

Somma Tool Company

SOMMA TOOL COMPANY / WHAT'S NEW IN THIS CATALOG...

Since 1939 it has been the goal of Somma Tool Company to offer the best quality tools to the screw machine industry. We continue this tradition by offering the following new catalog items to help make your machines run more efficiently.

- PG 7 CONVERT YOUR RQC SHANK TYPE SHAVE TOOL HOLDER TO A CIRCULAR SHAVE TOOL HOLDER
- PG 16 LARGER SELECTION OF DOVETAIL FORM TOOL BLANKS
- PG 18 LARGER SELECTION OF DOVETAIL SHAVE TOOL BLANKS
- PG 19 NOTICE OF ENHANCED QUOTING OF DOVETAIL & CIRCULAR FORM AND SHAVE TOOLS "TO PRINT" AND "HOLD FOR RELEASE" OPTION
- PG 22-24, 26, 27 CARBIDE TIPPED CIRCULAR FORM TOOLS
- PG 29 NOTICE OF ENHANCED QUOTING OF VARIOUS STYLE CUTOFF BLADES AND "HOLD FOR RELEASE" OPTION
- PG 42 NOTICE OF ENHANCED QUOTING OF INTERNAL ROTARY BROACHING TOOLS AND NEW "QR" CODE FOR YOUTUBE BROACHING VIDEOS
- PG 50 INTERNAL ROTARY BROACH SETUP TOOL GAGE
- PG 51 NOTICE OF ENHANCED QUOTING OF EXTERNAL ROTARY BROACHING TOOLS
- PG 53 RECESS TOOL HOLDER / ER COLLET
- PG 69 TENSION ONLY ER COLLET FLOATING TAP HOLDERS
- PG 70 TENSION/COMPRESSION FLOATING TAP HOLDERS
- PG 82 DOUBLE END SWISS COLLET CHUCKS
- PG 98-102 HD BUSHINGS
- PG 107 NOTICE OF AVAILABILITY OF HARDINGE® WORKHOLDING PRODUCTS
- PG 108 NOTICE OF ENHANCED QUOTING & AVAILABILITY OF VARIOUS TOOLHOLDERS & TAPER SHANK TOOLING
- PG 124 NOTICE OF ENHANCED QUOTING & AVAILABILITY OF BALAS TOOLHOLDING FORMERLY OFFERED BY SANDVIK
- PG 126 NOTICE OF ENHANCED QUOTING & AVAILABILITY OF BALAS WORKHOLDING COLLETS, PUSHERS & PADS
- PG 130,131 SWISS TYPE COLLETS
- PG 132 SWISS CARBIDE GUIDE BUSHINGS

SELECTING TOOL MATERIAL

THERE ARE THREE CHARACTERISTICS THAT AFFECT THE PERFORMANCE OF ANY CUTTING MATERIAL, THEY ARE:

- TOUGHNESS**— THE RELATIVE ABILITY OF THE STEEL TO WITHSTAND DEFLECTION AND INTERRUPTED CUTS WITHOUT CHIPPING.
- WEAR RESISTANCE**— THE RELATIVE ABILITY OF THE STEEL TO WITHSTAND THE ABRASIVE ACTION OF DIFFICULT TO MACHINE MATERIALS WITHOUT WEARING AWAY.
- RED HARDNESS**— THE RELATIVE ABILITY OF THE STEEL TO WITHSTAND THE HEAT GENERATED WHEN CUTTING HARD MATERIALS WITHOUT LOSING ITS HARDNESS.

M2 H.S.S. (ROCKWELL C63-65) HAS THE HIGHEST TOUGHNESS AS WELL AS GOOD WEAR RESISTANCE AND RED HARDNESS, AND IS ALSO THE LEAST EXPENSIVE.

T15PM H.S.S. (ROCKWELL C64-66) HAS HIGH WEAR AND ABRASION RESISTANCE PLUS GOOD RED HARDNESS AND TOUGHNESS, AND IS HIGHER PRICED.

M4PM H.S.S. - FORMERLY CALLED SUPERKUT. (ROCKWELL C64-66) HAS HIGH WEAR RESISTANCE PLUS GOOD RED HARDNESS AND TOUGHNESS, AND IS MEDIUM PRICED. WE PRESENTLY USE IT ONLY FOR CUTOFF BLADES BECAUSE IT HAS PROVEN TO OUTPERFORM COBALT TYPE BLADES.

76PM H.S.S. (ROCKWELL C65-68) HAS THE HIGHEST WEAR RESISTANCE AND RED HARDNESS PLUS GOOD TOUGHNESS, AND IS THE HIGHEST PRICED. IT CAN BE USED WHEN NONE OF THE ABOVE STEELS ARE SATISFACTORY.

M42 H.S.S. (ROCKWELL C65-68) HAS HIGH RED HARDNESS PLUS GOOD WEAR RESISTANCE AND TOUGHNESS, AND IS MEDIUM PRICED.

MAXAMET OR 86PM H.S.S. (ROCKWELL C69-71) FOR DIFFICULT TO MACHINE MATERIALS.

OTHER FACTORS TO CONSIDER IN SELECTING A TOOL MATERIAL ARE THE LENGTH OF THE RUN, THE TYPE OF MATERIAL BEING MACHINED, THE CONDITION OF THE MACHINE, THE TYPE OF COOLANT BEING USED, TOLERANCES AND FINISHES REQUIRED, AND THE PERSONNEL OPERATING THE MACHINES.

WE RECOMMEND THAT, RATHER THAN STANDARDIZING ON ANY SINGLE MATERIAL, YOU ANALYZE EVERY JOB FOR THE MATERIAL WITH THOSE CHARACTERISTICS BEST SUITED TO THE PARTICULAR REQUIREMENTS.

AND OF COURSE TO ATTAIN LONGEST TOOL LIFE, OR WHEN ALL ELSE FAILS, THE USE OF CARBIDE TOOLING IS THE ULTIMATE CHOICE.

Your local Somma distributor will provide you with prompt service and knowledgeable assistance. We also offer excellent backup support from our factory. Here is a list of people to contact at Somma Tool Company for sales and technical assistance. Our phone number is 203-753-2114, our extensions are as follows:

SALES / SALES ENGINEERS				BROACHING/ TECHNICAL SUPPORT		QC INSERT TOOLING/ TECHNICAL SUPPORT	
NAME	Ext.#	NAME	Ext.#	Ext.#	Ext.#	Ext.#	Ext.#
Matt Ciullo	105	Sharon Pelletier	104	Dick Noti	108	Rob Somma	111
Jerry Somma	106			Abel Rodrigues	110	Rick Grante	115

ALPHABETICAL INDEX - CUTTING TOOLS, TOOL HOLDERS, ACCESSORIES

Bar Puller & Bar Puller C/O Tool..... 90	Davenport Style Dovetail Blanks..... 16,18	Recessing Tools-Blanks/Holder..... 53
Blanks-Circular 20,21,22,26	Davenport Style Form Tools 22	Resharpenable Insert Tools..... 4-13
Blanks-Dovetail 16,17,18	Davenport Style Attachments 86,87	Retaper Second Oper. Mach..... 89
Blanks-Drill & Flat Form Tools 28	Davenport Style Cut-Off Holder..... 37,65	Revolving Stops 85
Bolts 62,63	Davenport Style D/T Tool Holders 64	Rolls, Boyar-Schultz 91
Broach Tool Holders 42-52	Deburring Tools 91	Rolls-Cam 92
Broaches Internal 42-50	Die Holders 54	Rolls-Davenport..... 91
Broaches External 51,52	Dovetail Blanks/Gages 16,17,18	Rolls-Shave Tool..... 91
Broaches Swiss..... 44,45	Dovetail Holders 64,65	Second Operation Machines 89
Bushings - Drill Holder..... 94,96	Dovetail Sharpening Fixture 17	Shave Tool Holders/Adapters 79
Bushings - Reamer Holder..... 97	Drill Blanks 28	Sizing Tool Holders..... 61
Bushings - Tap Holder..... 97	Drill Holders..... 71-82	Slotting Bushings..... 93
Bushings - Tool Holder 98-106	Drill Holder Bushings 94-97	Stops, Stock 85
Calculator/Surface Feet..... 15	Drill Speeder/Air Speeder..... 86	Straight Tools 25,26
Cam Blanks 92	EDM Blanks..... 12,14,17	Sumitomo Tooling 135
Carbide-Circular Tools-Blanks 22,24,26	EDM Fixtures..... 13	Swiss Insert Tools 35-41
Carbide-Cut-Off Blades 31,32,33	Euroturn Tooling 10	Swiss Back Working Collet Chucks..... 81
Carbide-Insert Holders 4-14, 34-41	Flat Drill Blanks 27	Swiss Broaching 44,45
Centering Tools..... 93	Flat Form Tool Blanks..... 28	Swiss Cut-Off..... 35,36
Chamfer Tools 22-24	Form Tools-Circular 19-27	Swiss Double Ended ER Collet Chucks 82
Circular Form Tool Holders..... 62	Form Tool Design Program..... 15	Swiss Guide Bushings..... 132
Circular Tool Adapter Block B&S 62	Gildemeister Tooling..... 9,10	Swiss Spindle Collets 130-132
Collets, Collet Pads, Workholding 126-133	Hook Bolts 62	Swiss Turning 38-41
Collets - 5C & R8..... 133,134	Knurling Tools..... 60,61	T Bolts 63
Collets - Drill Holding..... 115-121,123-125	Manual-Form Tool Design 15	Tap Holders 66-70
Collets - Tap Holding 115,122	Master Collets/Pushers 126-134	Tap Holder Bushings 97
Collets - Swiss 130,131	Offset Tool Holder..... 59	Tapping Machine/STC-TAP-ER..... 88
Countersink 37,41	Pushers/Pusher Pads..... 126-134	Throw-away Style Insert Tooling..... 14
Cut-Off Blade Holders 11,65	Quick Change Form & Shave..... 4-14	Tool Bits..... 28
Cut-Off Blades-H.S.S. & Carbide 11,30-33	Quick Change Swiss Drill & Boring 78,79	Tool Bolts..... 63
Cut-Off Tools-Circular 22,23,37	Quick Change Indexable Cut-Off..... 34-37	Tornos Tooling 10
Cut-Off Tool Post - B&S/Tornos 65	Radius Tools-Circular 25	Traub Tooling..... 10
Davenport Style Circular Blanks..... 21	Reamer Bushings..... 97	Turning Tools 54-60
Davenport Style Countersinks..... 37	Reamer Holders 83-85	Turret Bushings 93

When you only have a Catalog # to go on, this index will assist you in finding the page on which that item is shown. To simplify this chart we have only listed the first few characters of the catalog number: Ex. TH- =TH00, TH3-NBG, TH2-8, etc.

NUMERIC INDEX FOR CUTTING TOOLS, TOOLHOLDERS AND ACCESSORIES .

CAT.#	PAGE	CAT.#	PAGE	CAT.#	PAGE	CAT.#	PAGE	CAT.#	PAGE
3/8DTF.....	16	100.....	97	3060.....	64	DAPD.....	86	R1.....	21
.50TLCF.....	63	110.....	97	4H.....	21	DAV.....	37	R2.....	21
1/2DTS.....	18	120.....	97	6H.....	21	DAV-CIN.....	34,36,37	R3.....	21
5/8DTF.....	16	1263.....	86,87	62-5.....	91	DAV-CSK.....	37	R4.....	21
5/8DTS.....	18	1421.....	87	ABL.....	32	DB.....	50	RB.....	97
.75TLCF.....	63	1431.....	87	ACT.....	56	DF.....	21	RCB.....	92
.75TLDTH.....	64	1ANR.....	68	ADH.....	54	DHX.....	48	RI.....	12
		1DTF.....	16	ARTH.....	66	DP.....	22	RQC.....	4-13
0030.....	24	1DTS.....	18	AST.....	55	DR.....	21	RSA.....	85
0045.....	24	1.0TLCF.....	63	ATT.....	55,56,57,91	DS.....	22	RSS.....	85
0060.....	24	1.0TLDTH.....	64	AVT.....	56	DSCB.....	22	RT.....	53
00ANR.....	68	1-1/4DTF.....	16	BA.....	12	DSF.....	17	SB.....	93
00B.....	20	1-1/4DTS.....	18	BAC.....	57	DSPD.....	86	SBT.....	91
00C.....	23	1.25TLCF.....	63	BAS.....	55	DSH.....	21	SCBL.....	32
00-CIN.....	37	1.25TLDTH.....	64	BAT.....	57	DTG.....	17	SDH.....	72
00F.....	24	1-1/2DTS.....	18	BAV.....	57	DTH.....	16,64	SFT.....	39
00FL.....	20	1-5/8DTF.....	16	BB.....	88,89	EDM.....	13,17	SQ.....	47,49
00H.....	27	1-5/8DTS.....	18	BL.....	33	EHX.....	52	ST-5.....	32
00P.....	23	1.882TLD.....	64	BLTP.....	65	FARH.....	83	STA.....	14
00PTBL.....	20			BP.....	90	FDH.....	71	STC.....	35,63,125
00R.....	25			BSR.....	91	FLDR.....	27	SW.....	39
00S.....	26			BSP.....	91	FRH.....	83	SWHX.....	45
00SCB.....	26					FTSC.....	15	SWSQ.....	45
00TB.....	63							SWTO.....	45
00TP.....	63								
030.....	24								
045.....	24								
060.....	24								
0B.....	20								
0C.....	23								
0-CIN.....	37								
0F.....	24								
0FL.....	20								
0H.....	27								
0P.....	23								
0PTBL.....	20								
0R.....	25								
0S.....	26								
0SCB.....	26								
0TB.....	63								
0TPB.....	63								

All square tool bits, (EX. 1/8SQ x 2.5), flat form tool blanks,(EX. 1/2 x 1 x 7), and H.S.S. drill blanks, (EX. 1/8 DIA x 4), are located on page 28.

INDEX TO COLLET CHUCKS

STRAIGHT SHANK TOOLING:

QUICK CHANGE/PRESET ER.....	78-81
COLLET CHUCKS.....	73-77
FLOATING REAMERS.....	83-85
OFFSET ADJUSTABLE.....	72,80
TAP CHUCKS.....	69,70

CATERPILLAR TAPER SHANK:

COLLET CHUCKS.....	108,109
PRECISION CHUCK.....	114
ENDMILL ADAPTER.....	111
SHELLMILL ADAPTER.....	112
MILLING CHUCK.....	113

BT TAPER SHANK:

PRECISION CHUCK.....	114
MILLING CHUCK.....	113

AUTOMOTIVE SHANK.....

PRECISION CHUCK.....	72
MORSE TAPER.....	75,85
R8 SHANK.....	76,77
TAP EXTENSIONS.....	66

INDEX TO COLLETS

ACURA® FLEX STYLE COLLETS.....	123
DOUBLE ANGLE (DA) COLLETS.....	118,119
TG SINGLE ANGLE COLLETS.....	120,121
TG TAP COLLETS.....	122
ER COLLETS.....	116,117
ER TAP COLLETS.....	115
UNIVERSAL DOUBLE TAPER.....	115
5C&R8 COLLETS & ACCESSORIES.....	133,134
FLEXI-GRIP "C" SERIES.....	125

EXCLUSIVE FROM SOMMA

RESHARPENABLE QUICK-CHANGE FORM TOOL HOLDERS AND INSERTS, SHAVE TOOL HOLDERS AND INSERTS, CIRCULAR CUTOFF HOLDERS AND INSERTS (ALSO AVAILABLE WITH "THROW-AWAY" INSERTS, SEE PAGE 14).

FEATURES OF SOMMA RESHARPENABLE QUICK CHANGE INSERT TOOLHOLDERS

INSERTS CAN BE RESHARPENED BY GRINDING MATERIAL FROM TOP SURFACE AND REUSED WITHOUT RESETTING.

INSERTS CAN BE RESHARPENED 20 TO 30 TIMES.

INSERTS CAN BE CHANGED IN LESS THAN ONE MINUTE.

ONCE INSERT IS SET TO CENTER IT NEED NEVER BE RESET.

ONCE INSERT IS SET TO PROPER DIAMETER, IT NEED NEVER BE RESET.

LATERAL POSITIONING OF FORM NEVER CHANGES.

INSERTS DO NOT REQUIRE MATCHING BACKUP ANVILS FOR SUPPORT.

ALSO AVAILABLE WITH "THROW-AWAY" INSERTS (SEE PAGE 14).

Inserts available in C6 Micrograin Carbide, C2 Micrograin Carbide and 76PM High Speed Steel plus Tin Coating. Also available in Maxamet and 86PM High Speed Steel.

To assist you in selecting appropriate insert material for your application, it has been our experience that the following grades usually give the best results.

- | | |
|--|---|
| • BRASS: | 76PM HIGH SPEED STEEL |
| FOR LONG RUNS | C2 MICROGRAIN CARBIDE |
| • ALUMINUM, COPPER, BRONZE: | C2 MICROGRAIN CARBIDE |
| • FERROUS MATERIALS: | 76PM HIGH SPEED STEEL OR C2 MICROGRAIN CARBIDE OR C6 MICROGRAIN CARBIDE |
| • DIFFICULT TO MACHINE MATERIALS: | MAXAMET OR 86PM HIGH SPEED STEEL |

Somma can supply the blanks for EDMing at your facility or Somma can supply the finished form insert if you send us your part print. Prices on application.

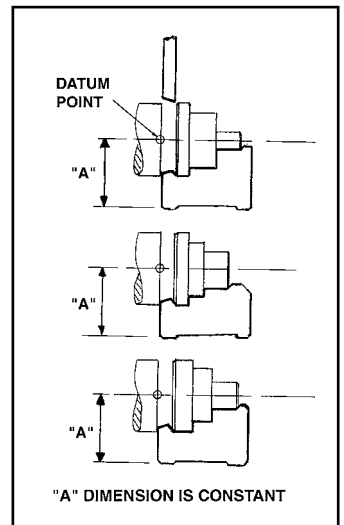
"DATUM POINT" TECHNOLOGY... for speedy job changeovers

"Datum Point" tooling for screw machines, whereby a family of similar parts can be made by simply changing the form tool, has been made simple with the introduction of Somma's patented "Resharpenable Quick Change" Insert Type Form Tool Holders.

Once the insert holder is set to the proper center height and lateral location for one job, it never has to be moved. All that is necessary when changing to a new job is to change the insert.

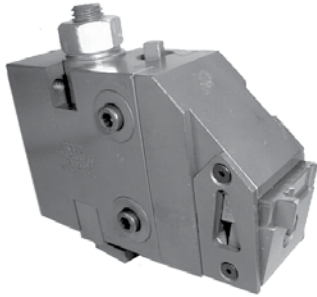
The form on each insert is calculated so that it will produce the diameters and lengths as required for each job and the inserts are mounted into a pocket in the toolholder of controlled width and depth, in relation to which the form of each insert is calculated.

Contact Somma to find out how "Datum Point" tooling can work for you!



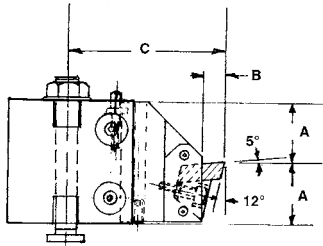
RESHARPENABLE QUICK CHANGE INSERT TOOL POSTS FOR BROWN & SHARPE MACHINES (Patent No. 5,345,846)

- Replaces circular and dovetail form tools
- Can be used on front slide or rear slide
- For right hand or left hand operation
- Flange screw adjustment for center setting of insert holder slide



CAT. NO.	W/COOLANT ATTACHMENT	A	B	C	INSERT SIZE	COOLANT ATTACHMENT ONLY
RQC00	RQC00-CS	1"	5/16	2-3/16	3/4 WIDE X 5/16	RQC5/16-CA
RQC00-W	RQC00-W-CS	1"	5/16	2-3/16	1-1/8 WIDE X 5/16	
RQC0	RQC0-CS	1-5/16"	5/16	2-7/8	3/4 WIDE X 5/16	RQC3/8-CA
RQC0-W	RQC0-W-CS	1-5/16"	5/16	2-7/8	1-1/8 WIDE X 5/16	
RQC2	RQC2-CS	1-7/16"	1/2	3-5/8	1-1/4 WIDE X 3/8	RQC3/8-CA
RQC2-1-3/4	RQC2-1-3/4-CS	1-7/16"	1/2	3-5/8	1-3/4 WIDE X 3/8	
RQC2-3/4	RQC2-3/4-CS	1-7/16"	5/16	3-5/8	3/4 WIDE X 5/16	RQC5/16-CA
RQC2-1-1/8	RQC2-1-1/8-CS	1-7/16"	5/16	3-5/8	1-1/8 WIDE X 5/16	

CONVERT THE INSERT WIDTH SIZE OF YOUR EXISTING HOLDER WITH INTERCHANGEABLE INSERT SLIDES



SEE PAGE 12 FOR INSERTS BLANKS.

COMPLETE INSERT SLIDES ONLY					
CAT. NO.	W/COOLANT ATTACHMENT	FITS		INSERT SIZE	COOLANT ATTACHMENT ONLY
RQC00-.75-SL	RQC00-.75-SL-CS	RQC00	RQC0	3/4 WIDE X 5/16	RQC5/16-CA
RQC00-.375-SL	RQC00-.375-SL-CS	RQC00-W	RQC0-W	3/8 WIDE X 5/16	RQC5/16-CA
		RQC16/20-A	RQC16/20-B		
RQC00-1.125-SL	RQC00-1.125-SL-CS	RQC16/20-A-N	RQC16/20-B-N	1-1/8 WIDE X 5/16	RQC5/16-CA
RQC2-.75-SL	RQC2-.75-SL-CS	RQC2	RQC2-3/4	3/4 WIDE X 5/16	RQC5/16-CA
RQC2-1.125-SL	RQC2-1.125-SL-CS			1-1/8 WIDE X 5/16	
RQC2-1.25-SL	RQC2-1.25-SL-CS	RQC2-1-3/4		1-1/4 WIDE X 3/8	RQC3/8-CA
RQC2-1.75-SL	RQC2-1.75-SL-CS			1-3/4 WIDE X 3/8	

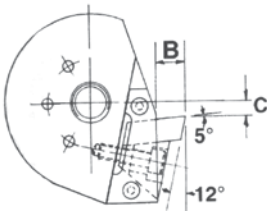


RESHARPENABLE QUICK CHANGE INSERT CIRCULAR TOOL HOLDERS FOR BROWN AND SHARPE MACHINES (Patent No. 5,345,846)

- Replaces conventional circular form tools.
- Pinholes provided both sides for right or left hand operation on B&S machines.
- Machine downtime less than one minute for insert resharpenings or replacement.

SEE PAGE 12 FOR INSERTS BLANKS.

SHOWN WITH COOLANT ATTACHMENT



CAT. NO.	W/COOLANT ATTACHMENT	MACH. SIZE	DIA.	CENTER HOLE	B	C	INSERT SIZE	COOLANT ATTACHMENT ONLY
RQC00-C-N	RQC00-C-N-CS	#00 B&S	1-3/4	3/8-16	5/16	1/8	3/8 X 5/16	RQC5/16-C-CA
RQC00-C	RQC00-C-CS	#00 B&S	1-3/4	3/8-16	5/16	1/8	3/4 X 5/16	
RQC00-C-W	RQC00-C-W-CS	#00 B&S	1-3/4	3/8-16	5/16	1/8	1-1/8 X 5/16	
RQC0-C	RQC0-C-CS	#0 B&S	2-1/4	1/2-13	5/16	5/32	3/4 X 5/16	RQC5/16-C-CA
RQC0-C-W	RQC0-C-W-CS	#0 B&S	2-1/4	1/2-13	5/16	5/32	1-1/8 X 5/16	RQC5/16-C-CA
RQC2-C-N	RQC2-C-N-CS	#2 B&S	3"	5/8-11	5/16	1/4	3/4 X 5/16	RQC5/16-C-CA
RQC2-C-NW	RQC2-C-NW-CS	#2 B&S	3"	5/8-11	5/16	1/4	1-1/8 X 5/16	RQC5/16-C-CA
RQC2-C-NN	RQC2-C-NN-CS	#2 B&S	3"	5/8/2011	5/16	1/4	3/8 X 5/16	RQC5/16-C-CA
RQC2-C	RQC2-C-CS	#2 B&S	3"	5/8-11	1/2	1/4	1-1/4 X 3/8	RQC3/8-C-CA
RQC2-C-W	RQC2-C-W-CS	#2 B&S	3"	5/8-11	1/2	1/4	1-3/4 X 3/8	

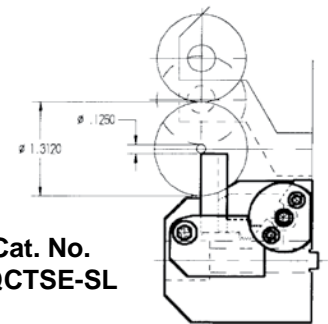
RESHARPENABLE QUICK CHANGE INSERT SLIDE ADAPTER FOR EURO TSE SHAVE TOOL HOLDERS 760200-1, 760600-1, 766000-1 (Patent No. 5848562)



Insert dims:
Resharpenable = 1-3/4 X 3/8
Throwaway = 1-3/4 X 1/8

Max Part Length = 1.750"
Max Part Dia. = 1.312"
Min. Part Dia. = .000"

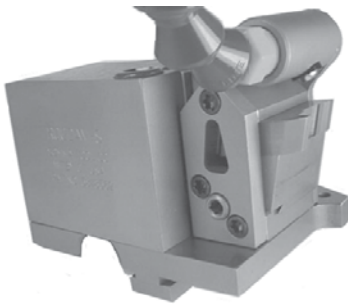
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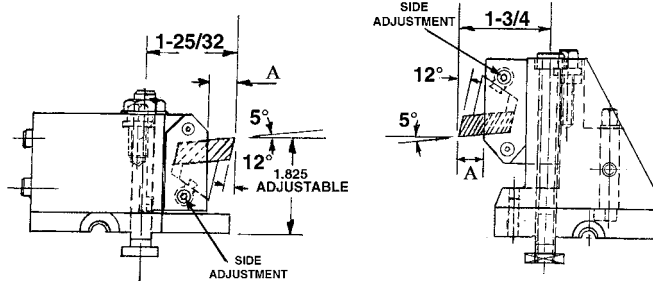
RESHARPENABLE QUICK-CHANGE INSERT TOOL POSTS FOR DAVENPORT MACHINE

With Side Adjusting Insert Clamp

(Patent No. 5,848,562)



1st Position
Shown with
Coolant Attachment



2nd Position

NOW AVAILABLE WITH COOLANT ATTACHMENT

- Increases tool life
- Improves part finish

COMPLETE TOOL POST 1ST POSITION

COMPLETE TOOL POST 2ND POSITION

CAT. NO.	W/COOLANT ATTACHMENT CAT. NO.	INSERT SIZE	A	COOLANT ATTACHMENT ONLY	CAT. NO.	W/COOLANT ATTACHMENT CAT. NO.	INSERT SIZE	A	COOLANT ATTACHMENT ONLY
RQCDV-S	RQCDV-S-CS	1-1/4W X 3/8	1/2"	RQCDV-CA	RQCDV-S	RQCDV-S-CS	1-1/4W X 3/8	1/2"	RQCDV-CA
RQCDV-W-S	RQCDV-W-S-CS	1-3/4W X 3/8	1/2"	RQCDV-CA	RQCDV-W-S	RQCDV-W-S-CS	1-3/4W X 3/8	1/2"	RQCDV-CA
RQCDV-N-S	RQCDV-N-S-CS	1-1/8W X 5/16	5/16"	RQC5/16-CA	RQCDV-N-S	RQCDV-N-S-CS	1-1/8W X 5/16	5/16"	RQC5/16-CA
RQCDV-NN-S	RQCDV-NN-S-CS	3/4W X 5/16	5/16"	RQC5/16-CA	RQCDV-NN-S	RQCDV-NN-S-CS	3/4W X 5/16	5/16"	RQC5/16-CA

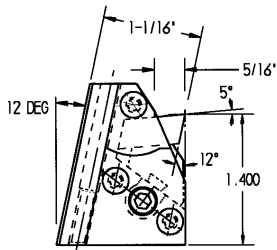
REPLACEMENT SIDE ADJUSTING INSERT SLIDES ONLY - TO FIT EXISTING RQCDV & RQCDV-B HOLDERS	CAT. NO.	CAT. NO.	FITS	INSERT
	RQCDV-SA	RQCDV-SA-CS	RQCDV RQCDV-B	1-1/4 WIDE X 3/8
	RQCDV-W-SA	RQCDV-W-SA-CS		1-3/4 WIDE X 3/8
	RQCDV-N-SA	RQCDV-N-SA-CS		1-1/8 WIDE X 5/16
	RQCDV-NN-SA	RQCDV-NN-SA-CS		3/4 WIDE X 5/16

SEE PAGE 12 FOR INSERT BLANKS.

RESHARPENABLE QUICK CHANGE INSERT DOVETAIL FORM TOOL HOLDERS

With Side Adjusting Insert Clamp Fit Davenport Cross Slide Tool Holders

(Patent No. 5,848,562)

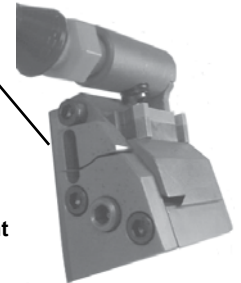


SEE PAGE 12 FOR INSERT BLANKS.

- Replaces HSS form tools and brazed on carbide form tools.

DOVETAIL SIZE	INSERT SIZE	CAT. NO.	W/COOLANT ATTACHMENT
5/8	1-1/8 WIDE X 5/16 THICK	RQCDV-DT	RQCDV-DT-CS
COOLANT ATTACHMENT ONLY		CAT. NO. RQCDV-DT-CA	

SWINGING SIDE PLATE FOR EASY INSERT REMOVAL

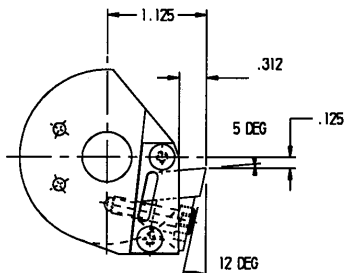


With coolant attachment.

RESHARPENABLE QUICK CHANGE INSERT CIRCULAR TOOL HOLDERS FOR DAVENPORT MACHINES

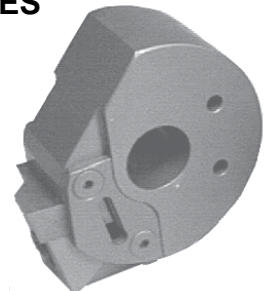
(Patent No. 5,345,846)

- Machine downtime less than one minute for insert resharpenings or replacement.
- Replaces conventional circular form tools.



SEE PAGE 12 FOR INSERT BLANKS.

DIA.	CENTER HOLE	INSERT SIZE	CAT. NO.	W/COOLANT ATTACHMENT CAT. NO.
2"	9/16" DIA.	3/8 X 5/16*	RQCDV-C-N	RQCDV-C-N-CS
2"	9/16" DIA.	3/4 X 5/16	RQCDV-C	RQCDV-C-CS
2"	9/16" DIA.	1-1/8 X 5/16	RQCDV-C-W	RQCDV-C-W-CS
COOLANT ATTACHMENT ONLY			CAT. NO. RQCDV-C-CA	



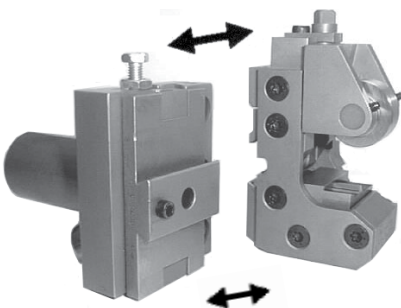
RESHARPENABLE QUICK CHANGE SHAVE TOOL HOLDERS FOR DAVENPORT MACHINES (Patent No. 5,848,562)

AT LAST.... A SHAVE TOOL WITH ALL THE FEATURES YOU ALWAYS WANTED:

THE ONLY QUICK CHANGE SHAVE TOOL INSERT THAT CAN BE RESHARPENED WITHOUT AFFECTING ITS ORIGINAL:

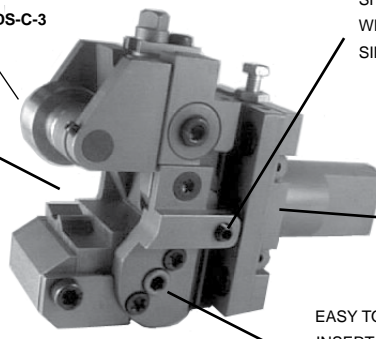
- CENTER SETTING • PART DIAMETER SETTING • LATERAL SETTING
- CAN ALSO BE USED WITH RESHARPENABLE OR THROWAWAY INSERTS • IDEAL FOR DATUM POINT APPLICATIONS

PATENTED DESIGN CLAMPS INSERT FORWARD AGAINST HOLDER FACE. INSERT ALWAYS LOCATED ON ROLL CENTERLINE. MAINTAINS PART DIAMETER AND LENGTHS EVEN AFTER RESHARPENING.



SHAVING HEAD PRESETTABLE FOR DIAMETER OFF THE MACHINE. SHAVE TOOL ROLL HEAD EASILY REMOVABLE FROM BODY. SETTINGS NOT AFFECTED BECAUSE SHANK AND BODY OF SHAVE. TOOL HOLDER REMAIN CLAMPED IN MACHINE. EASY ONE SCREW CLAMPING LOCKS HEAD IN PLACE. SIMPLIFIES DIAMETER SETUP OF HOLDER WHEN CHANGING JOBS.

OFFSET ROLL CARRIER AVAILABLE FOR WORKING CLOSER TO SPINDLE. CAT. NO. RQCDS-C-3



SEE PAGE 12 FOR INSERT BLANKS.

LATERAL FINE ADJUSTING SCREW. SHAVING HEAD CAN BE MOVED SIDEWAYS. WITHOUT MOVING SHANK OR TOOLHOLDER BLOCK. SIMPLIFIES ALIGNMENT WITH ROUGHING TOOLS.

PIPE THREAD COOLANT CONNECTION

ADJUSTABLE DOVETAIL GIB ELIMINATES CHATTER DUE TO NORMAL WEAR. SPRING TENSION ADJUSTABLE TO SUIT SIZE OF WORKPIECE.

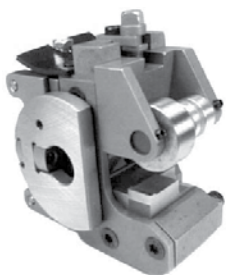
EASY TO GET AT FROM THE SIDE CLAMPING OF INSERT. INSERT CAN BE CHANGED IN LESS THAN A MINUTE. SINGLE HEX WRENCH ADJUSTMENT FOR CLAMPING AND UNCLAMPING OF INSERTS. SWING AWAY SIDE PLATE FOR EASY INSERT REPLACEMENT.

CAT. NO.	STYLE	CAPACITY	INSERT SIZE	SHANK
RQCDS-A	A	0-7/8"	1-1/8 X 3/8	1"
*RQCDS-SL	A	0-7/8"	1-1/8 X 3/8	1"
RQCDS-DV	A	0-7/8"	1-1/8 X 3/8	1-1/8"

* CENTERLINE OF SHAVE HEAD OFFSET 1/8" FROM CENTERLINE OF SHANK FOR USE WITH SLITTERS OR SLATER ADAPTER BLOCKS OR STC-DVAB-3 BLOCK SHOWN BELOW.

CONVERT YOUR RQC SHANK TYPE SHAVE TOOL HOLDER (SHOWN ABOVE) TO A CIRCULAR SHAVE TOOL HOLDER (SHOWN BELOW) WITH THIS PART;

CAT NO. **RQCDS-C-MOUNT**



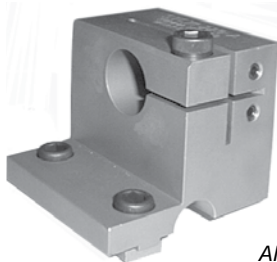
SHAVE TOOL HOLDERS FOR DAVENPORT CIRCULAR POSITIONS (Patent No. 5,848,562)

Cat. No. **RQCDS-C**

- MOUNTS ON SWING ARM-SAME AS CIRCULAR TOOLS
- ALL FEATURES SAME AS ABOVE SHANK TYPE SHAVE TOOL
- CAN BE ROTATED TO CENTER SAME AS CIRCULAR SHAVE TOOL HOLDERS
- ADJUSTABLE FOR PART TAPERS

USES 1-1/8 X 3/8 INSERT BLANKS SHOWN ON PAGE 12

SHAVE TOOL ADAPTER BLOCKS FOR DAVENPORT MACHINES



- MOUNTING HOLE FOR 1" DIAMETER SHANK
- FINE PITCH SCREWS FOR EASIER TAPER ADJUSTMENT
- HEAT TREATED ALLOY STEEL FOR DURABILITY

Ref 711-229A
SECOND POSITION
ADAPTER BLOCK
Cat. No. **STC-DVAB-2**

FOR RQCDS-A SHAVE TOOLS
- OR -
ANY SHAVE TOOL WITH SHANK THAT IS ON CENTER WITH MACHINE SPINDLE



Ref 711-313S
THIRD POSITION
ADAPTER BLOCK
Cat. No. **STC-DVAB-3**

FOR RQCDS-SL SHAVE TOOLS
- OR -
SLITTER/SLATER SHAVE TOOLS THAT ARE 1/8" OFF CENTER

To be used with Davenport Tool Arm #5080-64-1

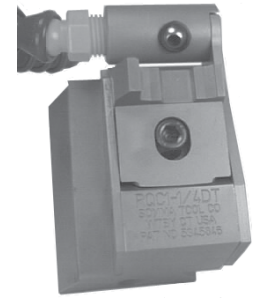
RESHARPENABLE QUICK CHANGE DOVETAIL FORM TOOL HOLDERS FOR MULTIPLE SPINDLE MACHINES

(Patent No. 5,345,846)

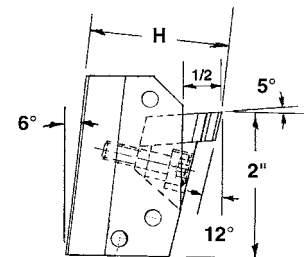
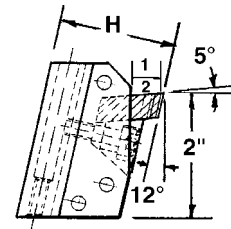
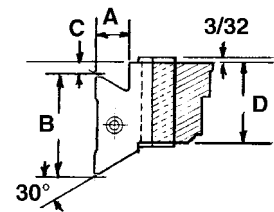
**NOW AVAILABLE WITH
COOLANT ATTACHMENT**

- Increases insert life
- Improves part finish

Coolant attachment assembly available for updating existing holders.



COOLANT ATTACHMENT STYLE



WICKMAN STYLE

SEE PAGE 12 FOR INSERTS

DOVETAIL SIZE	A	B	C	INSERT SIZE	H	CAT. NO.	W/COOLANT ATTACHMENT CAT. NO.
FOR NATIONAL ACME MACHINES							
5/8	19/64	.951	3/16	1-1/4 WIDE	1-1/2	RQC5/8DT	RQC5/8DT-CS
1	35/64	1.614	3/16	X	1-7/8	RQC1DT	RQC1DT-CS
1-1/4	35/64	1.882	3/16	3/8 THICK	1-7/8	RQC1-1/4DT	RQC1-1/4DT-CS
5/8	19/64	.951	7/16	1-3/4 WIDE	1-1/2	RQC5/8DT-W	RQC5/8DT-W-CS
1	35/64	1.614	7/16	X	1-7/8	RQC1DT-W	RQC1DT-W-CS
1-1/4	35/64	1.882	7/16	3/8 THICK	1-7/8	RQC1-1/4DT-W	RQC1-1/4DT-W-CS
5/8	19/64	.951	3/16	3/4 WIDE	1-5/8	RQC5/8DT-N	RQC5/8DT-N-CS
1	35/64	1.614	3/16	X	2"	RQC1DT-N	RQC1DT-N-CS
1-1/4	35/64	1.882	3/16	5/16 THICK	2"	RQC1-1/4DT-N	RQC1-1/4DT-N-CS
1-1/4	35/64	1.882	7/16	2-1/4 WIDE	1-7/8	RQC1-1/4DT-XW	RQC1-1/4DT-XW-CS
1-1/4	35/64	1.882	7/16	X 3/8 THICK			
1-1/4	35/64	1.882	7/16	2-3/4 WIDE	1-7/8	RQC1-1/4DT-WW	RQC1-1/4DT-WW-CS
1-1/4	35/64	1.882	7/16	X 3/8 THICK			
2-1/8	43/64	2.883	5/32	2-3/4 WIDE	2"	RQC2-1/8DT-WW	RQC2-1/8DT-WW-CS
2-1/8	43/64	2.883	5/32	X 3/8 THICK			
FOR NEW BRITAIN MACHINES							
5/8	19/64	.951	3/16	1-1/4 WIDE	1-1/2	RQC5/8DT	RQC5/8DT-CS
1.253	35/64	1.253	3/16	1-1/4 WIDE	1-7/8	RQCNBDT	RQCNBDT-CS
1.827	37/64	1.827	3/16	X 3/8 THICK	1-7/8	RQCNBDT-1.827	RQCNBDT-1.827-CS
1.253	35/64	1.253	7/16	1-3/4 WIDE	1-7/8	RQCNBDT-W	RQCNBDT-W-CS
1.827	37/64	1.827	7/16	X 3/8 THICK	1-7/8	RQCNBDT-1.827-W	RQCNBDT-1.827-W-CS
1.253	35/64	1.253	3/16	3/4 WIDE	1-7/8	RQCNBDT-N	RQCNBDT-N-CS
1.827	37/64	1.827	3/16	X 3/8 THICK	1-7/8	RQCNBDT-1.827-N	RQCNBDT-1.827-N-CS
FOR WICKMAN MACHINES							
.951"	21/64	.951	3/16	1-1/4 WIDE	1-5/8	RQCWK-951	RQCWK-951-CS
1.433"	25/64	1.433	3/16	X	1-5/8	RQCWK-1433	RQCWK-1433-CS
1.845"	33/64	1.845	3/16	3/8 THICK	1-7/8	RQCWK-1845	RQCWK-1845-CS
1.897"	33/64	1.897	3/16		1-7/8	RQCWK-1897	RQCWK-1897-CS
.951"	21/64	.951	7/16	1-3/4 WIDE	1-5/8	RQCWK-951W	RQCWK-951W-CS
1.433"	25/64	1.433	7/16	X	1-5/8	RQCWK-1433W	RQCWK-1433W-CS
1.845"	33/64	1.845	7/16	3/8 THICK	1-7/8	RQCWK-1845W	RQCWK-1845W-CS
1.897"	33/64	1.897	7/16		1-7/8	RQCWK-1897W	RQCWK-1897W-CS

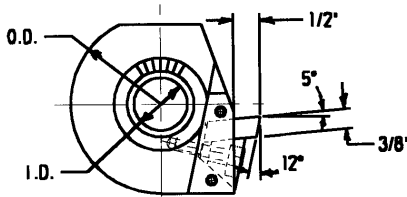
Special coolant attachments are available.

RESHARPENABLE QUICK CHANGE CIRCULAR FORM TOOL HOLDERS FOR MULTIPLE SPINDLE MACHINES

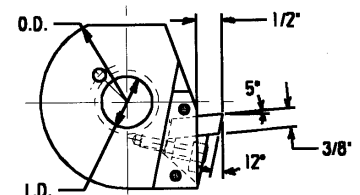
(PATENT NO. 5,345,846)

Available:

- 2-3/8" and 3-3/8" O.D. with pinholes or side teeth for National Acme Machines
- 2-1/4", 2-1/2", 3" and 3-1/2" O.D. with pinholes for New Britain and other machines
- with 3/8" x 1-1/4", 3/8" x 1-3/4", 3/8" x 2-1/4" re-sharpenable or throw-away inserts
- with coolant attachment



SIDE TEETH STYLE



PINHOLE STYLE

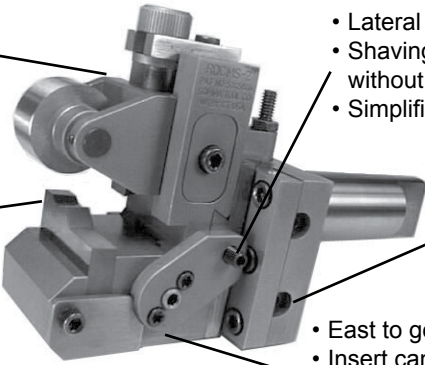
RESHARPENABLE QUICK CHANGE SHAPE TOOL HOLDERS FOR MULTIPLE SPINDLE MACHINES

(Patent No. 5,848,562)

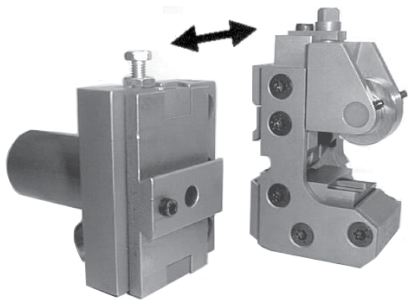
THE ONLY QUICK CHANGE SHAPE TOOL INSERT THAT CAN BE RESHARPENED WITHOUT AFFECTING ITS ORIGINAL:

- CENTER SETTING • PART DIAMETER SETTING • LATERAL SETTING
- CAN ALSO BE USED WITH THROW-AWAY INSERTS
- IDEAL FOR DATUM POINT APPLICATIONS

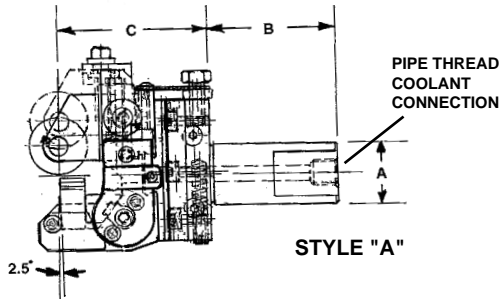
- Roll slide can be rotated 180° for rolling on out board end of workpiece.
- Carbide roll pin
- Patented design clamps insert forward against holder face.
- Insert always located on roll centerline.
- Maintains part diameter and lengths even after resharpening.



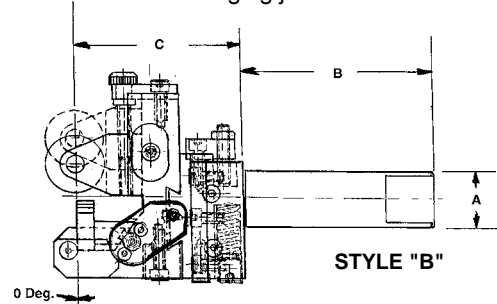
- Lateral fine adjusting screw
- Shaving head can be moved sideways without moving shank or tool holder block.
- Simplifies alignment with roughing tools.
- Adjustable dovetail gib eliminates chatter due to normal wear.
- Adjustable spring tension to suit size of workpiece.
- Easy to get at from the side clamping of insert.
- Insert can be changed in less than a minute.
- Single hex wrench adjustment for clamping and unclamping of inserts.
- Swing away side plate for easy insert replacement.



- Shaving head presettable for diameter off the machine.
- Shave tool roll head easily removable from body.
- Settings not affected because shank and body of shave toolholder remain clamped in machine.
- Easy one screw clamping locks head in place.
- Simplifies diameter setup of holder when changing jobs.



RESHARPENABLE QUICK CHANGE SHAPE TOOL HOLDERS FOR MULTIPLE SPINDLE MACHINES - STYLE "A"



RESHARPENABLE QUICK CHANGE SHAPE TOOL HOLDERS FOR MULTIPLE SPINDLE MACHINES - STYLE "B"

CAT. NO.	CAPACITY	INSERT SIZE	A	B	C	PRICE
RQCMS-0	0-7/8"	1-1/8 X 3/8	1"	3-1/2	2-3/8	1,432.00
RQCMS-0-1	1/8-1"	1-1/8 x 3/8	1"	3-1/2	2-3/8	1,432.00
RQCMS-1	1/8-1"	1-1/8 X 3/8	1-1/4	4"	3-1/8	1,546.00

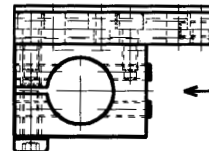
SEE PAGE 12 FOR INSERT BLANKS.

CAT. NO.	CAPACITY	INSERT SIZE	A	B	C	PRICE
RQCMS-2	1/8-1-1/4"	1-3/4 X 3/8	1-1/4	4"	3-1/2	1,863.00
RQCMS-3	1/2-1-5/8"	1-3/4 X 3/8	1-1/2	4-1/2	3-1/2	1,892.50
RQCMS-5	1-1/8-2-1/4"	1-3/4 X 3/8	1-1/2	4-1/2	3-1/2	2,350.00

SHAPE TOOL MOUNTING BLOCKS FOR GILDEMEISTER AND OTHER METRIC MACHINES



CAT. NO.	CENTER HEIGHT	SHANK DIA.	PRICE
RQCGLD20-SB	30MM	1.000"	485.00
RQCGLD50-SB	50MM	1.500"	595.00

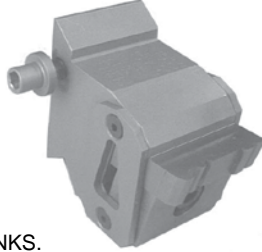
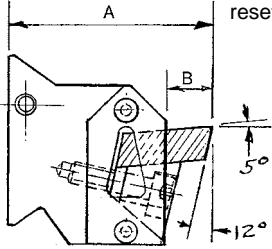


SHANK HOLDING BLOCK CAN BE REPOSITIONED ON BASE PLATE CLOSE TO SPINDLE FOR UPSIDE DOWN CROSS SLIDE POSITIONS.

RESHARPENABLE QUICK CHANGE INSERT TOOL HOLDERS FOR TRAUB TNM28 AND TNM42 MACHINES

(Patent No. 5,345,846)

- Replaces horizontal dovetail form tool holders.
- Machine downtime less than one minute for insert resharpenings or replacement.
- Center height adjustment never has to be reset after sharpening insert.



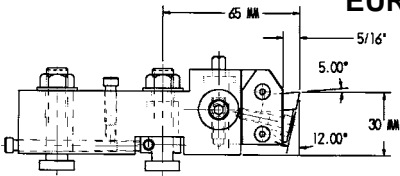
CAT. NO.	W/COOLANT ATTACHMENT	"A"	"B"	INSERT SIZE
RQC-TNM28-.75	RQC-TNM28-.75-CS	57MM (2.244")	5/16	3/4" X 5/16
RQC-TNM28	RQC-TNM28-CS	57MM (2.244")	1/2	1-1/4" X 3/8
RQC-TNM28-1.75	RQC-TNM28-1.75-CS	57MM (2.244")	1/2	1-3/4" X 3/8
RQC-TNM42-1.25	RQC-TNM42-1.25-CS	80MM (3.150")	1/2	1-1/4" X 3/8
RQC-TNM42-1.75	RQC-TNM42-1.75-CS	80MM (3.150")	1/2	1-3/4" X 3/8
RQC-TNM42-.75	RQC-TNM42-.75-CS	80MM (3.150")	5/16	3/4" X 5/16

SEE PAGE 12 FOR INSERT BLANKS.

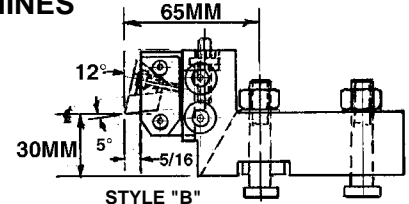
RESHARPENABLE QUICK CHANGE INSERT TOOL HOLDERS FOR TORNOS SAS16 MACHINES EUROTUR 6/20 AND GILDEMEISTER MACHINES

(Patent No. 5,345,846)

- Replaces dovetail form tools
- Replaces circular form tools
- Center height adjustment never has to be reset after sharpening insert.
- Machine downtime less than one minute for insert resharpenings or replacement.



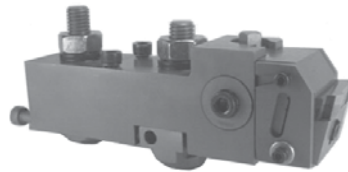
STYLE "A"



STYLE "B"

CAT. NO.	W/COOLANT ATTACHMENT	INSERT SIZE
RQC16/20-A	RQC16/20-A-CS	1-1/8 X 5/16
RQC16/20-A-N	RQC16/20-A-N-CS	3/4 X 5/16
RQC16/20-A-NN	RQC16/20-A-NN-CS	3/8 X 5/16
COOLANT ATTACHMENT ONLY		RQC5/16-CA

CAT. NO.	W/COOLANT ATTACHMENT	INSERT SIZE
RQC16/20-B	RQC16/20-B-CS	1-1/8 X 5/16
RQC16/20-B-N	RQC16/20-B-N-CS	3/4 X 5/16
RQC16/20-B-NN	RQC16/20-B-NN-CS	3/8 X 5/16
COOLANT ATTACHMENT ONLY		RQC5/16-CA

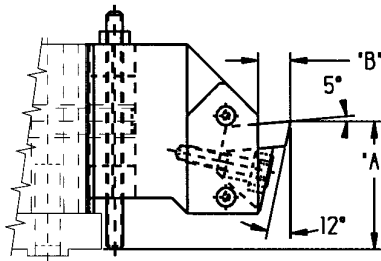
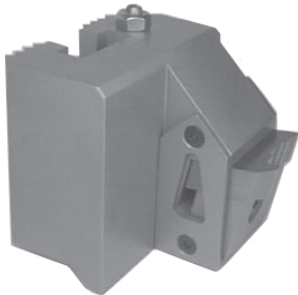


Fits:
Tornos SAS16 Euroturn 6/20
Positions 1,2 Positions 1,4,6
Gildemeister GM20
Positions 1,4

Fits:
Tornos SAS16 Euroturn 6/20
Positions 3,4,5 Positions 2,3,5
Gildemeister GM20
Positions 2,5

SEE PAGE 12 FOR INSERT BLANKS.
 FOR INSERT SLIDES ONLY, SEE RQC00 TOOLPOSTS PG. 5.

RESHARPENABLE QUICK CHANGE INSERT SERRATED TOOL HOLDERS FOR GILDEMEISTER AND EUROTUR MACHINES (Patent No. 5,345,846)



- Fits serrated tool blocks.
- Inserts offset close to spindle
- Reversible for upside down positions.
- Replaces horizontal dovetail form tool holders.
- Center height adjustment never has to be reset after sharpening insert.
- Machine downtime less than one minute for insert resharpenings or replacement.

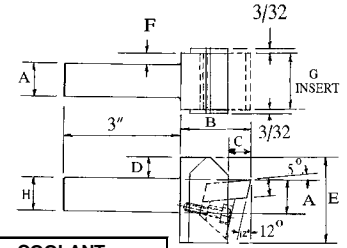
CAT. NO.	WITH COOLANT ATTACHMENT	MACHINE	"B"	INSERT SIZE	COOLANT ATTACHMENT ONLY
RQCGLD20	RQCGLD20-CS	GM16/20 & EUROTURN 6/20	5/16"	5/16 X 1-1/8	RQC5/16-CA
RQCGLD20-W	RQCGLD20-W-CS		5/16"	5/16 X 1-3/4	RQC5/16-CA
RQCGLD35-42-A	RQCGLD35-42-A-CS	GM35/42	1/2"	3/8 X 1-3/4	RQC3/8-CA
RQCGLD35-42-1.25	RQCGLD35-42-1.25-CS		1/2"	3/8 X 1-1/4	RQC3/8-CA
RQCEUR-32-1.25	RQCEUR-32-1.25-CS	EUR6/32-8/32	1/2"	3/8 X 1-1/4	RQC3/8-CA
RQCEUR-32-1.75	RQCEUR-32-1.75-CS		1/2"	3/8 X 1-3/4	RQC3/8-CA

SEE PAGE 12 FOR INSERT BLANKS.



RESHARPENABLE QUICK CHANGE INSERT SHANK TYPE TOOL HOLDERS (Patent No. 5,345,846)

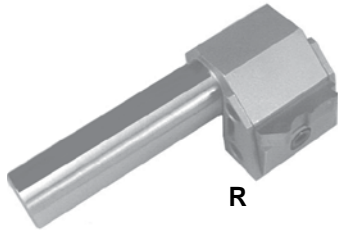
- Replaces full length H.S.S. toolbits
- Replaces brazed on type carbide tools



SEE PAGE 12 FOR INSERT BLANKS.

CAT. NO.	W/ COOLANT ATTACHMENT	H	A	B	C	D	E	F	G INSERT SIZE	COOLANT ATTACHMENT ONLY
RQC-312	--	1/2	5/8	1-1/4	5/16	3/8	1-1/4	--	5/16 X 5/16	--
RQC00-1/2	RQC00-1/2-CS	1/2	1/2	1-3/32	5/16	13/32	1-3/8	1/8	3/4 X 5/16	RQC5/16-CA
RQC00-5/8	RQC00-5/8-CS	5/8	5/8	1-3/32	5/16	13/32	1-3/8	1/16	3/4 X 5/16	
RQC00-3/4	RQC00-3/4-CS	3/4	3/4	1-3/32	5/16	13/32	1-3/8	--	3/4 X 5/16	
RQC-5/8	RQC-5/8-CS	5/8	5/8	1-5/8	1/2	1/2	1-15/16	5/16	1-1/4 X 3/8	RQC3/8-CA
RQC-3/4	RQC-3/4-CS	3/4	3/4	1-5/8	1/2	1/2	1-15/16	1/4	1-1/4 X 3/8	
RQC-1.0	RQC-1.0-CS	1"	1"	1-5/8	1/2	1/2	1-15/16	1/8	1-1/4 X 3/8	
RQC-1.0-W	RQC-1.0-W-CS	1"	1"	1-5/8	1/2	1/2	1-15/16	1/8	1-3/4 X 3/8	
RQC-1.25	RQC-1.25-CS	1-1/4	1-1/4	1-5/8	1/2	1/2	1-15/16	--	1-1/4 X 3/8	
RQC-1.25-W	RQC-1.25-W-CS	1-1/4	1-1/4	1-5/8	1/2	1/2	1-15/16	1/4	1-3/4 X 3/8	

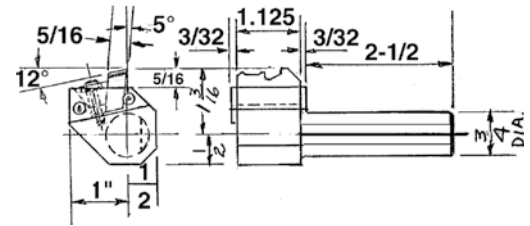
RESHARPENABLE QUICK CHANGE INSERT GANG TYPE TOOL HOLDERS (Patent No. 5,345,846)



R

SEE PAGE 12 FOR INSERT BLANKS.

- Replaces stick type form tools.
- Center height adjustment never has to be reset after sharpening insert.
- Machine downtime less than one minute for insert resharpenings or replacement.



CAT. NO.	SHANK	INSERT
RQCGT-3/4	3/4" DIA.	1-1/8 X 5/16

RESHARPENABLE QUICK CHANGE INSERT CIRCULAR CUTOFF TOOLS FOR 5TH POSITION DAVENPORT (Patent No. 5,345,846)

- MOUNTS ON SWING ARM - SAME AS CIRCULAR TOOL.
- ONCE HOLDER IS SET ON CENTER NEVER NEEDS TO BE RESET.
- INSERTS ARE RESHARPENABLE 10 TO 15 TIMES (1/8").
- RESHARPENING FIXTURE AVAILABLE - SEE PAGE 13.
- INSERTS ALWAYS RETURN TO ORIGINAL DIAMETER AND LENGTH SETTINGS.
- INSERTS CAN BE CHANGED IN LESS THAN A MINUTE.
- INSERTS AVAILABLE TO FULL DIAMETER CAPACITY OF MACHINE.

MICRO-GRAIN CARBIDE INSERTS

BLADE CLOSE TO PICKOFF COLLET

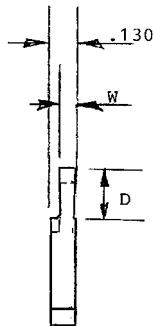
CAT. NO.	STYLE	W*	D
RQCT-047-0	A	.047	3/16
RQCT-063-0	A	.063	5/16
RQCT-078-0	A	.391	25/64
RQCT-094-0	A	.094	7/16
RQCT-125-0	A	.125	9/16

BLADE CLOSE TO SPINDLE

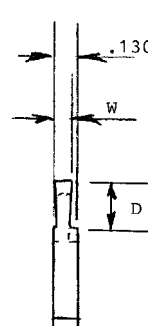
CAT. NO.	STYLE	W*	D
RQCT-047	B	.047	3/16
RQCT-063	B	.063	5/16
RQCT-078	B	.391	25/64
RQCT-094	B	.094	7/16



Cat. No. RQCDAV-CO



STYLE "A"

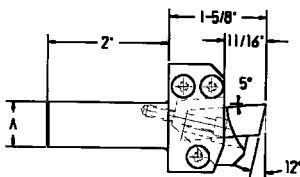


STYLE "B"

CUTOFF BLADE BLANKS FOR REWORKING TO YOUR REQUIREMENTS. GROUND HEIGHT, WIDTH & LENGTH	
	CAT. NO.
MICROGRAIN CARBIDE	RQCT-MIC
76PM HIGH SPEED STEEL	RQCT-A

- PRICES ON APPLICATION FOR WIDER INSERTS FOR PICKOFF COLLET FORM AND CUTOFF WORK.

* NOTE: CUTOFF WIDTH WILL BE REDUCED UP TO .001" PER SIDE (.002" TOTAL) AS INSERT IS RESHARPENED.



RESHARPENABLE QUICK CHANGE INSERT SHANK TYPE CUTOFF BLADE HOLDERS (Patent No. 5,345,846)

Uses same inserts as Davenport Holder shown above.
Inserts Resharpenable 10-15 times (1/8").

CAT. NO.	A
RQC-.75-CO	3/4"
RQC-.50-CO	1/2"
RQCGM20-CO	20MM

RESHARPENABLE QUICK CHANGE FORM TOOL INSERTS

Prices on application for inserts EDM'd to your part print.
 Inserts can be resharpened by grinding material from top surface and reused without resetting. Inserts can be resharpened 20 to 30 times. Adaptable for "Datum Point" Applications (See page 4)

RESHARPENABLE EDM READY BLANKS FOR THOSE WITH EDM FACILITIES



- Inserts are ground to 5/16" or 3/8" thickness only.
- Blanks oversize on width and length for EDMing.
- Blanks are recessed on back end for mounting in EDM fixture.



Resharpenable Insert

For best results, inserts should be cut in Wire EDM Fixtures shown on page 13.

Spacer

	INSERT SIZE - FOR FORM TOOLS							FOR SHAVE TOOLS	
	*5/16 X 3/4	5/16 X 1-1/8	5/16 X 1-3/4	3/8 X 1-1/4	3/8 X 1-3/4	3/8 X 2-1/4	3/8 X 2-3/4	3/8 X 1-1/8	3/8 X 1-3/4
C2 MICRO	RI-.75MIC	RI-1.125MIC	RI-1.75-N-MIC	RI-1.25MIC	RI-1.75MIC	RI-2.25MIC	RI-2.75MIC	RI-1.25MIC	RI-1.75MIC
C6 MICRO	RI-.75C6	RI-1.125C6	RI-1.75-N-C6	RI-1.25C6	RI-1.75C6	RI-2.25C6	RI-2.75C6	RI-1.25C6	RI-1.75C6
76 PM HSS	RI-.75-A	RI-1.125-A	RI-1.75-N-A	RI-1.25-A	RI-1.75-A	RI-2.25-A	RI-2.75-A	RI-1.25-A	RI-1.75-A
MAXAMET	RI-.75-M	RI-1.125-M	RI-1.75-N-M	RI-1.25-M	RI-1.75-M	RI-2.25-M	RI-2.75-M	RI-1.25-M	RI-1.75-M
SPACER	RI-.75-3/32	RI-1.125-3/32	RI-1.75-N-3/32	RI-1.25-1/8	RI-1.75-1/8	RI-2.25-1/8	RI-2.75-1/8	RI-1.25-1/8	RI-1.75-1/8

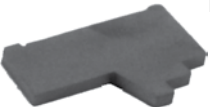
***Note: 5/16 x 3/4 blanks are used for 5/16 x 3/8 Inserts.**

QUICK CHANGE (THROWAWAY) FORM TOOL INSERTS

Prices on application for inserts EDM'd to your part print.

