-3215	204-4015
1/4"	204-1116	204-1616	204-2016	204-2516	204-3216	204-4016
17/64"	204-1117	204-1617	204-2017	204-2517	204-3217	204-4017
9/32"	204-1118	204-1618	204-2018	204-2518	204-3218	204-4018
19/64"		204-1619	204-2019	204-2519	204-3219	204-4019
5/16"		204-1620	204-2020	204-2520	204-3220	204-4020
21/64"		204-1621	204-2021	204-2521	204-3221	204-4021
11/32"		204-1622	204-2022	204-2522	204-3222	204-4022
23/64"		204-1623	204-2023	204-2523	204-3223	204-4023
3/8"		204-1624	204-2024	204-2524	204-3224	204-4024
25/64"			204-2025	204-2525	204-3225	204-4025
13/32"			204-2026	204-2526	204-3226	204-4026
27/64"			204-2027	204-2527	204-3227	204-4027
7/16"			204-2028	204-2528	204-3228	204-4028
29/64"			204-2029	204-2529	204-3229	204-4029
15/32"			204-2030	204-2530	204-3230	204-4030
31/64"			204-2031	204-2531	204-3231	204-4031
1/2"			204-2032	204-2532	204-3232	204-4032
33/64"				204-2533	204-3233	204-4033
17/32"				204-2534	204-3234	204-4034
35/64"				204-2535	204-3235	204-4035
9/16"				204-2536	204-3236	204-4036
37/64"				204-2537	204-3237	204-4037
19/32"				204-2538	204-3238	204-4038
39/64"				204-2539	204-3239	204-4039
5/8"				204-2540	204-3240	204-4040
41/64"					204-3241	204-4041
21/32"					204-3242	204-4042
43/64"					204-3243	204-4043
11/16"					204-3244	204-4044
45/64"					204-3245	204-4045
23/32"					204-3246	204-4046
47/64"					204-3247	204-4047
3/4"					204-3248	204-4048
49/64"					204-3249	204-4049
25/32"					204-3250	204-4050
51/64"					204-3251	204-4051
13/16"					204-3252	204-4052
53/64"						204-4053
27/32"						204-4054
55/64"						204-4055
7/8"						204-4056
57/64"						204-4057
29/32"						204-4058
59/64"						204-4059
15/16"						204-4060
61/64"						204-4061
31/32"						204-4062
63/64"						204-4063
1"						204-4064
1-1/64"						204-4065



Sets

Type	Descriptions	Order No.
ER16	10pcs set includes 1/32", 1/16", 3/32", 1/8", 3/16", 7/32", 1/4", 5/16", 11/32", 3/8"	204-1630
ER20	12pcs set includes 1/16", 3/32", 1/8", 3/16", 7/32", 1/4", 5/16", 11/32", 3/8", 13/32", 7/16", 1/2"	204-2040
ER25	15pcs set includes 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"	204-2550
ER32	18pcs set includes 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"	204-3260
ER40	23pcs/set with wooden stand, includes 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"	204-4000

Collet Punch Former

- Clamping diameter: $\phi 2-\phi 20$ mm
- Supply ER32 collete size: 4, 6, 8, 10, 12, 16, 20, 7Pcs in total
- For workpiece diameter smaller than 4mm, use shank 20mm/ER16 collet chuck
- It clamps workpiece quickly and steadily when processing without checking the center



OrderNo.287-6808

ER Collet Chucks

Morse Taper Shank



Shank Type	Collet Type	Drawbar End Thread	Capacity	Order No.
MT2	ER-20	3/8"-16	.04-.511	230-7051
MT2	ER-25	3/8"-16	.04-.629	230-7053
MT3	ER-32	1/2"-13	.06-.787	230-7055
MT3	ER-40	1/2"-13	.12-1.02	230-7057
MT4	ER-40	5/8"-11	.12-1.02	230-7062
MT4	ER-50	5/8"-11	.393-1.33	230-7063
MT5	ER-40	3/4"-10	.12-1.02	230-7061
MT5	ER-50	3/4"-10	.393-1.33	230-7065
MT6	ER-50	1"-8	.393-1.33	230-7067



30, 40 and 50 Taper Shank

Shank Type	Collet Type	Drawbar End Thread	Capacity	Order No.
30	ER-16	1/2"-13	.02-.393	230-7071
30	ER-32	1/2"-13	.08-.787	230-7073
30	ER-40	1/2"-13	.12-1.02	230-7075
40	ER-16	5/8"-11	.02-.393	230-7077
40	ER-20	5/8"-11	.04-.511	230-7079
40	ER-32	5/8"-11	.08-.787	230-7081
40	ER-40	5/8"-11	.12-1.02	230-7083
40	ER-50	5/8"-11	.393-1.33	230-7085
50	ER-16	1"-8	.02-.393	230-7087
50	ER-20	1"-8	.04-.511	230-7089
50	ER-40	1"-8	.12-1.02	230-7091
50	ER-50	1"-8	.393-1.33	230-7093

R8 Shank



Shank Type	Collet Type	Gage Length	Capacity	Order No.
R8	ER-16	1-1/2"	.02-.393	230-7041
R8	ER-16	3	.02-.393	230-7043
R8	ER-32	1-5/8	.06-.787	230-7045
R8	ER-40	2-27/32	.12-1.02	230-7047



Straight Shank

Shank Type	Collet Type	Drawbar End Thread	Capacity	Order No.
	ER-11	3/8"-16	.02-.275	230-7001
	ER-11	3/8"-16	.02-.275	230-7003
	ER-11	3/8"-16	.02-.275	230-7005
	ER-11	3/8"-16	.02-.275	230-7007
	ER-16	3/8"-16	.02-.393	230-7009
	ER-16	3/8"-16	.02-.393	230-7011
	ER-16	3/8"-16	.02-.393	230-7013
	ER-20	3/8"-16	.04-.511	230-7015
	ER-20	3/8"-16	.04-.511	230-7017
	ER-20	3/8"-16	.04-.511	230-7019
	ER-25	3/8"-16	.04-.629	230-7021
	ER-25	3/8"-16	.04-.629	230-7023
	ER-32	3/8"-16	.08-.787	230-7025
	ER-32	1/2"-13	.08-.787	230-7027
	ER-40	1/2"-13	.12-1.02	230-7033
	ER-32	5/8"-11	.08-.787	230-7029
	ER-32	5/8"-11	.08-.787	230-7031
	ER-40	5/8"-11	.12-1.02	230-7035

ER Collet Chuck Sets



ER11

7Pc. Collets in Set: 1/32, 1/16, 3/32, 1/8, 3/16, 7/32, 1/4

Shank Size	Order No.
R8	230-0718
30	230-0733
40	230-0734
50	230-0735
MT2	230-0772
MT3	230-0773
MT4	230-0774
3/4x2-1/2	230-0741
3/4x4"	230-0743
3/4x6"	230-0744

ER16

10Pc. Collets in Set: 1/32, 1/16, 3/32, 1/8, 3/16, 7/32, 1/4, 5/16, 11/32, 3/8

Shank Size	Order No.
R8	230-0608
30	230-0630
40	230-0640
50	230-0650
MT2	230-0662
MT3	230-0663
MT4	230-0664
3/4x2-1/2	230-0672
3/4x4"	230-0674
3/4x6"	230-0676

ER 25

6Pc. Collets in Set:

3/16, 1/4, 5/16, 3/8, 1/2, 5/8

Shank Size	Order No.
R8	230-0508
30	230-0530
40	230-0540
50	230-0550
MT2	230-0562
MT3	230-0563
MT4	230-0564
3/4x2-1/2	230-0574
1x2-3/8	230-0576

ER 25

10Pc. Collets in Set: 3/32, 1/8, 3/16,

1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8

Shank Size	Order No.
R8	230-0408
30	230-0430
40	230-0440
50	230-0450
MT2	230-0462
MT3	230-0463
MT4	230-0464
3/4"	230-0474
1"	230-0476

ER 32

12Pc. Collets in Set:

1/16, 3/32, 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 13/16

Shank Size	Order No.
R8	230-0208
30	230-0230
40	230-0240
50	230-0250
MT3	230-0263
MT4	230-0264
MT5	230-0265
3/4x2-1/2	230-0274
1"x2-3/8	230-0276

ER 32

6Pc. Collets in Set:

1/4, 5/16, 3/8, 1/2, 5/8, 3/4

Shank Size	Order No.
R8	230-0308
30	230-0330
40	230-0340
50	230-0350
MT3	230-0363
MT4	230-0364
MT5	230-0365
3/4x2-1/2	230-0374
1"x2-3/8	230-0376

ER 40

8Pc. Collets in Set:

1/8, 1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1

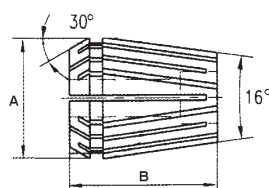
Shank Size	Order No.
R8	230-0108
30	230-0130
40	230-0140
50	230-0150
MT 3	230-0163
MT 4	230-0164
MT 5	230-0165
1x2-3/8	230-0176
1-1/4x2-3/8	230-0178

ER 40

15Pc. Collets in Set: 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"

Shank Size	Order No.
R8	230-0008
ISO 30	230-0030
ISO 40	230-0040
ISO 50	230-0050
MT 3	230-0063
MT 4	230-0064
MT 5	230-0065
1x2-3/8	230-0076
1-1/4x2-3/8	230-0078

Metric ER Collets



Type	A	B
ER11	11.5mm	18mm
ER16	17mm	27mm
ER20	21mm	31mm
ER25	26mm	35mm
ER32	33mm	40mm
ER40	41mm	46mm

	ER 8	ER 9	ER11	ER 12	ER 16	ER-20	ER-25	ER 32	ER 40	ER-50	ER 60	ER 90
Size	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
1mm	204-0810	204-0910	204-1010	204-1210	204-6010	204-7010	204-7210					
1.5mm	204-0815	204-0915	204-1015	204-1215	204-6015	204-7015	204-7215					
2mm	204-0820	204-0920	204-1020	204-1220	204-6020	204-7020	204-7220	204-3320				
2.5mm	204-0825	204-0925	204-1025	204-1225	204-6025	204-7025	204-7225	204-3325				
3mm	204-0830	204-0930	204-1030	204-1230	204-6030	204-7030	204-7230	204-3330	204-4130			
3.5mm	204-0835	204-0935	204-1035	204-1235	204-6035	204-7035	204-7235	204-3335				
4mm		204-0940	204-1040	204-1240	204-6040	204-7040	204-7240	204-3340	204-4134			
4.5mm		204-0945	204-1045	204-1245	204-6045	204-7045	204-7245	204-3345				
5mm		204-0950	204-1050	204-1250	204-6050	204-7050	204-7250	204-3350	204-4135			
5.5mm			204-1055	204-1255	204-6055	204-7055	204-7255	204-3355				
6mm			204-1060	204-1260	204-6060	204-7060	204-7260	204-3360	204-4136	204-9060		
7mm			204-1070	204-1270	204-6070	204-7070	204-7270	204-3370	204-4137	204-9070		
8mm					204-6080	204-7080	204-7280	204-3380	204-4138	204-9080		
9mm					204-6090	204-7090	204-7290	204-3390	204-4139	204-9090		
10mm					204-6100	204-7100	204-7300	204-3400	204-4140	204-9100	204-6210	
11mm						204-7110	204-7310	204-3410	204-4141	204-9110	204-6211	
12mm						204-7120	204-7320	204-3420	204-4142	204-9120	204-6212	
13mm						204-7130	204-7330	204-3430	204-4143	204-9130	204-6213	
14mm							204-7340	204-3440	204-4144	204-9140	204-6214	
15mm							204-7350	204-3450	204-4145	204-9150	204-6215	
16mm							204-7360	204-3460	204-4146	204-9160	204-6216	
17mm								204-3470	204-4147	204-9170	204-6217	
18mm								204-3480	204-4148	204-9180	204-6218	
19mm								204-3490	204-4149	204-9190	204-6219	
20mm								204-3500	204-4150	204-9200	204-6220	204-6320
21mm									204-4151	204-9210	204-6221	
22mm									204-4152	204-9220	204-6222	204-6322
23mm									204-4153	204-9230	204-6223	
24mm									204-4154	204-9240	204-6224	204-6324
25mm									204-4155	204-9250	204-6225	
26mm									204-4156	204-9260	204-6226	204-6326
27mm									204-4157	204-9270	204-6227	
28mm									204-4158	204-9280	204-6228	204-6328
29mm									204-4159	204-9290	204-6229	
30mm									204-4160	204-9300	204-6230	204-6330
31mm										204-9310	204-6231	
32mm										204-9320	204-6232	204-6332
33mm										204-9330	204-6233	
34mm										204-9340	204-6234	204-6334
35mm											204-6235	
36mm											204-6236	204-6336
37mm											204-6237	
38mm											204-6238	204-6338
39mm											204-6239	
40mm											204-6240	204-6340
42mm												204-6342
44mm												204-6344
46mm												204-6346
48mm												204-6348
50mm												204-6350
52mm												204-6352
54mm												204-6354
56mm												204-6356
58mm												204-6358
60mm												204-6360

Metric ER Collet & Chuck Sets

ER16

8 collets in set:
2, 3, 4, 5, 6, 7, 8,
10mm



Shank Size	Set Order No.
R8	230-2608
30	230-2630
40	230-2640
50	230-2650
MT2	230-2662

Shank Size	Set Order No.
MT3	230-2663
MT4	230-2664
1/2"	230-2672
3/4"	230-2674

ER25

6 collets in set:
4, 6, 8, 10, 12,
16mm

Shank Size	Set Order No.
R8	230-2508
30	230-2530
40	230-2540
50	230-2550
MT2	230-2562
MT3	230-2563
MT4	230-2564
3/4"	230-2574
1"	230-2576

ER25

10 collets in set:
3, 4, 5, 6, 8, 10, 12,
14, 15, 16mm

Shank Size	Set Order No.
R8	230-2408
30	230-2430
40	230-2440
50	230-2450
MT2	230-2462
MT3	230-2463
MT4	230-2464
3/4"	230-2474
1"	230-2476

ER32

6 collets in set:
6, 8, 10, 12, 16,
20mm

Shank Size	Set Order No.
R8	230-2308
30	230-2330
40	230-2340
50	230-2350
MT3	230-2363
MT4	230-2364
MT5	230-2365
3/4"	230-2374
1"	230-2376

ER32

12 collets in set:
3, 4, 5, 6, 8, 10, 12,
14, 15, 16, 18, 20mm

Shank Size	Set Order No.
R8	230-2208
30	230-2230
40	230-2240
50	230-2250
MT3	230-2263
MT4	230-2264
MT5	230-2265
3/4"	230-2274
1"	230-2276

ER40

8 collets in set:
3, 5, 8, 12, 15, 18,
22, 26mm

Shank Size	Set Order No.
R8	230-2108
30	230-2130
40	230-2140
45	230-2145
50	230-2150
MT3	230-2163
MT4	230-2164
MT5	230-2165
1"	230-2176
1-1/4"	230-2178

ER40

15 collets in set:
3, 4, 5, 6, 8, 10, 12,
14, 15, 16, 18, 20, 22,
24, 26mm

Shank Size	Set Order No.
R8	230-2008
30	230-2030
40	230-2040
45	230-2045
50	230-2050
MT3	230-2063
MT4	230-2064
MT5	230-2065
1"	230-2076
1-1/4"	230-2078

Milling Collet Chuck Sets

Type J7616

Inch Set: Each set completed with 1 collet chuck, 1 clamping nut, 1 spanner & 4 collets of 1/4, 3/8, 1/2, 5/8"

Metric Set: Each set completed with 1 collet chuck, 1 clamping nut, 1 spanner & 4 collets of 6, 10, 12, 16mm



Chuck Type	Inch Set Order No.	Metric Set Order No.
R8	230-1008	230-1208
30	230-1030	230-1230
40	230-1040	230-1240
50	230-1050	230-1250
MT3	230-1063	230-1263
MT4	230-1064	230-1264
MT5	230-1065	230-1265

Type J7325(DIN6388-EOC25A)

Inch Set: Each set completed with 1 collet chuck, 1 clamping nut, 1 spanner & 8 collets of 1/8, 1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1"

Metric Set: Each set completed with 1 collet chuck, 1 clamping nut, 1 spanner & 8 collets of 3, 5, 6, 12, 15, 18, 22, 25mm



Chuck Type	Inch Set Order No.	Metric Set Order No.
R8	230-0808	230-2808
30	230-0830	230-2830
40	230-0840	230-2840
50	230-0850	230-2850
MT3	230-0862	230-2863
MT4	230-0863	230-2864
MT5	230-0864	230-2865
Straight 1"	230-0876	230-2866
Straight 1-1/4"	230-0878	230-2868

Inch Set: Each set completed with 1 collet chuck, 1 clamping nut, 1 spanner & 8 collets of 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"

Metric Set: Each set completed with 1 collet chuck, 1 clamping nut, 1 spanner & 8 collets of 3, 4, 5, 6, 8, 10, 12, 14, 15, 16, 18, 20, 22, 24, 25mm



Chuck Type	Inch Set Order No.	Metric Set Order No.
R8	230-0808	230-2808
30	230-0830	230-2830
40	230-0840	230-2840
50	230-0850	230-2850
MT3	230-0862	230-2863
MT4	230-0863	230-2864
MT5	230-0864	230-2865
Straight 1"	230-0876	230-2866
Straight 1-1/4"	230-0878	230-2868

Type Q24-16

Inch Set: Each set completed with 1 collet chuck, 1 clamping nut, 1 spanner & 8 collets of 1/8, 3/16, 1/4, 5/16, 3/8, 1/2, 9/16, 5/8"

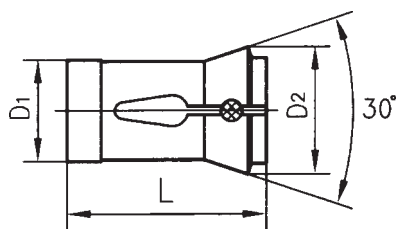
Metric Set: Each set completed with 1 collet chuck, 1 clamping nut, 1 spanner & 8 collets of 4, 5, 6, 8, 10, 12, 14, 16mm



Chuck Type	Inch Set Order No.	Metric Set Order No.
R8	230-0908	230-1908
30	230-0930	230-1930
40	230-0940	230-1940
MT2	230-0962	230-1962
MT3	230-0963	230-1963
MT4	230-0964	230-1964
Straight 1"	230-0976	230-1976
Straight 1-1/4"	230-0978	230-1978

DIN 6343 Clamping Collets

- Plastic
- Hardness: clamping part HRC55~60
Body HRC40~45
- This unit is applicable to all sorts of automatic lathes, turret lathes



Model	D1 (mm)	D2 (mm)	L (mm)	Hole Size(mm)			Wt(kg)
				Round	Square	Hex	
DIN6343-F17.5	17.5	22	51	13	8	10	0.05
DIN6343-F22	22	30	55	16	11	13	0.09
DIN6343-F27	27	38	72.7	22	15	19	0.10
DIN6343-F28	28	38	70	22	15	19	0.12
DIN6343-F32	32	45	75	26	18	22	0.27
DIN6343-F35	35	48	80	30	21	26	0.35
DIN6343-F42	42	55	94	36	25	30	0.49
DIN6343-F48	48	60	94	42	29	6	0.57
DIN6343-F56	56	68	94	50	35	42	0.65
DIN6343-F66	66	84	110	60	42	52	1.06

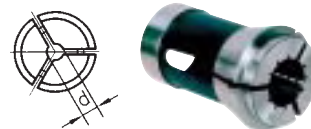


Square Hole Type

Size:S (mm)	F17.5 Order No.	F22 Order No.	F28 Order No.	F32 Order No.	F35 Order No.	F42 Order No.	F48 Order No.	F56 Order No.	F66 Order No.
2	543-1002	543-1102	543-1202						
3	543-1003	543-1103	543-1203						
4	543-1004	543-1104	543-1204	543-1304	543-1404	543-1504	543-1604		
5	543-1005	543-1105	543-1205	543-1305	543-1405	543-1505	543-1605		
6	543-1006	543-1106	543-1206	543-1306	543-1406	543-1506	543-1606		
7	543-1007	543-1107	543-1207	543-1307	543-1407	543-1507	543-1607		
8	543-1008	543-1108	543-1208	543-1308	543-1408	543-1508	543-1608	543-1708	
9		543-1109	543-1209	543-1309	543-1409	543-1509	543-1609	543-1709	
10		543-1110	543-1210	543-1310	543-1410	543-1510	543-1610	543-1710	543-1810
11		543-1111	543-1211	543-1311	543-1411	543-1511	543-1611	543-1711	543-1811
12			543-1212	543-1312	543-1412	543-1512	543-1612	543-1712	543-1812
13			543-1213	543-1313	543-1413	543-1513	543-1613	543-1713	543-1813
14			543-1214	543-1314	543-1414	543-1514	543-1614	543-1714	543-1814
15			543-1215	543-1315	543-1415	543-1515	543-1615	543-1715	543-1815
16				543-1316	543-1416	543-1516	543-1616	543-1716	543-1816
17				543-1317	543-1417	543-1517	543-1617	543-1717	543-1817
18				543-1318	543-1418	543-1518	543-1618	543-1718	543-1818
19					543-1419	543-1519	543-1619	543-1719	543-1819
20					543-1420	543-1520	543-1620	543-1720	543-1820
21					543-1421	543-1521	543-1621	543-1721	543-1821
22						543-1522	543-1622	543-1722	543-1822
23						543-1523	543-1623	543-1723	543-1823
24						543-1524	543-1624	543-1724	543-1824
25						543-1525	543-1625	543-1725	543-1825
26							543-1626	543-1726	543-1826
27							543-1627	543-1727	543-1827
28							543-1628	543-1728	543-1828
29							543-1629	543-1729	543-1829
30								543-1730	543-1830
31								543-1731	543-1831
32								543-1732	543-1832
33								543-1733	543-1833
34								543-1734	543-1834
35								543-1735	543-1835
36									543-1836
37									543-1837
38									543-1838
39									543-1839
40									543-1840
41									543-1841
42									543-1842

DIN 6343 Clamping collets Continued

- Hardness: clamping part HRC55~60
Body part HRC40~45
- This unit is applicable to all sorts of automatic lathes, turret lathes

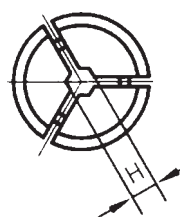


Round Hole Type

Size:d (mm)	F17.5 Order No.	F22 Order No.	F28 Order No.	F32 Order No.	F35 Order No.	F42 Order No.	F48 Order No.	F56 Order No.	F66 Order No.
2	543-0002	543-0102							
3	543-0003	543-0103	543-0203						
4	543-0004	543-0104	543-0204	543-0304	543-0404	543-0504	543-0604		
5	543-0005	543-0105	543-0205	543-0305	543-0405	543-0505	543-0605		
6	543-0006	543-0106	543-0206	543-0306	543-0406	543-0506	543-0606		
7	543-0007	543-0107	543-0207	543-0307	543-0407	543-0507	543-0607		
8	543-0008	543-0108	543-0208	543-0308	543-0408	543-0508	543-0608	543-0708	
9	543-0009	543-0109	543-0209	543-0309	543-0409	543-0509	543-0609	543-0709	
10	543-0010	543-0110	543-0210	543-0310	543-0410	543-0510	543-0610	543-0710	543-0810
11	543-0011	543-0111	543-0211	543-0311	543-0411	543-0511	543-0611	543-0711	543-0811
12	543-0012	543-0112	543-0212	543-0312	543-0412	543-0512	543-0612	543-0712	543-0812
13	543-0013	543-0113	543-0213	543-0313	543-0413	543-0513	543-0613	543-0713	543-0813
14		543-0114	543-0214	543-0314	543-0414	543-0514	543-0614	543-0714	543-0814
15		543-0115	543-0215	543-0315	543-0415	543-0515	543-0615	543-0715	543-0815
16		543-0116	543-0216	543-0316	543-0416	543-0516	543-0616	543-0716	543-0816
17			543-0217	543-0317	543-0417	543-0517	543-0617	543-0717	543-0817
18			543-0218	543-0318	543-0418	543-0518	543-0618	543-0718	543-0818
19			543-0219	543-0319	543-0419	543-0519	543-0619	543-0719	543-0819
20			543-0220	543-0320	543-0420	543-0520	543-0620	543-0720	543-0820
21			543-0221	543-0321	543-0421	543-0521	543-0621	543-0721	543-0821
22			543-0222	543-0322	543-0422	543-0522	543-0622	543-0722	543-0822
23				543-0323	543-0423	543-0523	543-0623	543-0723	543-0823
24				543-0324	543-0424	543-0524	543-0624	543-0724	543-0824
25				543-0325	543-0425	543-0525	543-0625	543-0725	543-0825
26				543-0326	543-0426	543-0526	543-0626	543-0726	543-0826
27					543-0427	543-0527	543-0627	543-0727	543-0827
28					543-0428	543-0528	543-0628	543-0728	543-0828
29					543-0429	543-0529	543-0629	543-0729	543-0829
30					543-0430	543-0530	543-0630	543-0730	543-0830
31						543-0531	543-0631	543-0731	543-0831
32						543-0532	543-0632	543-0732	543-0832
33						543-0533	543-0633	543-0733	543-0833
34						543-0534	543-0634	543-0734	543-0834
35						543-0535	543-0635	543-0735	543-0835
36						543-0536	543-0636	543-0736	543-0836
37							543-0637	543-0737	543-0837
38							543-0638	543-0738	543-0838
39							543-0639	543-0739	543-0839
40							543-0640	543-0740	543-0840
41							543-0641	543-0741	543-0841
42							543-0642	543-0742	543-0842
43								543-0743	543-0843
44								543-0744	543-0844
45								543-0745	543-0845
46								543-0746	543-0846
47								543-0747	543-0847
48								543-0748	543-0848
49								543-0749	543-0849
50								543-0750	543-0850
51									543-0851
52									543-0852
53									543-0853
54									543-0854
55									543-0855
56									543-0856
57									543-0857
58									543-0858
59									543-0859
60									543-0860

DIN 6343 Clamping collets Continued

- Hardness: clamping part HRC55~60
Body part HRC40~45
- This unit is applicable to all sorts of automatic lathes, turret lathes



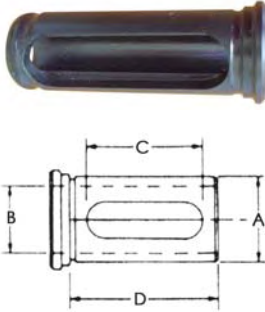
Hex Hole Type

Size:H (mm)	F17.5 Order No.	F22 Order No.	F28 Order No.	F32 Order No.	F35 Order No.	F42 Order No.	F48 Order No.	F56 Order No.	F66 Order No.
2	543-2002	543-2102	543-2202						
3	543-2003	543-2103	543-2203						
4	543-2004	543-2104	543-2204	543-2304	543-2404	543-2504	543-2604		
5	543-2005	543-2105	543-2205	543-2305	543-2405	543-2505	543-2605		
6	543-2006	543-2106	543-2206	543-2306	543-2406	543-2506	543-2606		
7	543-2007	543-2107	543-2207	543-2307	543-2407	543-2507	543-2607		
8	543-2008	543-2108	543-2208	543-2308	543-2408	543-2508	543-2608	543-2708	
9	543-2009	543-2109	543-2209	543-2309	543-2409	543-2509	543-2609	543-2709	
10	543-2010	543-2110	543-2210	543-2310	543-2410	543-2510	543-2610	543-2710	543-2810
11		543-2111	543-2211	543-2311	543-2411	543-2511	543-2611	543-2711	543-2811
12		543-2112	543-2212	543-2312	543-2412	543-2512	543-2612	543-2712	543-2812
13		543-2113	543-2213	543-2313	543-2413	543-2513	543-2613	543-2713	543-2813
14			543-2214	543-2314	543-2414	543-2514	543-2614	543-2714	543-2814
15			543-2215	543-2315	543-2415	543-2515	543-2615	543-2715	543-2815
16			543-2216	543-2316	543-2416	543-2516	543-2616	543-2716	543-2816
17			543-2217	543-2317	543-2417	543-2517	543-2617	543-2717	543-2817
18			543-2218	543-2318	543-2418	543-2518	543-2618	543-2718	543-2818
19			543-2219	543-2319	543-2419	543-2519	543-2619	543-2719	543-2819
20				543-2320	543-2420	543-2520	543-2620	543-2720	543-2820
21				543-2321	543-2421	543-2521	543-2621	543-2721	543-2821
22				543-2322	543-2422	543-2522	543-2622	543-2722	543-2822
23					543-2423	543-2523	543-2623	543-2723	543-2823
24					543-2424	543-2524	543-2624	543-2724	543-2824
25					543-2425	543-2525	543-2625	543-2725	543-2825
26					543-2426	543-2526	543-2626	543-2726	543-2826
27						543-2527	543-2627	543-2727	543-2827
28						543-2528	543-2628	543-2728	543-2828
29						543-2529	543-2629	543-2729	543-2829
30						543-2530	543-2630	543-2730	543-2830
31							543-2631	543-2731	543-2831
32							543-2632	543-2732	543-2832
33							543-2633	543-2733	543-2833
34							543-2634	543-2734	543-2834
35							543-2635	543-2735	543-2835
36							543-2636	543-2736	543-2836
37								543-2737	543-2837
38								543-2738	543-2838
39								543-2739	543-2839
40								543-2740	543-2840
41								543-2741	543-2841
42								543-2742	543-2842
43									543-2843
44									543-2844
45									543-2845
46									543-2846
47									543-2847
48									543-2848
49									543-2849
50									543-2850
51									543-2851
52									543-2852

Tool Holder Bushings

Type C

- Simplicity.
- Reliability.
- Precision.
- Superior design.
- Collis bushings available for all sizes of CNC Lathes.

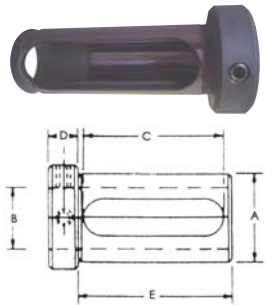


A O.D.	C Slot Length	D Length Under Head	Head Thick	B I.D.	Order No.
3/4"	1-7/8"	2-1/4"	3/16"	1/4"	210-6001
				5/16"	210-6002
				3/8"	210-6003
				1/2"	210-6004
1"	2-3/8"	2-3/4"	3/16"	1/4"	210-6005
				5/16"	210-6006
				3/8"	210-6007
				1/2"	210-6008
				5/8"	210-6009
				3/4"	210-6010
1-1/4"	2-7/8"	3-1/4"	3/16"	3/8"	210-6011
				1/2"	210-6012
				5/8"	210-6013
				3/4"	210-6014
				7/8"	210-6015
				1"	210-6016

A O.D.	C Slot Length	D Length Under Head	Head Thick	B I.D.	Order No.
1-1/2"	3"	3-3/8"	3/16"	3/8"	210-6017
				1/2"	210-6018
				5/8"	210-6019
				3/4"	210-6020
				7/8"	210-6021
				1"	210-6022
				1-1/4"	210-6023
1-3/4"	3-1/8"	3-1/2"	3/16"	1/2"	210-6024
				5/8"	210-6025
				3/4"	210-6026
				7/8"	210-6027
				1"	210-6028
				1-1/4"	210-6029
				1-1/2"	210-6030
2"	3-5/8"	4"	3/16"	1/2"	210-6031
				5/8"	210-6032
				3/4"	210-6033
				1"	210-6034
				1-1/4"	210-6035
				1-1/2"	210-6036
				1-3/4"	210-6037

Type Z

- Simplicity.
- Reliability.
- Precision.
- Superior design.
- Collis bushings available for all sizes of CNC Lathes.

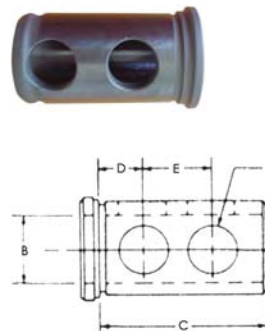


A O.D.	E Length Under Head	D Head Thickness	C Slot Length	B I.D.	Order No.
1"	2-3/4"	1/2"	2-3/8"	1/4"	210-6040
				5/16"	210-6041
				3/8"	210-6042
				1/2"	210-6043
				5/8"	210-6044
				3/4"	210-6045
1-1/4"	3"	5/8"	2-5/8"	3/8"	210-6046
				1/2"	210-6047
				5/8"	210-6048
				3/4"	210-6049
				7/8"	210-6050
				1"	210-6051
1-1/2"	3-1/4"	3/4"	2-7/8"	3/8"	210-6052
				1/2"	210-6053
				5/8"	210-6054
				3/4"	210-6055
				7/8"	210-6056
				1"	210-6057
				1-1/4"	210-6058

A O.D.	C Length Under Head	D Head Thickness	C Slot Length	B I.D.	Order No.
1-3/4"	3-1/2"	3/4"	3-1/8"	1/2"	210-6059
				5/8"	210-6060
				3/4"	210-6061
				7/8"	210-6062
				1"	210-6063
				1-1/4"	210-6064
				1-1/2"	210-6065
2"	3-3/4"	3/4"	3-3/8"	1/2"	210-6066
				5/8"	210-6067
				3/4"	210-6068
				7/8"	210-6069
				1"	210-6070
				1-1/4"	210-6071
				1-1/2"	210-6072
				1-3/4"	210-6073

Type J

- Vallue
- Simplicity.
- Reliability.
- Precision.
- Superior design.
- Collis bushings available for all sizes of CNC Lathes.



A O.D.	C Length Under Head	E Head Thickness	D Slot Length	F Head Thick	B I.D.	Order No.
3/4"	1-1/2"	13/16"	3/8"	3/8"	3/16"	210-6080
					5/16"	210-6081
					3/8"	210-6082
					1/2"	210-6083
1"	1-3/4"	7/8"	7/16"	5/8"	3/16"	210-6084
					1/2"	210-6085
					5/8"	210-6086
					3/4"	210-6087
1-1/4"	2-1/8"	1"	5/8"	5/8"	3/16"	210-6088
					1/2"	210-6089
					5/8"	210-6090
					3/4"	210-6091
					7/8"	210-6092
					1"	210-6093

A O.D.	C Length Under Head	E Head Thickness	D Slot Length	F Head Thick	B I.D.	Order No.
1-1/2"	2-1/2"	1-1/8"	11/16"	7/8"	3/16"	210-6094
					3/8"	210-6095
					5/8"	210-6096
					3/4"	210-6097
					7/8"	210-6098
					1"	210-6099
					1-1/4"	210-6100
1-3/4"	3"	1-1/4"	3/4"	7/8"	3/16"	210-6101
					5/8"	210-6102
					3/4"	210-6103
					7/8"	210-6104
					1"	210-6105
					1-1/4"	210-6106
					1-1/2"	210-6107
2"	3-1/2"	1-1/2"	3/4"	1"	3/16"	210-6108
					5/8"	210-6109
					3/4"	210-6110
					7/8"	210-6111
					1"	210-6112
					1-1/4"	210-6113
					1-1/2"	210-6114
					1-3/4"	210-6115

R8 End Mill Holders

For single and double end mills (* for single end mills only).

- Internal thread 7/16"-20.



Hole Dia.	Order No.
3/16"	210-0102
1/4"	210-0103
5/16"	210-0104
3/8"	210-0105
7/16"	210-0106
1/2"	210-0107
5/8"	210-0108
3/4"	210-0110*
7/8"	210-0112*
1"	210-0114*
1-1/8"	210-0115*
1-1/4"	210-0116*
1-1/2"	210-0118*
2"	210-0120*

Hole Dia.	Order No.
4mm	210-1104
5mm	210-1105
6mm	210-1106
7mm	210-1107
8mm	210-1108
10mm	210-1110
12mm	210-1112
14mm	210-1114
16mm	210-1116
18mm	210-1118
20mm	210-1120
22mm	210-1122
25mm	210-1125*
27mm	210-1127*

Sets

No. of Pieces	Specifications	Order No.
4	3/8, 1/2, 3/4, 1"	210-0304
5	3/16, 3/8, 1/2, 5/8, 3/4"	210-0305
6	3/16, 3/8, 1/2, 5/8, 3/4, 7/8"	210-0306
8	3/16, 1/4, 3/8, 1/2, 5/8, 3/4, 1, 1-1/4"	210-0307
8	3/16, 3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4"	210-0308
9	3/16, 3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2"	210-0309

NMTB Shank End Mill Holders

For holding single and double end mills (* for holding single end mills only).

- Drawbar end thread: 30#: 1/2"-13, 40#: 5/8"-11, 50#: 1"-8. Metric: 30#: M12, 40#: M16, 50#: M24.
- NMTB 30,40 & 50 shanks.



Hole Dia.	30# Order No.	40# Order No.	50# Order No.
3/16"	210-3012	210-4012	
5/16"	210-3015	210-4015	
3/8"	210-3024	210-4024	210-5024
1/2"	210-3032	210-4032	210-5032
5/8"	210-3040	210-4040	210-5040
3/4"	210-3048	210-4048	210-5048
7/8"	210-3056*	210-4056	210-5056
1"	210-3064*	210-4064*	210-5064
1-1/4"	210-3066*	210-4066*	210-5066*
1-1/2"		210-4068*	210-5068*
2"		210-4070*	210-5070*
2-1/2"			210-5072*

Hole Dia.	30# Order No.	40# Order No.	50# Order No.
6mm	210-3306		
8mm	210-3308	210-4308	210-5308
10 mm	210-3310	210-4310	210-5310
12mm	210-3312	210-4312	210-5312
13mm	210-3313	210-4313	210-5313
14mm	210-3314	210-4314	210-5314
16mm	210-3316	210-4316	210-5316
18mm	210-3318	210-4318	210-5318
19mm	210-3319	210-4319	210-5319
20mm	210-3320	210-4320	210-5320
22mm	210-3322*	210-4322	210-5322
25mm	210-3325*	210-4325*	210-5325
32mm	210-3332*	210-4332*	210-5332*
40mm		210-4340*	210-5340*
50mm			210-5350*
63mm			210-5363*

Morse Taper End Mill Holders

Tang Type

For Single & Double End Mills

(* For Single End Mills Only)



Shank Taper	Hole Dia.	Order No.	Shank Taper	Hole Dia.	Order No.
MT2	3/16"	219-2012	MT4	7/8"	219-4019*
MT2	1/4"	219-2013	MT4	1"	219-4020*
MT2	5/16"	219-2014	MT4	1-1/4"	219-4021*
MT2	3/8"	219-2015	MT4	1-1/2"	219-4022*
MT2	1/2"	219-2016*	MT5	3/16"	219-5012
MT 2	5/8"	219-2017*	MT5	1/4"	219-5013
MT2	3/4"	219-2018*	MT5	5/16"	219-5014
MT3	3/16"	219-3012	MT5	3/8"	219-5015
MT3	1/4"	219-3013	MT5	1/2"	219-5016
MT3	5/16"	219-3014	MT5	5/8"	219-5017
MT3	3/8"	219-3015	MT5	3/4"	219-5018
MT3	1/2"	219-3016	MT5	7/8"	219-5019
MT3	5/8"	219-3017*	MT5	1"	219-5020
MT3	3/4"	219-3018*	MT5	1-1/4"	219-5021*
MT3	7/8"	219-3019*	MT5	1-1/2"	219-5022*
MT3	1"	219-3020*	MT5	2"	219-5024*
MT4	3/16"	219-4012	MT5	2-1/2"	219-5025*
MT4	1/4"	219-4013	MT6	7/8"	219-6019
MT4	5/16"	219-4014	MT6	1"	219-6020
MT4	3/8"	219-4015	MT6	1-1/4"	219-6021*
MT4	1/2"	219-4016	MT6	1-1/2"	219-6022*
MT4	5/8"	219-4017	MT6	2"	219-6024*
MT4	3/4"	219-4018	MT6	2-1/2"	219-6025*

Morse Taper End Mill Holders

Drawbar End Type

For Single & Double End Mills(* For Single End Mills Only)

- Drawbar end thread: MT2:3/8"-16, MT3: 1/2"-13, MT4:5/8"-11, MT5: 3/4"-10, MT6: 1"-8.



Shank Taper	Hole Dia.	Order No.	Shank Taper	Hole Dia.	Order No.
MT2	3/16"	219-2112	MT4	1-1/4"	219-4121*
MT2	1/4"	219-2113	MT4	1-1/2"	219-4122*
MT2	5/16"	219-2114	MT5	3/8"	219-5115
MT2	3/8"	219-2115	MT5	1/2"	219-5116
MT2	1/2"	219-2116*	MT5	5/8"	219-5117
MT2	5/8"	219-2117*	MT5	3/4"	219-5118
MT2	3/4"	219-2118*	MT5	7/8"	219-5119
MT3	3/16"	219-3112	MT5	1"	219-5120
MT3	1/4"	219-3113	MT5	1-1/4"	219-5121*
MT3	5/16"	219-3114	MT5	1-1/2"	219-5122*
MT3	3/8"	219-3115	MT5	2"	219-5124*
MT3	1/2"	219-3116	MT6	3/8"	219-6115
MT3	5/8"	219-3117*	MT6	1/2"	219-6116
MT3	3/4"	219-3118*	MT6	5/8"	219-6117
MT3	7/8"	219-3119*	MT6	3/4"	219-6118
MT3	1"	219-3120*	MT6	7/8"	219-6119*
MT4	3/8"	219-4115	MT6	1"	219-6120*
MT4	1/2"	219-4116	MT6	1-1/4"	219-6121*
MT4	5/8"	219-4117	MT6	1-1/2"	219-6122*
MT4	3/4"	219-4118	MT6	2"	219-6124*
MT4	7/8"	219-4119*	MT6	2-1/2"	219-6126*
MT4	1"	219-4120*			

Morse Taper Shell End Mill Holders

Tang End



Shank Taper	Hole Size	Order No.	Shank Taper	Hole Size	Order No.
MT2	1/2"	219-2032	MT4	7/8"	219-4056
MT2	5/8"	219-2040	MT4	1"	219-4100
MT2	3/4"	219-2048	MT4	1-1/4"	219-4106
MT3	1/2"	219-3032	MT4	1-1/2"	219-4132
MT3	5/8"	219-3040	MT5	1/2"	219-5032
MT3	3/4"	219-3048	MT5	5/8"	219-5040
MT3	7/8"	219-3056	MT5	3/4"	219-5048
MT3	1"	219-3064	MT5	7/8"	219-5056
MT3	1-1/4"	219-3066	MT5	1"	219-5100
MT4	1/2"	219-4032	MT5	1-1/4"	219-5106
MT4	5/8"	219-4040	MT5	1-1/2"	219-5132
MT4	3/4"	219-4048	MT5	2"	219-5200

Shank Taper	Hole Size	Order No.	Shank Taper	Hole Size	Order No.
MT2	13mm	219-1213	MT4	27mm	219-1427
MT2	16mm	219-1216	MT4	32mm	219-1432
MT2	22mm	219-1222	MT4	40mm	219-1440
MT3	16mm	219-1316	MT5	16mm	219-1516
MT3	22mm	219-1322	MT5	22mm	219-1522
MT3	27mm	219-1327	MT5	27mm	219-1525
MT3	32mm	219-1332	MT5	32mm	219-1532
MT4	16mm	219-1416	MT5	40mm	219-1540
MT4	22mm	219-1422	MT5	50mm	219-1550

Draw Bar Thread End

- Drawbar end thread: MT2:3/8"-16, MT3: 1/2"-13, MT4:5/8"-11, MT5: 3/4"-10.
Metric: MT2:M10, MT3: M12
MT4: M16,MT5: M20.



Shank Taper	Hole Size	Order No.	Shank Taper	Hole Size	Order No.
MT2	1/2"	219-2232	MT4	7/8"	219-4456
MT2	5/8"	219-2240	MT4	1"	219-4464
MT2	3/4"	219-2248	MT4	1-1/4"	219-4466
MT3	1/2"	219-3432	MT4	1-1/2"	219-4468
MT3	5/8"	219-3440	MT5	1/2"	219-5532
MT3	3/4"	219-3448	MT5	5/8"	219-5540
MT3	7/8"	219-3456	MT5	3/4"	219-5548
MT3	1"	219-3464	MT5	7/8"	219-5556
MT3	1-1/4"	219-3466	MT5	1"	219-5564
MT4	1/2"	219-4432	MT5	1-1/4"	219-5566
MT4	5/8"	219-4440	MT5	1-1/2"	219-5568
MT4	3/4"	219-4448	MT5	2"	219-5570

Shank Taper	Hole Size	Order No.	Shank Taper	Hole Size	Order No.
MT2	13mm	219-2213	MT4	27mm	219-4327
MT2	16mm	219-2216	MT4	32mm	219-4332
MT2	22mm	219-2222	MT4	40mm	219-4340
MT3	16mm	219-3316	MT5	16mm	219-5316
MT3	22mm	219-3322	MT5	22mm	219-5322
MT3	27mm	219-3327	MT5	27mm	219-5327
MT3	32mm	219-3332	MT5	32mm	219-5332
MT4	16mm	219-4316	MT5	40mm	219-5340
MT4	22mm	219-4322	MT5	50mm	219-5350

Straight Shank Shell End Mill Holders



Dia. Of Shank	Arbor Dia.	Order No.
1/2"	1/2"	210-5501
1/2"	3/4"	210-5502
1/2"	1"	210-5503
1/2"	1-1/4"	210-5504
1/2"	1-1/2"	210-5505

Dia. Of Shank	Arbor Dia.	Order No.
3/4"	1/2"	210-5506
3/4"	3/4"	210-5507
3/4"	1"	210-5508
3/4"	1-1/4"	210-5509
3/4"	1-1/2"	210-5510

R8 Shell End Mill Holders

- Internal thread 7/16"-20.



Arbor	Order No.
1/2"	210-0401
3/4"	210-0402
1"	210-0403
1-1/4"	210-0404
1-1/2"	210-0405

Arbor Dia.	Order No.
16mm	210-0416
19mm	210-0419
22mm	210-0422
27mm	210-0427
32mm	210-0432
40mm	210-0440

30-40-50 Shell End Mill Holders

- Drawbar end thread: Inch 30#: 1/2"-13, 40#: 5/8"-11, 50#: 1"-8.
Metric: 30#: M12,40#: M16, 50#: M24.



ISO

Hole Size	ISO 30 Order No.	ISO 40 Order No.	ISO 50 Order No.
16mm	210-7316	210-7416	210-7516
19mm	210-7319	210-7419	210-7519
22mm	210-7322	210-7422	210-7522
25mm	210-7325	210-7425	210-7525
27mm	210-7327	210-7427	210-7527
32mm	210-7332	210-7432	210-7532
40mm	210-7340	210-7440	210-7540
50mm	210-7350	210-7450	210-7550
63mm	210-7363	210-7463	210-7563

Inch

Hole Size	30 Taper Order No.	40 Taper Order No.	50 Taper Order No.
1/2"	210-6332	210-6431	210-6531
3/4"	210-6348	210-6448	210-6548
1"	210-6364	210-6464	210-6564
1-1/4"	210-6366	210-6466	210-6566
1-1/2"	210-6368	210-6468	210-6568
2"	210-6370	210-6470	210-6570
2-1/2"			210-6572

DIN 2080

Hole Size	SK50 Order No.	SK40 Order No.	SK 30 Order No.
16	210-9516	210-9416	210-9316
22	210-9522	210-9422	210-9322
27	210-9527	210-9427	210-9327
32	210-9532	210-9432	210-9332
40	210-9540	210-9440	
50	210-9550	210-9450	

Morse Taper Comb Shell End Mill Arbors

- Drawbar end thread: MT3: 1/2"-13, MT4:5/8"-11, MT5: 3/4"-10.
Metric: MT3: M12, MT4: M16, MT5: M20.



Shank Taper	Arbor Dia.	Order No.	Shank Taper	Arbor Dia.	Order No.
MT3	1/2"	210-3532	MT4	1-1/4"	210-4566
MT3	5/8"	210-3540	MT4	1-1/2"	210-4568
MT3	3/4"	210-3548	MT4	2 "	210-4570
MT3	7/8"	210-3556	MT5	5/8"	210-5540
MT3	1 "	210-3564	MT5	3/4"	210-5548
MT3	1-1/4"	210-3566	MT5	7/8"	210-5556
MT4	1/2"	210-4532	MT5	1 "	210-5564
MT4	5 /8"	210-4540	MT5	1-1/4"	210-5566
MT4	3/4"	210-4548	MT5	1-1/2"	210-5568
MT4	7/8"	210-4556	MT5	2 "	210-5570
MT4	1"	210-4564			

Shank Taper	Arbor Dia.	Order No.	Shank Taper	Arbor Dia.	Order No.
MT3	13mm	210-3613	MT4	27mm	210-4627
MT3	16mm	210-3616	MT4	32mm	210-4632
MT3	22mm	210-3622	MT4	40mm	210-4640
MT3	27mm	210-3627	MT5	22mm	210-5622
MT3	32mm	210-3632	MT5	27mm	210-5627
MT4	13mm	210-4613	MT5	32mm	210-5632
MT4	16mm	210-4616	MT5	40mm	210-5640
MT4	22mm	210-4622	MT5	50mm	210-5650

30-40-50 Comb Shell End Mill Arbors

- Drawbar end thread: Inch 30#: 1/2"-13, 40#: 5/8"-11, 50#: 1"-8.
Metric: 30#: M12,40#: M16, 50#: M24.



Arbor Dia.	30 Order No.	40 Order No.	50 Order No.
1/2"	210-3132		
5/8"	210-3140	210-4140	210-5140
3/4"	210-3148	210-4148	210-5148
7/8"	210-3156	210-4156	210-5156
1"	210-3164	210-4164	210-5164
1-1/4"	210-3166	210-4166	210-5166
1-1/2"		210-4168	210-5168
2 "		210-4170	210-5170

Arbor Dia.	30 Order No.	40 Order No.	50 Order No.
13mm	210-3213		
16mm	210-3216	210-4216	210-5216
22mm	210-3222	210-4222	210-5222
27mm	210-3227	210-4227	210-5227
32mm	210-3232	210-4232	210-5232
40mm		210-4240	210-5240
50mm		210-4250	210-5250

R8 Comb Shell End Mill Arbors

It could be used clutch drive ring cross screw, cross spanner to help to clamp various end mills.

- Internal thread 7/16"-20.



Arbor Dia.	Order No.
1/2"	210-1332
5/8"	210-1340
3/4"	210-1348
1"	210-1364
1-1/4"	210-1366
1-1/2"	210-1368

Arbor Dia.	Order No.
13mm	210-1413
16mm	210-1416
22mm	210-1422
27mm	210-1427
32mm	210-1432
40mm	210-1440

Accessories For Shell End Mill Arbors

Screws



Arbor Dia.	Thread	Order No.
1/2"	1/4-28	210-5840
3/4"	3/8-24	210-5841
1 "	1/2-20	210-5842
1-1/4"	5/8-18	210-5843
1-1/2"	3/4-16	210-5844
2 "	1-14	210-5845

Arbor Dia.	Thread	Order No.
13mm	M6	210-5830
16mm	M8	210-5831
22mm	M10	210-5832
27mm	M12	210-5833
32mm	M16	210-5834
40mm	M20	210-5835
50mm	M24	210-5836
60mm	M30	210-5837

Spanners



Arbor Dia.	Order No.
1/2"	210-5860
5/8"	210-5861
3/4"	210-5862
1 "	210-5863
1-1/4"	210-5864
1-1/2"	210-5865
2 "	210-5866

Arbor Dia.	Order No.
13mm	210-5850
16mm	210-5851
22mm	210-5852
27mm	210-5853
32mm	210-5854
40mm	210-5855
50mm	210-5856
60mm	210-5857

Driver Rings



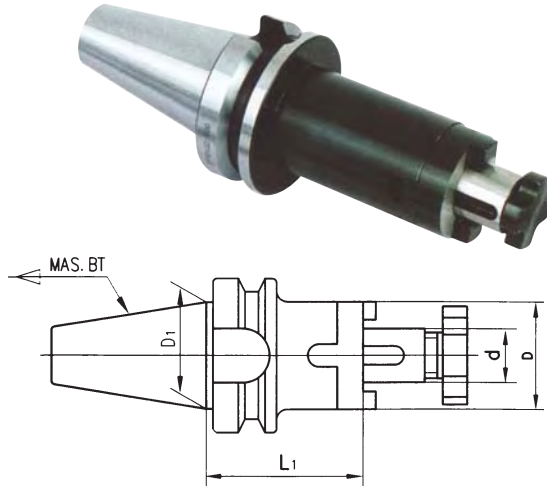
Size	Order No.
1/2"	210-5810
5/8"	210-5811
3/4"	210-5822
7/8"	210-5823
1 "	210-5824
1-1/4"	210-5825
1-1/2"	210-5826
2 "	210-5827
1/2"	210-5880

Size	Order No.
13mm	210-5800
16mm	210-5801
22mm	210-5802
27mm	210-5803
32mm	210-5804
40mm	210-5805
50mm	210-5806
60mm	210-5807

Combination Shell End Mill Arbors

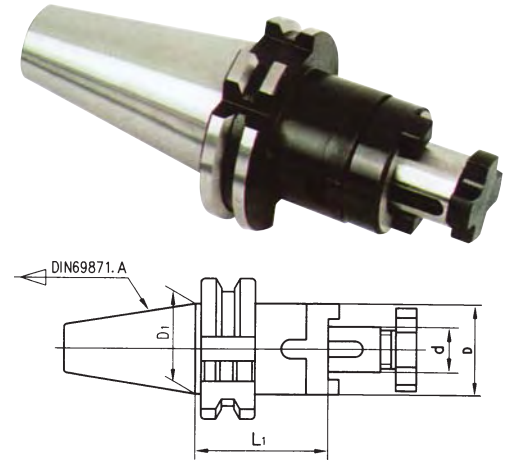
- Suitable for CNC RPM ≤ 8000.

BT



BT x d - L1	D mm	D1 mm	Weight kg	Order No.
BT30 x13-55	28	31.75	1.00	210-8201
BT30 x16-55	32	31.75	1.00	210-8202
BT30 x16-100	32	31.75	1.20	210-8203
BT30 x22-55	40	31.75	1.20	210-8204
BT30 x22-100	40	31.75	1.40	210-8205
BT30 x27-55	48	31.75	1.20	210-8206
BT30 x27-100	48	31.75	2.00	210-8207
BT30 x32-60	58	31.75	1.50	210-8208
BT30 x32-100	58	31.75	2.60	210-8209
BT30 x40-60	70	31.75	2.30	210-8210
BT30 x40-100	70	31.75	3.50	210-8211
BT40 x13-55	28	44.45	1.00	210-8212
BT40 x16-55	32	44.45	1.20	210-8213
BT40 x16-100	32	44.45	1.50	210-8214
BT40 x22-55	40	44.45	1.25	210-8215
BT40 x22-100	40	44.45	1.85	210-8216
BT40 x27-55	48	44.45	1.50	210-8217
BT40 x27-100	48	44.45	2.00	210-8218
BT40 x32-60	58	44.45	1.50	210-8219
BT40 x32-100	58	44.45	2.30	210-8220
BT40 x40-60	70	44.45	2.00	210-8221
BT40 x40-100	70	44.45	3.00	210-8222
BT50 x13-63	28	69.85	3.50	210-8223
BT50 x16-63	32	69.85	3.60	210-8224
BT50 x16-100	32	69.85	4.00	210-8225
BT50 x22-70	40	69.85	3.70	210-8226
BT50 x22-100	40	69.85	4.00	210-8227
BT50 x27-70	48	69.85	4.00	210-8228
BT50 x27-100	48	69.85	4.40	210-8229
BT50 x32-70	58	69.85	4.20	210-8230
BT50 x32-100	58	69.85	4.70	210-8231
BT50 x40-75	70	69.85	4.50	210-8232
BT50 x40-100	70	69.85	5.50	210-8233
BT50 x50-75	90	69.85	4.60	210-8234
BT50 x50-125	90	69.85	7.20	210-8235

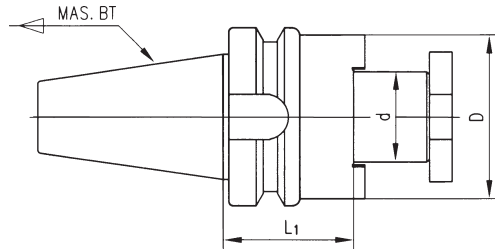
DIN69871.A



DIN69871.A x d - L1	D mm	D1 mm	Weight kg	Order No.
DIN69871.A30 x 13-55	28	31.75	1.00	210-8601
DIN69871.A30 x 16-55	32	31.75	1.00	210-8602
DIN69871.A30 x 16-100	32	31.75	1.20	210-8603
DIN69871.A30 x 22-55	40	31.75	2.00	210-8604
DIN69871.A30 x 22-100	40	31.75	3.50	210-8605
DIN69871.A30 x 27-55	48	31.75	2.10	210-8606
DIN69871.A30 x 27-100	48	31.75	4.30	210-8607
DIN69871.A30 x 32-60	58	31.75	1.80	210-8608
DIN69871.A30 x 32-100	58	31.75	2.60	210-8609
DIN69871.A30 x 40-60	70	31.75	7.30	210-8610
DIN69871.A30 x 40-100	70	31.75	3.50	210-8611
DIN69871.A40 x 13-55	28	44.45	1.10	210-8612
DIN69871.A40 x 16-55	32	44.45	1.20	210-8613
DIN69871.A40 x 16-100	32	44.45	1.50	210-8614
DIN69871.A40 x 22-55	40	44.45	1.23	210-8615
DIN69871.A40 x 22-100	40	44.45	1.83	210-8616
DIN69871.A40 x 27-55	48	44.45	1.30	210-8617
DIN69871.A40 x 27-100	48	44.45	2.20	210-8618
DIN69871.A40 x 32-60	58	44.45	1.50	210-8619
DIN69871.A40 x 32-100	58	44.45	2.30	210-8620
DIN69871.A40 x 40-60	70	44.45	1.80	210-8621
DIN69871.A40 x 40-100	70	44.45	3.00	210-8622
DIN69871.A50 x 13-63	28	69.85	3.50	210-8623
DIN69871.A50 x 16-63	32	69.85	3.50	210-8624
DIN69871.A50 x 16-100	32	69.85	3.80	210-8625
DIN69871.A50 x 22-70	40	69.85	3.60	210-8626
DIN69871.A50 x 22-100	40	69.85	4.00	210-8627
DIN69871.A50 x 27-70	48	69.85	3.70	210-8628
DIN69871.A50 x 27-100	48	69.85	4.40	210-8629
DIN69871.A50 x 32-70	58	69.85	3.80	210-8630
DIN69871.A50 x 32-100	58	69.85	4.70	210-8631
DIN69871.A50 x 40-75	70	69.85	3.90	210-8632
DIN69871.A50 x 40-100	70	69.85	5.30	210-8633
DIN69871.A50 x 50-75	90	69.85	4.50	210-8634
DIN69871.A50 x 50-125	90	69.85	7.20	210-8635

BT Shell Mill Arbors

- Suitable for CNC RPM $\leq$ 8000.

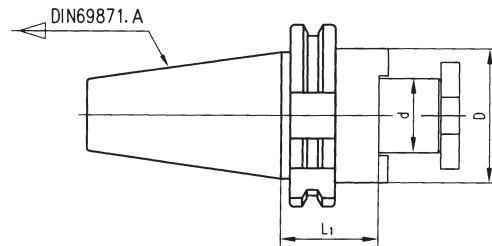


BT x d - L1	D mm	Weight kg	Order No.
BT30 x16-60	32	1.0	210-8701
BT30 x22-60	40	1.3	210-8702
BT30 x27-60	48	1.5	210-8703
BT30 x32-60	58	1.8	210-8704
BT30 x40-60	70	2.2	210-8705
BT30 x50-60	90	4.5	210-8706
BT40 x16-45	32	1.0	210-8707
BT40 x16-60	32	1.3	210-8708
BT40 x16-120	32	1.7	210-8709
BT40 x22-45	40	1.5	210-8710
BT40 x22-60	40	1.7	210-8711
BT40 x22-100	40	3.0	210-8712
BT40 x22-120	40	3.6	210-8713
BT40 x27-45	48	1.5	210-8714
BT40 x27-60	48	1.6	210-8715
BT40 x27-75	48	1.8	210-8716
BT40 x27-105	48	2.1	210-8717
BT40 x27-120	48	2.3	210-8718
BT40 x32-45	58	1.2	210-8719
BT40 x32-60	58	1.5	210-8720
BT40 x32-75	58	1.8	210-8721
BT40 x32-120	58	2.8	210-8722
BT40 x40-60	70	2.0	210-8723
BT40 x40-75	70	2.2	210-8724
BT40 x50-70	90	2.5	210-8725

BT x d - L1	D mm	Weight kg	Order No.
BT45 x22-60	40	2.6	210-8726
BT45 x27-60	48	2.8	210-8727
BT45 x27-100	48	3.1	210-8728
BT45 x40-100	70	3.4	210-8729
BT45 x40-105	70	3.5	210-8730
BT50 x16-60	32	3.6	210-8731
BT50 x16-75	32	3.9	210-8732
BT50 x16-120	32	4.3	210-8733
BT50 x22-60	40	5.0	210-8734
BT50 x22-75	40	4.0	210-8735
BT50 x22-100	40	4.5	210-8736
BT50 x22-120	48	5.5	210-8737
BT50 x27-60	48	5.5	210-8738
BT50 x27-105	48	4.0	210-8739
BT50 x32-60	58	4.5	210-8740
BT50 x32-75	58	1.6	210-8741
BT50 x32-105	58	1.8	210-8742
BT50 x40-60	70	2.2	210-8743
BT50 x40-75	70	3.6	210-8744
BT50 x40-90	70	3.7	210-8745
BT50 x40-100	70	3.75	210-8746
BT50 x40-105	70	3.8	210-8747
BT50 x50-60	90	4.0	210-8748
BT50 x50-70	90	4.2	210-8749
BT50 x50-120	90	4.4	210-8750

DIN Shell Mill Arbors

- Suitable for CNC RPM $\leq$ 8000.

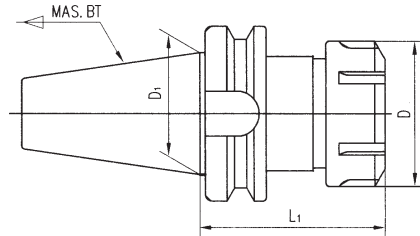


DIN69871.A x d-L1	D mm	Weight kg	Order No.
DIN69871.A30 x16-60	32	1.0	210-8801
DIN69871.A30 x22-60	40	1.3	210-8802
DIN69871.A30 x27-60	48	1.5	210-8803
DIN69871.A30 x32-60	58	1.8	210-8804
DIN69871.A30 x40-60	70	2.2	210-8805
DIN69871.A30 x50-70	90	3.2	210-8806
DIN69871.A40 x16-60	32	1.2	210-8807
DIN69871.A40 x22-60	40	1.3	210-8808
DIN69871.A40 x27-60	48	1.4	210-8809
DIN69871.A40 x27-75	48	1.6	210-8810

DIN69871.A x d-L1	D mm	Weight kg	Order No.
DIN69871.A40 x32-60	58	4.5	210-8811
DIN69871.A40 x40-60	70	4.8	210-8812
DIN69871.A40 x50-70	90	3.7	210-8813
DIN69871.A50 x16-60	32	3.8	210-8814
DIN69871.A50 x22-60	40	4.0	210-8815
DIN69871.A50 x27-60	48	4.2	210-8816
DIN69871.A50 x32-60	58	4.5	210-8817
DIN69871.A50 x40-60	70	4.8	210-8818
DIN69871.A50 x50-70	90	5.0	210-8819
DIN69871.A50 x50-80	90	5.1	210-8820

BT Milling Chuck Arbors

- Suitable for CNC RPM ≤ 8000.



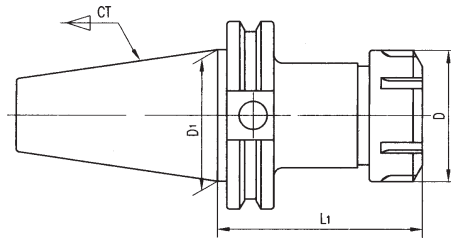
Metric

BT x ER x L1	D Nose Dia.	D1	Order No.
BT30 x ER16 x70	28	31.75	210-7101
BT30 x ER16 x100	28	31.75	210-7102
BT30 x ER16 x120	28	31.75	210-7103
BT30 x ER20 x70	35	31.75	210-7104
BT30 x ER20 x135	35	31.75	210-7105
BT30 x ER25 x70	42	31.75	210-7106
BT30 x ER25 x135	42	31.75	210-7107
BT30 x ER32 x70	50	31.75	210-7108
BT30 x ER40 x80	63	31.75	210-7109
BT40 x ER16 x50	28	44.45	210-7110
BT40 x ER16 x63	28	44.45	210-7111
BT40 x ER16 x70	28	44.45	210-7112
BT40 x ER16 x100	28	44.45	210-7113
BT40 x ER16 x125	28	44.45	210-7114
BT40 x ER16 x150	28	44.45	210-7115
BT40 x ER20 x70	35	44.45	210-7116
BT40 x ER20 x90	35	44.45	210-7117
BT40 x ER20 x100	35	44.45	210-7118
BT40 x ER20 x105	35	44.45	210-7119
BT40 x ER20 x135	35	44.45	210-7120
BT40 x ER20 x150	35	44.45	210-7121
BT40 x ER25 x60	42	44.45	210-7122
BT40 x ER25 x70	42	44.45	210-7123
BT40 x ER25 x90	42	44.45	210-7124
BT40 x ER25 x100	42	44.45	210-7125
BT40 x ER25 x125	42	44.45	210-7126
BT40 x ER25 x150	42	44.45	210-7127
BT40 x ER32 x70	50	44.45	210-7128
BT40 x ER32 x100	50	44.45	210-7129
BT40 x ER32 x150	50	44.45	210-7130
BT40 x ER40 x70	63	44.45	210-7131
BT40 x ER40 x80	63	44.45	210-7132
BT40 x ER40 x100	63	44.45	210-7133
BT40 x ER40 x120	63	44.45	210-7134
BT40 x ER40 x150	63	44.45	210-7135
BT45 x ER16 x70	28	57.15	210-7136
BT45 x ER16 x100	28	57.15	210-7137
BT45 x ER16 x125	28	57.15	210-7138
BT45 x ER20 x70	35	57.15	210-7139
BT45 x ER20 x90	35	57.15	210-7140
BT45 x ER20 x100	35	57.15	210-7141
BT45 x ER20 x105	35	57.15	210-7142
BT45 x ER20 x135	35	57.15	210-7143

BT x ER x L1	D Nose Dia.	D1	Order No.
BT45 x ER25 x70	42	57.15	210-7144
BT45 x ER25 x90	42	57.15	210-7145
BT45 x ER25 x100	42	57.15	210-7146
BT45 x ER25 x125	42	57.15	210-7147
BT45 x ER32 x70	50	57.15	210-7148
BT45 x ER32 x100	50	57.15	210-7149
BT45 x ER32 x120	50	57.15	210-7150
BT45 x ER32 x150	50	57.15	210-7151
BT45 x ER40 x80	63	57.15	210-7152
BT45 x ER40 x100	63	57.15	210-7153
BT45 x ER40 x120	63	57.15	210-7154
BT45 x ER40 x150	63	57.15	210-7155
BT45 x ER50 x80	78	57.15	210-7156
BT45 x ER50 x100	78	57.15	210-7157
BT50 x ER16 x70	28	69.85	210-7158
BT50 x ER16 x90	28	69.85	210-7159
BT50 x ER16 x105	28	69.85	210-7160
BT50 x ER16 x135	28	69.85	210-7161
BT50 x ER16 x165	28	69.85	210-7162
BT50 x ER20 x70	35	69.85	210-7163
BT50 x ER20 x90	35	69.85	210-7164
BT50 x ER20 x105	35	69.85	210-7165
BT50 x ER20 x135	35	69.85	210-7166
BT50 x ER20 x150	35	69.85	210-7167
BT50 x ER20 x165	35	69.85	210-7168
BT50 x ER25 x70	42	69.85	210-7169
BT50 x ER25 x105	42	69.85	210-7170
BT50 x ER25 x135	42	69.85	210-7171
BT50 x ER25 x165	42	69.85	210-7172
BT50 x ER32 x70	50	69.85	210-7173
BT50 x ER32 x80	50	69.85	210-7174
BT50 x ER32 x100	50	69.85	210-7175
BT50 x ER32 x120	50	69.85	210-7176
BT50 x ER40 x80	63	69.85	210-7177
BT50 x ER40 x100	63	69.85	210-7178
BT50 x ER40 x120	63	69.85	210-7179
BT50 x ER40 x135	63	69.85	210-7180
BT50 x ER50 x90	78	69.85	210-7181
BT50 x ER50 x120	78	69.85	210-7182

CAT Milling Chuck Arbors

- Suitable for CNC RPM ≤ 8000.



Metric

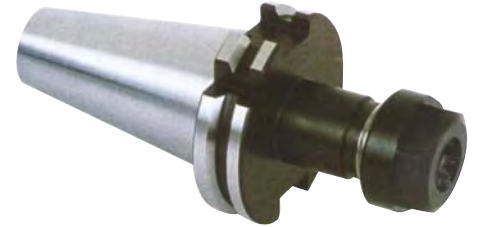
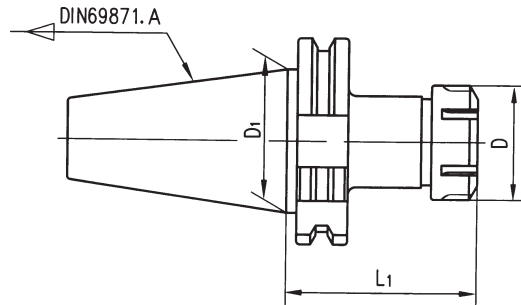
CT x ER x L1	D Nose Dia.	D1	Order No.
CT40 x ER16 x63mm	28mm	44.45mm	210-7201
CT40 x ER16 x70	28	44.45	210-7202
CT40 x ER16 x100	28	44.45	210-7203
CT40 x ER16 x125	28	44.45	210-7204
CT40 x ER16 x150	28	44.45	210-7205
CT40 x ER20 x70	35	44.45	210-7206
CT40 x ER20 x90	35	44.45	210-7207
CT40 x ER20 x100	35	44.45	210-7208
CT40 x ER20 x105	35	44.45	210-7209
CT40 x ER20 x135	35	44.45	210-7210
CT40 x ER20 x150	35	44.45	210-7211
CT40 x ER25 x70	42	44.45	210-7212
CT40 x ER25 x90	42	44.45	210-7213
CT40 x ER25 x100	42	44.45	210-7214
CT40 x ER25 x125	42	44.45	210-7215
CT40 x ER25 x150	42	44.45	210-7216
CT40 x ER32 x70	50	44.45	210-7217
CT40 x ER32 x100	50	44.45	210-7218
CT40 x ER32 x120	50	44.45	210-7219
CT40 x ER32 x150	50	44.45	210-7220
CT40 x ER40x70	63	44.45	210-7221
CT40 x ER40x80	63	44.45	210-7222
CT40 x ER40x100	63	44.45	210-7223
CT40 x ER40x120	63	44.45	210-7224
CT40 x ER40x150	63	44.45	210-7225
CT40 x ER50x80	78	44.45	210-7226
CT40 x ER50x100	78	44.45	210-7227
CT50 x ER16x70	28	69.85	210-7228
CT50 x ER16x90	28	69.85	210-7229
CT50 x ER16x105	28	69.85	210-7230
CT50 x ER16x135	28	69.85	210-7231
CT50 x ER16x165	28	69.85	210-7232
CT50 x ER20x70	35	69.85	210-7233
CT50 x ER20x90	35	69.85	210-7234
CT50 x ER20x105	35	69.85	210-7235
CT50 x ER20x135	35	69.85	210-7236
CT50 x ER20x150	35	69.85	210-7237
CT50 x ER20x165	35	69.85	210-7238
CT50 x ER25x70	42	69.85	210-7239
CT50 x ER25x105	42	69.85	210-7240
CT50 x ER25x135	42	69.85	210-7241
CT50 x ER25x165	42	69.85	210-7242
CT50 x ER32x70	50	69.85	210-7243
CT50 x ER32x80	50	69.85	210-7244
CT50 x ER32x100	50	69.85	210-7245

Metric

CT x ER x L1	D Nose Dia.	D1	Order No.
CT50 x ER32x120mm	50mm	69.85mm	210-7246
CT50 x ER40x80	63	69.85	210-7247
CT50 x ER40x100	63	69.85	210-7248
CT50 x ER40x120	63	69.85	210-7249
CT50 x ER40x135	63	69.85	210-7250
CT50 x ER50x90	78	69.85	210-7251
CT50 x ER50x120	78	69.85	210-7252
CT50 x EOC16x100	43	69.85	210-7253
CT50 x EOC25x80	60	69.85	210-7254
CT50 x EOC25x100	60	69.85	210-7255
CT50 x EOC25x120	60	69.85	210-7256
CT50 x EOC32x70	72	69.85	210-7257
CT50 x EOC32x90	72	69.85	210-7258
CT50 x EOC32x105	72	69.85	210-7259
CT50 x EOC32x120	72	69.85	210-7260
CT50 x EOC32x150	72	69.85	210-7261

DIN Milling Chuck Arbors

- Suitable for CNC RPM $\leq$ 8000.



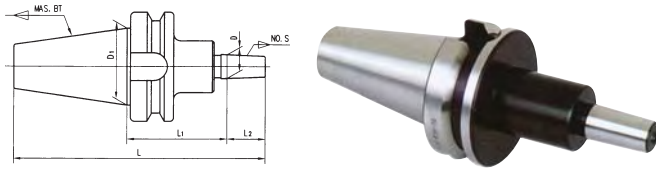
Metric

DIN69871.A x ER x L1	D Nose Dia.	D1	Order No.
DIN69871.A30xER11x80mm	19mm	31.75mm	210-7601
DIN69871.A30xER16x63	28	31.75	210-7602
DIN69871.A30xER16x100	28	31.75	210-7603
DIN69871.A30xER16x120	28	31.75	210-7604
DIN69871.A30xER16x135	28	31.75	210-7605
DIN69871.A30xER20x63	35	31.75	210-7606
DIN69871.A30xER20x120	35	31.75	210-7607
DIN69871.A30xER25x63	42	31.75	210-7608
DIN69871.A40xER11x80	19	44.45	210-7609
DIN69871.A40xER11x125	19	44.45	210-7610
DIN69871.A40xER11x150	19	44.45	210-7611
DIN69871.A40xER16x63	28	44.45	210-7612
DIN69871.A40xER16x70	28	44.45	210-7613
DIN69871.A40xER16x100	28	44.45	210-7614
DIN69871.A40xER16x120	28	44.45	210-7615
DIN69871.A40xER16x125	28	44.45	210-7616
DIN69871.A40xER16x160	28	44.45	210-7617
DIN69871.A40xER16x180	28	44.45	210-7618
DIN69871.A40xER20x70	35	44.45	210-7619
DIN69871.A40xER20x100	35	44.45	210-7620
DIN69871.A40xER20x135	35	44.45	210-7621
DIN69871.A40xER20x160	35	44.45	210-7622
DIN69871.A40xER25x60	42	44.45	210-7623
DIN69871.A40xER25x70	42	44.45	210-7624
DIN69871.A40xER25x100	42	44.45	210-7625
DIN69871.A40xER25x150	42	44.45	210-7626
DIN69871.A40xER25x180	42	44.45	210-7627
DIN69871.A40xER25x200	42	44.45	210-7628
DIN69871.A40xER32x70	50	44.45	210-7629
DIN69871.A40xER32x80	50	44.45	210-7630
DIN69871.A40xER32x100	50	44.45	210-7631
DIN69871.A40xER32x150	50	44.45	210-7632
DIN69871.A40xER40x80	63	44.45	210-7633
DIN69871.A40xER40x100	63	44.45	210-7634
DIN69871.A40xER40x150	63	44.45	210-7635
DIN69871.A40xER50x100	78	44.45	210-7636
DIN69871.A40xEOC16x70	43	44.45	210-7637
DIN69871.A40xEOC16x100	43	44.45	210-7638
DIN69871.A40xEOC25x70	60	44.45	210-7639
DIN69871.A40xEOC25x100	60	44.45	210-7640
DIN69871.A40xEOC25x120	60	44.45	210-7641
DIN69871.A40xEOC32x90	72	44.45	210-7642

DIN69871.A x ER x L1	D Nose Dia.	D1	Order No.
DIN69871.A40xEOC32x120mm	72mm	44.45mm	210-7643
DIN69871.A40xEOC32x150	72	44.45	210-7644
DIN69871.A50xER16x100	28	69.85	210-7645
DIN69871.A50xER16x160	28	69.85	210-7646
DIN69871.A50xER16x180	28	69.85	210-7647
DIN69871.A50xER20x100	35	69.85	210-7648
DIN69871.A50xER20x135	35	69.85	210-7649
DIN69871.A50xER20x160	35	69.85	210-7650
DIN69871.A50xER25x70	42	69.85	210-7651
DIN69871.A50xER25x100	42	69.85	210-7652
DIN69871.A50xER25x150	42	69.85	210-7653
DIN69871.A50xER25x200	42	69.85	210-7654
DIN69871.A50xER32x70	50	69.85	210-7655
DIN69871.A50xER32x80	50	69.85	210-7656
DIN69871.A50xER32x120	50	69.85	210-7657
DIN69871.A50xER32x160	50	69.85	210-7658
DIN69871.A50xER32x200	50	69.85	210-7659
DIN69871.A50xER40x80	63	69.85	210-7660
DIN69871.A50xER40x120	63	69.85	210-7661
DIN69871.A50xER40x160	63	69.85	210-7662
DIN69871.A50xER40x200	63	69.85	210-7663
DIN69871.A50xER50x80	78	69.85	210-7664
DIN69871.A50xER50x90	78	69.85	210-7665
DIN69871.A50xER50x120	78	69.85	210-7666
DIN69871.A50xER50x160	78	69.85	210-7667
DIN69871.A50xER50x200	78	69.85	210-7668
DIN69871.A50xEOC16x100	43	69.85	210-7669
DIN69871.A50xEOC25x70	60	69.85	210-7670
DIN69871.A50xEOC25x100	60	69.85	210-7671
DIN69871.A50xEOC25x140	60	69.85	210-7672
DIN69871.A50xEOC32x70	72	69.85	210-7673
DIN69871.A50xEOC32x80	72	69.85	210-7674
DIN69871.A50xEOC32x140	72	69.85	210-7675
DIN69871.A50xEOC40x90	85	89.85	210-7676

BT Taper Drill Chuck Arbors

- Suitable for CNC RPM ≤ 8000.