- For those who don't want to resharpen inserts but still want to enjoy advantages of "RQC" Holders
- Adaptable for "Datum Point" applications (see page 4)

EDM READY (THROWAWAY) BLANKS FOR THOSE WITH EDM FACILITIES



- Inserts are ground to 1/8" thickness only.
- Blanks oversize on width and length for EDMing.
- Blanks are recessed on back end for mounting in EDM fixture.



Throwaway Insert

For best results, inserts blanks should be cut in Wire EDM Fixtures shown on page 13.

Back-up Anvil

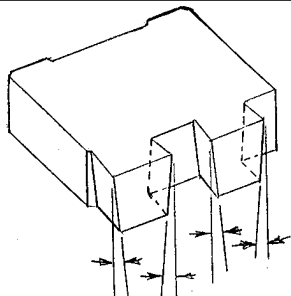
	INSERT SIZE - FOR FORM TOOLS							- FOR SHAVE TOOLS	
	*1/8 X 3/4	1/8 X 1-1/8	1/8 X 1-3/4-N	1/8 X 1-1/4	1/8 X 1-3/4	1/8 X 2-1/4	1/8 X 2-3/4	1/8 X 1-1/8	1/8 X 1-3/4
C2 MICRO	TA-1.25MIC	TA-1.25MIC	TA-1.75MIC	TA-1.25MIC	TA-1.75MIC	TA-2.25MIC	TA-2.75MIC	TA-1.25MIC	TA-1.75MIC
C6 MICRO	TA-1.25MIC	TA-1.25C6	TA-1.75-C6	TA-1.25C6	TA-1.75-C6	TA-2.25C6	TA-2.75C6	TA-1.25C6	TA-1.75-C6
76PM HSS	TA-.75-A	TA-1.25-A	TA-1.75-A	TA-1.25-A	TA-1.75-A	TA-2.25-A	TA-2.75-A	TA-1.25-A	TA-1.75-A
MAXAMET	TA-.75-M	TA-1.25-M	TA-1.75-M	TA-1.25-M	TA-1.75-M	TA-2.25-M	TA-2.75-M	TA-1.25-M	TA-1.75-M
ANVIL	BA-.75-3/16	BA-1.125-3/16	BA-1.75-3/16	BA-1.25-1/4	BA-1.75-1/4	BA-2.25-1/4	BA-2.75-1/4	BA-1.25-1/4	BA-1.75-1/4

***Note: 1/8 x 3/4 blanks are used for 1/8 x 3/8 Inserts.**

QUICK CHANGE (THROWAWAY) FORM TOOL INSERTS WITH TOP TO BOTTOM CLEARANCE

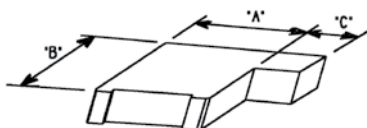
Prices on application for inserts EDM'd to your part print.

Top to bottom clearance reduces side rubbing and tool wear.
 Adaptable for "Datum Point" Applications.



We can supply inserts with top to bottom clearance (see diagram) that reduces side rubbing, improves part finish and increases insert resharpenable life by reducing the amount of material that has to be removed with resharpening.

CENTERING GAGES FOR RQC INSERT HOLDERS

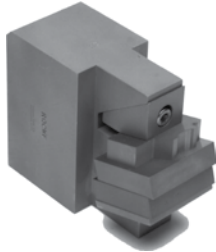


- Gages are same (B) length as standard inserts.
- Gages are "L" shaped and overhang holder for easy setting to center.
- Just clamp in holder and set to center as you would normally.

CAT. NO.	A	B	C
RQCG-5/16	3/4	.630	.500
RQCG-3/8	1-1/4	.956	.500

WIRE EDM MACHINING FIXTURES FOR RESHARPENABLE AND THROW-AWAY INSERTS

- Made of heat treated stainless steel
- Supplied with clamps for inserts and backup spacers
- Locates on recess in back side of insert for EDMing of all four sides
- Reversible for left hand cut



CATALOG NO. (INSERT WIDTHS)	NUMBER OF INSERTS	TYPE	OFFSET ANGLE
RQCWF (1.250 TO 2.750)	3 - 3/8" or 3 + 1 SPACER	SHARPENABLE	17°
	8-1/8" or 6 + 1 BACKUP	THROW-AWAY	
RQCWF00 (.375 TO 1.750)	3 - 5/16" or 3 + 1 SPACER	SHARPENABLE	17°
	8-1/8" or 6 + 1 BACKUP	THROW-AWAY	
RQCWFDS (1.125)	3 - 3/8" or 3 + 1 SPACER	SHARPENABLE	2-1/2°
	8-1/8" or 6 + 1 BACKUP	THROW-AWAY	
RQCWFDS-0 (1.750)	3 - 3/8" or 3 + 1 SPACER	SHARPENABLE	0°
	8-1/8" or 6 + 1 BACKUP	THROW-AWAY	

INSERT RESHARPENING FIXTURES

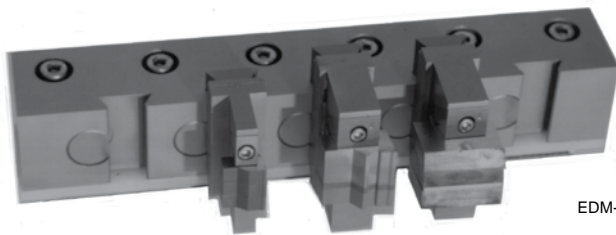
- For resharpener top surface of inserts
- Flexible jaw clamps insert securely
- For use on surface grinder with cup or dish wheel



CAT. NO.	INSERT WIDTH/TYPE
RQCSF	1-1/4" FORM
RQCSF-W	1-3/4" FORM/SHAVE
RQCSF00	3/4" FORM
RQCSF-DS	1-1/8" FORM/SHAVE
RQCSF00-N	3/8" FORM
RQCSF-CO	.130 CUTOFF
RQCSF-XW	2-1/4" FORM
RQCSF-WW	2-3/4" FORM

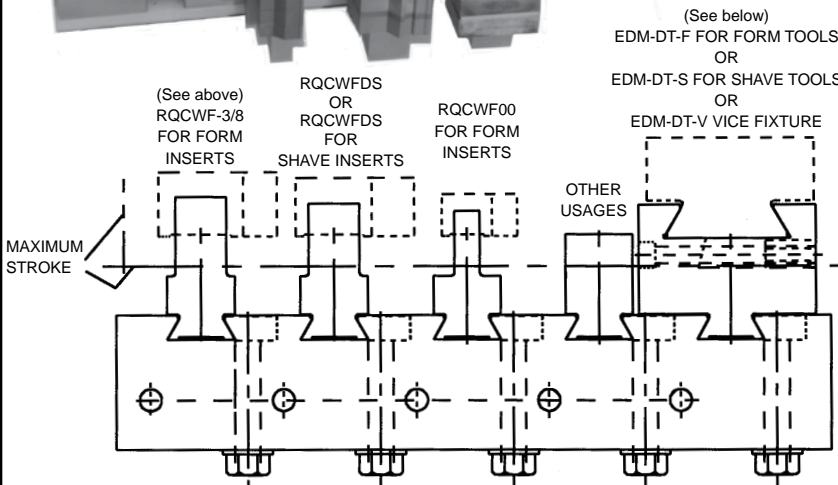
EDM FIXTURES ALSO AVAILABLE FOR:		
INSERTS	ANGLE	CATALOG NO.
3/8 INSERTS	12°	RQCWF-3/8
5/16 INSERTS	12°	RQCWF00-5/16

BASE PLATE AND FIXTURES FOR MULTIPLE EDMING OF INSERTS AND DOVETAIL TOOLS



WIRE EDM MACHINING FIXTURES FOR RESHARPENABLE AND THROW-AWAY INSERTS

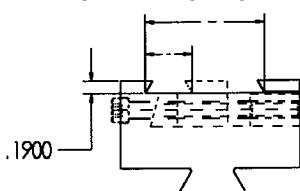
- Made of heat treated stainless steel
- Supplied with clamps for inserts and backup spacers
- Locates on recess in back side of insert for EDMing of all four sides
- Reversible for left hand cut



CATALOG NO. (INSERT WIDTHS)	NUMBER OF INSERTS	TYPE	OFFSET ANGLE
RQCWF-3/8 (1.250 TO 2.750)	3 - 3/8" or 3 + 1 SPACER	SHARPENABLE	17°
	8-1/8" or 6 + 1 BACKUP	THROW-AWAY	
RQCWF00-5/16 (.375 TO 1.750)	3 - 5/16" or 3 + 1 SPACER	SHARPENABLE	17°
	8-1/8" or 6 + 1 BACKUP	THROW-AWAY	
RQCWFDS (1.125)	3 - 3/8" or 3 + 1 SPACER	SHARPENABLE	2-1/2°
	8-1/8" or 6 + 1 BACKUP	THROW-AWAY	
RQCWFDS-0 (1.750)	3 - 3/8" or 3 + 1 SPACER	SHARPENABLE	0°
	8-1/8" or 6 + 1 BACKUP	THROW-AWAY	

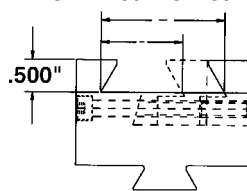
Base Plate Cat. No. RQCEDM-5A

EDM MACHINING FIXTURE ADJUSTABLE FOR DOVETAIL SHAPE TOOLS FROM .714" TO 1.787"



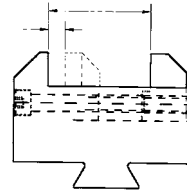
Cat. No. EDM-DT-S

EDM MACHINING FIXTURE ADJUSTABLE FOR DOVETAIL FORM TOOLS FROM 1.250" TO 1.897"



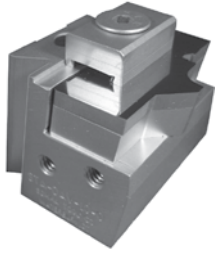
Cat. No. EDM-DT-F

EDM VISE FIXTURE ADJUSTABLE FROM 1/4" TO 1-1/2"

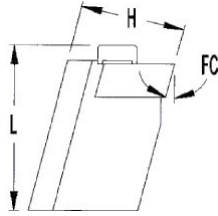


Cat. No. EDM-DT-V

- HOLDS ANY FIVE FIXTURES FOR UNATTENDED OPERATION.
- EDM FIXTURES ARE DOVETAIL MOUNTED AT ACCURATE CENTER TO CENTER LOCATION TO FACILITATE PROGRAMMING.
- MADE OF HEAT TREATED STAINLESS STEEL.
- MACHINE MOUNTING HOLES LOCATED TO SUIT YOUR EDM MACHINE.



STA
Dovetail Holder



EQUIP ALL YOUR MACHINES WITH INEXPENSIVE QUICK CHANGE INSERT FORM TOOL HOLDERS!

EXCLUSIVE FEATURES:

- Choose from full-width holder for parts up to 1-1/4" long or L-style holders for parts up to 3/4" long that require working close to the spindle or clearance for tools on the turret or tool spindle.
- Same holder can accommodate part forms up to 1/2" depth of cut (3/8" depth of cut for Davenport).
- Uses simple but rugged backup ANVIL (No need for expensive tailor made screwed on anvils).
- Ideal for Datum Point applications.
- Integral insert clamp and screw make it easy to install inserts.
- Dovetail holders available for Davenport, Acme, New Britain and CNC machines.
- Choice of 0° or 5° top rake angles for cutting of ferrous and non-ferrous metals.
- Compact and rigid one-piece body design.
- Pin locating system within +/- .001".
- Keyed inserts make it impossible to mistakenly use a 0° insert on a 5° holder, or a 5° insert on a 0° holder.

Dovetail-Style Holders											
Fits Holder	Dovetail	Front Clearance Angle (FC)	H	L	Max Depth of Cut	Max Width of Cut	Top Rake Angle	Catalog #	Uses Insert #	Uses Spacer #	
5/8"	0.951	12°	1.42	2-1/4"	1/2"	1-1/4"	0°	STA-5/8-0	STAI-128-3	STAS-3/8-2	
							5°	STA-5/8-5			
							3/4"	0°	STA-5/8-0L	STAI-103-2	STAS-3/8-3
								5°	STA-5/8-5L		
1-1/4"	1.882	12°	1.66	2-1/4"	1/2"	1-1/4"	0°	STA-1-1/4-0	STAI-128-3	STAS-3/8-2	
							5°	STA-1-1/4-5			
NBG	1.253	12°	1.66	2-1/4"	1/2"	1-1/4"	0°	STA-1.253-0	STAI-128-3	STAS-3/8-2	
							5°	STA-1.253-5			
							3/4"	0°	STA-1.253-0L	STAI-103-2	STAS-3/8-3
								5°	STA-1.253-5L		
NBG	1.827	12°	1.66	2-1/4"	1/2"	1-1/4"	0°	STA-1.827-0	STAI-128-3	STAS-3/8-2	
							5°	STA-1.827-5			
DAV	0.951	10°	1.215	1-1/2"	3/8"	1-1/4"	0°	STA-DAV-10-0	STAI-128-1	STAS-1/4-1	
							5°	STA-DAV-10-5			
							3/4"	0°	STA-DAV-10-0L	STAI-103-1	STAS-1/4-4
								5°	STA-DAV-10-5L		
DAV	0.951	12°	1.215	1-1/2"	3/8"	1-1/4"	0°	STA-DAV-12-0	STAI-128-1	STAS-1/4-1	
							5°	STA-DAV-12-5			
							3/4"	0°	STA-DAV-12-0L	STAI-103-1	STAS-1/4-4
								5°	STA-DAV-12-5L		

Circular-Style Holders

Fits Holder	Diameter	Front Clearance Angle (FC)	Center Offset	Max Depth of Cut	Max Width of Cut	Top Rake Angle	Catalog #	Uses Insert #	Uses Spacer #
00	1-3/4"	12°	1/8"	1/4"	1"	0°	STA-00-C-0	STAI-103-3	STAS-1/4-5
						5°	STA-00-C-5		
0	2-1/4"	12°	5/32"	1/2"	1-1/4"	0°	STA-0-C-0	STAI-128-4	STAS-1/4-2
						5°	STA-0-C-5		STAS-1/4-3
2	3"	12°	1/4"	5/8"	1-1/4"	0°	STA-2-C-0	STAI-128-1	STAS-3/8-1
						5°	STA-2-C-5	STAI-128-2	STAS-3/8-2
Dav	2"	12°	1/8"	3/8"	1-1/4"	0°	STA-DAV-C-0	STAI-128-1	STAS-1/4-1
						5°	STA-DAV-C-5	STAI-128-2	



STA Circular
Holder

Holdings are also available with coolant attachment. Add "-CS" to the holder catalog#.

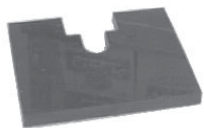
FORMED INSERTS TO YOUR PRINT

Send your part print for a prompt quote!



FOR THOSE WITH EDM FACILITIES:

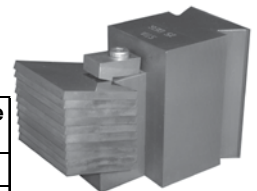
Insert Blanks & Spacers are available for EDMing in your plant. Blanks are available in micrograin carbide, C2, 76PM HSS and MAXAMET.



- EDM your inserts in house - save money - expedite delivery!
- STA-EDM Fixture for EDMing inserts available.
- Fixture can hold 10 inserts

EDM FIXTURES

Catalog Number	Included Angle	Front Clearance Angle	Top Rake Angle
STA-EDM-10	10	10	0
STA-EDM-12	12	12	0
STA-EDM-15	15	10	5
STA-EDM-17	17	12	5





PRO-CALC SPINDLE SPEED/ SURFACE FEET CALCULATOR

Cat. No.
PRO-CALC.®

Calculates surface feet, RPM, feed rate for turning, drilling, tapping and milling. Inches or metric.

Hand held - Can be used at machine location.

Merely select material:
Choose from 34 materials

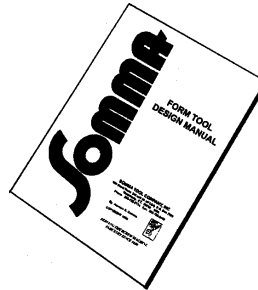
Select machine operation:

Cutoff/Form Tool
End mill
Drill/Counterbore
Tapping
Face Mill

Select Diameter:

Part Diameter
Tool Diameter

THE SOMMA FORM TOOL DESIGN MANUAL ANSWERS ALL THE QUESTIONS YOU WANTED TO KNOW ABOUT FORM TOOL DESIGNING.



- CHECKLIST
- DRAWING
- CALCULATING
- DIMENSIONING
- HELPFUL IDEAS
- USEFUL TABLES
- SELECTING TOOL MATERIAL
- FORM TOOL GEOMETRY

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FORM TOOL CALCULATION PROGRAM

SOMMA'S EXCLUSIVE PROGRAM WILL PERFORM ALL YOUR FORM TOOL CALCULATIONS

FEATURES:

- Leads you through problems.
- Eliminates long, complicated manual calculations.
- Eliminates corrected diameter tables, charts, graphs, trig tables, and square root calculations.
- Calculates any Circular Form Tool - regardless of Diameter, Offset or Top Rake.
- Calculates any Flat Type Form Tool - regardless of Front Clearance Angle or Top Rake.
- Can print out answers for a permanent record.

Cat. No.
FTSCW

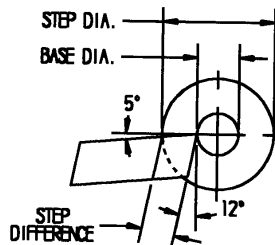
Download a free demo today at www.sommatool.com

FOR RESHARPENABLE QUICK CHANGE CHANGE FORM TOOL INSERTS

All you need to do is enter:

- Front Clearance Angle = 12°
- Top Rake Angle = 5°
- Base Diameter of Part =

Then as you enter each part diameter, the program calculates the corrected step difference.

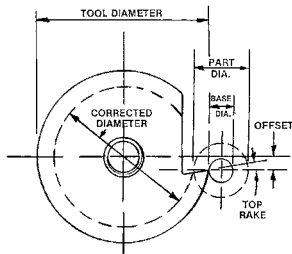
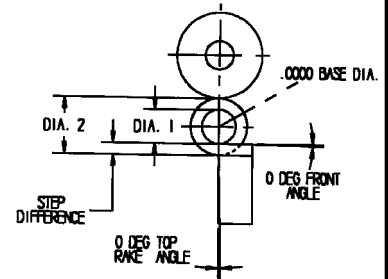


FOR RESHARPENABLE QUICK CHANGE CHANGE SHAVE TOOL INSERTS

All you need to do is enter:

- Front Clearance Angle = 0°
- Top Rake Angle = 0°
- Base Diameter of Part = .000", .125"

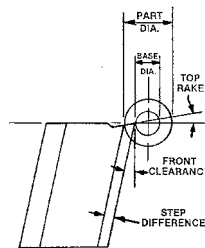
or .500" depending on holder being used. Then as you enter each part diameter, the program calculates the corrected step difference.



FOR CIRCULAR FORM TOOLS

All you need to do is enter:

- Tool Diameter ---
- Tool Offset Distance---
- Top Rake Angle---
- Base Diameter of Part---
- Then as you enter each part diameter, the program calculates tool diameter and step difference.



FOR FLAT TYPE FORM TOOLS

All you need to do is enter:

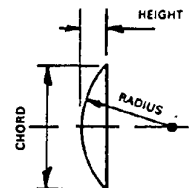
- Front Clearance Angle---
- Top Rake Angle---
- Base Diameter of Part---
- Then as you enter each part diameter, the program calculates the corrected step difference.

FOR RADIUS PROBLEMS

All you need to do is:

- Enter any two of the three dimensions of a chord.

The program will calculate the third dimension.

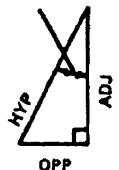


FOR TRIANGLE PROBLEMS

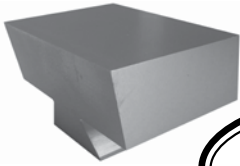
All you need to do is:

- Enter any two of the four dimensions of a right angle triangle---

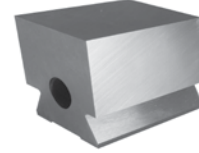
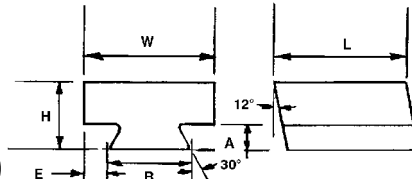
The program will calculate the remaining two dimensions.



Semi-standard blanks to your specifications in any material or quantity quoted upon request. Send for a supply of blank order forms.
H.S.S. DOVETAIL FORM TOOL BLANKS HARDENED AND GROUND ALSO AVAILABLE SOFT - PRICES ON REQUEST



**ASK FOR QUANTITY
DISCOUNT PRICES FOR
GREATER SAVINGS**



* SEE PAGES 64 & 65 FOR THESE HOLDERS.

**BLANKS SHOWN IN GRAY SHADED AREA
ARE SEMI-STANDARD
DELIVERY: 2-3 WEEKS**

**TOOL BLANKS
CUTTING TOOLS**

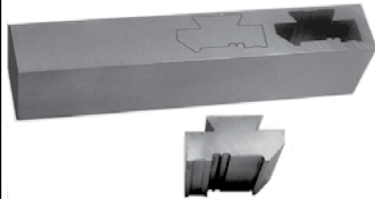
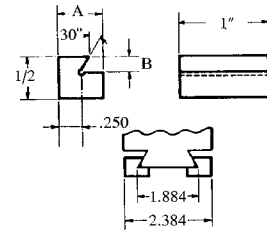
Fits Dovetail	B	H	W	E	L	A	G	M-2 HSS	M-42 HSS	T15PM HSS	76PM HSS	FOR CARBIDE TIPPING	
												4140 STEEL FOR CARBIDE TIPPED SOFT GROUND D/T	4140 STEEL HARDENED TO R/C35-45 GROUND D/T
Form	+ .003 - .003	+ .015 - .002	+ .015 - .002	+ .015 - .000	+ .030 - .030	+ .015 - .000	Tap Hole						
3/8"	0.700	3/4"	1"	1/4"	1-1/2"	19/64"	-	3/8DTF-1	3/8DTF-1H	3/8DTF-1P	3/8DTF-1A	3/8DTF-1-SG	3/8DTF-1-HG
5/8"	0.951	1"	1"	1/16"	2-1/4"	19/64"	-	5/8DTF-1	5/8DTF-1H	5/8DTF-1P	5/8DTF-1A	5/8DTF-1-SG	5/8DTF-1-HG
5/8"	0.951	1"	1-1/4"	5/16"	2-1/4"	19/64"	-	5/8DTF-1-2	5/8DTF-1-2H	5/8DTF-1-2P	5/8DTF-1-2A	5/8DTF-1-2-SG	5/8DTF-1-2-HG
5/8"	0.951	1"	1-1/2"	9/16"	2-1/4"	19/64"	-	5/8DTF-2	5/8DTF-2H	5/8DTF-2P	5/8DTF-2A	5/8DTF-2-SG	5/8DTF-2-HG
5/8"	0.951	1"	1-1/2"	0	2-1/4"	19/64"	-	5/8DTF-2-0	5/8DTF-2-0H	5/8DTF-2-0P	5/8DTF-2-0A	5/8DTF-2-0-SG	5/8DTF-2-0-HG
5/8"	0.951	1"	1-3/4"	9/16"	2-1/4"	19/64"	-	5/8DTF-2-2	5/8DTF-2-2H	5/8DTF-2-2P	5/8DTF-2-2A	5/8DTF-2-2-SG	5/8DTF-2-2-HG
5/8"	0.951	1"	2"	17/32"	2-1/4"	19/64"	-	5/8DTF-3	5/8DTF-3H	5/8DTF-3P	5/8DTF-3A	5/8DTF-3-SG	5/8DTF-3-HG
5/8"	0.951	1"	2-1/2"	3/4"	2-1/4"	19/64"	-	5/8DTF-4	5/8DTF-4H	5/8DTF-4P	5/8DTF-4A	5/8DTF-4-SG	5/8DTF-4-HG
5/8"	0.951	1-1/2"	1"	1/16"	2-1/4"	19/64"	-	5/8DTF-5	5/8DTF-5H	5/8DTF-5P	5/8DTF-5A	5/8DTF-5-SG	5/8DTF-5-HG
5/8"	0.951	1-1/2"	1-1/4"	5/16"	2-1/4"	19/64"	-	5/8DTF-6	5/8DTF-6H	5/8DTF-6P	5/8DTF-6A	5/8DTF-6-SG	5/8DTF-6-HG
5/8"	0.951	1-1/2"	1-1/2"	9/16"	2-1/4"	19/64"	-	5/8DTF-7	5/8DTF-7H	5/8DTF-7P	5/8DTF-7A	5/8DTF-7-SG	5/8DTF-7-HG
5/8"	0.951	1-1/2"	1-1/2"	0	2-1/4"	19/64"	-	5/8DTF-7-0	5/8DTF-7-0H	5/8DTF-7-0P	5/8DTF-7-0A	5/8DTF-7-0-SG	5/8DTF-7-0-HG
5/8"	0.951	1-1/2"	1-3/4"	9/16"	2-1/4"	19/64"	-	5/8DTF-8	5/8DTF-8H	5/8DTF-8P	5/8DTF-8A	5/8DTF-8-SG	5/8DTF-8-HG
5/8"	0.951	1-1/2"	2"	9/16"	2-1/4"	19/64"	-	5/8DTF-9	5/8DTF-9H	5/8DTF-9P	5/8DTF-9A	5/8DTF-9-SG	5/8DTF-9-HG
5/8"	0.951	1-1/2"	2-1/2"	3/4"	2-1/4"	19/64"	-	5/8DTF-10	5/8DTF-10H	5/8DTF-10P	5/8DTF-10A	5/8DTF-10-SG	5/8DTF-10-HG
1"	1.614	1/2"	2"	3/16"	3"	35/64"	-	1DTF-1	1DTF-1H	1DTF-1P	1DTF-1A	1DTF-1-SG	1DTF-1-HG
1"	1.614	1/2"	2-1/2"	7/16"	3"	35/64"	-	1DTF-2	1DTF-2H	1DTF-2P	1DTF-2A	1DTF-2-SG	1DTF-2-HG
1"	1.614	1/2"	3"	11/16"	3"	35/64"	-	1DTF-3	1DTF-3H	1DTF-3P	1DTF-3A	1DTF-3-SG	1DTF-3-HG
1-1/4"	1.882	1-1/2"	2"	1/8"	3"	35/64"	-	1-1/4DTF-1	1-1/4DTF-1H	1-1/4DTF-1P	1-1/4DTF-1A	1-1/4DTF-1-SG	1-1/4DTF-1-HG
1-1/4"	1.882	1-1/2"	2-1/2"	9/16"	3"	35/64"	-	1-1/4DTF-2	1-1/4DTF-2H	1-1/4DTF-2P	1-1/4DTF-2A	1-1/4DTF-2-SG	1-1/4DTF-2-HG
1-1/4"	1.882	1-1/2"	2-1/2"	0	3"	35/64"	-	1-1/4DTF-2-0	1-1/4DTF-2-0H	1-1/4DTF-2-0P	1-1/4DTF-2-0A	1-1/4DTF-2-0-SG	1-1/4DTF-2-0-HG
1-1/4"	1.882	1-1/2"	3"	9/16"	3"	35/64"	-	1-1/4DTF-3	1-1/4DTF-3H	1-1/4DTF-3P	1-1/4DTF-3A	1-1/4DTF-3-SG	1-1/4DTF-3-HG
1-1/4"	1.882	1-1/2"	2"	1/8"	2-1/4"	35/64"	-	1-1/4DTF-4	1-1/4DTF-4H	1-1/4DTF-4P	1-1/4DTF-4A	1-1/4DTF-4-SG	1-1/4DTF-4-HG
1-1/4"	1.882	1-1/2"	2-1/2"	9/16"	2-1/4"	35/64"	-	1-1/4DTF-5	1-1/4DTF-5H	1-1/4DTF-5P	1-1/4DTF-5A	1-1/4DTF-5-SG	1-1/4DTF-5-HG
1-1/4"	1.882	1-1/2"	2-1/2"	0	2-1/4"	35/64"	-	1-1/4DTF-5-0	1-1/4DTF-5-0H	1-1/4DTF-5-0P	1-1/4DTF-5-0A	1-1/4DTF-5-0-SG	1-1/4DTF-5-0-HG
1-1/4"	1.882	1-1/2"	3"	9/16"	2-1/4"	35/64"	-	1-1/4DTF-6	1-1/4DTF-6H	1-1/4DTF-6P	1-1/4DTF-6A	1-1/4DTF-6-SG	1-1/4DTF-6-HG
1-1/4"	1.882	1-1/2"	3"	0	2-1/4"	35/64"	-	1-1/4DTF-6-0	1-1/4DTF-6-0H	1-1/4DTF-6-0P	1-1/4DTF-6-0A	1-1/4DTF-6-0-SG	1-1/4DTF-6-0-HG
1-1/4"	1.882	1-1/2"	3"	9/16"	3"	35/64"	-	1-1/4DTF-7	1-1/4DTF-7H	1-1/4DTF-7P	1-1/4DTF-7A	1-1/4DTF-7-SG	1-1/4DTF-7-HG
1-1/4"	1.882	2"	2"	1/8"	3"	35/64"	-	1-1/4DTF-8	1-1/4DTF-8H	1-1/4DTF-8P	1-1/4DTF-8A	1-1/4DTF-8-SG	1-1/4DTF-8-HG
1-1/4"	1.882	2"	2-1/2"	5/8"	3"	35/64"	-	1-1/4DTF-9	1-1/4DTF-9H	1-1/4DTF-9P	1-1/4DTF-9A	1-1/4DTF-9-SG	1-1/4DTF-9-HG
1-1/4"	1.882	2"	2-1/2"	0	3"	35/64"	-	1-1/4DTF-9-0	1-1/4DTF-9-0H	1-1/4DTF-9-0P	1-1/4DTF-9-0A	1-1/4DTF-9-0-SG	1-1/4DTF-9-0-HG
1-1/4"	1.882	2"	3"	5/8"	3"	35/64"	-	1-1/4DTF-10	1-1/4DTF-10H	1-1/4DTF-10P	1-1/4DTF-10A	1-1/4DTF-10-SG	1-1/4DTF-10-HG
1-1/4"	1.882	2"	2"	1/8"	2-1/4"	35/64"	-	1-1/4DTF-11	1-1/4DTF-11H	1-1/4DTF-11P	1-1/4DTF-11A	1-1/4DTF-11-SG	1-1/4DTF-11-HG
1-1/4"	1.882	2"	2-1/2"	5/8"	2-1/4"	35/64"	-	1-1/4DTF-12	1-1/4DTF-12H	1-1/4DTF-12P	1-1/4DTF-12A	1-1/4DTF-12-SG	1-1/4DTF-12-HG
1-1/4"	1.882	2"	2-1/2"	0	2-1/4"	35/64"	-	1-1/4DTF-12-0	1-1/4DTF-12-0H	1-1/4DTF-12-0P	1-1/4DTF-12-0A	1-1/4DTF-12-0-SG	1-1/4DTF-12-0-HG
1-1/4"	1.882	2"	3"	5/8"	2-1/4"	35/64"	-	1-1/4DTF-13	1-1/4DTF-13H	1-1/4DTF-13P	1-1/4DTF-13A	1-1/4DTF-13-SG	1-1/4DTF-13-HG
1-5/8"	2.238	1-1/2"	3"	3/8"	3"	35/64"	-	1-5/8DTF-1	1-5/8DTF-1H	1-5/8DTF-1P	1-5/8DTF-1A	1-5/8DTF-1-SG	1-5/8DTF-1-HG
2-1/8"	2.883	1-1/2"	3"	1/8"	3"	43/64"	-	2-1/8DTF-1	2-1/8DTF-1H	2-1/8DTF-1P	2-1/8DTF-1A	2-1/8DTF-1-SG	2-1/8DTF-1-HG
DAVENPORT	0.951	1"	1"	1/16"	1-1/2"	19/64"	1/4-28	DAV-DTF-1	DAV-DTF-1H	DAV-DTF-1P	DAV-DTF-1A	DAV-DTF-1-SG	DAV-DTF-1-HG
DAVENPORT	0.951	1"	1-1/4"	19/64"	1-1/2"	19/64"	1/4-28	DAV-DTF-2	DAV-DTF-2H	DAV-DTF-2P	DAV-DTF-2A	DAV-DTF-2-SG	DAV-DTF-2-HG
DAVENPORT	0.951	1"	1-1/2"	19/64"	1-1/2"	19/64"	1/4-28	DAV-DTF	DAV-DTF-H	DAV-DTF-P	DAV-DTF-A	DAV-DTF-SG	DAV-DTF-HG
DAVENPORT	0.951	1"	1-1/2"	9/16"	1-1/2"	19/64"	1/4-28	DAV-DTF-3	DAV-DTF-3H	DAV-DTF-3P	DAV-DTF-3A	DAV-DTF-3-SG	DAV-DTF-3-HG
NEW	1.253	1-1/2"	1-1/2"	1/4"	2"	9/16"	-	NBDTF-1	NBDTF-1H	NBDTF-1P	NBDTF-1A	NBDTF-1-SG	NBDTF-1-HG
BRITAIN	1.253	1-1/2"	2"	3/8"	2"	9/16"	-	NBDTF-2	NBDTF-2H	NBDTF-2P	NBDTF-2A	NBDTF-2-SG	NBDTF-2-HG
GRIDLEY	1.253	1-1/2"	2-1/2"	5/8"	2"	9/16"	-	NBDTF-3	NBDTF-3H	NBDTF-3P	NBDTF-3A	NBDTF-3-SG	NBDTF-3-HG
	1.253	1-1/2"	3"	7/8"	2"	9/16"	-	NBDTF-4	NBDTF-4H	NBDTF-4P	NBDTF-4A	NBDTF-4-SG	NBDTF-4-HG
DTH00*	.714	3/4"	1-1/4"	17/64"	1"	13/64"	10-32	DTH00-9	DTH00-9H	DTH00-9P	DTH00-9A	DTH00-9-SG	DTH00-9-HG
DTH0*	.951	1"	1-1/2"	9/32"	1-5/16"	19/64"	1/4-20	DTH0-9	DTH0-9H	DTH0-9P	DTH0-9A	DTH0-9-SG	DTH0-9-HG
DTH2*	1.250	1-1/2"	2"	3/8"	1-7/16"	7/16"	1/4-20	DTH2-9	DTH2-9H	DTH2-9P	DTH2-9A	DTH2-9-SG	DTH2-9-HG

CAT. NO.	A	B
DTG-250	1/2	.185
DTG-250 x 100	13/32	.100

**SOLD AS A SET
2 PIECES**

DOVETAIL CHECKING GAGES

- EASIER THAN CHECKING OVER BALLS OR RODS.
- JUST ADD .500" TO THEORETICAL SHARP CORNER DIMENSION OF DOVETAIL. (SEE DIAGRAM.)



EDM WIRE READY H.S.S. BARS

**ASK FOR QUANTITY
DISCOUNT PRICES FOR
GREATER SAVINGS**

- HEAT TREATED / SURFACE GROUND
- FOR THOSE WHO HAVE WIRE EDM EQUIPMENT
- ECONOMICAL - MINIMUM WASTE
- USE ONLY WHAT YOU NEED FOR EACH JOB
- AVAILABLE IN M2, M42, T15PM AND 76PM HIGH SPEED STEEL

EDM WIRE READY H.S.S. BARS

CAT. NO.	HEIGHT	WIDTH	LENGTH	M42 CAT. NO.	T15PM CAT. NO.	76PM CAT. NO.
EDM4848	1"	2"	12"	EDM4848-H	EDM4848-P	EDM4848-A
EDM6848	1-1/2"	2"	12"	EDM6848-H	EDM6848-P	EDM6848-A
EDM8848	2"	2"	12"	EDM8848-H	EDM8848-P	EDM8848-A
EDM81248	2"	2-1/2"	12"	EDM81248-H	EDM81248-P	EDM81248-A

**CAN ALSO BE SUPPLIED IN
SPECIAL SIZES TO YOUR
SPECIFICATIONS. PRICES ON
APPLICATION - SPECIFY
QUANTITY, HEIGHT, WIDTH
AND LENGTH.**

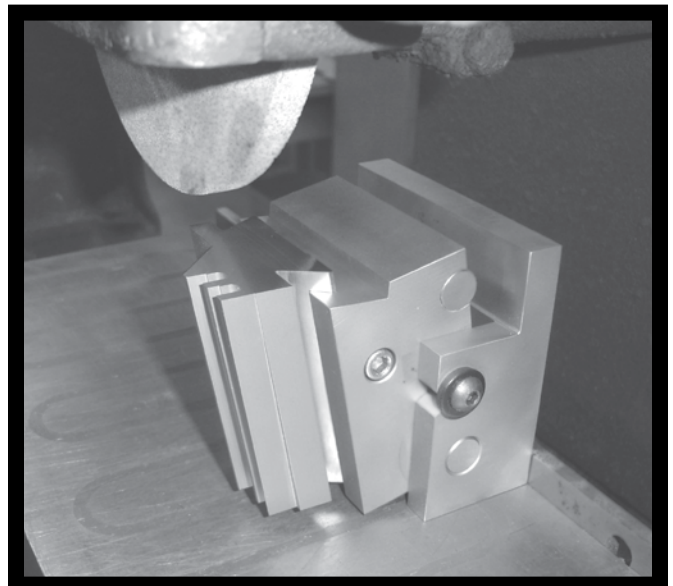
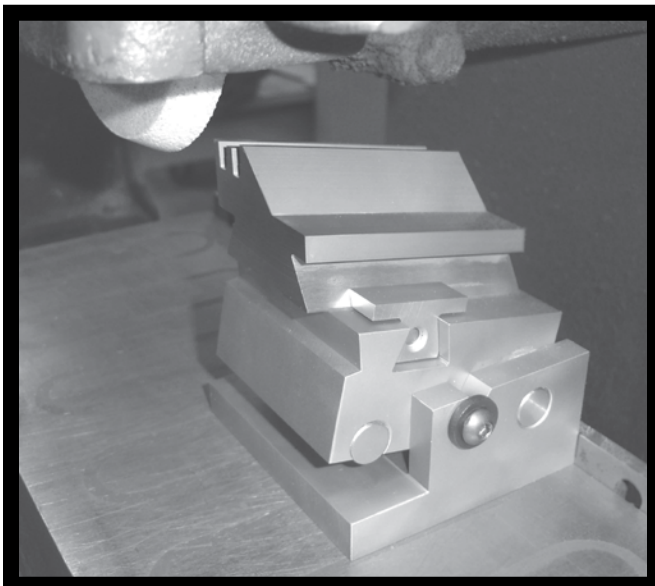
DOVETAIL SHARPENING FIXTURE



- CAN BE USED IN BOTH VERTICAL AND HORIZONTAL POSITIONS
- FOR DOVETAIL SIZES UP TO 1.882 (1-1/4)
- SUPPLIED WITH SPACERS FOR THE FOLLOWING ANGLES:
0, 2, 12, 17, 19.5 & 22 DEGREES

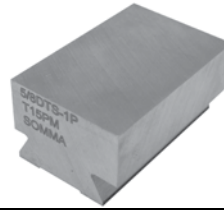
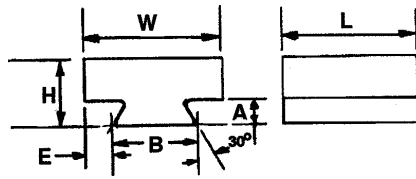
Cat. No.
DSF

CAN ALSO SUPPLY SPACERS FOR OTHER ANGLES



**TOOL BLANKS
CUTTING TOOLS**

H.S.S. DOVETAIL SHAVE TOOL BLANKS HARDENED AND GROUND



**ASK FOR QUANTITY
DISCOUNT PRICES FOR
GREATER SAVINGS**

**BLANKS SHOWN IN GRAY SHADED AREA
ARE SEMI-STANDARD
DELIVERY: 2-3 WEEKS**

**TOOL BLANKS
CUTTING TOOLS**

Fits											FOR CARBIDE TIPPING		
	Dovetail	B	H	W	E	L	A	M-2 HSS	M-42 HSS	T15PM HSS	76PM HSS	ALLOY TOOL STEEL	4140 STEEL
		Shave Tool	+ .003	+ .015	+ .015	+ .015	+ .030					+ .015	FOR CARBIDE TIPPED SOFT
Holder	- .003	- .002	- .002	- .000	- .030	- .000						GROUND DOVETAIL	GROUND DOVETAIL
1/2"	0.714	5/8"	1-1/4"	3/8"	1-1/8"	13/64"		1/2DTS-1	1/2DTS-1H	1/2DTS-1P	1/2DTS-1A	1/2DTS-1-SG	1/2DTS-1-HG
5/8"	0.912	3/4"	1"	3/32"	1-1/2"	17/64"		5/8DTS-1	5/8DTS-1H	5/8DTS-1P	5/8DTS-1A	5/8DTS-1-SG	5/8DTS-1-HG
5/8"	0.912	3/4"	1-1/2"	19/64"	1-1/2"	17/64"		5/8DTS-2	5/8DTS-2H	5/8DTS-2P	5/8DTS-2A	5/8DTS-2-SG	5/8DTS-2-HG
5/8"	0.912	3/4"	2"	35/64"	1-1/2"	17/64"		5/8DTS-3	5/8DTS-3H	5/8DTS-3P	5/8DTS-3A	5/8DTS-3-SG	5/8DTS-3-HG
5/8"	0.912	3/4"	1"	3/32"	1-1/4"	17/64"		5/8DTS-4	5/8DTS-4H	5/8DTS-4P	5/8DTS-4A	5/8DTS-4-SG	5/8DTS-4-HG
5/8"	0.912	3/4"	1-1/2"	9/16"	1-1/2"	17/64"		5/8DTS-5	5/8DTS-5H	5/8DTS-5P	5/8DTS-5A	5/8DTS-5-SG	5/8DTS-5-HG
5/8"	0.912	3/4"	2"	11/16"	1-1/4"	17/64"		5/8DTS-6	5/8DTS-6H	5/8DTS-6P	5/8DTS-6A	5/8DTS-6-SG	5/8DTS-6-HG
5/8"	0.912	7/8"	1"	3/32"	1-1/2"	17/64"		5/8DTS-7	5/8DTS-7H	5/8DTS-7P	5/8DTS-7A	5/8DTS-7-SG	5/8DTS-7-HG
5/8"	0.912	7/8"	1-1/2"	9/16"	1-1/2"	17/64"		5/8DTS-8	5/8DTS-8H	5/8DTS-8P	5/8DTS-8A	5/8DTS-8-SG	5/8DTS-8-HG
5/8"	0.912	7/8"	2"	11/16"	1-1/2"	17/64"		5/8DTS-9	5/8DTS-9H	5/8DTS-9P	5/8DTS-9A	5/8DTS-9-SG	5/8DTS-9-HG
5/8"	0.912	7/8"	1"	3/32"	1-1/4"	17/64"		5/8DTS-10	5/8DTS-10H	5/8DTS-10P	5/8DTS-10A	5/8DTS-10-SG	5/8DTS-10-HG
5/8"	0.912	7/8"	1-1/2"	9/16"	1-1/4"	17/64"		5/8DTS-11	5/8DTS-11H	5/8DTS-11P	5/8DTS-11A	5/8DTS-11-SG	5/8DTS-11-HG
5/8"	0.912	7/8"	2"	11/16"	1-1/4"	17/64"		5/8DTS-12	5/8DTS-12H	5/8DTS-12P	5/8DTS-12A	5/8DTS-12-SG	5/8DTS-12-HG
5/8"	0.912	1"	1"	3/32"	1-1/2"	17/64"		5/8DTS-13	5/8DTS-13H	5/8DTS-13P	5/8DTS-13A	5/8DTS-13-SG	5/8DTS-13-HG
5/8"	0.912	1"	1-1/2"	9/16"	1-1/2"	17/64"		5/8DTS-14	5/8DTS-14H	5/8DTS-14P	5/8DTS-14A	5/8DTS-14-SG	5/8DTS-14-HG
5/8"	0.912	1"	2"	11/16"	1-1/2"	17/64"		5/8DTS-15	5/8DTS-15H	5/8DTS-15P	5/8DTS-15A	5/8DTS-15-SG	5/8DTS-15-HG
5/8"	0.912	1"	1"	3/32"	1-1/4"	17/64"		5/8DTS-16	5/8DTS-16H	5/8DTS-16P	5/8DTS-16A	5/8DTS-16-SG	5/8DTS-16-HG
5/8"	0.912	1"	1-1/2"	9/16"	1-1/4"	17/64"		5/8DTS-17	5/8DTS-17H	5/8DTS-17P	5/8DTS-17A	5/8DTS-17-SG	5/8DTS-17-HG
5/8"	0.912	1"	2"	11/16"	1-1/4"	17/64"		5/8DTS-18	5/8DTS-18H	5/8DTS-18P	5/8DTS-18A	5/8DTS-18-SG	5/8DTS-18-HG
1"	1.287	3/4"	1-1/2"	7/32"	1-3/4"	17/64"		1DTS-1-2	1DTS-1-2H	1DTS-1-2P	1DTS-1-2A	1DTS-1-2-SG	1DTS-1-2-HG
1"	1.287	3/4"	2"	5/8"	1-3/4"	17/64"		1DTS-1-3	1DTS-1-3H	1DTS-1-3P	1DTS-1-3A	1DTS-1-3-SG	1DTS-1-3-HG
1"	1.287	7/8"	1-1/2"	7/32"	1-3/4"	17/64"		1DTS-1-4	1DTS-1-4H	1DTS-1-4P	1DTS-1-4A	1DTS-1-4-SG	1DTS-1-4-HG
1"	1.287	7/8"	2"	5/8"	1-3/4"	17/64"		1DTS-1-5	1DTS-1-5H	1DTS-1-5P	1DTS-1-5A	1DTS-1-5-SG	1DTS-1-5-HG
1"	1.287	1"	1-1/2"	7/32"	1-3/4"	17/64"		1DTS-1	1DTS-1H	1DTS-1P	1DTS-1A	1DTS-1-SG	1DTS-1-HG
1"	1.287	1"	2"	23/64"	1-3/4"	17/64"		1DTS-2	1DTS-2H	1DTS-2P	1DTS-2A	1DTS-2-SG	1DTS-2-HG
1"	1.287	1"	2-1/2"	5/8"	1-3/4"	17/64"		1DTS-3	1DTS-3H	1DTS-3P	1DTS-3A	1DTS-3-SG	1DTS-3-HG
1"	1.287	1-5/16"	1-1/2"	7/32"	1-3/4"	17/64"		1DTS-4	1DTS-4H	1DTS-4P	1DTS-4A	1DTS-4-SG	1DTS-4-HG
1"	1.287	1-5/16"	2"	5/8"	1-3/4"	17/64"		1DTS-5	1DTS-5H	1DTS-5P	1DTS-5A	1DTS-5-SG	1DTS-5-HG
1"	1.287	1-5/16"	2-1/2"	5/8"	1-3/4"	17/64"		1DTS-6	1DTS-6H	1DTS-6P	1DTS-6A	1DTS-6-SG	1DTS-6-HG
1"	1.287	1-5/16"	3"	5/8"	1-3/4"	17/64"		1DTS-7	1DTS-7H	1DTS-7P	1DTS-7A	1DTS-7-SG	1DTS-7-HG
1-1/4"	1.554	1"	2"	11/32"	1-3/4"	17/64"		1-1/4DTS-1	1-1/4DTS-1H	1-1/4DTS-1P	1-1/4DTS-1A	1-1/4DTS-1-SG	1-1/4DTS-1-HG
1-1/4"	1.554	1"	2-1/2"	7/32"	1-3/4"	17/64"		1-1/4DTS-2	1-1/4DTS-2H	1-1/4DTS-2P	1-1/4DTS-2A	1-1/4DTS-2-SG	1-1/4DTS-2-HG
1-1/4"	1.554	1-1/4"	2"	11/32"	1-3/4"	17/64"		1-1/4DTS-3	1-1/4DTS-3H	1-1/4DTS-3P	1-1/4DTS-3A	1-1/4DTS-3-SG	1-1/4DTS-3-HG
1-1/4"	1.554	1-1/2"	2"	1/2"	1-3/4"	17/64"		1-1/4DTS-4	1-1/4DTS-4H	1-1/4DTS-4P	1-1/4DTS-4A	1-1/4DTS-4-SG	1-1/4DTS-4-HG
1-1/4"	1.554	1-1/2"	2-1/2"	1/2"	1-3/4"	17/64"		1-1/4DTS-5	1-1/4DTS-5H	1-1/4DTS-5P	1-1/4DTS-5A	1-1/4DTS-5-SG	1-1/4DTS-5-HG
1-1/4"	1.554	1-1/2"	3"	1/2"	1-3/4"	17/64"		1-1/4DTS-6	1-1/4DTS-6H	1-1/4DTS-6P	1-1/4DTS-6A	1-1/4DTS-6-SG	1-1/4DTS-6-HG
1-1/2"	1.787	1"	2"	7/32"	1-7/8"	17/64"		1-1/2DTS-1	1-1/2DTS-1H	1-1/2DTS-1P	1-1/2DTS-1A	1-1/2DTS-1-SG	1-1/2DTS-1-HG
1-1/2"	1.787	1"	2-1/2"	1/2"	1-7/8"	17/64"		1-1/2DTS-2	1-1/2DTS-2H	1-1/2DTS-2P	1-1/2DTS-2A	1-1/2DTS-2-SG	1-1/2DTS-2-HG
1-1/2"	1.787	1-1/4"	2"	7/32"	1-7/8"	17/64"		1-1/2DTS-3	1-1/2DTS-3H	1-1/2DTS-3P	1-1/2DTS-3A	1-1/2DTS-3-SG	1-1/2DTS-3-HG
1-1/2"	1.787	1-1/2"	2"	7/32"	1-7/8"	17/64"		1-1/2DTS-4	1-1/2DTS-4H	1-1/2DTS-4P	1-1/2DTS-4A	1-1/2DTS-4-SG	1-1/2DTS-4-HG
1-1/2"	1.787	1-1/2"	2-1/2"	1/2"	1-7/8"	17/64"		1-1/2DTS-5	1-1/2DTS-5H	1-1/2DTS-5P	1-1/2DTS-5A	1-1/2DTS-5-SG	1-1/2DTS-5-HG
1-1/2"	1.787	1-1/2"	3"	1/2"	1-7/8"	17/64"		1-1/2DTS-6	1-1/2DTS-6H	1-1/2DTS-6P	1-1/2DTS-6A	1-1/2DTS-6-SG	1-1/2DTS-6-HG
1-5/8"	2.057	1-1/2"	2-1/2"	11/32"	2-9/16"	25/64"		1-5/8DTS-1	1-5/8DTS-1H	1-5/8DTS-1P	1-5/8DTS-1A	1-5/8DTS-1-SG	1-5/8DTS-1-HG

DOVETAIL & CIRCULAR

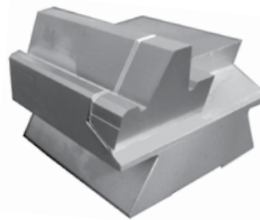
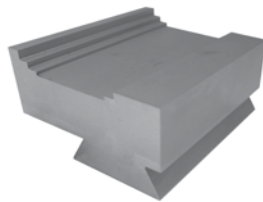
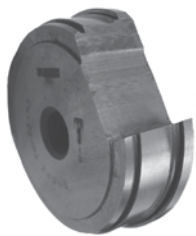
FORM & SHAVE TOOLS



Somma Tool Company has been the leader in circular and dovetail tool blanks since 1939, but did you know that Somma will supply your



TOOLS GROUND TO PRINT.

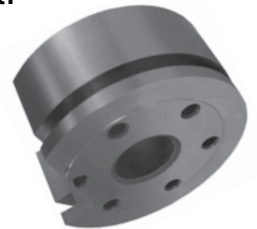


Contact us for cutting tools engineered to your part print.

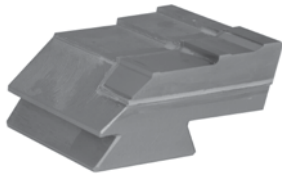
Blanks stocked in the following materials;

M2, M42, T15PM & 76PM
(Carbide Tipped upon Request)

Proudly made in the U.S.A.



Call for special quantity pricing based on placing a blanket purchase order and inventory will be warehoused specifically for your requirements.



Benefits:

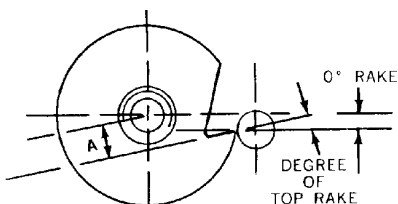
Special Quantity Pricing

Pay only when you request releases

No waiting-same day shipment when releases are requested



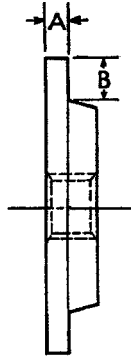
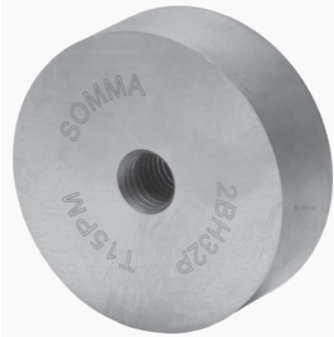
TABLE OF BELOW-CENTER GASHING DISTANCE FOR VARIOUS TOP RAKES ON CIRCULAR FORM TOOLS



Degree of Top Rake	No. 00 B&S 1-3/4" Dia. "A"	No. 0 B&S 2-1/4" Dia. "A"	No. 2 B&S 3" Dia. "A"	Davenport 2" Dia. "A"
0	.125	.156	.250	.125
3	.170	.214	.327	.177
5	.200	.252	.378	.211
7	.230	.291	.428	.245
10	.273	.347	.503	.295
12	.302	.384	.552	.328
15	.345	.439	.624	.378

To simplify tool sharpening, use our Scribe-Chek Cutting Edge Gage

B&S CIRCULAR FORM TOOL BLANKS



* Flange type (cutaway blanks)
save grinding time on narrow tools.

ALL BLANKS ARE AVAILABLE WITH PIN HOLES TO THE FOLLOWING SPECIFICATIONS				
Mach. Size	No. of Holes	Dia.	Depth	Bolt Circle
#00 B&S	8	5/32	5/16	1-1/16
#00 TRAUB	8	1/8	5/16	.787
#0 B&S	6	3/16	5/16	1-3/8
#2 B&S	6	3/16	3/8	1-1/2

*Specify type when ordering #00 Blanks.
PRICES ON APPLICATION FOR THRU HOLES OR ANY VARIATION OF THESE SPECIFICATIONS.

- Hardened and Surface ground both sides
- O.D. turned only

WIDTH		M2 H.S.S.	M42 H.S.S.	T15PM H.S.S.	76PM H.S.S.
A	B	CAT. NO.	CAT. NO.	CAT. NO.	CAT. NO.
#00 B&S		1-3/4" Dia.		3/8-16 Tap Hole	
.080	7/32	00FLH08	00FLH08H	00FLH08P	00FLH08A
.120	1/4	00FLH12	00FLH12H	00FLH12P	00FLH12A
.160	1/4	00FLH16	00FLH16H	00FLH16P	00FLH16A
.200	1/4	00FLH20	00FLH20H	00FLH20P	00FLH20A
1/4		00BH8	00BH8H	00BH8P	00BH8A
5/16		00BH10	00BH10H	00BH10P	00BH10A
3/8		00BH12	00BH12H	00BH12P	00BH12A
7/16		00BH14	00BH14H	00BH14P	00BH14A
1/2		00BH16	00BH16H	00BH16P	00BH16A
9/16		00BH18	00BH18H	00BH18P	00BH18A
5/8		00BH20	00BH20H	00BH20P	00BH20A
3/4		00BH24	00BH24H	00BH24P	00BH24A
7/8		00BH28	00BH28H	00BH28P	00BH28A
1"		00BH32	00BH32H	00BH32P	00BH32A
1-1/8		00BH36	00BH36H	00BH36P	00BH36A
1-1/4		00BH40	00BH40H	00BH40P	00BH40A
1-3/8		00BH44	00BH44H	00BH44P	00BH44A
1-1/2		00BH48	00BH48H	00BH48P	00BH48A
1-5/8		00BH52	00BH52H	00BH52P	00BH52A
1-3/4		00BH56	00BH56H	00BH56P	00BH56A

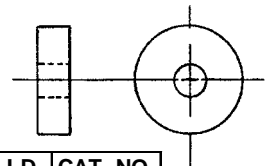
WIDTH		M2 H.S.S.	M42 H.S.S.	T15PM H.S.S.	76PM H.S.S.
A	B	CAT. NO.	CAT. NO.	CAT. NO.	CAT. NO.
#0 B&S		2-1/4" Dia.		1/2-13 Tap Hole	
.100	1/4	0FLH10	0FLH10H	0FLH10P	0FLH10A
.150	3/8	0FLH15	0FLH15H	0FLH15P	0FLH15A
.200	3/8	0FLH20	0FLH20H	0FLH20P	0FLH20A
.250	3/8	0FLH25	0FLH25H	0FLH25P	0FLH25A
5/16		0BH10	0BH10H	0BH10P	0BH10A
3/8		0BH12	0BH12H	0BH12P	0BH12A
7/16		0BH14	0BH14H	0BH14P	0BH14A
1/2		0BH16	0BH16H	0BH16P	0BH16A
9/16		0BH18	0BH18H	0BH18P	0BH18A
5/8		0BH20	0BH20H	0BH20P	0BH20A
3/4		0BH24	0BH24H	0BH24P	0BH24A
7/8		0BH28	0BH28H	0BH28P	0BH28A
1"		0BH32	0BH32H	0BH32P	0BH32A
1-1/8		0BH36	0BH36H	0BH36P	0BH36A
1-1/4		0BH40	0BH40H	0BH40P	0BH40A
1-3/8		0BH44	0BH44H	0BH44P	0BH44A
1-1/2		0BH48	0BH48H	0BH48P	0BH48A
1-5/8		0BH52	0BH52H	0BH52P	0BH52A
1-3/4		0BH56	0BH56H	0BH56P	0BH56A
1-7/8		0BH60	0BH60H	0BH60P	0BH60A
2"		0BH64	0BH64H	0BH64P	0BH64A

WIDTH		M2 H.S.S.	M42 H.S.S.	T15PM H.S.S.	76PM H.S.S.
A	B	CAT. NO.	CAT. NO.	CAT. NO.	CAT. NO.
#2 B&S		3" Dia.		5/8-11 Tap Hole	
1/8	3/8	2FLH4	2FLH4H	2FLH4P	2FLH4A
3/16	1/2	2FLH6	2FLH6H	2FLH6P	2FLH6A
1/4	1/2	2FLH8	2FLH8H	2FLH8P	2FLH8A
5/16	1/2	2FLH10	2FLH10H	2FLH10P	2FLH10A
3/8		2BH12	2BH12H	2BH12P	2BH12A
7/16		2BH14	2BH14H	2BH14P	2BH14A
1/2		2BH16	2BH16H	2BH16P	2BH16A
9/16		2BH18	2BH18H	2BH18P	2BH18A
5/8		2BH20	2BH20H	2BH20P	2BH20A
3/4		2BH24	2BH24H	2BH24P	2BH24A
7/8		2BH28	2BH28H	2BH28P	2BH28A
1"		2BH32	2BH32H	2BH32P	2BH32A
1-1/8		2BH36	2BH36H	2BH36P	2BH36A
1-1/4		2BH40	2BH40H	2BH40P	2BH40A
1-3/8		2BH44	2BH44H	2BH44P	2BH44A
1-1/2		2BH48	2BH48H	2BH48P	2BH48A
1-5/8		2BH52	2BH52H	2BH52P	2BH52A
1-3/4		2BH56	2BH56H	2BH56P	2BH56A
1-7/8		2BH60	2BH60H	2BH60P	2BH60A
2"		2BH64	2BH64H	2BH64P	2BH64A
2-1/4		2BH72	2BH72H	2BH72P	2BH72A
2-1/2		2BH80	2BH80H	2BH80P	2BH80A
2-3/4		2BH88	2BH88H	2BH88P	2BH88A
3"		2BH96	2BH96H	2BH96P	2BH96A
3-1/4		2BH104	2BH104H	2BH104P	2BH104A
3-1/2		2BH112	2BH112H	2BH112P	2BH112A
3-3/4		2BH120	2BH120H	2BH120P	2BH120A
4"		2BH128	2BH128H	2BH128P	2BH128A

BLANKS SHOWN IN GRAY SHADED AREA ARE SEMI-STANDARD DELIVERY: 1-2 WEEKS

BLANKS FOR B&S CIRCULAR POINTING TOOLS

- M2 H.S.S. - Hardened
- I.D. and Both Sides Ground
- O.D. Turned



MACH. SIZE	O.D.	WIDTH	I.D.	CAT. NO.
#00 B&S	1-1/8	1/4	3/8	00PTBL
#0 B&S	1-3/8	3/8	3/8	0PTBL
#2 B&S	1-3/4	1/2	1/2	2PTBL

DAVENPORT FORM TOOL BLANKS

also used on the 7/16" National Acme
and the 9/16" Conomatic.



2" Diameter
9/16" Center Hole,
(6) 9/64 Dia. Pin Holes
Thru On 1-1/4 B.C.

Hardened and surface
ground both sides O.D. turned only.

* F L A N G E

WIDTH		M2 H.S.S.	M42 H.S.S.	T15PM H.S.S.	76PM H.S.S.
A	B	CAT. NO.	CAT. NO.	CAT. NO.	CAT. NO.
1/8	1/4	DFLH4	DFLH4H	DFLH4P	DFLH4A
3/16	1/4	DFLH6	DFLH6H	DFLH6P	DFLH6A
1/4		DFH8	DFH8H	DFH8P	DFH8A
5/16		DFH10	DFH10H	DFH10P	DFH10A
3/8		DFH12	DFH12H	DFH12P	DFH12A
7/16		DFH14	DFH14H	DFH14P	DFH14A
1/2		DFH16	DFH16H	DFH16P	DFH16A
9/16		DFH18	DFH18H	DFH18P	DFH18A
5/8		DFH20	DFH20H	DFH20P	DFH20A
3/4		DFH24	DFH24H	DFH24P	DFH24A
7/8		DFH28	DFH28H	DFH28P	DFH28A
1"		DFH32	DFH32H	DFH32P	DFH32A
1-1/8		DFH36	DFH36H	DFH36P	DFH36A
1-1/4		DFH40	DFH40H	DFH40P	DFH40A
1-3/8		DFH44	DFH44H	DFH44P	DFH44A
1-1/2		DFH48	DFH48H	DFH48P	DFH48A
1-5/8		DFH52	DFH52H	DFH52P	DFH52A
1-3/4		DFH56	DFH56H	DFH56P	DFH56A
1-7/8		DFH60	DFH60H	DFH60P	DFH60A
2"		DFH64	DFH64H	DFH64P	DFH64A

DAVENPORT SIZE TOOL BLANKS



1-5/16" Diameter
7/16-20 L.H. Thread

Hardened and surface
ground both sides O.D. turned only.