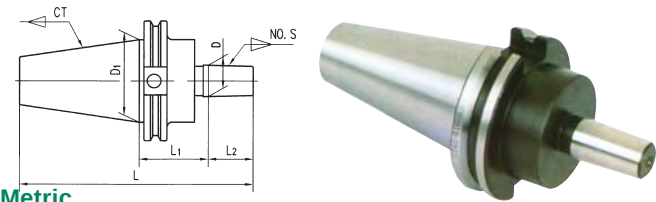


Metric

BT - NO.S - L1	L2 mm	L mm	D mm	D1 mm	Drawbar Thread	Weight kg	Order No.
BT30-J1-45	16.669	110	9.754	31.75	M12	.60	210-7801
BT30-J2-45	22.225	115.6	14.199	31.75	M12	.70	210-7802
BT30-J2S-45	19.05	112.4	13.940	31.75	M12	.70	210-7803
BT30-J3-45	30.956	124.4	20.599	31.75	M12	.80	210-7804
BT30-J4-45	42.069	135.4	28.550	31.75	M12	.85	210-7805
BT30-J5-45	47.625	141	35.890	31.75	M12	.90	210-7806
BT30-J6-45	25.4	118.8	17.170	31.75	M12	.75	210-7807
BT30-J33-40	25.4	113.8	15.850	31.75	M12	.75	210-7808
BT30-J33-45	25.4	118.8	15.850	31.75	M12	.75	210-7809
BT30-B10-45	14.5	107.9	10.094	31.75	M12	.60	210-7810
BT30-B12-45	18.5	111.9	12.065	31.75	M12	.60	210-7811
BT30-B16-45	24	117.4	15.733	31.75	M12	.70	210-7812
BT30-B18-45	32	125.4	17.780	31.75	M12	.82	210-7813
BT40-J1-45	16.669	127.1	9.754	44.45	M16	1.16	210-7814
BT40-J2-45	22.225	132.6	14.199	44.45	M16	1.25	210-7815
BT40-J2S-45	19.05	129.4	13.940	44.45	M16	1.20	210-7816
BT40-J3-45	30.956	141.4	20.599	44.45	M16	1.45	210-7817
BT40-J4-45	42.069	152.5	28.550	44.45	M16	1.55	210-7818
BT40-J5-45	47.625	158	35.890	44.45	M16	1.60	210-7819
BT40-J6-45	25.4	135.8	17.170	44.45	M16	1.30	210-7820
BT40-J33-45	25.4	135.8	15.850	44.45	M16	1.30	210-7821
BT40-B10-45	14.5	124.9	10.094	44.45	M16	1.40	210-7822
BT40-B10-120	14.5	199.9	10.094	44.45	M16	1.76	210-7823
BT40-B12-45	18.5	128.9	12.065	44.45	M16	1.34	210-7824
BT40-B16-32	24	121.4	15.733	44.45	M16	1.40	210-7825
BT40-B16-45	24	134.4	15.733	44.45	M16	1.45	210-7826
BT40-B16-75	24	164.4	15.733	44.45	M16	1.55	210-7827
BT40-B16-90	24	179.4	15.733	44.45	M16	1.40	210-7828
BT40-B18-45	32	142.4	17.780	44.45	M16	1.70	210-7829
BT40-B18-75	32	172.4	17.780	44.45	M16	1.76	210-7830
BT45-B16-90	24	196.8	15.733	51.75	M20	2.30	210-7831
BT45-B16-100	24	206.8	15.733	51.75	M20	2.40	210-7832
BT50-J1-45	16.669	163.5	9.754	69.85	M24	3.60	210-7833
BT50-J2-45	22.225	169	14.199	69.85	M24	3.95	210-7834
BT50-J2S-45	19.05	165.9	13.940	69.85	M24	3.90	210-7835
BT50-J3-45	30.956	177.8	20.599	69.85	M24	3.70	210-7836
BT50-J4-45	42.069	188.9	28.550	69.85	M24	3.75	210-7837
BT50-J5-45	47.625	194.4	35.890	69.85	M24	3.80	210-7838
BT50-J6-45	25.4	172.2	17.170	69.85	M24	4.00	210-7839
BT50-J33-45	25.4	172.2	15.850	69.85	M24	4.00	210-7840
BT50-B10-45	14.5	161.3	10.094	69.85	M24	3.60	210-7841
BT50-B10-100	14.5	216.3	10.094	69.85	M24	3.80	210-7842
BT50-B12-45	18.5	165.3	12.065	69.85	M24	3.60	210-7843
BT50-B16-45	24	170.8	15.733	69.85	M24	3.65	210-7844
BT50-B16-60	24	185.8	15.733	69.85	M24	3.70	210-7845
BT50-B16-75	24	200.8	15.733	69.85	M24	3.74	210-7846
BT50-B16-90	24	215.8	15.733	69.85	M24	3.78	210-7847
BT50-B18-45	32	178.8	17.780	69.85	M24	3.70	210-7848

CAT Taper Drill Chuck Arbors

- Suitable for CNC RPM ≤ 8000.

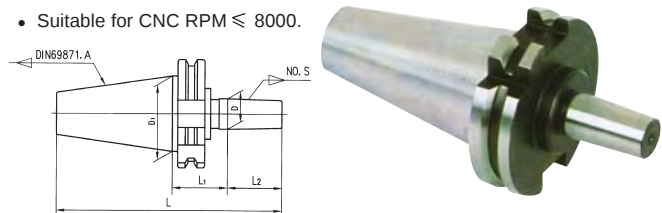


Metric

CT- NO.S - L1	L2 mm	L mm	D mm	D1 mm	Drawbar Thread	Weight kg	Order No.
CT40-J2-45	22.225	135.5	14.199	44.45	5/8"-11	1.55	210-8001
CT40-J3-45	30.956	144.2	20.599	44.45	5/8"-11	1.55	210-8002
CT40-J4-45	42.069	155.3	28.55	44.45	5/8"-11	1.60	210-8003
CT40-J6-45	25.4	138.65	17.17	44.45	5/8"-11	1.60	210-8004
CT40-J33-45	24.5	138.65	15.85	44.45	5/8"-11	1.62	210-8005
CT45-J1-45	16.669	144.2	9.754	57.15	3/4"-10	1.65	210-8006
CT45-J2-45	22.225	150	14.199	57.15	3/4"-10	1.70	210-8007
CT45-J3-45	30.956	158.5	20.599	57.15	3/4"-10	1.60	210-8008
CT45-J4-45	42.069	196.6	38.55	57.15	3/4"-10	1.60	210-8009
CT45-J5-45	47.625	175.2	35.89	57.15	3/4"-10	1.62	210-8010
CT45-J6-45	25.4	153	17.17	57.15	3/4"-10	1.65	210-8011
CT45-J33-45	25.4	153	15.85	57.15	3/4"-10	1.67	210-8012
CT50-J2-45	22.225	168.85	14.199	69.85	1"-8	1.70	210-8013
CT50-J3-45	30.956	177.56	20.599	69.85	1"-8	1.74	210-8014
CT50-J4-45	42.069	188.67	28.55	69.85	1"-8	1.55	210-8015
CT50-J5-45	47.625	194.23	35.89	69.85	1"-8	1.60	210-8016
CT50-J6-45	25.4	172	17.17	69.85	1"-8	1.65	210-8017
CT50-J33-45	25.4	172	15.85	69.85	1"-8	1.62	210-8018
CT45-B10-45	14.5	142	10.094	57.15	3/4"-10	1.67	210-8019
CT45-B12-45	18.5	146	12.065	57.15	3/4"-10	1.65	210-8020
CT45-B16-32	24	138.6	15.733	57.15	3/4"-10	1.67	210-8021
CT45-B16-45	24	151.6	15.733	57.15	3/4"-10	2.40	210-8022
CT45-B18-32	32	159.6	17.780	57.15	3/4"-10	2.45	210-8023

DIN Taper Drill Chuck Arbors

- Suitable for CNC RPM ≤ 8000.



Metric

DIN69871A - NO.S - L1	L2 mm	L mm	D mm	D1 mm	Drawbar Thread	Weight kg	Order No.
DIN69871A-A40-J0-32	11.112	111.5	6.35	44.45	M16	1.55	210-7900
DIN69871A-A40-J1-32	16.669	117	9.754	44.45	M16	1.55	210-7901
DIN69871A-A40-J2-32	22.225	122.6	14.199	44.45	M16	1.60	210-7902
DIN69871A-A40-J2S-32	19.05	119.5	13.940	44.45	M16	1.60	210-7903
DIN69871A-A40-J3-32	30.956	131.4	20.599	44.45	M16	1.62	210-7904
DIN69871A-A40-J4-32	42.069	142.5	28.550	44.45	M16	1.65	210-7905
DIN69871A-A40-J5-32	47.625	148	35.890	44.45	M16	1.70	210-7906
DIN69871A-A40-J6-32	25.4	125.8	17.170	44.45	M16	1.60	210-7907
DIN69871A-A40-J33-32	25.4	125.8	15.850	44.45	M16	1.60	210-7908
DIN69871A-A40-B6-32	10	110.4	6.35	44.45	M16	1.62	210-7909
DIN69871A-A40-B10-32	14.5	114.9	10.094	44.45	M16	1.65	210-7910
DIN69871A-A40-B10-45	14.5	127.9	10.094	44.45	M16	1.67	210-7911
DIN69871A-A40-B12-32	18.5	118.9	12.065	44.45	M16	1.70	210-7912
DIN69871A-A40-B12-80	18.5	166.9	12.065	44.45	M16	1.74	210-7913
DIN69871A-A40-B16-26	24	118.4	15.733	44.45	M16	1.55	210-7914

DIN Taper Drill Chuck Arbors Continued

- Suitable for CNC RPM $\leq$ 8000.

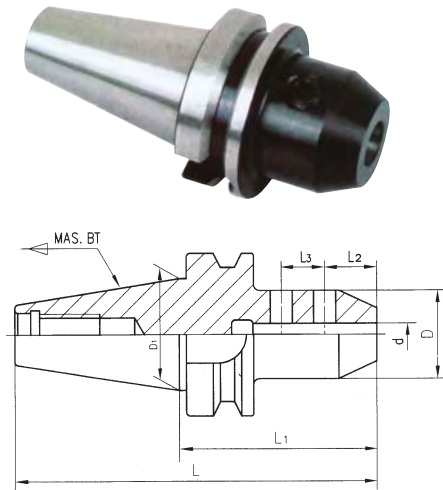
Metric

DIN69871.A - NO.S - L1	L2 mm	L mm	D mm	D1 mm	Drawbar Thread	Weight kg	Order No.
DIN69871.A40-B16-32	24	124.4	15.733	44.45	M16	1.60	210-7915
DIN69871.A40-B16-45	24	137.4	15.733	44.45	M16	1.65	210-7916
DIN69871.A40-B18-32	32	132.4	17.780	44.45	M16	1.62	210-7917
DIN69871.A40-B18-45	32	145.4	17.780	44.45	M16	1.67	210-7918
DIN69871.A40-B22-32	40.5	140.9	21.793	44.45	M16	1.65	210-7919
DIN69871.A40-B24-32	50.5	150.9	23.825	44.45	M16	1.67	210-7920
DIN69871.A50-B16-45	24	170.74	15.733	69.85	M24	2.40	210-7922

BT Flange End Mill Holders

- Suitable for CNC RPM $\leq$ 8000.

Metric



Inch

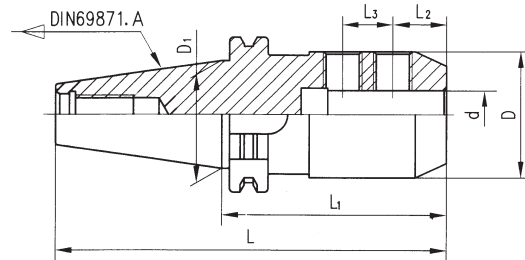
Taper	d In.	L1 mm	L mm	D mm	D1 mm	L2 mm	L3 mm	Order No.
BT30	1/4"	60	108.4	27	31.75	12		210-0516
	5/16"	60	108.4	30	31.75	16		210-0520
	3/8"	60	108.4	32	31.75	19		210-0524
	1/2"	60	108.4	35	31.75	22		210-0532
	5/8"	75	123.4	41	31.75	23		210-0540
	3/4"	75	123.4	44.5	31.75	25		210-0548
	1"	90	138.4	55	31.75	28	25.4	210-0564
BT40	1/4"	50	115.4	27	44.45	12		210-0616
	5/16"	50	115.4	30	44.45	16		210-0620
	3/8"	63	128.4	32	44.45	19		210-0624
	1/2"	63	128.4	35	44.45	22		210-0632
	5/8"	63	128.4	41	44.45	23		210-0640
	3/4"	63	128.4	44.5	44.45	25		210-0648
	1"	100	165.4	55	44.45	28	25.4	210-0664
BT50	1-1/4"	100	165.4	62	44.45	28	25.4	210-0666
	1/4"	63	164.8	27	69.85	12		210-0716
	5/16"	63	164.8	30	69.85	16		210-0720
	3/8"	63	164.8	32	69.85	19		210-0724
	1/2"	80	181.8	35	69.85	22		210-0732
	5/8"	80	181.8	41	69.85	23		210-0740
	3/4"	80	181.8	44.5	69.85	25		210-0748
	1"	100	201.8	55	69.85	28	25.4	210-0764
	1-1/4"	105	206.8	62	69.85	28	25.4	210-0766
	1-1/2"	105	216.8	38	69.85	28	25.4	210-0768

Taper	d mm	L1 mm	L mm	D mm	D1 mm	L2 mm	L3 mm	Order No.
BT30	6	50	98.4	25	31.75	18		210-0906
	6	60	108.4	25	31.75	18		210-0907
	8	60	108.4	28	31.75	18		210-0908
	10	60	108.4	35	31.75	20		210-0910
	10	80	128.4	35	31.75	20		210-0911
	12	60	108.4	42	31.75	22.5		210-0912
	14	60	108.4	42	31.75	22.5		210-0914
	16	75	123.4	48	31.75	24		210-0916
	18	75	123.4	50	31.75	24		210-0918
	20	75	123.4	52	31.75	25		210-0920
	25	90	138.4	65	31.75	24	25	210-0925
BT40	6	50	115.4	25	44.45	18		210-1206
	6	60	125.4	25	44.45	18		210-1207
	8	50	115.4	28	44.45	18		210-1208
	10	63	128.4	35	44.45	20		210-1210
	12	63	128.4	42	44.45	22.5		210-1212
	14	63	128.4	44	44.45	22.5		210-1214
	16	63	128.4	48	44.45	24		210-1216
	16	70	135.4	48	44.45	24		210-1217
	18	63	128.4	50	44.45	24		210-1218
	20	63	128.4	52	44.45	25		210-1220
	20	70	135.4	52	44.45	25		210-1221
	25	90	155.4	65	44.45	24	25	210-1225
	25	100	165.4	65	44.45	24	25	210-1226
BT50	32	100	165.4	72	44.45	24	28	210-1232
	32	110	175.4	72	44.45	24	28	210-1233
	40	120	185.4	90	44.45	30	32	210-1240
	40	140	205.4	90	44.45	30	32	210-1241
	6	63	164.4	25	69.85	18		210-1506
	8	63	164.4	28	69.85	18		210-1508
	10	63	164.4	35	69.85	20		210-1510
	12	80	181.8	42	69.85	22.5		210-1512
	16	80	181.8	48	69.85	24		210-1516
	20	80	181.8	52	69.85	25		210-1520
	25	100	201.8	65	69.85	24	25	210-1525
	25	105	206.8	65	69.85	24	25	210-1526
	25	150	251.8	65	69.85	24	25	210-1527
	25	200	301.8	65	69.85	24	25	210-1528
	32	100	201.8	72	69.85	24	28	210-1532
	32	105	206.8	72	69.85	24	28	210-1533
	40	115	216.8	90	69.85	30	32	210-1540
	40	120	221.8	90	69.85	30	32	210-1541
	42	120	221.8	90	69.85	30	32	210-1542
	50	150	251.8	100	69.85	35	35	210-1550

DIN Flange End Mill Holders

DIN69871.A

- Suitable for CNC RPM ≤ 8000.



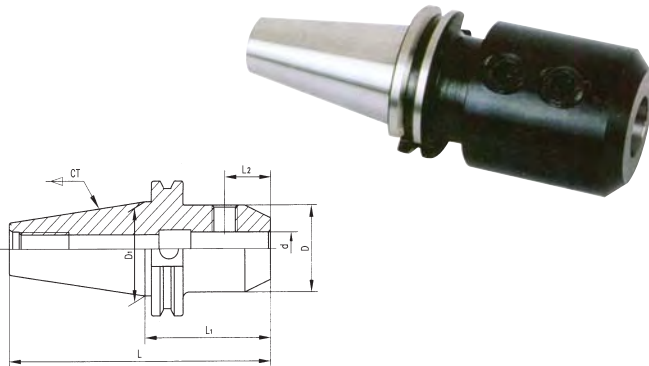
Taper	d In.	L1 mm	L mm	D mm	D1 mm	L2 mm	L3 mm	Order No.	Taper	d In.	L1 mm	L mm	D mm	D1 mm	L2 mm	L3 mm	Order No.
A30	1/4"	50	97.8	27	31.75	12		210-3416	A40	1-1/4"	100	168.4	62	44.45	28	25.4	210-3766
A30	5/16	50	97.8	30	31.75	16		210-3420	A50	1/4	63	164.75	27	69.85	12		210-4416
A30	3/8	50	97.8	32	31.75	19		210-3424	A50	5/16	63	164.75	30	69.85	16		210-4420
A30	1/2	50	97.8	35	31.75	23		210-3432	A50	3/8	63	164.75	32	69.85	19		210-4424
A30	5/8	63	110.8	41	31.75	23		210-3440	A50	1/2	63	164.75	35	69.85	22		210-4432
A40	1/4	50	118.4	27	44.45	12		210-3716	A50	5/8	63	164.75	41	69.85	23		210-4440
A40	5/16	50	118.4	30	44.45	16		210-3720	A50	3/4	63	164.75	44.5	69.85	28	25.4	210-4448
A40	3/8	50	118.4	32	44.45	19		210-3724	A50	1	80	181.75	55	69.85	28	25.4	210-4464
A40	1/2	50	118.4	35	44.45	22		210-3732	A50	1-1/4	100	201.75	62	69.85	28	25.4	210-4466
A40	5/8	63	131.4	41	44.45	23		210-3740	A50	1-1/2	100	201.75	68	69.85	28	36.5	210-4468
A40	3/4	63	431.4	44.5	44.45	25		210-3748	A50	2	125	226.75	97	69.85	30	36.5	210-4470
A40	1	100	168.4	55	44.45	28		210-3764	A50	2-1/2	150	250.75	125	69.85	30	36.5	210-4472

Metric

Taper	d mm	L1 mm	L mm	D mm	D1 mm	L2 mm	L3 mm	Order No.
A30	6	50	97.8	25	31.75	18		210-4706
A30	8	50	97.8	28	31.75	18		210-4708
A30	10	50	97.8	35	31.75	20		210-4710
A30	12	50	97.8	42	31.75	22.5		210-4712
A30	16	50	97.8	48	31.75	24		210-4716
A40	6	50	118.4	25	44.45	18		210-4806
A40	6	100	168.4	25	44.45	18		210-4807
A40	8	50	118.4	28	44.45	18		210-4808
A40	8	100	168.4	28	44.45	18		210-4809
A40	10	50	118.4	35	44.45	20		210-4810
A40	10	100	168.4	35	44.45	20		210-4811
A40	12	50	118.4	42	44.45	22.5		210-4812
A40	14	50	118.4	44	44.45	22.5		210-4814
A40	16	63	131.4	48	44.45	24		210-4816
A40	18	63	131.4	50	44.45	24		210-4818
A40	20	63	131.4	52	44.45	25		210-4820
A40	25	100	168.4	65	44.45	24	25	210-4825
A40	32	100	168.4	72	44.45	24	28	210-4832
A40	40	120	188.4	90	44.45	30	32	210-4840
A50	6	63	164.75	25	39.85	18		210-4906
A50	8	63	164.75	28	39.85	18		210-4908
A50	10	63	164.75	35	39.85	20		210-4910
A50	12	63	164.75	42	39.85	22.5		210-4912
A50	14	63	164.75	44	39.85	22.5		210-4914
A50	16	63	164.75	48	39.85	24		210-4916
A50	18	63	164.75	50	39.85	24		210-4918
A50	20	63	164.75	52	39.85	25		210-4920
A50	25	80	181.75	65	39.85	24	25	210-4925
A50	32	100	201.75	72	39.85	24	25	210-4932
A50	40	100	201.75	90	39.85	30	32	210-4940
A50	40	120	221.75	90	39.85	30	32	210-4941
A50	40	125	226.75	100	39.85	35	35	210-4942
A50	63	150	251.75	125	39.85	40	40	210-4963

CAT V-Flange End Mill Holders

- Suitable for CNC RPM ≤ 8000 .

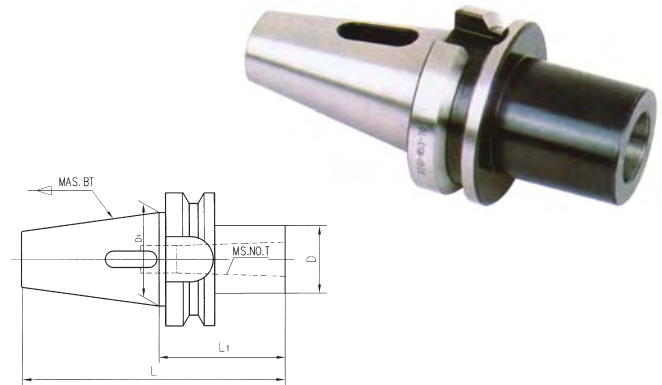


CT x d-L1	L mm	D mm	D1 mm	L2 mm	L3 mm	Order No.
CT40x3/16" - 2-1/2"	131.8	19.05	44.45	14.3		210-5412
CT40x1/4" - 2-1/2"	131.8	20.26	44.45	19.8		210-5416
CT40x5/16" - 2-1/2"	131.8	22.52	44.45	19.8		210-5420
CT40x3/8" - 2-1/2"	131.8	32	44.45	19.8		210-5424
CT40x7/16" - 2-1/2"	131.8	31.75	44.45	22.2		210-5428
CT40x1/2" - 2-5/8"	134.9	44.45	44.45	22.2		210-5432
CT40x5/8" - 3-3/4"	163.5	44.45	44.45	23.8		210-5440
CT40x3/4" - 3-3/4"	163.5	44.45	44.45	25.4		210-5448
CT40x7/8" - 4"	169.9	52	44.45	27	22.2	210-5456
CT40x1" - 4"	169.9	63	44.45	28.6	25.4	210-5464
CT40x1-1/4" - 4-1/8"	173	69.85	44.45	28.6	25.4	210-5466
CT50x3/8" - 4-1/2"	215.9	31.75	69.85	19.8		210-5724
CT50x3/8" - 6-1/2"	266.7	31.75	69.85	19.8		210-5726
CT50x1/2" - 2-5/8"	168.3	44.45	69.85	22.2		210-5732
CT50x1/2" - 4-5/8"	219.2	44.45	69.85	22.2		210-5733
CT50x5/8" - 3-3/4"	196.85	44.45	69.85	23.8		210-5740
CT50x5/8" - 5-3/4"	247.7	44.45	69.85	23.8		210-5741
CT50x3/4" - 3-3/4"	196.85	44.45	69.85	25.4		210-5748
CT50x3/4" - 5-3/4"	247.7	44.45	69.85	25.4		210-5749
CT50x7/8" - 3-3/4"	196.85	52	69.85	27	22.2	210-5756
CT50x7/8" - 5-3/4"	247.7	52	69.85	27	22.2	210-5757
CT50x1" - 4"	203.2	63	69.85	28.6	25.4	210-5764
CT50x1" - 6"	254	63	69.85	28.6	25.4	210-5766
CT50x1" - 8"	304.8	63	69.85	28.6	25.4	210-5768
CT50x1-1/4" - 4"	203.2	69.85	69.85	28.6	25.4	210-5774
CT50x1-1/4" - 6"	254	69.85	69.85	28.6	25.4	210-5776
CT50x1-1/4" - 8"	304.8	69.85	69.85	28.6	25.4	210-5778
CT50x1-1/2" - 4"	203.2	69.85	69.85	28.6	25.4	210-5784
CT50x1-1/2" - 6"	254	69.85	69.85	28.6	25.4	210-5786
CT50x1-1/2" - 8"	304.8	69.85	69.85	28.6	25.4	210-5788
CT50x2" - 5-5/8"	244.5	69.85	69.85	30.2	36.5	210-5794
CT50x2" - 7-5/8"	295.3	69.85	69.85	30.2	36.5	210-5796
CT50x2-1/2" - 6"	254		69.85	30.2	36.5	210-5798

BT Shank to Morse Taper Adaptors

with Tang

- Suitable for CNC RPM ≤ 8000 .



Metric

Taper	Morse Taper Hole	L1 Gage	L	D Nose Dia.	Order No.
BT30	MT1	45mm	93.4mm	25mm	210-5901
BT30	MT1	50	98.4	25	210-5902
BT30	MT2	60	108.4	32	210-5903
BT30	MT3	80	128.4	40	210-5904
BT40	MT1	45	110.4	25	210-6201
BT40	MT1	50	115.4	25	210-6202
BT40	MT1	120	185.4	25	210-6203
BT40	MT2	50	115.4	32	210-6204
BT40	MT2	60	125.4	32	210-6205
BT40	MT2	120	185.4	32	210-6206
BT40	MT3	70	135.4	40	210-6207
BT40	MT3	75	140.4	40	210-6208
BT40	MT4	90	155.4	48	210-6209
BT40	MT4	95	160.4	48	210-6210
BT40	MT4	135	200.4	48	210-6211
BT40	MT4	165	230.4	48	210-6212
BT45	MT1	120	202.8	25	210-6223
BT45	MT2	120	202.8	32	210-6224
BT45	MT3	120	202.8	40	210-6225
BT45	MT3	140	222.8	40	210-6226
BT45	MT4	98	180.8	48	210-6227
BT50	MT1	45	146.8	25	210-6601
BT50	MT2	50	151.8	32	210-6602
BT50	MT2	60	161.8	32	210-6603
BT50	MT2	120	221.8	32	210-6604
BT50	MT2	135	236.8	32	210-6605
BT50	MT3	65	166.8	40	210-6606
BT50	MT3	75	176.8	40	210-6607
BT50	MT3	120	221.8	40	210-6608
BT50	MT3	135	236.8	40	210-6609
BT50	MT3	150	251.8	40	210-6610
BT50	MT4	85	186.8	48	210-6611
BT50	MT4	95	196.8	48	210-6612
BT50	MT4	180	281.8	48	210-6613
BT50	MT5	105	206.8	63	210-6614
BT50	MT5	108	209.8	63	210-6615

BT Shank to Morse Taper Adaptors

with Tang

- Suitable for CNC RPM ≤ 8000 .

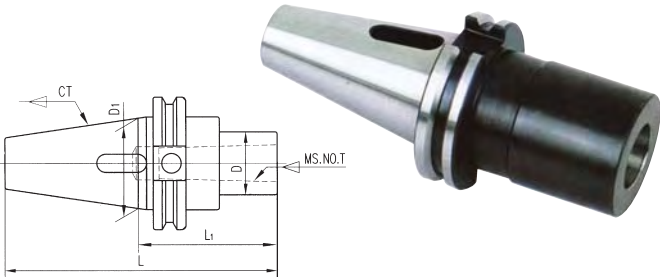
Inch

Taper	Morse Taper Hole	L1 Gage	D Nose Dia.	Order No.
BT40	MT2	2.375"	1.25"	210-6701
BT40	MT3	3.00	1.562	210-6702
BT40	MT4	2.562	2.00	210-6703
BT50	MT2	1.75	1.25	210-6731
BT50	MT3	1.75	1.562	210-6732
BT50	MT4	3.00	2.00	210-6733
BT50	MT5	1.125	2.75	210-6734

CAT Morse Taper Adaptors

with Tang

- Suitable for CNC RPM ≤ 8000 .



Inch

Taper	Morse Taper Hole	L1 Gage	D Nose Dia.	Order No.
CT40	MT2	2.375"	1.25"	210-6942
CT40	MT3	3.00	1.562	210-6943
CT40	MT4	2.562	2.00	210-6944
CT50	MT2	1.75	1.25	210-6952
CT50	MT3	1.75	1.562	210-6953
CT50	MT4	3.00	2.00	210-6954
CT50	MT5	4.125	2.75	210-6955

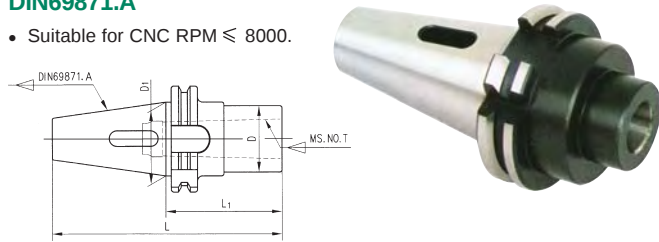
Metric

Taper	Morse Taper Hole	L1 Gage	L	D Nose Dia.	Order No.
CT40	MT1	45mm	113.25mm	25mm	210-6801
CT40	MT2	63	131.25	32	210-6802
CT40	MT3	75	143.25	40	210-6803
CT40	MT4	100	168.25	48	210-6804
CT45	MT1	40	122.55	25	210-6831
CT45	MT2	50	132.55	32	210-6832
CT45	MT3	73	155.55	40	210-6833
CT45	MT4	95	177.55	48	210-6834
CT45	MT5	125	207.55	61	210-6835
CT50	MT1	40	141.6	25	210-6851
CT50	MT2	50	151.6	32	210-6852
CT50	MT2	135	236.6	32	210-6853
CT50	MT3	63	164.6	40	210-6854
CT50	MT3	150	251.6	40	210-6855
CT50	MT4	65	166.6	48	210-6856
CT50	MT4	85	186.6	48	210-6857
CT50	MT5	105	206.6	61	210-6858

DIN Morse Taper Adaptors (with Tang)

DIN69871.A

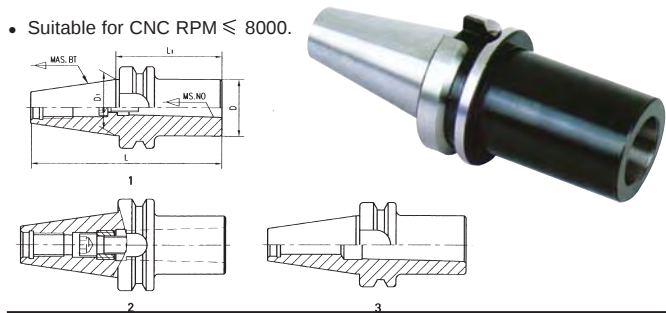
- Suitable for CNC RPM ≤ 8000 .



Taper	Morse Taper Hole	L1 Gage	L	D Nose Dia.	Order No.
A30	MT1	50mm	97.8mm	25mm	210-7031
A30	MT2	60	107.8	32	210-7032
A30	MT3	75	122.8	40	210-7033
A40	MT1	45	113.4	25	210-7041
A40	MT1	50	118.4	25	210-7042
A40	MT2	50	118.4	32	210-7043
A40	MT2	60	128.4	32	210-7044
A40	MT3	70	138.4	40	210-7045
A40	MT4	95	163.4	48	210-7046
A40	MT5	125	193.4	63	210-7047
A50	MT1	45	146.75	25	210-7051
A50	MT2	60	161.75	32	210-7052
A50	MT3	65	166.75	40	210-7053
A50	MT4	95	196.75	48	210-7054
A50	MT5	100	201.75	61	210-7055
A50	MT5	105	206.75	61	210-7056

BT Morse Taper Adaptors (with Drawbar)

- Suitable for CNC RPM ≤ 8000 .



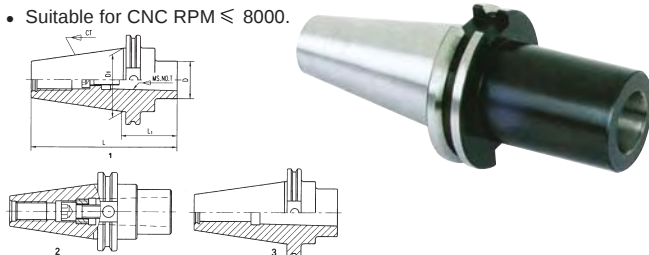
BTx MW.NO.T- L1	L mm	D mm	D1 mm	Figure	Order No.
BT40 x MW1-45	110.4	25	44.45	1	210-8101
BT40 x MW2-60	125.4	32	44.45	1	210-8102
BT40 x MW3-75	140.4	40	44.45	2	210-8103
BT40 x MW3-90	155.4	40	44.45	2	210-8104
BT40 x MW4-95	160.4	48	44.45	3	210-8105
BT40 x MW4-100	165.4	48	44.45	2	210-8106
BT50 x MW1-45	146.8	25	69.85	1	210-8107
BT50 x MW2-45	146.8	32	69.85	1	210-8108
BT50 x MW2-60	168.1	40	69.85	1	210-8109
BT50 x MW3-60	161.8	40	69.85	1	210-8110
BT50 x MW3-75	176.8	48	69.85	1	210-8111
BT50 x MW4-80	181.8	48	69.85	3	210-8112
BT50 x MW4-100	201.8	48	69.85	2	210-8113
BT50 x MW5-100	201.8	63	69.85	3	210-8114
BT50 x MW5-120	221.8	63	69.85	2	210-8115

Note:

- See figure 1, when the arbor being used, it is necessary to fix inner hex screw.
- See figure 2, when the arbor being used, it is necessary to fix standard knob, please note when order it.
- See figure 3, when the arbor being used, it is necessary to fix extension knob, please note when order it.

CAT Morse Taper Adaptors (with Drawbar)

- Suitable for CNC RPM ≤ 8000.



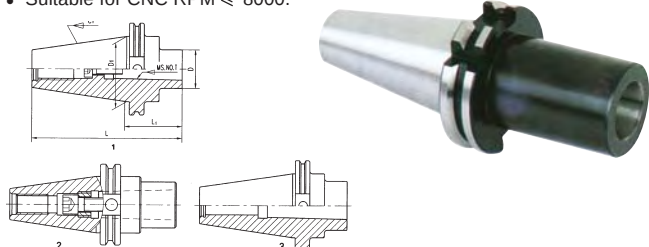
CTx MW.NO.T- L1	L mm	D mm	D1 mm	Figure	Order No.
CT40 x MW1-45	113.25	25	44.45	1	210-8131
CT40 x MW2-60	128.25	32	44.45	1	210-8132
CT40 x MW3-75	143.25	40	44.45	2	210-8133
CT40 x MW3-90	158.25	40	44.45	2	210-8134
CT40 x MW4-100	168.25	48	44.45	2	210-8135
CT40 x MW4-120	168.25	48	44.45	2	210-8136
CT50 x MW2-60	161.6	31.75	69.85	1	210-8137
CT50 x MW3-60	161.6	41.28	69.85	1	210-8138
CT50 x MW4-90	161.6	50.8	69.85	1	210-8139
CT50 x MW5-100	201.6	69.85	69.85	3	210-8140

Note:

- See figure 1, when the arbor being used, it is necessary to fix inner hex screw.
- See figure 2, when the arbor being used, it is necessary to fix standard knob, please note when order it.
- See figure 3, when the arbor being used, it is necessary to fix extension knob, please note when order it.

DIN Morse Taper Adaptors (with Drawbar)

- Suitable for CNC RPM ≤ 8000.



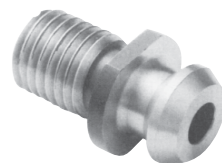
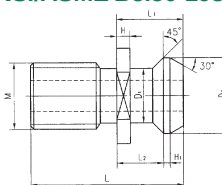
DIN69871.A x MW.NO.T- L1	L mm	D mm	D1 mm	Figure	Order No.
DIN69871.A40 x MW1-45	113.4	25	44.45	1	210-8161
DIN69871.A40 x MW2-60	128.4	32	44.45	1	210-8162
DIN69871.A40 x MW3-70	138.4	40	44.45	3	210-8163
DIN69871.A40 x MW3-80	148.4	40	44.45	2	210-8164
DIN69871.A40 x MW3-100	168.4	40	44.45	2	210-8165
DIN69871.A40 x MW4-90	158.4	48	44.45	3	210-8166
DIN69871.A40 x MW4-100	168.4	48	69.85	2	210-8167
DIN69871.A40 x MW4-120	188.4	48	69.85	2	210-8168
DIN69871.A50 x MW1-45	146.8	25	69.85	1	210-8169
DIN69871.A50 x MW2-45	146.8	32	69.85	1	210-8170
DIN69871.A50 x MW2-60	161.8	32	69.85	1	210-8171
DIN69871.A50 x MW3-60	161.8	40	69.85	1	210-8172
DIN69871.A50 x MW3-80	181.8	40	69.85	1	210-8173
DIN69871.A50 x MW4-80	181.8	48	69.85	3	210-8174
DIN69871.A50 x MW4-90	191.8	48	69.85	2	210-8175
DIN69871.A50 x MW4-120	221.8	48	69.85	2	210-8176
DIN69871.A50 x MW5-100	201.8	61	69.85	3	210-8177
DIN69871.A50 x MW5-120	221.8	61	69.85	2	210-8178

Note:

- See figure 1, when the arbor being used, it is necessary to fix inner hex screw.
- See figure 2, when the arbor being used, it is necessary to fix standard knob, please note when order it.
- See figure 3, when the arbor being used, it is necessary to fix extension knob, please note when order it.

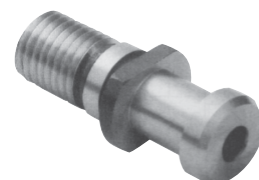
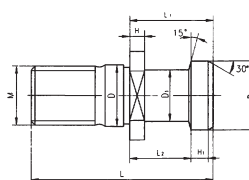
Retention Knobs

ANSI/ASME B5.50-1985



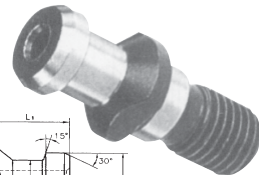
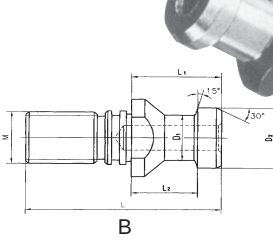
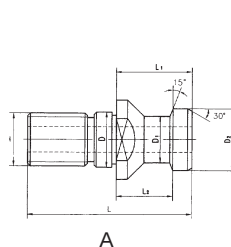
Type	D1	D2	M	L	L1	L2	H	H1	Order No.
30	9.78	13.21	1/2"-13	27.94	11.68	8.13	2.54	1.01	210-7701
40	12.45	18.80	5/8"-11	38.10	16.26	11.18	3.05	1.52	210-7702
45	15.37	23.88	3/4"-10	45.72	20.83	14.73	4.06	2.03	210-7703
50	20.83	28.96	1"-8	58.42	25.4	17.78	5.08	2.54	210-7704

ISO7388/2-1984A



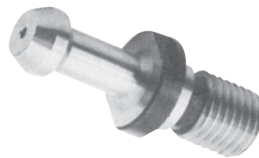
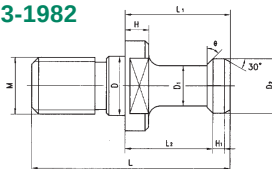
Type	D	D1	D2	M	L	L1	L2	H	H1	Order No.
30A	13mm	8mm	12mm	M12	44mm	24mm	19mm	4mm	3mm	210-7711
40A	17	14	19	M16	54	26	20	4	4	210-7712
45A	21	17	23	M20	65	30	23	5	5	210-7713
50A	25	21	28	M24	74	34	25	6	7	210-7714

DIN69872-1988



Type	D	D1	D2	M	L	L1	L2	Order No.
30A	13mm	8mm	12mm	M12	44mm	24mm	19mm	210-7721
40A	17	14	19	M16	54	26	20	210-7722
45A	21	17	23	M20	65	30	23	210-7723
50A	25	21	28	M24	74	34	25	210-7724
30B	8	12	M12	44	24	19		210-7725
40B	14	19	M16	54	26	20		210-7726
45B	17	23	M20	65	30	23		210-7727
50B	21	28	M24	74	34	25		210-7728

MAS403-1982



Type	D	D1	D2	M	L	L1	L2	H	H1	Θ	Order No.
P30T(°)	12.5	7	11mm	M12	43	23mm	18mm	5mm	2.5mm	30°	210-7731
P40T(°)	17	10	15	M16	60	35	28	6	3	30°	210-7732
P45T(°)	21	14	19	M20	70	40	31	8	4	30°	210-7733
P50T(°)	25	17	23	M24	85	45	35	10	5	30°	210-7734
P30T(°)	12.5	7	11	M12	43	23	18	5	2.5	45°	210-7741
P40T(°)	17	10	15	M16	60	35	28	6	3	45°	210-7742
P45T(°)	21	14	19	M20	70	40	31	8	4	45°	210-7743
P50T(°)	25	17	23	M24	85	45	35	10	5	45°	210-7744

Milling Machine Arbors

Style A



- Style A with 23/32" x 1-3/4" pilots.
- Machined from high grade forging; have standard key ways and include arbor spacers and running bushings.

Arbor No.	Taper	Arbor Dia.	Length of Shoulder To nut	Dia. of Running Bushings	Dia. of Bushings Furnished	Order No.
30-7/8-A10-2	30	7/8"	10	1-5/8"	1	219-8332
31-A10-2	30	1"	10	1-5/8"	1	219-8336
31-1/4-A10-2	30	1-1/4"	10	1-7/8"	1	219-8338
40-7/8-A10	40	7/8"	10		None	219-8432
40-7/8-A16-3	40	7/8"	16	1-7/8"	1	219-8434
41-A8	40	1"	8		None	219-8436
41-A10	40	1"	10		None	219-8438
41-A12	40	1"		12"	None	219-8440
41-A16-3	40	1"	16	1-7/8"	1	219-8442
41-1/4-A8	40	1-1/4"	8		None	219-8444
41-1/4-A10	40	1-1/4"	10		None	219-8446
41-1/4-A12	40	1-1/4"	12		None	219-8448
41-1/4-A-16-3	40	1-1/4"	16	1-7/8"	1	219-8450
50-7/8-A10	50	7/8"	10		None	219-8532
50-7/8-A18-4	50	7/8"	18	2-1/8"	1	219-8534
51-A8	50	1"	8		None	219-8536
51-A12	50	1"	12	2-1/8"	None	219-8538
51-A18-4	50	1"	18		1	219-8540
51-1/4-A8	50	1-1/4"	8		None	219-8542
51-1/4-A12	50	1-1/4"	12		None	219-8544
51-1/4-A18-4	50	1-1/4"	18	2-1/8"	1	219-8546

Style B



- Style B without pilots.
- Machined from high grade forging; have standard key ways and include arbor spacers and running bushings.

Arbor No.	Taper	Arbor Dia.	Length of Shoulder To nut	Dia. of Running Bushings	Dia. of Bushings Furnished	Order No.
31-B2	30	1"	2"	None	None	219-9334
40-7/8-B14-3	40	7/8"	14	1-7/8"	1	219-9432
40-7/8-B16-3	40	7/8"	16	1-7/8"	1	219-9434
41-B3	40	1"	3"	None	None	219-9436
41-B14-3	40	1"	14	1-7/8"	1	219-9438
41-B20-3	40	1"	20	1-7/8"	1	219-9440
41-1/4-B3	40	1-1/4"	3"	None	None	219-9442
41-1/4-B14-3	40	1-1/4"	14	1-7/8"	1	219-9444
41-1/4-B20-3	40	1-1/4"	20	1-7/8"	1	219-9446
41-1/2-B10	40	1-1/2"	10	2-1/8"	None	219-9448
41-1/2-B20-4	40	1-1/2"	20	2-1/8"	1	219-9450
51-B3-1/2	50	1"	3-1/2"	None	None	219-9532
51-B15-4	50	1"	15	2-1/8"	1	219-9534
51-B18-4	50	1"	18	2-1/8"	2	219-9536
51-B24-4	50	1"	24	2-1/8"	2	219-9538
51-1/4-B3-1/2	50	1-1/4"	3-1/2"	None	None	219-9540
51-1/4-B15-4	50	1-1/4"	15	2-1/8"	1	219-9542
51-1/4-B18-4	50	1-1/4"	18	2-1/8"	2	219-9544
51-1/4-B24-4	50	1-1/4"	24	2-1/8"	2	219-9546
51-1/4-B30-4	50	1-1/4"	30	2-1/8"	2	219-9548
51-1/2-B3-1/2	50	1-1/2"	3-1/2"	None	None	219-9550
51-1/2-B18-4	50	1-1/2"	18	2-1/8"	2	219-9552
51-1/2-B24-5	50	1-1/2"	24	2-3/4"	2	219-9554
51-1/2-B30-5	50	1-1/2"	30	2-3/4"	2	219-9556
51-1/2-B36-5	50	1-1/2"	36	2-3/4"	2	219-9558
52-B24-5	50	2"	24	2-3/4"	2	219-9560
52-B30-5	50	2"	30	2-3/4"	2	219-9562
52-B36-5	50	2"	36	2-3/4"	2	219-9564
52-1/2-B36-6	50	2-1/2"	36	3-3/8"	2	219-9566

Arbor Spacers with Keyways



7/8" Hole and 1-3/8"	1" Hole and 1-1/2"	1-1/4" Hole and 1-3/4"	1-1/2" Hole and 2-1/8"	2" Hole and 2-3/4"
Spacer Width	Order No.	Order No.	Order No.	Order No.
1/16"	219-8110	219-8210	219-8710	219-8810
3/32"	219-8112	219-8212	219-8712	219-8812
1/8"	219-8114	219-8214	219-8714	219-8814
3/16"	219-8116	219-8216	219-8716	219-8816
1/4"	219-8118	219-8218	219-8718	219-8818
5/16"	219-8120	219-8220	219-8720	219-8820
3/8"	219-8122	219-8222	219-8722	219-8822
7/16"	219-8124	219-8224	219-8724	219-8824
1/2"	219-8126	219-8226	219-8726	219-8826
5/8"	219-8128	219-8228	219-8728	219-8828
3/4"	219-8130	219-8230	219-8730	219-8830
7/8"	219-8132	219-8232	219-8732	219-8832
1"	219-8134	219-8234	219-8734	219-8834
1-1/4"	219-8136	219-8236	219-8736	219-8836
1-1/2"	219-8138	219-8238	219-8738	219-8838
2"	219-8140	219-8240	219-8740	219-8840
3"	219-8142	219-8242	219-8742	219-8842

Arbor Running Bushings with Keyways

For Style A and Style B milling machine arbors



Arbor Dia.	Outside Dia.	Length	Order No.	Arbor Dia.	Outside Dia.	Length	Order No.
7/8"	1-5/8"	2-5/8"	219-8652	1-1/4"	2-1/8"	3-3/4"	219-8668
1"	1-5/8"	2-5/8"	219-8654	1-1/2"	2-1/8"	3-3/4"	219-8670
1-1/4"	1-7/8"	2-5/8"	219-8656	1-1/2"	2-3/4"	4-1/4"	219-8672
7/8"	1-7/8"	3-1/8"	219-8658	1-1/4"	2-3/4"	4-1/4"	219-8674
1"	1-7/8"	3-1/8"	219-8660	1-1/2"	2-3/4"	4-1/4"	219-8676
1-1/4"	1-7/8"	3-1/8"	219-8662	1-1/2"	2-3/4"	4-1/4"	219-8678
7/8"	2-1/8"	3-3/4"	219-8664	1-1/4"	2-3/4"	4-1/4"	219-8680
1"	2-1/8"	3-3/4"	219-8666	1-1/2"	3-3/8"	4-1/4"	219-8682

Nuts

For milling machine arbors



Arbor Dia.	Thread	Right Hand Order No.	Left Hand Order No.
7/8"	7/8-14RH	219-8632	219-8602
1"	1-14RH	219-8634	219-8604
1-1/4"	1-1/4-12RH	219-8636	219-8606
1-1/2"	1-1/2-12 RH	219-8638	219-8608
2"	2-12RH	219-8640	219-8610
2-1/2"	2-1/2-12RH	219-8642	219-8612

Straight Shank Stub Milling Machine Arbors

- For holding saws or small cutters.
- These arbors are designed and made to fit directly into standard End Mill Adapters. Sets include spacers and nut.
- Arbors furnished with standard key ways and L.H. arbor nut.
- Lengths of shoulder to nut are 1"
- Hardened and ground.



Dia. Of Straight Shank	Arbor Dia.	Length of Shoulder to Nut	Order No.
1/2"	1/2"	1"	210-3800
1/2"	5/8"	1"	210-3801
1/2"	3/4"	1"	210-3802
3/4"	1/2"	1"	210-3803
3/4"	5/8"	1"	210-3804
3/4"	3/4"	1"	210-3805
3/4"	7/8"	1"	210-3806
3/4"	1"	1"	210-3807
3/4"	1-1/4"	1"	210-3808

Stub Milling Machine Arbors

- Adjust the washer to hold the end mills according to your various needs.



Shank	End Mill Dia.	Order No.
R8	22mm	210-2208
MT2	22mm	210-2212
MT3	22mm	210-2213
MT4	22mm	210-2214
MT5	22mm	210-2215
R8	27mm	210-2218
MT2	27mm	210-2222
MT3	27mm	210-2223
MT4	27mm	210-2224
MT5	27mm	210-2225

Shank	Arbor Dia.	Length of Shoulder to Nut	Order No.
R8	1 "	2 "	210-2108
MT2	1 "	2 "	210-2112
MT3	1 "	2 "	210-2113
MT4	1 "	2 "	210-2114
MT5	1 "	2 "	210-2115
R8	1-1/4"	2 "	210-2118
MT2	1-1/4"	2 "	210-2122
MT3	1-1/4"	2 "	210-2123
MT4	1-1/4"	2 "	210-2124
MT5	1-1/4"	2 "	210-2125
30	1 "	1-1/2"	210-2130
30	1-1/4"	1-3/4"	210-2133
40	1 "	1-1/2"	210-2140
40	1-1/4"	1-3/4"	210-2144
50	1 "	1-1/2"	210-2150
50	1-1/4"	1-3/4"	210-2155

30-40-50 to Morse Taper Adaptors

ANSI, BS & Metric



Outside Taper	Inside Taper	Overall Length	Drawbar Thread	Order No.	Drawbar Thread	Metric Order No.	Drawbar Thread	BS Order No.
30	MT1	118mm	1/2"-13	214-7300	M12	214-7700		
30	MT2	118mm	1/2"-13	214-7305	M12	214-7705	1/2 BSW	214-7605
30	MT3	138mm	1/2"-13	214-7310	M12	214-7710	1/2 BSW	214-7610
30	MT4	212mm	1/2"-13	214-7315	M12	214-7715		
40	MT1	143mm	5/8"-11	214-7320	M16	214-7720		
40	MT2	143mm	5/8"-11	214-7325	M16	214-7725	5/8 BSW	214-7625
40	MT3	158mm	5/8"-11	214-7330	M16	214-7730	5/8 BSW	214-7630
40	MT4	188mm	5/8"-11	214-7335	M16	214-7735	5/8 BSW	214-7635
40	MT5	273mm	5/8"-11	214-7340	M16	214-7740		
50	MT1	172mm	1"-8	214-7345	M24	214-7745		
50	MT2	187mm	1"-8	214-7350	M24	214-7750		
50	MT3	192mm	1"-8	214-7355	M24	214-7755		
50	MT4	197mm	1"-8	214-7360	M24	214-7760		
50	MT5	232mm	1"-8	214-7365	M24	214-7765		

Drift Keys

Drop Forged

Removes taper shank drills or reamers
From sleeves or sockets quickly



Size	Fits Mt. Sleeves and Sockets	Overall Length	ThickNess	Width at Hole	Order No.
1	MT1	4-1/2"	13/64"	11/16"	292-6220
2	MT2	4-1/8"	1/4"	13/16"	292-6225
3	MT3	6-3/4"	5/16"	1-1/16"	292-6230
4	MT4, MT5, MT6	7-1/8"	15/32"	1-1/8"	292-6235
4pcs/set includes: #1, #2, #3 & #4MT					392-6240

Half Automatic Mores Shank Pullers

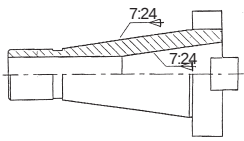
DIN 318



The morse shank can easy to be pulled off by the half-automatic morse shank puller operation quickly, saving time and pressure.

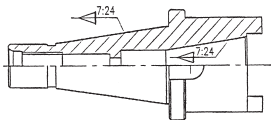
MS. NO	Order No.
MS1, MS2, MS3	292-6211
MS4, MS5, MS6	292-6212

30-40-50 to 30-40-50 Adaptors



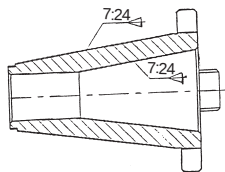
Inside Taper Draw Key Type

Outside Taper	Inside Taper	Overall Length	Order No.
40	30	110mm	214-7270
50	30	145mm	214-7275
50	40	145mm	214-7280



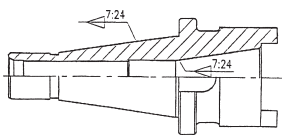
Outside Taper Draw Type

Outside Taper	Inside Taper	Overall Length	Order No.
40	30	152.4mm	214-7220
50	30	185.8mm	214-7225
50	40	207.8mm	214-7230



End Open Type

Outside Taper	Inside Taper	Overall Length	Order No.
40	30	86mm	214-7200
50	30	129.5mm	214-7205
50	40	129.5mm	214-7210



Inside Taper Draw Type

Outside Taper	Inside Taper	Overall Length	Order No.
40	30	152.4mm	214-7240
40	40	204.4mm	214-7245
50	30	185.8mm	214-7250
50	40	207.8mm	214-7255
50	50	260.8mm	214-7260

Morse Taper Sleeves



Hardened Tang Only

Morse Taper Outside	Morse Taper Inside	Order No.	Morse Taper Inside	Morse Taper Outside	Order No.
MT1	MT0	214-8001	MT2	MT5	214-8025
MT2	MT1	214-8012	MT2	MT6	214-8026
MT3	MT1	214-8013	MT3	MT4	214-8034
MT4	MT1	214-8014	MT3	MT5	214-8035
MT5	MT1	214-8015	MT3	MT6	214-8036
MT6	MT1	214-8016	MT4	MT5	214-8045
MT3	MT2	214-8023	MT4	MT6	214-8046
MT4	MT2	214-8024	MT5	MT6	214-8056

Hardened & Ground Throughout

Morse Taper Outside	Morse Taper Inside	Order No.	Morse Taper Inside	Morse Taper Outside	Order No.
MT1	MT0	214-8101	MT2	MT5	214-8125
MT2	MT1	214-8112	MT2	MT6	214-8126
MT3	MT1	214-8113	MT3	MT4	214-8134
MT4	MT1	214-8114	MT3	MT5	214-8135
MT5	MT1	214-8115	MT3	MT6	214-8136
MT6	MT1	214-8116	MT4	MT5	214-8145
MT3	MT2	214-8123	MT4	MT6	214-8146
MT4	MT2	214-8124	MT5	MT6	214-8156

Micrometer Adjustable Spacing Collars

- Provides you with quick, accurate and positive adjustment.
- Features precise calibration of 1/1000".



Range	Hole Dia.	Outside Dia.	Thickness	Order No.
7/16-5/8"	3/4	1-1/2	7/16	712-0400
9/16-3/4"	7/8	1-1/2	9/16	712-0410
5/8-7/8"	1	1-3/4	5/8	712-0420
3/4-1"	1-1/4	2-1/8	3/4	712-0430
7/8-1-1/4"	1-1/2	2-5/8	7/8	712-0440
15/16-1-1/2"	2	3-5/8	15/16	712-0450

R8 to Morse Taper Sleeves

- Internal thread 7/16"-20.



Outside Taper	Morse Taper	Order No.
R8	MT1	214-9001
R8	MT2	214-9002
R8	MT3	214-9003
R8	MT4	214-9004

Morse Taper Extension Sockets



Hardened Tang Only

Shank Taper to Hole Taper	Order No.	Shank Taper to Hole Taper	Order No.
MT1 to MT1	214-8511	MT5 to MT2	214-8525
MT2 to MT1	214-8512	MT6 to MT2	214-8526
MT3 to MT1	214-8513	MT2 to MT3	214-8532
MT4 to MT1	214-8514	MT3 to MT3	214-8533
MT5 to MT1	214-8515	MT4 to MT3	214-8534
MT6 to MT1	214-8516	MT5 to MT3	214-8535
MT1 to MT2	214-8521	MT6 to MT3	214-8536
MT2 to MT2	214-8522	MT2 to MT4	214-8542
MT3 to MT2	214-8523	MT3 to MT4	214-8543
MT4 to MT2	214-8524	MT4 to MT4	214-8544
MT5 to MT5	214-8555	MT5 to MT4	214-8545
MT6 to MT5	214-8556	MT6 to MT4	214-8546
MT4 to MT6	214-8564	MT3 to MT5	214-8553
MT5 to MT6	214-8565	MT4 to MT5	214-8554
MT6 to MT6	214-8566		

Hardened & Ground Throughout

Shank Taper to Hole Taper	Order No.	Shank Taper to Hole Taper	Order No.
MT2 to MT1	214-8612	MT2 to MT4	214-8642
MT3 to MT1	214-8613	MT3 to MT4	214-8643
MT4 to MT1	214-8614	MT4 to MT4	214-8644
MT1 to MT2	214-8621	MT5 to MT4	214-8645
MT2 to MT2	214-8622	MT6 to MT4	214-8646
MT3 to MT2	214-8623	MT3 to MT5	214-8653
MT4 to MT2	214-8624	MT4 to MT5	214-8654
MT2 to MT3	214-8632	MT5 to MT5	214-8655
MT3 to MT3	214-8633	MT6 to MT5	214-8656
MT4 to MT3	214-8634	MT5 to MT6	214-8665
MT5 to MT3	214-8635	MT6 to MT6	214-8666

Solid Sockets

MORSE TAPER I.D., STRAIGHT SHANK O.D, GROUND & ACCURATE.

Used to convert spindles to larger or smaller tapers and to extend the spindles of drill presses, radial drills, boring mills, turret lathes and similar machines.



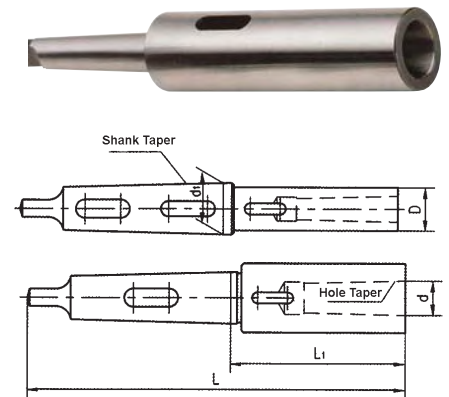
Solid Socket Number	Morse Taper I.D.	Shank Diameter	Overall Length	Order No.
1	1	1"	3-1/2	214-8701
2	1	1-1/4"	3-1/2	214-8702
3	1	1-1/2"	3-1/2	214-8703
4	2	1"	4	214-8704
5	2	1-1/4"	4	214-8705
6	2	1-1/2"	4	214-8706
7	2	1-3/4"	4	214-8707
8	2	2"	4	214-8708
9	3	1-1/4"	4-3/4	214-8709

Solid Socket Number	Morse Taper I.D.	Shank Diameter	Overall Length	Order No.
10	3	1-1/2"	4-3/4	214-8710
11	3	1-3/4"	4-3/4	214-8711
12	3	2"	4-3/4	214-8712
13	4	1-1/2"	6	214-8713
14	4	1-3/4"	6	214-8714
15	4	2"	6	214-8715
16	5	2-1/4"	7-3/8	214-8716
17	5	2-1/2"	7-3/8	214-8717
18	6	3-1/4"	10-1/8	214-8718
19	6	3-1/2"	10-1/8	214-8719

Morse Taper Sleeves

DIN1806

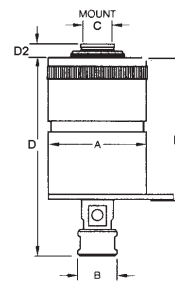
Shank Taper to Hole Taper	Overall Length (mm)	L1 (mm)	D (mm)	d (mm)	d1 (mm)	Accuracy (mm)	Order No.
MT3 to MT1	175	81	20	12.065	23.825	0.03	214-6105
MT3 to MT2	194	100	30	17.780	23.825	0.03	214-6110
MT3 to MT2	500	406	30	17.780	23.825	0.04	214-6115
MT3 to MT3	215	121	36	23.825	23.825	0.03	214-6120
MT3 to MT3	300	206	36	23.825	23.825	0.04	214-6125
MT4 to MT2	215	97.5	30	17.780	31.267	0.03	214-6130
MT4 to MT3	240	122.5	36	23.825	31.267	0.03	214-6135
MT4 to MT4	265	147.5	48	31.267	31.267	0.03	214-6140
MT5 to MT2	247	97.5	30	17.780	44.399	0.04	214-6145
MT5 to MT3	268	118.5	36	23.825	44.399	0.04	214-6150
MT5 to MT4	300	150.5	48	31.267	44.399	0.04	214-6155
MT5 to MT5	335	185.5	63	44.399	44.399	0.04	214-6160
MT5 to MT6	396	246.5	85	63.348	44.399	0.05	214-6165
MT6 to MT4	355	145	48	31.267	63.348	0.04	214-6170
MT6 to MT5	390	180	63	44.399	63.348	0.04	214-6175
MT6 to MT6	460	250	85	63.348	63.348	0.05	214-6180



Reversing Type Tapping Heads

- Use with Jacobs or threaded mounts adapters on manual operated drilling and milling machine.
- The Adjustable torque prevents damage and tap breakage.
- High ratio of reverse turing speed improves productivity.
- Easy operation design.
- Rubber flexible collets.

Capacity of Metric Thread (In Steel)	Capacity of Inch Thread (In Steel)	Mounts	Dimensions(mm)						Order No.
M1.4-M7	#0-1/4"	JT6	124	88	11	52	23	22.5	210-0210
M1.4-M7	#0-1/4"	JT33	124	88	11	52	23	22.5	210-0211
M1.4-M7	#0-1/4"	5/16"-24	124	88	11	52	23	22.5	210-0212
M1.4-M7	#0-1/4"	3/8"-24	124	88	11	52	23	22.5	210-0213
M1.4-M7	#0-1/4"	1/2"-20	124	88	11	52	23	22.5	210-0214
M1.4-M7	#0-1/4"	5/8"-16	124	88	11	52	23	22.5	210-0215
M3-M12	#6-1/2"	JT6	155	110	9	74	28	28	210-0220
M3-M12	#6-1/2"	JT33	155	110	9	74	28	28	210-0221
M3-M12	#6-1/2"	1/2"-20	155	110	9	74	28	28	210-0222
M3-M12	#6-1/2"	5/8"-16	155	110	9	74	28	28	210-0223
M3-M12	#6-1/2"	3/4"-16	155	110	9	74	28	28	210-0224
M5-M20	#10-3/4"	JT3	195	132	10	91	38	35.5	210-0230
M5-M20	#10-3/4"	1/2"-20	195	132	10	91	38	35.5	210-0231
M5-M20	#10-3/4"	5/8"-16	195	132	10	91	38	35.5	210-0232
M5-M20	#10-3/4"	3/4"-16	195	132	10	91	38	35.5	210-0233



Rubberflex Collets

	Order No.
4.2mm (2.0-4.2mm/.079-.165")	210-0280
6.5mm (4.2-6.5mm/.165-.256")	210-0282
7.0mm (3.5-7.0mm/.137-.275")	210-0284
9.0mm (5.0-9.0mm/.196-.354")	210-0286
10.0mm (7.0-10.0mm/.275-.393")	210-0288
14.0mm (9.0-14.0mm/.354-.551")	210-0290

Expanding Arbors

Chuck these expanding arbors to hold special parts in lathes, milling machine, grinders, chucks, collets, fixtures etc.

3 Pc in Set

Set includes one each of:

1-1/2, 1-3/4 & 2" w/1pc wrench

Supplied with wooden stand

Order No. 262-0103

8 Pc in Set

Set includes one each of:

1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4"

Supplied with wooden stand

Order No. 262-0108



Size	Length of Arbor	Accuracy	Order No.
1/4"	3"	.005"	262-4016
3/8	3	.005	262-4024
1/2	3	.005	262-4032
5/8	3	.005	262-4040
3/4	4	.005	262-4048
7/8	4	.005	262-4056
1	4	.005	262-4100
1-1/4	4	.005	262-4116
1-1/2	4	.005	262-4120
1-3/4	4	.005	262-4126
2	4	.005	262-4127
2-1/2	4	.005	262-4128
3	4	.005	262-4129

Precision Expanding Mandrels

Hardened & precision ground for maximum concentricity and holding power

- Center holes are ground and lapped.
- Automatic expansion feature can be used on any bore within the range of the mandrel standard or non-standard.
- Sizes up to 1" are furnished with 1 sleeve larger sizes have 2 sleeve, 1 large and 1 small.



Individuals

Range	Length of Arbor	Length of Sleeve	Order No.
1/2" ~ 9/16"	5"	2-1/2"	262-3050
9/16" ~ 21/32"	6"	2-3/4"	262-3052
21/32" ~ 3/4"	7"	2-3/4"	262-3054
3/4" ~ 7/8"	7"	3-1/4"	262-3056
7/8" ~ 1"	7"	3-1/2"	262-3058
1" ~ 1-1/4"	9"	4"	262-3060
1-1/4" ~ 1-1/2"	9"	4"	262-3062
1-1/2" ~ 2"	11-1/2"	5"	262-3064
2" ~ 2-3/4"	14"	6"	262-3066
2-3/4" ~ 3-3/4"	17"	7"	262-3068

Sets

No. of Mandrels	Range	Order No.
5	1/2" ~ 1"	262-3010
3	1" ~ 2"	262-3020
8	1/2" ~ 2"	262-3030

Lathe Mandrels

Made of hardened tool steel which is accurately ground to size. Slightly tapered with marked in the large end Standard taper .0005" per inch. Sizes under 1" are .0005" undersize on small end. Sizes 1-1/16" to 3" are .001" undersize on small end.



Diameter	Overall Length	Order No.
1/8	2-1/2	262-2008
5/32	3	262-2010
3/16	3	262-2012
7/32	3-3/4	262-2014
1/4	3-3/4	262-2016
9/32	4	262-2018
5/16	4	262-2020
11/32	4-1/4	262-2022
3/8	4-1/4	262-2024
13/32	4-1/2	262-2026
7/16	4-1/2	262-2028
15/32	5	262-2030
1/2	5	262-2032
17/32	5-1/4	262-2034
9/16	5-1/4	262-2036
19/32	5-1/2	262-2038
5/8	5-1/2	262-2040
21/32	5-3/4	262-2042
11/16	5-3/4	262-2044
23/32	6	262-2046
3/4	6	262-2048
25/32	6-1/4	262-2050
13/16	6-1/4	262-2052
27/32	6-1/2	262-2054
7/8	6-1/2	262-2056
29/32	6-3/4	262-2058
15/16	6-3/4	262-2060
31/32	7	262-2062
1	7	262-2100
1-1/32	7-1/4	262-2102
1-1/16	7-1/4	262-2104
1-3/32	7-1/2	262-2106
1-1/8	7-1/2	262-2108
1-5/32	7-3/4	262-2110
1-3/16	7-3/4	262-2112
1-7/32	8	262-2114
1-1/4	8	262-2116
1-9/32	8-1/4	262-2118
1-5/16	8-1/4	262-2120
1-11/32	8-3/4	262-2122
1-3/8	8-1/2	262-2124
1-7/16	8-3/4	262-2128
1-15/32	9	262-2130
1-1/2	9	262-2132
1-9/16	9-1/4	262-2136
1-5/8	9-1/2	262-2140
1-11/16	9-3/4	262-2144
1-3/4	10	262-2148
1-13/16	10-1/4	262-2152
1-7/8	10-1/2	262-2156
1-15/16	10-3/4	262-2160
2	11	262-2200
2-1/8	11-1/2	262-2208
2-1/4	12	262-2216
2-3/8	12	262-2224
2-1/2	12-1/2	262-2232
2-5/8	12-1/2	262-2240
2-3/4	13	262-2248
2-7/8	13	262-2256
3	13	262-2300

Precision Boring Heads-F1

- High quality, excellent performance, practical design at affordable price.
- Maximum rigidity is assured even when boring bar holder is used in an offset position.
- Hardened and ground adjusting screw along with outside base design guarantees long life and trouble free use.

Adjusting Screws

Range	Order No.
for 2"	220-1201
for 3"	220-1302
For 4"	220-1401

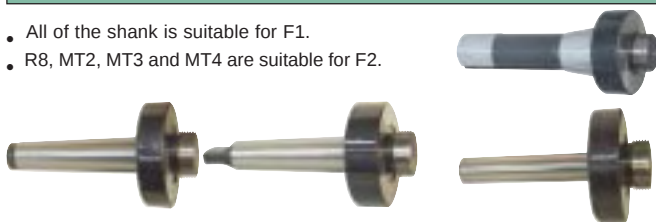


Boring Head Dia.	Boring Bar Hole Size	Max. Offset	Grad.	1-1/2"-18 Order No.	7/8"-20 Order No.
2	1/2	5/8	.0005"	220-1200	220-1210
3	3/4	1	.0005"	220-1300	220-1310
4	1	1-5/8	.0005"	220-1400	220-1410

Boring Head Dia.	Boring Bar Hole Size	Max. Offset	Grad.	1-1/2"-18 Order No.	7/8"-20 Order No.
50	12	16	.01mm	220-1050	220-1060
75	18	25	.01mm	220-1075	220-1085
100	25	41	.01mm	220-1100	220-1110

Precision Boring Head Shanks

- All of the shank is suitable for F1.
- R8, MT2, MT3 and MT4 are suitable for F2.



Morse Taper Shank	Thread	Draw Bar Thread	Draw Bar End Order No.	Tang End Order No.
1	7/8"-20	1/4"-20	220-1511	220-1512
1	1-1/2"-18	1/4"-20	220-1513	220-1514
2	3/4"-20	3/8"-16	220-1519	220-1520
2	7/8"-20	3/8"-16	220-1521	220-1522
2	1-1/2"-18	3/8"-16	220-1523	220-1524
3	7/8"-20	3/8"-16	220-1531	220-1532
3	1-1/2"-18	3/8"-16	220-1533	220-1534
4	7/8"-20	5/8"-11	220-1541	220-1542
4	1-1/2"-18	5/8"-11	220-1543	220-1544
5	7/8"-20	1"-8	220-1551	220-1552
5	1-1/2"-18	1"-8	220-1553	220-1554

Shank Types	7/8"-20 Thread Order No.	1-1/2"-18 Thread Order No.
R8	220-1560	220-1561
1/2" Dia. Straight Shank	220-1563	220-1564
5/8" Dia. Straight Shank	220-1566	220-1567
3/4" Dia. Straight Shank	220-1569	220-1570
7/8" Dia. Straight Shank	220-1572	220-1573
1" Dia. Straight Shank	220-1575	220-1576
1-1/4" Dia. Straight Shank	220-1578	220-1579
1-1/2" Dia. Straight Shank	220-1581	220-1582
2" Dia. Straight Shank	220-1584	220-1585
30 Taper	220-1590	220-1591
40 Taper	220-1593	220-1594
50 Taper	220-1596	220-1597

Boring Combo Sets



2" Boring Combo Set

- 2" Boring head Order No. 220-1210.
- R8 shank (7/8"-20 TPI) Order No. 220-1560.
- 1/2" Boring bar set Order No. 375-1202 or 375-1206.

Order No. 220-1600

3" Boring Combo Set

- 3" Boring head Order No. 220-1300.
- R8 shank (1-1/2"-18 TPI) Order No. 220-1561.
- 3/4" Boring bar set Order No. 375-1602 or 375-1606.

Order No. 220-1800

Precision Boring Heads-F2



Boring Head Diameter	Boring Bar Hole Size	Max. Offset	Grad.	Type	Thread	Order No.
2-1/8	1/2	5/16	.001"	F2	1-5/8"-16	220-1208
54	12	8	.01mm	F2	1-5/8"-16	220-1054

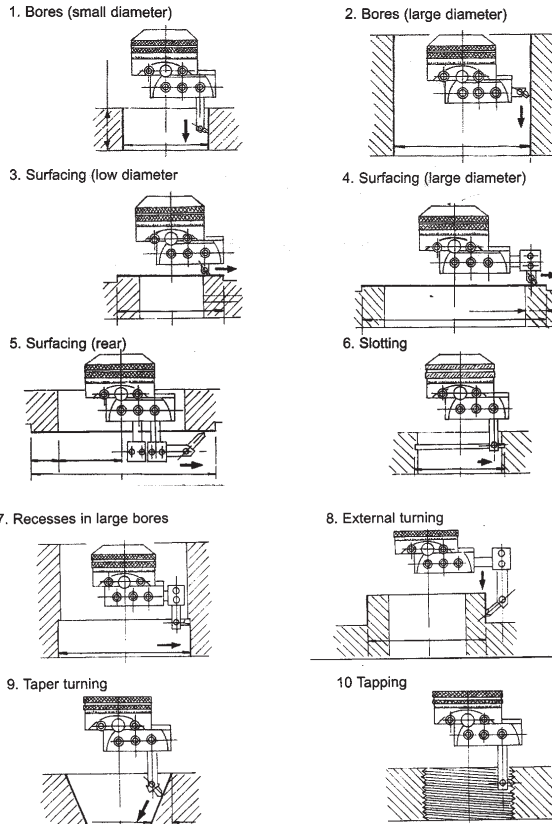
Revolving Tailstock Turrets

These turrets, available in 2 sizes, have 6 holes each for holding 6 tools. A trigger type handle is conveniently located which enables instant changing.



Shank	Dia. of Turret	Size of Hole	Order No.
MT1	2-1/2"	5/8"	220-0900
MT2	2-1/2"	5/8"	220-0901
MT3	2-1/2"	5/8"	220-0902
MT4	2-1/2"	5/8"	220-0903
1/2" Dia. Straight Shank	2-1/2"	5/8"	220-0904
5/8" Dia. Straight Shank	2-1/2"	5/8"	220-0905
3/4" Dia. Straight Shank	2-1/2"	5/8"	220-0906
7/8" Dia. Straight Shank	2-1/2"	5/8"	220-0907
1" Dia. Straight Shank	2-1/2"	5/8"	220-0908
MT2	5"	1"	220-0911
MT3	5"	1"	220-0912
MT4	5"	1"	220-0913
7/8" Dia. Straight Shank	5"	1"	220-0915
1" Dia. Straight Shank	5"	1"	220-0916
1-1/4" Dia. Straight Shank	5"	1"	220-0917
1-1/2" Dia. Straight Shank	5"	1"	220-0918

Universal Facing And Boring Head Sets



The facing and boring head is a major accessory of Boring Machine, Milling Machine, CNC Machine etc. It also can carry out such operations as facing, outside & inside boring, boring step and inner and outside groove cutting featuring manual fine feed, rapid adjustment, various velocities for radial automatic feed and overload protection.

Type of taper shanks available for the boring heads are as following:

R8, MT3-MT6, MW3-MW6, TZIO, ISO30, 40, 45, 50, etc.