WIDTH	M2 H.S.S.	M42 H.S.S.	T15PM H.S.S.	76PM H.S.S.
CAT. NO.	CAT. NO.	CAT. NO.	CAT. NO.	CAT. NO.
1/4	DSH8	DSH8H	DSH8P	DSH8A
5/16	DSH10	DSH10H	DSH10P	DSH10A
3/8	DSH12	DSH12H	DSH12P	DSH12A
7/16	DSH14	DSH14H	DSH14P	DSH14A
1/2	DSH16	DSH16H	DSH16P	DSH16A
9/16	DSH18	DSH18H	DSH18P	DSH18A
5/8	DSH20	DSH20H	DSH20P	DSH20A
3/4	DSH24	DSH24H	DSH24P	DSH24A
7/8	DSH28	DSH28H	DSH28P	DSH28A
1"	DSH32	DSH32H	DSH32P	DSH32A
1-1/8	DSH36	DSH36H	DSH36P	DSH36A
1-1/4	DSH40	DSH40H	DSH40P	DSH40A
1-3/8	DSH44	DSH44H	DSH44P	DSH44A
1-1/2**	DSH48	DSH48H	DSH48P	DSH48A

DAVENPORT ROLL BLANKS

**** NOTE: 1-1/2" WIDE BLANKS COUNTERBORED .501 DIA X 1-1/16" DEEP**



Hardened 52100 steel
(RC/55) Surface ground both sides
O.D. rough ground only
15/16 O.D.
.3125/.313 HONED I.D.

WIDTH	CAT. NO.	PRICE	WIDTH	CAT. NO.	PRICE
1/4	DR8	15.50	9/16	DR18	19.00
5/16	DR10	16.50	5/8	DR20	20.00
3/8	DR12	17.00	3/4	DR24	21.50
7/16	DR14	17.50	7/8	DR28	22.50
1/2	DR16	18.00	1"	DR32	24.00

**SEMI-STANDARD CIRCULAR BLANKS
FOR MULTIPLE SPINDLE MACHINES**

AVAILABLE IN M2, M42, AND T15PM H.S.S.
PRICES ON APPLICATION.
SPECIFY QUANTITY, STYLE AND
TYPE, WIDTH, MATERIAL
AND HARD OR SOFT.

Delivery: 2 - 3 weeks
(NOT RETURNABLE FOR CREDIT)

**SEMI-STANDARD CIRCULAR BLANKS
WITH SIDE TEETH**

AVAILABLE IN M2, M42, AND T15PM H.S.S.
PRICES ON APPLICATION.
SPECIFY QUANTITY, STYLE,
WIDTH, MATERIAL
AND HARD OR SOFT.

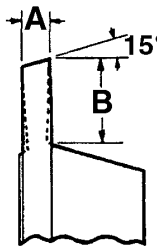
Delivery 2 weeks.
(NOT RETURNABLE FOR CREDIT)

Available:

NBH Style	2-1/4" Dia. for New Britain
GH Style	2-3/8" Dia. for Greenlee
CH Style	3" Dia. for Cleveland
4H Style	3-1/2" Dia. for NBG, B&S & Cleveland
6H Style	4" Dia. for Brown & Sharpe

Available:

R1H Style	1-7/8" Dia. for Acme
R2H Style	2-3/8" Dia. for Acme
R3H Style	3" Dia. for Acme
R4H Style	3-3/8" Dia. for Acme

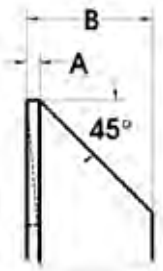


CIRCULAR PLAIN CUT-OFF TOOLS FOR DAVENPORT MACHINES (CAN ALSO BE USED ON 7/16" ACME AND 9/16" CONE MACHINES)

A	B	M2 PART#	T15PM PART#	3-LIP C2 CARB. TIPPED PART#	SOLID C2 CARBIDE PART#
.030	3/32	DP030	DP030V	DP030-CT	
.040	1/8	DP040	DP040V	DP040-CT	
.050	3/16	DP050	DP050V	DP050-CT	DP050-SC
.060	7/32	DP060	DP060V	DP060-CT	
.070	1/4	DP070	DP070V	DP070-CT	DP070-SC
.080	9/32	DP080	DP080V	DP080-CT	
.090	9/32	DP090	DP090V	DP090-CT	DP090-SC



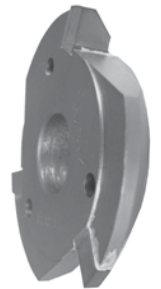
- For straight cutting-off
- Side clearance ground
- All with side pinholes
- Available with 23 degree C/O angle for non-ferrous metals
- Available with TIN and other coatings



45 DEGREE FACE-OFF TOOLS FOR DAVENPORT MACHINES

45° FACE-OFF TOOLS are intended for facing the end of the bar, necking, or forming large 45° chamfers.

A	B	M2 PART#	T15PM PART#	3-LIP C2 CARB. TIPPED PART#
1/16"	1/4"	DF45-1	DF45-1V	DF45-1CT
3/32"	5/16"	DF45-2	DF45-2V	DF45-2CT

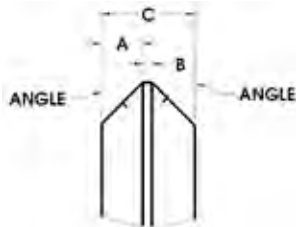


CIRCULAR DOUBLE CHAMFER TOOLS FOR DAVENPORT MACHINES

Double chamfer tools are designed for chamfering the back end of the completed part and the front end of following part prior to cutting off in between.

45° chamfer tools are available with the flat in the center or offset which has the flat closer to the spindle side of the tool to allow working close to the spindle.

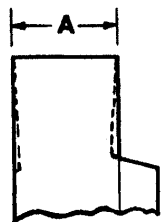
30° chamfer tools have the flat in the center of the tool.



ANGLE	A	B	C	M2 PART#	T15PM PART#	3-LIP C2 CARB. TIPPED PART#	SOLID C2 CARBIDE PART#
30 DEG.	7/64	.025	1/4"	D30C1	D30C1V	D30C1-CT	
45 DEG.	3/32	.060	5/16"			D45C1-CT	
45 DEG.	7/64	.025	1/4"	D45C1	D45C1V	D45C2-1-CT	D45C1-SC
45 DEG.	1/8"	.090	3/8"			D45C2-CT	



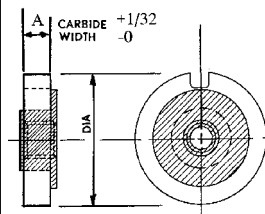
CIRCULAR STRAIGHT TOOLS FOR DAVENPORT MACHINES



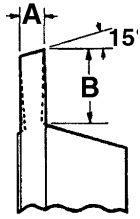
WIDTH A	M2 PART#	T15PM PART#	3-LIP C2 CARB. TIPPED PART#	SOLID C2 CARBIDE PART#
1/8"	DS4	DS4V	DS4-CT	DS4-SC
3/16"	DS6	DS6V	DS6-CT	DS6-SC
1/4"	DS8	DS8V	DS8-CT	DS8-SC
5/16"	DS10	DS10V	DS10-CT	DS10-SC
3/8"	DS12	DS12V	DS12-CT	DS12-SC
7/16"	DS14	DS14V	DS14-CT	
1/2"	DS16	DS16V	DS16-CT	DS16-SC
9/16"	DS18	DS18V	DS18-CT	
5/8"	DS20	DS20V	DS20-CT	

- For forming grooves, shoulders or roughing down the work piece
- Supplied with side pinholes
- Side clearance ground

SOLID CARBIDE UNGROUND CIRCULAR FORM TOOL BLANKS FOR DAVENPORT MACHINES



WIDTH	PART#
1/8"	DSCB-4
3/16"	DSCB-6
1/4"	DSCB-8
5/16"	DSCB-10
3/8"	DSCB-12
1/2"	DSCB-16



- For straight cutting-off
- **Carbide tipped tools** are supplied for right hand cutting, for left hand cutting add -L to the part number listed. All other choices have a "U" shaped gash for cutting in either direction.
- Side clearance ground
- Available with side pinholes
- Available with 23 degree C/O angle for non-ferrous metals
- Available with TIN and other coatings

CIRCULAR PLAIN CUT-OFF TOOLS FOR #0 B&S (2-1/4" DIA., 5/16" WIDE WITH 1/2-13 THREAD)

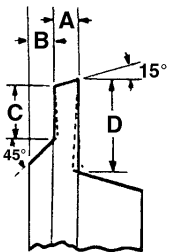
A	B	M2 PART#	T15PM PART#	3-LIP C2 CARB. TIPPED PART#	C2 SOLID CARBIDE PART#
.040	3/16	0P4	0P4V	0P4-CT	
.050	7/32	0P5	0P5V	0P5-CT	
.060	1/4	0P6	0P6V	0P6-CT	0P6-SC
.070	5/16	0P7	0P7V	0P7-CT	
.080	5/16	0P8	0P8V	0P8-CT	0P8-SC
.090	3/8	0P9	0P9V	0P9-CT	
.100	3/8	0P10	0P10V	0P10-CT	0P10-SC
.120	3/8	0P12	0P12V	0P12-CT	0P12-SC

CIRCULAR PLAIN CUT-OFF TOOLS FOR #0 B&S (1-3/4" DIA., 1/4" WIDE WITH 3/8-16 THREAD)

A	B	M2 PART#	T15PM PART#	3-LIP C2 CARB. TIPPED PART#	C2 SOLID CARBIDE PART#
.030	1/8	00P3	00P3V	00P3-CT	
.040	3/16	00P4	00P4V	00P4-CT	00P4-SC
.050	7/32	00P5	00P5V	00P5-CT	
.060	1/4	00P6	00P6V	00P6-CT	00P6-SC
.070	1/4	00P7	00P7V	00P7-CT	
.080	1/4	00P8	00P8V	00P8-CT	00P8-SC
.100	1/4	00P10	00P10V	00P10-CT	00P10-SC

CIRCULAR PLAIN CUT-OFF TOOLS FOR #2 B&S (3" DIA., 3/8" WIDE WITH 5/8-11 THREAD)

A	B	M2 PART#	T15PM PART#	3-LIP C2 CARB. TIPPED PART#	C2 SOLID CARBIDE PART#
.060	5/16	2P6	2P6V	2P6-CT	
.080	7/16	2P8	2P8V	2P8-CT	2P8-SC
.100	9/16	2P10	2P10V	2P10-CT	2P10-SC
.120	5/8	2P12	2P12V	2P12-CT	2P12-SC
.140	11/16	2P14	2P14V	2P14-CT	2P14-SC



- For cutting-off and chamfering
- **Carbide tipped tools** are supplied for right hand cutting, for left hand cutting add -L to the part number listed. All other choices have a "U" shaped gash for cutting in either direction.
- Side clearance ground
- Available with side pinholes
- Available with 23 degree C/O angle for non-ferrous metals
- Available with TIN and other coatings



CIRCULAR CUT-OFF & CHAMFER TOOLS FOR #0 B&S (1-3/4" DIA., 1/4" WIDE WITH 3/8-16 THREAD)

A	B	C	D	M2 PART#	T15PM PART#	3-LIP C2 CARB. TIPPED PART#
.030	.030	3/64	1/4	00C3	00C3V	00C3-CT
.040	.040	5/64	1/4	00C4	00C4V	00C4-CT
.050	.050	7/64	1/4	00C5	00C5V	00C5-CT
.060	.060	9/64	1/4	00C6	00C6V	00C6-CT
.070	.070	11/64	1/4	00C7	00C7V	00C7-CT
.080	.080	13/64	1/4	00C8	00C8V	00C8-CT

CIRCULAR CUT-OFF & CHAMFER TOOLS FOR #2 B&S (3" DIA., 3/8" WIDE WITH 5/8-11 THREAD)

A	B	C	D	M2 PART#	T15PM PART#	3-LIP C2 CARB. TIPPED PART#
.060	.060	1/8	3/8	2C6	2C6V	2C6-CT
.070	.070	3/16	7/16	2C7	2C7V	2C7-CT
.080	.080	1/4	1/2	2C8	2C8V	2C8-CT
.090	.090	5/16	9/16	2C9	2C9V	2C9-CT
.100	.100	3/8	9/16	2C10	2C10V	2C10-CT
.110	.110	7/16	5/8	2C11	2C11V	2C11-CT
.120	.120	1/2	5/8	2C12	2C12V	2C12-CT
.140	.140	9/16	11/16	2C14	2C14V	2C14-CT

CIRCULAR CUT-OFF & CHAMFER TOOLS FOR #0 B&S (2-1/4" DIA., 5/16" WIDE WITH 1/2-13 THREAD)

A	B	C	D	M2 PART#	T15PM PART#	3-LIP C2 CARB. TIPPED PART#
.040	.040	5/64	5/16	0C4	0C4V	0C4-CT
.050	.050	7/64	5/16	0C5	0C5V	0C5-CT
.060	.060	9/64	5/16	0C6	0C6V	0C6-CT
.070	.070	11/64	3/8	0C7	0C7V	0C7-CT
.080	.080	7/32	3/8	0C8	0C8V	0C8-CT
.090	.090	9/32	3/8	0C9	0C9V	0C9-CT
.100	.100	11/32	3/8	0C10	0C10V	0C10-CT

FISHTAIL (TUBING) CUT-OFF TOOLS

Somma can supply any of the above standard tools to "fishtail" shape for cutting tubing. The fishtail shape produces a clean cutoff on both the front and back of the part. It avoids the problem of material being rolled into and closing the front end of the hole.

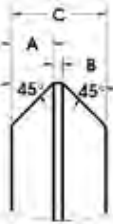


CIRCULAR CUT-OFF & CHAMFER TOOLS To Your Specifications

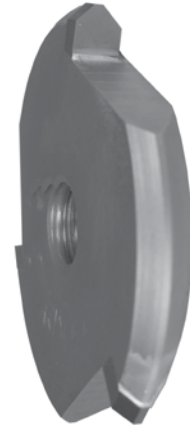
Prices on application, specify "A", "B", "C", and "D" dimensions, quantity, machine size, steel and type tool desired.

- Designed for chamfering the back end of the completed part and the front end of following part prior to cutting off in between.
- These tools are available with the flat in the center of the tool or offset which has the flat closer to the spindle side of the tool to allow working close to the spindle.
- **Carbide tipped tools** are supplied for right hand cutting, for left hand cutting add -L to the part number listed. All other choices have a "U" shaped gash for cutting in either direction.
- Available with side pinholes
- Side clearance ground

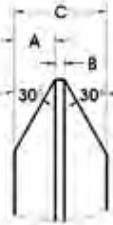
45° DOUBLE CHAMFER TOOLS FOR B&S



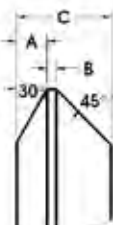
MACHINE SIZE	A	B	C	M2 PART#	T15PM PART#	3-LIP C2 CARB TIPPED PART#	SOLID C2 CARBIDE PART#
#00	1/16	.025	1/4	0045C1	0045C1V	0045C1-CT	
	7/64	.025	1/4	0045C2	0045C2V	0045C2-CT	0045C2-SC
#0	3/32	.040	5/16	045C1	045C1V	045C1-CT	
	1/8	.040	5/16	045C2	045C2V	045C2-CT	045C2-SC
#2	7/64	.050	3/8	245C1	245C1V	245C1-CT	
	5/32	.050	3/8	245C2	245C2V	245C2-CT	245C2-SC



30° DOUBLE CHAMFER TOOLS FOR B&S



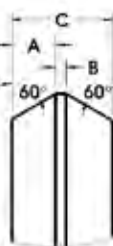
MACHINE SIZE	A	B	C	M2 PART#	T15PM PART#	3-LIP C2 CARB TIPPED PART#
#00	1/16	.025	1/4	0030C1	0030C1V	0030C1-CT
	7/64	.025	1/4	0030C2	0030C2V	0030C2-CT
#0	3/32	.040	5/16	030C1	030C1V	030C1-CT
	1/8	.040	5/16	030C2	030C2V	030C2-CT
#2	7/64	.050	3/8	230C1	230C1V	230C1-CT
	5/32	.050	3/8	230C2	230C2V	230C2-CT



30° / 45° CHAMFER TOOLS FOR B&S

MACHINE SIZE	A	B	C	M2 PART#	T15PM PART#
#00	5/64	.025	1/4	00C3045	00C3045V
#0	3/32	.040	5/16	0C3045	0C3045V
#2	7/64	.050	3/8	2C3045	2C3045V

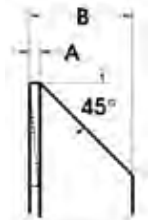
60° DOUBLE CHAMFER TOOLS FOR B&S



MACHINE SIZE	A	B	C	M2 PART#	T15PM PART#
#00	1/16	.025	1/4	0060C1	0060C1V
	7/64	.025	1/4	0060C2	0060C2V
#0	3/32	.040	5/16	060C1	060C1V
	1/8	.040	5/16	060C2	060C2V
#2	7/64	.050	3/8	260C1	260C1V
	5/32	.050	3/8	260C2	260C2V

FACE-OFF TOOLS FOR B&S

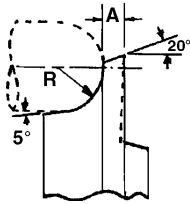
45° FACE-OFF TOOLS are intended for facing the end of the bar, necking, or forming large 45° chamfers



MACHINE SIZE	A	B	M2 PART#	T15PM PART#	3-LIP C2 CARB TIPPED PART#
#00	.025	1/4	00F45	00F45V	00F45-CT
#0	.040	5/16	0F45	0F45V	0F45-CT
#2	.050	3/8	2F45	2F45V	2F45-CT

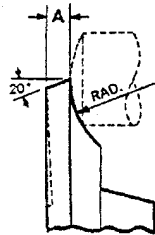
The following Circular Tools are available in M2 and T15PM H.S.S.
Delivery is 1-2 weeks, call us for prices.
Also available with pinholes upon request.

CIRCULAR RADIUS CUT-OFF TOOLS



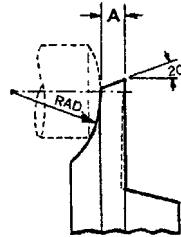
RADIUS	A	CAT. NO.	
		M2	T15PM
for 00 B&S			
1/32	.030	00R1	00R1V
3/64	.030	00R15	00R15V
1/16	.030	00R2	00R2V
3/32	.035	00R3	00R3V
1/8	.040	00R4	00R4V
5/32	.045	00R5	00R5V
3/16	.050	00R6	00R6V
7/32	.055	00R7	00R7V
1/4	.060	00R8	00R8V
for 0 B&S			
3/32	.040	0R3	0R3V
1/8	.040	0R4	0R4V
5/32	.045	0R5	0R5V
3/16	.050	0R6	0R6V
7/32	.055	0R7	0R7V
1/4	.060	0R8	0R8V
9/32	.065	0R9	0R9V
5/16	.070	0R10	0R10V
11/32	.075	0R11	0R11V
3/8	.075	0R12	0R12V
for 2 B&S			
1/8	.050	2R4	2R4V
5/32	.055	2R5	2R5V
3/16	.060	2R6	2R6V
7/32	.065	2R7	2R7V
1/4	.070	2R8	2R8V
9/32	.080	2R9	2R9V
5/16	.090	2R10	2R10V
11/32	.100	2R11	2R11V
3/8	.110	2R12	2R12V

CIRCULAR REAR CROWN CUT-OFF TOOLS



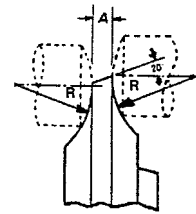
RADIUS	A	CAT. NO.	
		M2	T15PM
for 00 B&S			
1/16	.030	00RR2	00RR2V
3/32	.030	00RR3	00RR3V
1/8	.030	00RR4	00RR4V
5/32	.035	00RR5	00RR5V
3/16	.035	00RR6	00RR6V
7/32	.040	00RR7	00RR7V
1/4	.040	00RR8	00RR8V
9/32	.045	00RR9	00RR9V
5/16	.045	00RR10	00RR10V
11/32	.050	00RR11	00RR11V
3/8	.050	00RR12	00RR12V
13/32	.055	00RR13	00RR13V
7/16	.055	00RR14	00RR14V
15/32	.060	00RR15	00RR15V
1/2	.060	00RR16	00RR16V
for 0 B&S			
1/8	.040	0RR4	0RR4V
5/32	.040	0RR5	0RR5V
3/16	.040	0RR6	0RR6V
7/32	.040	0RR7	0RR7V
1/4	.040	0RR8	0RR8V
9/32	.045	0RR9	0RR9V
5/16	.045	0RR10	0RR10V
11/32	.050	0RR11	0RR11V
3/8	.050	0RR12	0RR12V
13/32	.055	0RR13	0RR13V
7/16	.055	0RR14	0RR14V
15/32	.060	0RR15	0RR15V
1/2	.060	0RR16	0RR16V
9/16	.065	0RR18	0RR18V
5/8	.070	0RR20	0RR20V
11/16	.075	0RR22	0RR22V
3/4	.075	0RR24	0RR24V
for 2 B&S			
1/4	.060	2RR8	2RR8V
5/16	.070	2RR10	2RR10V
3/8	.080	2RR12	2RR12V
7/16	.085	2RR14	2RR14V
1/2	.090	2RR16	2RR16V
9/16	.095	2RR18	2RR18V
5/8	.100	2RR20	2RR20V
11/16	.105	2RR22	2RR22V
3/4	.110	2RR24	2RR24V

CIRCULAR FRONT CROWN CUT-OFF TOOLS



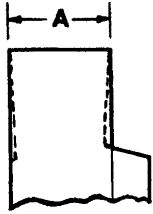
RADIUS	A	CAT. NO.	
		M2	T15PM
for 00 B&S			
1/16	.030	00RF2	00RF2V
3/32	.030	00RF3	00RF3V
1/8	.030	00RF4	00RF4V
5/32	.035	00RF5	00RF5V
3/16	.035	00RF6	00RF6V
7/32	.040	00RF7	00RF7V
1/4	.040	00RF8	00RF8V
9/32	.045	00RF9	00RF9V
5/16	.045	00RF10	00RF10V
11/32	.050	00RF11	00RF11V
3/8	.050	00RF12	00RF12V
13/32	.055	00RF13	00RF13V
7/16	.055	00RF14	00RF14V
15/32	.060	00RF15	00RF15V
1/2	.060	00RF16	00RF16V
for 0 B&S			
1/8	.040	0RF4	0RF4V
5/32	.040	0RF6	0RF6V
3/16	.040	0RF6	0RF6V
7/32	.040	0RF8	0RF8V
1/4	.040	0RF8	0RF8V
9/32	.045	0RF10	0RF10V
5/16	.045	0RF10	0RF10V
11/32	.050	0RF12	0RF12V
3/8	.050	0RF12	0RF12V
13/32	.055	0RF14	0RF14V
7/16	.055	0RF14	0RF14V
15/32	.060	0RF16	0RF16V
1/2	.060	0RF16	0RF16V
9/16	.065	0RF18	0RF18V
5/8	.070	0RF20	0RF20V
11/16	.075	0RF22	0RF22V
3/4	.075	0RF24	0RF24V
for 2 B&S			
1/4	.060	2RF8	2RF8V
5/16	.070	2RF10	2RF10V
3/8	.080	2RF12	2RF12V
7/16	.085	2RF14	2RF14V
1/2	.090	2RF16	2RF16V
9/16	.095	2RF18	2RF18V
5/8	.100	2RF20	2RF20V
11/16	.105	2RF22	2RF22V
3/4	.110	2RF24	2RF24V

CIRCULAR DOUBLE CROWN CUT-OFF TOOLS



RADIUS	A	CAT. NO.	
		M2	T15PM
for 00 B&S			
1/16	.030	00RD2	00RD2V
3/32	.030	00RD3	00RD3V
1/8	.030	00RD4	00RD4V
5/32	.035	00RD5	00RD5V
3/16	.035	00RD6	00RD6V
7/32	.040	00RD7	00RD7V
1/4	.040	00RD8	00RD8V
9/32	.045	00RD9	00RD9V
5/16	.045	00RD10	00RD10V
11/32	.050	00RD11	00RD11V
3/8	.050	00RD12	00RD12V
13/32	.055	00RD13	00RD13V
7/16	.055	00RD14	00RD14V
15/32	.060	00RD15	00RD15V
1/2	.060	00RD16	00RD16V
for 0 B&S			
1/8	.040	0RD4	0RD4V
5/32	.040	0RD6	0RD6V
3/16	.040	0RD6	0RD6V
7/32	.040	0RD8	0RD8V
1/4	.040	0RD8	0RD8V
9/32	.045	0RD10	0RD10V
5/16	.045	0RD10	0RD10V
11/32	.050	0RD12	0RD12V
3/8	.050	0RD12	0RD12V
13/32	.055	0RD14	0RD14V
7/16	.055	0RD14	0RD14V
15/32	.060	0RD16	0RD16V
1/2	.060	0RD16	0RD16V
9/16	.065	0RD18	0RD18V
5/8	.070	0RD20	0RD20V
11/16	.075	0RD22	0RD22V
3/4	.075	0RD24	0RD24V
for 2 B&S			
1/4	.060	2RD8	2RD8V
5/16	.070	2RD10	2RD10V
3/8	.080	2RD12	2RD12V
7/16	.085	2RD14	2RD14V
1/2	.090	2RD16	2RD16V
9/16	.095	2RD18	2RD18V
5/8	.100	2RD20	2RD20V
11/16	.105	2RD22	2RD22V
3/4	.110	2RD24	2RD24V

ALL TOOLS GASHED "U" SHAPED FOR RIGHT OR LEFT HAND CUTTING.



- For forming grooves, shoulders or roughing down the work piece
- Carbide tipped tools are supplied for right hand cutting, for left hand cutting add -L to the part number listed. All other choices have a "U" shaped gash for cutting in either direction.
- Side clearance ground
- Available with side pinholes

CIRCULAR STRAIGHT TOOLS FOR #00 B&S

A	M2 PART#	T15PM PART#	3-LIP C2 CARB. TIPPED PART#	C2 SOLID CARBIDE PART#
1/8	00S4	00S4V	00S4-CT	00S4-SC
3/16	00S6	00S6V	00S6-CT	00S6-SC
1/4	00S8	00S8V	00S8-CT	00S8-SC
5/16	00S10	00S10V	00S10-CT	00S10-SC
3/8	00S12	00S12V	00S12-CT	00S12-SC
7/16	00S14	00S14V	00S14-CT	
1/2	00S16	00S16V	00S16-CT	00S16-SC

CIRCULAR STRAIGHT TOOLS FOR #0 B&S

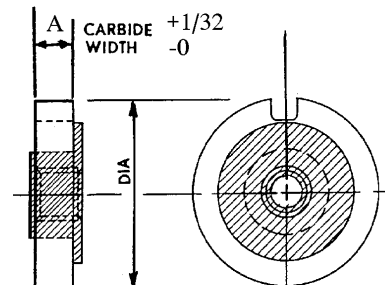
A	M2 PART#	T15PM PART#	3-LIP C2 CARB. TIPPED PART#	C2 SOLID CARBIDE PART#
1/8	0S4	0S4V	0S4-CT	0S4-SC
3/16	0S6	0S6V	0S6-CT	0S6-SC
1/4	0S8	0S8V	0S8-CT	0S8-SC
5/16	0S10	0S10V	0S10-CT	0S10-SC
3/8	0S12	0S12V	0S12-CT	0S12-SC
7/16	0S14	0S14V	0S14-CT	
1/2	0S16	0S16V	0S16-CT	0S16-SC
5/8	0S20	0S20V	0S20-CT	

CIRCULAR STRAIGHT TOOLS FOR #2 B&S

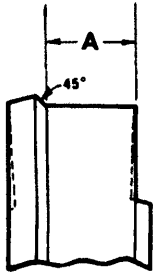
A	M2 PART#	T15PM PART#	3-LIP C2 CARB. TIPPED PART#	C2 SOLID CARBIDE PART#
1/8	2S4	2S4V	2S4-CT	2S4-SC
3/16	2S6	2S6V	2S6-CT	2S6-SC
1/4	2S8	2S8V	2S8-CT	2S8-SC
5/16	2S10	2S10V	2S10-CT	2S10-SC
3/8	2S12	2S12V	2S12-CT	2S12-SC
7/16	2S14	2S14V	2S14-CT	
1/2	2S16	2S16V	2S16-CT	2S16-SC
5/8	2S20	2S20V	2S20-CT	
3/4	2S24	2S24V	2S24-CT	

SOLID CARBIDE UNGROUND CIRCULAR FORM TOOL BLANKS FOR B&S

A	#00 B&S PART#	#0 B&S PART#	#2 B&S PART#
1/8	00SCB-4	0SCB-4	2SCB-4
3/16	00SCB-6	0SCB-6	2SCB-6
1/4	00SCB-8	0SCB-8	2SCB-8
5/16	00SCB-10	0SCB-10	2SCB-10
3/8	00SCB-12	0SCB-12	2SCB-12
1/2	00SCB-16	0SCB-16	2SCB-16



- Solid carbide circular form tool blanks brazed to threaded steel hubs
- Gashed "U" shape for right or left hand cutting.



- For forming fractional length shoulders with a slight corner break
- **Carbide tipped tools** are supplied for right hand cutting, for left hand cutting add -L to the part number listed. All other choices have a "U" shaped gash for cutting in either direction.
- Side clearance ground
- Available with side pinholes

CIRCULAR HUB TOOLS FOR #00 B&S

A	B	C	M2 PART#	T15PM PART#	3-LIP C2 CARB. TIPPED PART#
.060	.015	.030	00H060	00H060V	00H060-CT
.090	.015	.030	00H090	00H090V	00H090-CT
.122	.015	.030	00H122	00H122V	00H122-CT
.153	.015	.030	00H153	00H153V	00H153-CT
.184	.015	.030	00H184	00H184V	00H184-CT
.215	.020	.040	00H215	00H215V	00H215-CT
.246	.020	.040	00H246	00H246V	00H246-CT
.308	.020	.040	00H308	00H308V	00H308-CT
.370	.020	.040	00H370	00H370V	00H370-CT
.432	.020	.060	00H432	00H432V	
.495	.020	.060	00H495	00H495V	

CIRCULAR HUB TOOLS FOR #0 B&S

A	B	C	M2 PART#	T15PM PART#	3-LIP C2 CARB. TIPPED PART#
.090	.015	.030	0H090	0H090V	0H090-CT
.122	.015	.030	0H122	0H122V	0H122-CT
.153	.015	.030	0H153	0H153V	0H153-CT
.184	.015	.030	0H184	0H184V	0H184-CT
.215	.020	.040	0H215	0H215V	0H215-CT
.246	.020	.040	0H246	0H246V	0H246-CT
.308	.020	.040	0H308	0H308V	0H308-CT
.370	.020	.040	0H370	0H370V	0H370-CT
.432	.020	.040	0H432	0H432V	0H432-CT
.495	.020	.060	0H495	0H495V	
.557	.020	.060	0H557	0H557V	

CIRCULAR HUB TOOLS FOR #2 B&S

A	B	C	M2 PART#	T15PM PART#	3-LIP C2 CARB. TIPPED PART#
.122	.020	.040	2H122	2H122V	2H122-CT
.153	.020	.040	2H153	2H153V	2H153-CT
.184	.020	.040	2H184	2H184V	2H184-CT
.215	.020	.040	2H215	2H215V	2H215-CT
.246	.025	.050	2H246	2H246V	2H246-CT
.308	.025	.050	2H308	2H308V	2H308-CT
.370	.025	.050	2H370	2H370V	2H370-CT
.432	.025	.050	2H432	2H432V	2H432-CT
.495	.025	.050	2H495	2H495V	2H495-CT
.557	.025	.060	2H557	2H557V	
.620	.025	.070	2H620	2H620V	

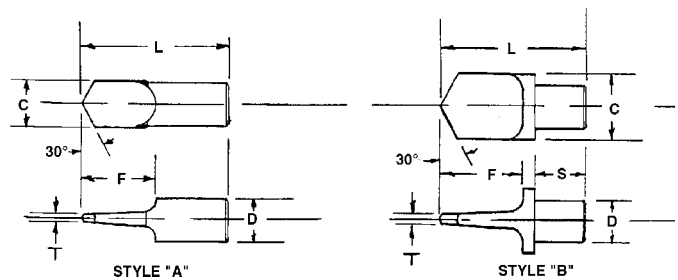
FLAT DRILL BLANKS

M2 H.S.S. HARDENED
AND GROUND FLAT DRILL
BLANKS



- Ready for step grinding to suit your job
- Eliminate flute grinding or milling
- Can be sharpened for right or left hand operation
- Short lengths for screw machine use
- No need to cut off length

CAT. NO.	STYLE	D -.001	L	F	C +.010	S	T
FLDR-8	A	1/4	2"	3/4	1/4	--	.050
FLDR-12	A	3/8	2-1/4	1"	3/8	--	.060
FLDR-16	A	1/2	2-1/2	1-1/8	1/2	--	.070
FLDR-20	A	5/8	2-3/4	1-1/4	5/8	--	.090
FLDR-24	A	3/4	3"	1-3/8	3/4	--	.100
FLDR-32	A	1"	3-1/2	1-3/4	1"	--	.110
FLDR-40	B	1"	3-1/2	1-3/4	1-1/4	1-1/4	.188
FLDR-48	B	1"	3-1/2	2"	1-1/2	1-1/4	.218



AVAILABLE IN T15PM H.S.S. - P.O.A.

TOOL BLANKS
CUTTING TOOLS

1/16 X 1/2 X 6-P	3/8 X 1.25 X 10-P
3/32 X 1/2 X 6-P	3/8 X 1.5 X 6-P
3/32 X 1 X 6-P	1/2 X 5/8 X 4.5-P
1/8 X 1/2 X 6-P	1/2 X 3/4 X 5-P
1/8 X 3/4 X 6-P	1/2 X 3/4 X 6-P
1/8 X 1 X 6-P	1/2 X 1 X 5-P
5/32 X 5/8 X 6-P	1/2 X 1 X 6-P
5/32 X 1 X 6-P	1/2 X 1 X 7-P
3/16 X 1 X 6-P	1/2 X 1.25 X 9-P
1/4 X 3/8 X 6-P	1/2 X 1.5 X 5-P
1/4 X 1/2 X 4-P	1/2 X 1.5 X 7-P
1/4 X 1/2 X 6-P	5/8 X 3/4 X 4-P
1/4 X 3/4 X 6-P	5/8 X 1 X 7-P
1/4 X 1 X 6-P	5/8 X 1.25 X 7-P
5/16 X 5/8 X 6-P	3/4 X 1 X 5-P
5/16 X 3/4 X 5-P	3/4 X 1 X 6-P
5/16 X 7/8 X 10-P	3/4 X 1 X 7-P
5/16 X 1 X 7-P	3/4 X 1.25 X 7-P
3/8 X 1/2 X 4-P	3/4 X 1.5 X 5-P
3/8 X 1/2 X 6-P	3/4 X 1.5 X 7-P
3/8 X 5/8 X 4.5-P	3/4 X 2 X 8-P
3/8 X 5/8 X 6-P	7/8 X 1.125 X 7-P
3/8 X 3/4 X 6-P	1 X 1.25 X 7-P
3/8 X 1 X 7-P	1 X 1.5 X 7.5-P

T15PM H.S.S. FLAT FORM TOOL BLANKS



These hardened and ground blanks are ideal for grinding into flat form tools, skive tools, punches, spacers, gages and many other applications.

T15PM is a tungsten type high speed steel containing high carbon and vanadium for very high hardness and maximum wear resistance, and cobalt for good red hardness. Manufactured powder - metalurgically for improved quality and grindability.

T15PM / WKE45 H.S.S. SQUARE TOOL BITS & FLAT FORM TOOL BLANKS

T15PM	WKE45
1/4 SQ X 2.5-P	--
1/4 SQ X 6-P	--
5/16 SQ X 2.5-P	--
5/16 SQ X 4-P	--
5/16 SQ X 6-P	5/16 SQ X 6
3/8 SQ X 3-P	3/8 SQ X 3
--	3/8 SQ X 4
3/8 SQ X 6-P	--
3/8 SQ X 8-P	--
7/16 SQ X 3.5-P	--
1/2 SQ X 4-P	--
1/2 SQ X 6-P	1/2 SQ X 6
1/2 SQ X 8-P	--
5/8 SQ X 4.5-P	5/8 SQ X 4.5
5/8 SQ X 6-P	--
3/4 SQ X 5-P	--
3/4 SQ X 6-P	--
1 SQ X 5.5-P	--
1 SQ X 7-P	--
1 SQ X 8-P	--



WKE 45 with 11% cobalt content, fine grain structure and unique chemical composition, meets requirements for maximum performance in most cutting tool applications.

WKE45
7MM SQ X 200MM
8MM SQ X 160MM
8MM SQ X 200MM
10MM SQ X 160MM
10MM SQ X 200MM
12MM SQ X 160MM
12MM SQ X 200MM
14MM SQ X 200MM



**TOLERANCE +.0000/- .0002
(ALSO AVAILABLE +.0002/- .0000)**

M2, M42, ASP30 & T15PM CYLINDRICAL BLANKS

LIMITED AVAILABILITY IN M4PM, ASP23, ASP60 AND CPM10V

These cylindrical blanks are hardened and ground on the O.D. They are ideal for grinding into step drills, counterbores, and other end cutting tools. They can be also be used for punches, roll pins, step pins and many other tool room applications.

CAT. NO. SUFFIX	M2 -M	M42 -H	ASP30 -A30	T15PM -P
1/64 DIA X 1.5	-M			
1/32 DIA X 1.5	-M	-H		
3/64 DIA X 1.75	-M	-H		
1/16 DIA X 1.875	-M	-H		
1/16 DIA X 2.5			-A30	
5/64 DIA X 2	-M	-H		
3/32 DIA X 2.25	-M	-H		
3/32 DIA X 2.5			-A30	
7/64 DIA 2.75	-M	-H		
1/8 DIA X 2.5	-M		-A30	
1/8 DIA X 2.75	-M	-H		
1/8 DIA X 4	-M		-A30	
1/8 DIA X 6	-M		-A30	-P
9/64 DIA X 3	-M	-H		
5/32 DIA 3.25	-M	-H		
11/64 DIA X 3.25	-M	-H		
3/16 DIA X 2.5	-M		-A30	
3/16 DIA X 3.5	-M	-H		
3/16 DIA X 4	-M		-A30	-P
3/16 DIA X 6	-M		-A30	-P
13/64 DIA X 3.625	-M	-H		
7/32 DIA X 3.75	-M	-H		
15/64 DIA X 3.875	-M	-H		
1/4 DIA X 2.5	-M		-A30	-P
1/4 DIA X 4	-M	-H	-A30	-P
1/4 DIA X 6	-M		-A30	-P
17/64 DIA X 4.125	-M	-H		
9/32 DIA X 4.25	-M	-H		
19/64 DIA X 4.375	-M	-H		
5/16 DIA X 4	-M		-A30	-P
5/16 DIA X 4.5	-M	-H		
5/16 DIA X 6	-M		-A30	-P
21/64 DIA X 4.625	-M	-H		
11/32 DIA X 4.75	-M	-H		
23/64 DIA X 4.875	-M	-H		
3/8 DIA X 4	-M		-A30	-P
3/8 DIA X 5	-M	-H		
3/8 DIA X 6	-M		-A30	-P

CAT. NO. SUFFIX	M2 -M	M42 -H	ASP30 -A30	T15PM -P
25/64 DIA X 5.125	-M	-H		
13/32 DIA X 5.25	-M	-H		
27/64 DIA X 5.375	-M	-H		
7/16 DIA X 5.5	-M	-H		
7/16 DIA X 6	-M		-A30	-P
29/64 DIA X 5.625	-M	-H		
15/32 DIA X 5.75	-M	-H		
31/64 DIA X 5.875	-M	-H		
1/2 DIA X 4	-M		-A30	-P
1/2 DIA X 6	-M	-H	-A30	-P
33/64 DIA X 6	-M	-H		
33/64 DIA X 9	-M	-H		
33/64 DIA X 12	-M	-H		
17/32 DIA X 6	-M	-H		
17/32 DIA X 9	-M	-H		
17/32 DIA X 12	-M	-H		
35/64 DIA X 6	-M	-H		
35/64 DIA X 9	-M	-H		
35/64 DIA X 12	-M	-H		
9/16 DIA X 6	-M	-H		-P
9/16 DIA X 9	-M	-H		
9/16 DIA X 12	-M	-H		
37/64 DIA X 6	-M	-H		
37/64 DIA X 9	-M	-H		
37/64 DIA X 12	-M	-H		
19/32 DIA X 6	-M	-H		
19/32 DIA X 9	-M	-H		
19/32 DIA X 12	-M	-H		
39/64 DIA X 6	-M	-H		
39/64 DIA X 9	-M	-H		
39/64 DIA X 12	-M	-H		
5/8 DIA X 4	-M		-A30	-P
5/8 DIA X 6	-M	-H	-A30	-P
5/8 DIA X 9	-M	-H		
5/8 DIA X 12	-M	-H		
41/64 DIA X 6	-M	-H		
41/64 DIA X 9	-M	-H		
41/64 DIA X 12	-M	-H		

CAT. NO. SUFFIX	M2 -M	M42 -H	ASP30 -A30	T15PM -P
21/32 DIA X 6	-M	-H		
21/32 DIA X 9	-M	-H		
21/32 DIA X 12	-M	-H		
43/64 DIA X 6	-M	-H		
43/64 DIA X 9	-M	-H		
43/64 DIA X 12	-M	-H		
11/16 DIA X 6	-M	-H		
11/16 DIA X 9	-M	-H		
11/16 DIA X 12	-M	-H		
45/64 DIA X 6	-M	-H		
45/64 DIA X 9	-M	-H		
45/64 DIA X 12	-M	-H		
23/32 DIA X 6	-M	-H		
23/32 DIA X 9	-M	-H		
23/32 DIA X 12	-M	-H		
47/64 DIA X 6	-M	-H		
47/64 DIA X 9	-M	-H		
47/64 DIA X 12	-M	-H		
3/4 DIA X 4	-M		-A30	-P
3/4 DIA X 6	-M	-H	-A30	-P
3/4 DIA X 9	-M	-H		
3/4 DIA X 12	-M	-H		
49/64 DIA X 6	-M	-H		
49/64 DIA X 9	-M	-H		
49/64 DIA X 12	-M	-H		
25/32 DIA X 6	-M	-H		
25/32 DIA X 9	-M	-H		
25/32 DIA X 12	-M	-H		
51/64 DIA X 6	-M	-H		
51/64 DIA X 9	-M	-H		
51/64 DIA X 12	-M	-H		
13/16 DIA X 6	-M	-H		
13/16 DIA X 9	-M	-H		
13/16 DIA X 12	-M	-H		
53/64 DIA X 6	-M	-H		
53/64 DIA X 9	-M	-H		
53/64 DIA X 12	-M	-H		

CAT. NO. SUFFIX	M2 -M	M42 -H	ASP30 -A30	T15PM -P
27/32 DIA X 6	-M	-H		
27/32 DIA X 9	-M	-H		
27/32 DIA X 12	-M	-H		
55/64 DIA X 6	-M	-H		
55/64 DIA X 9	-M	-H		
55/64 DIA X 12	-M	-H		
7/8 DIA X 6	-M	-H	-A30	-P
7/8 DIA X 9	-M	-H		
7/8 DIA X 12	-M	-H		
57/64 DIA X 6	-M	-H		
57/64 DIA X 9	-M	-H		
57/64 DIA X 12	-M	-H		
29/32 DIA X 6	-M	-H		
29/32 DIA X 9	-M	-H		
29/32 DIA X 12	-M	-H		
59/64 DIA X 6	-M	-H		
59/64 DIA X 9	-M	-H		
59/64 DIA X 12	-M	-H		
15/16 DIA X 6	-M	-H		
15/16 DIA X 9	-M	-H		
15/16 DIA X 12	-M	-H		
61/64 DIA X 6	-M	-H		
61/64 DIA X 9	-M	-H		
61/64 DIA X 12	-M	-H		
31/32 DIA X 6	-M	-H		
31/32 DIA X 9	-M	-H		
31/32 DIA X 12	-M	-H		
63/64 DIA X 6	-M	-H		
63/64 DIA X 9	-M	-H		
63/64 DIA X 12	-M	-H		
1" DIA X 6	-M	-H	-A30	-P
1" DIA X 9	-M	-H		
1" DIA X 12	-M	-H		

Metric Drill Blanks also available. Call with requests.



CUT-OFF BLADES



Somma Tool Company has been manufacturing cut-off blades for over 50 years!

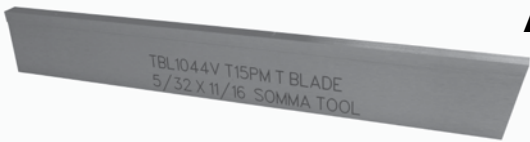
Why suffer with long delivery from your present supplier, Somma has **ample inventory in stock.**

Standard Styles Offered;

T-Type

Johnson / Hollow Ground

Acme "B" Type



Materials Offered;

M2, Cobalt & T15PM

Micro-grain Carbide Tipped

Solid Carbide (T-Type)

All blades are available in a wide variety of **performance coatings.**

Proudly made in the U.S.A.

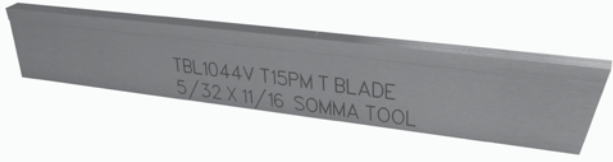
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Call for special quantity pricing based on placing a blanket purchase order and inventory will be warehoused specifically for your cut-off blade requirements.

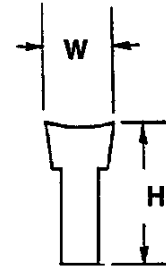
Benefits:
Special Quantity Pricing
Pay only when you request releases
No waiting-same day shipment when releases are requested

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TOOL BLANKS
CUTTING TOOLS



- Ground all over
- Concave ground top
- Blade centered



- M2** - GENERAL PURPOSE WITH EXCELLENT TOUGHNESS
COBALT- HIGHEST HEAT RESISTANCE, HIGHER RPM APPLICATIONS
M4PM - MAXIMUM PERFORMANCE ON ABRASIVE MATERIALS WHERE HEAT IS NOT A FACTOR
T15PM - EXCELLENT FOR DIFFICULT TO MACHINE MATERIALS WITH GOOD HEAT RESISTANCE

REF#	SIZE			M2 STEEL	COBALT STEEL	M4PM STEEL	T15PM STEEL
	W	H	L	ORDERING#	ORDERING#	ORDERING#	ORDERING#
P-1-N	.040	1/2	4-1/2	TBL332	TBL332C	TBL332C-K	TBL332V
P-1	1/16	1/2	4-1/2	TBL432	TBL432C	TBL432C-K	TBL432V
P-2-N	5/64	1/2	4-1/2	TBL532	TBL532C	TBL532C-K	TBL532V
P-2	3/32	1/2	4-1/2	TBL632	TBL632C	TBL632C-K	TBL632V
P-3-S	1/8	1/2	4-1/2	TBL832	TBL832C	TBL832C-K	TBL832V
P3N-866	1/16	11/16	5	TBL444	TBL444C	TBL444C-K	TBL444V
P-3-N	3/32	11/16	5	TBL644	TBL644C	---	TBL644V
P-3	1/8	11/16	5	TBL844	TBL844C	TBL844C-K	TBL844V
P-4	5/32	11/16	5	TBL1044	TBL1044C	---	TBL1044V
P-5-S	3/16	11/16	5	TBL1244	TBL1244C	---	TBL1244V
P-3-W	1/8	3/4	5	TBL848	TBL848C	---	TBL848V
P-4-W	5/32	3/4	5	TBL1048	TBL1048C	---	TBL1048V
P-5-W	3/16	3/4	5	TBL1248	TBL1248C	---	TBL1248V
P-5-X	1/8	7/8	6	TBL856	TBL856C	TBL856C-K	TBL856V
P-5-N	5/32	7/8	6	TBL1056	TBL1056C	TBL1056C-K	TBL1056V
P-5	3/16	7/8	6	TBL1256	TBL1256C	---	TBL1256V
P-6	1/4	7/8	6	TBL1656	TBL1656C	---	TBL1656V
P-8-X	1/8	1-1/8	6-1/2	TBL872	TBL872C	---	TBL872V
P-8-N	5/32	1-1/8	6-1/2	TBL1072	TBL1072C	---	TBL1072V
P-8	3/16	1-1/8	6-1/2	TBL1272	TBL1272C	---	TBL1272V
P-9	1/4	1-1/8	6-1/2	TBL1672	TBL1672C	---	TBL1672V
P-10	5/16	1-1/8	6-1/2	TBL2072	TBL2072C	---	TBL2072V

H.S.S. CUT-OFF BLADE GRINDING OPTIONS:

(FOR THE OPTIONS LISTED, ADD THE SUFFIX LISTED BELOW TO THE ORDERING NUMBER)

- CB = CHIP BREAKER GROOVE GROUND ALONG THE TOP LENGTH OF THE BLADE
- TAPER = SIDE TAPER GROUND FRONT TO BACK ALONG T PORTION OF BLADE

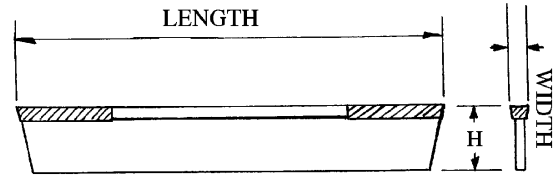
CUT-OFF BLADE COATING OPTIONS:

(FOR THE OPTIONS LISTED, ADD THE SUFFIX LISTED BELOW TO THE ORDERING NUMBER)

- TIN A GOOD GENERAL PURPOSE COATING FOR METAL CUTTING
- TICN THIS COATING IS RECOMMENDED FOR MACHINING HIGH CARBON STEEL, HIGH SILICON ALUMINUMS AND TOOL STEELS
- TIALN FOR MACHINING CAST IRON, HIGH NICKEL AND TITANIUM ALLOYS, HARDENED STEELS AND STAINLESS STEELS. GOOD CHOICE FOR INTERRUPTED APPLICATIONS

*****MANY MORE SPECIALIZED COATINGS AVAILABLE*****

SOLID CARBIDE T-TYPE C/O BLADES ON PAGE 32



MICROGRAIN - INCREASED FEEDS, SHOCK RESISTANT FOR INTERRUPTED CUTS.
C2 CARBIDE - HEAT AND WEAR RESISTANT. FOR CAST IRON & NON-FERROUS METALS AND PLASTICS.
C6 CARBIDE - FOR CARBON AND ALLOY STEELS AT MEDIUM SPEEDS. CAN BE USED AT HIGHER FEED RATES THAN C2.

REF#	SIZE			DOUBLE END	SINGLE END C2	DOUBLE END C6	SINGLE END C6
	W	H	L	MICROGRAIN ORDERING#	ORDERING#	ORDERING#	ORDERING#
P-1-N	.040	1/2	4-1/2	CTBL332-MIC	CTBL332-C2-SE	CTBL332-C6	CTBL332-C6-SE
P-1	1/16	1/2	4-1/2	CTBL432-MIC	CTBL432-C2-SE	CTBL432-C6	CTBL432-C6-SE
P-2-N	5/64	1/2	4-1/2	CTBL532-MIC	CTBL532-C2-SE	CTBL532-C6	CTBL532-C6-SE
P-2	3/32	1/2	4-1/2	CTBL632-MIC	CTBL632-C2-SE	CTBL632-C6	CTBL632-C6-SE
P-3-S	1/8	1/2	4-1/2	CTBL832-MIC	CTBL832-C2-SE	CTBL832-C6	CTBL832-C6-SE
P3N-866	1/16	11/16	5	CTBL444-MIC	CTBL444-C2-SE	CTBL444-C6	CTBL444-C6-SE
	5/64	11/16	5	CTBL544-MIC	CTBL544-C2-SE	CTBL544-C6	CTBL544-C6-SE
P-3-N	3/32	11/16	5	CTBL644-MIC	CTBL644-C2-SE	CTBL644-C6	CTBL644-C6-SE
P-3	1/8	11/16	5	CTBL844-MIC	CTBL844-C2-SE	CTBL844-C6	CTBL844-C6-SE
P-4	5/32	11/16	5	CTBL1044-MIC	CTBL1044-C2-SE	CTBL1044-C6	CTBL1044-C6-SE
P-5-S	3/16	11/16	5	CTBL1244-MIC	CTBL1244-C2-SE	CTBL1244-C6	CTBL1244-C6-SE
P-3-W	1/8	3/4	5	CTBL848-MIC	CTBL848-C2-SE	CTBL848-C6	CTBL848-C6-SE
P-4-W	5/32	3/4	5	CTBL1048-MIC	CTBL1048-C2-SE	CTBL1048-C6	CTBL1048-C6-SE
P-5-W	3/16	3/4	5	CTBL1248-MIC	CTBL1248-C2-SE	CTBL1248-C6	CTBL1248-C6-SE
P-5-X	1/8	7/8	6	CTBL856-MIC	CTBL856-C2-SE	CTBL856-C6	CTBL856-C6-SE
P-5-N	5/32	7/8	6	CTBL1056-MIC	CTBL1056-C2-SE	CTBL1056-C6	CTBL1056-C6-SE
P-5	3/16	7/8	6	CTBL1256-MIC	CTBL1256-C2-SE	CTBL1256-C6	CTBL1256-C6-SE
P-6	1/4	7/8	6	CTBL1656-MIC	CTBL1656-C2-SE	CTBL1656-C6	CTBL1656-C6-SE
P-8-X	1/8	1-1/8	6-1/2	CTBL872-MIC	CTBL872-C2-SE	CTBL872-C6	CTBL872-C6-SE
P-8-N	5/32	1-1/8	6-1/2	CTBL1072-MIC	CTBL1072-C2-SE	CTBL1072-C6	CTBL1072-C6-SE
P-8	3/16	1-1/8	6-1/2	CTBL1272-MIC	CTBL1272-C2-SE	CTBL1272-C6	CTBL1272-C6-SE
P-9	1/4	1-1/8	6-1/2	CTBL1672-MIC	CTBL1672-C2-SE	CTBL1672-C6	CTBL1672-C6-SE
P-10	5/16	1-1/8	6-1/2	CTBL2072-MIC	CTBL2072-C2-SE	CTBL2072-C6	CTBL2072-C6-SE

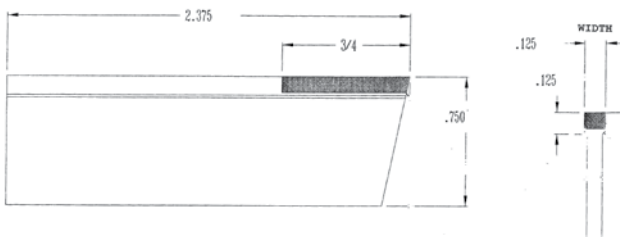
CUT-OFF BLADE COATING OPTIONS:

(FOR THE OPTIONS LISTED, ADD THE SUFFIX LISTED BELOW TO THE ORDERING NUMBER)

- TIN A GOOD GENERAL PURPOSE COATING FOR METAL CUTTING
- TICN THIS COATING IS RECOMMENDED FOR MACHING HIGH CARBON STEEL, HIGH SILICON ALUMINUMS AND TOOL STEELS
- TIALN FOR MACHING CAST IRON, HIGH NICKEL AND TITANIUM ALLOYS, HARDENED STEELS AND STAIN LESS STEELS. GOOD CHOICE FOR INTERRUPTED APPLICATIONS

*****MANY MORE SPECIALIZED COATINGS AVAILABLE*****

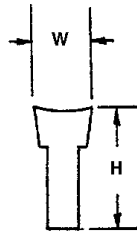
MICRO-GRAIN CARBIDE TIPPED / SHORT LENGTH T-TYPE CUT-OFF BLADES



CAT. NO.	WIDTH	HEIGHT	LENGTH	"A"
CTBL848-MIC-2-3/8	1/8	3/4	2-3/8"	3/4
CTBL1048-MIC-2-3/8	5/32	3/4	2-3/8"	3/4
CTBL1248-MIC-2-3/8	3/16	3/4	2-3/8"	3/4

SOLID CARBIDE T-TYPE C/O BLADES ON NEXT PAGE

SOLID CARBIDE T-TYPE CUT-OFF BLADES



Tools are supplied ready for use with cut-off angles sharpened on both ends so that tools can be used on front or rear slide and for either right or left hand operations.

CAT NO.	W	H	LENGTH	REF. NO.
SCBL332	3/64	1/2	4"	P-1-N
SCBL432	1/16	1/2	4"	P-1
SCBL532	5/64	1/2	4"	P-2-N
SCBL632	3/32	1/2	4"	P-2
SCBL832	1/8	1/2	4"	P-3-S
SCBL444	1/16	11/16	4"	P-3N-866
SCBL644	3/32	11/16	4"	P-3-N
SCBL844	1/8	11/16	4"	P-3
SCBL1244	3/16	11/16	4"	P-5-S

**LOW COST!
MORE PIECES PER BLADE!**
Longer wear, less galling, better finish,
higher speeds than high-speed steels.
PLUS greater rigidity and up to 10 times the
resharpenable tool life of carbide tipped tools.

CUT-OFF BLADE COATING OPTIONS:

(FOR THE OPTIONS LISTED, ADD THE SUFFIX LISTED BELOW TO THE ORDERING NUMBER)

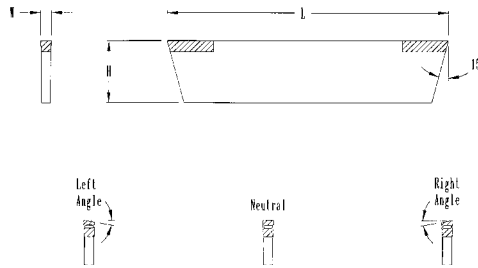
- TIN A GOOD GENERAL PURPOSE COATING FOR METAL CUTTING
- TICN THIS COATING IS RECOMMENDED FOR MACHINING HIGH CARBON STEEL, HIGH SILICON ALUMINUMS AND TOOL STEELS
- TIALN FOR MACHINING CAST IRON, HIGH NICKEL AND TITANIUM ALLOYS, HARDENED STEELS AND STAINLESS STEELS. GOOD CHOICE FOR INTERRUPTED APPLICATIONS

EMPIRE® TWIN-TIP® STYLE CUT-OFF BLADES

Call Somma Tool for a quote!

Specify either the complete Empire® part number or the following:

- 1) Empire® tool number (Ex. 1732)
- 2) Front Angle (Ex. 4° left angle)
- 3) Carbide Grade (Ex. C2)
- 4) Coating Type (if applicable)

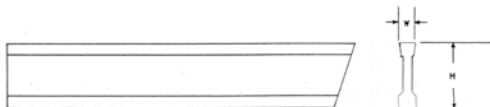


ACME "B" TYPE CUT-OFF BLADES 7° BEVELED



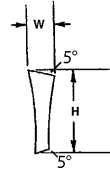
W	H	LENGTH	REF. NO.	M2 H.S.S. CAT. NO.	COBALT H.S.S. CAT. NO.	T15PM H.S.S. CAT. NO.	MICRO-GRAIN CARBIDE TIPPED CAT. NO.
.040	1/2	5-3/4	B-17	ABL332	ABL332C	ABL332V	ABL332-MIC
1/16	1/2	5-3/4	B-1	ABL432	ABL432C	ABL432V	ABL432-MIC
3/32	1/2	5-3/4	B-2	ABL632	ABL632C	ABL632V	ABL632-MIC
1/8	1/2	5-3/4	B-5	ABL832	ABL832C	ABL832V	ABL832-MIC
3/32	13/16	7-3/16	B-3	ABL652	ABL652C	ABL652V	ABL652-MIC
1/8	13/16	7-3/16	B-6	ABL852	ABL852C	ABL852V	ABL852-MIC
5/32	13/16	7-3/16	B-8	ABL1052	ABL1052C	ABL1052V	ABL1052-MIC
3/16	13/16	7-3/16	B-9	ABL1252	ABL1252C	ABL1252V	ABL1252-MIC
1/4	13/16	7-3/16	B-11	ABL1652	ABL1652C	ABL1652V	ABL1652-MIC
1/8	1"	8-1/4	B-7	ABL864	ABL864C	ABL864V	ABL864-MIC
3/16	1"	8-1/4	B-10	ABL1264	ABL1264C	ABL1264V	ABL1264-MIC
1/4	1"	8-1/4	B-12	ABL1664	ABL1664C	ABL1664V	ABL1664-MIC
1/4	1-1/4	9"	B-13	ABL1680	ABL1680C	ABL1680V	ABL1680-MIC

I-BEAM STYLE CUT-OFF BLADES



W	H	LENGTH	REF. NO.	M2 H.S.S. CAT. NO.	REF. NO.	T15PM H.S.S. CAT. NO.
1/8	15/16	5"	ST-589	IBL860	ST-590	IBL860V
3/16	1-7/16	7-1/2	ST-591	IBL12112	ST-592	IBL12112V

JCO (JOHNSON STYLE) HOLLOW GROUND CUT-OFF BLADES - H.S.S.



CUT-OFF ANGLE HAS TO BE SHARPENED BEFORE USING TO SUIT INDIVIDUAL APPLICATION.

- Ground all over

- M2** - GENERAL PURPOSE WITH EXCELLENT TOUGHNESS
- COBALT-** HIGHEST HEAT RESISTANCE, HIGHER RPM APPLICATIONS
- M4PM** - MAXIMUM PERFORMANCE ON ABRASIVE MATERIALS WHERE HEAT IS NOT A FACTOR
- T15PM** - EXCELLENT FOR DIFFICULT TO MACHINE MATERIALS WITH GOOD HEAT RESISTANCE

W	H	L	M2 STEEL ORDERING#	COBALT STEEL ORDERING#	M4PM STEEL ORDERING#	T15PM STEEL ORDERING#
.035	1/2	4-1/2	BL232	--	BL232C-K	--
3/64	1/2	4-1/2	BL332	BL332C	--	BL332V
1/16	1/2	4-1/2	BL432	BL432C	BL432C-K	BL432V
5/64	1/2	4-1/2	BL532	BL532C	BL532C-K	BL532V
3/32	1/2	4-1/2	BL632	BL632C	BL632C-K	BL632V
1/8	1/2	4-1/2	BL832	BL832C	--	BL832V
3/64	11/16	5"	--	--	--	BL344V
1/16	11/16	5"	BL444	BL444C	BL444C-K	BL444V
3/32	11/16	5"	BL644	BL644C	BL644C-K	BL644V
1/8	11/16	5"	BL844	BL844C	BL844C-K	BL844V
5/32	11/16	5"	BL1044	BL1044C	BL1044C-K	BL1044V
3/16	11/16	5"	BL1244	BL1244C	BL1244C-K	BL1244V
1/4	11/16	5"	BL1644	BL1644C	BL1644C-K	BL1644V
1/16	13/16	6"	BL452	BL452C	--	BL452V
3/32	13/16	6"	BL652	BL652C	BL652C-K	BL652V
1/8	13/16	6"	BL852	BL852C	BL852C-K	BL852V
5/32	13/16	6"	BL1052	BL1052C	--	BL1052V
3/16	13/16	6"	BL1252	BL1252C	--	BL1252V
1/4	13/16	6"	BL1652	BL1652C	--	BL1652V

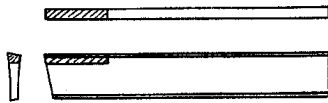
CUT-OFF BLADE COATING OPTIONS:

(FOR THE OPTIONS LISTED, ADD THE SUFFIX LISTED BELOW TO THE ORDERING NUMBER)

- TIN** A GOOD GENERAL PURPOSE COATING FOR METAL CUTTING
- TICN** THIS COATING IS RECOMMENDED FOR MACHINING HIGH CARBON STEEL, HIGH SILICON ALUMINUMS AND TOOL STEELS
- TIALN** FOR MACHINING CAST IRON, HIGH NICKEL AND TITANIUM ALLOYS, HARDENED STEELS AND STAINLESS STEELS. GOOD CHOICE FOR INTERRUPTED APPLICATIONS

JCO (JOHNSON STYLE) HOLLOW GROUND CUT-OFF BLADES - CARBIDE TIPPED

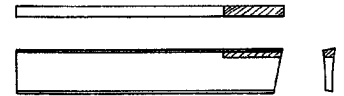
MICROGRAIN CARBIDE- INCREASED FEEDS, SHOCK RESISTANT FOR INTERRUPTED CUTS.



STYLE "Y"
FOR USE ON: FRONT SLIDE
R.H. / REAR SLIDE R.H. OR
VERTICAL SLIDE L.H.

CUT-OFF ANGLE HAS TO BE SHARPENED BEFORE USING TO SUIT INDIVIDUAL APPLICATION.

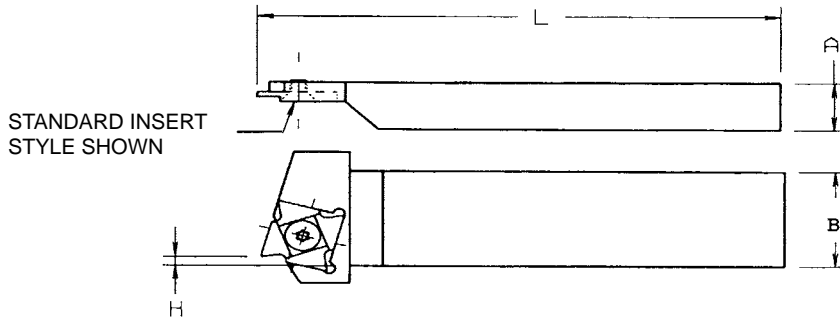
STYLE "Y" ORDERING#	W	H	L	STYLE "X" ORDERING#
CHBL432-Y-MIC	1/16	1/2	4-1/2	CHBL432-X-MIC
CHBL532-Y-MIC	5/64	1/2	4-1/2	CHBL532-X-MIC
CHBL632-Y-MIC	3/32	1/2	4-1/2	CHBL632-X-MIC
CHBL832-Y-MIC	1/8	1/2	4-1/2	CHBL832-X-MIC
CHBL444-Y-MIC	1/16	11/16	5"	CHBL444-X-MIC
CHBL644-Y-MIC	3/32	11/16	5"	CHBL644-X-MIC
CHBL844-Y-MIC	1/8	11/16	5"	CHBL844-X-MIC
CHBL1044-Y-MIC	5/32	11/16	5"	CHBL1044-X-MIC
CHBL1244-Y-MIC	3/16	11/16	5"	CHBL1244-X-MIC
CHBL452-Y-MIC	1/16	13/16	6"	CHBL452-X-MIC
CHBL652-Y-MIC	3/32	13/16	6"	CHBL652-X-MIC
CHBL852-Y-MIC	1/8	13/16	6"	CHBL852-X-MIC
CHBL1052-Y-MIC	5/32	13/16	6"	CHBL1052-X-MIC
CHBL1252-Y-MIC	3/16	13/16	6"	CHBL1252-X-MIC
CHBL1652-Y-MIC	1/4	13/16	6"	CHBL1652-X-MIC



STYLE "X"
FOR USE ON: FRONT SLIDE
L.H. / REAR SLIDE L.H. OR
VERTICAL SLIDE R.H.

ACME CUT-OFF TOOLHOLDERS

Patent No. D307859



MACHINE SIZE	A	B	H	L	CAT# FOR TOOL HOLDER W/ POCKET FOR 3/4" SQ STANDARD INSERT	CAT# FOR TOOL HOLDER W/ POCKET FOR 1" SQ STANDARD INSERT
7/16" R/A	1.215	0.988	0.251	6.00"	7/16AC-CIN	7/16AC-CIN-EX
9/16" R/A	0.595	1.188	0.251	5.00"	9/16AC-CIN	9/16AC-CIN-EX
1-1/4" R/A	0.845	1.781	0.453	5.00"	1-1/4AC-CIN	1-1/4AC-CIN-EX
1-5/8" R/A	1.235	1.875	0.485	6.00"	1-5/8AC-CIN	1-5/8AC-CIN-EX
2" R/A	1.235	2.250	0.407	6.00"	2AC-CIN	2AC-CIN-EX
3" R/A	1.484	2.500	0.219	6.00"	3AC-CIN	3AC-CIN-EX

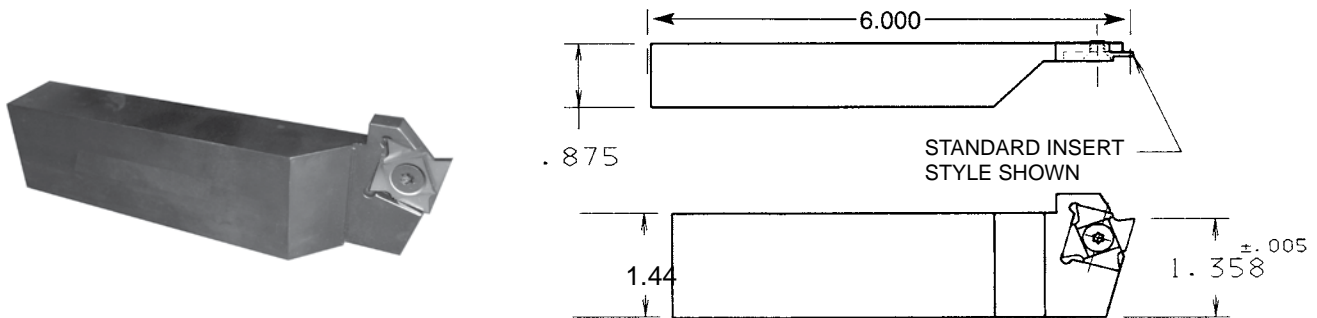
INSERT SIZE	INSERT SCREW#	INSERT WRENCH#
3/4" SQ	DAV-CIN-SCR	DAV-CIN-WR
1" SQ	DAV-CIN-SCR-ISO	DAV-CIN-WR

See Page 36 for inserts.

NEW BRITAIN CUT-OFF TOOLHOLDERS

TOOLHOLDERS SHOWN USE .750 SQ INSERT

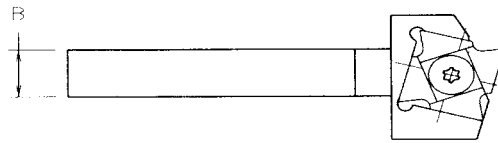
Patent No. D307859



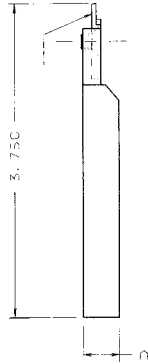
TOOLHOLDER CAT. #	INSERT SIZE	INSERT SCREW	INSERT WRENCH
NB-CIN	3/4"	DAV-CIN-SCR	DAV-CIN-WR
NB-CIN-EX	1"	DAV-CIN-SCR-ISO	DAV-CIN-WR

See Page 36 for inserts.

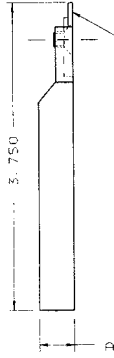
TOOLHOLDERS SHOWN USE .750 SQ INSERT
Patent No. D307859



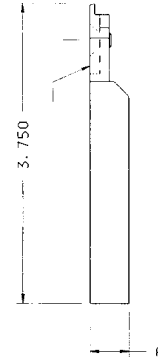
STANDARD STYLE INSERT



STYLE "R" INSERT



STYLE "C" INSERT

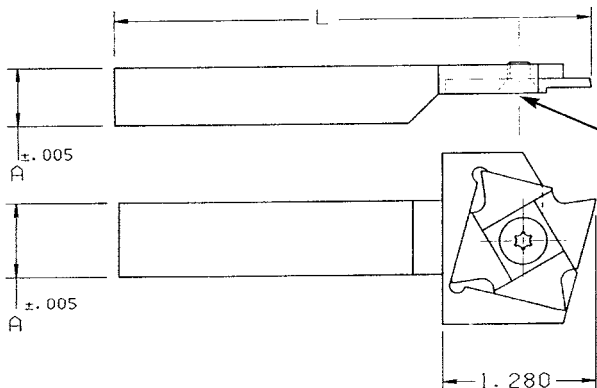


A	B	CAT# FOR STANDARD TOOLHOLDER	CAT# FOR STYLE R TOOLHOLDER	CAT# FOR STYLE C TOOLHOLDER
0.312	0.312	STCC-2117	STCC-2117R	STCC-2117C
0.375	0.375	STCC-2333	STCC-2333R	STCC-2333C
0.500	0.500	STCC-2237	STCC-2237R	STCC-2237C
0.500	0.625	STCC-1099	STCC-1099R	STCC-1099C
0.750	0.750	STCC-2218	STCC-2218R	STCC-2218C
0.750	1.000	STCC-2220	STCC-2220R	STCC-2220C
8MM	8MM	STCC-1915	STCC-4005R	STCC-4005C
10MM	10MM	STCC-4006	STCC-4006R	STCC-4006C
12MM	12MM	STCC-4007	STCC-4007R	STCC-4007C

See Page 36 for inserts.

CATALOG NUMBER	DESCRIPTION
DAV-CIN-SCR	INSERT SCREW
DAV-CIN-WR	INSERT WRENCH

TOOLHOLDER SHOWN USES 1" SQ INSERT
Patent No. D307859

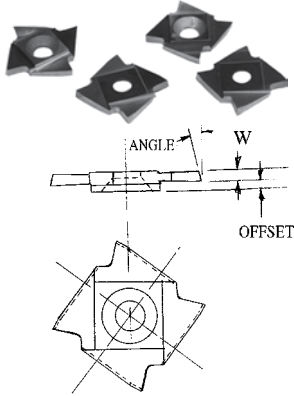


STANDARD INSERT STYLE SHOWN

A	L	CAT# FOR STANDARD TOOLHOLDER
0.500	4"	STCC-4784
0.625	6"	STCC-4785
0.750	6"	STCC-4786
1.000	6"	STCC-4656
12MM	100MM	STCC-4783
16MM	150MM	STCC-4105
20MM	150MM	STCC-6106

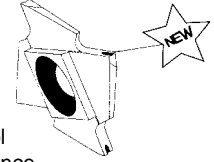
See Page 36 for inserts.

CAT#	DESCRIPTION
DAV-CIN-SCR-ISO	INSERT SCREW
DAV-CIN-WR	INSERT WRENCH



- QUICK CHANGE - JUST ROTATE INSERT WITHOUT REMOVING HOLDER FROM MACHINE (4 USABLE EDGES)
- NEVER LOSES CENTER SETTING - EVEN WHEN CHANGING FROM ONE SIZE CUT-OFF INSERT TO ANOTHER
- FREE CUTTING - INSERTS GROUND WITH BOTH FRONT TO BACK AND TOP TO BOTTOM CLEARANCE - ELIMINATES SIDE RUBBING AND DRAGGING
- LONGER LIFE - MICRO-GRAIN CARBIDE OUTPERFORMS CONVENTIONAL CARBIDE GRADES

CHIP BREAKER TYPE "-CB"



BENEFITS:

- Chip Control
- Ground in chip control for superior performance
- Longer Tool Life
- Minimum Down Time
- Consistent Quality
- Indexes within .001 Inches
- Four Cutting Edges

3/4" SQUARE 8° CUTOFF INSERTS

3/4" SQUARE 0° GROOVING INSERTS

WIDTH C/O	MAX DIA C/O	OFFSET	STD MICRO CARBIDE INSERT CAT. NO	MICRO CARBIDE INSERT W/ CHIP BREAKER CAT#
1/32"	0.187	3/32"	DAV-CIN-2	DAV-CIN-2-CB
1/32"	0.187	0	DAV-CIN-2R	DAV-CIN-2R-CB
3/64"	0.312	5/64"	DAV-CIN-3	DAV-CIN-3-CB
3/64"	0.312	0	DAV-CIN-3R	DAV-CIN-3R-CB
1/16"	0.500	1/16"	DAV-CIN-4	DAV-CIN-4-CB
1/16"	0.500	0	DAV-CIN-4R	DAV-CIN-4R-CB
5/64"	0.562	3/64"	DAV-CIN-5	DAV-CIN-5-CB
5/64"	0.562	0	DAV-CIN-5R	DAV-CIN-5R-CB
3/32"	0.562	1/32"	DAV-CIN-6	DAV-CIN-6-CB
3/32"	0.562	0	DAV-CIN-6R	DAV-CIN-6R-CB
1/8"	0.562	0	DAV-CIN-8	DAV-CIN-8-CB

WIDTH C/O	MAX DIA C/O	OFFSET	STD MICRO CARBIDE INSERT CAT. NO	MICRO CARBIDE INSERT W/ CHIP BREAKER CAT#
1/32"	0.187	3/32"	DAV-CIN-2-0	DAV-CIN-2-0-CB
1/32"	0.187	0	DAV-CIN-2R-0	DAV-CIN-2R-0-CB
3/64"	0.312	5/64"	DAV-CIN-3-0	DAV-CIN-3-0-CB
3/64"	0.312	0	DAV-CIN-3R-0	DAV-CIN-3R-0-CB
1/16"	0.500	1/16"	DAV-CIN-4-0	DAV-CIN-4-0-CB
1/16"	0.500	0	DAV-CIN-4R-0	DAV-CIN-4R-0-CB
5/64"	0.562	3/64"	DAV-CIN-5-0	DAV-CIN-5-0-CB
5/64"	0.562	0	DAV-CIN-5R-0	DAV-CIN-5R-0-CB
3/32"	0.562	1/32"	DAV-CIN-6-0	DAV-CIN-6-0-CB
3/32"	0.562	0	DAV-CIN-6R-0	DAV-CIN-6R-0-CB
1/8"	0.562	0	DAV-CIN-8-0	DAV-CIN-8-0-CB

1" SQUARE 8° CUTOFF INSERTS

WIDTH C/O	MAX DIA C/O	OFFSET	STD MICRO CARBIDE INSERT CAT. NO	MICRO CARBIDE INSERT W/ CHIP BREAKER CAT#
1/16"	0.844	1/16"	2EX-CIN-4	2EX-CIN-4-CB
1/16"	0.844	0	2EX-CIN-4R	2EX-CIN-4R-CB
5/64"	0.844	3/64"	2EX-CIN-5	2EX-CIN-5-CB
5/64"	0.844	0	2EX-CIN-5R	2EX-CIN-5R-CB
3/32"	0.844	1/32"	2EX-CIN-6	2EX-CIN-6-CB
3/32"	0.844	0	2EX-CIN-6R	2EX-CIN-6R-CB
1/8"	0.844	0	2EX-CIN-8	2EX-CIN-8-CB

FOR COATED INSERTS ADD THE FOLLOWING SUFFIXES TO THE PART NUMBERS LISTED:

TIN FOR TITANIUM NITRIDE COATED

TIALN FOR TITANIUM ALUMINUM NITRIDE COATED

TICN FOR TITANIUM CARBO-NITRIDE COATED

PART# DAV-CIN-SCR FOR SCREWS FOR 3/4" SQ INSERTS

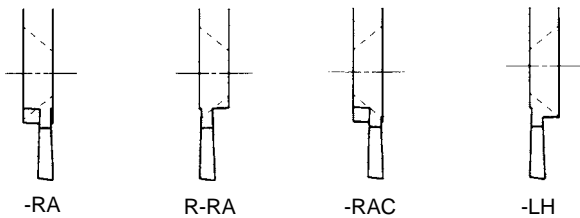
PART# DAV-CIN-SCR-ISO FOR SCREWS FOR 1" SQ INSERTS

PART# DAV-CIN-WR FOR INSERT WRENCH

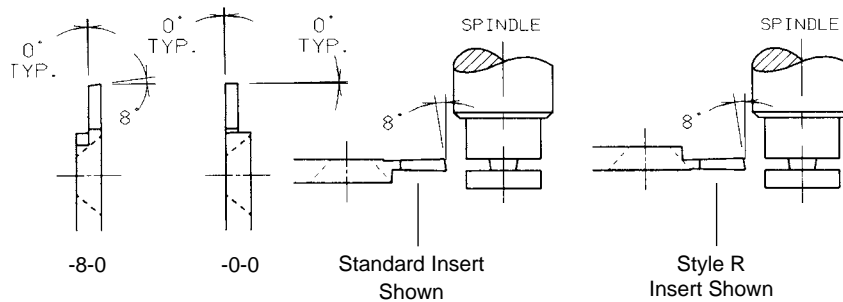
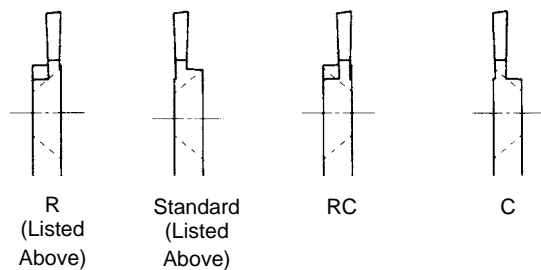
AVAILABLE INSERT STYLES

ADD THE SUFFIX LISTED BELOW TO THE ABOVE CATALOG NUMBERS

CLOCKWISE SPINDLE



COUNTERCLOCKWISE SPINDLE





QUICK CHANGE CARBIDE INSERTED CIRCULAR CUTOFF HOLDERS FOR DAVENPORT & B&S MACHINES

See Page 36 for inserts.

HOLDERS ARE AVAILABLE!
FOR LEFT HAND TURNING
AND THREADING ON BROWN
& SHARPE #00,#0, AND #2
ADD "-LH" TO THE CAT. NO

**DAVENPORT* W/ TWO 9/64" DIA PINHOLES
ON 1-1/4" B.C. & 9/16 REAMED HOLE
*ALSO FITS 9/16" CONE & 7/16" ACME**

CAT. NO	INSERT SIZE	A	L
DAV-CIN	3/4" SQ	1/8"	1-1/8"
DAV-CIN-EX	1" SQ	1/8"	1-1/8"

**#00 B&S & TRAUB W/ TWO 5/32" DIA
PINHOLES ON 1-1/16" B.C. AND
ONE 1/8" DIA PINHOLE ON .787 B.C.**

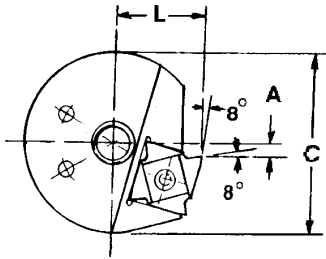
CAT. NO	INSERT SIZE	A	L
OO-CIN	3/4" SQ	1/8"	1"

**#0 B&S W/ TWO 3/16" DIA PINHOLES
ON 1-3/8" B.C.**

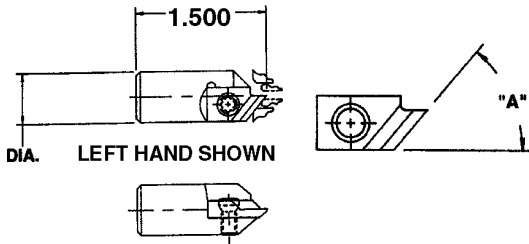
CAT. NO	INSERT SIZE	A	L
O-CIN	3/4" SQ	5/32"	1-1/8"

**#2 B&S W/ TWO 3/16" DIA PINHOLES
ON 1-1/2" B.C.**

CAT. NO	INSERT SIZE	A	L
2-CIN	3/4" SQ	1/4"	1-1/2"
2-CIN-EX	1" SQ	1/4"	1-1/2"



COUNTERSINK HOLDERS WITH MICRO-GRAIN CARBIDE AND T15PM INSERTS (PATENT NO. D396,865 / 5,827,019)



- COUNTERSINK RANGE .035 TO .325 DIA.
- LARGER RANGES AVAILABLE
- R.H. AND L.H. STOCKED
- BACKWORKING LEFT HAND CUT
- USED TO CHAMFER BACKEND OF PART I.D.
- REPEATABILITY WITHIN .001
- MINIMUM DOWN TIME

HOLDER PARTS

CAT. NO.	ITEM
DAV-CSK-SCR	TORX SCREW
DAV-CSK-WR	TORX WRENCH

USE T15PM INSERTS FOR SLOW SURFACE FEET PER MINUTE OR MACHINES THAT LACK RIGIDITY.

Note: Also available in 1", 2" and 2-1/2" lengths.

LEFT HAND

SHANK DIA.	INCL'D. ANGLE	HOLDER CAT. NO.	CARBIDE INSERT CAT. NO.	"A"	T15PM INSERT CAT. NO.
3/8	82 DEG.	DAV-CSK-3/8	DAV-CSI-LH41	41 DEG.	DAV-CSI-LH41-P
3/8	90 DEG.	DAV-CSK-3/8	DAV-CSI-LH45	45 DEG.	DAV-CSI-LH45-P
3/8	100 DEG.	DAV-CSK-3/8	DAV-CSI-LH50	50 DEG.	DAV-CSI-LH50-P
3/8	120 DEG.	DAV-CSK-3/8-120	DAV-CSI-LH60	60 DEG.	DAV-CSI-LH60-P
10MM	90 DEG.	DAV-CSK-10MM	DAV-CSI-LH45	45 DEG.	DAV-CSI-LH45-P
7/16	90 DEG.	DAV-CSK-7/16	DAV-CSI-LH45	45 DEG.	DAV-CSI-LH45-P
1/2	82 DEG.	DAV-CSK-1/2	DAV-CSI-LH41	41 DEG.	DAV-CSI-LH41-P
1/2	90 DEG.	DAV-CSK-1/2	DAV-CSI-LH45	45 DEG.	DAV-CSI-LH45-P
1/2	100 DEG.	DAV-CSK-1/2	DAV-CSI-LH50	50 DEG.	DAV-CSI-LH50-P
1/2	120 DEG.	DAV-CSK-1/2-120	DAV-CSI-LH60	60 DEG.	DAV-CSI-LH60-P
5/8"	90 DEG.	DAV-CSK-5/8	DAV-CSI-LH45	45 DEG.	DAV-CSI-LH45-P
3/4"	90 DEG.	DAV-CSK-3/4	DAV-CSI-LH45	45 DEG.	DAV-CSI-LH450-P

RIGHT HAND

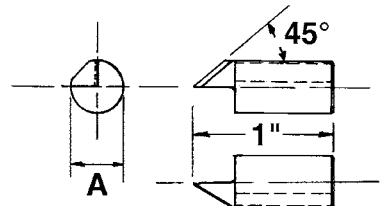
SHANK DIA.	INCL'D. ANGLE	HOLDER CAT. NO.	CARBIDE INSERT CAT. NO.	"A"	T15PM INSERT CAT. NO.
3/8	82 DEG.	DAV-CSK-3/8-R	DAV-CSI-RH41	41 DEG.	DAV-CSI-RH41-P
3/8	90 DEG.	DAV-CSK-3/8-R	DAV-CSI-RH45	45 DEG.	DAV-CSI-RH45-P
3/8	100 DEG.	DAV-CSK-3/8-R	DAV-CSI-RH50	50 DEG.	DAV-CSI-RH50-P
3/8	120 DEG.	DAV-CSK-3/8-120-R	DAV-CSI-RH60	60 DEG.	DAV-CSI-RH60-P
10MM	90 DEG.	DAV-CSK-10MMR	DAV-CSI-RH45	45 DEG.	DAV-CSI-RH45-P
7/16	90 DEG.	DAV-CSK-7/16R	DAV-CSI-RH45	45 DEG.	DAV-CSI-RH45-P
1/2	82 DEG.	DAV-CSK-1/2-R	DAV-CSI-RH41	41 DEG.	DAV-CSI-RH41-P
1/2	90 DEG.	DAV-CSK-1/2-R	DAV-CSI-RH45	45 DEG.	DAV-CSI-RH45-P
1/2	100 DEG.	DAV-CSK-1/2-R	DAV-CSI-RH50	50 DEG.	DAV-CSI-RH50-P
1/2	120 DEG.	DAV-CSK-1/2-120-R	DAV-CSI-RH60	60 DEG.	DAV-CSI-RH60-P
5/8"	90 DEG.	DAV-CSK-5/8-R	DAV-CSI-RH45	45 DEG.	DAV-CSI-RH45-P
3/4"	90 DEG.	DAV-CSK-3/4-R	DAV-CSI-RH45	45 DEG.	DAV-CSI-RH45-P

Also available tin coated - Add TIN to Insert Part #

SOLID MICRO-GRAIN CARBIDE COUNTERSINK TOOLS FOR DAVENPORT MACHINES

CAT. NO.	"A" DIA.
DAV-CSK-LH	3/8

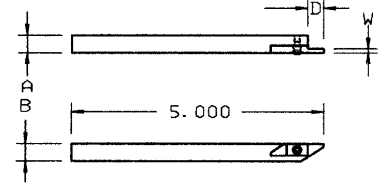
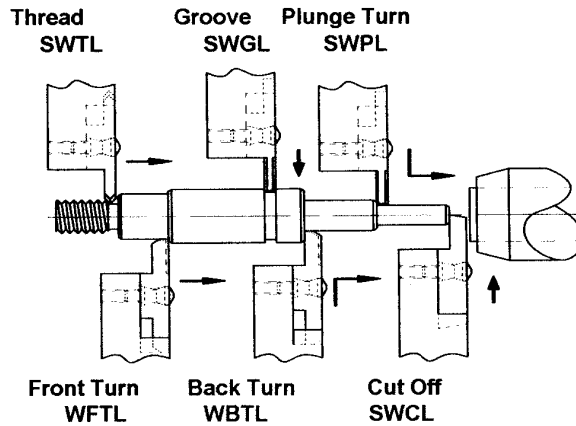
• FOR LEFT HAND CUT



TOOL HOLDERS

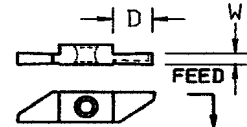
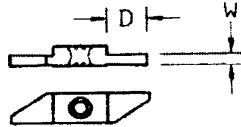
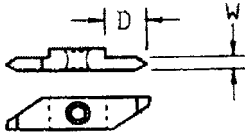
Holder No.	Dimensions	
	A	B
SWSL-10	.312	.312
SWSL-12	.375	.375
SWSL-14	.437	.437
SWSL-16	.500	.500
SWSL-20	.625	.625
SWSL-24	.750	.750
SWSL-8MM	8MM	8MM
SWSL-10MM	10MM	10MM
SWSL-12MM	12MM	12MM

LEFT HAND TURNING



Cat. No.	Description
SW-3126	SCREW
SW-3344	WRENCH

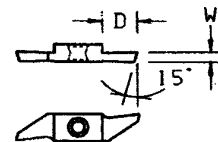
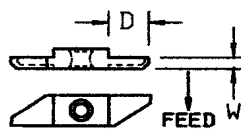
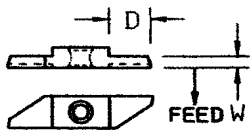
INSERTS



THREADING (SWTL)		
Insert Catalog No.	DIMENSIONS	
	W	D
SWTL-1250	.1250	.320
SWTL-0940	.0940	.300
SWTL-0780	.0780	.275
SWTL-0630	.0630	.250
SWTL-0470	.0470	.125
SWTL-0310	.0310	.093

GROOVE (SWGL)		
Insert Catalog No.	DIMENSIONS	
	W	D
SWGL-1250	.1250	.320
SWGL-0940	.0940	.300
SWGL-0780	.0780	.275
SWGL-0630	.0630	.250
SWGL-0470	.0470	.125
SWGL-0310	.0310	.093

PLUNGE & TURN (SWPL)		
Insert Catalog No.	DIMENSIONS	
	W	D
SWPL-1250	.1250	.320
SWPL-0940	.0940	.300
SWPL-0780	.0780	.275
SWPL-0630	.0630	.250
SWPL-0470	.0470	.125
SWPL-0310	.0310	.093



FRONT TURN (WFTL)		
Insert Catalog No.	DIMENSIONS	
	W	D
WFTL-1250	.1250	.320
WFTL-0940	.0940	.300
WFTL-0780	.0780	.275
WFTL-0630	.0630	.250
WFTL-0470	.0470	.125
WFTL-0310	.0310	.093

BACK TURN (WBTL)		
Insert L.H.	DIMENSIONS	
	W	D
WBTL-1250	.1250	.320
WBTL-0940	.0940	.300
WBTL-0780	.0780	.275
WBTL-0630	.0630	.250
WBTL-0470	.0470	.125
WBTL-0310	.0310	.093

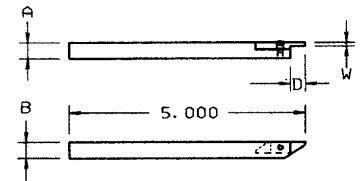
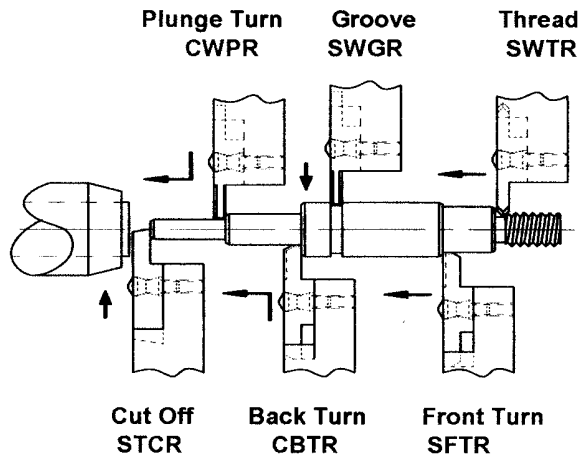
CUT-OFF (SWCL)		
Insert L.H.	DIMENSIONS	
	W	D
SWCL-1250	.1250	.320
SWCL-0940	.0940	.300
SWCL-0780	.0780	.275
SWCL-0630	.0630	.250
SWCL-0470	.0470	.125
SWCL-0310	.0310	.093

TOOL BLANKS
CUTTING TOOLS

TOOL HOLDERS

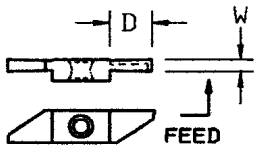
Holder No.	Dimensions	
	A	B
SWSR-10	.312	.312
SWSR-12	.375	.375
SWSR-14	.437	.437
SWSR-16	.500	.500
SWSR-20	.625	.625
SWSR-24	.750	.750
SWSR-8MM	8MM	8MM
SWSR-10MM	10MM	10MM
SWSR-12MM	12MM	12MM

RIGHT HAND TURNING



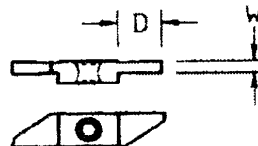
Cat. No.	Description
SW-3126	SCREW
SW-3344	WRENCH

INSERTS



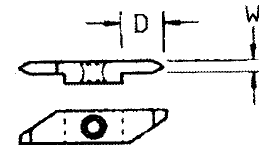
PLUNGE & TURN (CWPR)

Insert Catalog No.	DIMENSIONS	
	W	D
CWPR-1250	.1250	.320
CWPR-0940	.0940	.300
CWPR-0780	.0780	.275
CWPR-0630	.0630	.250
CWPR-0470	.0470	.125
CWPR-0310	.0310	.093



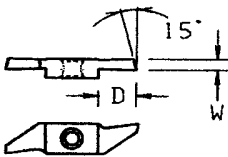
GROOVE (SWGR)

Insert Catalog No.	DIMENSIONS	
	W	D
SWGR-1250	.1250	.320
SWGR-0940	.0940	.300
SWGR-0780	.0780	.275
SWGR-0630	.0630	.250
SWGR-0470	.0470	.125
SWGR-0310	.0310	.093



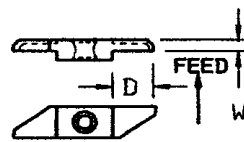
THREADING (SWTR)

Insert Catalog No.	DIMENSIONS	
	W	D
SWTR-1250	.1250	.320
SWTR-0940	.0940	.300
SWTR-0780	.0780	.275
SWTR-0630	.0630	.250
SWTR-0470	.0470	.125
SWTR-0310	.0310	.093



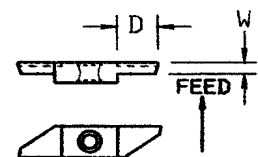
CUT-OFF (STCR)

Insert Catalog No.	DIMENSIONS	
	W	D
STCR-1250	.1250	.320
STCR-0940	.0940	.300
STCR-0780	.0780	.275
STCR-0630	.0630	.250
STCR-0470	.0470	.125
STCR-0310	.0310	.093



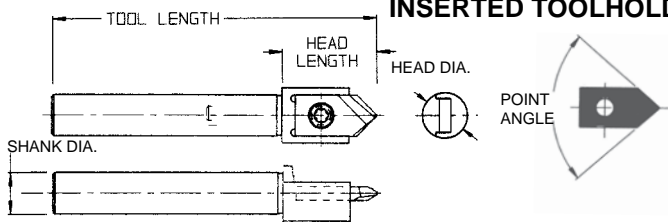
BACK TURN (CBTR)

Insert Catalog No.	DIMENSIONS	
	W	D
CBTR-1250	.1250	.320
CBTR-0940	.0940	.300
CBTR-0780	.0780	.275
CBTR-0630	.0630	.250
CBTR-0470	.0470	.125
CBTR-0310	.0310	.093



FRONT TURN (SFTR)

Insert Catalog No.	DIMENSIONS	
	W	D
SFTR-1250	.1250	.320
SFTR-0940	.0940	.300
SFTR-0780	.0780	.275
SFTR-0630	.0630	.250
SFTR-0470	.0470	.125
SFTR-0310	.0310	.093



- THREE FLAT POINT TYPES AVAILABLE
.005 (FINE) / .015 (MEDIUM) / .034 (HEAVY)
- REPEATABILITY WITHIN +/- .0005
- AVAILABLE IN CARBIDE AND T15PM TIN COATED
- MINIMUM MACHINE DOWN TIME
- LEFT HAND AVAILABLE
- SPECIAL ANGLED INSERTS AVAILABLE
(PRICE ON APPLICATION)

SERIES #2 TOOLHOLDER#	TOOL LENGTH	SHANK DIA.	HEAD DIA.	HEAD LENGTH
CDH2-250-2.0	2.0	.250	.375	.690
CDH2-375-1.5	1.5	.375	----	----
CDH2-375-2.5	2.5	.375	----	----
CDH2-500-2.0	2.0	.500	----	----
CDH2-500-3.0	3.0	.500	----	----
CDH2-625-5.0	5.0	.625	----	----
CDH2-750-5.0	5.0	.750	----	----
CDH2-1.000-5.0	5.0	1.000	----	----
CDH2-10MM-1.5	1.5	10MM	----	----
CDH2-10MM-2.5	2.5	10MM	----	----

SERIES #2 SPOT DRILLING INSERTS - .250 BODY DIAMETER			
POINT ANGLE	POINT FLAT	MICROGRAIN CARBIDE TIN COATED INSERT#	T15PM H.S.S. TIN COATED INSERT#
82°	.005	2-82-005-MICTIN	2-82-005-PTIN
82°	.015	2-82-015-MICTIN	2-82-015-PTIN
90°	.005	2-90-005-MICTIN	2-90-005-PTIN
90°	.015	2-90-015-MICTIN	2-90-015-PTIN
120°	.005	2-120-005-MICTIN	2-120-005-PTIN
120°	.015	2-120-015-MICTIN	2-120-015-PTIN
SCREW# DAV-CSK-SCR / WRENCH# DAV-CSK-WR			

SERIES #3 TOOLHOLDER#	TOOL LENGTH	SHANK DIA.	HEAD DIA.	HEAD LENGTH
SDH3-375-2.0	2.0	.375	.500	1.100
SDH3-375-3.0	3.0	.375	.500	1.100
SDH3-500-2.0	2.0	.500	----	----
SDH3-500-3.0	3.0	.500	----	----
SDH3-625-3.0	3.0	.625	----	----
SDH3-625-5.0	5.0	.625	----	----
SDH3-750-3.5	3.5	.750	----	----
SDH3-750-5.0	5.0	.750	----	----
SDH3-1.000-5.0	5.0	1.000	----	----
SDH3-10MM-2.0	2.0	10MM	.500	1.100
SDH3-10MM-3.0	3.0	10MM	.500	1.100
SDH3-16MM-3.0	3.0	16MM	----	----

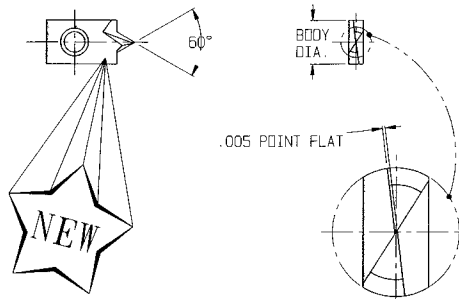
SERIES #3 SPOT DRILLING INSERTS - .375 BODY DIAMETER			
POINT ANGLE	POINT FLAT	MICROGRAIN CARBIDE TIN COATED INSERT#	T15PM H.S.S. TIN COATED INSERT#
82°	.005	3-82-005-MICTIN	3-82-005-PTIN
82°	.015	3-82-015-MICTIN	3-82-015-PTIN
82°	.034	3-82-034-MICTIN	3-82-034-PTIN
90°	.005	3-90-005-MICTIN	3-90-005-PTIN
90°	.015	3-90-015-MICTIN	3-90-015-PTIN
90°	.034	3-90-034-MICTIN	3-90-034-PTIN
120°	.005	3-120-005-MICTIN	3-120-005-PTIN
120°	.015	3-120-015-MICTIN	3-120-015-PTIN
120°	.034	3-120-034-MICTIN	3-120-034-PTIN
SCREW# STCC-4110 / WRENCH# STCC-4112			

SERIES #4 TOOLHOLDER#	TOOL LENGTH	SHANK DIA.	HEAD DIA.	HEAD LENGTH
CDH4-375-3.5	3.5	.375	.750	1.100
CDH4-500-2.5	2.5	.500	.750	1.100
CDH4-500-3.5	3.5	.500	.750	1.100
CDH4-625-2.5	2.5	.625	.750	1.100
CDH4-625-3.5	2.5	.625	.750	1.100
CDH4-625-5.0	5.0	.625	.750	1.100
CDH4-750-2.5	2.5	.750	----	----
CDH4-750-3.5	3.5	.750	----	----
CDH4-750-5.0	5.0	.750	----	----
CDH4-1.000-5.0	5.0	1.000	----	----

SERIES #4 SPOT DRILLING INSERTS - .500 BODY DIAMETER			
POINT ANGLE	POINT FLAT	MICROGRAIN CARBIDE TIN COATED INSERT#	T15PM H.S.S. TIN COATED INSERT#
82°	.015	4-82-015-MICTIN	4-82-015-PTIN
82°	.034	4-82-034-MICTIN	4-82-034-PTIN
90°	.015	4-90-015-MICTIN	4-90-015-PTIN
90°	.034	4-90-034-MICTIN	4-90-034-PTIN
120°	.015	4-120-015-MICTIN	4-120-015-PTIN
120°	.034	4-120-034-MICTIN	4-120-034-PTIN
SCREW# STCC-4111 / WRENCH# STCC-4112			

Screw is supplied with holder.
Inserts and wrenches are sold separately.

NEW! 60° TWO FLUTE RADIAL RELIEF SPOT DRILL INSERTS FOR ABOVE HOLDERS



PATENT PENDING

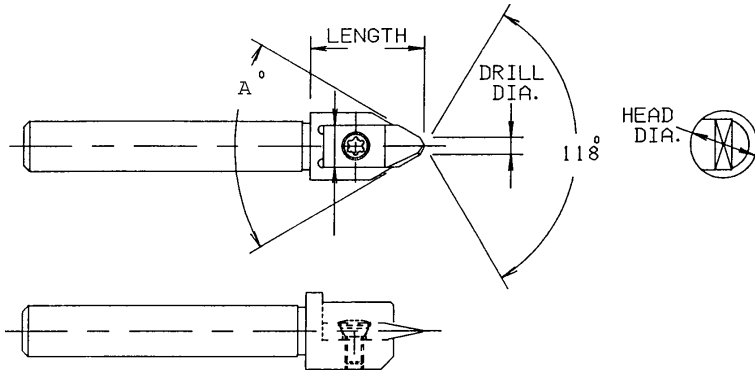
The speed for these two inserts needs to be between 5000 - 8000 R.P.M. and the feed rate should be between .500" - 1.000" per minute.

SERIES #2 SPOT DRILLING INSERTS - .250 BODY DIAMETER			
POINT ANGLE	POINT FLAT	MICROGRAIN CARBIDE TIN COATED INSERT#	T15PM H.S.S. TIN COATED INSERT#
60°	.005	2-60-005-MICTIN	2-60-005-PTIN

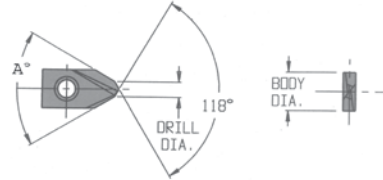
SERIES #3 SPOT DRILLING INSERTS - .375 BODY DIAMETER			
POINT ANGLE	POINT FLAT	MICROGRAIN CARBIDE TIN COATED INSERT#	T15PM H.S.S. TIN COATED INSERT#
60°	.005	3-60-005-MICTIN	3-60-005-PTIN

60° INCLUDED RADIAL SPOT DRILL INSERT ADVANTAGES

- The 60° included angle has radial and conical relief that is offset to give the cutting edge maximum strength plus clearance.
- These two spot drill inserts are center cutting with the ability to spot material starting with an outside diameter of .010"



- NEW STYLE IS FLUTED FOR EASY CHIP REMOVAL
- REPEATABILITY WITHIN .001
- AVAILABLE IN CARBIDE AND T-15PM
- TIN & TIALN COATED
- MINIMUM MACHINE DOWN TIME
- SHORTER CUTTING CYCLE
- SPECIAL ORDERS WELCOMED



Screw is supplied with holder.
Inserts and wrenches are sold separately.

TWO FLUTE STANDARD RELIEF - R.H. CENTER CUTTING INSERTS

NOTE: INSERTS ALSO AVAILABLE WITHOUT THE FLUTES FOR HEAVY CUTS - ADD "-0" TO PART NUMBERS SHOW BELOW.

HOLDERS

SERIES #2				
HOLDER NUMBER	SHANK DIA.	HEAD DIA.	HEAD LENGTH	TOTAL LENGTH
CDH2-375-1.5	.375	----	----	1.5
CDH2-375-2.5	.375	----	----	2.5
CDH2-10MM-1.5	10MM	----	----	1.5
CDH2-10MM-2.5	10MM	----	----	2.5
CDH2-500-1.5	.500	----	----	1.5
CDH2-500-2.5	.500	----	----	2.5

INSERTS

SERIES #2 DRILL & COUNTERSINK INSERTS - .250 BODY DIAMETER			
INCLUDED ANGLE "A"	DRILL DIA.	MICROGRAIN CARBIDE TIN COATED INSERT#	T15PM H.S.S TIN COATED INSERT#
60°	.109	CDI2-60-109MICTIN	CDI2-60-109PTIN
82°	.109	CDI2-82-109MICTIN	CDI2-82-109PTIN
90°	.109	CDI2-90-109MICTIN	CDI2-90-109PTIN

SCREW# DAV-CSK-SCR / WRENCH# DAV-CSK-WR

SERIES #2.5				
HOLDER NUMBER	SHANK DIA.	HEAD DIA.	HEAD LENGTH	TOTAL LENGTH
CDH2.5-375-2.0	.375	.500	.850	2.0
CDH2.5-375-3.0	.375	.500	.850	3.0
CDH2.5-10MM-2.0	10MM	.500	.850	2.0
CDH2.5-10MM-3.0	10MM	.500	.850	3.0
CDH2.5-500-2.0	.500	.500	.850	2.0
CDH2.5-500-3.0	.500	.500	.850	3.0

SERIES #2.5 DRILL & COUNTERSINK INSERTS - .312 BODY DIAMETER			
INCLUDED ANGLE "A"	DRILL DIA.	MICROGRAIN CARBIDE TIN COATED INSERT#	T15PM H.S.S TIN COATED INSERT#
60°	.125	CDI2.5-60-125MICTIN	CDI2.5-60-125PTIN
82°	.125	CDI2.5-82-125MICTIN	CDI2.5-82-125PTIN
90°	.125	CDI2.5-90-125MICTIN	CDI2.5-90-125PTIN

SCREW# STCC-4110 / WRENCH# STCC-4112

SERIES #3.5				
HOLDER NUMBER	SHANK DIA.	HEAD DIA.	HEAD LENGTH	TOTAL LENGTH
CDH3.5-375-2.0	.375	.750	1.100	2.0
CDH3.5-375-3.0	.375	.750	1.100	3.0
CDH3.5-10MM-2.0	10MM	.750	1.100	2.0
CDH3.5-10MM-3.0	10MM	.750	1.100	3.0
CDH3.5-500-2.0	.500	.750	1.100	2.0
CDH3.5-500-3.0	.500	.750	1.100	3.0

SERIES #3.5 DRILL & COUNTERSINK INSERTS - .437 BODY DIAMETER			
INCLUDED ANGLE "A"	DRILL DIA.	MICROGRAIN CARBIDE TIN COATED INSERT#	T15PM H.S.S TIN COATED INSERT#
60°	.187	CDI3.5-60-187MICTIN	CDI3.5-60-187PTIN
82°	.187	CDI3.5-82-187MICTIN	CDI3.5-82-187PTIN
90°	.187	CDI3.5-90-187MICTIN	CDI3.5-90-187PTIN

SCREW# STCC-4111 / WRENCH# STCC-4112

SERIES #4				
HOLDER NUMBER	SHANK DIA.	HEAD DIA.	HEAD LENGTH	TOTAL LENGTH
CDH4-500-2.5	.500	.750	1.100	2.5
CDH4-500-3.5	.500	.750	1.100	3.5
CDH4-625-2.5	.625	.750	1.100	2.5
CDH4-625-3.5	.625	.750	1.100	3.5
CDH4-750-2.5	.750	----	----	2.5
CDH4-750-3.5	.750	----	----	3.5

SERIES #4 DRILL & COUNTERSINK INSERTS - .500 BODY DIAMETER			
INCLUDED ANGLE "A"	DRILL DIA.	MICROGRAIN CARBIDE TIN COATED INSERT#	T15PM H.S.S TIN COATED INSERT#
60°	.218	CDI4-60-218MICTIN	CDI4-60-218PTIN
82°	.218	CDI4-82-218MICTIN	CDI4-82-218PTIN
90°	.218	CDI4-90-218MICTIN	CDI4-90-218PTIN

SCREW# STCC-4111 / WRENCH# STCC-4112

TOOL BLANKS
CUTTING TOOLS



INTERNAL ROTARY BROACHING



Simply stated, this is the process of forming an internal shape into an undersized pre-drilled hole. Generally used on blind hole applications where the length of the form does not exceed three times the diameter of the form. Can also be used on through hole applications.



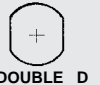
View our broaching videos on YouTube!



Used on all types of machines to produce hundreds of items like cap screws, faucet splines, involute gears, knurls and medical bone screws to name just a few.

Proudly made in the U.S.A.

THESE ARE EXAMPLES OF SPECIAL SHAPES THAT HAVE BEEN SUCCESSFULLY BROACHED - LET US QUOTE ON YOUR REQUIREMENTS.



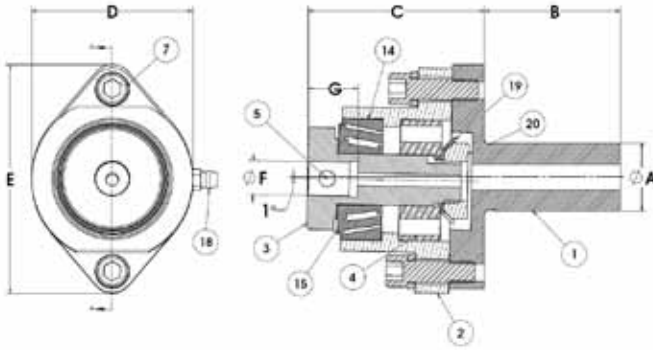
PLEASE INCLUDE THE FOLLOWING INFORMATION WITH YOUR SPECIAL BROACH INQUIRY:

INTERNAL OR EXTERNAL H/S/S BROACH?
SHAPE OF H/S/S BROACH FORM
CLEARING ID ON INTERNAL?
EXTERNAL CLEARING ON OD?

TOLERANCE IF NOT SHOWN ON PRINT
MATERIAL GRADE OF PART
ARE ANY INTERNAL RADII LESS THAN .0055 ON INT. BROACHES?
ARE ANY EXTERNAL RADII LESS THAN .0055 ON EXT. BROACHES?

IS H/S/S BROACH TO BE USED IN A SOMMA HOLDER?
IF NOT, WHAT ARE THE BLANK DIM. FOR YOUR HOLDER & ° OF SPINDLE TILT?
WHAT IS HOLDER SIZE OR SHANK DIA?

OFFSET INTERNAL ROTATING BROACH TOOL



Also available with
CAT, VDI, CAPTO C6, HSK &
Morse Taper Shanks

HAS KNOCK OUT HOLE THRU SPINDLE
FOR BROKEN BROACH REMOVAL

This tool is used to produce hexagon, square and other irregular internal shapes in the workpiece as it is rotating in the spindle of the machine. Minimal turret driving force is required due to the spindle offset which distributes the load of the cut. The tool holder spindle, which is mounted in ball bearings, rotates freely with the workpiece and does not require auxiliary driving attachments. Fine adjusting screws are provided for accurate aligning of the broach with the pre-drilled hole in the workpiece.

Can be used on B&S, Davenport, and multi-spindle screw machines, as well as turret lathes and CNC machines.

Standard from stock H.S.S. broaches shown starting on page 46.

Broach gages available - see page 50.

Please lubricate holder before using:

For running at LOW to MODERATE RPM

we recommend ZENIPLEXII-Extreme Pressure Aluminum Complex Grease. (Do not overpack with grease).

CAT. NO. **DESCRIPTION**

GREASE-ORB Grease 14 oz. Tube

For running HIGH RPM, use a good lubricating oil instead of this grease.

CAT. NO.	A	B	C	D	E	F	G
ORB00	5/8	1-1/2	1-59/64	1-1/2	2-7/16	.315	9/16
ORB00/16MM	16MM	1-1/2	1-59/64	1-1/2	2-7/16	.315	9/16
ORB00/20MM	20MM	1-1/2	1-59/64	1-1/2	2-7/16	.315	9/16
ORB00/22MM	22MM	1-1/2	1-59/64	1-1/2	2-7/16	.315	9/16
ORB0S (Davenport)	3/4	2"	1-59/64	1-1/2	2-7/16	.315	9/16
ORB0	3/4	2"	2-17/32	2-3/8	3-5/16	.500	.742
ORB2	1"	2"	2-17/32	2-3/8	3-5/16	.500	.742
ORB2/20MM	20MM	2"	2-17/32	2-3/8	3-5/16	.500	.742
ORB2/22MM	22MM	2"	2-17/32	2-3/8	3-5/16	.500	.742
ORB2/25MM	25MM	2"	2-17/32	2-3/8	3-5/16	.500	.742
ORB3	1-1/4	3"	2-17/32	2-3/8	3-5/16	.500	.742
ORB3/32MM	32MM	3"	2-17/32	2-3/8	3-5/16	.500	.742
ORB4	1-1/2	3"	2-17/32	2-3/8	3-5/16	.500	.742
ORBHDS	1-1/2	3"	4-9/16	3-1/2	5-1/4	.750	1.250
ORBHDS/32MM	32MM	3"	4-9/16	3-1/2	5-1/4	.750	1.250
ORBHD	1-3/4	3"	4-9/16	3-1/2	5-1/4	.750	1.250

Part No.	ORB00 Cat. No.	ORB0S Cat. No.	ORB0 Cat. No.	ORB2 Cat. No.	ORB3 Cat. No.	ORB4 Cat. No.	ORBHDS Cat. No.	ORBHD Cat. No.
1. Shank	ORB00-1	ORB0S-1	ORB0-1	ORB2-1	ORB3-1	ORB4-1	ORBHDS-1	ORBHD-1
2. Body	ORB00-2N	ORB00-2N	ORB2-2N	ORB2-2N	ORB2-2N	ORB2-2N	ORBHD-2	ORBHD-2
3. Spindle	ORB00-3N	ORB00-3N	ORB2-3N	ORB2-3N	ORB2-3N	ORB2-3N	ORBHD-3	ORBHD-3
4. Radial Bearing	ORB00-4N	ORB00-4N	ORB2-4N	ORB2-4N	ORB2-4N	ORB2-4N	ORBHD-4N	ORBHD-4
5. Set Screw	ATT00-12	ATT00-12	ORB2-5	ORB2-5	ORB2-5	ORB2-5	FARH2-10	FARH2-10
7. Clamp Screw & Washer	ORB00-7	ORB00-7	ORB2-7	ORB2-7	ORB2-7	ORB2-7	ORBHD-7	ORBHD-7
8. Adj. Screw	ATT0-35	ATT0-35	ORB2-8	ORB2-8	ORB2-8	ORB2-8	ORB2-5	ORB2-5
14. Ang. Bearing	ORB00-14N	ORB00-14N	ORB2-14N	ORB2-14N	ORB2-14N	ORB2-14N	ORBHD-14	ORBHD-14
15. Seal	ORB00-15	ORB00-15	--	--	--	--	--	--
18. Grease Fitting	ORB00-18	ORB00-18	ORB00-18	ORB00-18	ORB00-18	ORB00-18	ORB00-18	ORB00-18
19. Spindle Nut	ORB00-19	ORB00-19	ORB2-19	ORB2-19	ORB2-19	ORB2-19	ORBHD-19	ORBHD-19
20. Spindle Washer	ORB00-20	ORB00-20	ORB2-20	ORB2-20	ORB2-20	ORB2-20	ORBHD-20	ORBHD-20

COLLET CHUCK STYLE BROACH TOOL HOLDERS (PATENT PENDING)

More versatile, just change the collet to accept any shank diameter broaching tool within the collet range. For example, you may want to purchase three common size collets, 0.315 (8mm), 0.472 (12mm), and 0.500 for the ER20 broach tool holder. This will allow you to use one holder for all shank sizes.

Built in stop screw allows you to adjust for different length broaches or to compensate for lengths on re-sharpened broaches.

Eliminates necessity of centering cutting tool to "spindle" of broaching holder. No screws to knock cutting tool off center.

Use only exact size **High Precision** DIN6499 ER collets.

Standard from stock HSS broaches shown starting on page 46.

Broach gages available - see page 50.



**HIGH PRECISION
REPLACEMENT COLLETS
(Common Broach Shank Sizes)**

CAT. NO.	SHANK DIA.	SHANK LENGTH	PROJECTION	NUT DIA	COLLET I.D. (std)	COLLET MAX. CAP.
ORB00-ER16M	5/8"	1-1/2"	2-11/16"	22MM	.315	13/32"
ORB0S-ER16M*	5/8"	1-1/2"	2-11/16"	22MM	.315	13/32"
ORB0-ER20H	3/4"	2"	3-5/8"	1.348	.500	13MM
ORB2-ER20H	1"	2"	3-5/8"	1.348	.500	13MM
ORB3-ER20H	1-1/4"	3"	3-5/8"	1.348	.500	13MM
ORB4-ER20H	1-1/2"	3"	3-5/8"	1.348	.500	13MM

CAT. NO.	I.D.
ER16-8HP	8mm / .315
ER20-8HP	8mm / .315
ER20-12HP	12mm / .472
ER20-1/2HP	.500

NOTE: COLLET NUT, COLLET WRENCH, SPINDLE WRENCH AND STANDARD HIGH PRECISION COLLET INCLUDED WITH EACH CAT. NO.

*Limited applications due to 47/64" longer projection than standard Davenport broach holder ORBOS shown above.

ALSO AVAILABLE WITH METRIC SHANKS

FULL RANGE OF HIGH PRECISION COLLETS AVAILABLE

CNC

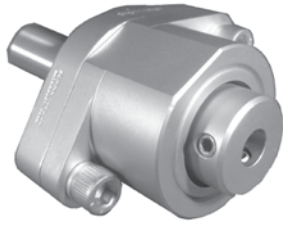
MULTI-
SPINDLE

BROWN &
SHARPE

DAVENPORT

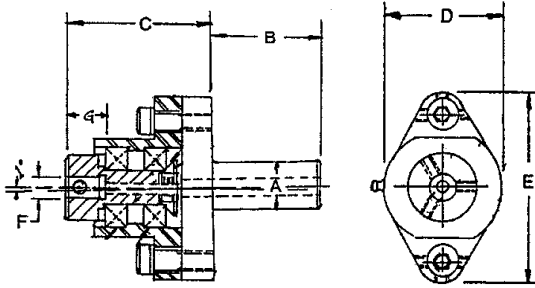
CNC LATHE, ADJUSTMENT FREE, INTERNAL BROACH TOOL HOLDER

Introducing a wobble broach tool that can be quickly setup for use in CNC lathes.
(Not for use on milling machines)



CONVENTIONAL CNC HOLDERS

CAT. NO.	A	B	C	D	E	F	G
ORB00-CNC	5/8	1-1/2	1-59/64	1-1/2	2-7/16	.315	9/16
ORB0-CNC	3/4	2"	2-17/32	2-3/8	3-5/16	.500	.742
ORB2-CNC	1"	2"	2-17/32	2-3/8	3-5/16	.500	.742
ORB3-CNC	1-1/4"	3"	2-17/32	2-3/8	3-5/16	.500	.742
ORB4-CNC	1-1/2"	3"	2-17/32	2-3/8	3-5/16	.500	.742



- Adjustment free holder for CNC lathes (not for use on milling machines)
- Requires X-Axis machine adjustment only
- No center indicating required
- Hex and square broaches in stock for these holders starting on page 45.
- Setup gages available for these holders on page 50.

CNC LATHE COLLET TYPE ADJUSTMENT FREE INTERNAL BROACH TOOL HOLDER

HAVE ALL THE SAME FEATURES AS THE COLLET CHUCK
STYLE HOLDERS LISTED ON PAGE 43



CAT. NO.	A	B	C	NUT DIA.	COLLET I.D. (std)	COLLET MAX. CAP.
ORB00-AF	5/8"	2"	2-11/16"	22MM	.315	13/32"
ORB0-AF	3/4"	2"	3-5/8"	1.348	.500	13MM
ORB2-AF	1"	2"	3-5/8"	1.348	.500	13MM
ORB3-AF	1-1/4"	3"	3-5/8"	1.348	.500	13MM
ORB4-AF	1-1/2"	3"	3-5/8"	1.348	.500	13MM

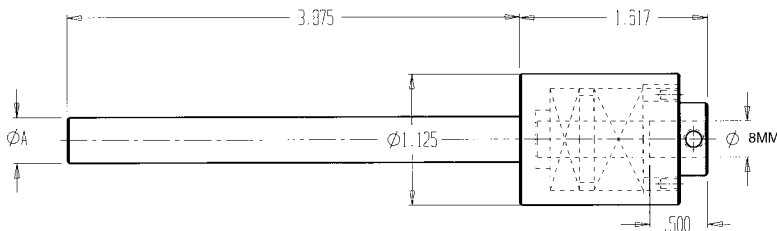
NOTE: COLLET NUT, COLLET WRENCH, SPINDLE WRENCH AND STANDARD HIGH PRECISION COLLET INCLUDED WITH EACH CAT. NO.

ADJUSTMENT FREE INTERNAL ROTATING BROACH TOOLS FOR SWISS MACHINES



CAT. NO.	A
ORBSWS-10MM	10MM
ORBSWS-12MM	12MM
ORBSWS-14MM	14MM
ORBSWS-16MM	16MM
ORBSWS-20MM	20MM
ORBSWS-22MM	22MM
ORBSWS-25MM	25MM
ORBSWS-625	.625
ORBSWS-750	.750
ORBSWS-1000	1"

Hex, Square and Six Loded broaches in stock to fit these holders.

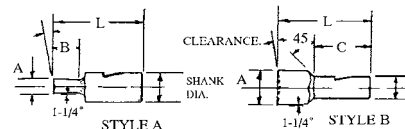
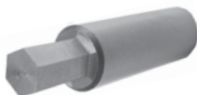


- Shank can be cut to desired length
- Adjustment free
- No center indicating required
- Smaller head diameter eliminates interference
- Short head length for limited back work space
- Built in wobble cutting features 1° angle
- Fits most Swiss type & gang machines
- Setup gages available for these holders on page 50.

NOTE: USE ONLY 8MM DIA X 28MM LONG BROACHES (SHOWN ON PAGE 45)

- * M2 HSS Hardened
- * Ground all over
- * Angular clamping flat prevents pull out

Available in T15PM H.S.S.
(Prices on application)



INTERNAL HEX BROACHES FOR SWISS HOLDERS

Inch - 8MM SHANK DIA. FOR ORBSWS						
HEX SIZE	A	B	C	L	STYLE	CAT. NO.
.050	.0505	.078	-	28MM	A	SWHX-050
1/16	.0635	.094	-	28MM	A	SWHX-1/16
5/64	.0786	.109	-	28MM	A	SWHX-5/64
3/32	.0947	.141	-	28MM	A	SWHX-3/32
7/64	.1106	.156	-	28MM	A	SWHX-7/64
1/8	.1265	.188	-	28MM	A	SWHX-1/8
9/64	.1421	.219	-	28MM	A	SWHX-9/64
5/32	.1582	.250	-	28MM	A	SWHX-5/32
3/16	.1895	.281	-	28MM	A	SWHX-3/16
7/32	.2212	.344	-	28MM	A	SWHX-7/32
1/4	.2525	.375	-	28MM	A	SWHX-1/4
9/32	.2840	-	.688	28MM	B	SWHX-9/32
5/16	.3155	-	.688	28MM	B	SWHX-5/16
11/32	.3467	-	.625	28MM	B	SWHX-11/32
3/8	.3785	-	.625	28MM	B	SWHX-3/8

Metric - 8MM SHANK DIA. FOR ORBSWS						
HEX SIZE	A	B	C	L	STYLE	CAT. NO.
1.5MM	.0605	.094	-	28MM	A	SWHX-1.5
2.0MM	.0805	.109	-	28MM	A	SWHX-2.0
2.5MM	.1005	.156	-	28MM	A	SWHX-2.5
3.0MM	.1205	.188	-	28MM	A	SWHX-3.0
4.0MM	.1605	.250	-	28MM	A	SWHX-4.0
5.0MM	.1995	.313	-	28MM	A	SWHX-5.0
6.0MM	.2395	.375	-	28MM	A	SWHX-6.0
7.0MM	.2785	-	.688	28MM	B	SWHX-7.0
8.0MM	.3185	-	.688	28MM	B	SWHX-8.0
9.0MM	.3575	-	.625	28MM	B	SWHX-9.0
10.0MM	.3985	-	.625	28MM	B	SWHX-10.0



INTERNAL SQUARE BROACHES FOR SWISS HOLDERS

Inch - 8MM SHANK DIA. FOR ORBSWS						
SQUARE SIZE	A	B	C	L	STYLE	CAT. NO.
1/16	.0635	.141	-	28MM	A	SWSQ-1/16
5/64	.0785	.141	-	28MM	A	SWSQ-5/64
3/32	.0947	.141	-	28MM	A	SWSQ-3/32
7/64	.1105	.188	-	28MM	A	SWSQ-7/64
1/8	.1265	.188	-	28MM	A	SWSQ-1/8
9/64	.1421	.281	-	28MM	A	SWSQ-9/64
5/32	.1582	.250	-	28MM	A	SWSQ-5/32
11/64	.1735	.281	-	28MM	A	SWSQ-11/64
3/16	.1895	.281	-	28MM	A	SWSQ-3/16
7/32	.2212	.344	-	28MM	A	SWSQ-7/32
1/4	.2522	-	.688	28MM	B	SWSQ-1/4
9/32	.2840	-	.625	28MM	B	SWSQ-9/32
5/16	.3155	-	.625	28MM	B	SWSQ-5/16

Metric - 8MM SHANK DIA. FOR ORBSWS						
SQUARE SIZE	A	B	C	L	STYLE	CAT. NO.
1.5MM	.0605	.109	-	28MM	A	SWSQ-1.5
2.0MM	.0805	.156	-	28MM	A	SWSQ-2.0
2.5MM	.1005	.188	-	28MM	A	SWSQ-2.5
3.0MM	.1205	.250	-	28MM	A	SWSQ-3.0
4.0MM	.1605	.313	-	28MM	A	SWSQ-4.0
5.0MM	.1995	.375	-	28MM	A	SWSQ-5.0
6.0MM	.2395	-	.688	28MM	B	SWSQ-6.0
7.0MM	.2785	-	.625	28MM	B	SWSQ-7.0

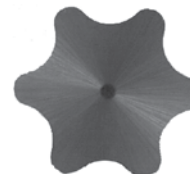
Hexagon go / no-go gages (with handle) are available upon request.