Descriptions	Order No. 220-1701	Order No. 220-1801	Order No. 220-1901
Max. facing and boring dia (mm)	150	350	450
Dia. of tool post holes in slide (mm)	18	22	22
Fine feed per graduation (mm)	0.005	0.005	0.005
Weight of head without shank (kgs)	2.9	6.1	7.8
Max. stroke of slide (mm)	+/-15	+/-25	+/- 50
Self-acting feed per revolution (mm)	0.02, 0.04, 0.06, 0.08, 0.10, 0.12	0.03, 0.06, 0.09, 0.12, 0.15, 0.18	0.03, 0.06, 0.09, 0.12, 0.15, 0.18
Max. dia. of slide (mm)	90	120	168
Height of head without shank	87.5	118	118
The length of sliding block (mm)	75	105	160
The width of sliding block (mm)	70	90	90

Solid Lathe Centers

- Hardened and ground to the closest tolerance.
- There are three type to meet your need carbon steel, high speed steel tipped, carbide tipped



Carbon Steel and High Speed Steel



Carbide Tipped

Morse Taper	Overall Length	Carbon Steel Order No.	H.S.S. Order No.	Carbide Tipped Order No.
MT1	3-3/16"	251-3011	251-3071	251-3051
MT2	3-15/16"	251-3012	251-3072	251-3052
MT3	4-15/16"	251-3013	251-3073	251-3053
MT4	6-5/16"	251-3014	251-3074	251-3054
MT5	7-7/8"	251-3015	251-3075	251-3055
MT6	11"	251-3016	251-3076	251-3056
MT7	14"	251-3017	251-3077	251-3057

Half-Notched Lathe Centers



Morse Taper	Order No.
MT1	251-3801
MT2	251-3802
MT3	251-3803
MT4	251-3804
MT5	251-3805
MT6	251-3806
MT7	251-3807

Bull Nose Live Centers



Morse Taper	Small End Dia.	Large End Dia.	Order No.
MT2	1/2"	2-7/16"	251-3702
MT3	3/4"	3"	251-3703
MT3	1-1/4"	4"	251-3704
MT3	1-1/2"	5"	251-3705
MT4	1-3/8"	5"	251-3706
MT4	2"	6"	251-3707
MT5	1-3/8"	6"	251-3708
MT5	2-1/8"	8"	251-3709

Precision Live Centers

Light Duty



Morse Taper	Accuracy	Order No.
MT1	.0004"	251-3031
MT2	.0004"	251-3032
MT3	.0004"	251-3033
MT4	.0004"	251-3034
MT5	.0004"	251-3035
MT6	.0004"	251-3036
MT7	.0004"	251-3037

Medium Duty



Morse Taper	Accuracy	Order No.
MT1	.0008"	251-3021
MT2	.0008"	251-3022
MT3	.0008"	251-3023
MT4	.0008"	251-3024
MT5	.001	251-3025
MT6		251-3026

Heavy Duty



Morse Taper	Accuracy	Order No.
MT1	.0003"	251-3001
MT2	.0003"	251-3002
MT3	.0003"	251-3003
MT4	.0003"	251-3004
MT5	.0004"	251-3005
MT6	.0004"	251-3006

Carbide Tipped Live Centers

Medium Duty

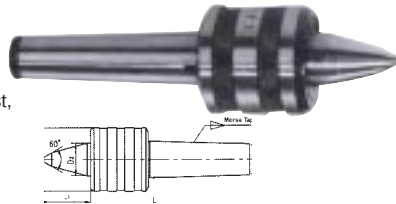


Morse Taper	Accuracy	Order No.
MT1	0.010mm	251-3091
MT2	0.010mm	251-3092
MT3	0.010mm	251-3093
MT4	0.010mm	251-3094
MT5	0.015mm	251-3095
MT6	0.015mm	251-3096

Long Nose Live Centers

Head-Driving Type for N/C & Copying Lathes

- Usable at high speeds-3,000 RPM on MT3, MT4. 2,000 RPM on MT5 and 1500RPM on MT6.
- Run out with in .0002".
- Unique head-driving mechanism ensures that no dust, chips, or foreign oils can enter and destroy bearings.



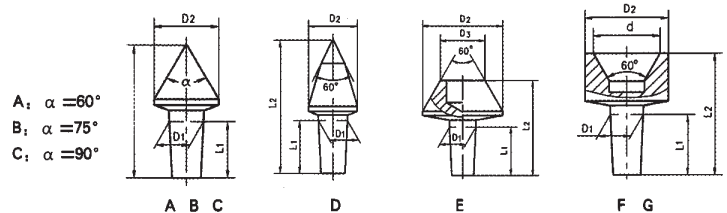
Morse Taper	L1	D	D2	L	Order No.
MT3	1.42"	1.77"	.87"	6.50"	251-3043
MT4	1.42"	1.77"	.87"	7.40"	251-3044
MT5	2.44"	3.07"	1.57"	10.55"	251-3045
MT6	2.95"	4.02"	1.97"	13.62"	251-3046

Medium Duty Multi-Purpose Live Centers & Sets

- The body of these sets is constructed similar to medium live centers.
- The sets consists of 3 large male centers, 1 female center, 4 smaller, different sized male center.



Morse Taper	Head A Order No.	Head B Order No.	Head C Order No.	Head D Order No.	Head E Order No.	Head F Order No.	Head G Order No.	SETS Order No.
MT2	251-3201	251-3202	251-3203	251-3204	251-3205	251-3206	251-3207	251-3082
MT3	251-3301	251-3302	251-3303	251-3304	251-3305	251-3306	251-3307	251-3083
MT4	251-3401	251-3402	251-3403	251-3404	251-3405	251-3406	251-3407	251-3084
MT5	251-3501	251-3502	251-3503	251-3504	251-3505	251-3506	251-3507	251-3085
MT6	251-3601	251-3602	251-3603	251-3604	251-3605	251-3606	251-3607	251-3086



Dimensions (mm)

Morse Taper	D1	L1	D2	Head A L2	Head B D2 L2	Head C D2 L2	Head D D2 L2	Head E D2 D3 L2	Head F D2 L2 d	Head G D2 L2 d
2	10	20	16	39	16 35.5	16 33	16 46	25 10 40	16 36 10	20 39 16
3	12	24	20	48	20 43.5	20 40.5	18 56	35 15 50	22 42 18	35 48 30
4	15	30	28	61.5	28 55.5	28 51.5	26 73	55 30 61.5	40 55 35	55 60 48
5	20	40	36	80	36 72.45	36 66.87	36 101	70 41 78	60 81 50	70 85 61
6	30	55	55	117	55 113	55 108	50 138	90 50 107.5	75 110 60	90 116 75

Key Type Drill Chucks

Light Duty

- The light duty is suitable for general electric drill, pneumatic, impact electric drill and light duty bench drill press.



Taper Mounted

Capacity	Taper Mount	Order No.
1/64-1/4"	JT1	290-0605
1/16-3/8"	JT2	290-0615
1/16-1/2"	JT33	290-0625

Thread Mounted

Capacity	Thread Mount	Order No.
1/64-1/4"(0.6-6mm)	3/8-24UNF	290-0505
1/16-3/8"(1.5-10mm)	3/8-24UNF	290-0509
1/16-3/8"(1.5-10mm)	1/2-20UNF	290-0513
1/16-1/2"(1.5-13mm)	3/8-24UNF	290-0525
1/16-1/2"(1.5-13mm)	1/2-20UNF	290-0529
1/8-5/8"(3.0-16mm)	3/8-24UNF	290-0545
1/8-5/8"(3.0-16mm)	1/2-20UNF	290-0549
1/8-5/8"(3.0-16mm)	5/8-16UNF	290-0553
1/16-3/8"(1.5-10mm)	M10x1.0	290-0517
1/16-3/8"(1.5-10mm)	M12x1.25	290-0521
1/16-1/2"(1.5-13mm)	M12x1.0	290-0533
1/16-1/2"(1.5-13mm)	M12x1.25	290-0537
1/16-1/2"(1.5-13mm)	M14x1.0	290-0541
1/8-5/8"(3.0-16mm)	M12x1.25	290-0557

Taper Mounted

Capacity	Taper Mount	Order No.
1/64-1/4"(0.6-6mm)	B10	290-0405
1/16-3/8"(1.5-10mm)	B12	290-0409
1/16-1/2"(1.5-13mm)	B16	290-0412
1/8-5/8"(3.0-16mm)	B16	290-0416
1/8-5/8"(3.0-16mm)	B18	290-0420

Heavy Duty

- The heavy duty is suitable for using on heavy duty drill machine, lathe, and milling machine.



Taper Mounted

Capacity	Taper Mount	Order No.
0-1/4"	JT1	290-0001
0-3/8"	JT2	290-0002
0-1/2"	JT2	290-0007
0-1/2"	JT33	290-0003
0-1/2"	JT6	290-0004
1/8-5/8"	JT3	290-0008
1/8-5/8"	JT33	290-0011
1/8-5/8"	JT6	290-0012
1/32- 5/8"	JT3	290-0005
3/16-3/4"	JT3	290-0009
3/64-3/4"	JT3	290-0006
1/32-3/4"	JT4	290-0014
3/16"-1-1/32"	JT4	290-0010

Thread Mounted

Capacity	Thread Mount	Order No.
0-1/4"	3/8"-24UNF	290-0021
1/16"-3/8"	3/8"-24UNF	290-0022
0-3/8"	3/8"-24 UNF	290-0023
5/16-1/2"	3/8"-24 UNF	290-0024
5/16-1/2"	1/2"-20 UNF	290-0025
1/8-5/8"	1/2"-20 UNF	290-0026
1/8-5/8"	5/8"-16 UNF	290-0027
6mm	M10x1	290-0030
6mm	M12x1.25	290-0031
10mm	M10x1	290-0032
10mm	M12x1.25	290-0033
1.5-13mm	M12x1.25	290-0034
3-16mm	M12x1.25	290-0035
3-16mm	M16x1.5	290-0036

Keyless Drill Chucks

Light Duty Keyless Drill chuck



Thread Mounted

Capacity	Thread Mount	Dimension DxLxI	Accuracy	Order No.	Accuracy	Order No.	Accuracy	Order No.
1-10mm	M10x1	42x86x78mm	0.14mm	290-7021	0.25mm	290-7121	0.35mm	290-7221
1-13mm	M12x1.25	44x90x81mm	0.14mm	290-7025	0.25mm	290-7125	0.35mm	290-7225
3-16mm	M16x1.5mm	48x102x92mm	0.20mm	290-7029	0.25mm	290-7129	0.35mm	290-7229
1/32"-3/8"	3/8"-24UNF	42x86x78mm	0.14mm	290-7049	0.25mm	290-7149	0.35mm	290-7249
1/32"-3/8"	1/2"-20UNF	42x86x78mm	0.14mm	290-7051	0.25mm	290-7151	0.35mm	290-7251
1/32"-1/2"	1/2"-20UNF	44x90x81mm	0.14mm	290-7053	0.25mm	290-7153	0.35mm	290-7253
1/8"-5/8"	5/8"-16UNF	48x102x92mm	0.20mm	290-7059	0.25mm	290-7159	0.35mm	290-7259

Keyless Drill Chucks

Light Duty Keyless Drill chucks

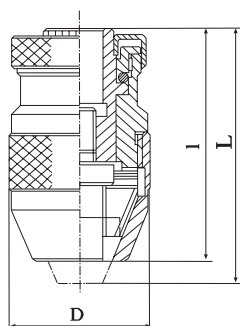
Taper Mounted



Capacity	Taper Mount	Dimension DxLxI	Accuracy	Order No.	Accuracy	Order No.	Accuracy	Order No.
1-10mm	B12	42x86x78mm	0.14mm	290-6021	0.25mm	290-6121	0.35mm	290-6221
1-13mm	B16	44x97x88mm	0.14mm	290-6025	0.25mm	290-6125	0.35mm	290-6225
3-16mm	B16	48x102x92mm	0.20mm	290-6029	0.25mm	290-6129	0.35mm	290-6229
3-16mm	B18	48x108x98mm	0.20mm	290-6031	0.25mm	290-6131	0.35mm	290-6231
1/32"-3/8"	JT2	42x86x78mm	0.14mm	290-6049	0.25mm	290-6149	0.35mm	290-6249
1/32"-1/2"	JT6	44x97x88mm	0.14mm	290-6051	0.25mm	290-6151	0.35mm	290-6251
1/32"-1/2"	JT33	44x97x88mm	0.14mm	290-6053	0.25mm	290-6153	0.35mm	290-6253
1/8"-5/8"	JT6	48x102x92mm	0.20mm	290-6055	0.25mm	290-6155	0.35mm	290-6255
1/8"-5/8"	JT3	48x108x98mm	0.20mm	290-6057	0.25mm	290-6157	0.35mm	290-6257

Heavy duty Keyless Drill chucks

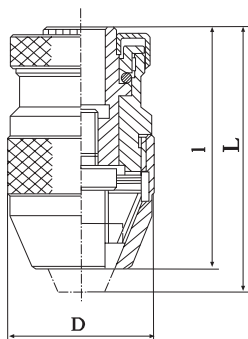
Thread Mounted



Capacity	Thread Mount	Dimension DxLxI	Accuracy	Order No.	Accuracy	Order No.	Accuracy	Order No.
0.5-8mm	M10x1	42x91x84mm	0.06mm	290-5401	0.12mm	290-5501	0.20mm	290-5601
1-10mm	M10x1	42x91x84mm	0.06mm	290-5403	0.12mm	290-5503	0.20mm	290-5603
1-13mm	M12x1.25	48x106x97mm	0.06mm	290-5405	0.12mm	290-5505	0.20mm	290-5605
1-16mm	M16x1.5	53x109x101mm	0.07mm	290-5407	0.14mm	290-5507	0.20mm	290-5607
3-16mm	M16x1.5	53x109x101mm	0.07mm	290-5409	0.14mm	290-5509	0.20mm	290-5609
1/64"-5/16"	3/8"-24UNF	42x91x84mm	0.06mm	290-5415	0.12mm	290-5515	0.20mm	290-5615
1/32"-3/8"	3/8"-24UNF	42x91x84mm	0.06mm	290-5417	0.12mm	290-5517	0.20mm	290-5617
1/32"-3/8"	1/2"-20UNF	42x91x84mm	0.06mm	290-5419	0.12mm	290-5519	0.20mm	290-5619
1/32"-1/2"	1/2"-20UNF	48x106x97mm	0.06mm	290-5421	0.12mm	290-5521	0.20mm	290-5621
1/32"-5/8"	1/2"-20UNF	53x109x101mm	0.07mm	290-5423	0.14mm	290-5523	0.20mm	290-5623
1/8"-5/8"	1/2"-20UNF	53x109x101mm	0.07mm	290-5425	0.14mm	290-5525	0.20mm	290-5625

Heavy Duty Keyless Drill Chucks

Taper mounted



Capacity	Taper Mount	Dimension DxLxI	Accuracy	Order No.	Accuracy	Order No.	Accuracy	Order No.
0.5-8mm	B12	42x91x84mm	0.06mm	290-5001	0.12mm	290-5101	0.20mm	290-5201
0.5-8mm	B16	42x91x84mm	0.06mm	290-5003	0.12mm	290-5103	0.20mm	290-5203
1-10mm	B12	42x91x84mm	0.06mm	290-5005	0.12mm	290-5105	0.20mm	290-5205
1-10mm	B16	42x91x84mm	0.06mm	290-5007	0.12mm	290-5107	0.20mm	290-5207
1-13mm	B12	48x106x97mm	0.06mm	290-5009	0.12mm	290-5109	0.20mm	290-5209
1-13mm	B16	48x106x97mm	0.06mm	290-5011	0.12mm	290-5111	0.20mm	290-5211
1-16mm	B16	53x109x101mm	0.07mm	290-5013	0.14mm	290-5113	0.20mm	290-5213
1-16mm	B18	53x109x101mm	0.07mm	290-5015	0.14mm	290-5115	0.20mm	290-5215
3-16mm	B16	53x109x101mm	0.07mm	290-5017	0.14mm	290-5117	0.20mm	290-5217
3-16mm	B18	53x109x101mm	0.07mm	290-5019	0.14mm	290-5119	0.20mm	290-5219
5-20mm	B22	62x129x119mm	0.09mm	290-5021	0.18mm	290-5121	0.20mm	290-5221
0.5-6mm	B10	35x67x61mm	0.06mm	290-5023	0.12mm	290-5123	0.20mm	290-5223
0.5-6mm	B12	35x67x61mm	0.06mm	290-5025	0.12mm	290-5125	0.20mm	290-5225
1/64"-5/16"	JT2	42x91x84mm	0.06mm	290-5029	0.12mm	290-5129	0.20mm	290-5229
1/64"-5/16"	JT33	42x91x84mm	0.06mm	290-5031	0.12mm	290-5131	0.20mm	290-5231
1/32"-3/8"	JT2	42x91x84mm	0.06mm	290-5033	0.12mm	290-5133	0.20mm	290-5233
1/32"-3/8"	JT33	42x91x84mm	0.06mm	290-5035	0.12mm	290-5135	0.20mm	290-5235
1/32"-1/2"	JT2	48x106x97mm	0.06mm	290-5037	0.12mm	290-5137	0.20mm	290-5237
1/32"-1/2"	JT33	48x106x97mm	0.06mm	290-5039	0.12mm	290-5139	0.20mm	290-5239
1/32"-1/2"	JT6	48x106x97mm	0.06mm	290-5041	0.12mm	290-5141	0.20mm	290-5241
1/32"-5/8"	JT3	53x109x101mm	0.07mm	290-5043	0.14mm	290-5143	0.20mm	290-5243
1/32"-5/8"	JT6	53x109x101mm	0.07mm	290-5045	0.14mm	290-5145	0.20mm	290-5245
1/8"-5/8"	JT3	53x109x101mm	0.07mm	290-5047	0.14mm	290-5147	0.20mm	290-5247
1/8"-5/8"	JT6	53x109x101mm	0.07mm	290-5049	0.14mm	290-5149	0.20mm	290-5249
3/16"-3/4"	JT3	62x129x119mm	0.09mm	290-5051	0.18mm	290-5151	0.20mm	290-5251
1/64"-1/4"	JT1	35x67x61mm	0.06mm	290-5053	0.12mm	290-5153	0.20mm	290-5253

Drill Chuck Arbors

R8 to Jacobs Taper



Jacobs Taper	R8 Shank Order No.
JT 0	290-0800
JT 1	290-0801
JT 2	290-0802
JT 3	290-0803
JT 4	290-0804
JT 5	290-0805
JT 6	290-0806
JT 33	290-0833

MT Shank to Jacobs Taper



Jacobs Taper	MT0 Order No.	MT1 Order No.	MT2 Order No.	MT3 Order No.	MT4 Order No.	MT5 Order No.	MT6 Order No.
JT 0	290-1000	290-1100	290-1200	290-1300	290-1400	290-1500	290-2700
JT 1	290-1001	290-1101	290-1201	290-1301	290-1401	290-1501	290-2701
JT 2	290-1002	290-1102	290-1202	290-1302	290-1402	290-1502	290-2702
JT 3	290-1003	290-1103	290-1203	290-1303	290-1403	290-1503	290-2703
JT 4	290-1004	290-1104	290-1204	290-1304	290-1404	290-1504	290-2704
JT 5	290-1005	290-1105	290-1205	290-1305	290-1405	290-1505	290-2705
JT 6	290-1006	290-1106	290-1206	290-1306	290-1406	290-1506	290-2706
JT 33	290-1033	290-1133	290-1233	290-1333	290-1433	290-1533	290-2733

30, 40, 50 Shank to Jacobs Taper



Jacobs Taper	ISO 30 Order No.	ISO 40 Order No.	ISO 45 Order No.	ISO 50 Order No.
JT 0	290-2300	290-2400	290-2600	290-2500
JT 1	290-2301	290-2401	290-2601	290-2501
JT 2	290-2302	290-2402	290-2602	290-2502
JT 3	290-2303	290-2403	290-2603	290-2503
JT 4	290-2304	290-2404	290-2604	290-2504
JT 5	290-2305	290-2405	290-2605	290-2505
JT 6	290-2306	290-2406	290-2606	290-2506
JT 33	290-2333	290-2433	290-2633	290-2533

Straight Shank to Jacobs Taper



Jacobs Taper	1/2" Straight Shank Order No.	5/8" Straight Shank Order No.	3/4" Straight Shank Order No.	7/8" Straight Shank Order No.	1" Straight Shank Order No.	1-1/2" Straight Shank Order No.	1-3/4" Straight Shank Order No.
JT 0	290-1600	290-1700	290-1800	290-1900	290-2000	290-2100	290-2200
JT 1	290-1601	290-1701	290-1801	290-1901	290-2001	290-2101	290-2201
JT 2	290-1602	290-1702	290-1802	290-1902	290-2002	290-2102	290-2202
JT 3	290-1603	290-1703	290-1803	290-1903	290-2003	290-2103	290-2203
JT 4	290-1604	290-1704	290-1804	290-1904	290-2004	290-2104	290-2204
JT 5	290-1605	290-1705	290-1805	290-1905	290-2005	290-2105	290-2205
JT 6	290-1606	290-1706	290-1806	290-1906	290-2006	290-2106	290-2206
JT 33	290-1633	290-1733	290-1833	290-1933	290-2033	290-2133	290-2233

Straight Shank to Threaded Shank



Size	Order No.
straight shank 1/2" to 3/8"-24	290-2902

MT to Threaded Shank



Size	Order No.
MT2 to 3/8"-24	290-2910
MT2 to 1/2"-20	290-2912
MT2 to 5/8"-16	290-2914
MT3 to 1/2"-13	290-2916
MT3 to 5/8"-16	290-2918

Vertical 5C Angle Collet Fixture

Model A

Base Size: 2-1/2"x7-3/4"

Height: 4"

Order No. 235-6090



H/V 5C Angle Collet Fixture

Model C



Base In Horizontal	Height In Horizontal	Base In Vertical	Height In Vertical	Order No.
5x4"	3-5/8"	5x3-5/8"	4"	235-6080

H/V 5C Angle Collet Fixture

Model B

Base Size: 4-1/4"x4-1/4"

Height: 4"-1/4"

Order No. 235-6095



H/V 5C Angle Collet Fixture

Model D



Base	Height	Order No.
5x3-5/8"	3-3/4"	235-6085

5C Collet Index Fixture

- Threaded spindle is hardened and ground (2-1/4"-8TPI).
- Single lever action activates the indexing mechanism.
- Precision ground index plate has 24 indexing locations in fifteen degree.
- 15° increments, any of which can be masked for greater versatility.

Specifications	Max Var.
Dividing spindle concentricity	.004"
Cylinder center bore (per 1") concentricity	.008"
Lateral offset of center slot of dividing spindle	.008"
Center slot to dividing spindle concentric	.008"
Spindle center line parallelism	.008"



Order No. 235-6200

5C Collet Index Fixture

Great for drilling, milling, grinding and locating angles.
Precision ground spindle
Plate can be bolted to top of drill bushing
Use in vertical position with angle plate
Model 5C complete with 24 space ring and 5C draw nut.



Order No. 235-6081

5C Spin Index Fixtures

- Hardened and precision ground spindle.
- Direct indexing in ten steps, graduated in 5° increments.
- Applicable to all milling machines, surface grinders and inspection equipment.
- Precision ground 36 position index plate.
- .0004" T.I.R spindle accuracy.
- Super time saver.



Descriptions	Order No.
5C Spin Index Fixture Only	235-6011
5C Spin Index Fixture(235-6011) & Tailstock(200-1104)	235-6012

5C Collet Chuck

Designed for 5C Collets
Used for clamping tools or workpieces in turning, grinding, boring and milling machines
Supplied with wrench

Fixture outside diameter size: 5"/126mm

Collet capacity:

Round 5C collets: 3/64-1-1/8"(1-28mm)

Square 5C collets: 1/8-3/4"(3-19mm)

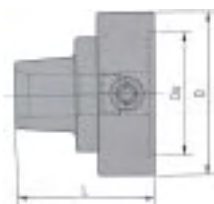
Hex 5C collets: 1/8-7/8"(3-22mm)

Max. RPM: 6000

Weight: Approx: 10lbs



Model	Order No.
D1-4 Spindle	235-6020
D1-5 Spindle	235-6021
D1-6 Spindle	235-6022
Plain Back	235-6023



Blade Resharpener Fixture

This fixture accommodates all APT MULTI-TOOL blade diameters and thicknesses. The correct end tooth relief angle is built into the fixture marking resharpener simple, accurate and inexpensive on any surface grinder.



Order No. 209-9012

End Mill Grinding Fixture

- The fixture uses 5C collects (no more bushings to lose) which means any shank-size end mill from 1/16" to 1-1/8" can be ground. Shell mills can easily be held with straight shank arbors.
- Grinds 2,3,4,6,8 & 12 fluted end mills and shell mills. Faces only!
- Clearance and relief angles are built into base.
- Solid 2-1/2" x 4-1/2" base ground on bottom for sure contact with magnet.
- Black oxide finish.



Order No. 287-6000

End Mill Cutters/Sharpener

Type 287

- Designed to accomplish all sharpening need.
- Diameter of shank of end mill is 3/8, 1/2", 5/8".
- It may be equally divided to 2,3,4,6,8.



Order No. 231-0287

End Mill Sharpener

- Designed to accomplish all sharpening needs. No need to send out tools. Specials as standards can be sharpened.
- Spindles and bushings to cover the full range of 3/16" up to 1-1/4"
- Shank end-mills are supplied. Will accept cutters with diameters up to 12", and even larger with the use of "riser blocks".
- Quickly sharpens cutters and end-mills right on your tool or surface grinder.
- Two spindles and four bushings cover the full range of 3/16", 3/8", 1/2", 5/8", 3/4", 7/8", 1" and 1-1/4" shank end-mills.
- Accept double end, end-mills



Order No. 287-6530

Specifications	Maximum Variation
Spindle center line to base parallelism (per 12"	0.0024"
Body to stand concentricity	0.0012"
Repeat accuracy	0.0012"

Electric Drill Sharpener

- Volt/Frequency: 110V/60Hz, or 230V/50Hz.
- Input Power: 70 Watts.
- Max. Speed: 1600 RPM.
- Sharpening Size: 9/64"-25/64"/3.6-10mm.
- Comes with sharpening wheel-80 grit 60mm diameter.
- Net Weight: 3.50LBS/1.60Kg.



Order No. 287-6520

Grinding Carrier Sets



Workpiece Dia.	Order No.	Workpiece Dia.	Order No.
1/4"	262-8100	1"	262-8125
3/8"	262-8105	1-1/4"	262-8130
1/2"	262-8110	1-1/2"	262-8135
5/8"	262-8115	1-3/4"	262-8140
3/4"	262-8120	2"	262-8145

Center & Follower Rests



Center Rest Height	Follower Rest Height	Order No.
150mm	140mm	200-2540
230mm	187mm	200-2542
200mm	157mm	200-2544
180mm	137mm	200-2546
160mm	126mm	200-2548
170mm	144mm	200-2550
150mm	124mm	200-2552

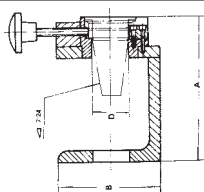
Lathe Dogs

Bent



Workpiece Dia.	Order No.	Workpiece Dia.	Order No.
1/2"	262-8000	2"	262-8030
3/4"	262-8005	2- 1/2"	262-8035
1"	262-8010	3"	262-8040
1-1/4"	262-8015	4"	262-8045
1-1/2"	262-8020	5"	262-8050
1-3/4"	262-8025	6"	262-8055

H&V Tool Locking Fixtures



Model	D	A	B	Order No.
BT(JT,CT) 30	32	180	130	235-6016
BT(JT,CT) 40	44.5	180	130	235-6017
BT(JT,CT) 45	57.2	235	175	235-6018
BT(JT,CT) 50	70	235	175	235-6019

3-Jaws Punch Former

This Punch Former is attached with 3 jaws which can hold workpieces quickly and conveniently. It can also adjust center of 3 jaws.

Main Parameters:

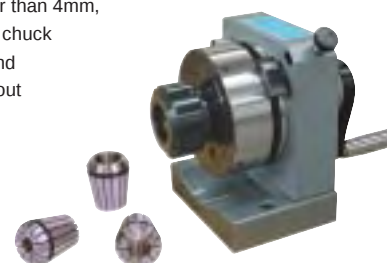
3 jaws hole diameter 16mm
Min clamping diameter 2mm
Max clamping diameter 70mm



Order No.287-6807

Collet Punch Former

- Clamping diameter: $\phi 2-\phi 20$ mm
- Supply ER32 collete size: 4, 6, 8, 10, 12, 16, 20, 7Pcs in total
- For workpiece diameter smaller than 4mm, use shank 20mm/ER16 collet chuck
- It clamps workpiece quickly and steadily when processing without checking the center



Order No.287-6808

Big Type Punch Former

One-Way

- This Punch Former is applicable on surface grinder or universal grinder to clamp puncher within $\phi 70$ mm for grinding various shapes.

Main Parameters:

Center height: 150mm
Clamping diameter in V-slot: 70mm
Travel of V-block: 25mm
Quantity of teeth: 24



Order No.287-6812

Two-Way

- This Punch Former is applicable on surface grinder or universal grinder to clamp puncher within $\phi 70$ mm for grinding various shapes.
- It can shape quickly and precisely, with the moving function and fixing block for oval grinding.
- The fine truning funtion can adjust center accurately. Using the fixing block and folding down the screw when mouse much, can grind oval workpiece conveniently.

Main Parameters:

Center height: 150mm
Clamping diameter in V-slot: 70mm
Travel of V-block: 35mm
Transveral travel of slide: +/-35mm
Quantity of teeth: 24



Order No.287-6813

Universal Dividing Heads

The dividing head is designed as an accessory for milling machine and other machine tools which help the machining on dividing the workpieces into any desired angles. Moreover, with the help of the dividing head, grooves, slots, gears, helical gears, Archimedes cams and helical curves can be achieved on the machines.



Accessories: Tailstock, Gear Bracket, Change Gear Jack, Center, Carrier, Dividing Plate, Flange, Vernier Dial, 3 Jaw Chuck

Specifications	Order No. 235-6008	Order No. 235-6100	Order No. 235-6125	Order No. 235-6160
Center Height	80mm/3.15"	100mm/3.94"	125mm/4.92"	160mm/6.30"
Tilting Angle of The Spindle	>=95°; >=5°	>=95°; >=5°	>=95°; >=5°	>=95°; >=5°
Rotating Angle of the Spindle for One Complete Revolution of the Dividing Handle	9°	9°	9°	9°
Graduation	10 Second	10 Second	10 Second	10 Second
Worm Gear Ratio	1:40	1:40	1:40	1:40
Diameter of Spindle Register Taper	36.541mm/1.441"	41.275mm/1.63"	53.975mm/2.13"	53.975mm/2.13"
Spindle Taper	MT3	MT3	MT4	MT4
Width of The Locating Key	14mm/.55"	14mm/.55"	18mm/.71"	18mm/.71"
Module of Change Gears	1.5mm/0.06"	1.5mm/0.06"	2mm/0.08"	2mm/0.08"
Hole Number of Dividing Plate for All (First Face)	24,25,28,30,34,37,38,39,41,42,43			
Hole Number of Dividing Plate for All (Second Face)	46,47,49,51,53,54,57,58,59,62,66			
Teeth Number of Change Gears for All	25,25,30,35,40,50,55,60,70,80,90,100			
Individual Indexing Error of the spindle for one complete revolution of dividing handle	60 Second	+/-45 Second	+/-45 Second	+/-45 Second

Horizontal/Vertical Indexing Fixtures

- Designed for milling, drilling, jig boring, and many other shop applications.
- Hardened and ground 24 position index plate (15 degree increments).
- 360 degree satin chrome grauated ring with 5 minute adjustable vernier plate insures accurate readings.
- Fast and simple indexing of 2,3,4,6,8,12 divisions.

Specifications

Indexing unit complete with 3 jaw Chuck and 6 masking plate.

Squareness (table base to chuck)...0.0008"

Parallelism (face to face).....0.0006"

Concentricity(mounting flange).....0.0008"

Concentricity (chuck).....0.0012"

Indexing Fixtures

Size of Chuck	Thru Hole Dia.	Order No.
6"	1-23/32"	200-2006
8	2-15/32	200-2008

Optional Face Plates

Description	Order No.
For 6" Indexing Fixture	200-2016
For 8" Indexing Fixture	200-2018

Super Horizontal/Vertical Indexing Fixtures

- Designed for milling, drilling, jig boring, and many other shop applications.
- Hardened and ground 24 position index plate (15 degree increments).
- 360 degree satin chrome grauated ring with **10 SECOND** adjustable vernier plate insures accurate readings.
- Fast and simple indexing of 2,3,4,6,8,12 divisions.

Specifications

Indexing unit complete with 3 jaw Chuck and 6 masking plate and face plate

Vernier Reading.....10 seconds

Squareness (table base to chuck).....0.0008"

Parallelism (face to face).....0.0004"

Concentricity(mounting flange).....0.0008"

Concentricity (chuck).....0.0012"



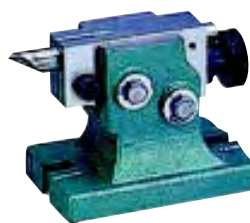
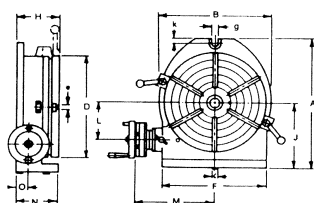
Indexing Fixtures

Size of Chuck	Thru Hole Dia.	Order No.
6"	1-23/32"	200-2106
8	2-15/32	200-2108

Optional Face Plates

Description	Order No.
For 6" Indexing Fixture	200-2016
For 8" Indexing Fixture	200-2018

High Precision Horizontal/Vertical Rotary Tables



- Extra deep coolant channel.
- Dual positive action locks.

Optional Tailstock

- Gear drive immersed in oil.
- Optional dividing plates and tailstock.
- Gear Ratio 90:1.

Optional Dividing Plates

- Graduated 360°
- Low profile.
- 10 second vernier reading.

H/V Rotary Tables

Descriptions	Order No.
8" Horizontal & Vertical Table (YUASA TYPE)	200-1143
10" Horizontal & Vertical Table (YUASA TYPE)	200-1153
12" Horizontal & Vertical Table (YUASA TYPE)	200-1163
4" Horizontal & Vertical Table	200-1089
6" Horizontal & Vertical Table	200-1090
8" Horizontal & Vertical Table	200-1091
10" Horizontal & Vertical Table	200-1093
12" Horizontal & Vertical Table	200-1095
16" Horizontal & Vertical Table	200-1097

Optional Accessories

Descriptions	Order No.
Dividing Plate (fits all except 6")	200-1096
Adjustable Tailstock for 8" & 10"	200-1098
Adjustable Tailstock for 12"	200-1100

Specification

Specifications	Maximum Variation (inches/second)
Clamping surface flatness(concave)	.0006"
Cylindrical center bore concentricity	.0008"
Taper center bore concentricity	.0008"
Surface to base parallelism	.0008"
Surface to angle face squareness	.0004
Surface to center slot squareness	.0008"

Dimensions

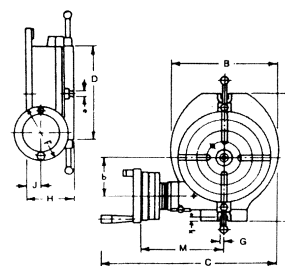
Table Dia.	A	B	C	D	E	F	G	H	J	K	L	M	N	O	T-Slot Width	Net Weight	Shipping Weight	Order No.
8"	11.200	9.400	0.650	7.827	3MT	8.203	0.570	3.944	5.985	0.610	3.700	7.830	3.880	1.900	0.465	64lbs	95lbs	200-1143
10	12.900	11.300	0.552	9.800	3MT	9.960	0.562	4.330	6.750	0.562	4.100	8.625	4.175	1.900	0.465	94lbs	135lbs	200-1153
12	16.125	14.250	0.710	15-5/8	4MT	12.625	0.725	4.750	8.250	0.725	5.250	10.250	4.640	1.900	0.545	209lbs	250lbs	200-1163

High Precision Horizontal Rotary Tables



Special design features include:

- Graduated 360°
- Low profile.
- Satin chrome dials.
- Extra deep coolant channel.
- Dual positive action locks.
- Gear ratio 90:1.



Rotary Tables

Descriptions	Order No.
6" Horizontal	200-1076
8" Horizontal	200-1078
10" Horizontal	200-1080
12" Horizontal	200-1082

Specification

Specifications	Maximum Variation (inches/second)
Clamping surface flatness(concave)	.0006"
Cylindrical center bore concentricity	.0008"
Taper center bore concentricity	.0008"
Surface to base parallelism	.0008"
Surface to angle face squareness	.0004"
Surface to center slot squareness	.0008"

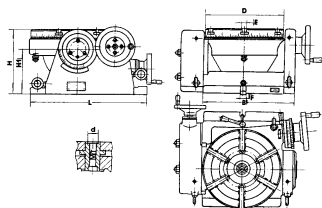
Optional Dividing Plate(Order No. 200-1096)

- Gear drive immersed in oil.
- 10 second vernier reading.
- Fits all tables except 6".

Dimensions

Table Dia.	A	B	C	D	E	F	G	H	J	K	L	M	T-Slot Width	Net Weight	Shipping Weight	Order No.
6"	10-1/4	7-3/4	13-1/16	6-19/64	2MT	4-15/16	0.224	3-5/64	1	45/64	3	5	0.39	36lbs	48lbs	200-1076
8	11-7/6	9-5/16	14-1/4	7-7/8	3MT	4-15/16	9/32	3-7/32	1	13/16	3-1/2	5-11/16	0.456	50lbs	61lbs	200-1078
10	13	11-1/4	16-5/8	9-15/16	3MT	4-15/16	9/32	3-11/16	1	13/16	3-7/8	9-1/2	0.465	82lbs	93lbs	200-1080
12	16-1/8	14-3/16	19-9/16	12-5/8	4MT	4-15/16	0.354	4-1/16	1-3/8	1	4-1/4	12-5/16	0.545	153lbs	167lbs	200-1082

Precision Inclineable Rotary Tables



- Gear drive immersed in oil.
- 10 second vernier reading.
- Optional dividing plates and tailstock.
- Dual positive action locks.
- Extra deep coolant channel.
- Satin chrome dials.
- Gear ratio 90:1.
- Low profile.

Rotary Tables

Descriptions	Order No.
10" inclineable rotary table	200-1915
12" inclineable rotary table	200-1917

Specification

Specifications	Maximum Variation (inches/econd)
Clamping surface flatness(concave)	.0006"
Cylindrical center bore concentricity	.0008"
Taper center bore concentricity	.0008"
Surface to base parallelism	.0008"
Surface to angle face squareness	.0004"
Surface to center slot squareness	.0008"

Dimensions

Table	Table	Center	Base	Base	T-slot	Center	Center	Center	Center
Outer Dia.	Height	Height	Dia.	Dia.	Width	Hole	Taper	Weight	
D	H	H1	B	L	E	F	D		
9.81	8.07	5.51	10.24	12.2	0.47	0.55	1.2	MT-3	172
12.6	10.04	6.89	13.07	14.96	0.55	0.71	1.6	MT-4	293

Milling & Drilling Table

Suitable for all kinds of precision machining operations. Easy to read dials are graduated in .001". Dovetail slides have adjustable steel gibs to compensate for wear. T-slots are 5/8" wide x 7/16" deep.



Order No.	201-2524
Size	7x7(Rotatable 360°)
Height	4-1/8"
Travel	4 on each axis
Base Size	4-5/8" diameter
Mounting	1-1/8" Long Base Bolt
Weight	35 lbs

Single Slide Table

A heavy, rugged slide used in all kinds of positioning, milling, drilling, microscope viewing and staging, adjustable bases for heavy loads, small jig boring, precision cut-off.



Order No.	200-2539
Table	5-1/2" x 12"
T-Slots	on 2-1/2" centers
Height	3-3/4"
Travel	8"
Weight	35 lbs

Compound Sliding Tables

with Calibrated Wheels and Calibrated Swivel Table



Description	Order No. 200-2707	Order No. 200-2708
Size of Table	11-13/16x7-7/8	7-7/8x7-7/8
Height Overall	5-1/2	6-7/8
Length Overall	20-3/32	13-25/32
Size of Slots	7/16	3/8
Sliding	7-7/8	4-29/32
Graduation	.001"	.001"
Weight (Approx.)	84lbs	44lbs

Compound Slide Tables

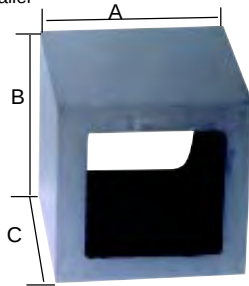
A heavy, rugged slide used in all kinds of positioning, milling, drilling, microscope viewing and staging, adjustable bases for heavy loads, small jig boring, precision cutter.