See page 50 for Broach Centering Gages.

INTERNAL BROACHES FOR 6 LOBED HEAD SCREWS FOR SWISS HOLDERS



8MM SHANK DIA. FOR ORBSW		
SHAPE	L	CAT. NO.
T5	28MM	SWTO-T5
T6	28MM	SWTO-T6
T7	28MM	SWTO-T7
T8	28MM	SWTO-T8
T9	28MM	SWTO-T9
T10	28MM	SWTO-T10
T15	28MM	SWTO-T15
T20	28MM	SWTO-T20
T25	28MM	SWTO-T25
T27	28MM	SWTO-T27
T30	28MM	SWTO-T30



Inch - .315 SHANK DIA. FOR ORB00/ORB0S

HEX SIZE	A	B	C	L	STYLE	CAT. NO.
.050	.0505	5/64	-	1-1/4	A	HX00-050
1/16	.0635	3/32	-	1-1/4	A	HX00-1/16
5/64	.0786	7/64	-	1-1/4	A	HX00-5/64
3/32	.0947	9/64	-	1-1/4	A	HX00-3/32
7/64	.1106	5/32	-	1-1/4	A	HX00-7/64
1/8	.1265	3/16	-	1-1/4	A	HX00-1/8
9/64	.1421	7/32	-	1-1/4	A	HX00-9/64
5/32	.1582	1/4	-	1-1/4	A	HX00-5/32
3/16	.1895	9/32	-	1-1/4	A	HX00-3/16
7/32	.2212	11/32	-	1-1/4	A	HX00-7/32
1/4	.2525	3/8	-	1-1/4	A	HX00-1/4
9/32	.2840	-	0.813	1-1/4	B	HX00-9/32
5/16	.3155	-	0.813	1-1/4	B	HX00-5/16
11/32	.3467	-	0.813	1-1/4	B	HX00-11/32
3/8	.3785	-	0.750	1-1/4	B	HX00-3/8
13/32	.4097	-	0.750	1-1/4	B	HX00-13/32
7/16	.4415	-	0.750	1-1/4	B	HX00-7/16
15/32	.4725	-	0.750	1-1/4	B	HX00-15/32
1/2	.5045	-	0.688	1-1/4	B	HX00-1/2

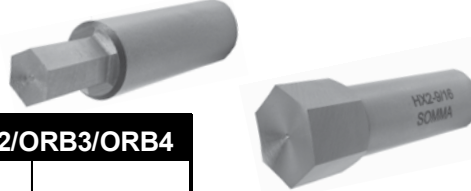
Metric - .315 SHANK DIA. FOR ORB00/ORB0S

HEX SIZE	A	B	C	L	STYLE	CAT. NO.
1.5MM	.0605	3/32	-	1-1/4	A	HX00-1.5
2.0MM	.0805	7/64	-	1-1/4	A	HX00-2.0
2.5MM	.1005	5/32	-	1-1/4	A	HX00-2.5
3.0MM	.1205	3/16	-	1-1/4	A	HX00-3.0
4.0MM	.1605	1/4	-	1-1/4	A	HX00-4.0
5.0MM	.1995	5/16	-	1-1/4	A	HX00-5.0
6.0MM	.2395	3/8	-	1-1/4	A	HX00-6.0
7.0MM	.2785	-	0.813	1-1/4	B	HX00-7.0
8.0MM	.3185	-	0.813	1-1/4	B	HX00-8.0
9.0MM	.3575	-	0.813	1-1/4	B	HX00-9.0
10.0MM	.3985	-	0.750	1-1/4	B	HX00-10.0
11.0MM	.4365	-	0.750	1-1/4	B	HX00-11.0
12.0MM	.4775	-	0.750	1-1/4	B	HX00-12.0

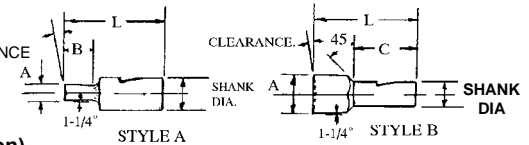
BROACHING

Hexagon go / no-go gages (with handle) are available upon request.

See page 50 for Broach Centering Gages.



Available in
T15PM H.S.S.
(Prices on application)



- * M2 HSS Hardened
- * Ground all over
- * Angular clamping flat prevents pull out
- * Fit all Rotating Broach Tools

Inch - .500 SHANK DIA. FOR ORB0/ORB2/ORB3/ORB4

HEX SIZE	A	B	C	L	STYLE	CAT. NO.
3/32	.0947	9/64	-	1-3/4	A	HX2-3/32
7/64	.1106	5/32	-	1-3/4	A	HX2-7/64
1/8	.1265	3/16	-	1-3/4	A	HX2-1/8
9/64	.1421	7/32	-	1-3/4	A	HX2-9/64
5/32	.1582	1/4	-	1-3/4	A	HX2-5/32
3/16	.1895	9/32	-	1-3/4	A	HX2-3/16
7/32	.2212	11/32	-	1-3/4	A	HX2-7/32
1/4	.2525	3/8	-	1-3/4	A	HX2-1/4
9/32	.2840	7/16	-	1-3/4	A	HX2-9/32
5/16	.3155	1/2	-	1-3/4	A	HX2-5/16
11/32	.3467	9/16	-	1-3/4	A	HX2-11/32
3/8	.3785	9/16	-	1-3/4	A	HX2-3/8
13/32	.4097	9/16	-	1-3/4	A	HX2-13/32
7/16	.4415	-	1.313	1-3/4	B	HX2-7/16
15/32	.4725	-	1.313	1-3/4	B	HX2-15/32
1/2	.5045	-	1.313	1-3/4	B	HX2-1/2
17/32	.5357	-	1.250	1-3/4	B	HX2-17/32
9/16	.5675	-	1.250	1-3/4	B	HX2-9/16
19/32	.5987	-	1.250	1-3/4	B	HX2-19/32
5/8	.6305	-	1.250	1-3/4	B	HX2-5/8
21/32	.6617	-	1.188	1-3/4	B	HX2-21/32
11/16	.6935	-	1.188	1-3/4	B	HX2-11/16
23/32	.7242	-	1.188	1-3/4	B	HX2-23/32
3/4	.7565	-	1.125	1-3/4	B	HX2-3/4

Metric - .500 SHANK DIA. FOR ORB0/ORB2/ORB3/ORB4

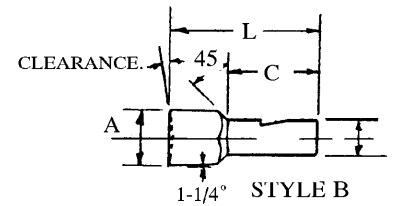
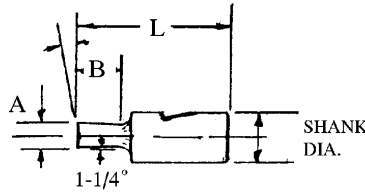
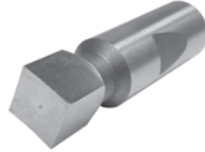
HEX SIZE	A	B	C	L	STYLE	CAT. NO.
2.0MM	.0805	9/64	-	1-3/4	A	HX2-2.0
2.5MM	.1005	5/32	-	1-3/4	A	HX2-2.5
3.0MM	.1205	3/16	-	1-3/4	A	HX2-3.0
4.0MM	.1605	1/4	-	1-3/4	A	HX2-4.0
5.0MM	.1995	5/16	-	1-3/4	A	HX2-5.0
6.0MM	.2395	3/8	-	1-3/4	A	HX2-6.0
7.0MM	.2785	7/16	-	1-3/4	A	HX2-7.0
8.0MM	.3185	1/2	-	1-3/4	A	HX2-8.0
9.0MM	.3575	9/16	-	1-3/4	A	HX2-9.0
10.0MM	.3985	9/16	-	1-3/4	A	HX2-10.0
11.0MM	.4365	-	1.313	1-3/4	B	HX2-11.0
12.0MM	.4775	-	1.313	1-3/4	B	HX2-12.0
13.0MM	.5165	-	1.313	1-3/4	B	HX2-13.0
14.0MM	.5565	-	1.250	1-3/4	B	HX2-14.0
15.0MM	.5965	-	1.250	1-3/4	B	HX2-15.0
16.0MM	.6355	-	1.250	1-3/4	B	HX2-16.0
17.0MM	.6775	-	1.188	1-3/4	B	HX2-17.0
18.0MM	.7145	-	1.188	1-3/4	B	HX2-18.0
19.0MM	.7575	-	1.125	1-3/4	B	HX2-19.0

Inch - .315 SHANK DIA. FOR ORB00/ORB0S

SQUARE SIZE	A	B	C	L	STYLE	CAT. NO.
1/16	.0635	9/64	-	1-1/4	A	SQ00-1/16
5/64	.0785	9/64	-	1-1/4	A	SQ00-5/64
3/32	.0947	9/64	-	1-1/4	A	SQ00-3/32
7/64	.1105	3/16	-	1-1/4	A	SQ00-7/64
1/8	.1265	3/16	-	1-1/4	A	SQ00-1/8
9/64	.1421	9/32	-	1-1/4	A	SQ00-9/64
5/32	.1582	1/4	-	1-1/4	A	SQ00-5/32
11/64	.1735	9/32	-	1-1/4	A	SQ00-11/64
3/16	.1895	9/32	-	1-1/4	A	SQ00-3/16
7/32	.2212	11/32	-	1-1/4	A	SQ00-7/32
1/4	.2525	-	0.813	1-1/4	B	SQ00-1/4
9/32	.2840	-	0.813	1-1/4	B	SQ00-9/32
5/16	.3155	-	0.750	1-1/4	B	SQ00-5/16
11/32	.3470	-	0.750	1-1/4	B	SQ00-11/32
3/8	.3785	-	0.750	1-1/4	B	SQ00-3/8
13/32	.4095	-	0.688	1-1/4	B	SQ00-13/32

Metric - .315 SHANK DIA. FOR ORB00/ORB0S

SQUARE SIZE	A	B	C	L	STYLE	CAT. NO.
1.50MM	.0605	7/64	-	1-1/4	A	SQ00-1.5
2.00MM	.0805	5/32	-	1-1/4	A	SQ00-2.0
2.50MM	.1005	3/16	-	1-1/4	A	SQ00-2.5
3.00MM	.1205	3/16	-	1-1/4	A	SQ00-3.0
4.00MM	.1605	5/16	-	1-1/4	A	SQ00-4.0
5.00MM	.1995	3/8	-	1-1/4	A	SQ00-5.0
6.00MM	.2395	-	0.813	1-1/4	B	SQ00-6.0
7.00MM	.2785	-	0.813	1-1/4	B	SQ00-7.0
8.00MM	.3195	-	0.750	1-1/4	B	SQ00-8.0
9.00MM	.3575	-	0.750	1-1/4	B	SQ00-9.0
10.00MM	.3985	-	0.688	1-1/4	B	SQ00-10.0



Inch - .500 SHANK DIA. FOR ORB0/ORB2/ORB3/ORB4

SQUARE SIZE	A	B	C	L	STYLE	CAT. NO.
3/32	.0947	9/64	-	1-3/4	A	SQ2-3/32
7/64	.1105	7/32	-	1-3/4	A	SQ2-7/64
1/8	.1265	3/16	-	1-3/4	A	SQ2-1/8
9/64	.1421	1/4	-	1-3/4	A	SQ2-9/64
5/32	.1582	1/4	-	1-3/4	A	SQ2-5/32
3/16	.1895	9/32	-	1-3/4	A	SQ2-3/16
7/32	.2212	11/32	-	1-3/4	A	SQ2-7/32
1/4	.2525	3/8	-	1-3/4	A	SQ2-1/4
9/32	.2840	7/16	-	1-3/4	A	SQ2-9/32
5/16	.3155	1/2	-	1-3/4	A	SQ2-5/16
11/32	.3470	9/16	-	1-3/4	A	SQ2-11/32
3/8	.3785	-	1.313	1-3/4	B	SQ2-3/8
13/32	.4097	-	1.313	1-3/4	B	SQ2-13/32
7/16	.4415	-	1.250	1-3/4	B	SQ2-7/16
1/2	.5045	-	1.250	1-3/4	B	SQ2-1/2
17/32	.5357	-	1.188	1-3/4	B	SQ2-17/32
9/16	.5675	-	1.188	1-3/4	B	SQ2-9/16
19/32	.5987	-	1.188	1-3/4	B	SQ2-19/32
5/8	.6305	-	1.125	1-3/4	B	SQ2-5/8

Metric - .500 SHANK DIA. FOR ORB0/ORB2/ORB3/ORB4

SQUARE SIZE	A	B	C	L	STYLE	CAT. NO.
2.00MM	.0805	5/32	-	1-3/4	A	SQ2-2.0
2.50MM	.1005	3/16	-	1-3/4	A	SQ2-2.5
3.00MM	.1205	1/4	-	1-3/4	A	SQ2-3.0
4.00MM	.1605	5/16	-	1-3/4	A	SQ2-4.0
5.00MM	.1995	3/8	-	1-3/4	A	SQ2-5.0
6.00MM	.2395	1/2	-	1-3/4	A	SQ2-6.0
7.00MM	.2785	9/16	-	1-3/4	A	SQ2-7.0
8.00MM	.3195	9/16	-	1-3/4	A	SQ2-8.0
9.00MM	.3575	-	1.313	1-3/4	B	SQ2-9.0
10.0MM	.3985	-	1.313	1-3/4	B	SQ2-10.0
11.0MM	.4365	-	1.250	1-3/4	B	SQ2-11.0
12.0MM	.4775	-	1.250	1-3/4	B	SQ2-12.0
13.0MM	.5165	-	1.250	1-3/4	B	SQ2-13.0
14.0MM	.5565	-	1.188	1-3/4	B	SQ2-14.0
15.0MM	.5965	-	1.188	1-3/4	B	SQ2-15.0



See page 50 for Broach Centering Gages.

INTERNAL BROACHES FOR 6 LOBED HEAD SCREWS

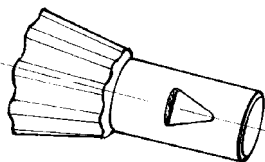
.315 SHANK DIA. FOR ORB00/ORB0S

SHAPE	L	STYLE	CAT. NO.
T5	1-1/4	A	TO00-T5
T6	1-1/4	A	TO00-T6
T7	1-1/4	A	TO00-T7
T8	1-1/4	A	TO00-T8
T9	1-1/4	A	TO00-T9
T10	1-1/4	A	TO00-T10
T15	1-1/4	A	TO00-T15
T20	1-1/4	A	TO00-T20
T25	1-1/4	A	TO00-T25
T27	1-1/4	A	TO00-T27
T30	1-1/4	A	TO00-T30
T40	1-1/4	A	TO00-T40
T45	1-1/4	A	TO00-T45
T50	1-1/4	B	TO00-T50
T55	1-1/4	B	TO00-T55

.500 SHANK DIA. FOR ORB0/ORB2/ORB3/ORB4

SHAPE	L	STYLE	CAT. NO.
T5	1-3/4	A	TO2-T5
T6	1-3/4	A	TO2-T6
T7	1-3/4	A	TO2-T7
T8	1-3/4	A	TO2-T8
T9	1-3/4	A	TO2-T9
T10	1-3/4	A	TO2-T10
T15	1-3/4	A	TO2-T15
T20	1-3/4	A	TO2-T20
T25	1-3/4	A	TO2-T25
T27	1-3/4	A	TO2-T27
T30	1-3/4	A	TO2-T30
T40	1-3/4	A	TO2-T40
T45	1-3/4	A	TO2-T45
T50	1-3/4	A	TO2-T50
T55	1-3/4	A	TO2-T55
T60	1-3/4	B	TO2-T60
T70	1-3/4	B	TO2-T70
T90	1-3/4	B	TO2-T90
T100	1-3/4	B	TO2-T100

- * M2 HSS Hardened
- * Ground all over
- * Angular clamping flat prevents pull out
- * Fit all Rotating Broach Tools



Broach gages available - see page 50.

Inch - .315 SHANK DIA. FOR ORB00/ORB0S

DBL. HEX SIZE	A	B	C	L	STYLE	CAT. NO.
1/4	.2525	3/8	-	1-1/4	A	DHX00-1/4
9/32	.2840	-	0.813	1-1/4	B	DHX00-9/32
5/16	.3155	-	0.813	1-1/4	B	DHX00-5/16
11/32	.3467	-	0.813	1-1/4	B	DHX00-11/32
3/8	.3785	-	0.750	1-1/4	B	DHX00-3/8
13/32	.4097	-	0.750	1-1/4	B	DHX00-13/32
7/16	.4415	-	0.750	1-1/4	B	DHX00-7/16
15/32	.4725	-	0.750	1-1/4	B	DHX00-15/32
1/2	.5045	-	0.688	1-1/4	B	DHX00-1/2

Metric - .315 SHANK DIA. FOR ORB00/ORB0S

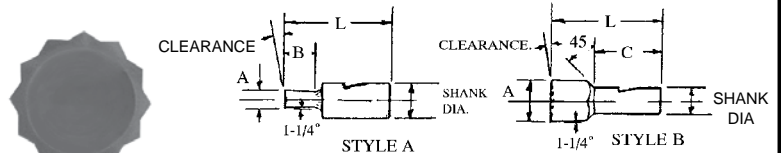
DBL. HEX SIZE	A	B	C	L	STYLE	CAT. NO.
6MM	.2395	3/8	-	1-1/4	A	DHX00-6.0
7MM	.2785	3/8	0.813	1-1/4	B	DHX00-7.0
8MM	.3185	3/8	0.813	1-1/4	B	DHX00-8.0
9MM	.3575	3/8	0.813	1-1/4	B	DHX00-9.0
10MM	.3985	3/8	0.750	1-1/4	B	DHX00-10.0
11MM	.4365	3/8	0.750	1-1/4	B	DHX00-11.0
12MM	.4775	3/8	0.750	1-1/4	B	DHX00-12.0

Inch - .500 SHANK DIA. FOR ORB0/ORB2/ORB3/ORB4

DBL. HEX SIZE	A	B	C	L	STYLE	CAT. NO.
1/4	.2525	3/8	-	1-3/4	A	DHX2-1/4
9/32	.2840	7/16	-	1-3/4	A	DHX2-9/32
5/16	.3155	1/2	-	1-3/4	A	DHX2-5/16
11/32	.3467	9/16	-	1-3/4	A	DHX2-11/32
3/8	.3785	9/16	-	1-3/4	A	DHX2-3/8
13/32	.4097	9/16	-	1-3/4	A	DHX2-13/32
7/16	.4415	-	1.313	1-3/4	B	DHX2-7/16
15/32	.4725	-	1.313	1-3/4	B	DHX2-15/32
1/2	.5045	-	1.313	1-3/4	B	DHX2-1/2
17/32	.5357	-	1.250	1-3/4	B	DHX2-17/32
9/16	.5675	-	1.250	1-3/4	B	DHX2-9/16
19/32	.5987	-	1.250	1-3/4	B	DHX2-19/32
5/8	.6305	-	1.250	1-3/4	B	DHX2-5/8
21/32	.6617	-	1.188	1-3/4	B	DHX2-21/32
11/16	.6935	-	1.188	1-3/4	B	DHX2-11/16
23/32	.7242	-	1.188	1-3/4	B	DHX2-23/32
3/4	.7565	-	1.125	1-3/4	B	DHX2-3/4

Metric - .500 SHANK DIA. FOR ORB0/ORB2/ORB3/ORB4

DBL. HEX SIZE	A	B	C	L	STYLE	CAT. NO.
6MM	.2395	3/8	-	1-3/4	A	DHX2-6.0
7MM	.2785	7/16	-	1-3/4	A	DHX2-7.0
8MM	.3195	1/2	-	1-3/4	A	DHX2-8.0
9MM	.3575	9/16	-	1-3/4	A	DHX2-9.0
10MM	.3985	9/16	-	1-3/4	A	DHX2-10.0
11MM	.4365	-	1.313	1-3/4	B	DHX2-11.0
12MM	.4775	-	1.313	1-3/4	B	DHX2-12.0



- * M2 HSS Hardened
- * Ground all over
- * Angular clamping flat prevents pull out
- * Fit all Rotating Broach Tools

See page 50 for Broach Centering Gages.

Available in T15PM H.S.S. (Prices on application)

Inch - .750 SHANK DIA. FOR ORBHDS/ORBHD

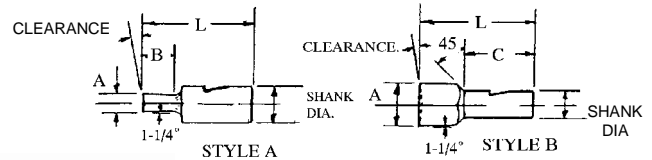
DBL. HEX SIZE	A	B	C	L	STYLE	CAT. NO.
13/32	.4097	5/8	-	2-1/2	A	DHX3-13/32
7/16	.4415	25/32	-	2-1/2	A	DHX3-7/16
15/32	.4725	25/32	-	2-1/2	A	DHX3-15/32
1/2	.5045	25/32	-	2-1/2	A	DHX3-1/2
17/32	.5357	29/32	-	2-1/2	A	DHX3-17/32
9/16	.5675	29/32	-	2-1/2	A	DHX3-9/16
19/32	.5987	7/8	-	2-1/2	A	DHX3-19/32
5/8	.6305	7/8	-	2-1/2	A	DHX3-5/8
21/32	.6617	-	1-7/8	2-3/4	B	DHX3-21/32
11/16	.6935	-	1-7/8	2-3/4	B	DHX3-11/16
23/32	.7242	-	1-7/8	2-3/4	B	DHX3-23/32
3/4	.7565	-	1-7/8	2-3/4	B	DHX3-3/4
25/32	.7877	-	1-7/8	2-3/4	B	DHX3-25/32
13/16	.8195	-	1-7/8	2-3/4	B	DHX3-13/16
27/32	.8512	-	1-7/8	2-3/4	B	DHX3-27/32
7/8	.8845	-	1-7/8	2-3/4	B	DHX3-7/8
29/32	.9157	-	1-7/8	2-3/4	B	DHX3-29/32
15/16	.9470	-	1-7/8	2-3/4	B	DHX3-15/16
31/32	.9782	-	1-7/8	2-3/4	B	DHX3-31/32
1"	1.0095	-	1-7/8	2-3/4	B	DHX3-1

Metric - .750 SHANK DIA. FOR ORBHDS/ORBHD

DBL. HEX SIZE	A	B	C	L	STYLE	CAT. NO.
10.0MM	.3985	5/8	-	2-1/2	A	DHX3-10.0
11.0MM	.4365	25/32	-	2-1/2	A	DHX3-11.0
12.0MM	.4775	25/32	-	2-1/2	A	DHX3-12.0
13.0MM	.5165	25/32	-	2-1/2	A	DHX3-13.0
14.0MM	.5565	29/32	-	2-1/2	A	DHX3-14.0
15.0MM	.5965	7/8	-	2-1/2	A	DHX3-15.0
16.0MM	.6355	7/8	-	2-1/2	A	DHX3-16.0
17.0MM	.6775	-	1-7/8	2-3/4	B	DHX3-17.0
18.0MM	.7145	-	1-7/8	2-3/4	B	DHX3-18.0
19.0MM	.7575	-	1-7/8	2-3/4	B	DHX3-19.0
20.0MM	.7945	-	1-7/8	2-3/4	B	DHX3-20.0
21.0MM	.8355	-	1-7/8	2-3/4	B	DHX3-21.0
22.0MM	.8785	-	1-7/8	2-3/4	B	DHX3-22.0
23.0MM	.9155	-	1-7/8	2-3/4	B	DHX3-23.0
24.0MM	.9565	-	1-7/8	2-3/4	B	DHX3-24.0
25.0MM	.9935	-	1-7/8	2-3/4	B	DHX3-25.0
26.0MM	1.0335	-	1-7/8	2-3/4	B	DHX3-26.0

Inch - .750 SHANK DIA FOR ORBHDS/ORBHD						
HEX SIZE	A	B	C	L	STYLE	HEX CAT. NO.
1/4	.2525	3/8	-	2-1/2	A	HX3-1/4
9/32	.2840	1/2	-	2-1/2	A	HX3-9/32
5/16	.3155	1/2	-	2-1/2	A	HX3-5/16
11/32	.3467	17/32	-	2-1/2	A	HX3-11/32
3/8	.3785	9/16	-	2-1/2	A	HX3-3/8
13/32	.4097	5/8	-	2-1/2	A	HX3-13/32
7/16	.4415	21/32	-	2-1/2	A	HX3-7/16
15/32	.4725	11/16	-	2-1/2	A	HX3-15/32
1/2	.5045	25/32	-	2-1/2	A	HX3-1/2
17/32	.5357	27/32	-	2-1/2	A	HX3-17/32
9/16	.5675	29/32	-	2-1/2	A	HX3-9/16
19/32	.5987	31/32	-	2-1/2	A	HX3-19/32
5/8	.6305	1"	-	2-1/2	A	HX3-5/8
21/32	.6617	-	1-7/8	2-3/4	B	HX3-21/32
11/16	.6935	-	1-7/8	2-3/4	B	HX3-11/16
23/32	.7242	-	1-7/8	2-3/4	B	HX3-23/32
3/4	.7565	-	1-7/8	2-3/4	B	HX3-3/4
25/32	.7877	-	1-7/8	2-3/4	B	HX3-25/32
13/16	.8195	-	1-7/8	2-3/4	B	HX3-13/16
27/32	.8512	-	1-7/8	2-3/4	B	HX3-27/32
7/8	.8845	-	1-7/8	2-3/4	B	HX3-7/8
29/32	.9157	-	1-7/8	2-3/4	B	HX3-29/32
15/16	.9470	-	1-7/8	2-3/4	B	HX3-15/16
31/32	.9782	-	1-7/8	2-3/4	B	HX3-31/32
1"	1.0095	-	1-7/8	2-3/4	B	HX3-1

Metric - .750 SHANK DIA FOR ORBHDS/ORBHD						
HEX SIZE	A	B	C	L	STYLE	HEX CAT. NO.
6.0MM	.2395	3/8	-	2-1/2	A	HX3-6.0
7.0MM	.2785	7/16	-	2-1/2	A	HX3-7.0
8.0MM	.3195	1/2	-	2-1/2	A	HX3-8.0
9.0MM	.3575	17/32	-	2-1/2	A	HX3-9.0
10.0MM	.3985	9/16	-	2-1/2	A	HX3-10.0
11.0MM	.4365	5/8	-	2-1/2	A	HX3-11.0
12.0MM	.4775	11/16	-	2-1/2	A	HX3-12.0
13.0MM	.5165	23/32	-	2-1/2	A	HX3-13.0
14.0MM	.5565	25/32	-	2-1/2	A	HX3-14.0
15.0MM	.5965	13/16	-	2-1/2	A	HX3-15.0
16.0MM	.6355	15/16	-	2-1/2	A	HX3-16.0
17.0MM	.6775	-	1-7/8	2-3/4	B	HX3-17.0
18.0MM	.7145	-	1-7/8	2-3/4	B	HX3-18.0
19.0MM	.7575	-	1-7/8	2-3/4	B	HX3-19.0
20.0MM	.7945	-	1-7/8	2-3/4	B	HX3-20.0
21.0MM	.8355	-	1-7/8	2-3/4	B	HX3-21.0
22.0MM	.8785	-	1-7/8	2-3/4	B	HX3-22.0
23.0MM	.9155	-	1-7/8	2-3/4	B	HX3-23.0
24.0MM	.9565	-	1-7/8	2-3/4	B	HX3-24.0
25.0MM	.9935	-	1-7/8	2-3/4	B	HX3-25.0
26.0MM	1.0335	-	1-7/8	2-3/4	B	HX3-26.0



Available in T15PM H.S.S.
(Prices on application)



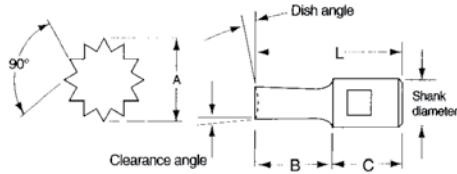
- * M2 HSS Hardened
- * Ground all over
- * Angular clamping flat prevents pull out
- * Fit all Rotating Broach Tools

Hexagon go / no-go gages (with handle) are available upon request.

See page 50 for Broach Centering Gages.

Inch - .750 SHANK DIA FOR ORBHDS/ORBHD						
SQUARE SIZE	A	B	C	L	STYLE	CAT. NO.
9/32	.2840	7/16	-	2-1/2	A	SQ3-9/32
5/16	.3155	1/2	-	2-1/2	A	SQ3-5/16
11/32	.3467	9/16	-	2-1/2	A	SQ3-11/32
3/8	.3785	9/16	-	2-1/2	A	SQ3-3/8
13/32	.4097	5/8	-	2-1/2	A	SQ3-13/32
7/16	.4415	5/8	-	2-1/2	A	SQ3-7/16
15/32	.4725	25/32	-	2-1/2	A	SQ3-15/32
1/2	.5045	25/32	-	2-1/2	A	SQ3-1/2
17/32	.5357	-	1-7/8	2-3/4	B	SQ3-17/32
9/16	.5675	-	1-7/8	2-3/4	B	SQ3-9/16
19/32	.5987	-	1-7/8	2-3/4	B	SQ3-19/32
5/8	.6305	-	1-7/8	2-3/4	B	SQ3-5/8
21/32	.6617	-	1-7/8	2-3/4	B	SQ3-21/32
11/16	.6935	-	1-7/8	2-3/4	B	SQ3-11/16
23/32	.7242	-	1-7/8	2-3/4	B	SQ3-23/32
3/4	.7565	-	1-7/8	2-3/4	B	SQ3-3/4
25/32	.7877	-	1-7/8	2-3/4	B	SQ3-25/32
13/16	.8195	-	1-7/8	2-3/4	B	SQ3-13/16

Metric - .750 SHANK DIA FOR ORBHDS/ORBHD						
SQUARE SIZE	A	B	C	L	STYLE	CAT. NO.
6.00MM	.2395	25/32	-	2-1/2	A	SQ3-6.0
7.00MM	.2785	25/32	-	2-1/2	A	SQ3-7.0
8.00MM	.3195	1/2	-	2-1/2	A	SQ3-8.0
9.00MM	.3575	17/32	-	2-1/2	A	SQ3-9.0
10.00MM	.3985	9/16	-	2-1/2	A	SQ3-10.0
11.00MM	.4365	9/16	-	2-1/2	A	SQ3-11.0
12.00MM	.4775	11/16	-	2-1/2	A	SQ3-12.0
13.00MM	.5165	3/4	-	2-1/2	A	SQ3-13.0
14.00MM	.5565	3/4	1-7/8	2-3/4	B	SQ3-14.0
15.00MM	.5965	3/4	1-7/8	2-3/4	B	SQ3-15.0
16.00MM	.6355	3/4	1-7/8	2-3/4	B	SQ3-16.0
17.00MM	.6775	3/4	1-7/8	2-3/4	B	SQ3-17.0
18.00MM	.7145	3/4	1-7/8	2-3/4	B	SQ3-18.0
19.00MM	.7575	3/4	1-7/8	2-3/4	B	SQ3-19.0
20.00MM	.7945	3/4	1-7/8	2-3/4	B	SQ3-20.0



J500 INTERNAL



J500 - .500 SHANK DIA. FOR ORB0/ORB2/ORB3/ORB4

J500 SIZE	Number of Teeth	A	C	L	STYLE	CAT. NO.
1/2	36	.5081	1.313	1-3/4	B	J52-1/2
5/8	36	.6338	1.250	1-3/4	B	J52-5/8
3/4	48	.7586	1.188	1-3/4	B	J52-3/4

J500 - .750 SHANK DIA. FOR ORBHDS/ORBHD

J500 SIZE	Number of Teeth	A	B	C	L	STYLE	CAT. NO.
1/2	36	.5081	25/32	--	2-1/2	A	J53-1/2
5/8	36	.6338	1"	--	2-1/2	A	J53-5/8
3/4	48	.7586	--	1-7/8	2-3/4	B	J53-3/4
7/8	48	.8849	--	1-7/8	2-3/4	B	J53-7/8
1"	48	1.0110	--	1-7/8	2-3/4	B	J53-1

Broach gages available - see below.

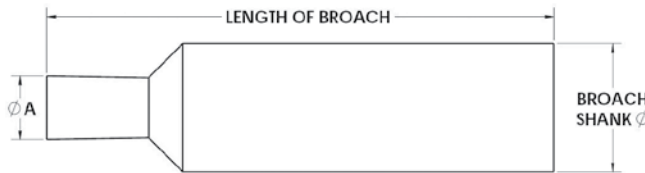


INTERNAL ROTARY BROACH SET UP TOOL GAGE

Using this gage will allow you to center your broach tool in minutes.

To order:

Match the broach **shank diameter and broach length** of the broach currently using with the corresponding catalog number shown in the chart.



BROACH SHANK O.D.	LENGTH OF BROACH	CAT. NO.	A
.315 (8MM)	28MM (1.103")	CPSW-1.103	.156
.315 (8MM)	1-1/4"	CP00-1.25	.156
.315 (8MM)	1-1/2"	CP00-1.50	.156
.315 (8MM)	2"	CP00-2.00	.156
.500	1-1/2"	CP2-1.50	.250
.500	1-3/4"	CP2-1.75	.250
.500	2"	CP2-2.00	.250
.500	2-1/4"	CP2-2.25	.250
.500	2-1/2"	CP2-2.50	.250
.500	2-3/4"	CP2-2.75	.250
.500	3"	CP2-3.00	.250
.750	2-1/2"	CPHD-2.50	.250
.750	2-3/4"	CPHD-2.75	.250

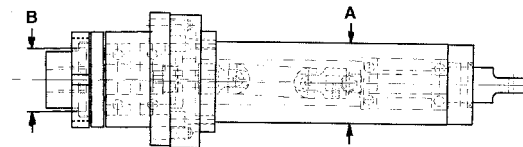
DRIVEN ROTATING BROACH HOLDERS FOR MULTIPLE SPINDLE AND CNC MACHINES

- Rotated by machine drive shaft
- Mounts in endworking tool holder block
- Rotates broach at same RPM as workpiece
- Eliminates spiralling
- Eliminates skidding action at start of cut
- Produces accurate straight broached forms
- Available for external and internal cutting
- Spline drive shafts available (Price on application)
- Can remove shank to center it off the machine.



Standard from stock HSS broaches shown on pages 46 - 49.

Broach gages available - see above.



CAT. NO.	INTERNAL BROACHING	
	"A"	BROACH SHANK DIA.
DB-1.50-ORB2	1.500	.500
DB-2.00-ORB2	2.000	.500
DB-2.25-ORB2	2.250	.500
DB-50MM-ORB2	50MM	.500

CAT. NO.	EXTERNAL BROACHING	
	"A"	"B"
DB-1.50-ORB2	1.500	1.575
DB-2.00-ORB2	2.000	1.575
DB-2.25-ORB2	2.250	1.575
DB-50MM-ORB2	50MM	1.575

ALL BROACH HEAD DIMENSIONS SAME AS ORB2 AND ORBX2 AS SHOWN ON PAGES 43 & 51.



EXTERNAL ROTARY BROACHING



The process of forming an external shape on the turned O.D. of a part. Generally used on applications where the length of the form does not exceed three times the diameter of the form.



Used on all types of machines to produce hundreds of items like hex and square drivers, faucet splines, involute gears and knurled parts to name a few.

BROACHING

OFFSET EXTERNAL ROTATING BROACH TOOL

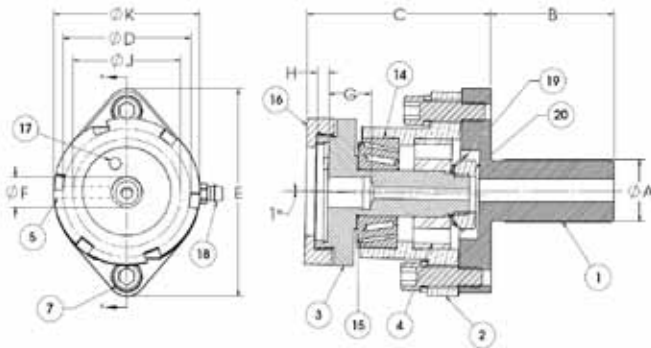
This tool is used to produce hexagons, splines or other irregular shapes on external surfaces of the workpiece as it is rotating in the spindle of the machine.



Standard from stock H.S.S. external broaches shown on pg 52.

ALL EXTERNAL HOLDERS EXCEPT ORBX00 CAN ALSO BE USED FOR INTERNAL BROACHING!

CAT. NO.	A	B	C	D	E	F	G	H	J+.001	K
ORBX00	5/8	1-1/2	2-1/16	1-1/2	2-7/16	.375	1/2	3/16	.945	1-5/8
ORBX00/16MM	16MM	1-1/2	2-1/16	1-1/2	2-7/16	.500	1/2	3/16	.945	1-5/8
ORBX00/20MM	20MM	1-1/2	2-1/16	1-1/2	2-7/16	.500	1/2	3/16	.945	1-5/8
ORBX00/22MM	22MM	1-1/2	2-1/16	1-1/2	2-7/16	.500	1/2	3/16	.945	1-5/8
ORBX0S (Davenport)	3/4	2"	2-13/32	1-1/2	2-7/16	.500	11/16	3/16	.945	1-5/8
ORBX0	3/4	2"	2-15/16	2-3/8	3-5/16	.500	.700	3/16	1.575	2-3/8
ORBX2	1"	2"	2-15/16	2-3/8	3-5/16	.500	.700	3/16	1.575	2-3/8
ORBX2/20MM	20MM	2"	2-15/16	2-3/8	3-5/16	.500	.700	3/16	1.575	2-3/8
ORBX2/22MM	22MM	2"	2-15/16	2-3/8	3-5/16	.500	.700	3/16	1.575	2-3/8
ORBX2/25MM	25MM	2"	2-15/16	2-3/8	3-5/16	.500	.700	3/16	1.575	2-3/8
ORBX3	1-1/4	3"	2-15/16	2-3/8	3-5/16	.500	.700	3/16	1.575	2-3/8
ORBX3/32MM	32MM	3"	2-15/16	2-3/8	3-5/16	.500	.700	3/16	1.575	2-3/8
ORBX4	1-1/2	3"	2-15/16	2-3/8	3-5/16	.500	.700	3/16	1.575	2-3/8
ORBXHDS	1-1/2	3"	4-3/4	3-1/2	5-1/4	.750	7/8	3/16	2.500	3-5/8
ORBXHDS/32MM	32MM	3"	4-3/4	3-1/2	5-1/4	.750	7/8	3/16	2.500	3-5/8
ORBXHD	1-3/4	3"	4-3/4	3-1/2	5-1/4	.750	7/8	3/16	2.500	3-5/8



Also available with CAT, VDI, CAPTO C6, HSK & Morse Taper Shanks

ALL OTHER FEATURES & PARTS ARE THE SAME AS THE INTERNAL ROTATING BROACH TOOLS SHOWN ON TOP OF PG. 43.

Part No.	ORBX00 Cat No.	ORBX0S Cat No.	ORBX0 Cat No.	ORBX2 Cat No.	ORBX3 Cat No.	ORBX4 Cat No.	ORBXHDS Cat No.	ORBXHD Cat No.
3. Spindle	ORBX00-3N	ORBX0S-3N	ORBX2-3N	ORB2-3N	ORB2-3N	ORB2-3N	ORB2-3N	ORB2-3N
5. Set Screw	---	ORB2-5	ORB2-5	ORB2-5	ORB2-5	ORB2-5	---	---
16. Spindle Cap	ORBX00-16	ORBX00-16	ORB2-16	ORB2-16	ORB2-16	ORB2-16	ORB2-16	ORB2-16
17. Drive Pin	ORBX00-17	ORBX00-17	ORB2-17	ORB2-17	ORB2-17	ORB2-17	ORB2-17	ORB2-17
Spanner Wrench	ADH00-3	ADH00-3	ADH2-3	ADH2-3	ADH2-3	ADH2-3	ORB2-17	ORB2-17

CNC

MULTI-
SPINDLE

BROWN &
SHARPE

DAVENPORT

Inch

.9445 MOUNTING DIAMETER FOR ORBX00/ORBX0S

HEX SIZE	A	L = 3/8	L = 1"
		CAT. NO.	CAT. NO.
1/4	.2435	EHX00-1/4	EHX0S-1/4
9/32	.2745	EHX00-9/32	EHX0S-9/32
5/16	.3045	EHX00-5/16	EHX0S-5/16
11/32	.3355	EHX00-11/32	EHX0S-11/32
3/8	.3665	EHX00-3/8	EHX0S-3/8
13/32	.3965	EHX00-13/32	EHX0S-13/32
7/16	.4275	EHX00-7/16	EHX0S-7/16

Inch

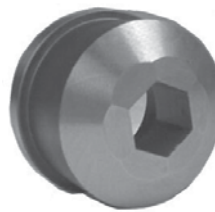
1.5745 MOUNTING DIA. FOR ORBX0/ORBX2/ORBX3/ORBX4

HEX SIZE	A	L = 1"	L = 1-3/4
		CAT. NO.	CAT. NO.
1/4	.2435	EHX2-1/4	EHX2L-1/4
9/32	.2745	EHX2-9/32	EHX2L-9/32
5/16	.3045	EHX2-5/16	EHX2L-5/16
11/32	.3355	EHX2-11/32	EHX2L-11/32
3/8	.3665	EHX2-3/8	EHX2L-3/8
13/32	.3965	EHX2-13/32	EHX2L-13/32
7/16	.4275	EHX2-7/16	EHX2L-7/16
15/32	.4625	EHX2-15/32	EHX2L-15/32
1/2	.4885	EHX2-1/2	EHX2L-1/2
17/32	.5195	EHX2-17/32	EHX2L-17/32
9/16	.5505	EHX2-9/16	EHX2L-9/16
19/32	.5815	EHX2-19/32	EHX2L-19/32
5/8	.6115	EHX2-5/8	EHX2L-5/8
21/32	.6425	EHX2-21/32	EHX2L-21/32
11/16	.6735	EHX2-11/16	EHX2L-11/16
23/32	.7045	EHX2-23/32	EHX2L-23/32
3/4	.7355	EHX2-3/4	EHX2L-3/4
25/32	.7665	EHX2-25/32	EHX2L-25/32
13/16	.7975	EHX2-13/16	EHX2L-13/16
27/32	.8285	EHX2-27/32	EHX2L-27/32
7/8	.8595	EHX2-7/8	EHX2L-7/8
29/32	.8905	EHX2-29/32	EHX2L-29/32
15/16	.9215	EHX2-15/16	EHX2L-15/16
31/32	.9515	EHX2-31/32	EHX2L-31/32
1"	.9815	EHX2-1	EHX2L-1

Metric

.9445 MOUNTING DIAMETER FOR ORBX00/ORBX0S

HEX SIZE	A	L = 3/8	L = 1"
		CAT. NO.	CAT. NO.
6MM	.2275	EHX00-6.0	EHX0S-6.0
7MM	.2665	EHX00-7.0	EHX0S-7.0
8MM	.3055	EHX00-8.0	EHX0S-8.0
9MM	.3455	EHX00-9.0	EHX0S-9.0
10MM	.3845	EHX00-10.0	EHX0S-10.0



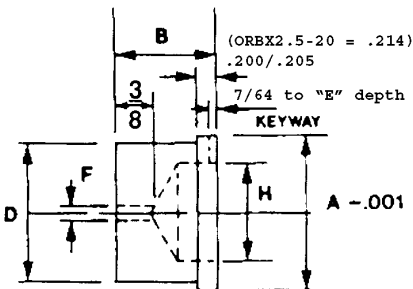
Note: External square broaches also available.

Metric

1.5745 MOUNTING DIA. FOR ORBX0/ORBX2/ORBX3/ORBX4

HEX SIZE	A	L = 1"	L = 1-3/4
		CAT. NO.	CAT. NO.
6MM	.2275	EHX2-6.0	EHX2L-6.0
7MM	.2665	EHX2-7.0	EHX2L-7.0
8MM	.3055	EHX2-8.0	EHX2L-8.0
9MM	.3455	EHX2-9.0	EHX2L-9.0
10MM	.3845	EHX2-10.0	EHX2L-10.0
11MM	.4235	EHX2-11.0	EHX2L-11.0
12MM	.4615	EHX2-12.0	EHX2L-12.0
13MM	.5005	EHX2-13.0	EHX2L-13.0
14MM	.5395	EHX2-14.0	EHX2L-14.0
15MM	.5795	EHX2-15.0	EHX2L-15.0
16MM	.6185	EHX2-16.0	EHX2L-16.0
17MM	.6585	EHX2-17.0	EHX2L-17.0
18MM	.6975	EHX2-18.0	EHX2L-18.0
19MM	.7365	EHX2-19.0	EHX2L-19.0
20MM	.7745	EHX2-20.0	EHX2L-20.0
21MM	.8135	EHX2-21.0	EHX2L-21.0
22MM	.8525	EHX2-22.0	EHX2L-22.0
23MM	.8925	EHX2-23.0	EHX2L-23.0
24MM	.9315	EHX2-24.0	EHX2L-24.0
25MM	.9695	EHX2-25.0	EHX2L-25.0

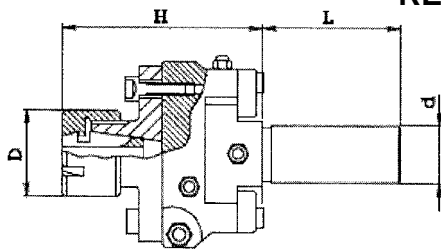
See pages 50 and 51 for holders for these external broaches.



EXTERNAL BROACH BLANKS

TO FIT	A	B	D	E	F	H	M2 H.S.S.	T15PM H.S.S.
							CAT. NO.	CAT. NO.
ORBX00	0.9448	3/8	.750	.094	3/32	-	ORBX00-20	ORBX00-20-P
ORBX0S	0.9448	1"	.750	.094	3/32	1/2	ORBX0S-20	ORBX0S-20-P
ORBX0	1.5740	1"	1.406	.188	3/32	1"	ORBX2-20	ORBX2-20-P
ORBX2							ORBX2-20L	ORBX2-20L-P
ORBX3							ORBX2.5-20	ORBX2.5-20-P
ORBX4							ORBX2.5-20	ORBX2.5-20-P
	2.312	1"	2.060	.086	3/32	1-1/2"	ORBXHD-20	ORBXHD-20-P
ORBXHD	2.500	1-1/4	2.313	.188	3/32	1-13/16	ORBXHD-20	ORBXHD-20-P

RECESS TOOL HOLDER / ER COLLET

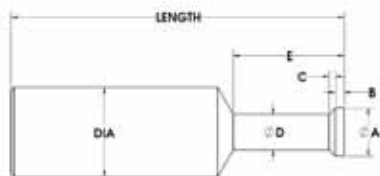


- CENTER HEIGHT ADJUSTMENT
- SERRATED FACE FOR EASY OFFSET ADJUSTMENT AND RIGIDITY
- SLIDING STROKE ADJUSTMENT (20MM MAXIMUM)
- GIB ADJUSTMENT
- 3 LOCATING POSITIONS FOR BUMP

SHANK d	COLLET SERIES	COLLET RANGE	COLLET NUT (INCLUDED)	COLLET WRENCH (NOT INCLUDED)	D	H	L	CAT. NO.
3/4"	ER16	1/16" TO 13/32"	ER16M	ER16MW	22mm	64mm	46mm	SS075RTER16
3/4"	ER20	1/16" TO 1/2"	ER20M	ER20MW	28mm	68mm	46mm	SS075RTER20
3/4"	ER25	1/16" TO 5/8"	ER25M	ER25MW	35mm	82mm	50mm	SS075RTER25
1"	ER16	1/16" TO 13/32"	ER16M	ER16MW	22mm	64mm	46mm	SS100RTER16
1"	ER20	1/16" TO 1/2"	ER20M	ER20MW	28mm	76mm	50mm	SS100RTER20
1"	ER25	1/16" TO 5/8"	ER25M	ER25MW	35mm	82mm	50mm	SS100RTER25
1-1/4"	ER20	1/16" TO 1/2"	ER20M	ER20MW	28mm	76mm	50mm	SS125RTER20
1-1/4"	ER25	1/16" TO 5/8"	ER25M	ER25MW	35mm	82mm	50mm	SS125RTER25
20mm	ER16	1/16" TO 13/32"	ER16M	ER16MW	22mm	64mm	46mm	SS20RTER16
20mm	ER20	1/16" TO 1/2"	ER20M	ER20MW	28mm	68mm	46mm	SS20RTER20
20mm	ER25	1/16" TO 5/8"	ER25M	ER25MW	35mm	82mm	50mm	SS20RTER25
22mm	ER16	1/16" TO 13/32"	ER16M	ER16MW	22mm	64mm	46mm	SS22RTER16
22mm	ER20	1/16" TO 1/2"	ER20M	ER20MW	28mm	76mm	50mm	SS22RTER20
22mm	ER25	1/16" TO 5/8"	ER25M	ER25MW	35mm	82mm	50mm	SS22RTER25
25mm	ER16	1/16" TO 13/32"	ER16M	ER16MW	22mm	64mm	46mm	SS25RTER16
25mm	ER20	1/16" TO 1/2"	ER20M	ER20MW	28mm	76mm	50mm	SS25RTER20
25mm	ER25	1/16" TO 5/8"	ER25M	ER25MW	35mm	82mm	50mm	SS25RTER25
30mm	ER20	1/16" TO 1/2"	ER20M	ER20MW	28mm	76mm	50mm	SS30RTER20
30mm	ER25	1/16" TO 5/8"	ER25M	ER25MW	35mm	82mm	50mm	SS30RTER25
32mm	ER20	1/16" TO 1/2"	ER20M	ER20MW	28mm	76mm	50mm	SS32RTER20
32mm	ER25	1/16" TO 5/8"	ER25M	ER25MW	35mm	82mm	50mm	SS32RTER25

NOTE: HOLDERS ARE ALSO AVAILABLE WITH 1/2" ID ON REQUEST

CIRCULAR RECESS TOOL BLANKS



Available in a wide variety of shank sizes, head diameters and lengths to fit all recessing tools and for all types of jobs.

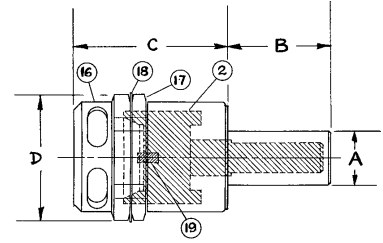
These tool blanks are made from hardened M2 high speed steel.

CAT. NO.	DIA.	LENGTH	A +/- .005	B +/- .003	C +/- .003	D +/- .005	E
RT8-1	1/4	7/8	.140	.030	.030	.080	5/16
RT8-2	1/4	1"	.190	.030	.040	.110	7/16
RT8-3	1/4	1-1/8	.240	.030	.045	.150	9/16
RT10-81	5/16	2"	.140	.030	.030	.080	5/16
RT10-1	5/16	1-1/4	.220	.040	.035	.150	1/2
RT10-101	5/16	2"	.220	.040	.035	.150	1/2
RT10-2	5/16	1-3/8	.260	.040	.040	.180	5/8
RT10-3	5/16	1-1/2	.300	.040	.045	.210	3/4
RT12-1	3/8	1-1/2	.240	.045	.030	.180	9/16
RT12-121	3/8	2"	.240	.045	.030	.180	9/16
RT12-2	3/8	1-5/8	.300	.045	.050	.200	11/16
RT12-122	3/8	2"	.300	.045	.050	.200	11/16
RT12-3	3/8	1-3/4	.360	.045	.055	.250	13/16
RT16-1	1/2	1-7/8	.270	.050	.035	.200	5/8
RT16-2	1/2	2"	.330	.050	.040	.250	3/4
RT16-3	1/2	2-1/4	.400	.050	.050	.300	1"

RELEASING DIE HOLDERS FOR ACORN DIES



- * These holders have the same exclusive releasing clutch mechanism as used on our releasing Tap Holder.
- * A keyed washer is used between the adjusting cap and the lock nut. Tightening lock nut will not change the adjustment of die.



RELEASING ACORN DIE HOLDER PARTS

All other parts are the same as Releasing Tap Holder (Pg. 67)

RELEASING ACORN DIE HOLDER SPECIFICATIONS

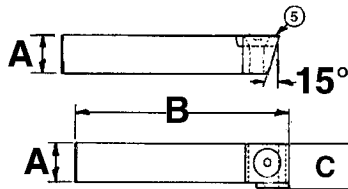
ALL SIZE ACORN DIES AVAILABLE TO FIT THESE HOLDERS -

CAT. NO.	A	B	C	D	ACORN DIE SIZE
ADH000	5/8	1-3/16	1-5/8	1-3/16	1
ADH00	5/8	1-1/4	1-13/16	1-9/16	2
ADH1	3/4	1-3/4	2-5/16	1-3/4	2
ADH2	1"	2"	2-7/8	2-7/16	3
ADH3	1-1/4	2-9/16	4-1/16	2-13/16	4

Part No.	ADH 000 Cat. No.	ADH 00 Cat. No.	ADH 1 Cat. No.	ADH 2 Cat. No.	ADH 3 Cat. No.
2. Spindle	ADH000-2	ADH00-2	ADH1-2	ADH2-2	ADH3-2
3. Spanner Wrench	ADH000-3	ADH00-3	ADH00-3	ADH2-3	ADH3-3
16. Acorn Adjusting Cap	ADH000-16	ADH00-16	ADH1-16	ADH2-16	ADH3-16
17. Lock Nut	ADH000-17	ADH00-17	ADH1-17	ADH2-17	ADH3-17
18. Lock Nut Washer	ADH000-18	ADH00-18	ADH1-18	ADH2-18	ADH3-18
19. Drive Pins (ea)	ADH000-19	ADH00-19	ADH1-19	ADH2-19	ADH3-19

CONVERT YOUR PRESENT TURNING TOOLS TO INDEXABLE QUICK CHANGE CARBIDE INSERTS WITH SQUARE SHANK TOOL BIT TYPE INSERT HOLDERS

RECTANGULAR CARBIDE INSERT HOLDERS FOR LEFT HAND TURNING



- Quick change-only one easy-to-get-at screw
- Cut tangentially-not radially
- Ideal 10° front clearance angle - instead of 5° of triangular inserts
- Shave turned diameter for better size control and finish
- Produce square sharp corners
- Repeatability within .001"
- 4 usable cutting edges (2 right hand and 2 left hand)

RECTANGULAR CARBIDE INSERT HOLDERS

CAT. NO.		A	B
CIH00-L	Left Hand	5/16	1-7/16
CIH1-L	Left Hand	3/8	2-1/8
CIH2-L	Left Hand	7/16	2-7/16
CIH2A-L	Left Hand	1/2	2-7/16
CIH3-L	Left Hand	5/8	3-1/2

Holders do not include insert

RECTANGULAR QUICK CHANGE CARBIDE INSERTS

Part No.	TOOL SIZE				
	CIH00 Cat. No.	CIH1 Cat. No.	CIH2 Cat. No.	CIH2A Cat. No.	CIH3 Cat. No.
5. Carbide Insert Grade C-2	CIH00-5-C2	CIH1-5-C2	CIH2-5-C2	CIH2A-5-C2	CIH3-5-C2
5. Carbide Insert Grade C-7	CIH00-5-C7	CIH1-5-C7	CIH2-5-C7	CIH2A-5-C7	CIH3-5-C7
TITANIUM NITRIDE (TIN) COATED INSERTS					
5. Carbide Insert Grade C-2 Titanium Coated	CIH00-5-C2TIN	CIH1-5-C2TIN	CIH2-5-C2TIN	CIH2A-5-C2TIN	CIH3-5-C2TIN
5. Carbide Insert Grade C-7 Titanium Coated	CIH00-5-C7TIN	CIH1-5-C7TIN	CIH2-5-C7TIN	CIH2A-5-C7TIN	CIH3-5-C7TIN

* Carbide inserts available from stock in: GRADE C-2 For brass, aluminum, and light cuts on steel. GRADE C-7 For heavy cuts on steel.

Right Hand holders discontinued.

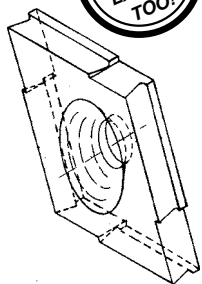
• Replaced with TSQ style holders - Page 55.

• Inserts available with .015 or .031 corner radius for special applications.

ACCU-SET Turning Tools

with exclusive TANGI-SQUARE
QUICK CHANGE

Micro-Grain Carbide Inserts

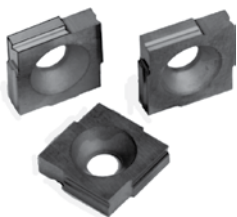


TANGI-SQUARE CARBIDE
INSERTS OUTPERFORM ALL
OTHER INSERTS BECAUSE:

- Quick change - only one easy-to-get-at screw
- Cut tangentially not radially
- Ideal 10° front clearance angle - instead of 5° of triangular inserts
- Shave turned diameter for better size control and finish
- Built in chip breaker
- Produce square, sharp corners
- Repeatability within .001"
- No need for slide retraction because freer cutting action eliminates scroll lines on most applications.
- 4 right hand cutting edges
- MICRO-GRAIN carbide for longest tool life
- TIN coating available as standard

AVAILABLE IN FOUR STYLES:

- 35° HIGH TOP RAKE FOR LONGEST TOOL LIFE ON STAINLESS AND OTHER DIFFICULT-TO-MACHINE MATERIALS.
 - * SQUARE CORNER
 - * .015 OR .031 CORNER RADIUS
- 5° TOP RAKE FOR MILD MATERIALS
 - * SQUARE CORNER
 - * .015 OR .031 CORNER RADIUS



The only insert ever designed specifically for screw machine turning tools!



ACCU-SET
TANGI-SQUARE
ROLLER
BACKREST
TURNING
TOOLS



ACCU-SET
TANGI-SQUARE
BALANCE
TURNING
TOOLS

Cat. No.	Shank Size	
	Dia.	Length
ASTT00	5/8	1-9/32
ASTT0	3/4	1-1/2
ASTT2	1"	1-15/16

Cat. No.	Shank Size	
	Dia.	Length
BASTT00	5/8	1-3/32
BASTT0	3/4	1-1/2
BASTT2	1"	1-15/16

Tangi-Square slides fit your present Accu-Set tools.

No need to buy complete tool !

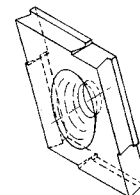
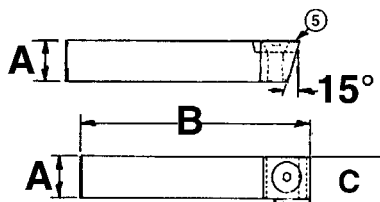
Tool Size	ASTT00/BASTT00 Cat. No.	ASTT0/BASTT0 Cat. No.	ASTT2/BASTT2 Cat. No.
TANGI-SQUARE CARBIDE INSERT SLIDE (COMPLETE)	ATT00-SCS	ATT0-SCS	ATT2-SCS

INSERT STYLE	ASTT00/BASTT00 Cat. No.	ASTT2/BASTT2 ASTT0/BASTT0 Cat. No.	TSQ000 Cat. No.
35° HIGH TOP RAKE SQUARE CORNER	TSQ00-45-MIC	TSQ2-45-MIC	TSQ000-45-MIC
	TSQ00-45-MICTIN TIN COATED	TSQ2-45-MICTIN TIN COATED	TSQ000-45-MICTIN TIN COATED
35° HIGH TOP RAKE .015 CORNER RADIUS OR .031 CORNER RADIUS	TSQ00-45-015	TSQ2-45-015	TSQ000-45-015
	TSQ00-45-015TIN TIN COATED	TSQ2-45-015TIN TIN COATED	TSQ000-45-015TIN TIN COATED
	TSQ00-45-031	TSQ2-45-031	TSQ000-45-031
	TSQ00-45-031TIN TIN COATED	TSQ2-45-031TIN TIN COATED	TSQ000-45-031TIN TIN COATED
5° TOP RAKE SQUARE CORNER	TSQ00-5-MIC	TSQ2-5-MIC	TSQ000-5-MIC
	TSQ00-5-MICTIN TIN COATED	TSQ2-5-MICTIN TIN COATED	TSQ000-5-MICTIN TIN COATED
5° TOP RAKE .015 CORNER RADIUS OR .031 CORNER RADIUS	TSQ00-5-015	TSQ2-5-015	TSQ000-5-015
	TSQ00-5-015-TIN TIN COATED	TSQ2-5-015-TIN TIN COATED	TSQ000-5-015TIN TIN COATED
	TSQ00-5-031	TSQ2-5-031	TSQ000-5-031
	TSQ00-5-031-TIN TIN COATED	TSQ2-5-031-TIN TIN COATED	TSQ000-5-031TIN TIN COATED
INSERT SCREW	ATT00-17	ATT2-17	TSQ000-2
MAX DEPTH OF CUT PER SIDE	3/16"	17/64"	7/64"

CONVERT YOUR PRESENT TURNING TOOLS TO INDEXABLE "THROWAWAY" CARBIDE INSERTS
WITH TANGI-SQUARE CARBIDE INSERT TOOL BIT TYPE HOLDERS.
THEY WILL REPLACE HIGH SPEED STEEL TOOL BITS IN MOST TURNING TOOLS.

TANGI-SQUARE CARBIDE INSERT HOLDERS FOR RIGHT HAND TURNING

Cat. No.	A	B	C	Insert Style
TSQ000-R	1/4	1-5/16	1/4	TSQ000
TSQ00-R	5/16	1-1/2	3/8	TSQ00
TSQ1-R	3/8	2-1/8	3/8	TSQ00
TSQ2-R	7/16	2-1/2	1/2	TSQ2
TSQ2A-R	1/2	2-1/2	1/2	TSQ2
TSQ3-R	5/8	3-1/2	1/2	TSQ2



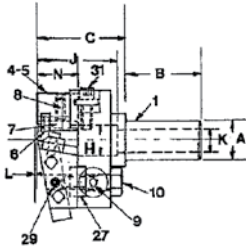
The only insert ever designed specifically for screw machine turning tools!

ACCU-SET Roller Backrest Turning Tool

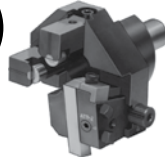
Shown in 3 styles below - See page 55 for improved Tangi-Square design!

FEATURES

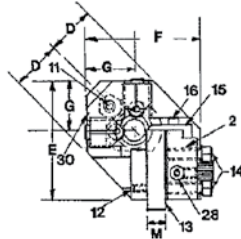
- All cutting tool slides are interchangeable.
- All cutting tool slides are adjustable to center to compensate for machine misalignment.
- Screw adjustment of roller backrest slides assure easy, positive setting.
- Extended roller blocks available-for supporting on stock O.D. (positioned ahead of the cutting tool)
- Available for left hand operation.
- Micrometer adjustment of cutting tool slide-each graduation = .004" (1MM) on diameter (easily set in between for .001 or less move ment.)
- Available for left hand operation.



ATT STYLE
With H.S.S. Cutting Tool Slide



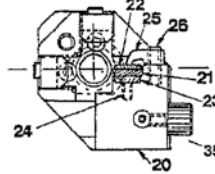
• Cuts tangentially.