Order No.	200-2535	Order No. 200-2536	Order No. 200-2537
Desc.	200-2535	200-2536	200-2537
Table	4"x6"	5-1/2"x12"	6"x18"
T-Slot Size	3/8"	5/8"	5/8"
Height	6-7/8"	4-1/2"	5"
Travel	3-1/5"	6-1/2"/4-1/3"	13"/6"
Base Size		9"x8"	10-1/2"x8"

Box Parallels

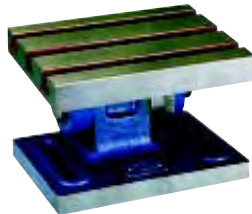
- Made of high quality fine grained cast iron, stress relieved.
- All faces and ends finished square and parallel.
- Machined finish-Size $\pm 0.015"$. Square and parallel within 0.002". per 6"
- Ground finish - Size $\pm 0.002"$ Square and parallel within 0.0005" per 6"



A	B	C	Wall Thickness	Wt (lbs)	Machined Order No.	Ground Order No.
4"	4"	5"	5/8"	12	418-4000	418-4020
4"	4"	6"	3/4"	16	418-4002	418-4022
5"	5"	5"	3/4"	17	418-4004	418-4024
4"	6"	6"	3/4"	20	418-4006	418-4026
6"	6"	6"	3/4"	25	418-4008	418-4028
6"	6"	8"	3/4"	35	418-4010	418-4030
5"	10"	10"	3/4"	73	418-4012	418-4032
6"	12"	12"	3/4"	105	418-4014	418-4034
8"	8"	8"	5/8"	71	418-4016	418-4036
10"	10"	10"			418-4018	418-4038

Swivel Angle Tables

- Adjustable heavy castings.
- Rugged construction.
- Machined "T" slots.
- SAVES job set-up time in operation.
- Graduated for 90 tilt.
- Accuracy of table surface 0.0005mm

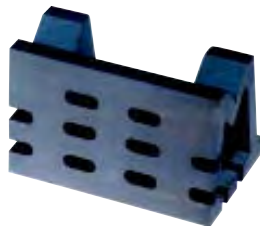


Size	Height	T-Slot	Order No.
5 x 6"	4-1/2"	3/8"	200-1305
6 x 8	5	3/8	200-1306
8 x 10	6-1/2	7/16	200-1308
10 x 12	8	1/2	200-1310
12x5	9	9/16	200-1312

Vee Angle Plates

The V-Angle is manufactured from a high grade cast iron that is fully stress relieved to give stability through out its working life.

The V-Angle has many more clamping positions than an ordinary angle plate. Its design allows almost any shape to be clamped securely, and all types of clamps to be used.



Size	Order No.
3 x 3 x 5"	418-4905
4 x 4 x 6"	418-4906
5 x 5 x 7"	418-4907
6 x 6 x 8"	418-4908

Adjustable Angle Plates

Heavy machined casting. Adjustable 45 in either direction. Crank handle for easy and precise adjustment.

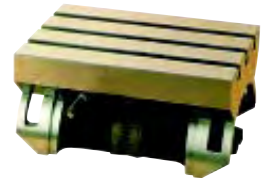


Plate Size (In)	Height (In)	T-Slot (In)	Order No.
5 x 7"	3-7/8"	3/8"	200-1105
7 x 10	5-3/16	7/16	200-1110
9 x 12	6-7/16	1/2	200-1112
10 x 15	7-3/8	9/16	200-1115
12 x 24	8-1/8	11/16	200-1124

Swivel Angle Plates

- Perfect for setting work at any angle during milling or other operations.
- Heavy rugged graded casting.
- Machined "T" slots.
- Graduated 90° for setting 45° on each side.
- Accuracy of table surface 0.0005mm

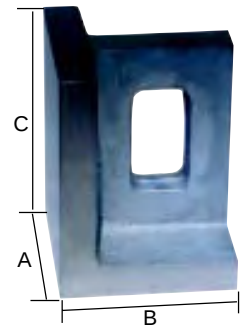


Size	Height	T-Slot	Order No.
5 x 7"	3-3/4"	3/8"	200-1205
7 x 10"	5"	1/2"	200-1207
10 x 15"	6-3/4"	9/16"	200-1210

Universal Right Angle Plates

Machined or Precision Ground

Made of finest quality, close grained semi-steel castings, stress relieved against distortion by annealing after seasoning. All outside surfaces closely finished for square and parallel references: Machined Square and parallel within 0.002" per 6". Precision ground: Square within 0.0005" per 6". Parallel within 0.00025" per 6".

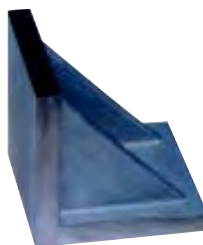


A	B	C	Machine Finished Order No.	Ground Finished Order No.
3-3/4"	4"	5"	418-4105	418-4205
4"	4"	6"	418-4110	418-4210
4"	5"	6"	418-4115	418-4215
4-1/2"	5"	8"	418-4120	418-4220
5"	8"	12"	418-4125	418-4225
5-1/2"	7"	10"	418-4130	418-4230
5-1/2"	8"	10"	418-4135	418-4235
6"	6"	8"	418-4140	418-4240
8"	10"	12"	418-4145	418-4245
8"	9"	16"	418-4150	418-4250
10"	12"	16"	418-4155	418-4255
12	12"	24"	418-4160	418-4260

Plain Angle Plates

Machined or Precision Ground

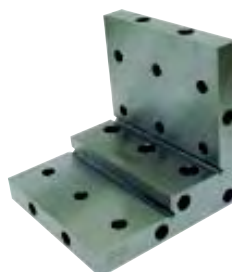
- Made from high tensile cast iron normalized and stress relieved.
- Machined: Flat and square within 0.002" per 6" for general work.
- Precision ground: flat and square within 0.0005" per 6" for layout and inspection or precision machine.



Size	No. of Ribs	Machined Order No.	Ground Order No.
2 x 2 x 2"	1	418-4310	418-4410
3 x 3 x 3"	1	418-4315	418-4415
4 x 4 x 4"	2	418-4320	418-4420
5 x 5 x 5"	2	418-4325	418-4425
6 x 6 x 6"	2	418-4330	418-4430
8 x 8 x 8"	2	418-4335	418-4435
10 x 10 x 10"	2	418-4340	418-4440
12 x 12 x 12"	2	418-4345	418-4445

Stepped Angle Plates

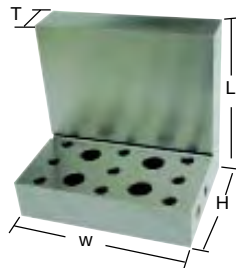
- Manufactured from a single piece of hardened tool steel.
- Precision ground, square and parallel.
- A convenient step of 1-1/4"(32mm) down from the top and a 1/2"(12mm) seat allows for use with smaller work pieces.
- 24 Tapped holes allow for fastening to fixtures and clamping work to the angle plate.
- Ground flat, square & parallel within .0002".



Dimensions Inch/Metric	Thread of Tapped Holes	Order No.
3x3x3"(75x75x75mm)	1/4"-20	418-4978
4x4x4(100x100x100)	5/16"-18	418-4980
4x4x4(100x100x100)	1/4"-20	418-4981

Precision Steel Angle Plates

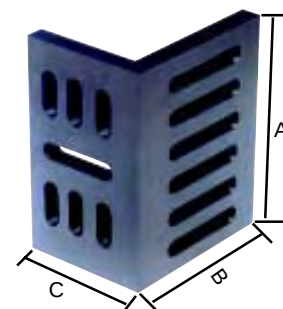
- Solid 1 piece steel construction for longer life.
- Hardened to RC 58-62.
- Ground flat, square & parallel within .0002".
- Tapped holes are either 1/4-20 or 3/8-16 to use standard clamping accessories.



L	w	H	T	Tapped Holes	Order No.
3"	3"	4"	1"	(13)1/4"-20	418-4970
3	4	4	1-1/8	(31)1/4"-20	418-4972
4	4	4	1-1/4	(13)1/4"-20	418-4974
4	4	6	1-1/4	(14)3/8-16	418-4976
4	6	6	1-1/4	(33)1/4"-20	418-4982

Slotted Angle Plates

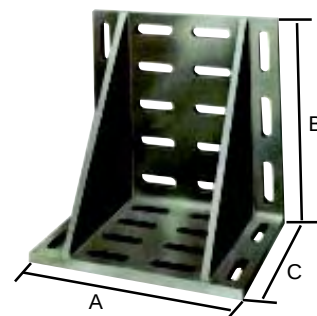
- Made of high tensile cast iron properly seasoned against distortion.
- webbed style accurately machined, square parallel on outside faces and ends.
- Open end style accurately machined square and parallel on a ll faces.



Dimensions			Webbed Machined Order No.	Webbed Ground Order No.	Open end Machined Order No.	Open end Ground Order No.
A	B	C				
3"	2-1/2"	2"	418-4510	418-4612	418-4710	418-4812
3-1/2"	3"	2-1/2"	418-4515	418-4617	418-4715	418-4817
4-1/2"	3-1/2"	3"	418-4520	418-4622	418-4720	418-4822
6"	5"	4-1/2"	418-4525	418-4627	418-4725	418-4827
7"	5-1/2"	4-1/2"	418-4530	418-4632	418-4730	418-4832
8"	6"	5"	418-4535	418-4637	418-4735	418-4837
9"	7"	6"	418-4540	418-4642	418-4740	418-4842
10"	8"	6"	418-4545	418-4647	418-4745	418-4847
12"	9"	8"	418-4550	418-4652	418-4750	418-4752

Giant Slotted Angle Plates

- Made from high tensile cast-iron normalized and stress relieved.
- Machined flat and square within 0.002" per 6" for general work.



Dimensions			Order No.
A	B	C	
16"	12"	9"	418-4916
20"	16"	12"	418-4920
24"	24"	18"	418-4924
36"	24"	24"	418-4936

Compound Angle Plate

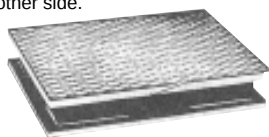
- Solid one piece construction.
- Made of steel, hardened to PC 58-62, and ground flat.
- Square and parallel within .0002".
- Features ground vees for convenient holding of small round parts.
- Includes one clamp.



Dimensions	Tapped Holes	Order No.
6"long x 4"high x 1" thick	(16)1/4"-20	418-4910

Lapping Bench Plate

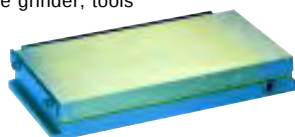
- Precision ground on one side, ground on the other side.
- Made of casting iron.
- Size: 10"x14"x2-3/4"



Size	Order No.
Size: 10"x14"x2-3/4"	640-0000

Dense Permanent Magnetic Chucks

Dense permanent magnetic chuck can be used for processing various magnetic conduction work pieces, especially thin and small pieces, in surface grinder, tools grinder and electric sparks machine tools.



Dimensions	Order No.
4 x 7"	285-0160
5 x 10"	285-0170
6 x 12"	285-0180
6 x 18"	285-0190
8 x 24"	285-0200

Powerful Permanent Magnetic Chucks

Powerful permanent magnetic chuck has a magnetic strength of 12 - 15 kg/cm, suitable for powerful milling and grinding.



Dimensions	Order No.
4 x 7"	285-0300
6 x 12"	285-0310
8 x 20"	285-0370
10 x 15"	285-0390

Precision Sine Plates

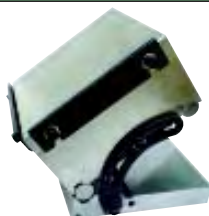
- Squareness & Parallelism: 0.0002".
- Hardened steel.



Size	Order No.
4x4x2"	647-7580
6x6x2-1/4"	647-7590

Magnetic Sine Plates

Using ceramic permanent magnets which cannot be demagnetized, these magnetic Sine Plates are designed for the precise angular positioning and holding of small or odd-shaped workpieces. Fine pole division permits more uniform magnetic holding. Sine plate angles lock rigidly with locking strap. Removable handle included for on-off.



Dimension	Center dist. of Rolls	Order No.
4x4x4-5/8"	3" Within .0002"	647-5544
6x6x4-5/8"	5" Within .0002"	647-5566

Circular Permanent Magnetic Chucks

Circular permanent magnetic chuck is used for holding work pieces in grinder, lathe and bench work.



Dia.	Order No.
6"	285-1206
8"	285-1208
10"	285-1210
12"	285-1211

Big Type Punch Formers

One-Way

This Punch Former is applicable on surface grinder or universal grinder to clamp puncher within $\phi 70$ mm for grinding various shapes.

Main Parameters:

Center height: 150mm
Clamping diameter in V-slot: 70mm
Travel of V-block: 25mm
Quantity of teeth: 24



OrderNo.287-6812

Two-Way

- It can shape quickly and precisely, with the moving function and fixing block for oval grinding.
- The fine tuning function can adjust center accurately. Using the fixing block and folding down the screw when mouse much, can grind oval workpiece conveniently.

Main Parameters:

Center height: 150mm
Clamping diameter in V-slot: 70mm
Travel of V-block: 35mm
Transversal travel of slide: +/-35mm
Quantity of teeth: 24



OrderNo.287-6813

Collet Punch Former

- Clamping diameter: $\phi 2-\phi 20$ mm
- Supply ER32 collete size: 4, 6, 8, 10, 12, 16, 20, 7Pcs in total
- For workpiece diameter smaller than 4mm, use shank 20mm/ER16 collet chuck
- It clamps workpiece quickly and steadily when processing without checking the center



OrderNo.287-6808

3-Jaws Punch Former

This Punch Former is attached with 3 jaws which can hold workpieces quickly and conveniently. It can also adjust center of 3 jaws.

Main Parameters:

3 jaws hole diameter 16mm
Min clamping diameter 2mm
Max clamping diameter 70mm



OrderNo.287-6807

2-Jaw Self-Centering Chucks

- Standard Accuracy.
- Semi-Steel Body.
- Soft two piece hard reversible jaws.
- Shape to Fit work pieces.
- 1 Chuck wrench.



Chuck Dia.	Thru Hole	Order No.
6"	1.65"	428-7106
8	2.16	428-7108
10	2.99	428-7110
12	4.05	428-7112

Chuck Dia.	Thru Hole	Order No.
160mm	42mm	428-7206
200mm	55mm	428-7208
250mm	76mm	428-7210
325mm	103mm	428-7212

3-Jaw Plain Back Self-Centering Chucks

- Self-Centering 0.003" T.I.R.
- Semi-Steel Body.
- 2 sets solid jaws.
- 2 Pc. hard reversible jaws.
- 1 Chuck wrench.



Chucks with 2 sets solid jaws

Chuck Dia.	Thru Hole	Order No.
3"	.630"	429-3003
4"	.866"	429-3004
5"	1.181"	429-3005
6"	1.575"	429-3006
8"	2.559"	429-3008
10"	3.150"	429-3010
12"	3.937"	429-3012
15"	4.000"	429-3015

Chuck Dia.	Thru Hole	Order No.
80mm	16mm	429-3023
100mm	22mm	429-3024
125mm	30mm	429-3025
150mm	40mm	429-3026
200mm	65mm	429-3028
250mm	80mm	429-3030
325mm	100mm	429-3032
380mm	135mm	429-3035



Chucks with 2 piece reversible jaws

Chuck Dia.	Thru Hole	Order No.
6"	1.575"	428-7006
8"	2.559"	428-7008
10"	3.150"	428-7010
12"	3.937"	428-7012
15"	5.32"	428-7015
16"	5.11"	428-7016

Chuck Dia.	Thru Hole	Order No.
160mm	40mm	428-7026
200mm	65mm	428-7028
250mm	80mm	428-7030
325mm	100mm	428-7032
380mm	135mm	428-7035
400mm	130mm	428-7036

3-Jaw Shank Type Self-Centering Chucks

Scroll type chucks come with attached 5C, R8 or MT Mounting Shank, 2 set of solid jaws and one chuck wrench.



Chuck Dia.	5C Shank Order No.	R8 Shank Order No.	MT2 Shank Order No.
3"	230-6003	230-6013	230-6023
4	230-6004	230-6014	230-6024
5	230-6005	230-6015	
6	230-6006	230-6016	

3-Jaw Direct Mounting D Series Chucks

Universal

the advantage of using a direct mount chuck is extra working capacity on the lathe due to a shorter overall length with the integral camlock mount.

- Self-Centering .
- Semi-Steel body.
- Camlock spindle "D" Series.



Chuck Dia.	To Fit Spindle	Thru Hole	Order No.
6"	D1-3	1.575"	429-3063
6"	D1-4	1.575"	429-3064
6"	D1-5	1.575"	429-3065
8"	D1-4	1.969"	429-3084
8"	D1-5	1.969"	429-3085
8"	D1-6	1.969"	429-3086
10"	D1-5	2.756"	429-3105
10"	D1-6	2.756"	429-3106
10"	D1-8	2.756"	429-3108
12"	D1-11	3.937"	429-3121
12"	D1-6	3.937"	429-3126
12"	D1-8	3.937"	429-3128
15"	D1-11	5.11"	429-3151
15"	D1-8	5.11"	429-3158
16"	D1-11	4.95"	429-3161

Chuck Dia.	To Fit Spindle	Thru Hole	Order No.
160mm	D1-3	40mm	429-3170
160mm	D1-4	40mm	429-3172
160mm	D1-5	40mm	429-3174
200mm	D1-4	50mm	429-3176
200mm	D1-5	50mm	429-3178
200mm	D1-6	50mm	429-3180
250mm	D1-5	70mm	429-3182
250mm	D1-6	70mm	429-3184
250mm	D1-8	80mm	429-3186
325mm	D1-6	100mm	429-3188
325mm	D1-8	100mm	429-3190
325mm	D1-11	100mm	429-3192
380mm	D1-8	100mm	429-3194
380mm	D1-11	100mm	429-3196

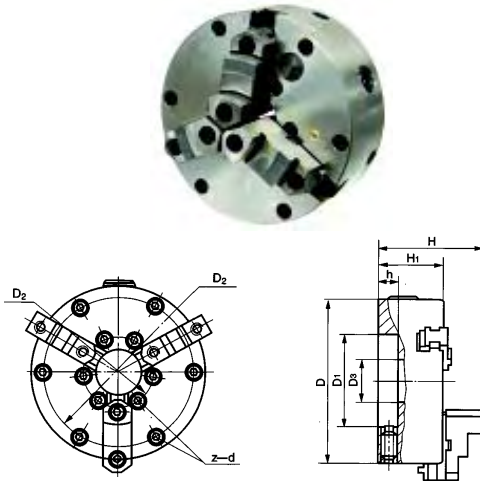
Chuck Wrenches



Size	Standard Order No.	Self-Ejecting Order No.
1/4"	290-1171	290-1071
5/16"	290-1172	290-1072
3/8"	290-1173	290-1073
7/16"	290-1174	290-1074
1/2"	290-1175	290-1075
9/16"	290-1176	290-1076
5/8"	290-1177	290-1077
11/16"	290-1178	290-1078
3/4"	290-1179	290-1079

3-Jaw Adjustable Scroll Chucks

This series chucks are made of high quality materials with precision machining, and the bodies enjoy nice rigidity. What is more, the chucks have a high repeatable concentric precision. With suitable adjustment the chuck's clamping precision can reach 0.013mm.



Chuck										
Dia.	D	D1	D2	D3	H	H1	h	z-d	Order No.	
6"	6	3.125	5.343	1.535	3.882	2.323	0.689	6-1/4-20	429-3600	
8"	8.27	4.75	7.5	2.264	5.206	3.122	0.752	6-3/8-16	429-3825	
10"	10	6.374	4.375	2.835	6.056	3.492	0.803	6-7/16-14	429-3910	
12"	12	7.905	5.25	3.268	6.569	3.980	0.803	6-1/2-13	429-3912	

Chuck										
Dia.	D	D1	D2	D3	H	H1	h	z-d	Order No.	
160mm	152.5	79.37	135.70	39	98.6	59	17.5	6-M6	429-3165	
200mm	210	120.65	190.5	57.5	132.2	79.3	19.1	6-M10	429-3200	
250mm	254	161.90	111.13	72	153.8	88.7	20.4	6-M12	429-3250	
315mm	305	200.79	133.35	83	166.9	101.1	20.4	6-M12	429-3325	

4-Jaw R8 Shank Self-Centering Chucks

4 Jaw independent direct flat back chucks come with 5C, R8 Mounting Shank.



Chuck	R8 Shank	5C Shank
Dia.	Order No.	Order No.
3"	230-6113	230-6103
4	230-6114	230-6104

Chuck	R8 Shank	5C Shank
Dia.	Order No.	Order No.
5"	230-6115	230-6105
6	230-6116	230-6106

4-Jaw Plain Back Self-Centering Chucks



Chuck		
Dia.	Thru Hole	Order No.
5"	1.181"	428-8205
6"	1.575"	428-8206
8"	2.559"	428-8208
10"	3.150"	428-8210
12"	3.937"	428-8212
15"	4.000"	428-8215
20"	6.25"	428-8220

Chuck		
Dia.	Thru Hole	Order No.
127mm	30mm	428-8605
160mm	40mm	428-8606
200mm	65mm	428-8608
250mm	80mm	428-8610
325mm	100mm	428-8612
380mm	101mm	428-8615
508mm	159mm	428-8620

4-Jaw Independent Plain Back Chucks

The chuck body is made of cast iron. The reversible jaws and operation screw are made of high quality carbon steel jaws and are hardened precision ground.



- Self-Centering .
- Cast iron body.
- Camlock spindle "D" Series.
- 1Set solid reversible jaws.
- 1Set of mounting Screws.
- 1 Chuck Wrench.



Chuck To Fit	Thru		
Dia.	Spindle Hole	Order No.	
8"	D1-4	2.165"	429-4084
8"	D1-5	2.165"	429-4085
10"	D1-4	2.756"	429-4104
10"	D1-5	2.953"	429-4105
10"	D1-6	2.953"	429-4106
12"	D1-6	3.740"	429-4126
12"	D1-8	3.740"	429-4128
16"	D1-8	4.921"	429-4168

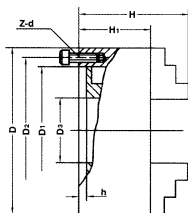
Chuck To Fit	Thru		
Dia.	Spindle Hole	Order No.	
200mm	D1-4	55mm	429-4284
200mm	D1-5	55mm	429-4285
250mm	D1-4	70mm	429-4304
250mm	D1-5	75mm	429-4305
250mm	D1-6	75mm	429-4306
325mm	D1-6	95mm	429-4326
325mm	D1-8	95mm	429-4328
406mm	D1-8	125mm	429-4368

Chuck Hole	Thru		
Dia.	Circle Hole	Order No.	
3"	2.59	.86"	429-4003
6"	5-23/32	1-1/2"	429-4006
8"	4-9/67	1-15/16"	429-4008
10"	4-3/4	2-1/21"	429-4010
12"	6-1/2	3-3/4"	429-4012
16"	8-15/16	3-1/2"	429-4016
20"	9-1/4	6-1/4"	429-4020

Chuck Hole	Thru		
Dia.	Circle Hole	Order No.	
75mm	66	22	429-4203
160mm	145	38	429-4206
200mm	105	49	429-4208
250mm	121	52	429-4210
325mm	165	95	429-4212
380mm	227	89	429-4216
508mm	235	159	429-4220

6-Jaw Self-Centering Scroll Chucks

These chucks are suitable for clamping and machining the thin-walled workpieces, especially the handle-cutting tools. By using this series of chucks, the deformation can be reduced or avoided when the workpieces are gripped and the grinding states can be improved owing to their evenbearing



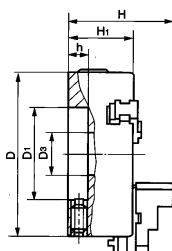
- Plain back
- Cast iron body.
- 1Set of two Pc. hardened reversible jaws.
- 1Set of mountingScrews.
- 1 Chuck Wrench.

Chuck							
Dia.	D1	D2	D3	H	H1	h	Order No.
4"	2.83"	3.31"	1.02"	2.87"	2.11"	0.14"	429-6004
5"	3.94	4.53	1.38	3.39	2.36	0.14	429-6005
6"	5.12	5.71	1.65	3.80	2.62	0.18	429-6006
8"	6.50	7.09	2.56	4.29	2.95	0.20	429-6008

Chuck							
Dia.	D1	D2	D3	H	H1	h	Order No.
100mm	72	84	26	73	53.5	3.5	429-6104
130mm	100	115	35	86	60	3.5	429-6105
165mm	130	145	42	96.5	66.5	4.5	429-6106
200mm	165	180	65	109	75	5	429-6108

6-Jaw Adjustable Scroll Chucks

This series chucks are made of high quality materials with precision machining, and the bodies enjoy nice rigidity. What is more, the chucks have a high repeatable concentrical precision. With suitable adjustment the chuck's clamping precision can reach 0.013mm.



Chuck								
Dia.	D	D1	D2	D3	H	H1	h	z-d
6"	6	3.125	5.343	1.535	3.882	2.323	0.689	6-1/4-20
8-1/4"	8.27	4.75	7.5	2.264	5.206	3.122	0.752	6-3/8-16
10"	10	6.374	4.375	2.835	6.056	3.492	0.803	6-7/16-14
12"	12	7.905	5.25	3.268	6.569	3.980	0.803	6-1/2-13

Chuck								
Dia.	D	D1	D2	D3	H	H1	h	z-d
160mm	152.5	79.37	135.70	39	98.6	59	17.5	6-M6
200mm	210	120.65	190.5	57.5	132.2	79.3	19.1	6-M10
250mm	254	161.90	111.13	72	153.8	88.7	20.4	6-M12
315mm	305	200.79	133.35	83	166.9	101.1	20.4	6-M12

Mounting Plates



"D" Series Adapters for 3 Jaw Self-Centering Plain Chucks

Chuck		
Size	Spindle	Order No.
6"	D3	429-3900
6	D4	429-3901
8	D3	429-3902
8	D4	429-3903
8	D5	429-3904
8	D6	429-3905
10	D6	429-3907
10	D8	429-3909
12	D6	429-3908
12	D8	429-3911
15	D11	429-3913
15	D8	429-3915
20	D11	429-3920

"A" Series Back Plates for Adjustable Chucks

Chuck		
Size	Spindle	Order No.
6"	A4	429-3764
6	A5	429-3765
6	A6	429-3766
8-1/4	A5	429-3785
8-1/4	A6	429-3786
10	A6	429-3806
10	A8	429-3808
12	A6	429-3826
12	A8	429-3828

L Series Back Plates for Adjustable Chucks

Chuck		
Size	Spindle	Order No.
6"	L-00	429-3830
6	L-0	429-3831
8-1/4	L-00	429-3832
8-1/4	L-0	429-3833
10	L-00	429-3834
10	L-0	429-3835
10	L-1	429-3836
12	L-0	429-3837
12	L-1	429-3838

Thread Back Plates

Chuck Size	Spindle Threads	Order No.
4"	1-1/2"-8	429-3823
5	1-1/2"-8	429-3824
6	1-1/2"-8	429-3840
6	1-3/4"-8	429-3841
6	2-1/4"-8	429-3842
6	2-3/8"-8	429-3843
8	2-1/4"-8	429-3844
8	2-3/8"-6	429-3845
10	2-1/4"-8	429-3846
10	2-3/8"-6	429-3847
10	2-3/4"-8	429-3848
12	2-3/8"-6	429-3849
12	2-3/4"-8	429-3850

"D" Series Back Plates for Adjustable Run-True Chucks

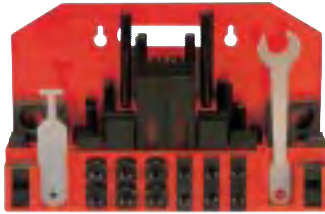
Chuck		
Size	Spindle	Order No.
6"	D3	429-3716
6	D4	429-3719
6	D5	429-3720
8	D3	429-3722
8	D4	429-3725
8	D5	429-3728
8	D6	429-3731
10	D4	429-3734
10	D5	429-3737
10	D6	429-3740
10	D8	429-3743
12	D6	429-3746
12	D8	429-3749
12	D11	429-3752
15	D11	429-3754

52 Piece Deluxe Steel Clamping Kits

Each set contains:

- 6 T-slot nuts.
- 6 flange nuts.
- 4 coupling nuts.
- 6 step blocks.
- 6 serrated end clamps.
- 24 studs, 4 each: 3", 4", 5", 6", 7" & 8" long.
- Plastic holder with metal back

* This items have two free parts:
1 T slot cleaner & 1 nut wrench.



Stud Size	Table Slot	Order No.
5/16"-18	3/8	400-3375
3/8-16	7/16	400-3437
3/8-16	1/2	400-3501
3/8-16	9/16	400-3456
1/2-13	9/16	400-3562
1/2-13	5/8	400-3626*
1/2-13	11/16	400-2639
5/8-11	11/16	400-3740
5/8-11	3/4	400-3750
5/8-11	13/16	400-3759

38 Piece T-Nut & Stud Sets

Each set contains:

- 4 flange nuts.
- 4 T-slot nuts.
- 4 coupling nuts.
- 1T-slot cleaner.
- 24 studs, 4 each:
3", 4", 5", 6", 7" & 8" long.
- 1 wooden stand.



Stud Size	Table Slot	Order No.
5/16"-18	3/8"	402-4375
3/8"-16	1/2"	402-4500
3/8"-16	7/16"	402-4437
3/8"-16	9/16"	402-4560
1/2"-13	9/16"	402-4562
1/2"-13	5/8"	402-4625
1/2"-13	11/16"	402-4680
5/8"-11	11/16"	402-4687
5/8"-11	3/4"	402-4750
5/8"-11	13/16"	402-4800
3/4"-10	13/16"	402-4812
3/4"-10	7/8"	402-4875
3/4"-10	1"	402-4900
3/4"-10	1-1/16"	402-4962

Economy Adjusta-Clamp Kit

Better Performance with just 21 pieces

Each set contains:

- 2 forged Adjusta-Clamps .
- 8 T slot bolts, two each of 2,4,5 & 6".
- 4 Rotary T slot bolts 3,4,5 & 6".
- 2 springs.
- 4 flange nuts.
- 1 sturdy holder.



Order No. 400-8032

50 Piece Super Clamp Sets

Each set contains:

- 24 studs with flats,
4 each: 3", 4", 5",
6", 7" & 8" long.
- 4 coupling nuts.
- 4 flange nuts.
- 6 serrated end clamps.
- 4 T slot nuts.
- 6 step blocks.
- 1 T-slot cleaner.
- 1 wooden stand.



with Standard Blocks 1"

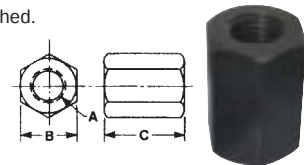
Stud Size	Table Slot	Order No.
5/16"-18	3/8"	400-4375
3/8-16	7/16	400-4377
3/8-16	1/2	400-4379
1/2-13	9/16	400-4381
1/2-13	5/8	400-4626
1/2-13	11/16	400-4628
5/8-11	11/16	400-4630
5/8-11	3/4	400-4632
5/8-11	13/16	400-4634

with Heavy Duty Blocks 1-1/2"

Stud Size	Table Slot	Order No.
1/2-13	9/16	400-4636
1/2-13	5/8	400-4638
1/2-13	11/16	400-4640
5/8-11	11/16	400-4642
5/8-11	3/4	400-4644
5/8-11	13/16	400-4646
3/4-10	13/16	400-4648
3/4-10	7/8	400-4650
3/4-10	1	400-4652

Coupling Nuts

- Heated treated steel black oxide finished.

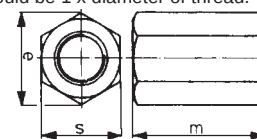


Thread Size A	Hex Size B	Length C	Order No.
1/4-20	1/2	5/8	407-4016
5/16"-18	9/16"	7/8"	407-4020
3/8-16	11/16	1	407-4024
1/2-13	7/8	1-1/4	407-4032
5/8-11	15/16	1-5/8	407-4040
3/4-10	1-1/8	1-7/8	407-4048
7/8-9	1-5/16	2-1/4	407-4056
1-8	1-5/8	2-1/2	407-4064

Metric Coupling Nuts

Material: European class 10.9 steel

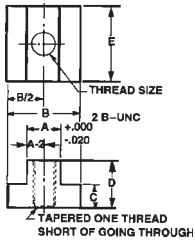
For functional and safety purposes bolts (DIN 787) and/or studs (DIN 6379) to be joined should be screwed in on either side to half the length of the nut. Minimum thread reach should be 1 x diameter of thread.



Thread Size	Hex Size S	E	Ht.	Order No.
M6	10	11.5	18	407-4106
M8	13	15.0	24	407-4108
M10	16	17.8	30	407-4110
M12	18	20.0	36	407-4112
M14	21	23.4	42	407-4114
M16	24	27.7	48	407-4116
M18	27	31.2	54	407-4118
M20	30	34.6	60	407-4120
M24	36	41.6	72	407-4124

T-Slot Nuts

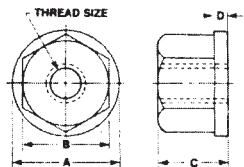
An imperfect thread is left on the tapped T-Nut base to eliminate any danger of screwing the stud through the T-nut and damaging the table slot.



Thread Size	Table Slot A	Base W B	Slot Ht. C	OAH D	OAL E	Order No.
1/4"-20	5/16"	9/16"	3/16"	1/4"	9/16"	407-2241
1/4-20	3/8	9/16	15/64	3/8	9/16	407-2242
5/16-18	3/8	5/8	3/16	1/2	7/8	407-2202
5/16-18	7/16	11/16	7/32	1/2	7/8	407-2244
5/16-18	1/2	7/8	9/32	1/2	7/8	407-2245
3/8-16	7/16	11/16	7/32	1/2	7/8	407-2204
3/8-16	1/2	7/8	9/32	1/2	7/8	407-2206
3/8-16	9/16	7/8	11/32	5/8	1-1/8	407-2208
7/16-14	1/2	3/4	7/32	3/8	7/8	407-2249
7/16-14	1/2	7/8	9/32	1/2	7/8	407-2250
1/2-13	9/16	7/8	11/32	5/8	1-1/8	407-2210
1/2-13	5/8	1	11/32	5/8	1-1/8	407-2212
1/2-13	5/8	1-1/8	3/8	3/4	1-1/8	407-2253
1/2-13	11/16	1-1/8	7/16	3/4	1-1/4	407-2214
1/2-13	3/4	1-1/4	15/32	3/4	1-1/4	407-2255
5/8-11	11/16	1-1/8	7/16	3/4	1-1/4	407-2216
5/8-11	3/4	1-1/4	15/32	3/4	1-1/4	407-2218
5/8-11	13/16	1-1/4	9/16	1	1-1/2	407-2220
3/4-10	13/16	1-1/4	9/16	1	1-1/2	407-2222
3/4-10	7/8	1-1/2	9/16	1	1-1/2	407-2224
3/4-10	1	1-5/8	5/8	1	1-3/4	407-2226
3/4-10	3/4-10	1-3/4	3/4	1-1/2	1-3/4	407-2262
3/4-10	1-1/16	1-5/8	11/16	1-1/8	2	407-2228
7/8-9	1	1-5/8	5/8	1	1-3/4	407-2230
7/8-9	1-1/16	1-5/8	11/16	1-1/8	2	407-2265
7/8-9	1-1/8	1-3/4	3/4	1-1/2	2	407-2266
7/8-9	1-5/16	2	15/16	1-1/4	2	407-2267
1-8	1-1/16	1-5/8	11/16	1-1/8	2	407-2232
1-8	1-1/8	1-3/4	3/4	1-1/2	2	407-2269
1-8	1-1/4	2	6/7	1-1/1	2	407-2270
1-8	1-3/8	2	15/16	1-1/4	2	407-2271
1-1/4-7	1-3/8	2-1/2	1/1/8	1-3/4	2-1/2	407-2272

Flanged Nuts

- Heat treated steel, black oxide finished.



Thread Size	A	B	C	D	Order No.
5/16"-18	11/16"	9/16"	9/32"	1/8"	407-5020
3/8-16	53/64	21/32	33/64	1/8	407-5024
1/2-13	1-5/32	7/8	1/2	3/16	407-5032
5/8-11	1-5/16	15/16	5/8	3/16	407-5040
3/4-10	1-1/2	1-1/8	21/32	1/4	407-5048
7/8-9	1-3/4	1-5/16	3/4	1/4	407-5056
1-8	2	1-1/2	7/8	1/4	407-5064

Clamping Studs



Thread	OAL	Thread Length	Order No.
1/4-20	1-1/2	1/2	407-0015
1/4-20	2	3/4	407-0020
1/4-20	2-1/2	1	407-0025
1/4-20	3	1	407-0030
1/4-20	3-1/2	1	407-0035
1/4-20	4	1	407-0040
1/4-20	4-1/2	1	407-0045
1/4-20	5	1	407-0050
1/4-20	5-1/2	1	407-0055
1/4-20	6	1	407-0060
1/4-20	6-1/2	1	407-0065
1/4-20	7	1	407-0070
1/4-20	7-1/2	1	407-0075
1/4-20	8	1	407-0080
5/16-18	1-1/2"	1/2"	407-0115
5/16-18	2	3/4	407-0120
5/16-18	2-1/2	1	407-0125
5/16-18	3	1-1/8	407-0130
5/16-18	3-1/2	1-1/8	407-0135
5/16-18	4	1-1/8	407-0140
5/16-18	4-1/2	1-1/8	407-0145
5/16-18	5	1-1/8	407-0150
5/16-18	5-1/2	1-1/8	407-0155
5/16-18	6	1-1/8	407-0160
5/16-8	6-1/2	1-1/8	407-0165
5/16-18	7	1-1/8	407-0170
5/16-18	7-1/2	1-1/8	407-0175
5/16-18	8	1-1/8	407-0180
3/8-16	1-1/2	1/2	407-0215
3/8-16	2	3/4	407-0220
3/8-16	2-1/2	1	407-0225
3/8-16	3	1-1/8	407-0230
3/8-16	3-1/2	1-1/4	407-0235
3/8-16	4	1-1/4	407-0240
3/8-16	4-1/2	1-1/4	407-0245
3/8-16	5	1-1/4	407-0250
3/8-16	5-1/2	1-1/4	407-0255
3/8-16	6	1-1/4	407-0260
3/8-16	6-1/2	1-1/4	407-0265
3/8-16	7	1-1/4	407-0270
3/8-16	7-1/2	1-1/4	407-0275
3/8-16	8	1-1/4	407-0280
7/16-14	1-1/2	1/2	407-0815
7/16-14	2	3/4	407-0820
7/16-14	2-1/2	1	407-0825
7/16-14	3	1	407-0830
7/16-14	3-1/2	1-1/4	407-0835
7/16-14	4	1-3/8	407-0840
7/16-14	4-1/2	1-3/8	407-0845
7/16-14	5	1-3/8	407-0850
7/16-14	5-1/2	1-3/8	407-0855
7/16-14	6	1-3/8	407-0850
7/16-14	6-1/2	1-3/8	407-0865
7/16-14	7-1/2	1-3/8	407-0875
1/2-13	1-1/2"	1/2"	407-0315
1/2-13	2	3/4	407-0320
1/2-13	2-1/2	1	407-0325
1/2-13	3	1-1/8	407-0330
1/2-13	3-1/2	1-3/8	407-0335
1/2-13	4	1-1/2	407-0340
1/2-13	4-1/2	1-1/2	407-0345
1/2-13	5	1-1/2	407-0350
1/2-13	5-1/2	1-1/2	407-0355
1/2-13	6	1-1/2	407-0360
1/2-13	6-1/2	1-1/2	407-0365
1/2-13	7	1-1/2	407-0370
1/2-13	7-1/2	1-1/2	407-0375
1/2-13	8	1-1/2	407-0380
1/2-13	9	1-1/2	407-0385
1/2-13	10	1-1/2	407-0390
1/2-13	12	1-1/2	407-0392
1/2-13	14	1-1/2	407-0394
1/2-13	16	1-1/2	407-0396
5/8-11	1-1/2	1/2	407-0415
5/8-11	2	3/4	407-0420
5/8-11	2-1/2	1	407-0425
5/8-11	3	1-1/8	407-0430
5/8-11	3-1/2	1-3/8	407-0435

Thread	OAL	Thread Length	Order No.
5/8-11	4	1-5/8	407-0440
5/8-11	4-1/2	1-3/4	407-0445
5/8-11	5"	1-3/4"	407-0450
5/8-11	5-1/2	1-3/4	407-0455
5/8-11	6	1-3/4	407-0460
5/8-11	6-1/2	1-3/4	407-0465
5/8-11	7	1-3/4	407-0470
5/8-11	7-1/2	1-3/4	407-0475
5/8-11	8	1-3/4	407-0480
5/8-11	9	1-3/4	407-0485
5/8-11	10	1-3/4	407-0490
5/8-11	12	1-3/4	407-0492
5/8-11	14	1-3/4	407-0494
5/8-11	16	1-3/4	407-0495
5/8-11	18	1-3/4	407-0496
5/8-11	20	1-3/4	407-0497
5/8-11	22	1-3/4	407-0498
5/8-11	24	1-3/4	407-0499
3/4-10	3	1	407-0530
3/4-10	3-1/2	1-1/4	407-0535
3/4-10	4	1-5/8	407-0540
3/4-10	4-1/2	1-7/8	407-0545
3/4-10	5	2	407-0550
3/4-10	5-1/2	2	407-0555
3/4-10	6	2	407-0560
3/4-10	6-1/2	2	407-0565
3/4-10	7	2	407-0570
3/4-10	7-1/2	2	407-0575
3/4-10	8	1-3/4	407-0578
3/4-10	8	2	407-0580
3/4-10	9	2	407-0585
3/4-10	10	2	407-0590
3/4-10	12	2	407-0591
3/4-10	14	2	407-0592
3/4-10	16	2	407-0593
3/4-10	18	2	407-0594
3/4-10	20	2	407-0595
3/4-10	22	2	407-0596
3/4-10	24	2	407-0597
7/8-9	3"	1	407-0630
7/8-9	3-1/2	1-1/4	407-0635
7/8-9	4	1-1/2	407-0640
7/8-9	4-1/2	1-3/4	407-0645
7/8-9	5	2	407-0650
7/8-9	5-1/2	2-1/4	407-0655
7/8-9	6	2-1/4	407-0660
7/8-9	6-1/2	2-1/4	407-0665
7/8-9	7	2-1/4	407-0670
7/8-9	7-1/2	2-1/4	407-0675
7/8-9	8	2-1/4	407-0680
7/8-9	9	2-1/4	407-0685
7/8-9	10	2-1/4	407-0690
7/8-9	12	2-1/4	407-0691
7/8-9	14	2-1/4	407-0692
7/8-9	16	2-1/4	407-0693
7/8-9	18	2-1/4	407-0694
7/8-9	20	2-1/4	407-0695
7/8-9	22	2-1/4	407-0696
7/8-9	24	2-1/4	407-0697
1-8	3	1	407-0730
1-8	3-1/2	1-1/4	407-0735
1-8	4	1-1/2	407-0740
1-8	4-1/2	1-3/4	407-0745
1-8	5	2	407-0750
1-8	5-1/2	2-1/4	407-0755
1-8	6	2-1/2	407-0760
1-8	6-1/2	2-1/2	407-0765
1-8	7-1/2	2-1/2	407-0775
1-8	8	2-1/2	407-0780
1-8	9	2-1/2	407-0785
1-8	10	2-1/2	407-0790
1-8	12	2-1/2	407-0791
1-8	14	2-1/2	407-0792
1-8	16	2-1/2	407-0793
1-8	18	2-1/2	407-0794
1-8	20	2-1/2	407-0795
1-8	22	2-1/2	407-0796
1-8	24	2-1/2	407-0797

Threaded Studs

These headless externally-threaded studs are designed to provide a permanently mounted anchor. All studs have rolled thread to a commercial nut fit.

Type 18-8 Stainless Steel

- Excellent corrosion resistance
- Ideal for chemical, marine, and other environments where corrosion is a factor
- Min. tensile strength: 75,000 psi
- Can be mildly magnetic



Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.
2-56	1"	407-1019	10-24	3/4	407-1038	1/4-20	1-1/2	407-1052	1/2-13	2	407-1076
2-56	1-1/2	407-1020	10-24	1	407-1039	1/4-20	1-3/4	407-1053	1/2-13	2 1/2	407-1077
2-56	2	407-1021	10-24	1-1/2	407-1040	1/4-20	2	407-1054	1/2-13	3	407-1078
4-40	1/2	407-1001	10-24	2	407-1041	1/4-20	2-1/4	407-1055	1/2-13	3-1/2	407-1079
4-40	3/4	407-1022	10-24	2-1/2	407-1042	1/4-20	2-1/2	407-1056	1/2-13	4	407-1080
4-40	1	407-1023	10-24	3	407-1043	1/4-20	3	407-1057	1/2-13	4-1/2	407-1081
4-40	1-1/2	407-1024	10-24	4	407-1044	1/4-20	4	407-1058	1/2-13	5	407-1082
4-40	2	407-1025	10-24	5	407-1008	1/4-28	3/4	407-1102	1/2-13	5-1/2	407-1083
4-40	2-1/2	407-1026	10-24	6	407-1009	1/4-28	1	407-1103	1/2-13	6	407-1084
4-40	3	407-1002	10-32	3/4	407-1045	5/16-18	1	407-1059	5/8-11	5	407-1085
6-32	3/4	407-1027	10-32	1	407-1046	5/16-18	1-1/4	407-1060	5/8-11	2-1/2	407-1086
6-32	1	407-1028	10-32	1-1/2	407-1047	5/16-18	1-1/2	407-1061	5/8-11	3	407-1087
6-32	1-1/2	407-1029	10-32	2	407-1104	5/16-18	1-3/4	407-1062	5/8-11	3-1/2	407-1088
6-32	2	407-1030	10-32	2-1/2	407-1048	5/16-18	2	407-1063	5/8-11	4	407-1089
6-32	2-1/2	407-1031	10-32	1/2	407-1010	5/16-18	2-1/2	407-1064	5/8-11	4-1/2	407-1090
6-32	1/2	407-1003	10-32	3	407-1011	5/16-18	3	407-1065	5/8-11	5	407-1091
6-32	3	407-1004	10-32	4	407-1012	3/8-16	1	407-1066	5/8-11	6	407-1092
6-32	4	407-1005	10-32	5	407-1013	3/8-16	1-1/4	407-1067	5/8-11	7	407-1093
8-32	1/2	407-1006	10-32	6	407-1014	3/8-16	1-1/2	407-1068	3/4-10	2	407-1094
8-32	3/4	407-1032	1/4-28	1-1/2	407-1015	3/8-16	1-3/4	407-1069	3/4-10	3	407-1095
8-32	1	407-1033	1/4-28	2	407-1016	3/8-16	2	407-1070	3/4-10	3-1/2	407-1096
8-32	1-1/2	407-1034	1/4-28	3	407-1017	3/8-16	2-1/4	407-1071	3/4-10	4	407-1097
8-32	2	407-1035	1/4-28	3-1/2	407-1018	3/8-16	2-1/2	407-1072	3/4-10	5	407-1098
8-32	2-1/2	407-1036	1/4-20	3/4	407-1049	3/8-16	3	407-1073	3/4-10	6	407-1099
8-32	3	407-1037	1/4-20	1	407-1050	3/8-16	4	407-1074	3/4-10	7	407-1100
10-24	1/2	407-1007	1/4-20	1-1/4	407-1051	1/2-13	1-1/2	407-1075	3/4-10	8	407-1101

Type 316 Stainless Steel

- Non-magnetic material with Molybdenum
- Better corrosion resistance than type 18-8 Stainless Steel withstands many industrial chemicals and solutions
- Even pitting caused by chlorides is virtually eliminated
- Minimum tensile strength is 75,000 psi

Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.
10-32	3/4"	407-1201	1/4-20	2	407-1210	3/8-16	2	407-1219	1/2-13	6	407-1228
10-32	1	407-1202	5/16-18	1	407-1211	3/8-16	2-1/2	407-1220	5/8-11	3-1/2	407-1229
10-32	1-1/4	407-1203	5/16-18	1-1/4"	407-1212	3/8-16	3	407-1221	5/8-11	4	407-1230
10-32	1-1/2	407-1204	5/16-18	1-1/2	407-1213	1/2-13	2	407-1222	5/8-11	5	407-1231
10-32	2	407-1205	5/16-18	2	407-1214	1/2-13	2-1/2	407-1223	5/8-11	6	407-1232
1/4-20	3/4.	407-1206	3/8-16	1	407-1215	1/2-13	3	407-1224	3/4-10	3-1/2	407-1233
1/4-20	1	407-1207	3/8-16	1-1/4	407-1216	1/2-13	3-1/2	407-1225	3/4-10	4	407-1234
1/4-20	1-1/4	407-1208	3/8-16	1-1/2	407-1217	1/2-13	4	407-1226	3/4-10	5	407-1235
1/4-20	1-1/2	407-1209	3/8-16	1-3/4	407-1218	1/2-13	5	407-1227	3/4-10	6	407-1236

Aluminum

- Excellent resistance to corrosion from rain, sunlight and atmosphere
- Ideal for exterior use
- 1/3 the weight of plain steel
- Minimum tensile strength ranges from 42,000-55,000 psi

Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.
4-40	1"	407-1323	8-32	3/4"	407-1327	10-24	2"	407-1310	10-32	1-1/2"	407-1302
4-40	1-1/2	407-1324	8-32	1	407-1328	10-24	2-1/2	407-1311	10-32	2	407-1315
4-40	2	407-1325	8-32	2	407-1329	10-24	3	407-1312	1/4-20	1	407-1316
4-40	2-1/2	407-1303	8-32	1-1/2	407-1307	10-24	4	407-1313	1/4-20	2	407-1317
6-32	1	407-1304	8-32	2-1/2	407-1308	10-24	5	407-1314	1/4-20	3	407-1318
6-32	1-1/2	407-1305	10-24	1/2	407-1309	10-24	6	407-1301	1/4-20	4	407-1319
6-32	2	407-1306	10-24	1	407-1321	10-32	1/2	407-1322	1/4-20	6	407-1329
6-32	2-1/2	407-1326									

Threaded Studs Continued

Plain Steel

- Plain Steel, Class 5.8 Steel, Zinc Plated Steel
- Minimum tensile strength is 60.000 psi
- AISI C-1010 to C-1020 Steel,
- Zinc plating retards corrosion



Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.
2-56	1"	407-1529	10-24	3-1/2"	407-1617	1/4-20	7"	407-1645	3/8-24	1"	407-1672
2-56	1-1/2	407-1530	10-24	4	407-1618	1/4-20	8	407-1646	3/8-24	2	407-1673
2-56	2	407-1531	10-24	5	407-1619	1/4-28	3/4	407-1647	3/8-24	3	407-1556
2-56	3	407-1501	10-24	6	407-1620	1/4-28	1	407-1648	7/16-14	1-1/2	407-1674
4-40	1/2	407-1603	10-24	7	407-1511	1/4-28	1-1/2	407-1649	7/16-14	2	407-1675
4-40	3/4	407-1604	10-24	8	407-1512	1/4-28	2	407-1650	7/16-14	2-1/2	407-1676
4-40	1	407-1605	10-32	1/2	407-1621	1/4-28	2-1/4	407-1651	7/16-14	3	407-1677
4-40	1-1/2	407-1606	10-32	3/4	407-1622	1/4-28	2-1/2	407-1652	7/16-14	3-1/2	407-1678
4-40	2	407-1607	10-32	1	407-1623	1/4-28	3	407-1653	1/2-13	1	407-1679
4-40	2-1/2	407-1532	10-32	1-1/2	407-1624	5/16-18	3/4	407-1654	1/2-13	1-1/4	407-1680
4-40	3	407-1502	10-32	2	407-1625	5/16-18	1	407-1655	1/2-13	1-1/2	407-1681
6-32	1/2	407-1503	10-32	2-1/2	407-1626	5/16-18	1-1/4	407-1656	1/2-13	1-3/4	407-1564
6-32	3/4	407-1533	10-32	3	407-1627	5/16-18	1-1/2	407-1657	1/2-13	2	407-1565
6-32	1	407-1534	10-32	3-1/2	407-1628	5/16-18	2	407-1658	1/2-13	2-1/2	407-1566
6-32	1-1/2	407-1535	10-32	4	407-1629	5/16-18	2-1/4	407-1659	1/2-13	3	407-1567
6-32	2	407-1536	10-32	5	407-1513	5/16-18	2-1/2	407-1660	1/2-13	3-1/2	407-1518
6-32	2-1/2	407-1608	10-32	6	407-1514	5/16-18	3	407-1661	1/2-13	4	407-1568
6-32	3	407-1609	10-32	7	407-1515	5/16-18	3-1/2	407-1662	1/2-13	4-1/2	407-1519
6-32	4	407-1504	10-32	8	407-1516	5/16-18	4	407-1663	1/2-13	5	407-1557
6-32	5	407-1505	12-24	1-1/2	407-1544	5/16-18	5	407-1664	1/2-13	6	407-1558
6-32	6	407-1506	12-24	2	407-1545	5/16-18	6	407-1665	5/8-11	1-1/2	407-1520
8-32	1/2	407-1507	12-24	3	407-1546	5/16-18	7	407-1666	5/8-11	2	407-1521
8-32	3/4	407-1537	1/4-20	1/2	407-1630	5/16-18	8	407-1667	5/8	2-1/2	407-1522
8-32	1	407-1538	1/4-20	3/4	407-1631	3/8-16	3/4	407-1668	5/8-11	2-3/4	407-1559
8-32	1-1/2	407-1539	1/4-20	1	407-1632	3/8-16	1	407-1669	5/8-11	3	407-1560
8-32	2	407-1540	1/4-20	1-1/4	407-1633	3/8-16	1-1/4	407-1670	5/8-11	3-1/2	407-1561
8-32	2-1/2	407-1610	1/4-20	1-1/2	407-1634	3/8-16	1-1/2	407-1671	5/8-11	4	407-1562
8-32	3	407-1611	1/4-20	2	407-1635	3/8-16	2	407-1547	5/8-11	6	407-1563
8-32	4	407-1612	1/4-20	2-1/4	407-1636	3/8-16	2-1/4	407-1548	3/4-10	1-1/2	407-1523
8-32	5	407-1613	1/4-20	2-1/2	407-1637	3/8-16	2-1/2	407-1549	3/4-10	2	407-1524
10-24	1/2	407-1510	1/4-20	2-3/4	407-1638	3/8-16	2-3/4	407-1550	3/4-10	2-1/2	407-1525
10-24	3/4	407-1541	1/4-20	3	407-1639	3/8-16	3	407-1551	3/4-10	3	407-1526
10-24	1	407-1542	1/4-20	3-1/2	407-1640	3/8-16	3-1/2	407-1552	3/4-10	4	407-1527
10-24	1-1/2	407-1543	1/4-20	4	407-1641	3/8-16	4	407-1553	3/4-10	6	407-1528
10-24	2	407-1614	1/4-20	4-1/2	407-1642	3/8-16	5	407-1554			
10-24	2-1/2	407-1615	1/4-20	5	407-1643	3/8-16	6	407-1555			
10-24	3	407-1616	1/4-20	6	407-1644	3/8-16	7	407-1517			

Zinc Plated Steel

Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.
8-32	1/2"	407-1801	10-24	3"	407-1810	1/4-20	3"	407-1815	3/8-16	3"	407-1822
8-32	3/4	407-1802	10-24	4	407-1811	5/16-18	1	407-1833	3/8-16	4	407-1823
8-32	1	407-1803	10-24	5	407-1812	5/16-18	1-1/4	407-1816	3/8-16	6	407-1824
8-32	1-1/2	407-1804	10-24	6	407-1813	5/16-18	1-1/2	407-1817	3/8-16	8	407-1825
8-32	2	407-1805	1/4-20	1	407-1830	5/16-18	2	407-1818	3/8-16	10	407-1826
8-32	2-1/2	407-1806	1/4-20	1-1/4	407-1831	5/16-18	3	407-1819	1/2-13	2	407-1827
8-32	3	407-1807	1/4-20	1-1/2	407-1832	3/8-16	1-1/2	407-1820	1/2-13	3	407-1828
10-24	1	407-1808	1/4-20	2	407-1814	3/8-16	2	407-1821	1/2-13	4	407-1829
10-24	2	407-1809									

Metric Plain Steel

Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.
M5x.8	16	407-1569	M6x1	50	407-1590	M12x1.75	30	407-1599	M16x2	80	407-1577
M5x0.8	20	407-1583	M8x1.25	25	407-1591	M12x1.75	40	407-1600	M16x2	100	407-1602
M5x0.8	25	407-1584	M8x1.25	30	407-1592	M12x1.75	50	407-1601	M20x2.5	50	407-1578
M5x0.8	30	407-1585	M8x1.25	40	407-1593	M12x1.75	60	407-1571	M20x2.5	60	407-1579
M6x1	16	407-1570	M8x1.25	50	407-1594	M12x1.75	70	407-1572	M20x2.5	70	407-1580
M6 x1	20	407-1586	M10x1.5	30	407-1595	M12x1.75	80	407-1573	M20x2.5	80	407-1581
M6x1	25	407-1587	M10x1.5	40	407-1596	M16x2	50	407-1574	M20x2.5	100	407-1582
M6x1	30	407-1588	M10x1.5	50	407-1597	M16x2	60	407-1575			
M6x1	40	407-1589	M10x1.5	60	407-1598	M16x2	70	407-1576			

Threaded Studs

Brass

- Non-magnetic material offers good corrosion resistance, especially in salt air atmosphere
- Minimum tensile strength is 60,000 psi



Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.	Thd. Size	OAL	Order No.
2-56	3/4"	407-1401	6-32	1	407-1424	10-24	3/4	407-1431	10-32	3	407-1411
2-56	1	407-1417	6-32	1-1/2	407-1425	10-24	1	407-1432	10-32	4	407-1412
2-56	1-1/2	407-1418	6-32	2	407-1426	10-24	1-1/2	407-1433	1/4-20	1	407-1441
2-56	2	407-1444	6-32	3	407-1404	10-24	2	407-1434	1/4-20	1-1/2	407-1442
4-40	1/2	407-1402	8-32	1/2	407-1405	10-24	2-1/2	407-1435	1/4-20	2	407-1443
4-40	3/4	407-1419	8-32	3/4	407-1427	10-24	3	407-1408	1/4-20	3	407-1440
4-40	1	407-1420	8-32	1	407-1428	10-32	1/2	407-1409	1/4-20	4	407-1413
4-40	1-1/2	407-1421	8-32	1-1/2	407-1429	10-32	3/4	407-1436	5/16-18	1-1/2	407-1414
4-40	2	407-1422	8-32	2	407-1430	10-32	1	407-1437	5/16-18	2	407-1415
6-32	1/2	407-1403	8-32	3	407-1406	10-32	1-1/2	407-1438	5/16-18	3	407-1416
6-32	3/4	407-1423	10-24	1/2	407-1407	10-32	2	407-1410			

Plain Clamps

Heat treated steel black oxide finished



Bolt Size	Length	Width	Thickness	Order No.
5/16 or 3/8"	2-1/2"	1"	1/2"	410-7002
5/16 or 3/8"	4	1	5/8	410-7004
5/16 or 3/8"	6	1-1/8	3/4	410-7006
1/2	2-1/2	1-1/8	1/2	410-7008
1/2	4	1-1/4	3/4	410-7010
1/2	6	1-1/4	7/8	410-7012
5/8	2-1/2	1-1/4	5/8	410-7014
5/8	4	1-1/2	3/4	410-7016
5/8	6	1-1/2	7/8	410-7018
3/4	4	1-1/2	3/4	410-7020
3/4	6	1-1/2	1	410-7022
3/4	8	1-3/4	1-1/8	410-7024
1	6	2	1-1/4	410-7026
1	8	2	1-3/8	410-7028
1	10	2	1-1/2	410-7030

Step Clamps

- Step clamp teeth are matched to fit any size step blocks.
- Heat treated steel black oxide finished.
- 1/2" & 5/8" bolt size clamps forged & hardened.



Bolt Size	Length	Width	Thickness	Order No.
5/16 or 3/8"	2-1/2"	1"	1/2"	410-7702
5/16 or 3/8"	4	1	5/8	410-7704
5/16 or 3/8"	6	1-1/8	3/4	410-7706
1/2	2-1/2	1-1/8	1/2	410-7708
1/2	4	1-1/4	3/4	410-7710
1/2	6	1-1/4	7/8	410-7712
5/8	2-1/2	1-1/4	5/8	410-7714
5/8	4	1-1/2	3/4	410-7716
5/8	6	1-1/2	7/8	410-7718
3/4	4	1-1/2	3/4	410-7720
3/4	6	1-1/2	1	410-7722
3/4	8	1-3/4	1-1/8	410-7724
7/8 or 1	6	2	1-1/4	410-7726
7/8 or 1	8	2	1-3/8	410-7728
7/8 or 1	10	2	1-1/2	410-7730

Step Blocks

- Solid in pairs only.
- Standard steel and powder casting.



Standard, 1" Wide

Capacity of Full Block	Height of 1/2 Block	Powder Casting Order No.	Steel Order No.
3/4 to 1-1/2"	1-1/8"	407-6110	407-6010
1-1/8 to 2-1/2	1-3/4	407-6120	407-6020
2-1/2 to 6	3-7/8	407-6130	407-6030

Heavy Duty, 1-1/2" Wide

Capacity of Full Block	Height of 1/2 Block	Powder Casting Model No	Steel Order No.
1-1/2 to 3-3/4"	2-1/2"	407-6140	407-6040
2-1/2 to 6	3-7/8	407-6150	407-6050
3-1/2 to 9	5-1/2	407-6160	407-6060

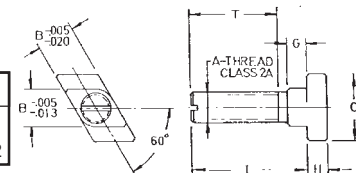
Heavy Duty, 2" Wide

Capacity of Full Block	Height of 1/2 Block	Powder Casting Order No	Steel Order No.
1-1/2 to 3-3/4"	2-1/2"	407-6170	407-6070
2-1/2 to 6	3-7/8	407-6180	407-6080
3-1/2 to 9	5-1/2	407-6190	407-6090

Rotary T Slot Bolts

- The Rotary T-Slot Nut give convenienc to rotate the head in the T-Slot.
- Black Oxide finish.

A Thread	B	C	G	H
1/2-13	0.63	1-1/8	11/32	11/32
5/8-11	0.75	1-1/4	13/32	15/32



Length Under Head (L)	Thread Length (T)	Thread 1/2"-13 Order No.	Thread 5/8"-11 Order No.
1.5"	1.0"	407-3110	407-3100
2.0"	1.5"	407-3111	407-3101
2.5"	2.0"	407-3112	407-3102
3.0"	2.5"	407-3113	407-3103
3.5"	2.0"	407-3114	407-3104
4.0"	2.5"	407-3115	407-3105
4.5"	2.5"	407-3116	
5.0"	2.5"	407-3117	407-3106
6.0"	4.5"	407-3118	407-3107

T-Slot Bolts

Used for setting up work on planers, shapers, milling machines or similar applications.

Heads sized to fit in table slot giving more bearing surface.

- Hot forged from C-1045 steel
- Class 3A smooth cut threads
- Cannot twist or jam in slots
- Black oxide finish



Thread	L under	Head		
Size	Head	Slot	WxH	Order No.
3/8"-16	1"	3/8"	11/16x3/16"	407-3200
3/8-16	1-1/4	3/8	11/16x3/16	407-3202
3/8-16	1-1/2	3/8	11/16x3/16	407-3204
3/8-16	1-3/4	3/8	11/16x3/16	407-3206
3/8-16	2	3/8	11/16x3/16	407-3208
3/8-16	2-1/4	3/8	11/16x3/16	407-3210
3/8-16	1-1/2	3/8	11/16x3/16	407-3212
3/8-16	2-3/4	3/8	11/16x3/16	407-3214
3/8-16	2	3/8	11/16x3/16	407-3216
3/8-16	3-1/2	3/8	11/16x3/16	407-3218
3/8-16	4	3/8	11/16x3/16	407-3220
3/8-16	4-1/2	3/8	11/16x3/16	407-3222
3/8-16	5	3/8	11/16x3/16	407-3224
3/8-16	5-1/2	3/8	11/16x3/16	407-3226
3/8-16	6	3/8	11/16x3/16	407-3228
3/8-16	7	3/8	11/16x3/16	407-3230
3/8-16	8	3/8	11/16x3/16	407-3232
3/8-16	9	3/8	11/16x3/16	407-3234
3/8-16	10	3/8	11/16x3/16	407-3236
3/8-16	12	3/8	11/16x3/16	407-3238
1/2-13	1-1/4	1/2	7/8x9/32	407-3240
1/2-13	1-1/2	1/2	7/8x9/32	407-3242
1/2-13	1-3/4	1/2	7/8x9/32	407-3244
1/2-13	2	1/2	7/8x9/32	407-3246
1/2-13	2-1/4	1/2	7/8x9/32	407-3248
1/2-13	2-1/2	1/2	7/8x9/32	407-3250
1/2-13	2-3/4	1/2	7/8x9/32	407-3252
1/2-13	3	1/2	7/8x9/32	407-3254
1/2-13	3-1/2	1/2	7/8x9/32	407-3256
1/2-13	4	1/2	7/8x9/32	407-3258
1/2-13	4-1/2	1/2	7/8x9/32	407-3260
1/2-13	5	1/2	7/8x9/32	407-3262
1/2-13	5-1/2	1/2	7/8x9/32	407-3264
1/2-13	6	1/2	7/8x9/32	407-3266
1/2-13	7	1/2	7/8x9/32	407-3268
1/2-13	8	1/2	7/8x9/32	407-3270
1/2-13	9	1/2	7/8x9/32	407-3272
1/2-13	10	1/2	7/8x9/32	407-3274
1/2-13	12	1/2	7/8x9/32	407-3276
1/2-13	14	1/2	7/8x9/32	407-3278
5/8-11	1-1/2	5/8	1-3/32x11/32	407-3280
5/8-11	2	5/8	1-3/32x11/32	407-3282
5/8-11	2-1/4	5/8	1-3/32x11/32	407-3284
5/8-11	2-1/2	5/8	1-3/32x11/32	407-3286
5/8-11	2-3/4	5/8	1-3/32x11/32	407-3288
5/8-11	3	5/8	1-3/32x11/32	407-3290
5/8-11	3-1/2	5/8	1-3/32x11/32	407-3292
5/8-11	4	5/8	1-3/32x11/32	407-3294

Thread	L under	Head		
Size	Head	Slot	WxH	Order No.
5/8"-11	4-1/2"	5/8"	1-3/32x11/32"	407-3296
5/8-11	5	5/8	1-3/32x11/32	407-3298
5/8-11	5-1/2	5/8	1-3/32x11/32	407-3300
5/8-11	6	5/8	1-3/32x11/32	407-3302
5/8-11	8	5/8	1-3/32x11/32	407-3304
5/8-11	9	5/8	1-3/32x11/32	407-3306
5/8-11	10	5/8	1-3/32x11/32	407-3308
5/8-11	12	5/8	1-3/32x11/32	407-3310
5/8-11	14	5/8	1-3/32x11/32	407-3312
5/8-11	16	5/8	1-3/32x11/32	407-3314
5/8-11	18	5/8	1-3/32x11/32	407-3316
5/8-11	20	5/8	1-3/32x11/32	407-3318
5/8-11	24	5/8	1-3/32x11/32	407-3320
5/8-11	30	5/8	1-3/32x11/32	407-3322
3/4-10	2	3/4	1-1/4x7/16	407-3324
3/4-10	2-1/2	3/4	1-1/4x7/16	407-3326
3/4-10	3	3/4	1-1/4x7/16	407-3328
3/4-10	3-1/2	3/4	1-1/4x7/16	407-3330
3/4-10	4	3/4	1-1/4x7/16	407-3332
3/4-10	4-1/2	3/4	1-1/4x7/16	407-3334
3/4-10	5	3/4	1-1/4x7/16	407-3336
3/4-10	5-1/2	3/4	1-1/4x7/16	407-3338
3/4-10	6	3/4	1-1/4x7/16	407-3340
3/4-10	7	3/4	1-1/4x7/16	407-3342
3/4-10	8	3/4	1-1/4x7/16	407-3344
3/4-10	9	3/4	1-1/4x7/16	407-3346
3/4-10	10	3/4	1-1/4x7/16	407-3348
3/4-10	12	3/4	1-1/4x7/16	407-3350
3/4-10	14	3/4	1-1/4x7/16	407-3352
3/4-10	16	3/4	1-1/4x7/16	407-3354
3/4-10	18	3/4	1-1/4x7/16	407-3356
3/4-10	20	3/4	1-1/4x7/16	407-3358
3/4-10	24	3/4	1-1/4x7/16	407-3360
3/4-10	2-1/2	7/8	1-1/2x9/16	407-3362
3/4-10	3	7/8	1-1/2x9/16	407-3364
3/4-10	3-1/2	7/8	1-1/2x9/16	407-3366
3/4-10	4	7/8	1-1/2x9/16	407-3368
3/4-10	4-1/2	7/8	1-1/2x9/16	407-3370
3/4-10	5	7/8	1-1/2x9/16	407-3372
3/4-10	5-1/2	7/8	1-1/2x9/16	407-3374
3/4-10	6	7/8	1-1/2x9/16	407-3376
3/4-10	7	7/8	1-1/2x9/16	407-3378
3/4-10	8	7/8	1-1/2x9/16	407-3380
3/4-10	9	7/8	1-1/2x9/16	407-3382
3/4-10	10	7/8	1-1/2x9/16	407-3384
3/4-10	12	7/8	1-1/2x9/16	407-3386
3/4-10	14	7/8	1-1/2x9/16	407-3388
3/4-10	16	7/8	1-1/2x9/16	407-3390

Thread	L under	Head		
Size	Head	Slot	WxH	Order No.
3/4"-10	18"	7/8"	1-1/2x9/16"	407-3392
3/4-10	20	7/8	1-1/2x9/16	407-3394
3/4-10	24	7/8	1-1/2x9/16	407-3396
3/4-10	30	7/8	1-1/2x9/16	407-3398
7/8-9	3	7/8	1-1/2x9/16	407-3400
7/8-9	4	7/8	1-1/2x9/16	407-3402
7/8-9	5	7/8	1-1/2x9/16	407-3404
7/8-9	6	7/8	1-1/2x9/16	407-3406
7/8-9	7	7/8	1-1/2x9/16	407-3408
7/8-9	8	7/8	1-1/2x9/16	407-3410
7/8-9	9	7/8	1-1/2x9/16	407-3412
7/8-9	10	7/8	1-1/2x9/16	407-3414
7/8-9	12	7/8	1-1/2x9/16	407-3416
7/8-9	14	7/8	1-1/2x9/16	407-3418
7/8-9	16	7/8	1-1/2x9/16	407-3420
7/8-9	18	7/8	1-1/2x9/16	407-3422
7/8-9	20	7/8	1-1/2x9/16	407-3424
7/8-9	24	7/8	1-1/2x9/16	407-3426
7/8-9	30	7/8	1-1/2x9/16	407-3428
7/8-9	3	1	1-3/4x5/8	407-3430
7/8-9	4	1	1-3/4x5/8	407-3432
7/8-9	5	1	1-3/4x5/8	407-3434
7/8-9	6	1	1-3/4x5/8	407-3436
7/8-9	7	1	1-3/4x5/8	407-3438
7/8-9	8	1	1-3/4x5/8	407-3440
7/8-9	9	1	1-3/4x5/8	407-3442
7/8-9	10	1	1-3/4x5/8	407-3444
7/8-9	12	1	1-3/4x5/8	407-3446
7/8-9	14	1	1-3/4x5/8	407-3448
7/8-9	16	1	1-3/4x5/8	407-3450
7/8-9	18	1	1-3/4x5/8	407-3452
7/8-9	20	1	1-3/4x5/8	407-3454
7/8-9	24	1	1-3/4x5/8	407-3456
7/8-9	30	1	1-3/4x5/8	407-3458
1-8	3	1	1-3/4x5/8	407-3460
1-8	4	1	1-3/4x5/8	407-3462
1-8	5	1	1-3/4x5/8	407-3464
1-8	6	1	1-3/4x5/8	407-3466
1-8	7	1	1-3/4x5/8	407-3468
1-8	8	1	1-3/4x5/8	407-3470
1-8	9	1	1-3/4x5/8	407-3472
1-8	10	1	1-3/4x5/8	407-3474
1-8	12	1	1-3/4x5/8	407-3476
1-8	14	1	1-3/4x5/8	407-3478
1-8	16	1	1-3/4x5/8	407-3480
1-8	18	1	1-3/4x5/8	407-3482
1-8	20	1	1-3/4x5/8	407-3484
1-8	24	1	1-3/4x5/8	407-3486

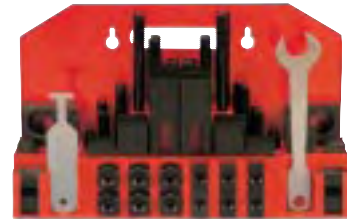
Metric Clamping Tools & Kits

Each set contains:

- 6 T-slot nuts.
- 6 flange nuts.
- 4 coupling nuts.
- 6 step blocks.
- 6 serrated end clamps.
- 24 studs, 4 each: 76, 102, 127, 152, 178 & 203mm long.

* This item have two free parts:

- 1 T slot cleaner.
- 1 nut wrench.



58Pcs Metric Clamping Kits

Size	Order No.
M10	400-3010
M12	400-3012*
M14	400-3014
M16	400-3016

Double End Bolts

A	L	I	Order No.	A	L	I	Order No.
M10	76	28	407-8005	M14	76	28	407-8065
M10	102	32	407-8010	M14	102	38	407-8070
M10	127	32	407-8015	M14	127	38	407-8075
M10	152	32	407-8020	M14	152	38	407-8080
M10	178	32	407-8025	M14	178	38	407-8085
M10	203	32	407-8030	M14	203	38	407-8090
M12	76	28	407-8035	M16	76	28	407-8095
M12	102	38	407-8040	M16	102	45	407-8100
M12	127	38	407-8045	M16	127	45	407-8105
M12	152	38	407-8050	M16	152	45	407-8110
M12	178	38	407-8055	M16	178	45	407-8115
M12	203	38	407-8060	M16	203	45	407-8120

Coupling Nuts

A	L	B	Order No.
M10	30	16	407-4110
M12	36	18	407-4112
M14	42	21	407-4114
M16	48	24	407-4116

Flanged Nuts

A	L	B	Order No.
M10	12	17	407-5010
M12	17	19	407-5012
M14	17	19	407-5014
M16	20	24	407-5016

T-Slot Nuts

A	B	C	D	Order No.
M10	11.70	18	7.1	407-2310
M12	13.70	22	8	407-2312
M14	15.70	25	8	407-2314
M16	17.70	28	11	407-2316

Step Clamps

For Bolt	L	B	H	Order No.
M10	63.5	25	12	407-8205
M10	101.6	25	15	407-8210
M10	152.4	28	19	407-8215
M12	63.5	28	12	407-8220
M12	101.6	31	19	407-8225
M12	152.4	31	22	407-8230
M14	63.5	28	12	407-8235
M14	101.6	31	19	407-8240
M14	152.4	31	22	407-8245
M16	101.6	38	19	407-8250
M16	152.4	38	22	407-8255

Step Blocks

L	H	B	Order No.
19.05	27.30	25	407-6210
26.99	39.60	25	407-6220
63.50	96.00	25	407-6230
50.80	77.30	27	407-6240
76.20	115	27	407-6250

T-Slot Cleaner

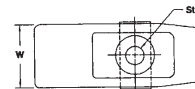
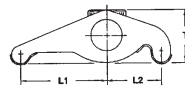


A must for every machine shop

Order No. 400-0000

Adjusta Clamps

- Instant height adjustment without blocks or shims.
- One piece assembly allows quick setups and eliminates lost clamp pieces.
- Attachable brass shims protect machine table and workpiece.
- Swing clamp 90. in either direction for loading clearance.



Clamp Body and Assembly

include one each of
Adjusta Clamp
Flat Washer, Spring,
Flange Nut, T-Slot Bolt

Clamping						Body Only	Clamp Body and Assembly	
Studs	Range	L1	L2	T	W	Order No.	T Slot Bolt	Order No.
3/8"	Up to 1-3/4"	1-7/8"	1-1/8"	1"	1-1/4"	400-8050	3/8"-16x3"	400-8051
1/2	Up to 2-1/16"	2-5/16"	1-7/16"	1-7/16"	1-5/8"	400-8052	1/2"-13x4"	400-8053
5/8	Up to 3"	3-1/4"	2"	1-7/8"	1-7/8"	400-8054	5/8"-11x5"	400-8055
3/4	Up to 4-1/4"	3-1/2"	2-1/8"	2-1/4"	2-5/8"	400-8056	3/4"-10x6"	400-8057

Side Mount Toggle Clamps

- Spindle and washer included.
- Red Plastic hand grip.