AVTT STYLE
With Triangular Carbide Insert Slide



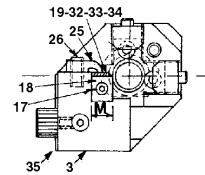
• Triangular carbide insert cuts radially.



ACTT STYLE
With Rectangular Carbide Insert Slide



• Only available left hand, right hand tools have been replaced with TANGI-SQUARE ASTT style holder shown on Pg. 55.



Roller Turning Tool	Cat. No.	Cat. No.	Cat. No.
With H.S.S. Cutting Tool Slide	ATT00	ATT0	ATT2
With H.S.S. Cutting Tool Slide LH	ATT00-L	ATT0-L	ATT2-L
With Rectangular Carbide Insert Tool Slide LH	ACTT00-L	ACTT0-L	ACTT2-L
With Triangular Carbide Insert Tool Slide	AVTT00	AVTT0	AVTT2
With Triangular Carbide Insert Tool Slide LH	AVTT00-L	AVTT0-L	AVTT2-L
A	5/8	3/4	1"
B	1-9/32	1-1/2	1-15/16
C	1-17/32	2-3/16	3"
D	13/16	1-3/16	1-3/8
E	1-15/16	2-3/4	3-7/16
F	1-15/16	2-7/8	3-9/16
G	13/16	1-3/8	1-11/16
H	1/2	7/8	1-1/4
J	1-3/8	1-7/8	2-3/4
K	3/8	1/2	5/8
L	3/64	3/32	3/32
M	5/16	3/8	7/16
N	11/16	1-1/16	1-1/2
Turning Capacity	5/64 to 3/8 Dia. x Mach. Cap.	5/32 to 1/2 Dia. x Mach. Cap.	3/16 to 5/8 Dia. x Mach. Cap.
	25/64 to 1/2 Dia. x 1-3/8 Lg	33/64 to 7/8 Dia. x 1-7/8 Lg	41/64 to 1-1/4 Dia. x 2-3/4 Lg

Parts for Tool Numbers	ATT00 AVTT00 ACTT00-L	ATT00-L AVTT00-L ACTT00-L	ATT0 AVTT0 ACTT0-L	ATT2 AVTT2 ACTT2-L
Part No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
1. Body	ATT00-1	ATT0-1	ATT2-1	
1. Body LH	ATT00-1L	ATT0-1L	ATT2-1L	
2. H.S.S. Tool Slide	ATT00-2	ATT0-2	ATT2-2	
2. H.S.S. Tool Slide LH	ATT00-2L	ATT0-2L	ATT2-2L	
3. Rectangular Insert Tool Slide LH	ATT00-3L	ATT0-3L	ATT2-3L	
4. Roller Block	ATT00-4	ATT0-4	ATT2-4	
5. Extended Roller Block	ATT00-5	ATT0-5	ATT2-5	
6. Roll	ATT00-6	ATT0-6	ATT2-6	
7. Carbide Roll Pin	ATT00-7	ATT0-7	ATT2-7	
8. Pin Screw	ATT00-8	ATT0-8	ATT2-8	
9. Micrometer Screw	ATT00-9	ATT0-9	ATT2-9	
10. H.S.S. Tool Slide Lock Screw	ATT00-10	ATT0-10	ATT2-10	
11. Roller Slide Clamp Lock Screw	ATT00-10	ATT0-11	FDH4B-4-1	
12. Rocker Screw	ATT00-12	TH000-3	1ANR-6	
13. H.S.S. Cutting Tool	TT00-8	TT1-8	TT2-8	
14. Tool Lock Screw	ATT00-14	ATT0-14	ATT2-14	
15. H.S.S. Chip Breaker	ATT00-15	ATT0-15	ATT2-15	
16. Chip Breaker Screw	ATT00-16	ATT0-16	TCOBH00-SCR	
17. Rectangular Insert Screw	ATT00-17	ATT0-17	ATT2-17	
18. Rectangular Inserts Grade C-2 Carbide	CIH00-5-C2	See Page 54 for Specifications	CIH2-5-C2	
Grade C-7 Carbide	CIH00-5-C7	CIH1-5-C2	CIH2-5-C7	
19. Rectangular Carbide Chip Breaker	ATT00-19	ATT00-19	ATT2-19	
20. Triangular Insert Tool Slide	ATT00-20	ATT0-20	ATT2-20	
20. Triangular Insert Tool Slide LH	ATT00-20L	ATT0-20L	ATT2-20L	
21. Triangular Inserts Grade C-2 Carbide	ATT00-21-C2	ATT00-21-C2	ATT2-21-C2	
Grade C-7 Carbide	ATT00-21-C7	ATT00-21-C7	ATT2-21-C7	
22. Triangular Carbide Chip Breaker	ATT00-22	ATT00-22	ATT2-22	
23. Triangular Anvil	ATT00-23	ATT00-23	ATT2-23	
24. Triangular Anvil Screw	ATT00-24	ATT00-24	ATT2-24	
25. Carbide Insert Clamp	ATT00-25	ATT00-25	ATT2-25	
26. Carbide Insert Clamp Screw	ATT00-26	ATT00-26	ATT2-26	
27. Slide Plate	ATT00-27	ATT0-27	ATT2-27	
27. Slide Plate LH	ATT00-27L	ATT0-27L	ATT2-27L	
28. Adjusting Stud	ATT00-28	ATT0-28	ATT2-28	
29. Adj. Stud Lock Screw	ATT00-12	ATT00-12	1ANR-6	
30. Roller Block Clamp	ATT00-30	ATT0-30	ATT2-30	
31. Roller Block Adj. Screw	ATT00-31	ATT0-31	ATT2-31	
32. Backup Plate & Screw	ATT00-32	ATT0-32	ATT2-32	
33. Triangular Chip Breaker Adjuster	ATT00-33	ATT00-33	ATT00-33	
34. Breaker Adj Screw	ATT00-34	ATT00-34	ATT00-34	
35. Slide Clamp Screw	ATT00-35	ATT0-35	ATT00-12	

Tool Slide Only	For ATT00	For ATT0	For ATT2
Tool Size	Cat. No.	Cat. No.	Cat. No.
Complete H.S.S. Cutting Tool Slide	ATT00-CTS	ATT0-CTS	ATT2-CTS
Complete H.S.S. Cutting Tool Slide LH	ATT00-CTS-L	ATT0-CTS-L	ATT2-CTS-L
Complete Rectangular Carbide Insert Slide	ATT00-RCS	ATT0-RCS	ATT2-RCS
Complete Rectangular Carbide Insert Slide LH	ATT00-RCS-L	ATT0-RCS-L	ATT2-RCS-L
Complete Triangular Carbide Insert Slide	ATT00-VCS	ATT0-VCS	ATT2-VCS
Complete Triangular Carbide Insert Slide LH	ATT00-VCS-L	ATT0-VCS-L	ATT2-VCS-L
Complete Roller Backrest Slide	ATT00-RBS	ATT0-RBS	ATT2-RBS
Complete Extended Roller Backrest Slide	ATT00-ERB	ATT0-ERB	ATT2-ERB

ACCU-SET Balance Turning Tool

Shown in 3 styles below - See page 55 for improved Tangi-Square design!

FEATURES

- All cutting tool slides are interchangeable. (see parts list). Converts from H.S.S. to carbide in seconds.
- All cutting tool slides are adjustable to center to compensate for machine misalignment.
- Micrometer adjustment of cutting tool slides- each graduation = .004" (1MM) on diameter (easily set in between for .001 or less move ment.)
- Fine adjustment of H.S.S. cutting tool provided by rocker screw.
- Available for left hand operation.



BATT STYLE
With H.S.S. Cutting
Tool Slides



BAVTT STYLE
With Triangular Carbide
Insert Slides

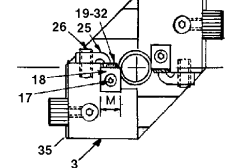
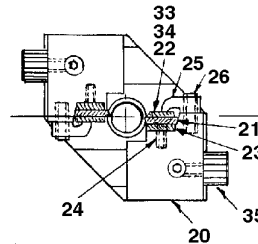
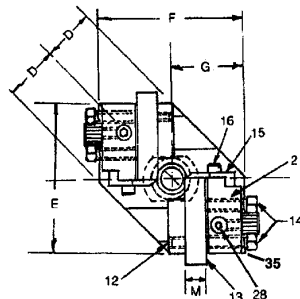
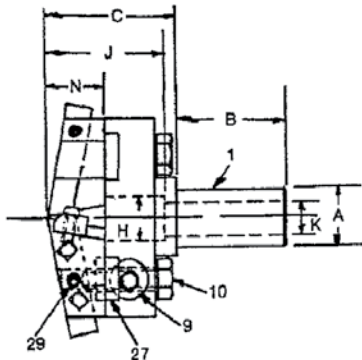


BACTT STYLE
With Rectangular Carbide
Insert Slides



- Triangular carbide Inserts cut radially.

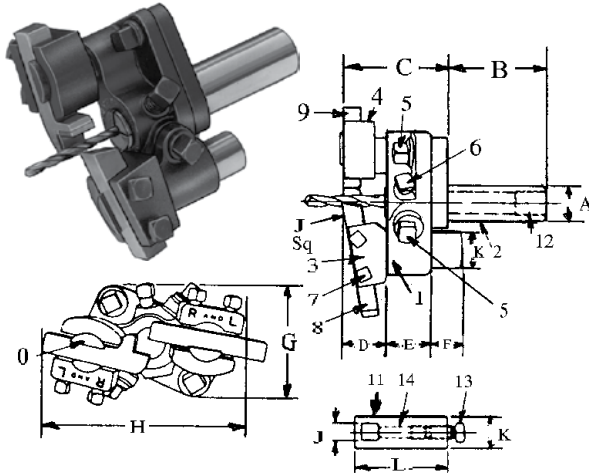
- Only available left hand, right hand tools have been replaced with TANGI-SQUARE BASTT style holder. Page 55.



Balance Turning Tool	Cat. No.	Cat. No.	Cat. No.
With H.S.S. Cutting Tool Slide	BATT00	BATT0	BATT2
With H.S.S. Cutting Tool Slide LH	BATT00-L	BATT0-L	BATT2-L
With Rectangular Carbide Insert Tool Slide LH	BACTT00-L	BACTT0-L	BACTT2-L
With Triangular Carbide Insert Tool Slide	BAVTT00	BAVTT0	BAVTT2
With Triangular Carbide Insert Tool Slide LH	BAVTT00-L	BAVTT0-L	BAVTT2-L
A	5/8	3/4	1"
B	1-9/32	1-1/2	1-15/16
C	1-17/32	2-3/16	3"
D	13/16	1-3/16	1-3/8
E	2-1/4	2-3/4	3-1/2
F	2-3/8	3"	3-3/4
G	1-3/16	1-1/2	1-7/8
H	5/8	7/8	1-1/4
J	1-7/16	1-7/8	2-3/4
K	3/8	1/2	5/8
M	5/16	3/8	7/16
N	11/16	1-1/16	1-1/2
Turning Capacity	Up to 3/8 Dia. x Mach. Cap.	Up to 1/2 Dia. x Mach. Cap.	Up to 5/8 Dia. x Mach. Cap.
	25/64 to 5/8 Dia. x 1-3/8 Lg	33/64 to 7/8 Dia. x 1-7/8 Lg	41/64 to 1-1/4 Dia. x 2-3/4 Lg

Parts for Tool Numbers	BATT00 BAVTT00 BATT00-L BACTT00-L BAVTT00-L	BATT0 BAVTT0 BATT0-L BACTT0-L BAVTT0-L	BATT2 BAVTT2 BATT2-L BACTT2-L BAVTT2-L
Part No.	Cat. No.	Cat. No.	Cat. No.
1. Body	BATT00-1	BATT0-1	BATT2-1
1. Body LH	BATT00-1L	BATT0-1L	BATT2-1L
2. HSS Tool Slide	ATT00-2	ATT0-2	ATT2-2
2. HSS Tool Slide LH	ATT00-2L	ATT0-2L	ATT2-2L
3. Rectangular Insert Tool Slide LH	ATT00-3L	ATT0-3L	ATT2-3L
9. Micrometer Screw	ATT00-9	ATT0-9	ATT2-9
10. H.S.S. Tool Slide Lock Screw	ATT00-10	ATT0-10	ATT2-10
12. Rocker Screw	ATT00-12	TH000-3	1ANR-6
13. HSS Cutting Tool	TT00-8	TT1-8	TT2-8
14. Tool Lock Screw	ATT00-14	ATT0-14	ATT2-14
15. HSS Chip Breaker	ATT00-15	ATT0-15	ATT2-15
16. Chip Breaker Screw	ATT00-16	ATT0-16	TCOBH00-SCR
17. Rectangular Insert Screw	ATT00-17	ATT0-17	ATT2-17
18. Rectangular Inserts	See Page 54 for Specifications		
Grade C-2 Carbide	CIH00-5-C2	CIH1-5-C2	CIH2-5-C2
Grade C-7 Carbide	CIH00-5-C7	CIH1-5-C7	CIH2-5-C7
19. Rectangular Carbide Chip Breaker	ATT00-19	ATT0-19	ATT2-19
20. Triangular Insert Tool Slide	ATT00-20	ATT0-20	ATT2-20
20. Triangular Insert Tool Slide LH	ATT00-20L	ATT0-20L	ATT2-20L
21. Triangular Inserts	See Page 54 for Specifications		
Grade C-2 Carbide	ATT00-21-C2	ATT00-21-C2	ATT2-21-C2
Grade C-7 Carbide	ATT00-21-C7	ATT00-21-C7	ATT2-21-C7
22. Triangular Carbide Chip Breaker	ATT00-22	ATT00-22	ATT2-22
23. Triangular Anvil	ATT00-23	ATT00-23	ATT2-23
24. Triangular Anvil Screw	ATT00-24	ATT00-24	ATT2-24
25. Carbide Insert Clamp	ATT00-25	ATT00-25	ATT2-25
26. Carbide Insert Clamp Screw	ATT00-26	ATT00-26	ATT2-26
27. Slide Plate	ATT00-27	ATT0-27	ATT2-27
27. Slide Plate LH	ATT00-27L	ATT0-27L	ATT2-27L
28. Adjusting Stud	ATT00-28	ATT0-28	ATT2-28
29. Adj Stud Lock Screw	ATT00-12	ATT00-12	1ANR-6
32. Backup Plate & Screw	ATT00-32	ATT0-32	ATT2-32
33. Triangular Chip Breaker Adjuster	ATT00-33	ATT00-33	ATT00-33
34. Breaker Adj Screw	ATT00-34	ATT00-34	ATT00-34
35. Slide Clamp Screw	ATT00-35	ATT0-35	ATT00-12

Tool Slide Only	For BATT00	For BATT0	For BATT2
Tool Size	Cat. No.	Cat. No.	Cat. No.
Complete H.S.S. Cutting Tool Slide	ATT00-CTS	ATT0-CTS	ATT2-CTS
Complete H.S.S. Cutting Tool Slide LH	ATT00-CTS-L	ATT0-CTS-L	ATT2-CTS-L
Complete Rectangular Carbide Insert Slide LH	ATT00-RCS-L	ATT0-RCS-L	ATT2-RCS-L
Complete Triangular Carbide Insert Slide	ATT00-VCS	ATT0-VCS	ATT2-VCS
Complete Triangular Carbide Insert Slide LH	ATT00-VCS-L	ATT0-VCS-L	ATT2-VCS-L



The most **VERSATILE** tool on the market!...
Saves many times its cost in tool investment...
Can be used for either **RIGHT** or **LEFT** hand operations as...

- Carbide backrest box tool
- Balance turning tool
- Drilling & Chamfering tool
- Drilling & turning tool
- Roller backrest support for turret
- Pointing tool
- Knee tool
- Roller Backrest box tool
- Carbide backrest support for turret
- Centering & facing tool
- Floating drill holder
- Two diameter turning tool
- Carbide Insert Tool

FEATURES:

- FULLY ADJUSTABLE (FLOATS)
- EASY TO SET
- REQUIRES LESS CROSS SLIDE CLEARANCE
- NO DRILL PUSHBACK
- RUGGED CONSTRUCTION FOR BOTH ROUGHING AND FINISHING CUTS
- MORE VERSATILE
- ADJUSTABLE DRILL STOP SCREW IN SHANK
- ATTACHMENTS CAN BE MOVED FORWARD OR BACK IN HOLDER TO WORK ON ANY AREA OF PART.



TURNING TOOL SPECIFICATIONS

Size	A Shank	B	C	D		E	F		G	H	J Square	K	L	Hole Dia. for Bushing	Hole Dia. In Shank	Turning Capacity	
				Max.	Min.		Max.	Min.								Diameter	Length
No. 00	5/8	1-1/2	1-3/4	1-1/16	5/8	11/16	7/16	0	1-9/16	3"	5/16	1/2	1-17/32	1/2	3/8	Up to 3/8 3/8 to 1/2	Mach. Cap. 1-3/4
No. 1	3/4	2"	2-3/8	1-1/2	7/8	7/8	5/8	0	2-7/16	4-1/4	3/8	3/4	2"	5/8	1/2	Up to 1/2 1/2 to 3/4	Mach. Cap. 2-1/4
No. 2	1"	2"	3-1/16	1-15/16	1-1/16	1-1/8	7/8	0	3"	5-3/8	7/16	1"	3"	1"	11/16	Up to 11/16 11/16 to 1" over 1"	Mach. Cap. 3-1/16 1-15/16

THESE TOOLS ARE AVAILABLE AS
UNIVERSAL TURNING TOOLS WITH
ALL ACCESSORIES AS SHOWN:

THESE TOOLS ARE ALSO AVAILABLE AS SPECIAL PURPOSE
WITH ONLY THE ACCESSORIES AS SHOWN:

- 1-Carbide Backrest
- 2-Angular Cutter Holders
- 1-Straight Cutter Holders
- 1-Roller Backrest
- 2-Angular Cutter Holders
- 1-Straight Cutter Holder

- 1-Carbide Backrest
- 1-Angular Cutter Holder

- 1-Roller Backrest
- 1-Angular Cutter Holder

- 2-Angular Cutter Holder for Balance Turning

- 1-Straight Cutter Holder (Knee Tool)

TOOL SIZE	CAT. NO.	PRICE	CAT. NO.	PRICE	CAT. NO.	CAT. NO.	CAT. NO.	CAT. NO.	CAT. NO.
No. 00	TT00-C	623.52	TT00-R	623.52	TT00-CA	TT00-RA	TT00-AA	TT00-S	
No. 1	TT1-C	744.43	TT1-R	744.43	TT1-CA	TT1-RA	TT1-AA	TT1-S	
No. 2	TT2-C	954.99	TT2-R	954.99	TT2-CA	TT2-RA	TT2-AA	TT2-S	

TURNING TOOL PARTS

Part. No.	Cat. No.	No. 00	Cat. No.	No. 1	Cat. No.	No. 2
1. Body	TT00-1		TT1-1		TT2-1	
2. Shank	TT00-2		TT1-2		TT2-2	
3. Angular cutter holder	TT00-3		TT1-3		TT2-3	
4. Backrest holder	TT00-4		TT1-4		TT2-4	
5. Clamp screw (ea)	TT00-5		TT1-5		TT2-5	
6. Drill holder screws (ea)	TT00-13		TT1-6		TT2-13	
7. Tool adjusting screws (ea)	TT00-7		TT00-13		TT1-6	
8. Cutting tool (ea)	TT00-8		TT1-8		TT2-8	
9. Carbide backrest	TT00-9		TT1-9		TT2-9	
10. Rocker shoes (ea)	TT00-10		TT1-10		TT2-10	
11. Straight cutter holder	TT00-11		TT1-11		TT2-11	
12. Shank screw	TT00-12		TT1-12		TT2-12	
13. Set screw for straight cutter holders	TT00-13		TT1-6		TT2-13	
14. Binder pin for straight cutter holders	TT00-14		TT1-14		TT2-14	
15. Double end wrench	TT00-15		TT00-15		TT2-15	

COMPLETE ROLLER BACKRESTS

Roller backrests can be used advantageously for many support applications where carbide backrests are not satisfactory. Precision rollers and pins rotate freely and give sturdy support on even the heaviest cuts.



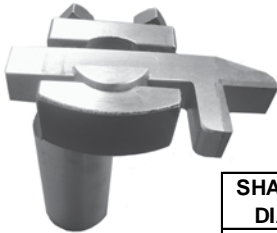
SHANK DIA	FITS	CAT. NO.	MIN. DIA. THAT CAN BE TURNED
1/2"	00	TT00-RBR	1/8"
3/4"	1	TT1-RBR	1/8"
1"	2	TT2-RBR	3/16"

ROLLER BACKREST PARTS

Size	TT00-RBR	TT1-RBR	TT2-RBR
Part No.	Cat. No.	Cat. No.	Cat. No.
1. Roller and Pin Sets*	TT00RBR-1	TT1RBR-1	TT2RBR-1
2. Roller Shank	TT00RBR-2	TT1RBR-2	TT2RBR-2
3. Roller Clamp	TT00RBR-3	TT1RBR-3	TT2RBR-3
4. Clamp Screw	TT00-5	TT1-5	TT2-5

*Roller and pin sets consist of 2 rolls and 2 pins

COMPLETE CARBIDE BACKRESTS



The extremely hard surface of the carbide backrests will not pick up metal or mar the surface of the work with scratches or blisters.

SHANK DIA	FITS	CAT. NO.	MIN. DIA. THAT CAN BE TURNED
1/2"	00	TT00-CBR	1/16"
3/4"	1	TT1-CBR	1/16"
1"	2	TT2-CBR	1/16"

The completed carbide backrest consists of the following assembly of parts as listed on page 58.

- | | | | |
|---|-----------------------------|---|------------------------|
| 1 | No. 4 Backrest holder | 1 | No. 9 Carbide backrest |
| 2 | No. 7 Tool adjusting screws | 1 | No. 10 Rocker shoe |

COMPLETE ANGULAR CUTTER HOLDERS



SHANK DIA	FITS	CAT. NO.
1/2"	00	TT00-ACH
3/4"	1	TT1-ACH
1"	2	TT2-ACH

The complete angular cutter holder consists of the following assembly of parts as listed on page 58.

- | | | | |
|---|-----------------------------|---|--------------------|
| 1 | No. 3 Angular cutter holder | 1 | No. 8 Cutting tool |
| 2 | No. 7 Tool adjust screws | 1 | No. 10 Rocker shoe |

OFFSET TOOL HOLDER



May be used for either right or left hand operations as:

- Carbide Backrest for Turret
- Roller Backrest for Turret
- Knee Tool
- Drill and Chamfer Tool
- Drill and Turn Tool
- Center and Face Tool

When used in conjunction with standard Somma R & L turning tool attachments as shown below.



With Roller Backrest*



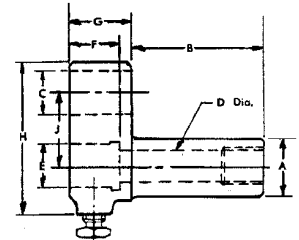
With Carbide Backrest*



With Angular Cutter Holder*



With Straight Cutter Holder*



TOOL NO.	OTH00	OTH1	OTH2
A	5/8	3/4	1"
B	1-1/2	2"	2"
C	1/2	3/4	1"
D	3/8	1/2	11/16
E	1/2	5/8	1"
F	9/16	3/4	7/8
G	11/16	7/8	1-1/8
H	1-11/16	2-3/16	3"
J	13/16	1"	1-5/16

COMPLETE STRAIGHT CUTTER HOLDERS

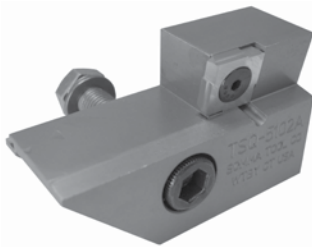
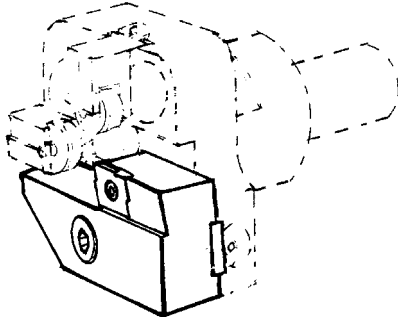


SHANK DIA	FITS	CAT. NO.
1/2"	00	TT00-SCH
3/4"	1	TT1-SCH
1"	2	TT2-SCH

Complete straight cutter holder consists of the following assembly of parts as listed on page 58.

- | | | | |
|---|-------------------------------|---|---------------------------------------|
| 1 | No. 11 Straight cutter holder | 1 | No. 13 Set Screw for straight holder |
| 1 | No. 8 Cutting tool | 1 | No. 14 Binder pin for straight holder |

CONVERT YOUR BOYAR-SCHULTZ RT H.S. TOOLBIT STYLE OR RTC TRIANGULAR INSERT TURNING TOOLS TO TANGI-SQUARE INSERTS AND IMPROVE YOUR CUTTING PERFORMANCE BECAUSE:

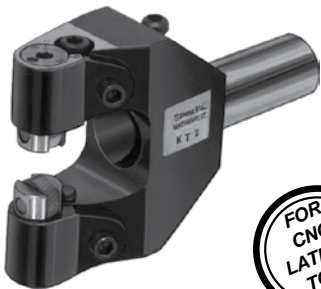


- Quick change-only one easy-to-get-at screw
- Cut tangentially-not radially
- Freer cutting 10° front clearance angle - instead of 5° of triangular inserts
- Shaves turned diameter for better size control and finish
- Built in chip breaker
- Produces square sharp corners
- Repeatability within .001"
- No need for slide retraction because freer cutting action eliminates scroll line on most applications.
- 4 right hand cutting edges
- MICRO-GRAIN carbide for longest life

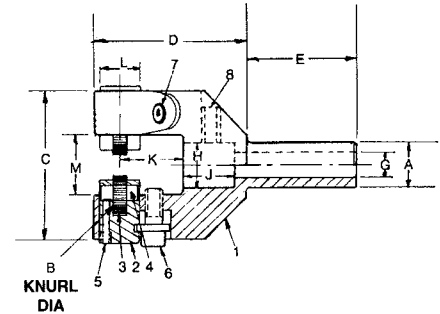
* TIN coating available as standard

TANGI-SQUARE CARBIDE INSERT CUTTING TOOL SLIDES (INCLUDES INSERT)					
BOYAR-SCHULTZ TOOL SIZE	00RTC	00RT	0RTC	0RT	2RTC/2RT
TANGI-SQUARE COMPLETE CARBIDE INSERT SLIDE	TSQ-51204	TSQ-5002A	TSQ-51304	TSQ-5102A	TSQ-51404
USES INSERT STYLE	TSQ00	TSQ00	TSQ2	TSQ2	TSQ2

KNURLING TOOL



- Knurl can be adjusted to produce straight, diagonal, or diamond knurls by rotating the barrels.
- Holds drills for combined operations
- Standard with carbide knurl pins
- Same tool can be converted to "extra capacity" by changing barrels.



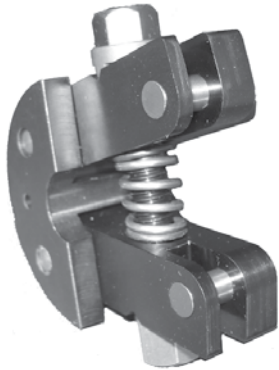
CAT. NO.	B											BARREL LENGTH	CAPACITY DIA.
	A	OD x ID x W	C	D	E	G	H	J	K	L	M		
KT00	5/8	1/2x3/16x3/16	1-15/16	1-7/8	1-1/8	5/16	1/2	9/16	5/8	9/16	5/8	7/8	Up to 1/2"
KT1	3/4	5/8x1/4x1/4	2-15/32	2-9/16	1-7/8	7/16	5/8	7/8	1-1/16	11/16	1"	1-1/16	Up to 3/4"
KT2	1"	5/8x1/4x1/4	3-5/16	3-7/16	2-3/16	5/8	1"	1-1/4	1-1/2	11/16	1-3/8	1-5/16	Up to 7/8"
KT2-EC (EXTRA CAPACITY)	1"	5/8x1/4x1/4	3-5/16	3-7/16	2-3/16	5/8	1"	1-1/4	1-1/2	11/16	1-3/8	1-1/16	7/16 to 1-5/16
KT3	1-1/4	5/8x1/4x1/4	4"	4-1/4	3-1/4	5/8	1-1/4	1-1/4	2"	11/16	2-1/16	1-5/16	1/2 to 1-3/8
KT3-EC (EXTRA CAPACITY)	1-1/4	5/8x1/4x1/4	4"	4-1/4	3-1/4	5/8	1-1/4	1-1/4	2"	11/16	2-1/16	1-1/16	1" to 2"

KNURLING TOOL PARTS

Part No.	KT00 Cat. No.	KT1 Cat. No.	KT2 Cat. No.	KT2 EC Cat. No.	KT3 Cat. No.	KT3 EC Cat. No.
1. Body	KT00-1	KT1-1	KT2-1	KT2-1	KT3-1	KT3-1
2. Barrels	KT00-2	KT1-2	KT2-2	KT1-2	KT2-2	KT1-2
3. Knurls*	KT00-3	KT2-3	KT2-3	KT2-3	KT2-3	KT2-3
4. Knurl Pins, Carbide	KT00-4	KT2-4	KT2-4	KT2-4	KT2-4	KT2-4
5. Barrel Screws	KT00-5	KT1-5	KT2-5	KT1-5	KT2-5	KT1-5
6. Adjusting Screws	KT00-6	KT2-6	KT2-6	KT2-6	KT2-6	KT2-6
7. Clamp Screws	KT00-7	KT2-7	KT2-7	KT2-7	KT3-7	KT3-7
8. Drill Holder Screws	KT00-8	KT1-8	KT2-8	KT2-8	KT2-8	KT2-8

* Specify pitch of knurl required when ordering. Medium knurls supplied unless otherwise specified.

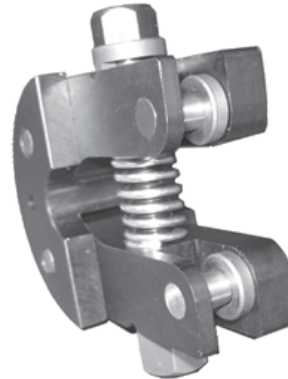
STRADDLE KNURL HOLDER FOR DAVENPORT



Knurls:
5/8" Diameter
1/4" Wide
1/4" Hole

Cat. No.
2730-SA-SOMMA

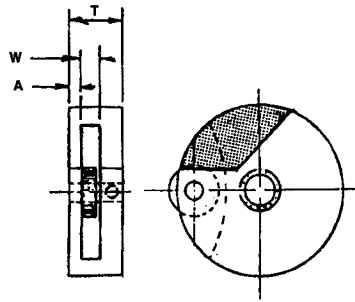
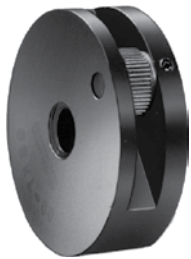
OVERSIZE STRADDLE KNURL HOLDER FOR DAVENPORT



Knurls:
3/4" Diameter
3/8" Wide
1/4" Hole
(Can also use 1/4"
wide knurls)

Cat. No.
2730-23-SA-SOMMA

CIRCULAR KNURL HOLDERS FOR DAVENPORT CROSS SLIDES



FEATURES:

- MADE OF HEAT-TREATED STEEL
- CARBIDE KNURL PINS
- PERMITS KNURLING CLOSE TO SPINDLE

CAT. NO.	FITS	DIA.	CENTER HOLE	KNURL OD x ID x W	W	A	T
CSKT-DAV	DAVENPORT	2"	9/16-REAM	3/4x1/4x1/4	3/8	5/32	3/4

* INCLUDES MEDIUM KNURL

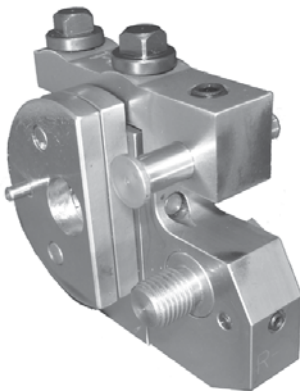
Note: Davenport Tool is milled away for proper clearance (shaded area in diagram) and has two 9/64" pinholes thru.

CIRCULAR KNURL HOLDER PARTS

Part No.	CSKT-DAV Cat. No.
2. Knurl	CSKT-DAV-2
3. Carbide Pin	CSKT2-3
4. Set Screw	CSKT00-4
5. Washer	1ANR-8

SIZING TOOL HOLDER FOR DAVENPORT

.075" to .500" Diameter x 3/4" Wide

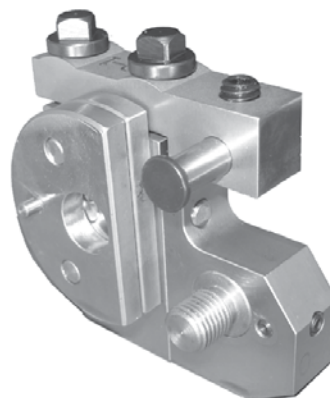


Cat. No.
2726-R-SA-SOMMA

For Rolls see page 21
For Size Tool Blanks see page 21

SIZING TOOL HOLDER (OVERSIZE) FOR DAVENPORT

.262" to .812" Diameter x 3/4" Wide



Cat. No.
2726-O-SA-SOMMA

For Rolls see page 21
For Size Tool Blanks see page 21

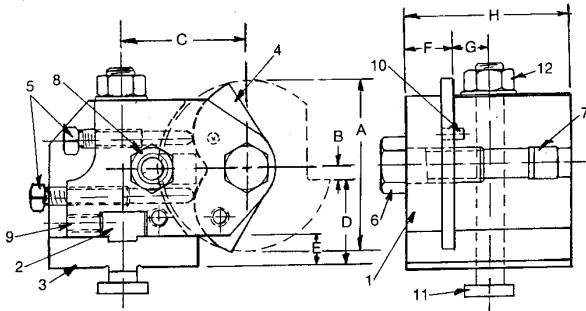
CIRCULAR FORM TOOL HOLDER FOR B&S MACHINES



- Supplied with riser block for right or left-hand operation
- Pinhole sector plate prevents tool slippage
- Swivel adjustment to correct part tapers
- Adjusting screws for fine adjustment to center
- 2 tapped holes on side to fit attachments
- Supplied with 3 hook bolts for various tool widths as shown below.

CIRCULAR TOOL POST - SPECIFICATIONS

CAT. NO.	FITS	A	B	C	D	E	F	G	H
CTP00-F	#00 B&S FRONT	1-3/4	1/8	1-5/16	1"	1/4	7/16	3/8	1-11/16
CTP00-B	#00 B&S BACK	1-3/4	1/8	1-5/16	1"	1/4	7/16	3/8	1-11/16
CTP0-F	#0 B&S FRONT	2-1/4	5/32	1-3/4	1-5/16	5/16	19/32	13/32	2"
CTP0-B	#0 B&S BACK	2-1/4	5/32	1-3/4	1-5/16	5/16	19/32	13/32	2"
CTP2-F	#2 B&S FRONT	3"	1/4	2-5/32	1-7/16	1/2	13/16	11/16	2-7/8
CTP2-B	#2 B&S BACK	3"	1/4	2-5/32	1-7/16	1/2	13/16	11/16	2-7/8



See page 20 for Standard Circular Form Tools and Blanks to fit these holders.

CIRCULAR TOOL POST - PARTS

Part No.	CTP00 Cat. No.	CTP0 Cat. No.	CTP2 Cat. No.
1F. Body-Fr. Slide	CTP00-F-1	CTP0-F-1	CTP2-F-1
1B. Body Bk. Slide	CTP00-B-1	CTP0-B-1	CTP2-B-1
2. Alignment Plate	DTH00-3	DTH0-3	CTP2-2
3. Riser Block	CTP00-3	CTP0-3	CTP2-3
4. Sector Plate	CTP00-4	CTP0-4	CTP2-4
5. Adj. Screws	CTP00-5	CTP0-5	CTP0-5
5. Adj. Screws, long	---	---	CTP2-5
6. Tool Bolt	00TB-1	0TB2-3	2TB2-1
7. Hook Bolts (3)	(See Listing This Page)		
8. Hook Nut & Washer	CTP00-8	CTP0-8	CTP2-8
9. Alignment Screw	0RB2-5	CTP0-9	2ANR-6
10. Sector Pin	CTP00-10	CTP2-10	CTP2-10
11. T Bolt	00TPB-3	0TPB-4	2TPB-4
12. T. Nut & Washer	00TBN	0TBN	2TBN

CIRCULAR TOOL HOLDER ADAPTER BLOCK FOR B&S MACHINES (#2 TO #00)



Save money by mounting your #00 B&S circular form tool holder on a #2 B&S machine.

CAT# CTP00/2

HOOK BOLTS FOR B&S MACHINES

- Alloy Steel
- Heat Treated For Longer Life
- Available in 3 Lengths for #00 + #0, 4 lengths for #2 Machine To Accommodate All Tool Widths
- Fit All Standard Circular Tool Posts



PART. NO.	FITS	LENGTH UNDER HOOK
CTP00-7S	#00 B&S	1-1/8
CTP00-7M	#00 B&S	1-7/16
CTP00-7L	#00 B&S	1-3/4
CTP0-7S	#0 B&S	1-3/8
CTP0-7M	#0 B&S	1-3/4
CTP0-7L	#0 B&S	2-1/8
CTP2-7S	#2 B&S	1-15/16
CTP2-7M	#2 B&S	2-7/16
CTP2-7L	#2 B&S	2-11/16
CTP2-7XL	#2 B&S	3-7/16

KWIK FORM TOOL BIT HOLDER FOR DAVENPORTS

FOR FAST SET UPS ON SHORT RUNS



No need for special tools -- simply hand surface grind form into standard H.S. S. or Carbide tool bit; or even circular grind, using Kwik-Form as a fixture.

Kwik-Form mounts right onto the tool post like a form tool.

Fits front or rear slides for forward or reverse rotation.

With Somma's Kwik-Form holder it's no longer necessary to remove the circular form tool post when using tool bits on short runs.

Special length tool bits are available from stock as shown at right.

Note: Workpiece diameter differences will vary as tool is resharpened if form toolbit is not circular ground.

MACHINE SIZE	CENTER HOLE	TOOL BIT SIZE	CATALOG NUMBER
DAVENPORT	9/16 REAM	3/8 SQ.	KDAV

KWIK-FORM TOOL PARTS

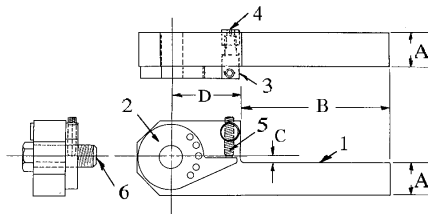
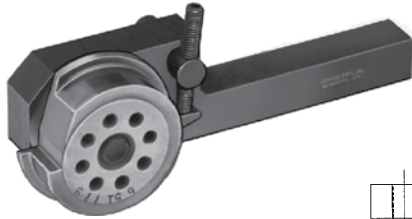
Part No.	ITEM
K00-3	Clamp Screw DAV
TT1-8	H.S. 3/8 Sq. x 2" Tool Bit for #0 & DA

WIDER BITS MAY BE USED BY ALLOWING OVERHANG.

CIRCULAR FORM TOOL ADAPTER FOR TURRET LATHES AND CNC LATHES

These Holders are designed to hold standard Brown & Sharpe type Circular Form Tools in the flat form tool post or square tool post of all Turret Lathes and CNC Lathes.

The Circular Tool is mounted in the adapter so that the cutting edge of the tool is in line with the top side of the shank. The tool can be rotated to the center of the work by use of an adjustable sector plate with pinholes.



CAT. NO.	PRICE	A	B	TOOL DIA.	THD. SIZE	C OFFSET	D	PINHOLE
.50TLCF	201.45	1/2 SQ.	2-5/8	1-3/4	3/8-16	1/8	1-3/8	1/8 DIA. .787 BC 5/32 DIA. 1-1/16
.75TLCF	201.45	3/4 SQ.	3-1/2	2-1/4	1/2-13	5/32	1-9/16	3/16 DIA. 1-3/8 BC
1.0TLCF	215.60	1" SQ.	4"	3"	5/8-11	1/4	2"	3/16 DIA. 1-1/2 BC
1.25TLCF	232.68	1-1/4 SQ.	4-1/2	3"	5/8-11	1/4	2"	3/16 DIA. 1-1/2 BC

CIRCULAR FORM TOOL ADAPTER PARTS

Part No.	.50TLCF Cat. No.	.75TLCF Cat. No.	1.0TLCF Cat. No.	1.25TLCF Cat. No.
1. Body	.50TLCF-1	.75TLCF-1	1.0TLCF-1	1.25TLCF-1
2. Sector Plate	.50TLCF-2	.75TLCF-2	1.0TLCF-2	1.25TLCF-2
3. Adj. Stud	.50TLCF-3	.50TLCF-3	1.0TLCF-3	1.25TLCF-3
4. Adj. Nut	TH000-14	TH000-14	TH00-14	TH00-14
5. Adj. Screws	OCD2-15	OCD2-15	OCD2-15	OCD2-15
6. Tool Bolt	00TB-1	0TB2-3	2TB2-1	2TB2-1
7. Spacer	.50TLCF-7	—	—	—

See page 20 for Standard Circular Form Tools and Blanks to fit these holders.

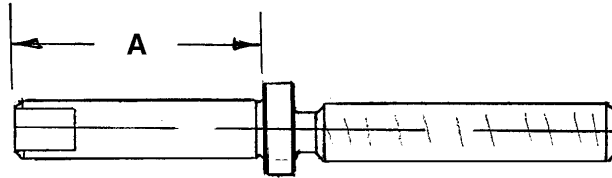
TOOL BOLTS FOR CIRCULAR FORM TOOLS



Made of heat-treated alloy steel, turned from hex bar stock, these tool bolts will hold securely and squarely.

CAT. NO.	THD.	LENGTH	CAT. NO.	THD.	LENGTH
00TB-1	3/8-16	1"	0TB-1	1/2-14	1"
0TB1-3	1/2-13	1"	0TB-2	1/2-14	1-1/2
0TB2-3	1/2-13	1-1/2	2TB-1	5/8-12	1-1/8
2TB1-1	5/8-11	1-1/8	2TB-2	5/8-12	1-5/8
2TB2-1	5/8-11	1-5/8			

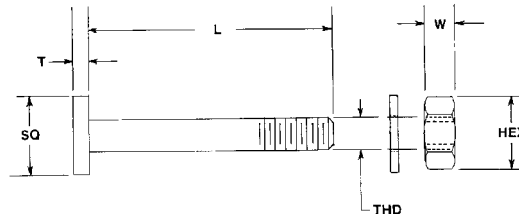
CROSSLIDE TOOLPOST ADJUSTING SCREWS FOR DAVENPORT MACHINES



CAT. NO.	"A"
STC-DV-SCR-1.25	1-1/4
STC-DV-SCR-1.62	1-5/8

"T" BOLTS FOR CROSS SLIDES

- Fit B&S, Davenport and other machines
- Heat treated alloy steel for long life



NUT (INCLUDING WASHERS) SPECIFICATIONS

CAT. NO.	HEX	W	THD.
00TBN	11/16	3/8	3/8-16
0TBN	3/4	7/16	7/16-14
2TBN	7/8	1/2	1/2-13

"T" BOLT SPECIFICATIONS

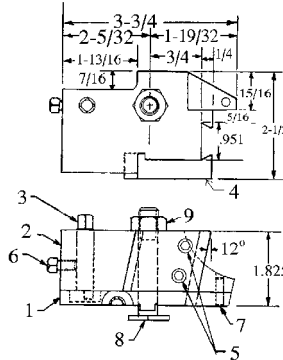
CAT. NO.	L	T	SQ	THD-LENGTH
00TPB-1	1-3/4			
00TPB-2	2-1/8			
00TPB-3	2-1/2	3/16	5/8	3/8-16x1"
00TPB-4	2-3/4			
00TPB-4.5	3-1/8			
00TPB-5	3-1/2			
00TPB-6	4-1/2			
00TPB-7	4"			
0TPB-1	2-1/8			
0TPB-2	2-5/8			
0TPB-3	3-1/8	3/16	3/4	7/16-14x1"
0TPB-4	3-1/2			
0TPB-5	4-3/4			
2TPB-1	2-1/2			
2TPB-2	3"			
2TPB-3	3-1/2	1/4	7/8	1/2-13x1"
2TPB-4	4"			
2TPB-5	5"			
2TPB-6	5-3/4			

1st POSITION 12° DOVETAIL TOOL HOLDER FOR DAVENPORT



CAT. NO. DTH-DAV

- Extended outboard support eliminates tearing out of "T" slot of slide.
- Permits heavier cuts without chatter.
- Eccentric stud and pin adjustment to correct part taper.
- Support fits freely under oversize spindle.



1st POSITION DOVETAIL TOOL HOLDER PARTS

PART. NO.	CAT. NO.
1. PLATE	DTH-DAV-1
2. BODY	DTH-DAV-2
3. STUD	DTH-DAV-3
4. CLAMP	DTH-DAV-4
5. CLAMP SCREW	DTH-DAV-5
6. STUD SCREW	TT00-13
7. PIVOT PIN	CTP2-10
8. BOLT	00TPB-4
9. NUT & WASHER	00TBN

See page 16 for Standard Dovetail Form Blanks to fit these and other holders.

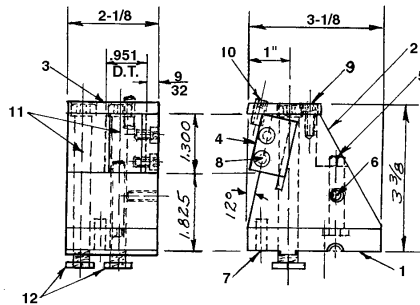
FOR 2nd POSITION 12° DAVENPORT SLIDE

- Permits heavier cuts without chatter.



CAT. NO. DTH-DVB

- Eccentric stud and pin adjustment to correct part taper.

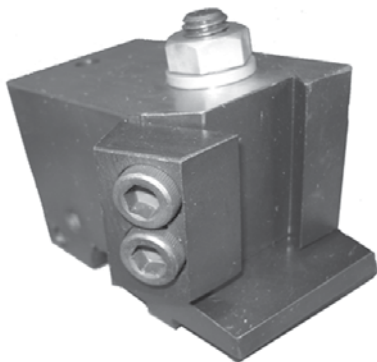


See page 16 for Standard Dovetail Form Blanks to fit these and other holders.

2nd POSITION DOVETAIL TOOL HOLDER PARTS

Part No.	Cat. No.
1. PLATE	DTH-DVB-1
2. BODY	DTH-DVB-2
3. TOP PLATE	DTH-DVB-3
4. CLAMP	DTH0-2
5. STUD	DTH-DAV-3
6. STUD SCREW	TH000-3
7. PIVOT PIN	DTH-DVB-7
8. CLAMP SCREW	DTH2-7
9. COVER SCREW	TCOBH00-SCR
10. JACK SCREW	DTH-DVB-10
11. CAP SCREW	DTH-DVB-11
12. SQUARE NUT	DTH-DVB-12

1ST POSITION 10° DOVETAIL TOOL HOLDER FOR DAVENPORT

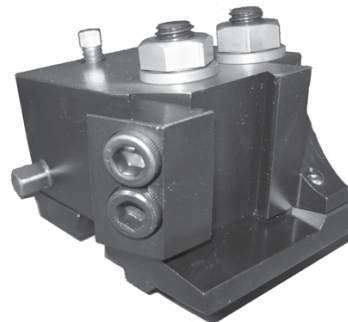


- 1-Bolt
- 10° Face Angle
- First Position

Cat. No.
3060-SA-SOMMA

For Dovetail Blanks see page 16

1ST POSITION 10° DOVETAIL TOOL HOLDER FOR DAVENPORT



- 2-Bolt
- Designed for heavy cuts
- 10° Face Angle
- First Position

Cat. No.
3060-10-SA-SOMMA

For Dovetail Blanks see page 16

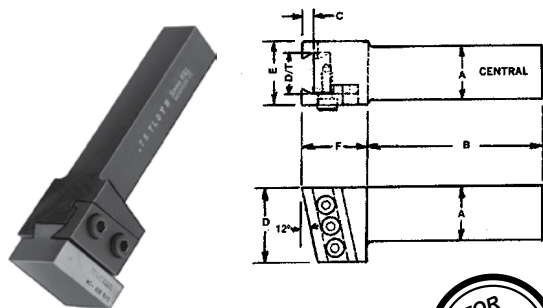
DOVETAIL FORM TOOL ADAPTER FOR TURRET LATHES AND CNC LATHES

These Holders are designed to hold standard Dovetail Blanks in the flat tool post or square tool post of all Turret Lathes and CNC Lathes.

CAT. NO.	A	B	D/T	C	D	E	F
.75TLDTH	3/4 SQ.	3-1/2	.6995	1/4	1-1/4	1-1/4	1-1/4
1.0TLDTH	1" SQ.	4"	.951	1/4	1-3/4	1-1/2	1-1/2
1.25TLDTH	1-1/4 SQ.	4-1/2	.951	1/4	1-3/4	1-1/2	1-1/2
1.882TLDTH	1-1/4 SQ.	4-1/2	1.882	17/32	2"	3"	2"

DOVETAIL FORM TOOL ADAPTER PARTS

Part No.	.75TLDTH Cat. No.	1.0TLDTH Cat. No.	1.25TLDTH Cat. No.	1.882TLDTH Cat. No.
1. Body	.75TLDTH-1	1.0TLDTH-1	1.25TLDTH-1	1.882TLDTH-1
2. Clamp	.75TLDTH-2	1.0TLDTH-2	1.0TLDTH-2	1.882TLDTH-2
3. Clamp Scr.	DTH2-7	DTH2-7	1.25TLDTH-3	1.25TLDTH-3



See page 16 for Standard Dovetail Blanks to fit these holders.

BROWN & SHARPE UNIVERSAL DOVETAIL TOOL HOLDERS

- Designed for use on front or rear slide for either forward or reverse spindle rotation.
- Especially suited for heavy cuts or where design limitations of circular type tools do not permit grinding of side clearances.
- Swivel adjustment provided to correct for tapers.

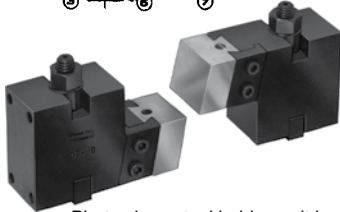
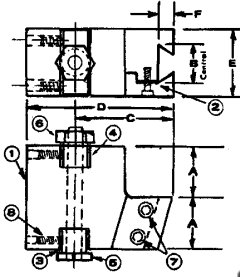


Photo shows tool holder as it is used for forward rotation on front and rear slide.

MACH SIZE	D/T BLANK SEE PG 16	ORDERING#	A	B	C	D	E	F
#00	DTH00-..	DTH00	1"	.714	1-5/8	2-5/8	1-1/4	3/16
#00	5/8DTF-..	DTH00-951	1"	.951	1-11/16	2-11/16	1-1/2	1/4
#0	DTH0-..	DTH0	1-5/16	.951	2-1/8	3-3/8	1-1/2	1/4
#2	DTH2-..	DTH2	1-7/16	1.250	2-17/32	3-15/16	2"	13/32
#2	5/8DTF-..	DTH2-951	1-7/16	.951	2-7/8	4-9/32	1-1/2	1/4
#2	1-1/4DTF-..	DTH2-1.882	1-7/16	1.882	2-17/32	3-15/16	3"	1/2

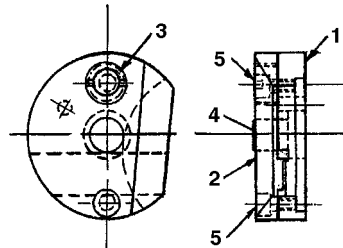
"T" CUT-OFF BLADE HOLDER FOR DAVENPORT

This Cut-Off Blade Holder can be mounted in the circular form tool position on the Davenport Machine and holds standard 1/2" high "T" Type Cut-Off Blades.

Cat. No. TCOBH-DAV

- EXCLUSIVE ADJUSTMENT FEATURE MAKES COMPENSATION FOR DIFFERENT BLADE WIDTHS FAST AND EASY
- * ELIMINATES NEED FOR WASHERS OR SPACERS
 - * HOLDS BLADES MORE SECURELY
 - * HOLDER LASTS LONGER

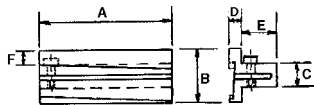
(FOR STANDARD BLADES TO FIT THIS HOLDER SEE PAGES 30 & 31).



Part No.	Cat. No.
1. Body	TCOBH-DAV-1
2. Clamp	TCOBH-DAV-2
3. Adjustment Screw	TCOBH-DAV-3
4. Center Stud	TCOBH-DAV-4
5. Clamp Screws	ATT0-16

CUT-OFF BLADE HOLDERS

- Fits R & L Universal Tool Post
- Can also be used on turret lathe tool posts
- Forward rotation holder can be used on either front or rear side.
- Reverse rotation holder can be used on either front or rear side
- Entire holder can be removed for tool resharping without losing setting.
- TCOBH-ACCU is rectangular and does not have projection "C" and "E".



(FOR STANDARD CUT-OFF BLADES TO FIT THESE HOLDERS SEE PAGES 30 & 31.)

HOLDERS FOR T-TYPE BLADES

TOOL NO.	ROTATION	BLADE HEIGHT
TCOBH00-F	FORWARD	1/2
TCOBH00-R	REVERSE	1/2
TCOBH1-F	FORWARD	11/16
TCOBH1-R	REVERSE	11/16
TCOBH2-F	FORWARD	11/16
TCOBH2-R	REVERSE	11/16
TCOBH-ACCU	FORWARD	1/2

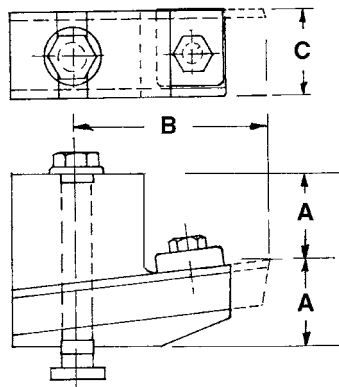
CUT-OFF BLADE HOLDER SPECIFICATIONS

Size	A	B	C	D	E	F
No. 00	2-1/2	1"	3/8	1/4	1/2	5/16
No. 1	2-3/4	1-1/8	1/2	1/4	3/4	9/32
No. 2	3"	1-3/16	5/8	5/16	1"	5/16
ACCU	3-1/2	63/64	0	9/16	0	1/4

UNIVERSAL CUTOFF BLADE TOOL POST FOR B&S MACHINES

UNIQUE DESIGN:

- ONE TOOL POST TAKES CARE OF ALL POSITIONS BY HOLDING BLADE ON ONE SIDE OR THE OTHER AND BY USING TOOL POST RIGHT SIDE UP OR UPSIDE DOWN
- CAN BE USED ON EITHER FRONT OR REAR SLIDE AND FOR FORWARD OR REVERSE ROTATION
- HOLDS "T" TYPE CUTOFF BLADES (SEE PAGES 30 & 31 FOR BLADES TO FIT THESE HOLDERS)
- REVERSIBLE CLAMP BLOCK HOLDS BLADE SECURELY ON EITHER SIDE
- RUGGED CONSTRUCTION
- FOR No. 00, No. 0 AND No. 2 B&S



CAT. NO.	A	B	C	BLADE
BLTP-00	1"	2-3/16	1"	1/2
BLTP-0	1-5/16	2-3/4	1-1/4	11/16
BLTP-2	1-7/16	3-5/8	1-3/8	11/16

UNIVERSAL TOOL POST

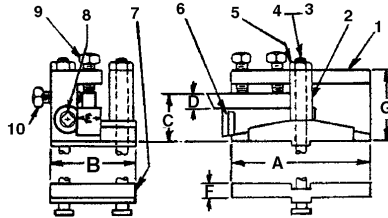


- Can be adapted to turret lathes and hand screw machines
- Can be set up close to chuck
- Can be used with R & L cut-off blade holder

- Holds flat form tools on front or rear slide
- Can be used for skiving tools as well as for flat form tools
- For both right and left hand spindle rotation

UNIVERSAL TOOL POSTS SPECIFICATIONS

CAT. NO.	A	B	C	D	E	F	G	FITS
TP00	3"	1-13/16	1"	3/8	1/2	3/8	1-1/2	No. 00 B&S
TP1	4"	2-13/32	1-5/16	1/2	3/4	1/2	1-27/32	No. 0 B&S
TP2	4-1/2"	3"	1-7/16	5/8	1"	5/8	2-3/32	No. 2 B&S



UNIVERSAL TOOL POST PARTS

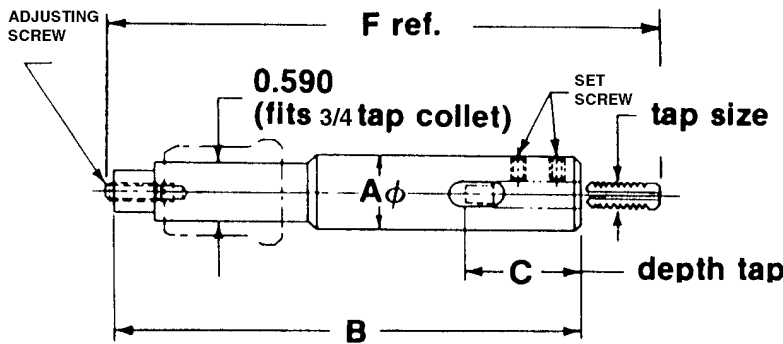
Part No.	TP00 Cat. No.	TP1 Cat. No.	TP2 Cat. No.
1. Body	TP00-1	TP1-1	TP2-1
2. Bushing	TP00-2	TP1-2	TP2-2
3. Long Bolts (ea)	00TPB-3	0TPB-3	2TPB-3
4. Short Bolts (ea)	00TPB-2	0TPB-2	2TPB-2
5. Nuts (ea)	00TBN	0TBN	2TBN
6. Tape Wedge	TP00-6	TP1-6	TP2-6
7. Raising Block	TP00-7	TP1-7	TP2-7
8. Adjusting Screw	TP00-8	TP1-8	TP2-8
9. Clamp Screws (ea)	TT1-6	TT2-13	TT2-13
10. Alignment Screws (ea)	TP00-10	TP1-10	TP1-10

(FOR STANDARD FORM TOOL BLANKS TO FIT THESE TOOL POSTS SEE PAGE 28.)

TAP EXTENSIONS

USED WHERE ADDITIONAL LENGTH IS REQUIRED.

USE WITH 3/4" TAP COLLET (.590) ON THE REQUIRED TAP CHUCK.

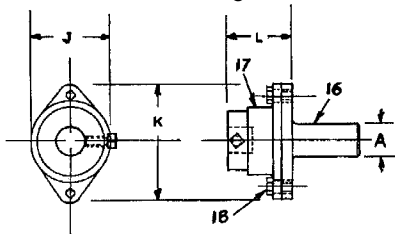


TAP SIZE	A	B	C	F REF LENGTH	CAT. NO.
#6	.500	4.750	.938	6.03	FTE6475
#8	.562	4.688	.812	6.03	FTE8469
#8	.562	9.094	.812	10.44	FTE8909
#10	.562	4.688	1.062	6.03	FTE10469
#10	.562	9.094	1.062	10.44	FTE10909
#12	.590	4.688	1.093	6.03	FTE12469
#14 & 1/4	.590	4.688	1.188	6.03	FTE025469
#14 & 1/4	.590	9.094	1.188	10.44	FTE025909
5/16	.590	4.531	1.250	6.03	FTE031453
5/16	.590	8.938	1.250	10.44	FTE031894
3/8	.750	4.438	1.375	6.03	FTE037444
3/8	.750	8.843	1.375	10.44	FTE037884
7/16	.590	4.250	1.406	6.03	FTE043412
1/2	.750	4.062	1.438	6.03	FTE050406
1/2	.750	8.469	1.438	10.44	FTE050847
9/16	.750	3.906	1.500	6.03	FTE056391
9/16	.750	8.312	1.500	10.44	FTE056831
5/8	.812	3.750	1.562	6.03	FTE062375
5/8	.812	8.156	1.562	10.44	FTE062816
11/16	.875	3.812	1.875	6.03	FTE068381
1/8P WITH 7/16 SHANK	.750	5.000	1.125	6.03	FTE012P500
1/8P WITH 7/16 SHANK	.750	9.406	1.125	10.44	FTE012P941
1/8P WITH 5/16 SHANK	.590	5.000	1.125	6.03	FTE006P500
1/8P WITH 5/16 SHANK	.590	9.406	1.125	10.44	FTE006P941
1/4P	.875	4.688	1.125	6.03	FTE025P468
1/4P	.875	9.094	1.125	10.44	FTE025P909
3/8P	1.000	4.750	1.312	6.03	FTE037P475
3/8P	1.000	9.156	1.312	10.44	FTE037P916

ADJUSTABLE (FLOATING) RELEASING TAP HOLDERS



Now the exclusive principal of the R & L clutch type releasing Tap Holder is available in the adjustable (floating) type. This new tool gives all the advantages of the R & L Releasing Tap Holder and in addition can also be used on screw machines and turret lathes that are out of alignment.



ADJUSTABLE RELEASING TAP HOLDER

CAT. NO.	A	J	K	L	TAP CAPACITY	
					HAND	PIPE
ARTH00	5/8	1-3/8	2-1/8	1-11/32	7/16	1/8
ARTH1	3/4	1-19/32	2-3/4	1-11/16	11/16	1/4
ARTH2	1"	2-7/32	3-1/2	2-3/8	1-1/8	3/4
ARTH3	1-1/4	2-13/16	4-5/8	3-1/4	1-1/4	1"
ARTH4	1-1/2	3-5/8	5-1/2	4-5/32	1-1/2	1"

All other dimensions and parts are the same as Releasing Tap Holder (Pg. 67).

ADJUSTABLE RELEASING TAP HOLDER PARTS

Part No.	ARTH00 Cat. No.	ARTH1 Cat. No.	ARTH2 Cat. No.	ARTH3 Cat. No.	ARTH4 Cat. No.
16. Shank	ARTH00-16	ARTH1-16	ARTH2-16	ARTH3-16	ARTH4-16
17. Head	ARTH00-17	ARTH1-17	ARTH2-17	ARTH3-17	ARTH4-17
18. Clamp Screw & Washer	ARTH00-18	ARTH1-18	FDH1-4	FDH4A-4	FDH4B-4

SEE PG. 97 FOR TAP HOLDER BUSHINGS FOR THESE TAP HOLDERS.



R&L RELEASING TAP HOLDER

The patented unique releasing mechanism of the Somma R & L Tap Holder is unequalled for dependability and accuracy which resulted in its selection for usage as original equipment by many machine tool manufacturers.

FEATURES

- For right or left hand threading
- No spring plungers to wear or break
- Eases tap into work for better matching of threads
- No. 000 size is extremely sensitive for small taps when used on high speed machines
- Simple operation (see diagrams below)

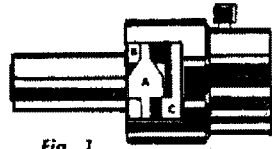


Fig. 1

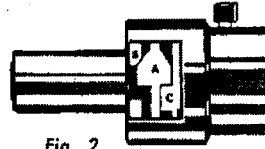


Fig. 2

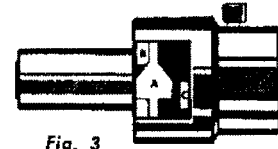


Fig. 3

PATENTED

Ready to start threading operation, clutch slightly engaged (A) and (C).

When tap contacts work, clutch ring (A) slides forward to fully engage spindle (C) for positive driving power.

When end of pullout is reached clutch ring (A) springs back instantly, leaving ample clearance between contact points of clutch ring and spindle, preventing re-engagement or hammering of clutch points in case turret advances slightly after release.