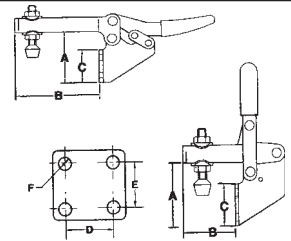
21383/25383



202-F/202-FL



101-B



Model#	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	Spindle Size	Holding Cap.(lbs.)	Order No.
21383	2-1/32	1-1/2	1-1/4	1	25/32	M6	555	407-7383
25383	2-51/64	3-1/8	1-1/2	29/32	1-1/8	M8	621	407-7386
202-FL	2-3/8	3-9/16	1-21/32	1-3/16	1	5/16-18	500	407-7389
202-F	2-3/8	2-1/8	1-21/32	1-3/16	1	5/16-18	500	407-7392
101-B	1-3/4	1-3/8	1-1/8	25/32	35/64	1/4-20	220	407-7395

Horizontal Hold Down Action Clamps

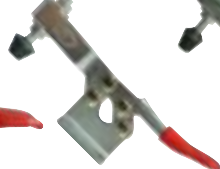
- Low hight design is ideal for small working ares
- Clamps are available with solid or U-shaped hold down bars
Providing maximum ease for loading and unloading
- Includes spindle and washer



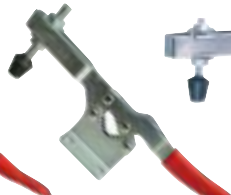
201-A



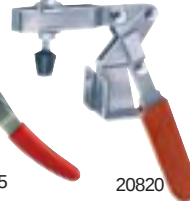
201



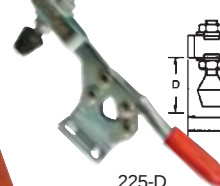
201-B



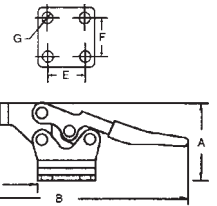
20235



20820



225-D



Model#	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	Spindle Size	Holding Cap.(lbs.)	Order No.
201-A	11/16	3-3/16	7/8	3/8	7/16X5/8	5/8	8-32	60	407-7201
201	11/16	3-3/16	3/4	5/16	7/16X5/8	5/85	8-32	60	407-7203
201-B	1-1/2	5-7/16	2-3/16	1	1X1-1/16	7/8	1/4-20	200	407-7206
20820	-	6-1/4	2-11/16	2-3/4	5/8	1	5/16-18	220	407-7212
225-D	1-13/16	6-1/2	2-3/4	1-3/8	1	7/8	5/16-18	500	407-7220
20235	2-1/2	10-3/8	4-7/32	1/3/4	1-5/8	1-5/8	3/8-16	750	407-7209

Vertical Hold Down Action Clamps

- Spindle and washer included.



13005



101-A



12050



12130



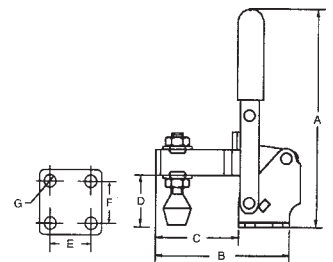
12140



12265



10247

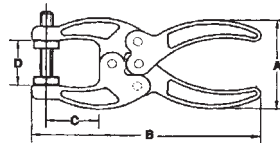


Model#	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	Spindle Size	Holding Cap.(lbs.)	Order No.
101-A	2-61/64	1-31/32	31/32	41/64	5/8	15/16	3/16	10-24	100	407-7250
130005	1-3/8	2-1/4	1-7/32	1/2	17/32	5/8	11/64	10-24	150	407-7253
12050*	3-3/4	2-17/32	1-5/6	29/32	1/2	1-1/16	13/64	1/4-20	200	407-7256
12130	5-1/2	4-9/16	2-13/16	1-1/4	3/4	1-1/4	5/32	5/16-18	500	407-7259
12140	5-1/2	5-1/2	3-3/4	1-1/4	3/4	1-1/4	5/32	5/16-18	500	407-7262
12265	7-1/2	5-17/32	3-19/32	1-11/16	1-1/4	1-25/32	21/64	3/8-16	750	407-7265
12275	7-1/2	5-17/32	3-19/32	1-11/16	1-1/4	1-25/32	21/64	3/8-16	750	407-7267
10247	8-7/8	6-15/16	4-15/16	2	1-1/4	1-25/32	11/32	1/2-13	1000	407-7269

* Fixed bar

Toggle Pliers Toggle clamps

- Squeeze one or both handles against the central position, and jaws lock automatically
- Jaws are drop-forged steel or aluminum, and supplied with adjustable pressure spindles



50360

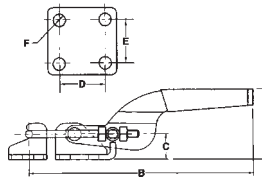


50380

Model#	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	Trigger Release	Holding Cap.(lbs.)	Order No.
50350	1-15/16	5-1/8	1-1/8	1	1/4-20	No	200	407-7363
50360	2-3/8	6-1/2	1-3/4	1-1/4	5/16-18	No	350	407-7366
50380	2-11/16	8-1/2	2-3/4	1-3/4	3/8-16	Yes	700	407-7369

Latch Type Pull Action Clamps

- Excellent for many types of latching operations
- Threaded pull bar offers convenient adjustment
- All models are supplied with red vinyl handle grip for maximum operator comfort
- Includes latch plate



40323

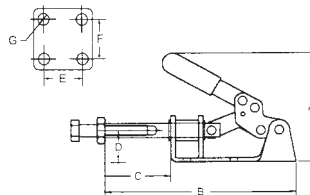


431

Model#	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	Holding Cap.(lbs.)	Order No.
40323	1-5/32	3-1/2	15/32	3/4	5/8	11/64	360	407-7340
431	1-5/8	5-5/8	21/32	1-1/4	3/4	17/64	700	407-7343
40341	2-29/32	7-1/2	59/64	1-1/2	1-5/8	11/32	2000	407-7346

Push/Pull Action Clamps

- Clamps are available in a variety of molds
- Push-pull handle makes operating easy by moving the plunger of the clamp in and out along its axis
- Model 36202 features threaded mounting for through hole mounting
- Includes spindle



301-A



36202



302-F



36010



36330



304-E

Model#	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	Holding Cap.(lbs.)	Order No.
301-A	1-1/4	2-11/16	5/8	1/2	5/8	5/8	100	407-7301
36202	2-15/16	2-3/8	3/4	-	-	-	200	407-7303
302-F	3-3/8	4-7/16	1-1/4	31/32	1-3/8	1-5/8	300	407-7306
36010	4-1/16	6-3/4	1-5/8	1-3/4	1-5/8	1-5/8	800	407-7309
36330	4-27/32	7-1/32	2	13/16	1-3/8	1-5/8	2500	407-7312
304-E	3-7/8	6-1/4	1-5/8	1-1/4	1-5/8	1-5/8	850	407-7315

Accessories

Adjustable Spindle Assemblies

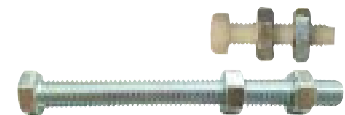
Flat Tip Bonded Neoprene Caps

Description	Order No.
10-24x1-3/8	407-7110
1/4-20x1-3/4	407-7112
1/4-20x2-1/8	407-7113
5/16-18x2-1/2	407-7115
3/8-16x3-1/2	407-7117
1/2-13x3-3/4	407-7119



Hex Head Standard Adjustable

Description	Order No.
8-32x3/4(nylon)	407-7150
3/8-16x4	407-7152
1/2-13x4-1/2	407-7154



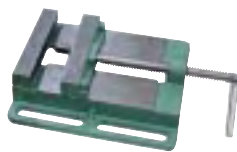
Swivel Foot

Description	Order No.
14-20x2-1/4	407-7162
5/16-18x2-3/4	407-7164
3/8-16x3	407-7166
1/2-13x4	407-7168



American Type Drill Press Vises

- Popularly used in tool rooms and machine shops for small work.
- Adjustable screw has fine pitch and long bearing.
- Rugged cast iron construction.
- Grooved steel jaw for better grip.
- Lead screw has precision cut.



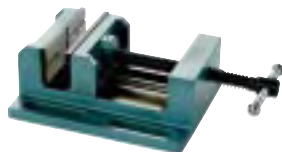
Jaw Width	Height of Jaw	Max. Jaw Opening	Order No.
2-1/2"	3/4"	2	428-8402
3"	3/4"	3-3/8	428-8403
4"	3/4"	4	428-8404
5"	7/8"	4-7/8	428-8405
6"	7/8"	5-5/8	428-8406

German Type Drill Press Vises



Jaw Width	Height of Jaw	Max. Jaw Opening	Order No.
50mm	20	30	428-8412
75mm	20	50	428-8413
100mm	20	80	428-8414
125mm	25	100	428-8415
150mm	25	135	428-8416

Leader Vises



Jaw Width	Jaw Height	Max. Jaw opening	Order No.
80mm	34mm	75mm	428-8460
106mm	46mm	95mm	428-8462
155mm	48mm	150mm	428-8464

Swivel & Tilt Vises

- The base has keyway and two bolt slots for locating and mounting on machine table.
- Angle vise are mounted on swivel base, providing complete 360° rotation of the angle base and 0° horizontal to 90° vertical setting.
- Jaw plates are one plain and one grooved.



Jaw Width	Jaw Depth	Jaw Opening	Order No.
2-1/2	1-1/2	2-1/2"	428-8825
3-1/2	1-3/8	3"	428-8830
4-1/2	1-5/8	4"	428-8840

Drill Press Vises

- The cross V-Groove on each jaw face has facility in clamping round work piece.
- Hardened screw spindle improve vise life.
- Open slotted base for easy assembly on machinery.



Jaw Width	Jaw Opening	Order No.
85mm	60mm	428-8423
100mm	75mm	428-8424
125mm	100mm	428-8425
150mm	120mm	428-8426

Drill Press Vises

- For small drilling, tapping and grinding.
- Can be turned on either side of stand on end.
- Accurately machined and assembled from high intensive cast iron.



Jaw Width	Jaw Depth	Jaw Opening	Order No.
1-1/2"	1"	1-1/2"	428-7401
2-1/2	1-1/2	2-1/2	428-7402
3-1/2	1-3/4	3-1/2	428-7403
4-1/2	1-3/4	4-1/2	428-7404
3	3	1-1/2	428-7405
4	1-3/4	4	428-7406

Adjustable Angle Vises

- Full 90° adjustable hardened and ground replaceable jaws, ground to fit round parts.



Jaw Width	Jaw Depth	Jaw Opening	Order No.
2-1/2"	1-1/2"	2-3/8"	428-7101
3-1/2"	1-1/2"	3"	428-7102
4-1/2"	1-5/8"	4"	428-7103

Deluxe Tilt Vises

- Full 90° horizontal to vertical adjustment.
- One grooves and one plain jaw plates.
- Two bolt lugs on the base for setting on machine table.



Jaw Width	Jaw Depth	Jaw Opening	Order No.
3	1-3/8	3"	428-8730
3-1/4	1-1/4	3-1/8"	428-8731
4	1-5/8	4"	428-8740
4-1/4	1-1/2	4-1/4"	428-8741

Quick Grip Drill Press Vises

- Center bar of high carbon steel and locking mechanism are hardened and ground. Set screw adjusts clamping pressure and feed of the sliding jaw, when the lever is in operation.
- With bolt lugs for clamping on worktable.
- Body and sliding jaw are of selected strong stress relieved iron casting.



A Type

Jaw Width	Jaw Depth	Jaw Opening	Order No.
3"	1-1/4"	3"	428-8503
4	1-5/16	4-11/16"	428-8504
6	1-13/16	6-3/16"	428-8506
8	2	8-3/8"	428-8508



B Type

Jaw Width	Jaw Opening	Jaw Depth	Order No.
3-1/8"	2-3/4"	1-1/2"	428-8523
4	3-1/8	1-3/4	428-8524
4-3/4	3-1/2	2	428-8525

Precision Vises



Jaw Width	Jaw Depth	Jaw Opening	Vise Length	Order No.
2"/60mm	1"	1-3/8"/30mm	3-1/2"	428-8201
2-3/4"/70mm	1-1/8	3-1/8"/80mm	6	428-8202
3/75mm	1-1/4	3-5/8"/95mm	7	428-8203

Precision Toolmakers Vises

- Clamping slots and 3/8" hole in base, provide easymeans of fixing to angle plate etc.
- Hardened and ground dovetail slides eliminate "left" and insure consistent accuracy, the hardness is 58-62 HRC.
- Has ground "V" way, Detachable replacement jaws.
- Vise is square and parallel to .005mm/.0002"



Jaw Width	Jaw Depth	Jaw Opening	Vise Length	Order No.
2"	1"	2-1/2"	5-1/2"	428-9020
2-1/2	1-1/4	3-1/2	7-1/2"	428-9025
3	1-1/4	4	8-1/2"	428-9030
3-1/2	1-3/8	5	10"	428-9035
4	1-5/8	5	10-3/8"	428-9040
5	2	6-3/8	12"	428-9050
6				428-9060

Precision Toolmakers Vises

- Guaranteed tolerance within .005mm/.0002" of parallelism, flatness and squareness with the vise in any mode. Made of high carbon steel, Hardened and tempered to ensure stability and accuracy throughout the unit's working life, The hardness is 58-62 HRC.
- For high accuracy light machining, inspection or marking of precision components. Vise can be used on base, side, end or top.



Jaw Width	Jaw Depth	Jaw Opening	Vise Length	Order No.
1"	3/8"	1"	1-5/8"	428-9210
2	1	3	5-1/2	428-9220
2-1/2	1-3/8	3-1/2	6-3/4	428-9225
3	1-3/8	4	7-1/2	428-9230
3-1/2	1-5/8	5	9	428-9235
4	1-7/8	5	9-3/4	428-9240
5	2	6-3/8	11-1/4	428-9250
6				428-9260

Precision Sine Vises

- Made of high carbon steel. Subject to rigid heat-treatment.
- Provide a close tolerance of .005mm/.0002" for both parallelism and squareness.
- Available for inspecting angles and work pieces with angle.



A Type

Jaw Width	Jaw Depth	Jaw Opening	Vise Length	Order No.
2"	1"	2-1/2"	5-3/8"	428-9520
2-1/2	1-1/4	3-1/2	7"	428-9525
3	1-1/4	4	7-5/8"	428-9530
3-1/2	1-5/8	5	9-3/8"	428-9535
4	1-5/8	5	10"	428-9540

- Made of high carbon steel. Subject to rigid heat-treatment.
- Provide a close tolerance of .005mm/.0002" for both parallelism and squareness.
- Jaw can be opened or closed without unbolting from work surface.



B Type

Jaw Width	Jaw Depth	Jaw Opening	Vise Length	Order No.
2"	1"	2-1/2"	5-3/8"	428-9555
2-1/2	1-1/4	3-1/2	7"	428-9560
3	1-1/4	4	7-5/8"	428-9565
3-1/2	1-5/8	5	9-3/8"	428-9570
4	1-5/8	5	10"	428-9575

All Purpose ToolMakers Sine Vises

- Sine Range from 0° to 60°.
- Hardness of Jaws 50-55HRC.



with Screw Handle

Jaw Width	Jaw Depth	Jaw Opening	Vise Length	Order No.
2"	2-1/2"	1"	6"	428-9720
2-1/2	3-1/2	1-1/4	7-1/2	428-9725
3	4	1-1/4	8-1/2	428-9730
3-1/2	5	1-3/8	10	428-9735
4	5	1-5/8	10-3/8	428-9740
5	6-3/8	2	12	428-9750

Precision Universal Vises

Precision Universal Vise is a newly developed fixture which is composed of two parts, namely a precision vise and a swivel plate base. With the aid of graduated swivel plate, the vise is capable of revolving 360° in a horizontal plane and 45° in a vertical plane. It is adaptable to precision grinding machine and boring machine and so on, for level and inclined face machining as well as boring at a certain degree of inclination etc.



Width of Jaw	Max. Opening of Jaws	Depth of Jaw	Order No.
2-3/4"	3-1/8"	1-1/8"	628-7020
70mm	80mm	30mm	628-7010

2 Way Compound Slide Vises

- Adjustable wear gibs and both axis.
- Independent cross feed and traverse.
- Hardened and ground top jaws.
- Used for end mills or drills presses, machined handle.



Round Base

Vise Width	Base Travel	Vise Travel	Order No.
3"	4-1/2"	3-1/2"	428-8303
4	6	5"	428-8304
5	7	6"	428-8305
6	8	6"	428-8306



Square Base

Vise Width	Base Travel	Vise Travel	Order No.
3"	4-1/2"	3-1/2"	428-8313
4	6	5"	428-8314
5	7	6"	428-8315
6	8	6"	428-8316

Milling Vises With Swivel Base

- Used in milling sharpening and drilling machine.
- Full 360° swivel base with fine, accurate graduation.
- Can be used both as stationary or swivel vise.
- Drop forged handle.



Jaw Width	Jaw Depth	Jaw Opening	Order No.
3"	1-3/8"	2-5/8"	428-8103
4	1-1/2	3-1/8"	428-8104
5	1-3/4	4"	428-8105
6	2	5"	428-8106
8	2-3/8	6-1/2"	428-8108

Tilt & Swivel Milling Vises

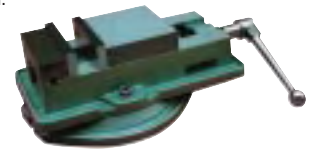
- Positive locking to withstand heavy loads.
- Horizontal swivel movement 360°, Vertical swivel movement 90°.
- Accuracy hardened and ground jaws run on precision ground.



Jaw Width	Jaw Depth	Jaw Opening	Order No.
4"	1-5/8"	2-3/4"	428-7304
5	1-7/8	4"	428-7305
6	2	5"	428-7306

Precision Milling Machine Vises

- Two type with swivel and without swivel.
- With lock down jaw eliminates TILT.
- Provide better clamping pressure.
- Eliminates hammering.
- Removable hinged handle for fast locking.



Jaw Width	Jaw Depth	Jaw Opening	With Swivel Base Order No.	Without Swivel Base Order No.
4"	1-1/4"	4-1/8"	428-7241	428-7240
5	1-3/8	4-1/2"	428-7251	428-7250
6	1-3/4	5-1/2"	428-7261	428-7260
6	1-1/2	7-1/2"	428-7267	
8	2-1/4	8-1/4"	428-7281	428-7280
6-1/4	1-1/2	8-1/8"	428-7265	428-7266

Precision Machine Vises

with 2 Clamping Stations

Jaw Width.....6.3(160mm)
Jaw Height.....2" (50mm)
Maximum Opening.....4" (100mm)
Net Weight.....47kg
Size.....730x280x200mm



Description	Order No.
Grey Cast Iron Vise Body	428-1261
Spheroidal Cast Iron Vise Body	428-1260

Machine Vises For Holding Round Bars

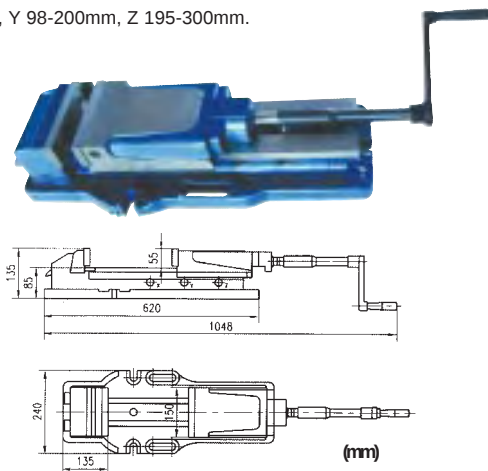
- Capacity 1/2" to 2-1/2" round parts.
- Work rests on V-block made of hardened and ground tool steel.
- Has an adjustable sliding rod to set work in proper position.
- Vise ends are ground so that it can be used vertically or horizontally.



Description	Order No.
3" Jaw Width	428-3017
4" Jaw Width	428-3018

Hydraulic Power Machine Vises

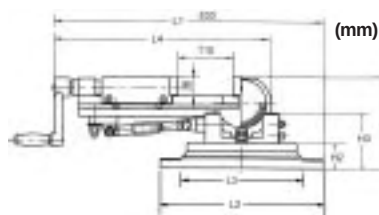
- High precision and rigidity.
- Precision machined.
- The parallelism of two jaws and squareness between Jaws and vise base are within 0.01mm.
- The parallelism of vise base(leading guide to bottom surface) is within 0.01mm.
- Clamping power is much stronger than normal vise.
- The vise body is made of spheroidal cast Iron.
- Three holes one the side of base for clamping range:
X 0-100mm, Y 98-200mm, Z 195-300mm.



Jaw Width	Jaw Opening	Jaw Depth	Clamping Force	Swivel Base Order No.	Stationary Base Order No.
6"/150mm	12"/305mm	2.2"/55mm	5000kgs/11000lbs	428-6016	428-6015

3- Way Universal Tilt & Swivel Machine Vises

- Designed for machining complex workpiece on Milling, Grinding, Drilling Machine and Electrical Discharge Machine (EDM) etc.
- The vise body is made of high tensile close grain cast iron.
- Swiveling 360° around base, tilting 90° horizontal to vertical, rotate from center axis 45° to each side.
- Vise top surface is ground accurately to facilitate use of magnetic tool holders and other accessories.
- Jaw plates are ground and hardened.



Jaw Width	Jaw Opening	Jaw Depth	Clamping Force	Order No.
4"/110mm	4"/110mm	1-3/4"/45mm	1500kgs/3300lbs	428-6050
5"/125mm	5"/125mm	1-3/4"/45mm		428-6055

Precision CNC Machine Vise

6" Jaw Width,
5-7/8" Jaw Opening,
17.5" OAL,
5" Height.



Order No. 428-9999

Precision Vises

- Made of high-quality alloy steel. The hardness of working surface reaches HRC58-62.
- The accuracy of vise (parallelism and squareness): 0.01mm.
- Quickly to clamp and easy to operate.
- Used on milling, grinding machine etc.

Jaw Width.....5.52"/140mm
Jaw Depth.....1.57"/40mm
Jaw Opening.....5.31"/135mm



Order No. 428-7300

Mini Precision Tilt/Swivel Vise

- 2-1/4" Jaw size
- 5/8" Open
- 25/32" Jaw depth
- Tilting from vertical to horizontal 90°.
- Swivel+/- 180°.
- Made of high quality tool steel, precision grinding.



Order No. 428-9993

2 Piece Quick Clamp Milling Vises



Jaw Width	Jaw Depth	Key Slot Width	T-Slot Center Distance	Clamp Travel	Order No.
6"	3"	11/16"	2-1/4 to 2-3/4"	1/4"	428-3010
8"	3-1/4"	13/16"	2-3/4 to 3-3/4"	1/4"	428-3012

Multi-Fixture Vises

Fast set-up for fixture work. Three - point gripping jaws make holds of both odd and regular shape work pieces securely.

Use on Milling Machine,
Radial Drills, Drill Presses,
Set-up Tables.



Width of Jaw	Max. Opening of Jaws	Length of Base	Overall Length	Overall Width	Overall Height	Order No.
2-3/4"	3"	10"	14-3/4"	7-1/8"	3-1/4"	428-8915
5-1/2"	6"	18-1/4"	25"	9"	5"	428-8920

Precision Modular Vises

Each Model includes:

- One each of L-Socket Wrench, T-Hex Key, Ground flat, square, and parallel within 0.005mm (.0002")
- One set Vise Holding Clamps (four pieces)
- One set Positioning Key-Nuts (two pieces)
- One Work Stop with main bolt.



Jaw Width	Jaw Depth	Jaw Opening	Overall Length	w/o Swivel Base Order No.	w/ Swivel Base Order No.
4"/100	1.2"/30	4"/100	10.6"/270	428-0100	428-1100
5"/125	1.6"/40	6"/150	13.6"/345	428-0125	428-1125
6"/150	2.0"/50	8"/200	16.5"/420	428-0150	428-1150
6"/150	2.4"/50	12"/300	20.5"/520	428-0151	428-1151
7"/175	2.4"/60	8"/200	17.9"/455	428-0175	428-1175
7"/175	2.4"/60	12"/300	21.9"/555	428-0176	428-1176
7"/175	2.4"/60	16"/400	25.8"/655	428-0177	428-1177
7"/175	2.4"/60	20"/500	29.7"/755	428-0178	428-1178
8"/200	2.6"/65	8"/200	19.5"/495	428-0200	428-1200
8"/200	2.6"/65	12"/300	23.4"/595	428-0201	428-1201
8"/200	2.6"/65	16"/400	27.4"/695	428-0202	428-1202
8"/200	2.6"/65	20"/500	31.3"/795	428-0203	428-1203
8"/200	2.6"/65	24"/600	35.2"/895	428-0204	428-1204
12"/300	3.1"/80	12"/300	26.9"/635	428-0300	428-1300
12"/300	3.1"/80	16"/400	28.9"/735	428-0301	428-1301
12"/300	3.1"/80	20"/500	32.9"/835	428-0302	428-1302
12"/300	3.1"/80	24"/600	36.8"/935	428-0303	428-1303

Long Body Modular Vises



Basic Model

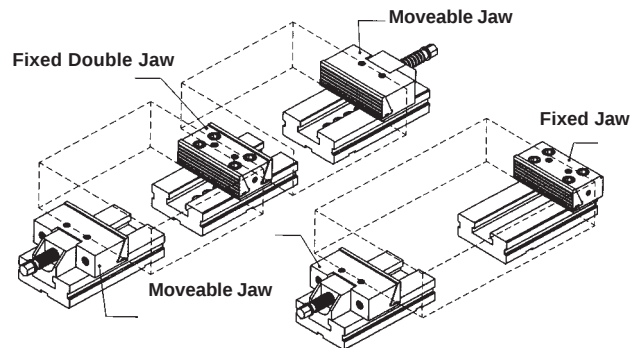
Jaw Width	Jaw Open	Base Length	Weight	Order No.
4"/100mm	11"/290mm	18"/460mm	10kg	428-2100
5"/125mm	13"/320mm	20"/520mm	17kg	428-2125
6"/150mm	14"/360mm	23"/580mm	31kg	428-2150
6"/150mm	18"/460mm	27"/680mm	34kg	428-2151
7"/175mm	16"/400mm	26"/666mm	46kg	428-2181
7"/175mm	20"/500mm	30"/766mm	51kg	428-2182
7"/175mm	24"/600mm	34"/866mm	56kg	428-2183
8"/200mm	20"/500mm	32"/805mm	85kg	428-2200
8"/200mm	24"/600mm	36"/905mm	92kg	428-2201
8"/200mm	28"/700mm	40"/1005mm	99kg	428-2202



Double Lock

Jaw Width	Each Jaw Open	Base Length	Weight	Order No.
4"/100mm	3-1/2" /90mm	18"/460mm	14kg	428-3100
5"/125mm	4" /100mm	20"/520mm	21kg	428-3125
6"/150mm	4-3/10"/110mm	23"/580mm	38kg	428-3150
6"/150mm	6-3/10"/160mm	27"/680mm	42kg	428-3151
7"/175mm	4-7/10"/120mm	26"/666mm	58kg	428-3181
7"/175mm	6-7/10"/170mm	30"/766mm	63kg	428-3182
7"/175mm	8-7/10"/220mm	34"/866mm	68kg	428-3183
8"/200mm	6"/150mm	32"/805mm	95kg	428-3200
8"/200mm	8"/200mm	36"/905mm	101kg	428-3201
8"/200mm	10"/250mm	40"/1005mm	107kg	428-3202

Short Body Precision Modular Vises



Moveable Jaw Fixed Double Jaw Fixed Jaw

Base Length	Jaw Width	Vise Height	Moveable Jaw Order No.	Fixed Jaw Order No.	Fixed Double Jaw Order No.
5-1/2"/140	4"/100	2-3/5"/65	428-4014	428-4114	428-4214
6-3/10"/160	5"/125	3"/80	428-4016	428-4116	428-4216
9"/230	6"/150	4"/100	428-4023	428-4123	428-4223
9-2/5"/240	7"/175	4-3/5"/118	428-4024	428-4124	428-4224
11-4/5"/300	8"/200	5-3/10"/135	428-4030	428-4130	428-4230
13-4/5"/350	12"/300	6-1/5"/158	428-4035	428-4135	428-4235

Multi-Purpose Adjustable Vises

One of the most versatile vises on the market. Unique design comes equipped with 5" parallel jaw, V-shaped pipe jaws, and a solid steel anvil. Both jaws and locking base swivel 360° for the best angle on your work.



Jaw width	Parallel Jaw Opening	PipeVise Opening	Weight (kgs)	Order No.
4"	0-3.2"	.39-2"	19	428-9905
4"	0-3.2"	.39-2"	23	428-9907
5"	0-4"	.6-2.36	40	428-9910
5"	0-4"	.6-2.36"	22	428-9911
5"	0-4"	.6-2.36"	27	428-9912
5"	0-4"	0-4.7"	30	428-9913
5"	0-4"	0-4.7"	34	428-9914
6"	0-4.7"	.59-2.56"	38	428-9915
6"	0-4.7"	.59-2.56"	45	428-9916

Bench Vises

- Removable hardened alloy steel jaw inserts.
- Completely enclosed center screw.
- Attractive hammered enamel finish.



Jaw Width	Jaw Opening	Weight (kgs)	Stationary Base Order No.	Weight (kgs)	Swivel Base Order No.
4"	4"	6.5	428-7504	7	428-7604
5"	5"	12	428-7505	13	428-7605
6"	6"	20	428-7506	22	428-7606
8"	8"	32	428-7508	35	428-7608

Pipe Jaw Bench Vises



Jaw Width	Jaw Opening	Swivel Base Order No.	Stationary Base Order No.
4"/100mm	4"/85mm	428-0002	428-0022
5"/120mm	4-1/2"/110mm	428-0013	428-0033
5-1/2"/140mm	6"/160mm	428-0014	428-0034
6"/160mm	6"/160mm	428-0016	428-0036

All Steel Bench Vises



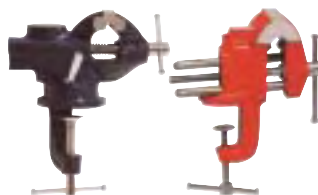
Jaw Width	Jaw Opening	Swivel Base Order No.	Stationary Base Order No.
4"/100mm	4"/100mm	428-4142	428-4102
5"/125mm	5"/125mm	428-4143	428-4103
6"/150mm	6"/150mm	428-4144	428-4104
8"/200mm	6"/150mm	428-4145	428-4105

Bench Vises



Jaw Width	Jaw Opening	Swivel Base Order No.	Stationary Base Order No.
3"/75mm	3"/76mm		428-0053
4"/100mm	4"/100mm	428-0064	428-0054
5"/125mm	5"/125mm	428-0065	428-0055
6"/150mm	6"/150mm	428-0066	428-0056

Baby Bench Vises



Jaw Width	Jaw Opening	Base	Order No.
50mm	45mm	Swivel	428-0425
60mm	55mm	Swivel	428-0426
65mm	55mm	Swivel	428-0427
75mm	70mm	Stationary	428-0438

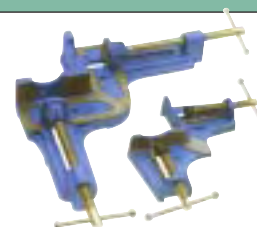
Baby Bench Vises

with Suction Base



Jaw Width	Jaw Opening	Suction Base Order No.	Stationary Base Order No.
3"/75mm	1-1/2"/35mm	428-0443	428-0453

Corner Miter Vises



Max. Opening	Order No.
2-1/4"/56mm	625-0002
4-1/4"/107mm	625-0004

Welding Angle Clamp

- Holds two pieces of different thickness at a 90° angle.
- Has "V" jaws for holding round material.
- Up to 1-1/2" on square or rectangular material.
- Up to 1-1/2" round material.



Order No. 318-0008

Jaw Length	Jaw Height	Jaw Opening	Order No.
4"	1-3/8"	2-3/8"	625-0125
5"	2-3/8"	4"	625-0130



Fabricated Offset Vises

Size	Order No.
5"/125mm	426-8405
6"/150mm	426-8410



Parrot Vises



Jaw Width	Jaw Height	Max. Jaw opening	Order No.
3-1/2"/90mm	2-1/2"/65mm	4-1/2"/115mm	428-0602

Wood Working Clamps

This heavy duty unit is everything a vise should be. Some features include carefully machined main screw and guide rods, quality casting and quick release bar. Predrilled jaws allow easy installation of wooden faces. Fastens flush to a standard 2-1/2" work bench.

Jaw Width	Jaw Depth	Jaw Opening	Order No.
7"	3-1/2"	11"	428-9900
9"	3-1/3"	10-1/2"	428-9901



Bench Yoke Vises

- Body made of malleable cast iron.
- Hardened and milled alloy steel jaws.
- Suitable for pipe fixing in room.

Size Range	Order No.
0# 2/5" to 1-3/5" /10-40mm	428-9010
1# 2/5" to 2-2/5" /10-60mm	428-9011
2# 2/5" to 3-3/5" / 10-90mm	428-9012
3# 3/5" to 4-1/2"/15-115mm	428-9013
4# 3/5" to 6-1/2"/ 15-165mm	428-9014



C-Clamps

Drop Forged, Regular-Duty, Standard Throat

Max. Opening	Throat Depth	Order No.
2"	1-3/4"	412-0020
3	2-1/4	412-0030
4	2-1/2	412-0040
6	3-1/8	412-0060
8	3-3/4	412-0070
10	4-1/4	412-0080
12	4-1/4	412-0090



Heavy Duty C-Clamps(Malleable)

Capacity	Throat Depth	Order No.
1"	3/4"	412-0301
2	1	412-0302
3	1-3/4	412-0303
4	2	412-0304
5	2-1/2	412-0305
6	2-1/2	412-0306
8	3-1/2	412-0308
3pcs/set	1,2 & 3"	412-0300



Toolmaker Parallel Clamps

Capacity	Length	Order No.
1-1/4"	2"	428-9303
1-3/4	2-1/2	428-9305
2-1/4	3	428-9307
2-3/4	4	428-9309
3-1/2	5	428-9311
4-1/2	6	428-9313
6	8	428-9315



Wood Working Angle Vise

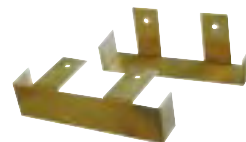
The vise is designed for wood working. Two Jaws could be adjusted to 90°, The swivel base could turn 90°, Max. Jaw Opening is 4", The weight is 11lbs.



Order No. 428-8400

Brass Vise Jaw Bib

Suitable for 4", 5", 6" Vises



Order No. 428-7500

Bench Yoke Vises

With Tripod Stand

- Body made of malleable cast iron.
- Hardened and milled alloy steel jaws.
- Complete with pipe rest.
- Designed for pipe construction outer door.

Size Range	Order No.
0# 2/5" to 1-3/5" /10-40mm	428-9000
2# 2/5" to 3-3/5" / 10-90mm	428-9002
3# 3/5" to 4-1/2"/15-115mm	428-9003



Magnetic Vise Jaw Caps

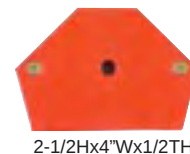
- Soft metals protect your work piece against scratching and nicking.
- 6 grooves ensure tightly hold different shapes work piece in place.
- Middle deeper VEE for clamping round work piece.
- Strong magnetic power.

Jaw Width	Aluminum Order No.	Brass Order No.
4"/101mm	427-0040	427-1040
4-1/2"/114mm	427-0045	427-1045
5"/127mm	427-0050	427-1050
5-1/2"/140mm	427-0055	427-1055
6"/152mm	427-0060	427-1060
6-1/2"/165mm	427-0065	427-1065
8"/203mm	427-0080	427-1080
10"/254mm	427-0100	427-1100
12"/305mm	427-0120	427-1120



Magnetic Quick Clamps

- Designed to enable fast & accurate holding of ferrous metals for welding & assembly jobs.
- Holds both sheet & tube at angles 90°, 75°, 60°, 45° and 30°.



2-1/2Hx4"Wx1/2TH

Order No. 625-0108



3-1/2Hx5-1/2"Wx5/8TH

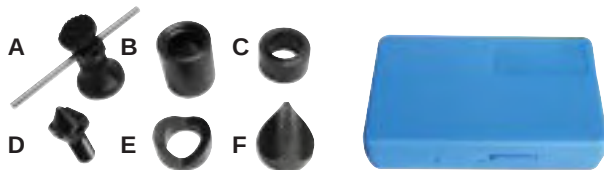
Order No. 625-0109

2 Piece Set,
Order No. 625-0111

" Little Giant " Jack Screw Sets

For leveling work on planer beds, upright drills and setting up machinery

- Each kind of jack has different range as below, which can raise 1000 pounds or more.
- The extensions may be used singly or together, and when use together, Max. Height for each one is: 3-3/4 and 6-1/8.



Sets

Pieces	Range	Ability to Lift	Order No.
6	1-1/2" to 2-1/4"	1000lbs	827-9370
6	2-1/4" to 3-3/8"	1000lbs	827-9380

Individual Parts

Pieces	Name	Range 7-1/2 to 2-1/4"	Range 2-1/4 to 3-3/8"
		Order No.	Order No.
A	Jack	827-9371	827-9381
B	Extension Base	827-9372	827-9382
C	Extension Base	827-9373	827-9383
D	Auxiliary Pointed Screw	827-9374	827-9384
E	Extension V Base	827-9375	827-9385
F	Extension Base	827-9376	827-9386

Machinist Jack

- For use any place where leveling is necessary.
- Lifting capacity of approximately 1000lbs.
- 1" adjustment.
- 4" high when fully extended.



Order No. 827-9360

Snap Lever Sight Feed Oilers

- Clear acrylic lenses. Off/on lever on top of oiler.
- Made of non-rust brass.
- Adjustable knurled feed knob below top switch.



Overall Height	Pipe Diameter	Pipe Conn.	Order No.
3-9/64	1"	1/8"	251-1001
3-9/64	1"	1/4"	251-1002
3-3/4	1-1/4"	1/8"	251-1003
3-3/4	1-1/4"	1/4"	251-1004
3-5/16	1-1/2"	1/8"	251-1005
3-5/16	1-1/2"	1/4"	251-1006
4-23/32	2"	1/4"	251-1007
5-5/16	2-1/2"	1/4"	251-1008
5-29/32	3"	1/4"	251-1009

Mechanics' Sonarscope

- Effective whenever trouble can be traced by sound.
- Can easily locate and isolate trouble in engines, motors and other moving parts.



Order No. 606-0250

Milling Vise Work Stops

Permits fast completely accurate positioning of repetitive work.

Descriptions	Order No.
For 3" or 4" Vise	209-9013
For 6"	209-9010



Adjustable Universal Stop

- Serves as a rigid stop for milling set-ups.
- Used with vises, angle plates, jigs, etc.
- Usable as a versatile holder, as well as stop.

Column: 5/8" x 6-1/4"

Base: 3/4" x 2" x 4-1/2"

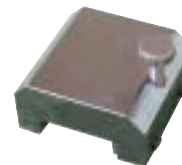
Rod: 3/8" x 10"

Order No. 209-9008



Vise Work Stop

- To fit angle lock type vises
- Single thumbscrew tightens clamp to vise jaw.
- Two ground -pins on both sides of clamp.
- Easily mounts to the top of most vise jaws.
- 1pc. Clamping screw.
- 7/8" capacity.



Order No. 209-9007

Quill Stop

- For Bridgeport Type Mills.
- Quick action clip.
- Top or bottom positioning.
- 0.020" fine adjustment.
- Easily installed, quickly moved.
- Clips on quill easily for rapid depth setting.



Order No. 428-9705

Quick Clamp

- Fits all milling machine vises with 3/8" to 3/4" vise jaws.
- Hardened steel body. 1" wide and two steel guide pins for positive clamping.
- Clamps quickly and easily to the Top of hard or soft jaws.



Order No. 209-9006

Draw Bars

Fits All Mills



A	B	C	D	E	Order No.
23-1/2"	4-1/2"	0.99"	1-3/4"	3/4"	209-9015
21-1/8"	1-3/4"	0.99"	2"	3/4"	209-9016
24-3/16"	6-5/16"	5/16"	1"	3/4"	209-9017