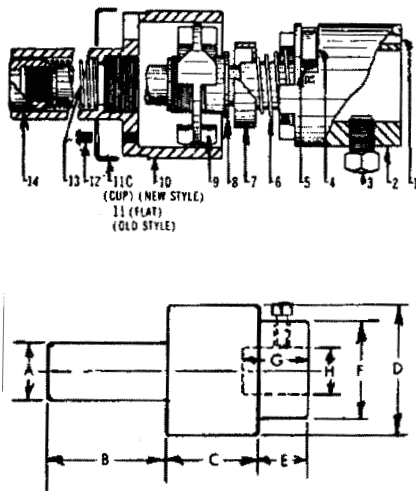
NOTE: TH2-NBG, TH3-NBG AND TH4-NBG have special shank diameter and length for use on New Britain Gridley automatics.

SEE PAGE 97 FOR TAP HOLDER BUSHINGS FOR THESE TAP HOLDERS

SIZE	A	B	C	D	E	F	G	H	TAP CAPACITY		PULLOUT FOR RELEASING			
									HAND TAP	PIPE TAP	CAT. NO.	STD. CLUTCH NUT	CAT. NO.	SHORT CLUTCH NUT
TH000	5/8	1-3/16	7/8	1-1/32	3/8	13/16	1/2	1/2	1/4	1/16	TH000	1/8	TH000-S	.100
TH00	5/8	1-1/4	7/8	1-11/32	13/32	1-1/8	19/32	1/2	7/16	1/8	TH00	1/8	TH00-S	.100
TH1	3/4	1-3/4	1-1/16	1-19/32	1/2	1-5/16	3/4	5/8	11/16	1/4	TH1	5/32	TH1-S	.115
TH2	1"	2"	1-3/8	2-7/32	13/16	1-3/4	1-5/32	1"	1-1/8	3/4	TH2	7/32	TH2-S	.156
TH2-NBG	1"	2"	1-3/8	2-7/32	13/16	1-3/4	1-5/32	1"	1-1/8	3/4			TH2-NBG	.156
TH3	1-1/4	2-9/16*	2"	2-13/16	7/8	2-1/4	1-1/2	1-1/4	1-1/4	1"	TH3	1/4	TH3-S	.167
TH3-NBG	1-1/2	1-11/16	2"	2-13/16	7/8	2-1/4	1-1/2	1-1/4	1-1/4	1"			TH3-NBG	.167
TH4	1-1/2	3-3/16	2-9/16	3-5/8	1-1/8	3"	1-5/8	1-1/2	1-1/2	1"	TH4	5/16	TH4-S	.203
TH4-NBG	1-1/2	1-11/16	2-9/16	3-5/8	1-1/8	3"	1-5/8	1-1/2	1-1/2	1"			TH4-NBG	.203

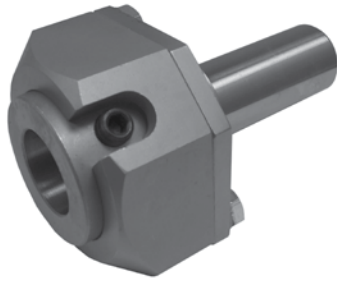
* PLUS 31/32 DIA. x 15/16 LONG PROJECTION

RELEASING TAP HOLDER PARTS



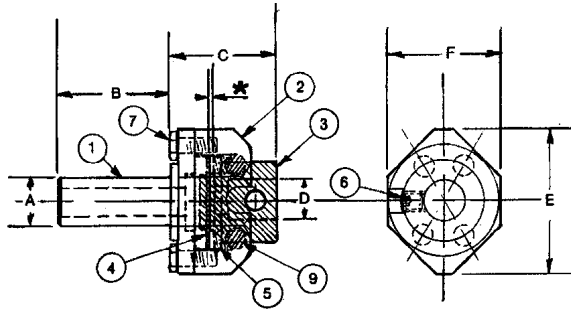
Part No.	TH000 Cat. No.	TH00 Cat. No.	TH1 Cat. No.	TH2 Cat. No.	TH2-NBG Cat. No.	TH3 Cat. No.	TH3-NBG Cat. No.	TH4 Cat. No.	TH4-NBG Cat. No.
1. Pawl Pin	TH000-1	TH00-1	TH1-1	TH2-1	TH2-1	TH3-1	TH3-1	TH4-1	TH4-1
2. Spindle	TH000-2	TH00-2	TH1-2	TH2-2	TH2-2	TH3-2	TH3-2	TH4-2	TH4-2NBG
3. Set Screw	TH000-3	TH00-13	TH1-6	TH2-13	TH2-13	TH3-13	NR3-3	TH4-3	NR4-3
4. Pawl	TH000-4	TH00-4	TH1-4	TH2-4	TH2-4	TH3-4	TH3-4	TH4-4	TH4-4
5. Pawl Spring	TH000-5	TH1-5	TH1-5	TH1-5	TH1-5	TH3-5	TH3-5	TH3-5	TH3-5
6. Clutch Spring	TH000-6	TH00-6	TH1-6	TH2-6	TH2-6	TH3-6	TH3-6	TH4-6	TH4-6
7. Clutch Washer	TH000-7	TH00-7	TH1-7	TH2-7	TH2-7	TH3-7	TH3-7	TH4-7	TH4-7
8. Clutch Nut	TH000-8	TH00-8	TH1-8	TH2-8	--	TH3-8	--	TH4-8	--
8-S Short Clutch Nut	TH000-8S	TH00-8S	TH1-8S	TH2-8S	TH2-8S	TH3-8S	TH3-8S	TH4-8S	TH4-8S
9. Clutch Ring	TH000-9	TH00-9	TH1-9	TH2-9	TH2-9	TH3-9	TH3-9	TH4-9	TH4-9
10. Body	TH000-10	TH00-10	TH1-10	TH2-10	TH2-10NBG	TH3-10	TH3-10NBG	TH4-10	TH4-10NBG
11. Cover Plate (Old Style)	TH000-11	TH00-11	TH1-11	TH2-11	TH2-11	TH3-11	TH3-11NBG	TH4-11	TH4-11
11C. Cup Style	TH000-11C	TH00-11C	TH1-11C	TH2-11C	TH2-11C	TH3-11C	TH3-11NBG	TH4-11C	TH4-11C
12. Cover Plate Screw	TH000-12	TH00-12	TH00-12	TH00-12	TH00-12	TH00-12	TH00-12	TH00-12	TH00-12
13. Shank Spring	TH000-13	TH00-13	TH1-13	TH2-13	TH2-13	TH3-13	TH3-13	TH4-13	TH4-13NBG
13-2 Retainer	--	TH00-13-2	--	--	--	--	--	--	--
14. Spindle Nut	TH000-14	TH00-14	TH1-14	TH2-14	TH2-14	TH2-14	TH2-14	TH4-14	TH4-14NBG

TOOL HOLDERS
S.S. COLLET CHUCKS



ADJUSTABLE NON-RELEASING TAP HOLDER

- Fits all standard machines.
- Adjustable (floating). Easy-to-get-at back end adjustment screws to compensate for machine misalignment.
- Has thru-hole, eliminates cutting down tap shanks. Makes it easier to remove taps from holder.
- Bumper action for better threads - but bumper action can be eliminated by use of two, part No. 4 Retaining Washers to fill gap. *
- Easy to service, simple 2 spring balanced pull-out mechanism.
- Rugged enough for heavy taps and yet sensitive enough for small taps.
- Minimum overhang for maximum machine clearance (Eliminates shortening of taps).



SEE PAGE 97 FOR TAP HOLDER BUSHINGS FOR THESE TAP HOLDERS.

CAT. NO.	A	B	C	D	E	F	PULLOUT	TAP CAPACITY	
								HAND	PIPE
00ANR	5/8	1-3/16	31/32	1/2	1-3/4	1-5/16	3/32	7/16	1/8
1ANR	3/4	1-3/4	1-13/32	5/8	2-1/4	1-3/4	1/4	11/16	1/4
2ANR	1"	2-3/8	1-57/64	1"	3-1/8	2-3/8	9/32	1-1/8	3/4

ADJUSTABLE NON-RELEASING TAP HOLDER PARTS

Part No.	00ANR Cat. No.	1ANR Cat. No.	2ANR Cat. No.
1. Shank	00ANR-1	1ANR-1	2ANR-1
2. Body	00ANR-2N	1ANR-2N	2ANR-2N
3. Spindle	00ANR-3N	1ANR-3N	2ANR-3N
4. Retaining Washer	00ANR-4N	1ANR-4N	2ANR-4N
5. Springs (Std)	00ANR-5	1ANR-5	2ANR-5
5. Springs (Light Duty)	00ANR-5LD	1ANR-5LD	2ANR-5LD
6. Set Screw	ORB2-5	1ANR-6	2ANR-6
7. Clamp Screw & Washer	ARTH00-18	ARTH1-18	2ANR-7
9. Ball	RSA00-5	RSA2-5	2ANR-9

NON-RELEASING TAP HOLDER

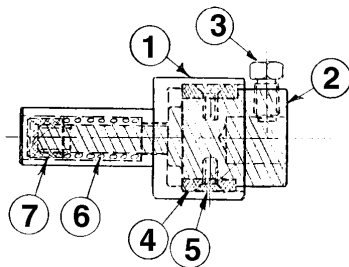


CAT. NO.	SHANK DIA.	SHANK LENGTH	TAP CAPACITY		
			HAND	PIPE	PULLOUT
NR000	5/8	1-3/16	1/4	1/16	7/16
NR00	5/8	1-1/4	7/16	1/8	1/2
NR1	3/4	1-3/4	11/16	1/4	17/32
NR2	1"	2"	1-1/8	3/4	5/8
NR2-NBG	1"	2"	1-1/8	3/4	5/8
NR3	1-1/4	2-9/16	1-1/4	1"	7/8
NR3-NBG	1-1/2	1-3/4	1-1/4	1"	7/8
NR4	1-1/2	3-3/16	1-1/2	1"	1"
NR4-NBG	1-1/2	1-11/16	1-1/2	1"	1"

All other dimensions same as releasing tap holders (see pg. 69) Tools with "NBG" Cat. Nos. have special shank dimensions for use on New Britain Gridley Automatics.

* Excellent for operations where release is not required.

* Smooth, extra long pullout.



SEE PAGE 97 FOR TAP HOLDER BUSHINGS FOR THESE TAP HOLDERS

NON-RELEASING TAP HOLDERS PARTS

Part No.	NR000 Cat. No.	NR00 Cat. No.	NR1 Cat. No.	NR2 Cat. No.	NR3 Cat. No.	NR4 Cat. No.
1. Body	NR000-1	NR00-1	NR1-1	NR2-1	NR3-1	NR4-1
2. Spindle	NR000-2	NR00-2	NR1-2	NR2-2	NR3-2	NR4-2
3. Set Screw	ATT00-12	TH000-3	FARH2-10	2ANR-6	NR3-3	NR4-3
4. Key (Ea.)	NR00-4	NR00-4	NR1-4	NR2-4	NR3-4	NR4-4
5. Keys Screws (Ea.)	NR000-5	NR000-5	NR000-5	NR2-5	NR2-5	NR2-5
6. Shank Spring	TH000-13	TH00-13	TH1-13	TH2-13	TH3-13	TH4-13
7. Spindle Nut	TH000-14	TH00-14	TH1-14	TH2-14	TH2-14	TH4-14
8. Retainer	---	TH00-13-2	---	---	---	---

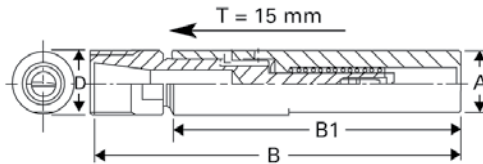
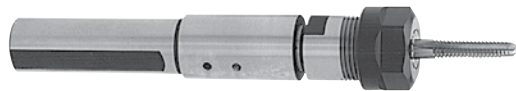
All parts for NBG Tap Holders same as standard except as shown below.

Part No.	NR2-NBG Cat. No.	NR3-NBG Cat. No.	NR4-NBG Cat. No.
1. Body	NR2-1NBG	NR3-1NBG	NR4-1NBG
2. Spindle	---	---	NR4-2NBG

ER16 TENSION ONLY TAP HOLDERS

Part No.	A	B	B1	D	Tension	Nut
SS20ERT693	20	6.93	3.94	1.10	0.59	ER16H
SS22ERT531	22	5.31	3.94	1.10	0.59	ER16H
SS075ERT535	3/4	5.35	2.36	1.10	0.59	ER16H
SS075ERT394	3/4	3.94	2.56	.87	0.59	ER16M

- PERMITS TAPPING USING ER16 COLLET SYSTEM #0-5/16 HAND TAP CAPACITY.
- IDEALLY SUITED FOR THROUGH HOLE APPLICATIONS ON SWISS AND JAPANESE AUTOMATICS AND LATHES.



SEE PAGE 115 FOR COLLETS.

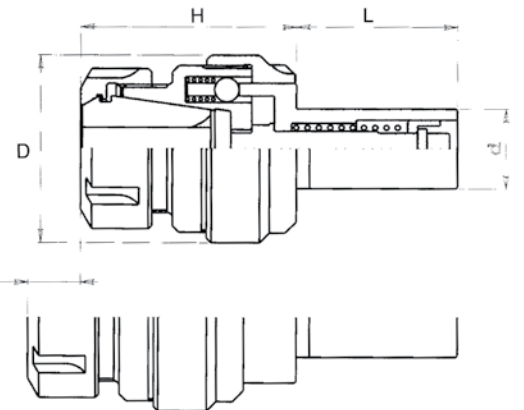
TENSION ONLY FLOATING ER COLLET TAP HOLDERS

- Tension Feature Eliminates Tap Breakage During Machine Reversal
- For use on CNC machining centers and lathes, screw machines, automatic lathes, chucks, and milling machines.
- Can be used on rigid or reversing spindles
- Floating mechanism (.020 per side / .040 total float) compensates for misalignment between tap and work piece.

SEE PAGE 115 FOR COLLETS.



Shank Dia.	Collet Series	L	H	D	Tension (mm)		Part No.	Collet Nut*	Collet Wrench**
						T			
5/8	ER11	32	36	29		8	SS062TIER11	ER11H	ER11HW
5/8	ER16	32	48	29		8	SS062TIER16	ER16M	ER16MW
3/4	ER11	32	36	29		8	SS075TIER11	ER11H	ER11HW
3/4	ER16	32	48	29		8	SS075TIER16	ER16M	ER16MW
3/4	ER20	46	56	44		12	SS075TIER20	ER20H	ER20HW
3/4	ER25	46	70	44		12	SS075TIER25	ER25E	ER25EW
1"	ER20	46	56	44		12	SS100TIER20	ER20H	ER20HW
1"	ER25	50	64	58		16	SS100TIER25	ER25E	ER25EW
1"	ER25	80	64	58		16	SS100TIER25L	ER25E	ER25EW
1"	ER32	50	66	58		16	SS100TIER32	ER32E	ER32EW
1"	ER32	80	66	58		16	SS100TIER32L	ER32E	ER32EW
1-1/4"	ER25	50	64	58		16	SS125TIER25	ER25E	ER25EW
1-1/4"	ER32	50	66	58		16	SS125TIER32	ER32E	ER32EW
16MM	ER11	32	36	29		8	SS16TIER11	ER11H	ER11HW
16MM	ER16	32	48	29		8	SS16TIER16	ER16M	ER16MW
20MM	ER11	32	36	29		8	SS20TIER11	ER11H	ER11HW
20MM	ER16	32	48	29		8	SS20TIER16	ER16M	ER16MW
20MM	ER20	46	56	44		12	SS20TIER20	ER20H	ER20HW
20MM	ER25	46	70	44		12	SS20TIER25	ER25E	ER25EW
22MM	ER20	46	56	44		12	SS22TIER20	ER20H	ER20HW
22MM	ER25	46	70	44		12	SS22TIER25	ER25E	ER25EW
25MM	ER20	46	56	44		12	SS25TIER20	ER20H	ER20HW
25MM	ER25	50	64	58		16	SS25TIER25	ER25E	ER25EW
25MM	ER25	80	64	58		16	SS25TIER25L	ER25E	ER25EW
25MM	ER32	50	66	58		16	SS25TIER32	ER32E	ER32EW
25MM	ER32	80	66	58		16	SS25TIER32L	ER32E	ER32EW
30MM	ER25	50	64	58		16	SS30TIER25	ER25E	ER25EW
30MM	ER32	50	66	58		16	SS30TIER32	ER32E	ER32EW
32MM	ER25	50	64	58		16	SS32TIER25	ER25E	ER25EW
32MM	ER32	50	64	58		16	SS32TIER32	ER32E	ER32EW
40MM	ER25	85	64	58		16	SS40TIER25	ER25E	ER25EW
40MM	ER32	85	64	58		16	SS40TIER32	ER32E	ER32EW



TAP COLLET SERIES	HAND TAP COLLET RANGE
ER11	#0 TO 1/4
ER16	#0 TO 5/16
ER20	#0 TO 1/2
ER25	#0 TO 5/8
ER32	#0 TO 13/16

** Collet Wrench and Tap Collets sold separately

STRAIGHT SHANK COOLANT THROUGH ER COLLET CHUCK

Cat. No.	Collet Series	Collets Range	L1	L	J	D	D1
SS075ERC16209	ERC16	1/8-3/8	3.00	2.093	M12	.875	.750
SS075ERC20248	ERC20	1/8-1/2	3.00	2.484	M12	1.109	.750
SS075ERC25283	ERC25	1/8-5/8	3.00	2.828	M12	1.656	.750
SS100ERC32303	ERC32	1/8-3/4	3.00	3.031	M16	1.958	1.000
SS125ERC40303	ERC40	1/8-1"	3.00	3.031	M18 X 1.5	2.359	1.250

ER Axial - Float Tension/Compression Tapholders

Application:

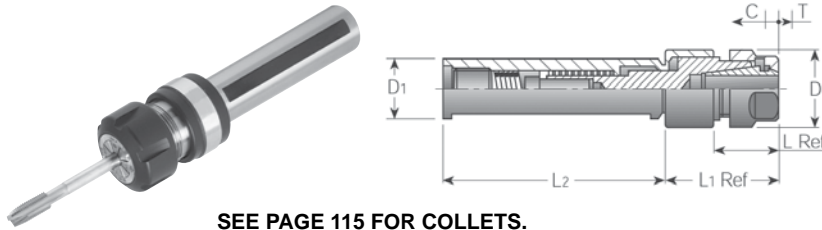
Axial-float/tension/compression type for C.N.C. milling machines and lathes with reversing motors and rigid tapping.

Features:

- Compensates for machine feed and tap pitch variance.
- Floating mechanism compensates for misalignment between tap and workpiece. (-.004/side .008 Total Float)
- Right-and left-hand tapping.

Advantages:

- Practical and efficient tap holding by the ER spring collet without using jaw drive.
- Compact design for minimal clearance applications.
- Heavy Duty design for high torque drive ensures the same accuracy as the tap itself.



SEE PAGE 115 FOR COLLETS.

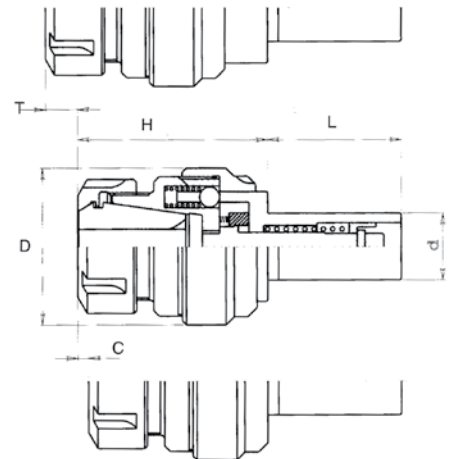
TENSION & COMPRESSION ER COLLET FLOATING TAP HOLDERS

- Axial-float/tension/compression for CNC lathes & milling machines with reversing motors and rigid tapping
- Compensates for machine feed and tap pitch variance
- Floating mechanism (.020 per side / .040 total float) compensates for misalignment between tap and work piece
- Compact design for minimal clearance applications
- Uses ER series tap collets

SEE PAGE 115 FOR COLLETS.



Shank Dia.	Collet Series	L	H	D	Tension T	Compression C	Part No.	Collet Nut*	Collet Wrench**
5/8	ER11	32	36	29	5.5	2.5	SS062TCIER11	ER11H	ER11HW
5/8	ER16	32	48	29	5.5	2.5	SS062TCIER16	ER16M	ER16MW
3/4	ER11	32	36	29	5.5	2.5	SS075TCIER11	ER11H	ER11HW
3/4	ER16	32	48	29	5.5	2.5	SS075TCIER16	ER16M	ER16MW
3/4	ER20	46	59	44	9	3	SS075TCIER20	ER20H	ER20HW
3/4	ER25	46	73	44	9	3	SS075TCIER25	ER25E	ER25EW
1"	ER20	46	59	44	9	3	SS100TCIER20	ER20H	ER20HW
1"	ER25	50	68	58	12	4	SS100TCIER25	ER25E	ER25EW
1"	ER25	80	68	58	12	4	SS100TCIER25L	ER25E	ER25EW
1"	ER32	50	70	58	12	4	SS100TCIER32	ER32E	ER32EW
1"	ER32	80	70	58	12	4	SS100TCIER32L	ER32E	ER32EW
1-1/4"	ER25	50	68	58	12	4	SS125TCIER25	ER25E	ER25EW
1-1/4"	ER32	50	70	58	12	4	SS125TCIER32	ER32E	ER32EW
16MM	ER11	32	36	29	5.5	2.5	SS16TCIER11	ER11H	ER11HW
16MM	ER16	32	48	29	5.5	2.5	SS16TCIER16	ER16M	ER16MW
20MM	ER11	32	36	29	5.5	2.5	SS20TCIER11	ER11H	ER11HW
20MM	ER16	32	48	29	5.5	2.5	SS20TCIER16	ER16M	ER16MW
20MM	ER20	46	59	44	9	3	SS20TCIER20	ER20H	ER20HW
20MM	ER25	46	73	44	9	3	SS20TCIER25	ER25E	ER25EW
22MM	ER20	46	59	44	9	3	SS22TCIER20	ER20H	ER20HW
22MM	ER25	46	73	44	9	3	SS22TCIER25	ER25E	ER25EW
25MM	ER20	46	59	44	9	3	SS25TCIER20	ER20H	ER20HW
25MM	ER25	50	68	58	12	4	SS25TCIER25	ER25E	ER25EW
25MM	ER25	80	68	58	12	4	SS25TCIER25L	ER25E	ER25EW
25MM	ER32	50	70	58	12	4	SS25TCIER32	ER32E	ER32EW
25MM	ER32	80	70	58	12	4	SS25TCIER32L	ER32E	ER32EW
30MM	ER25	50	68	58	12	4	SS30TCIER25	ER25E	ER25EW
30MM	ER32	50	70	58	12	4	SS30TCIER32	ER32E	ER32EW
32MM	ER25	50	68	58	12	4	SS32TCIER25	ER25E	ER25EW
32MM	ER32	50	70	58	12	4	SS32TCIER32	ER32E	ER32EW
40MM	ER25	85	68	58	12	4	SS40TCIER25	ER25E	ER25EW
40MM	ER32	85	70	58	12	4	SS40TCIER32	ER32E	ER32EW

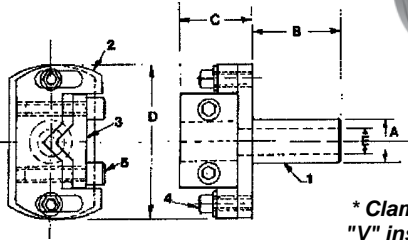
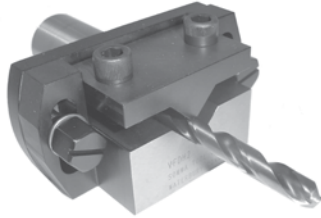


TAP COLLET SERIES	HAND TAP COLLET RANGE
ER11	#0 TO 1/4
ER16	#0 TO 5/16
ER20	#0 TO 1/2
ER25	#0 TO 5/8
ER32	#0 TO 13/16

** Collet Wrench and Tap Collets sold separately

"V" TYPE ADJUSTABLE (FLOATING) DRILL HOLDER

- ELIMINATES BUSHINGS
- HOLDS ANY SIZE DRILL SECURELY
- REVERSIBLE CLAMP
- HARDENED GROUND JAWS ASSURE SQUARENESS



* Clamp can be reversed - use with "V" inside for small drills or reverse for large drills.

CAT. NO.	A	B	C	D	E	CAPACITY	
						MIN.*	MAX.*
VFDH00	5/8	1-1/8	1"	2"	13/32	1/64	1/2
VFDH0	3/4	1-1/2	1-1/4	2-5/8	7/16	1/16	3/4
VFDH2	1"	1-3/4	1-5/8	3-1/2	11/16	1/8	1"

"V" FLOATING DRILL HOLDER PARTS

Part No.	VFDH00 Cat. No.	VFDH0 Cat. No.	VFDH2 Cat. No.
1. Shank	VFDH00-1	VFDH0-1	VFDH2-1
2. Body	VFDH00-2	VFDH0-2	VFDH2-2
3. Clamp	VFDH00-3	VFDH0-3	VFDH2-3
4. Body Screw & Washer	VFDH00-4	VFDH0-4	VFDH2-4
5. Clamp Screw	VFDH00-5	VFDH0-5	VFDH2-5

FLOATING DRILL HOLDERS (ADJUSTABLE)

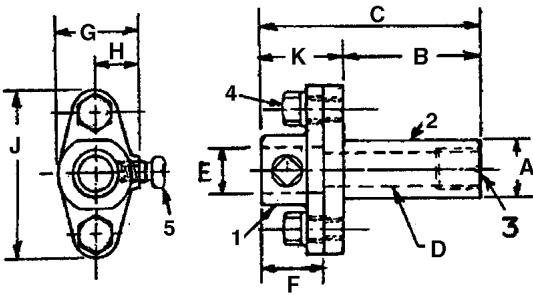


- Fully adjustable to correct for machine misalignment
- Hardened alloy steel
- Precision ground for perfect alignment
- Holds standard drill bushings - see pages 94 - 97.

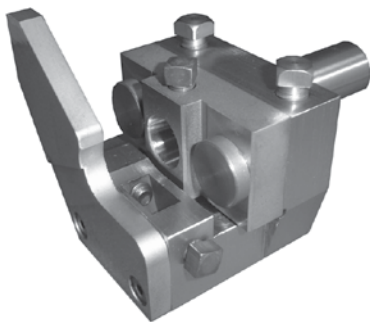
CAT. NO.	A	B	C	D	E	F	G	H	J	K
FDH00	5/8	1-1/2	2-13/32	3/8	1/2	11/16	15/16	1/2	1-13/16	15/16
FDH1	3/4	2"	3-5/32	1/2	5/8	7/8	1-5/16	11/16	2-7/16	1-5/32
FDH2	1"	2"	3-7/16	11/16	1"	1-1/8	1-5/8	7/8	2-15/16	1-7/16
FDH3	1-1/4	2-3/4	4-1/2	3/4	1-1/4	1-3/8	2-3/8	1-3/16	4"	1-3/4
FDH4A	1-1/2	3-1/4	4-13/16	3/4	1"	1-5/32	1-7/8	15/16	3-3/4	1-9/16
FDH4B	1-1/2	3-1/4	5-7/16	1-1/16	1-1/2	1-19/32	2-5/8	1-5/16	4-3/4	2-5/32

FLOATING DRILL HOLDER PARTS

Part No.	FDH00 Cat. No.	FDH1 Cat. No.	FDH2 Cat. No.	FDH3 Cat. No.	FDH4A Cat. No.	FDH4B Cat. No.
1. Body	FDH00-1	FDH1-1	FDH2-1	FDH3-1	FDH4A-1	FDH4B-1
2. Shank	FDH00-2	FDH1-2	FDH2-2	FDH3-2	FDH4A-2	FDH4B-2
3. Shank Screw	TT00-12	TT1-12	TT2-12	FDH4A-3	FDH4A-3	TT3-12
4. Clamp Screw & Washer	FDH00-4	FDH1-4	FDH2-4	FDH3-4	FDH4A-4	FDH4B-4
5. Drill Holder Screw	TT00-13	TT1-6	TT2-13	TT2-13	TT2-13	TH4-3



ADJUSTABLE DRILL & FACING TOOL HOLDER



- An adjustable drill holder which can also hold a blade for facing
- Stock stop plate for use in first position - allows the use of a form tool in the front cross slide
- Blade and drill can be set independently of each other
- Adjusting screw prevents drill from slipping back
- Holder can be used in any position
- Holds a 5/8" diameter drill bushing and a 3/8" square tool bit.

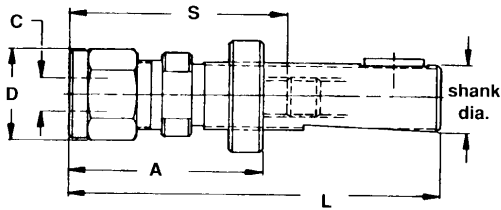
SEE PAGES 94 - 97 FOR DRILL BUSHINGS.

Cat. No.
2763-10-SA-SOMMA

TOOL HOLDERS
S.S. COLLET CHUCKS

AUTOMOTIVE THREADED SHANK COLLET CHUCKS

RECOMMENDED FOR DRILLING



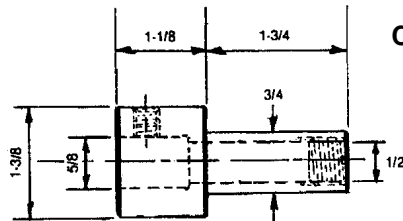
- Unique, adjustable stop screw allows drills to be preset and provides through-coolant capability.
- Erickson double-angle collets collapse 1/32" and can grip on back taper and margins of drills to allow for maximum feed rates and more accurate holes.

ERICKSON
PRODUCTS®

SHANK SIZE	C CAPACITY	COLLET SERIES	L	D	A MIN.	S MIN/MAX	CATALOG NUMBER
1/2-16	1/64-1/4	300DA	4.16	0.79	1.53	1.50/3.81	AS050DA308416
5/8-16	1/64-1/4	300DA	4.16	0.79	1.53	1.50/3.81	AS062DA308416
	1/32-3/8	200DA	4.67	1.15	2.06	1.62/4.18	AS062DA208469
3/4-12	1/64-1/4	300DA	4.16	0.79	1.53	1.50/3.81	AS075DA308416
	1/32-3/8	200DA	4.31	1.15	1.69	1.62/3.81	AS075DA208431
	1/4-9/16	100DA	4.88	1.42	2.25	1.81/4.38	AS075DA108488
7/8-12	1/32-3/8	200DA	4.94	1.15	1.69	1.62/4.43	AS088DA208494
	1/4-9/16	100DA	5.50	1.42	2.25	1.75/4.87	AS088DA108550
1 - 12	1/64-1/4	300DA	4.78	0.79	1.53	1.50/4.38	AS100DA308478
	1/4-9/16	100DA	5.19	1.42	1.94	1.94/4.50	AS100DA108519
	1/4-3/4	180DA	6.00	1.73	2.75	2.12/5.19	AS100DA188600
1-1/16-12	1/64-1/4	300DA	4.78	0.79	1.53	1.50/4.38	AS106DA308478
	1/32-3/8	200DA	4.94	1.15	1.69	1.62/4.37	AS106DA208494
	1/4-9/16	100DA	5.19	1.42	1.94	1.94/4.56	AS106DA108519
	1/4-3/4	180DA	6.00	1.73	2.75	2.12/5.18	AS106DA188600
1-1/4-12	1/4-3/4	180DA	6.25	1.73	2.00	1.94/5.56	AS125DA188625
	1-3/8-12	1/4-9/16	100DA	6.19	1.42	1.94	1.94/5.50
		1/4-3/4	180DA	6.25	1.73	2.00	1.94/5.56
		3/8-1	400DA	7.25	2.50	3.00	2.38/6.69
1-7/8-12	3/8-1	400DA	7.69	2.50	2.43	2.12/6.75	AS188DA408769

SEE PAGES 118 & 119 FOR COLLETS.

SOLID DRILL HOLDER FOR DAVENPORT MACHINES

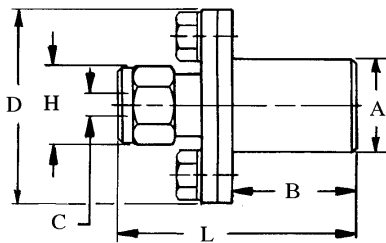


CAT. NO. SDH-DAV

- SHANK AND DRILL HOLE PRECISION GROUND FOR MAXIMUM CONCENTRICITY
- ALLOY STEEL-HEAT TREATED FOR LONG LIFE
- STOP SCREW IN SHANK PREVENTS DRILL PUSHBACK
- TAKES STANDARD DRILL BUSHINGS SEE PAGE 95.

ADJUSTABLE FLANGE HOLDER

RECOMMENDED FOR DRILLING



C CAPACITY	COLLET SERIES	A	B	L	H HEX	D	CAT. NO.
1/32-1/4	300	5/8	1-1/8	2.00	3/4	2"	SS062AF308200
1/32-1/4	300	3/4	2.00	2.88	3/4	2"	SS075AF308288
3/64-25/64	200	3/4	1-15/16	3.05	1"	2-5/16	SS075AF208305
3/64-9/16	100	3/4	2-13/32	4.31	1-1/8	3-1/8	SS075AF108431
3/64-9/16	100	1"	2-15/16	4.84	1-1/8	3-1/8	SS100AF108484



ERICKSON
PRODUCTS®

- DESIGN ALLOWS FOR THE CORRECTION OF MISALIGNMENT BETWEEN THE SPINDLE AND TURRET CENTERLINES.
- UNIQUE ADJUSTABLE STOP SCREW ALLOWS DRILLS TO BE PRESET AND PROVIDES THROUGH-COOLANT CAPABILITY.
- IDEAL FOR TURRET LATHES AND AUTOMATICS.

SEE PAGES 118 & 119 FOR COLLETS.



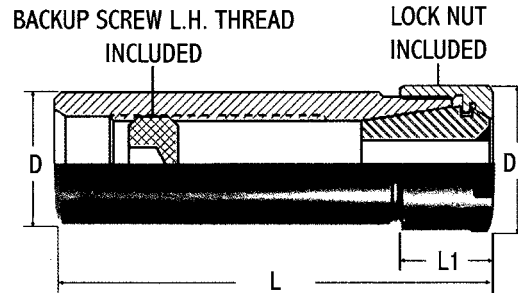
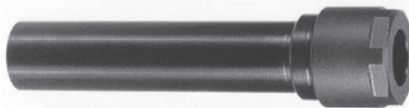
EXTRA LONG STRAIGHT SHANK COLLET CHUCK EXTENSIONS					
SHANK DIA.	OAL	SHANK TYPE	COLLET SERIES	CAPACITY	CAT. NO.
1/2"	8"	SOLID	300DA	1/32 TO 1/4	SS050DA304800S
1/2"	9"	SOLID	300DA	1/32 TO 1/4	SS050DA304900S
1/2"	9"	THRU HOLE	300DA	1/32 TO 1/4	SS050DA304900
1/2"	10"	SOLID	300DA	1/32 TO 1/4	SS050DA3041000S
3/4"	10.5"	THRU HOLE	200DA	3/64 TO 25/64	SS075DA2041050
3/4"	14"	SOLID	200DA	3/64 TO 25/64	SS075DA2041400S
1"	9.5"	THRU HOLE	100DA	3/64 TO 9/16"	SS100DA104950
1"	10.5"	SOLID	ER20	1/16 TO 1/2	SS100ER201050S
1"	10.5"	SOLID	100DA	3/64 TO 9/16"	SS100DA1041050S
1"	14"	SOLID	100DA	3/64 TO 9/16"	SS100DA1041400S

EXTENSIONS WITH THRU HOLE INCLUDE BACKUP SCREW.

LONGER SIZES CAN BE QUOTED.

SHANKS ON THESE CHUCKS DO NOT HAVE A FLAT ON THEM.

SEE PAGES 116 - 118 FOR COLLETS



SEE PAGES 116 - 119 FOR COLLETS

SHORT (STUBBY) STRAIGHT SHANK DA COLLET CHUCKS								
SHANK DIA.	OAL "L"	"L1"	"D1"	WRENCH SIZE	COLLET SERIES	CAPACITY	CATALOG NO.*	COLLET NUT CAT. NO.
1/2"	3.60"	.70"	.56"	1/2"	300DA	1/32 TO 1/4	SS050DA308360	NP300C
5/8"	3.75"	.70"	.56"	1/2"	300DA	1/32 TO 1/4	SS062DA308375	NP300C
5/8"	3.75"	.71"	.75"	11/16"	200DA	3/64 TO 25/64	SS062DA208375	NP200SC
3/4"	3.80"	.71"	.81"	3/4"	200DA	3/64 TO 25/64	SS075DA208380	NP200S
1"	4"	.90"	1.06"	7/8"	100DA	3/64 TO 9/16	SS100DA108400	NP100C
1"	6.20"	.87"	1.56"	1-3/8"	180DA	3/64 TO 3/4	SS100DA188620**	NP180C
1-1/4"	6.20"	.87"	1.56"	1-3/8"	180DA	3/64 TO 3/4	SS125DA188620	NP180C
1-1/2"	6.20"	.87"	1.56"	1-3/8"	180DA	3/64 TO 3/4	SS150DA188620	NP180C
1-3/4"	6.20"	.87"	1.56"	1-3/8"	180DA	3/64 TO 3/4	SS175DA188620	NP180C

* INCLUDES COLLET NUT

** THE SHANK ON THIS HOLDER DOES NOT HAVE A FLAT ON IT - ALL OTHER DA CHUCKS DO

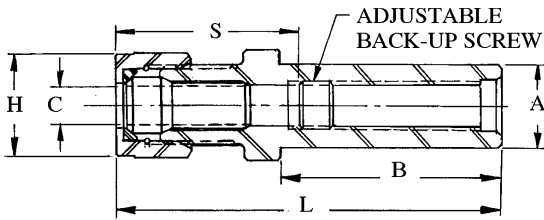
SHORT (STUBBY) STRAIGHT SHANK ER COLLET CHUCKS								
SHANK DIA.	OAL "L"	"L1"	"D1"	WRENCH SIZE	COLLET SERIES	CAPACITY	CATALOG NO.*	COLLET NUT CAT. NO.
1/2"	3.50"	.47"	.62"	9/16"	ER11	.039 TO .276	SS050ER11350	ER11MC
5/8"	3.50"	.47"	.62"	9/16"	ER11	.039 TO .276	SS062ER11350	ER11MC
5/8"	3.65"	.68"	.86"	13/16"	ER16	.039 TO .394	SS062ER16365	ER16MC
3/4"	3.65"	.68"	.86"	13/16"	ER16	.039 TO .394	SS075ER16365	ER16MC
1"	3.75"	.78"	1.10"	1"	ER20	.062 TO .512	SS100ER20375	ER20MC
1"	6.10"	.84"	1.36"	1-1/4"	ER25	.062 TO .630	SS100ER25610	ER25MC
1"	6.20"	.95"	1.61"	1-1/2"	ER32	.094 TO .787	SS100ER32620	ER32MC
1-1/4"	6.10"	.84"	1.36"	1-1/4"	ER25	.062 TO .630	SS125ER25610	ER25MC
1-1/4"	6.20"	.95"	1.61"	1-1/2"	ER32	.094 TO .787	SS125ER32620	ER32MC
1-1/2"	6.20"	.95"	1.61"	1-1/2"	ER32	.094 TO .787	SS150ER32620	ER32MC

* INCLUDES COLLET NUT.

SHANKS ON THESE ER CHUCKS DO NOT HAVE A FLAT ON THEM.

STUB-NOSE

RECOMMENDED FOR DRILLING AND MILLING.



- GRIP 1:1
- HEAVY-DUTY DESIGN
- DESIGNED TO BE THE MOST RUGGED DA DESIGNED CHUCK WITHOUT INFLUENCING ACCURACY
- RECOMMENDED FOR APPLICATIONS WHERE BETTER RIGIDITY IS REQUIRED
- BALANCED-BY-DESIGN
- FITTED WITH LEFT-HAND THREAD STOP SCREW
- THROUGH-THE-TOOLHOLDER COOLANT CAPABILITY

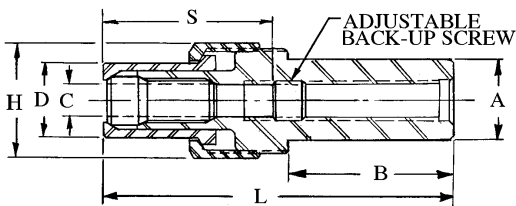
COLLET SERIES	A	B	L	H HEX	S MIN/MAX	CAT. NO.	Locknut
300	1/2	4"	5.16	11/16	1.5/4.2	SS050DA308516	LNA308M
300	5/8	4"	5.16	11/16	1.5/4.2	SS062DA308516	LNA308M
200	5/8	4"	5.69	1"	1.6/4.2	SS062DA208569	NPA208
300	3/4	4"	5.16	11/16	1.5/4.2	SS075DA308516	LNA308M
200	3/4	4"	5.31	1"	1.6/4.1	SS075DA208531	NPA208
100	3/4	4"	5.88	1-1/4	1.8/5.3	SS075DA108588	LNA108M
300	1"	4"	5.16	11/16	1.5/4.2	SS100DA308516	LNA308M
200	1"	3"	4.31	1"	1.6/3.7	SS100DA208431	NPA208
200	1"	4"	5.31	1"	1.6/4.1	SS100DA208531	NPA208
100	1"	4"	5.56	1-1/4	1.9/4.9	SS100DA108556	LNA108M
180	1"	4"	6.38	1-1/2	1.9/5.6	SS100DA188638	NPA188
200	1-1/4	4"	5.31	1"	1.62/4.12	SS125DA208531	NPA208
100	1-1/4	4"	5.56	1-1/4	1.9/4.9	SS125DA108556	LNA108M
100	1-1/4	6"	7.56	1-1/4	1.9/5.6	SS125DA108756	LNA108M
180	1-1/4	6"	7.62	1-1/2	1.9/6.6	SS125DA188762	NPA188
400	1-1/4	6"	8.62	2-1/4	2.1/7.7	SS125DA408862	NPA408
100	1-1/2	6"	7.56	1-1/4	1.9/5.6	SS150DA108756	LNA108M
200	1-1/2	4"	5.31	1"	1.6/4.7	SS150DA208531	NPA208
200	1-1/2	6"	7.31	1"	1.6/4.1	SS150DA208731	NPA208
180	1-1/2	6"	7.62	1-1/2	1.9/6.6	SS150DA188762	NPA188
400	1-1/2	6"	8.62	2-1/4	2.1/7.6	SS150DA408862	NPA408
180	1-3/4	6"	7.62	1-1/2	1.9/6.7	SS175DA188762	NPA188
180	2"	6"	7.62	1-1/2	1.9/5.6	SS200DA188762	NPA188
400	2"	6"	8.06	2-1/4	2.1/7.1	SS200DA408806	NPA408

SEE PAGES 118 AND 119 FOR
DOUBLE-ANGLE COLLETS.

COLLET SERIES	C COLLET RANGE
100 DA	3/64 TO 9/16
180 DA	3/64 TO 3/4
200 DA	3/64 TO 25/64
300 DA	1/32 TO 1/4
400 DA	3/32 TO 1"

EXTENDED-NOSE

RECOMMENDED FOR DRILLING.



- GRIP 1:1
- THIS STYLE DELIVERS THE BEST ACCURACY OF DA COLLET CHUCKS WITH MAXIMUM CLEARANCE AT THE NOSE
- ACCURATE DOUBLE-ANGLE DESIGN ENABLES HIGHER-SPEED APPLICATIONS COMPARED TO STUB-NOSE AND CLOSE-CENTER DA STYLES
- PILOTED LONG NOSEPIECE BEARING AND COMPENSATING LOCKNUT ALLOWS COLLET TO FIND ITS OWN AXIAL POSITION AND PREVENTS COLLET FROM TWISTING

COLLET SERIES	A	B	L	D DIAMETER	H HEX	S MIN/MAX	CAT. NO.	NOSE PIECE	LOCKNUT
300	1/2	4"	5.44	1/2	3/4	1.4/4.2	SS050DA301544	NP301	LN301
300	5/8	4"	5.44	1/2	3/4	1.4/4.2	SS062DA301544	NP301	LN301
300	5/8	1.73	3.19	1/2	3/4	1.4/2.7	SS062DA301319	NP301	LN301
200	5/8	1.26	3.25	13/16	1-1/4	1.4/2.8	SS062DA201325	NP201	LN201
200	5/8	4.01	6.00	13/16	1-1/4	1.4/4.2	SS062DA201600	NP201	LN201
300	3/4	2"	3.44	1/2	3/4	1.4/3.0	SS075DA301344	NP301	LN301
300	3/4	4"	5.44	1/2	3/4	1.4/5.0	SS075DA301544	NP301	LN301
200	3/4	4"	6.00	13/16	1-1/4	1.7/4.1	SS075DA201600	NP201	LN201
100	3/4	4"	6.50	1-1/16	1-1/2	1.7/5.7	SS075DA101650	NP101	LN101
300	1"	4"	5.44	1/2	3/4	1.4/4.2	SS100DA301544	NP301	LN301
200	1"	4"	6.00	13/16	1-1/4	1.7/4.1	SS100DA201600	NP201	LN201
100	1"	4"	6.50	1-1/16	1-1/2	1.9/5.6	SS100DA101650	NP101	LN101
180	1"	4"	6.38	2.02	1-3/4	1.7/5.6	SS100DA181638	NP181	LN181
180	1-1/4	6"	8.38	1-5/16	1-3/4	1.7/5.6	SS125DA181838	NP181	LN181
200	1-1/2	4"	6.00	13/16	1-1/4	1.7/4.1	SS150DA201600	NP201	LN201
180	1-1/2	6"	8.38	1-5/16	1-3/4	1.8/5.6	SS150DA181838	NP181	LN181
200	1-1/2	6"	8.00	1.44	1-1/4	1.7/4.1	SS150DA201800	NP201	LN201
100	1-1/2	6"	8.50	1.73	1-1/2	1.9/5.6	SS150DA101850	NP101	LN101
180	2"	6"	8.38	1-5/16	1-3/4	1.8/5.6	SS200DA181838	NP181	LN181
400	2"	6"	9.06	1-7/8	2-1/2	2.1/6.6	SS200DA401906	NP401	LN401
200	2"	6"	8.00	1.44	1-1/4	1.7/4.1	SS200DA201800	NP201	LN201
100	2"	6"	8.50	1.73	1-1/2	1.9/5.6	SS200DA101850	NP101	LN101

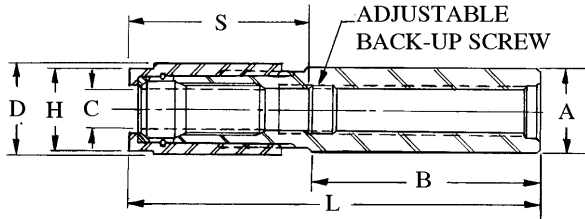
- FITTED WITH LEFT-HAND THREAD STOP SCREW
- THROUGH-THE-TOOLHOLDER COOLANT CAPABILITY

CLOSE-CENTER

RECOMMENDED FOR DRILLING

- GRIP 1:1
- SMALL OUTSIDE DIAMETER CLEARANCE IS IDEAL FOR MACHING CENTERS, AND CLOSE CENTER-DISTANCE AND FIXTURE PROBLEMS
- RECOMMENDED FOR APPLICATIONS WHERE REACH AND CLOSE PROXIMITY OF WORKPIECE PROBLEMS ARE ENCOUNTERED
- FITTED WITH LEFT-HAND THREAD STOP SCREWS
- THROUGH-THE-TOOLHOLDER COOLANT CAPABILITY

SEE PAGES 118 AND 119 FOR COLLETS.

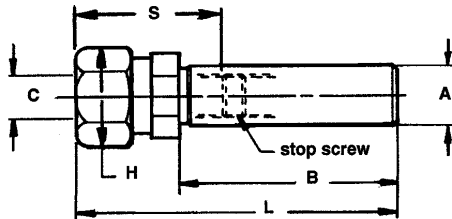


ERICKSON[®] PRODUCTS

C CAPACITY	COLLET SERIES	A	B	L	D DIAMETER	H HEX	S MIN/MAX	CAT. NO.	LOCKNUT
1/32-1/4	300	1/2	3.0	4.38	.56	1/2	1.5/3.9	SS050DA304438	LNA304M
1/32-1/4	300	1/2	5.4	6.81	.56	1/2	1.5/4.2	SS050DA304681	LNA304M
3/64-25/64	200	3/4	3.0	4.69	.84	3/4	1.6/4.7	SS075DA204469	LNA204M
3/64-25/64	200	3/4	5.5	7.12	.84	3/4	1.6/4.7	SS075DA204712	LNA204M
3/64-9/16	100	1"	3.0	4.88	1.06	15/16	1.9/4.2	SS100DA104488	LNA104M
3/64-9/16	100	1"	5.4	7.31	1.06	15/16	1.9/6.6	SS100DA104731	LNA104M
3/64-3/4	180	1-1/4	5.5	7.38	1.44	1-3/16	1.9/6.6	SS125DA184738	LNA184M
3/64-3/4	180	1-1/4	8"	9.88	1.44	1.19	1.9/9.0	SS125DA184988	LNA184M
3/32-1"	400	1-1/2	5.5	7.90	1.88	1.68	2.2/7.0	SS150DA404791	LNA404M
3/32-1"	400	1-1/2	8"	10.40	1.88	1.68	2.2/9.4	SS150DA404104	LNA404M

SINGLE ANGLE TG COLLET CHUCKS

RECOMMENDED FOR DRILLING, END MILLING AND SOLID TAPPING.



ERICKSON[®] PRODUCTS

C CAPACITY	COLLET SERIES	A	B	L	H HEX	S MIN/MAX	CAT. NO.	LOCKNUT
3/64-17/32	50TG	1"	5.5	7.19	1-1/16	1.75/6.5	SS100TG050719	NPA050
3/64-17/32	50TG	1"	5.5	6.98	1.5"	1.54/6.3	SS100TG050698G	NPA075
1/16-3/4	75TG	1-1/4	6"	8.50	1-7/8	2.1/7.6	SS125TG075850	NPA100
1/16-3/4	75TG	1-1/2	6"	7.75	1-7/8	2.1/7.1	SS150TG075775	NPA075
3/32-1"	100TG	1-1/2	6"	9.25	2-1/4	2.6/8.6	SS150TG100925	NPA100
3/32-1"	100TG	1-3/4	6"	8.19	2-1/4	2.9/7.5	SS175TG100819	NPA100
3/32-1"	100TG	2"	6"	8.19	2-1/4	2.6/7.5	SS200TG100819	NPA100

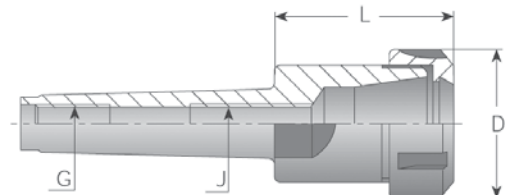
SEE PAGES 120 TO 122 FOR COLLETS.

- TREMENDOUS GRIP (3:1 ADVANTAGE)
- TREMENDOUS GRIP (TG) COLLET CHUCKS PROVIDE THE GRIP AND ACCURACY NECESSARY FOR THE DEMANDS OF TODAY'S MACHINE TOOLS BECAUSE OF ITS SLOW COLLET TAPER AND BEARING-STYLE NOSEPIECE.
- COLLETS COLLAPSE 1/64" AND CAN GRIP ON BACK TAPER AND MARGINS OF DRILLS TO ALLOW FOR MAXIMUM FEED RATES AND MORE ACCURATE HOLES.
- THE VERSATILITY AND GRIPPING POWER OF THE TG CHUCK IS SUPERIOR TO COMPETITIVE DESIGNS.
- THROUGH-THE-TOOLHOLDER COOLANT CAPABILITY

MORSE TAPER SHANK COLLET CHUCKS

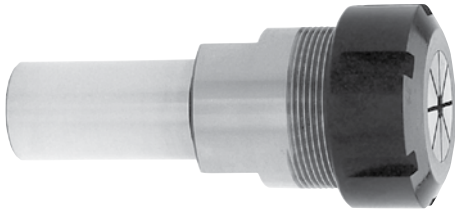
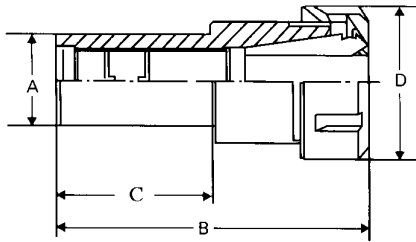
MORSE TAPER ER COLLET CHUCK

Cat. No.	Range	L	G	J	D
MT2-ER20	.022-.514	1.687	3/8-16	M10	1.344
MT2-ER25	.041-.632	1.875	3/8-16	M10	1.656
MT3-ER32	.080-.789	2.750	1/2-13	M12	1.968
MT3-ER40	.120-1.025	3.125	1/2-13	M12	2.484
MT4-ER32	.080-.789	2.406	5/8-11	M16	1.968
MT4-ER40	.120-1.025	3.187	5/8-11	M16	2.484
MT4-ER50	.396-1.338	4.937	5/8-11	M16	3.078
MT5-ER40	.120-1.025	3.250	3/4-16	M28 X 1.5	2.484
MT5-ER50	.396-1.338	3.328	3/4-16	M28 X 1.5	3.078
MT6-ER50	.396-1.338	3.937	1-8	M36 X 1.5	3.078



SEE PAGES 116 & 117 FOR COLLETS.

SEE PAGES 116 & 117 FOR COLLETS.



ENGLISH S.S. COLLET CHUCK (STEPPED)

CAPACITY	COLLET SERIES	A	B	C	D	NUT	PART #
1/16-1/4	ER11	1/4	2.28	1.77	.63	ER11M	SS025ER11228
1/16-13/32	ER16	3/8	2.76	1.73	.87	ER16M	SS038ER16276
1/16-13/32	ER16	1/2	6.61	6.06	.87	ER16M	SS050ER16661
1/16-13/32	ER16	5/8	3.35	2.36	1.10	ER16H	SS062ER16335
1/16-13/32	ER16	5/8	4.13	3.15	1.10	ER16H	SS062ER16413
1/16-1/2	ER20	5/8	5.60	3.94	1.10	ER20M	SS062ER20560
1/16-5/8	ER25	5/8	3.35	1.97	1.65	ER25E	SS062ER25335
1/16-13/32	ER16	3/4	3.11	1.97	1.10	ER16H	SS075ER16311
1/16-13/32	ER16	3/4	4.33	3.15	1.10	ER16H	SS075ER16433
1/16-13/32	ER16	3/4	4.92	3.94	1.10	ER16H	SS075ER16492
1/16-5/8	ER25	3/4	3.35	1.97	1.65	ER25E	SS075ER25335
1/16-5/8	ER25	3/4	5.31	3.94	1.65	ER25E	SS075ER25531
1/16-5/8	ER25	7/8	5.51	3.94	1.65	ER25E	SS088ER25551
3/32-3/4	ER32	1"	3.74	1.97	1.97	ER32E	SS100ER32374
1/8-1	ER40	1"	3.74	1.97	2.48	ER40E	SS100ER40374
1/8-1	ER40	1"	4.33	2.38	2.48	ER40E	SS100ER40433
3/32-3/4	ER32	1-1/4	4.33	1.97	1.97	ER32E	SS125ER32433
3/32-3/4	ER32	1-1/4	4.13	2.36	1.97	ER32E	SS125ER32413
1/8-1	ER40	1-1/4	4.13	2.36	2.48	ER40E	SS125ER40413

"M" WRENCH

TO FIT NUT#	WRENCH#
ER8M	ER8MW
ER11M	ER11MW
ER16M	ER16MW
ER20M	ER20MW
ER25M	ER25MW

"H" WRENCH

TO FIT NUT#	WRENCH#
ER11H	ER11HW
ER12H	ER11HW
ER16H	ER16HW
ER20H	ER20HW

"E" WRENCH

TO FIT NUT#	WRENCH#
ER16E	ER16EW
ER20E	ER20EW
ER25E	ER25EW
ER32E	ER32EW
ER40E	ER40EW
ER50E	ER50EW

METRIC S.S. COLLET CHUCK (STEPPED)

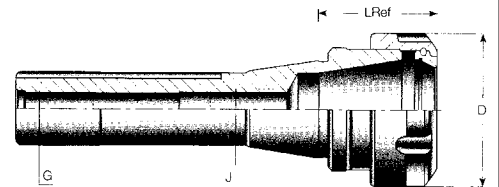
CAPACITY	COLLET SERIES	A	B	C	D	NUT	PART #
0.5-7.0MM	ER11	7MM	58MM	45MM	16MM	ER11M	SS7ER11058
0.5-7.0MM	ER11	8MM	70MM	56MM	16MM	ER11M	SS8ER11070
0.5-10.0MM	ER16	10MM	70MM	44MM	22MM	ER16M	SS10ER16070
0.5-10.0MM	ER16	10MM	86MM	60MM	22MM	ER16M	SS10ER16086
0.5-10.0MM	ER16	10MM	120MM	80MM	22MM	ER16M	SS10ER16120
0.5-10.0MM	ER16	12MM	105MM	80MM	22MM	ER16M	SS12ER16105M
0.5-10.0MM	ER16	12MM	105MM	80MM	28MM	ER16H	SS12ER16105H
1.0-13.0MM	ER20	12MM	142MM	100MM	28MM	ER20M	SS12ER20142
0.5-10.0MM	ER16	14MM	55MM	30MM	28MM	ER16H	SS14ER16055
0.5-10.0MM	ER16	14MM	97MM	60MM	28MM	ER16H	SS14ER16097
1.0-13.0MM	ER20	15MM	142MM	100MM	28MM	ER20M	SS15ER20142
0.5-10.0MM	ER16	16MM	90MM	60MM	28MM	ER16H	SS16ER16090
1.0-13.0MM	ER20	16MM	142MM	100MM	28MM	ER20M	SS16ER20142
1.0-13.0MM	ER20	20MM	55MM	30MM	34MM	ER20H	SS20ER20055
1-16MM	ER25	20MM	85MM	50MM	42MM	ER25E	SS20ER25085
1-16MM	ER25	20MM	135MM	100MM	42MM	ER25E	SS20ER25135
2-20MM	ER32	20MM	83MM	35MM	50MM	ER32E	SS20ER32083
2-20MM	ER32	20MM	75MM	50MM	50MM	ER32E	SS20ER32075
1-16MM	ER25	25MM	85MM	50MM	42MM	ER25E	SS25ER25085
2-20MM	ER32	25MM	95MM	50MM	50MM	ER32E	SS25ER32095
3-26MM	ER40	25MM	95MM	50MM	63MM	ER40E	SS25ER40095

R8 SHANK COLLET CHUCKS

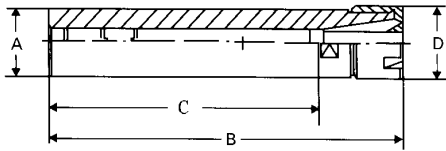
CAT. NO.	COLLET SERIES	CAPACITY	G	J	D	L	COLLET NUT	WRENCH
R8ER16	ER16	1/16 TO 13/32	7/16-20	M10	1.102	1.496	ER16H	ER16HW
R8ER32	ER32	3/32 TO 3/4	7/16-20	M10	1.968	1.575	ER32E	ER32EW
R8ER40	ER40	1/8 TO 1"	7/16-20	M10	2.48	2.835	ER40E	ER40EW

NOTE: CAT. NO. INCLUDES COLLET NUT & BACKUP SCREW
WRENCHES ARE SOLD SEPARATELY

SEE PAGES 116 & 117 FOR COLLETS.



- Superior gripping power and accuracy.
- Concentricity within 0.0005 TIR at nose.
- Chucks supplied with stop screws and nosepiece.
- One collet chuck provides milling and drilling capabilities with 1/32" through 3/4" shank tools.



SEE PAGES 116 & 117 FOR COLLETS.

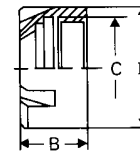
STRAIGHT SHANK COLLET CHUCK EXTENSIONS - METRIC

CAPACITY	COLLET SERIES	A	B	C	D	NUT	CAT. NO.
0.5-5.0MM	ER8	8MM	70MM	56MM	12MM	ER8M	SS8ER8070
0.5-5.0MM	ER8	8MM	100MM	80MM	12MM	ER8M	SS8ER8100
0.5-5.0MM	ER8	10MM	70MM	56MM	12MM	ER8M	SS10ER8070
0.5-5.0MM	ER8	10MM	100MM	80MM	12MM	ER8M	SS10ER8100
0.5-5.0MM	ER8	12MM	95MM	80MM	12MM	ER8M	SS12ER8095
0.5-7.0MM	ER12	14MM	38MM	25MM	19MM	ER12H	SS14ER12038
0.5-7.0MM	ER11	20MM	145MM	115MM	19MM	ER11H	SS20ER11145
0.5-10.0MM	ER16	20MM	55MM	30MM	28MM	ER16H	SS20ER16055
0.5-10.0MM	ER16	20MM	79MM	50MM	28MM	ER16H	SS20ER16079
0.5-10.0MM	ER16	20MM	125MM	100MM	28MM	ER16H	SS20ER16125
0.5-10.0MM	ER16	20MM	135MM	100MM	22MM	ER16M	SS20ER16135
1-13MM	ER20	20MM	142MM	100MM	28MM	ER20M	SS20ER20142M
1-13MM	ER20	20MM	142MM	100MM	34MM	ER20H	SS20ER20142H
0.5-7.0MM	ER11	22MM	130MM	100MM	19MM	ER11H	SS22ER11130
0.5-10.0MM	ER16	22MM	103MM	80MM	28MM	ER16H	SS22ER16103
0.5-10.0MM	ER16	22MM	160MM	134MM	28MM	ER16H	SS22ER16160
1-13MM	ER20	22MM	140MM	100MM	34MM	ER20H	SS22ER20140
1-13MM	ER20	22MM	160MM	120MM	34MM	ER20H	SS22ER20160
1-13MM	ER20	22MM	120MM	80MM	34MM	ER20H	SS22ER20120
1-16MM	ER25	25MM	135MM	100MM	42MM	ER25E	SS25ER25135

STRAIGHT SHANK COLLET CHUCK EXTENSIONS - ENGLISH

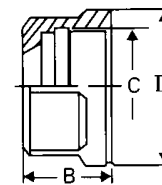
CAPACITY	COLLET SERIES	A	B	C	D	NUT	CAT. NO.
0.5-5.0MM	ER8	1/2	3.74	3.15	.47	ER8M	SS050ER8374
1/16-1/4	ER11	1/2	6.61	6.06	.63	ER11M	SS050ER11661
1/16-1/4	ER11	1/2	3.94	3.15	.63	ER11M	SS050ER11394
1/16-1/4	ER11	1/2	3.94	3.15	.75	ER11H	SS050ER113941
1/16-1/4	ER11	5/8	6.10	5.51	.75	ER11H	SS062ER11610
1/16-1/4	ER11	5/8	2.50	2.00	.63	ER11M	SS062ER11250
1/16-1/4	ER11	5/8	6.61	6.06	.63	ER11M	SS062ER11661
1/16-1/4	ER11	5/8	6.61	6.06	.75	ER11H	SS062ER116612
1/16-13/32	ER16	5/8	6.18	5.51	1.10	ER16H	SS062ER16618
1/16-13/32	ER16	3/4	5.31	3.94	.87	ER16M	SS075ER16531
1/16-13/32	ER16	3/4	6.40	5.28	.87	ER16M	SS075ER16640
1/16-13/32	ER16	1"	5.28	3.94	1.10	ER16H	SS100ER16528
1/16-13/32	ER16	1"	6.18	5.51	1.10	ER16H	SS100ER16618
1/16-1/2	ER20	1"	6.30	5.28	1.10	ER20M	SS100ER20630
1/16-5/8	ER25	1"	3.35	1.97	1.65	ER25E	SS100ER25335
1/16-5/8	ER25	1"	5.31	3.94	1.65	ER25E	SS100ER25531
1/16-5/8	ER25	1"	3.35	1.97	1.38	ER25M	SS100ER25335M
1/16-5/8	ER25	1"	5.31	3.94	1.38	ER25M	SS100ER25531M

"M" NUTS



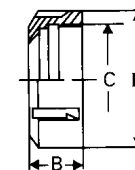
PART#	D (MM)	B (MM)	C
ER8M	12	10.8	M10 X 0.75
ER11M	16	11.3	M13 X 0.75
ER16M	22	17	M19 X 1
ER20M	28	19	M24 X 1
ER25M	35	20	M30 X 1

"H" NUT



PART#	D (MM)	B (MM)	C
ER11H	19	11.3	M14 X 0.75
ER12H	19	12.5	M14 X 0.75
ER16H	28	17	M22 X 1.5
ER20H	34	19	M25 X 1.5

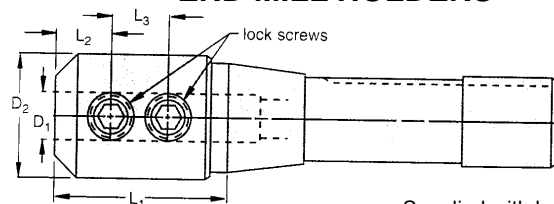
"E" NUT



PART#	D (MM)	B (MM)	C
ER16E	32	17.5	M22 X 1.5
ER20E	35	18.5	M25 X 1.5
ER25E	42	20	M32 X 1.5
ER32E	50	22	M40 X 1.5
ER40E	63	25	M50 X 1.5
ER50E	78	35	M64 X 2

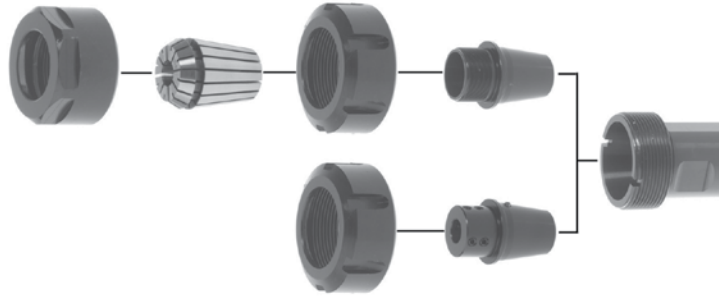
TOOL CAPACITY D1	BODY DIAMETER D2	PROJECTION LENGTH			CAT. NO.
		L1	L2	L3	
.187	.94	1.12	.406	--	R8EM018112
.375	1.25	1.00	.719	--	R8EM038100
.500	1.25	1.12	.875	--	R8EM050112
.625	1.58	1.50	.875	--	R8EM062150
.750	1.72	2.62	1.109	--	R8EM075262
.875	1.94	3.06	1.063	.828	R8EM088306
1.000	1.94	3.06	1.109	.953	R8EM100306
1.250	2.38	3.06	1.109	.953	R8EM125306

R-8 SHANK END MILL HOLDERS



- Supplied with lock screw(s).
- Knurled nose for added safety.

ER COLLET QUICK CHANGE SHANKS



SAVE TIME AND MONEY WITH THE QUICK CHANGE SYSTEM

- CHANGE A DULL TOOL IN SECONDS
- ELIMINATE TOUCHING OFF WHEN CHANGING A DULL TOOL
- HAVE SPARE TOOLING PRESET AND READY FOR QUICK TOOL CHANGES
- ALL SHANKS HAVE A TAPPED COOLANT PORT
- USE A BORING TOOL FOR ONE JOB AND A DRILL FOR THE NEXT WITHOUT REMOVING THE SHANK FROM THE MACHINE

SHANKS ARE LISTED BELOW, CORRESPONDING QUICK CHANGE HEADS ARE LISTED ON PAGE 89
SEE PAGE 80 FOR FLOATING HOLDERS FOR THIS QUICK CHANGE SYSTEM



**STRAIGHT SHANKS FOR QUICK CHANGE ER COLLET SYSTEM
(COLLET NUT NOT INCLUDED)**

SHANK DIA	OAL	HEAD ASS'Y	MAX CAP		SHANK PART#
			COLLET	STR HOLE	
1/2"	4-1/2"	ER11S	1/4"	3/8"	SS050QCER11
5/8"	4-1/2"	ER11S	1/4"	3/8"	SS062QCER11
3/4"	4-1/2"	ER11S	1/4"	3/8"	SS075QCER11
3/4"	4-1/2"	ER16S	13/32"	1/2"	SS075QCER16
3/4"	4-1/2"	ER20S	1/2"	5/8"	SS075QCER20
1"	3"	ER11S	1/4"	3/8"	SS100QCER11S
1"	4-1/2"	ER11S	1/4"	3/8"	SS100QCER11
1"	4-1/2"	ER16S	13/32"	1/2"	SS100QCER16
1"	4-1/2"	ER20S	1/2"	5/8"	SS100QCER20
1"	4-1/2"	ER25S	5/8"	3/4"	SS100QCER25
1-1/4"	4-1/2"	ER16S	13/32"	1/2"	SS125QCER16
1-1/4"	4-1/2"	ER20S	1/2"	5/8"	SS125QCER20
1-1/4"	4-1/2"	ER25S	5/8"	3/4"	SS125QCER25
1-1/2"	4-1/2"	ER20S	1/2"	5/8"	SS150QCER20
1-1/2"	6"	ER25S	5/8"	3/4"	SS150QCER25
1-1/2"	6"	ER32S	3/4"	POA	SS150QCER32
2"	6"	ER25S	5/8"	3/4"	SS200QCER25
2"	6"	ER32S	3/4"	POA	SS200QCER32
16MM	4-1/2"	ER11S	1/4"	3/8"	SS16QCER11
20MM	71MM	ER11S	1/4"	3/8"	SS20QCER11S
20MM	114MM	ER11S	1/4"	3/8"	SS20QCER11
22MM	118MM	ER11S	1/4"	3/8"	SS22QCER11
22MM	4-1/2"	ER16S	13/32"	1/2"	SS22QCER16
22MM	4-1/2"	ER20S	1/2"	5/8"	SS22QCER20
25MM	60MM	ER11S	1/4"	3/8"	SS25QCER11S
25MM	95MM	ER11S	1/4"	3/8"	SS25QCER11
32MM	118MM	ER16S	13/32"	1/2"	SS32QCER16
32MM	4-1/2"	ER20S	1/2"	5/8"	SS32QCER20
32MM	4-1/2"	ER25S	5/8"	3/4"	SS32QCER25

**DOUBLE ENDED STRAIGHT SHANKS FOR QUICK CHANGE ER SYSTEM
(COLLET NUTS NOT INCLUDED)**

SHANK DIA	OAL	HEAD ASS'Y	MAX CAP		SHANK PART#
			COLLET	STR HOLE	
3/4"	3-3/4"	ER11S	1/4"	3/8"	SS075QCDEER11S
3/4"	4-1/2"	ER11S	1/4"	3/8"	SS075QCDEER11
1"	3-3/4"	ER11S	1/4"	3/8"	SS100QCDEER11S
1"	4-1/2"	ER11S	1/4"	3/8"	SS100QCDEER11
1"	4-1/2"	ER16S	13/32"	1/2"	SS100QCDEER16
20MM	95MM	ER11S	1/4"	3/8"	SS20QCDEER11
22MM	100MM	ER11S	1/4"	3/8"	SS22QCDEER11S
22MM	114MM	ER11S	1/4"	3/8"	SS22QCDEER11
25MM	95MM	ER11S	1/4"	3/8"	SS25QCDEER11
32MM	100MM	ER16S	13/32"	1/2"	SS32QCDEER16S
32MM	118MM	ER16S	13/32"	1/2"	SS32QCDEER16

NOTE: THESE SHANKS CAN ALSO BE USED AS A CONVENTIONAL COLLET CHUCK. CALL FOR DETAILS.

QUICK CHANGE ER HEAD ASSEMBLY - COLLET NUT(S) INCLUDED

(SHANKS FOR THESE HEADS ARE SHOWN ON PAGES 80, 78 & 81)



ER11 HEAD ASSEMBLIES (3 PC) FOR QUICK CHANGE SYSTEM

NOTE: YOU CAN ALSO CONVERT ANY ER16 CAVITY TO A QUICK CHANGE ER11 SYSTEM WITH THESE HEAD ASSEMBLIES

QC ADAPTER PART#	THREAD SIZE	PROJECTION LTH
ER11S	M19 X 1.0	0.825
ER11L	M22 X 1.5	0.825

STRAIGHT SHANK ADAPTERS (2PC)

ONLY FOR QUICK CHANGE SYSTEM USING ER11S HEAD ASSEMBLIES

DESCRIPTION	PART#	PROJECTION LTH
1/8" STR. HOLE ADAPTER	BTH0125ER11	0.700
3/16" STR HOLE ADAPTER	BTH0188ER11	0.700
1/4" STR HOLE ADAPTER	BTH0250ER11	0.700
5/16" STR. HOLE ADAPTER	BTH0312ER11	0.700
3/8" STR HOLE ADAPTER	BTH0375ER11	0.700
4MM STR HOLE ADAPTER	BTH4MMER11	0.700
5MM STR HOLE ADAPTER	BTH5MMER11	0.700
6MM STR HOLE ADAPTER	BTH6MMER11	0.700

ER16 HEAD ASSEMBLIES (3 PC) FOR QUICK CHANGE SYSTEM

NOTE: YOU CAN ALSO CONVERT ANY ER20 CAVITY TO A QUICK CHANGE ER16 SYSTEM WITH THESE HEAD ASSEMBLIES

QC ADAPTER PART#	THREAD SIZE	PROJECTION LTH
ER16S	M24 X 1.0	1.255
ER16L	M25 X 1.5	1.255

STRAIGHT SHANK ADAPTERS (2PC)

ONLY FOR QUICK CHANGE SYSTEM USING ER16S HEAD ASSEMBLIES

DESCRIPTION	PART#	PROJECTION LTH
1/8" STR. HOLE ADAPTER	BTH0125ER16	0.765
3/16" STR HOLE ADAPTER	BTH0188ER16	0.765
1/4" STR HOLE ADAPTER	BTH0250ER16	0.765
5/16" STR. HOLE ADAPTER	BTH0312ER16	0.765
3/8" STR HOLE ADAPTER	BTH0375ER16	0.765
1/2" STR HOLE ADAPTER	BTH0500ER16	0.765

ER20 HEAD ASSEMBLIES (3 PC) FOR QUICK CHANGE SYSTEM

NOTE: YOU CAN ALSO CONVERT ANY ER25 CAVITY TO A QUICK CHANGE ER20 SYSTEM WITH THESE HEAD ASSEMBLIES

QC ADAPTER PART#	THREAD SIZE	PROJECTION LTH
ER20S	M30 X 1.0	1.455
ER20L	M32 X 1.5	1.455

STRAIGHT SHANK ADAPTERS (2PC)

ONLY FOR QUICK CHANGE SYSTEM USING ER20S HEAD ASSEMBLIES

DESCRIPTION	PART#	PROJECTION LTH
1/8" STR. HOLE ADAPTER	BTH0125ER20	0.800
3/16" STR HOLE ADAPTER	BTH0188ER20	0.800
1/4" STR HOLE ADAPTER	BTH0250ER20	0.800
5/16" STR. HOLE ADAPTER	BTH0312ER20	0.800
3/8" STR HOLE ADAPTER	BTH0375ER20	0.800
1/2" STR HOLE ADAPTER	BTH0500ER20	0.800
5/8" STR HOLE ADAPTER	BTH0625ER20	0.800

ER25 HEAD ASSEMBLIES (3 PC) FOR QUICK CHANGE SYSTEM

NOTE: YOU CAN ALSO CONVERT ANY ER32 CAVITY TO A QUICK CHANGE ER25 SYSTEM WITH THIS HEAD ASSEMBLY

QC ADAPTER PART#	THREAD SIZE	PROJECTION LTH
ER25S	M40 X 1.5	1.565

STRAIGHT SHANK ADAPTERS (2PC)

ONLY FOR QUICK CHANGE SYSTEM USING ER25S HEAD ASSEMBLIES

DESCRIPTION	PART#	PROJECTION LTH
1/4" STR HOLE ADAPTER	BTH0250ER25	1.060
5/16" STR. HOLE ADAPTER	BTH0312ER25	1.060
3/8" STR HOLE ADAPTER	BTH0375ER25	1.060
1/2" STR HOLE ADAPTER	BTH0500ER25	1.060
5/8" STR HOLE ADAPTER	BTH0625ER25	1.060
3/4" STR HOLE ADAPTER	BTH0750ER25	1.060

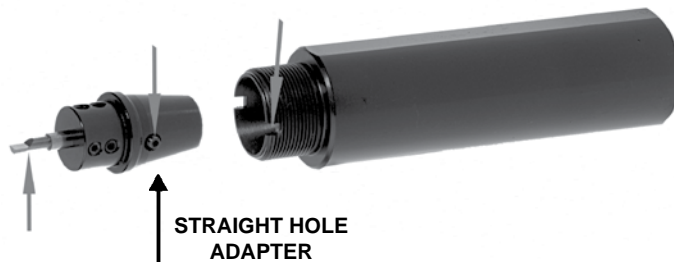
ER32 HEAD ASSEMBLIES (3 PC) FOR QUICK CHANGE SYSTEM

NOTE: YOU CAN ALSO CONVERT ANY ER40 CAVITY TO A QUICK CHANGE ER32 SYSTEM WITH THIS HEAD ASSEMBLY

QC ADAPTER PART#	THREAD SIZE	PROJECTION LTH
ER32S	M50 X 1.5	1.680

NOTE: STRAIGHT HOLE ADAPTERS AVAILABLE ON REQUEST

See Page 116 & 117 for collets.



BORING TOOLS ARE PERFECTLY CENTERED

DUE TO 90° TIMING OF THE FLAT ON THE SHANK OF THE TOOLHOLDER TO THE I.D. NOTCHES ON THE FRONT OF THE TOOLHOLDER AND THE SAME TIMING OF THE PINS ON THE STRAIGHT SHANK ADAPTERS TO THE SCREWS HOLDING THE BORING TOOL.



HIGH PRESSURE STEEL COOLANT LINES

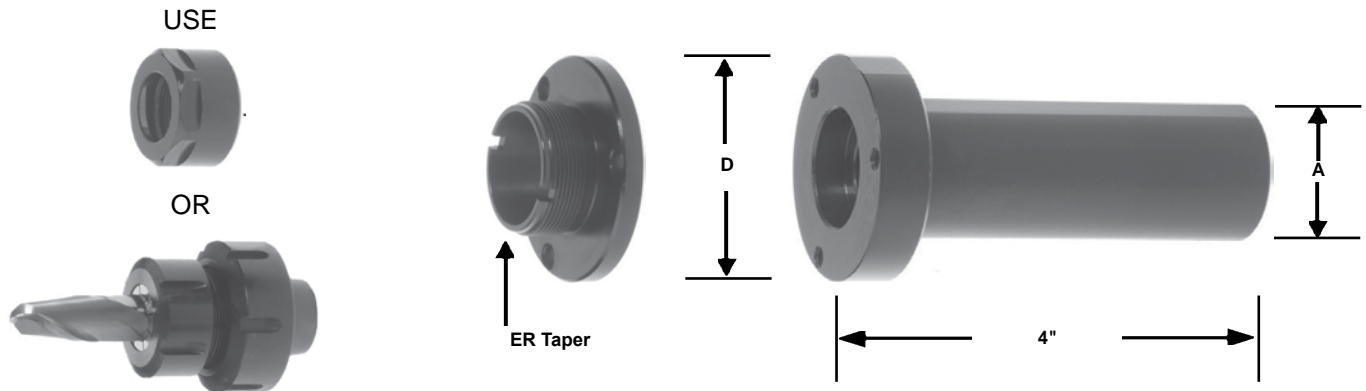
LENGTH	CAT#
6"	CL-6
8"	CL-8
12"	CL-12
16"	CL-16



FLOATING (ADJUSTABLE) ER COLLET CHUCKS QUICK CHANGE OR STANDARD

- CAN COMPENSATE FOR UP TO .045" OF MACHINE MIS-ALIGNMENT.
- USES STANDARD ER COLLETS
- CAN BE ORDERED AS A STANDARD COMPLETE COLLET CHUCK **OR** WITHOUT THE COLLET NUT FOR USE WITH THE QUICK CHANGE ER SYSTEM.

SEE PAGE 79 FOR CORRESPONDING QUICK CHANGE HEAD ASSEMBLIES
SEE PAGES 116 & 117 FOR COLLETS

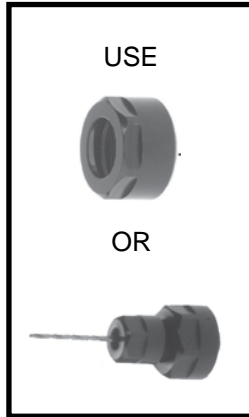


FLOATING (ADJUSTABLE) ER QUICK CHANGE COLLET CHUCKS

"A" SHANK DIA	"D"	COLLET SERIES	COLLET RANGE	CAT# FOR COMPLETE COLLET CHUCK W/ COLLET NUT	CAT# FOR QC SYS COLLET CHUCK MINUS COLLET NUT	FOR USE WITH HEAD ASSY SEE PAGE
5/8"	1-1/2"	ER16	1/16-13/32	SS062AFER16	SS062AFER16P	ER11S
3/4"	1-1/2"	ER16	1/16-13/32	SS075AFER16	SS075AFER16P	ER11S
3/4"	2"	ER20	1/16-1/2	SS075AFER20	SS075AFER20P	ER16S
3/4"	2"	ER25	1/16-5/8	SS075AFER25	SS075AFER25P	ER20S
1"	1-1/2"	ER16	1/16-13/32	SS100AFER16	SS100AFER16P	ER11S
1"	2"	ER20	1/16-1/2	SS100AFER20	SS100AFER20P	ER16S
1"	2"	ER25	1/16- 5/8	SS100AFER25	SS100AFER25P	ER20S
1-1/4"	2"	ER20	1/16-1/2	SS125AFER20	SS125AFER20P	ER16S
1-1/4"	2"	ER25	1/16-5/8	SS125AFER25	SS125AFER25P	ER20S
1-1/4"	2-1/2"	ER32	3/32-3/4	SS125AFER32	SS125AFER32P	ER25S
1-1/4"	2-1/2"	ER40	1/8-1"	SS125AFER40	SS125AFER40P	ER32S
1-1/2"	2"	ER20	1/16-1/2	SS150AFER20	SS150AFER20P	ER16S
1-1/2"	2"	ER25	1/16-5/8	SS150AFER25	SS150AFER25P	ER20S
1-1/2"	2-1/2"	ER32	3/32-3/4	SS150AFER32	SS150AFER32P	ER25S
1-1/2"	2-1/2"	ER40	1/8-1"	SS150AFER40	SS150AFER40P	ER32S
2"	2-1/2"	ER32	3/32-3/4	SS200AFER32	SS200AFER32P	ER25S
2"	2-1/2"	ER40	1/8-1"	SS200AFER40	SS200AFER40P	ER32S
22MM	1-1/2"	ER16	1/16-13/32	SS22AFER16	SS22AFER16P	ER11S
22MM	2"	ER20	1/16-1/2	SS22AFER20	SS22AFER20P	ER16S
22MM	2"	ER25	1/16-5/8	SS22AFER25	SS22AFER25P	ER20S
32MM	2"	ER20	1/16-1/2	SS32AFER20	SS32AFER20P	ER16S
32MM	2"	ER25	1/16-5/8	SS32AFER25	SS32AFER25P	ER20S

COLLET CHUCKS FOR STAR AND HANWHA SUB SPINDLES (BACKWORKING)

CAN BE ORDERED AS A STANDARD COLLET CHUCK OR WITHOUT THE COLLET NUT FOR USE WITH QUICK CHANGE HEAD ASSEMBLIES--SEE PAGE 79



SHOWN WITH OPTIONAL COOLANT LINE
(SEE PAGE 79)

MACHINE MAKE	COLLET SERIES	COLLET RANGE	PROJECTION* W/O NUT	COOLANT PORT	CAT# WITH COLLET NUT	CAT# W/O COLLET NUT	SERIES# HEAD ASSY	SEE PHOTO
STAR	ER16	1/16 - 13/32	0.47	NO	STER16470	STER16470P	ER11S	1
STAR	ER16	1/16 - 13/32	0.75	YES	STER16750	STER16750P	ER11S	2
STAR	ER16	1/16 - 13/32	1.25	YES	STER161250	STER161250P	ER11S	3
STAR	ER20	1/16 - 1/2	0.97	YES	STER20970	STER20970P	ER16S	4
HANWHA	ER16	1/16 - 13/32	0.75	YES	HAER1633MM	HAER1633MMP	ER11S	5
HANWHA	ER16	1/16 - 13/32	0.75	YES	HAER1634MM	HAER1634MMP	ER11S	6

* ADD APPROX. .420 TO PROJECTION LENGTH WITH COLLET & NUT INSTALLED

SEE PAGE 79 FOR HEAD ASSEMBLIES
SEE PAGES 116 & 117 FOR COLLETS

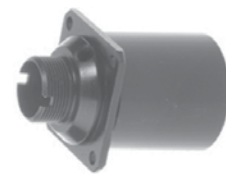


4



5

33MM DIA. SHANK



6

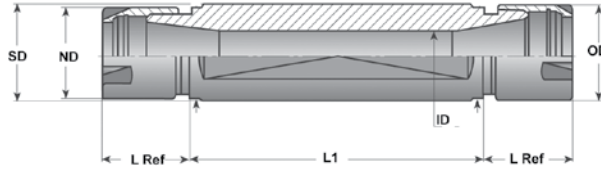
34MM DIA. SHANK

STRAIGHT SHANK ADAPTER FOR STAR SUB SPINDLE WITH 1/2" I.D. AND COOLANT PORT



CAT# STSS0500

DOUBLE ENDED COLLET CHUCKS FOR SWISS MACHINES



SEE PAGES 116 AND 117 FOR COLLETS



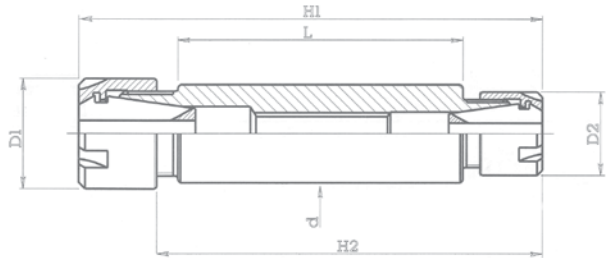
CAT. NO.	ND	SD	ID	L1	L	MACHINE TYPE	COLLET	CAPACITY
SS075DEER11	.630	.750	.295	2.756	.787	CITIZEN	ER11	1/16 to 1/4
SS075DEER16	.866	.750	.413	2.165	1.024	CITIZEN	ER16	1/16 to 13/32
SS100DEER16	.866	1.000	.413	2.441	1.102	STAR	ER16	1/16 to 13/32
METRIC								
SS16DEER11	16	16	7.5	50	20		ER11	0.5 to 7.0 MM
SS20DEER11	16	20	7.5	30	20	CITIZEN	ER11	0.5 to 7.0 MM
SS20DEER11L	16	20	7.5	50	20	CITIZEN	ER11	0.5 to 7.0 MM
SS20DEER16	22	20	10.5	55	26	CITIZEN	ER16	0.5 to 10.0 MM
SS22DEER16	22	22	10.5	55	28	STAR	ER16	0.5 to 10.0 MM
SS22DEER16L	22	22	10.5	75	28	STAR	ER16	0.5 to 10.0 MM
SS25DEER16	22	25	10.5	62	28		ER16	0.5 to 10.0 MM
SS32DEER20	28	32	13.5	55	28	STAR	ER20	1.0 to 13.0 MM
SS32DEER20L	28	32	13.5	75	28	STAR	ER20	1.0 to 13.0 MM

DOUBLE ENDED SWISS ER COLLET CHUCKS WITH DIFFERENT SERIES ER COLLETS ON EACH END

SEE PAGES 116 & 117 FOR COLLETS

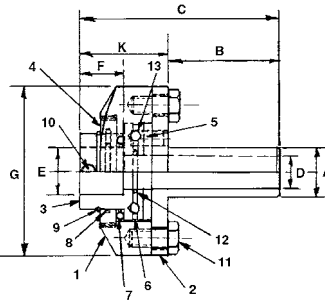


COLLET SERIES	COLLET RANGE ENGLISH	COLLET RANGE METRIC
ER8		1 TO 5
ER11	1/16 TO 1/4	1 TO 7
ER16	1/16 TO 13/32	1 TO 10
ER20	1/16 TO 1/2	1 TO 13
ER25	1/8 TO 5/8	2 TO 16
ER32	3/32 TO 3/4	3 TO 20
ER40	1/8 TO 1"	4 TO 26



Shank Dia.	L	H1	H2	Collet D1	D1	Nut D1	Wrench D1	Collet D2	D2	Nut D2	Wrench D2	Part No.
3/4	50	85	68	ER16	22	ER16M	ER16MW	ER11	16	ER11M	ER11MW	SS075DEER16-11
3/4	50	91	72	ER20	28	ER20M	ER20MW	ER11	16	ER11M	ER11MW	SS075DEER20-11
20MM	50	85	68	ER16	22	ER16M	ER16MW	ER11	16	ER11M	ER11MW	SS20DEER16-11
20MM	50	91	72	ER20	28	ER20M	ER20MW	ER11	16	ER11M	ER11MW	SS20DEER20-11
22MM	45	90	71	ER20	28	ER20M	ER20MW	ER16	22	ER16M	ER16MW	SS22DEER20-16
22MM	60	105	86	ER20	28	ER20M	ER20MW	ER16	22	ER16M	ER16MW	SS22DEER20-16L
25MM	45	90	71	ER20	28	ER20M	ER20MW	ER16	22	ER16M	ER16MW	SS25DEER20-16
25MM	60	105	86	ER20	28	ER20M	ER20MW	ER16	22	ER16M	ER16MW	SS25DEER20-16L
25MM	45	91	71	ER25	35	ER25M	ER25MW	ER16	22	ER16M	ER16MW	SS25DEER25-16
25MM	60	106	86	ER25	35	ER25M	ER25MW	ER16	22	ER16M	ER16MW	SS25DEER25-16L
32MM	60	108	88	ER25	35	ER25M	ER25MW	ER20	28	ER20M	ER20MW	SS32DEER25-20

FLOATING (ADJUSTABLE) REAMER HOLDER



- Manually adjustable for machine misalignment
- Exclusive wave spring construction gives automatic centering - does not depend on "O" rings for float.
- Tangent opposed ball raceways give full lateral float.
- Rides on free rolling balls - no pins to cause jamming

SEE PAGE 97 FOR REAMER BUSHINGS.

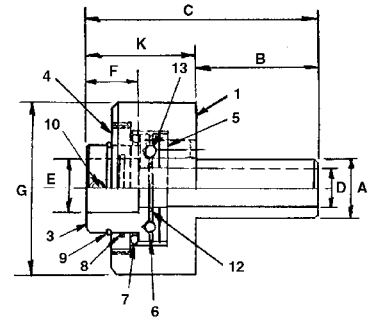
CAT. NO.	A	B	C	D	E	F	G	K
FARH00	5/8	1-1/4	2-11/32	3/8	1/2	9/16	1-5/8x2-1/4	1-1/16
FARH0	3/4	1-5/8	3-1/8	1/2	5/8	3/4	2-1/8x3	1-1/2
FARH2	1"	2-1/8	4"	11/16	1"	7/8	2-1/2x3-3/8	1-7/8

PARTS

Part No.	FARH00 Cat. No.	FARH0 Cat. No.	FARH2 Cat. No.
1. Head	FARH00-1	FARH0-1	FARH2-1
2. Shank	FARH00-2	FARH0-2	FARH2-2
3. Spindle	FARH00-3	FARH0-3	FARH2-3
4. Lock Nut	FARH00-4	FARH0-4	FARH2-4
5. Plate w/Pins	FARH00-5	FARH0-5	FARH2-5
6. Ball Retainer	FARH00-6	FARH0-6	FARH2-6
7. Bearing	FARH00-7	FARH0-7	FARH2-7
8. Wave Spring	FARH00-8	FARH0-8	FARH2-8
9. Seal Ring	FARH00-9	FARH0-9	FARH2-9
10. Set Screw	ATT00-12	ORB2-5	FARH2-10
11. Screw/Washer	FDH00-4	FDH1-4	FDH3-4
12. "O" Ring	FARH00-12	FARH0-12	FARH2-12
13. Balls	FARH00-13	FARH0-13	RSA00-5

FLOATING REAMER HOLDERS

.015 per side / .030 total
#00 - .025 total



- Exclusive wave spring construction gives automatic centering - does not depend on "O" rings for float.
- Tangent opposed ball raceways give full lateral float.
- Rides on free rolling balls - no pins to cause jamming

SEE PAGE 97 FOR REAMER BUSHINGS.

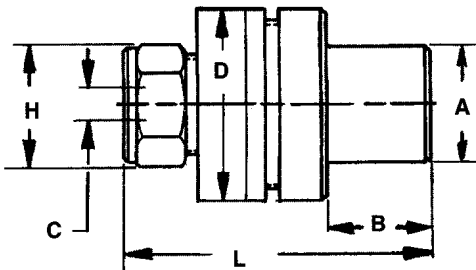
CAT. NO.	A	B	C	D	E	F	G	K
FRH00	5/8	1-1/4	2-3/8	3/8	1/2	9/16	1-3/4	1-1/8
FRH0	3/4	1-5/8	3-3/16	1/2	5/8	3/4	2-1/4	1-9/16
FRH2	1"	2-1/8	4-1/16	11/16	1"	7/8	3"	1-15/16

PARTS

Part No.	FRH00 Cat. No.	FRH0 Cat. No.	FRH2 Cat. No.
1. Body	FRH00-1	FRH0-1	FRH2-1
3. Spindle	FARH00-3	FARH0-3	FARH2-3
4. Lock Nut	FARH00-4	FARH0-4	FARH2-4
5. Plate w/Pins	FARH00-5	FARH0-5	FARH2-5
6. Ball Retainer	FARH00-6	FARH0-6	FARH2-6
7. Bearing	FARH00-7	FARH0-7	FARH2-7
8. Wave Spring	FARH00-8	FARH0-8	FARH2-8
9. Seal Ring	FARH00-9	FARH0-9	FARH2-9
10. Set Screw	ATT00-12	ORB2-5	FARH2-10
12. "O" Ring	FARH00-12	FARH0-12	FARH2-12
13. Ball	FARH00-13	FARH0-13	RSA00-5

RECOMMENDED FOR REAMING

FULL FLOATING HOLDERS



- FLOATS APPROXIMATELY .010" OFF CENTER (.020" TOTAL) TO COMPENSATE FOR BOTH PARALLEL AND ANGULAR MISALIGNMENTS.
- IDEAL FOR REAMING OPERATIONS ON SINGLE AND MULTI-SPINDLE AUTOMATICS AND TURRET LATHES.
- HOLLOW DESIGN ALLOWS COOLANT THROUGH AND TOOL OVERHAND TO BE SHORTENED.
- RECOMMENDED ONLY FOR STATIONARY APPLICATIONS (LATHE)
- ADJUSTING NUT VARIES SPRING TENSION TO COMPENSATE FOR CUTTER WEIGHT.

- COLLETS COLLAPSE TO COVER A 1/32" RANGE.
- HIGHEST QUALITY MATERIALS ARE USED THROUGHOUT.

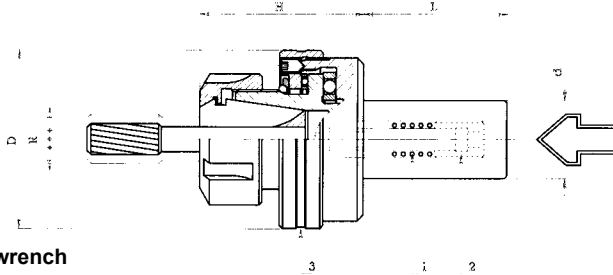
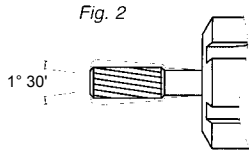
SEE PAGES 118 & 119 FOR COLLETS.

C CAPACITY	COLLET SERIES	A	B	D DIA.	L	H HEX	CAT. NO.
3/64-25/64	200	3/4	4"	1-7/8	6.44	7/8	SS075FC208644
3/64-3/4	180	3/4	4"	2-3/8	6.88	1-1/2	SS075FC188688
3/64-9/16	100	1"	4"	2-1/16	6.59	1-1/8	SS100FC108659
3/64-3/4	180	1"	4"	2-3/8	6.88	1-1/2	SS100FC188688
3/64-3/4	180	1-1/4	6"	2-3/8	8.88	1-1/2	SS125FC188888
3/64-9/16	100	1-1/2	6"	2-1/16	8.59	1-1/8	SS150FC108859
3/64-3/4	180	1-1/2	4"	2-3/8	6.88	1-1/2	SS150FC188688
3/64-3/4	180	1-1/2	6"	2-3/8	8.88	1-1/2	SS150FC188888
3/32-1"	400	1-1/2	6"	3-3/4	9.88	2-1/4	SS150FC408988
3/64-3/4	180	1-3/4	6"	2-3/8	8.88	1-1/2	SS175FC188888
3/64-3/4	180	2"	6"	2-3/8	8.88	1-1/2	SS200FC188888
3/32-1"	400	2"	6"	3-3/4	9.88	2-1/4	SS200FC408988

ER COLLET FLOATING REAMER HOLDERS

Features:

- The free moving ball bearing drive allows reamers to follow the existing drilled hole for high quality work.
- Could be used for synchronized tapping operations on lathes and CNC machining centers.
- Through the shank coolant capability



Note: Does not include wrench

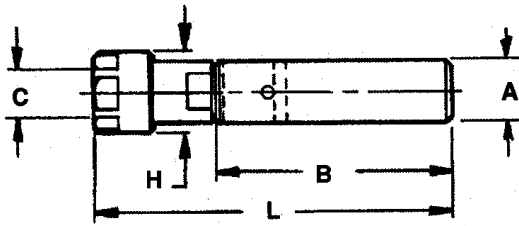
SEE PAGES 116 & 117 FOR COLLETS

Shank Dia.	Collet Series	D	H	L	R	Coolant Thru Part No.	Collet Nut	Collet Wrench
5/8	ER11	42	40	46	1	SS062ERFC11	ER11H	ER11HW
5/8	ER16	42	44	46	1	SS062ERFC16	ER16H	ER16HW
3/4	ER11	42	40	46	1	SS075ERFC11	ER11H	ER11HW
3/4	ER16	42	44	46	1	SS075ERFC16	ER16H	ER16HW
3/4	ER20	50	50	46	1	SS075ERFC20-I	ER20H	ER20HW
3/4	ER25	57	53	46	1	SS075ERFC25	ER25E	ER25EW
1"	ER11	42	40	46	1	SS100ERFC11	ER11H	ER11HW
1"	ER16	42	44	46	1	SS100ERFC16	ER16H	ER16HW
1"	ER20	50	50	46	1	SS100ERFC20	ER20H	ER20HW
1"	ER25	57	53	46	1	SS100ERFC25	ER25E	ER25EW
1"	ER32	69	58	50	1.5	SS100ERFC32-I	ER32E	ER32EW
1"	ER40	79	64	50	1.5	SS100ERFC40	ER40E	ER40EW
1-1/4"	ER32	69	58	50	1.5	SS125ERFC32	ER32E	ER32EW
1-1/4"	ER40	79	64	50	1.5	SS125ERFC40	ER40E	ER40EW
16MM	ER11	42	40	46	1	SS16ERFC11	ER11H	ER11HW
16MM	ER16	42	44	46	1	SS16ERFC16	ER16H	ER16HW
16MM	ER20	50	50	46	1	SS16ERFC20	ER20H	ER20HW
16MM	ER25	57	53	46	1	SS16ERFC25	ER25E	ER25EW
20MM	ER11	42	40	46	1	SS20ERFC11	ER11H	ER11HW
20MM	ER16	42	44	46	1	SS20ERFC16	ER16H	ER16HW
20MM	ER20	50	50	46	1	SS20ERFC20	ER20H	ER20HW
20MM	ER25	57	53	46	1	SS20ERFC25	ER25E	ER25EW
22MM	ER11	42	40	46	1	SS22ERFC11	ER11H	ER11HW
22MM	ER16	42	44	46	1	SS22ERFC16	ER16H	ER16HW
22MM	ER25	57	53	46	1	SS22ERFC25	ER25E	ER25EW
25MM	ER11	42	40	46	1	SS25ERFC11	ER11H	ER11HW
25MM	ER16	42	44	46	1	SS25ERFC16	ER16H	ER16HW
25MM	ER20	50	50	46	1	SS25ERFC20	ER20H	ER20HW
25MM	ER25	57	53	46	1	SS25ERFC25	ER25E	ER25EW
25MM	ER32	69	58	50	1.5	SS25ERFC32	ER32E	ER32EW
25MM	ER40	79	64	50	1.5	SS25ERFC40	ER40E	ER40EW
30MM	ER32	69	58	50	1.5	SS30ERFC32	ER32E	ER32EW
30MM	ER40	79	64	50	1.5	SS30ERFC40	ER40E	ER40EW
32MM	ER25	57	53	46	1	SS32ERFC25	ER25E	ER25EW
32MM	ER32	69	58	50	1.5	SS32ERFC32	ER32E	ER32EW
32MM	ER40	79	64	50	1.5	SS32ERFC40	ER40E	ER40EW

TOOL HOLDERS
S.S. COLLET CHUCKS

DOUBLE PIN FLOATING HOLDER

RECOMMENDED FOR REAMING



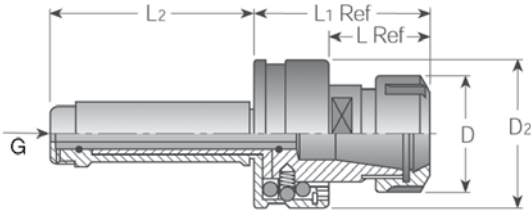
ERICKSON PRODUCTS

SEE PAGES 118 & 119 FOR COLLETS.

- FLOATS APPROXIMATELY .004" OFF CENTER (.008" TOTAL) TO COMPENSATE FOR BOTH PARALLEL AND ANGULAR MISALIGNMENTS.
- IDEAL FOR REAMING ON MACHINING CENTERS OR OTHER MACHINES WHERE MISALIGNMENTS ARE NOT EXCESSIVE.
- MAXIMUM 6000 RPM

C CAPACITY	COLLET SERIES	A	B	L	H HEX	CAT. NO.
1/32-1/4	300	1/2	2-1/2	4.03	5/8	SS050DP308403
1/32-1/4	300	3/4	2-1/2	4.03	5/8	SS075DP308403
3/64-25/64	200	3/4	2-7/8	4.48	7/8	SS075DP208448
3/64-25/64	200	1"	3"	4.48	7/8	SS100DP208448
1/32-1/4	300	1"	2-1/2	4.03	5/8	SS100DP308403
3/64-9/16	100	1"	3-1/2	5.62	1-1/8	SS100DP108562
3/64-3/4	180	1-1/4	4-1/2	6.96	1-3/8	SS125DP188696

MORSE TAPER SHANK ER COLLET FLOATING REAMER HOLDER W/ COOLANT PORT

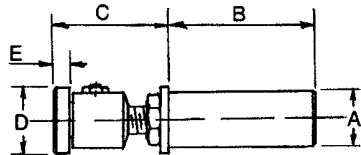


SEE PAGES 116 & 117 FOR COLLETS

PART NO.	SHANK TAPER	COLLET SERIES	COLLET CAPACITY	RADIAL FLOAT	L	L1	L2	D	D2	G
MT2FRER20	#2	ER20	1/16 TO 1/2	.040	1.358	2.382	2.520	1.339	1.969	3/8" - 16
MT3FRER32	#3	ER32	3/32 TO 3/4	.060	1.807	3.028	3.386	1.968	2.559	1/2" - 13

ADJUSTABLE REVOLVING STOPS WITH INTERCHANGEABLE HEADS

- STOP WASHER - PREVENTS PUSHBACK
- SMALL HOLE IN FACE OF HEAD - ELIMINATES LENGTH VARIATIONS



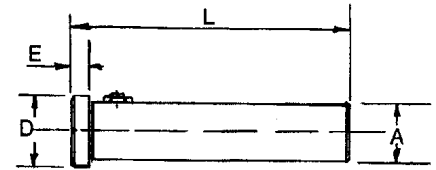
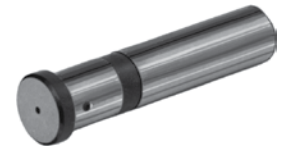
CAT. NO.	A	B	C		D	E
			MIN.	MAX.		
RSA00	5/8	1-11/16	1-3/16	1-7/16	3/4	3/16
RSA0	3/4	2-7/16	1-7/16	1-11/16	1"	3/16
RSA2	1"	3-5/16	1-7/16	1-11/16	1-1/8	3/16

INTERCHANGEABLE HEADS

- FULL SIZE - FOR MOST JOBS
- SMALL - FOR LIGHT WORKPIECES
- OVERSIZE - (FOR RSA2 and RSS2)
- SOFT - 4140 STEEL - FOR MACHINING AS I.D. OR O.D. SUPPORT
- BOTH STYLE STOPS ARE SUPPLIED WITH (STANDARD) HEADS
- ANY OTHER HEAD CAN BE SUBSTITUTED WHEN ORDERING COMPLETE STOPS - MERELY SPECIFY CAT. NO. OF HEAD REQUIRED AND ADD PRICE DIFFERENTIAL (IF ANY) TO PRICE OF STOP

HEAD ONLY			
CAT. NO.	D	E	4140 STEEL
RSA00-4 (Std)	3/4	3/16	HARD
RSA00-4SM	5/16	3/16	HARD
RSA00-4S	3/4	1/2	SOFT
RSA0-4 (Std)	1"	3/16	HARD
RSA0-4SM	3/8	3/16	HARD
RSA0-4S	1"	1/2	SOFT
RSA2-4 (Std)	1-1/8	3/16	HARD
RSA2-4SM	5/8	1/2	HARD
RSA2-4OS	1-5/8	1/4	HARD
RSA2-4S	1-1/8	3/4	SOFT
RSA2-4OSS	1-5/8	3/4	SOFT

REVOLVING STOPS WITH INTERCHANGEABLE HEADS



CAT. NO.	A	L	D	E
RSS-00	5/8	3"	3/4	3/16
RSS-0	3/4	4"	1"	3/16
RSS-2	1"	5"	1-1/8	3/16

SWISS

CNC

MULTI-SPINDLE

BROWN & SHARPE

DAVENPORT

SOMMA DRILL SPEEDER

For use on New Britains, Acmes, Wickmans, Hydromats and other Multi Spindle Machines

- 2" Diameter Quill
- 200 Double Angle Collet, 0-3/8" capacity
- 5,000 RPM
- 27 IN-LB of Torque
- Forward and Reverse
- Speed or Torque readout
- All electronics are in one box with a 3 wire hook up
- At speed or current limit output

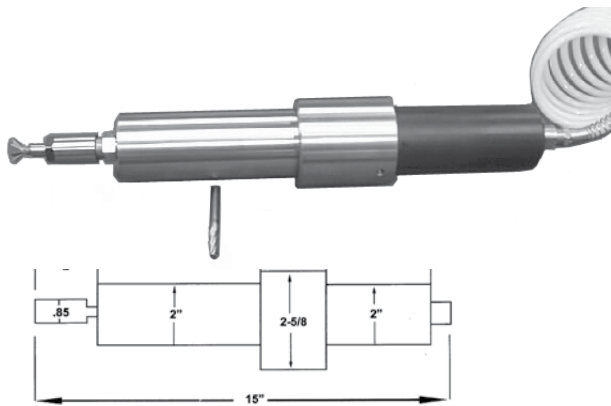
For drilling small holes as well as cross hole drilling and milling.

SEE PAGE 118 FOR COLLETS

Cat. No. DSPD



SOMMA AIR SPEEDER



PURPOSE:

ELIMINATE NEED FOR SECONDARY OPERATIONS. USE THIS TOOL TO DRILL, MILL, SLOT.

EASILY MOUNTS TO A CROSS SLIDE OR A 2" TOOL HOLDER.

FOR USE ON NEW BRITAINS, ACMES, WICKMANS, HYDROMATS AND OTHER MULTI SPINDLE MACHINES.

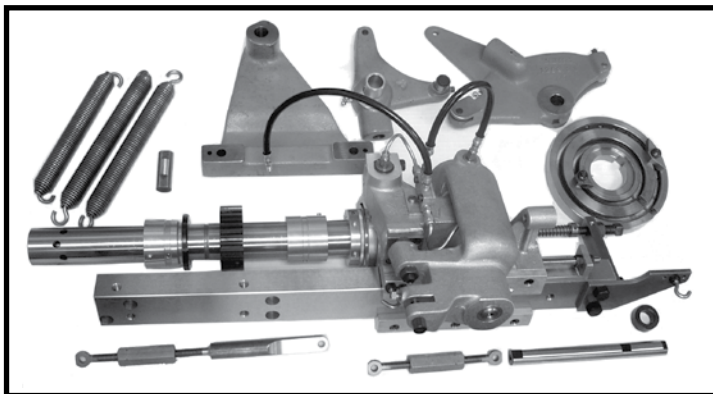
FEATURES:

- 2" DIAMETER QUILL
- 200 DA COLLET 0-3/8" CAPACITY
- 2,000, 3,300, 4,500 6,000 RPM
- 1/3 HP
- 15" OAL
- SIMPLE HOOK-UP, SUPPLY AIR AND DRIP LUBE.

RPM	CAT. NO.
2000	DAPD-2000
3300	DAPD-3300
4500	DAPD-4500
6000	DAPD-6000

SEE PAGE 118 FOR COLLETS

5TH POSITION STATIONARY HEAD BURRING ATTACHMENT FOR DAVENPORT MACHINES

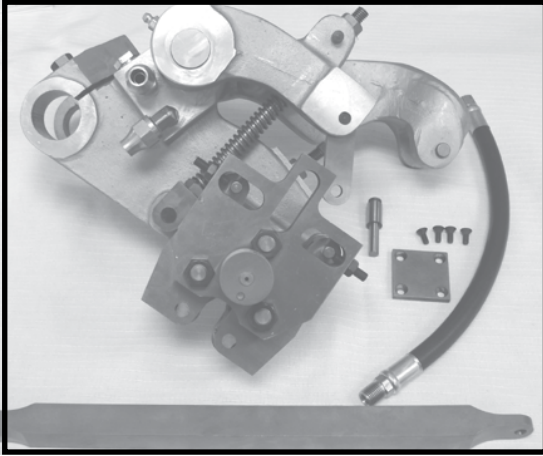


There is a chucking mechanism on the burring spindle that can be actuated at any time during the cycle. This facilitates the use of this attachment.

Cat. No.

1263-5-10-SA-SOMMA

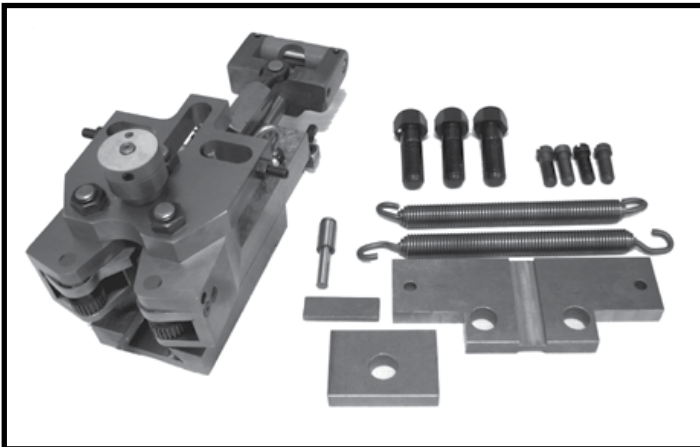
3RD POSITION THREAD ROLL ATTACHMENT FOR DAVENPORT MACHINES



- The 3rd Position Thread Roll Attachment (1431-SA-SOMMA) is connected to a special swing arm casting with 2 thread rolls.
- The swing arm feeds the attachment until the rolls are on center with the blank diameter of the work piece.
- The attachment feeds the rolls inward on the center line of the work piece.
- When the threads are formed, the roll arms are released.
- The attachment returns to the home position.

Cat. No.
1431-SA-SOMMA

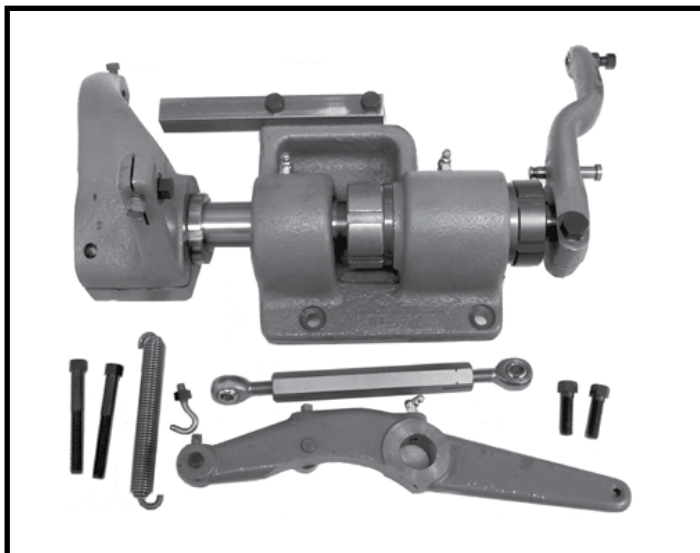
4TH POSITION THREAD ROLL ATTACHMENT FOR DAVENPORT MACHINES



- The 4th Position Thread Roll Attachment (1421-SA-SOMMA) is connected to a slide with 2 thread rolls.
- The slide feeds the attachment until the rolls are on center with the blank diameter of the work piece.
- The attachment feeds the rolls inward on the center line of the work piece.
- When the threads are formed, the roll arms are released.
- The attachment returns to the home position.

Cat. No.
1421-SA-SOMMA

5TH POSITION COUNTERSINK ATTACHMENT FOR DAVENPORT MACHINES



- Consists of a cam operated arm.
- Can be mounted with any kind of left hand end working tool (ie countersinks, drill, turning tools, reamers, etc.)
- After cutoff, the arm is positioned in front of the burring spindle. The workpiece can then be fed into the desired tool.

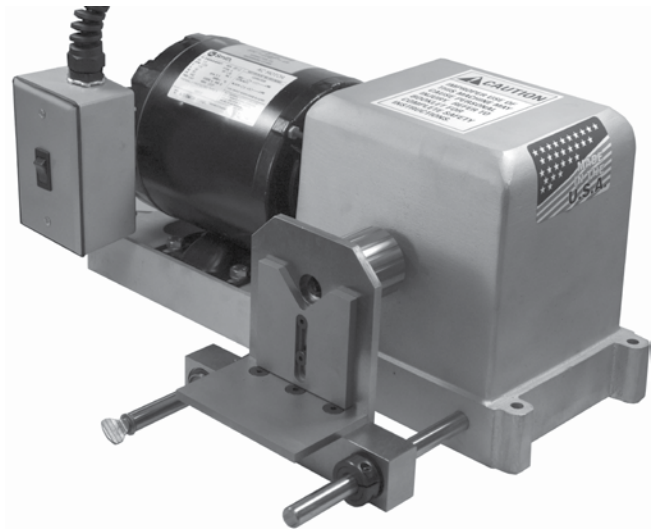
Cat. No.
1263-119-1-SA-SOMMA

STC-TAP-ER TAPPING MACHINE

TAPS UP TO 5/16-18 THREAD IN 1/2" STEEL!!

HEAVY DUTY TAPERED CONE DRIVE

1/2" capacity chuck
 1/3 H.P., 115V, Single Phase
 1725 RPM, A48 Frame Motor
 Shipping weight: 43 lbs



Standard Part No.
STC-TAP-ER

The STC-TAP-ER has a double disc friction drive that reverses rotation instantly by the application of forward or backward hand pressure on the part being tapped. The friction discs are driven by a Heavy Duty Tapered Cone Drive Collar mounted on the motor shaft. The maximum spindle speed is 300 RPM.

ORDERING NO.	CONFIGURATION
STC-TAP-ER	STANDARD AS SHOWN
STC-TAP-ER(-)	MINUS THE FRONT STAGING
STC-TAP-ER/MAGNETIC	WITH MAGNETIC START
STC-TAP-ER-3/4CAP	WITH 3/4" CAPACITY CHUCK
STC-TAP-ER KEYLESS	WITH KEYLESS CHUCK
STC-TAP-ER-F/R	WITH FORWARD-REVERSE SWITCH
STC-TAP-ER-VAR/RPM	WITH VARIABLE SPINDLE SPEED CONTROL
STC-TAP-ER-380/3	WITH 380V 50HZ 3 PHASE MOTOR

FEATURES:

- Push to tap in
- Pull to tap out
- Sliding face plate
- Work table can be reversed when not needed
- Adjustable "V" plate for small parts (removable)
- Easy to set stop for tap depth control
- Comfortable bench height working area
- Long lasting tapered cone drive
- Pilot light switch warns if motor is left running

ALSO AVAILABLE 220V, 50HZ OR 60HZ, SINGLE OR SPLIT PHASE MOTORS OR AVAILABLE WITHOUT MOTOR

CALL FOR A QUOTATION ON YOUR SPECIFIC CONFIGURATION

REPLACEMENT PART

CAT. NO.	DESCRIPTION
BB-TAP-6	TAPPERED CONE DRIVE

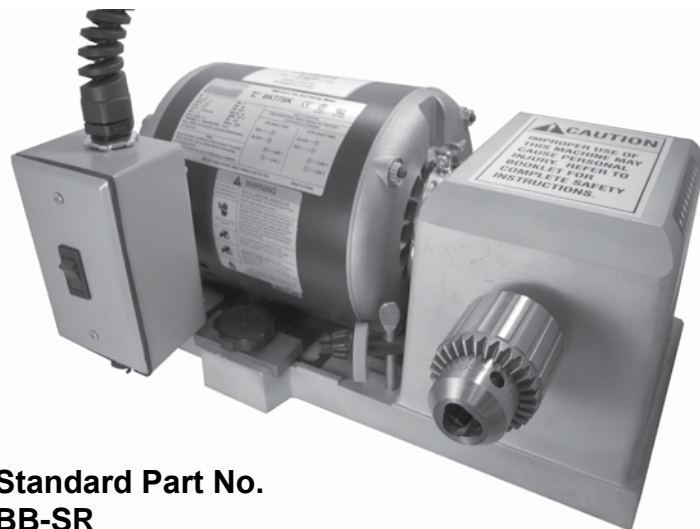
WARNING!! TO AVOID INJURIES, WORKPIECE SHOULD BE HELD IN AN APPROPRIATE CLAMPING DEVICE WHILE BEING TAPPED AND SHOULD NEVER BE HELD BY HAND WITHOUT ADEQUATE PROTECTION.

BB-SR RE-TAPPING MACHINE

THE FASTEST AND EASIEST WAY TO:

- Retap threaded parts
- Chase threads
- Remove cutoff burrs from threads
- Inspect threads (with thread gage mounted in chuck)
- Countersink holes
- Deburr holes
- Ream holes

1/2" capacity chuck
 1/3 H.P., 115V, Single Phase
 1725 RPM, A48 Frame Motor
 Shipping weight: 32 lbs



**Standard Part No.
 BB-SR**

The Re-TAP-ER has a double disc friction drive that reverses rotation instantly by the application of forward or backward hand pressure on the part being retapped. The friction discs are driven by a Rubber Drive Ring mounted on the motor shaft.

Because the unit is driven merely by friction, it would be impossible to guarantee any particular R.P.M. since the R.P.M. will vary with the pressure exerted and the operation performed. The maximum spindle speed is 1,000 RPM.

NEW IMPROVED DESIGN

- Solid one piece enclosed housing
- Motor slides back for easy drive ring replacement
- Pilot light switch warns if motor is left running
- Rugged construction yet light weight and portable (only 32lbs)



ORDERING NO.	CONFIGURATION
BB-SR	STANDARD AS SHOWN
BB-SR/MAGNETIC START	WITH MAGNETIC START
BB-SR-3/4CAP	WITH 3/4" CAPACITY CHUCK
BB-SR 3450RPM	WITH 3450 RPM MOTOR
BB-SR-F/R	WITH FORWARD-REVERSE SWITCH
BB-SR-VAR/RPM	WITH VARIABLE SPINDLE SPEED CONTROL
BB-SR-380/3	WITH 380V 50HZ 3 PHASE MOTOR

ALSO AVAILABLE 220V, 50HZ OR 60HZ, SINGLE OR SPLIT PHASE MOTORS
 OR AVAILABLE WITHOUT MOTOR

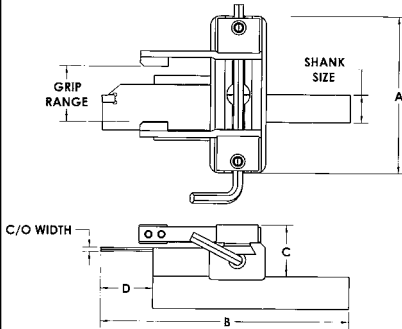
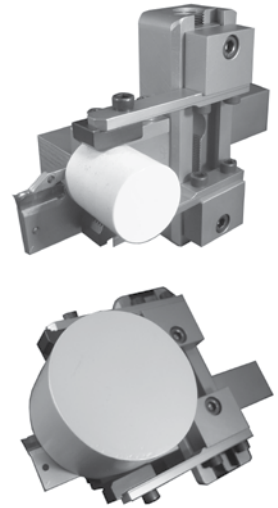
CALL FOR A QUOTATION ON YOUR SPECIFIC CONFIGURATION

Replacement Parts

CAT. NO.	RE-TAP-ER
BB-7	DRIVE RING BLACK NEOPRENE
BB-7HD	HEAVY DUTY DRIVE RING ORANGE URETHANE
BB-21	PKG. OF 6 FINGER PROTECTORS

COMBINATION BAR PULLER CUT-OFF TOOL FOR CNC Bar puller and cut off tool (sold separately) in one unit!

- Single screw adjustment allows jaws to be set up and adjusted in minutes for next job
- One turn of screw moves both jaws in or out exactly .100"
- Saves a turret position
- Rugged, compact dovetail slide construction
- Reduces cycle time - no need to index between cut off and pulling operations
- Screw adjustment is infinitely adjustable as opposed to serrated design that had adjustment limitations
- Jaw carriers can also be individually adjusted to simplify centering with cut off blade
- Will accept all popular brands of insert style cut off blades, which are sold separately
- Designed to accept competitors' jaws and jaw fingers
- Also available with 1-1/4" and metric square shanks - price on application



SQUARE SHANK SIZE	GRIPPING RANGE	A	B	C	MAX DEPTH D	CAT. NO. RIGHT HAND
3/4"	1/8 TO 3-1/4"	4-1/4"	6-5/8"	1-15/32"	1-21/64"	BPCO-1*
1"	1/8 TO 3-1/4"	4-1/4"	6-5/8"	1-15/32"	1-21/64"	BPCO-2*

*NOTE: CUT-OFF HOLDER FOR BAR PULLER MUST BE ORDERED SEPARATELY
BAR PULLER IS DESIGNED FOR RIGHT HAND USE ONLY

CUT-OFF HOLDER FOR BAR PULLER (INCLUDES STANDARD INSERT AND INSERT WRENCH)

CAT. NO.	C/O WIDTH
CO-HLDR-BP	0.118

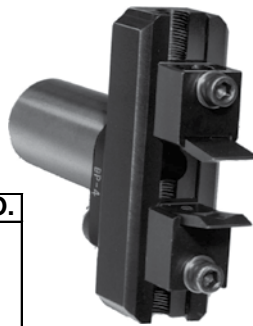
REPLACEMENT PARTS

DESCRIPTION	CAT. NO.
SPRING FINGER	PCO-5
SERRATED JAW	PCO-6
C/O INSERT FOR GENERAL STEEL	WCFR3 AC3000
C/O INSERT FOR HARD STL/ SLOW FEED	WCFR3A AC225
C/O INSERT FOR CAST IRON/ ALUMINUM	WCFR3B G10E

BAR PULLER SPECIFICATIONS

CAT. NO.	"D"	"L"
BP00	5/8" DIA.	2"
BP1	3/4" DIA.	2"
BP2	1" DIA.	2-5/8"
BP3	1-1/4" DIA.	2-5/8"
BP4	1-1/2" DIA.	2-5/8"
BP5	2" DIA.	3-5/16"

BAR PULLER FOR CNC TAPE LATHES



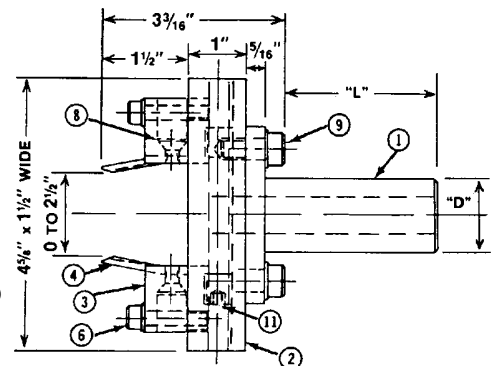
- BP00, BP1, BP2, BP3 AND BP4 ARE ADJUSTABLE TO PULL BARS RANGING FROM 1/16 DIA MIN TO UP TO 2-1/2" DIA MAX.
- BP5 IS ADJUSTABLE TO PULL BARS RANGING FROM 1/16 DIA MIN TO UP TO 3" DIA MAX.
- AVAILABLE IN VARIOUS SHANK SIZES TO FIT ALL MACHINES
- NO-SPRINGS TENSION BUILT INTO JAWS FOR UP TO 250 LBS. PRESSURE
- JAWS ARE EASILY REPLACED

BAR PULLER PARTS

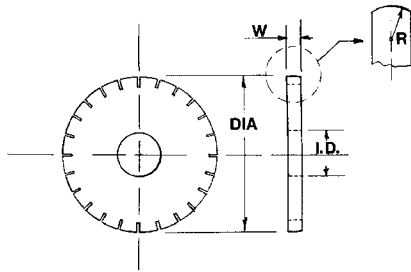
PART NO.	CAT. NO.
1. Shank 3/4" DIA.	BP1-1
1. Shank 1" DIA.	BP2-1
1. Shank 1-1/4" DIA.	BP3-1
1. Shank 1-1/2" DIA.	BP4-1
1. Shank 2" Dia.	BP5-1
2. Body	BP4-2
2. Body (for BP5 only)	BP5-2
3. Slide	BP4-3
4. Jaw	BP4-4
6. Slide Clamp Screw & Washer	VFDH0-5
8. Jaw Screw	BP4-8
9. Clamp Screw & Washer	FDH2-4
11. Adjusting Screw	BP4-11

EASY TO ADJUST:

- SCREW JAWS DOWN TO SLIP FIT ON BAR
- BACK OFF BAR
- ADJUST BOTH JAWS DOWN 1/4 TURN
- LOCK IN PLACE AND PULLER IS READY TO USE
- PRESSURE CAN BE INCREASED OR DECREASED BY ADJUSTING JAWS IN OR OUT



DEBURRING TOOLS FOR SLOTTING ATTACHMENTS OF B&S AND SWISS MACHINES



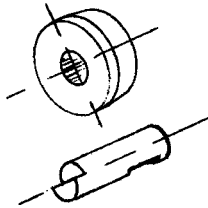
These high speed steel circular deburring tools fit the slotting attachment of B&S Screw Machines and Swiss Machines and remove cut-off burrs from the back end of the part completely, smoothly and uniformly.

The O.D. of the deburring tool is slightly crowned and the teeth are radial (without clearance) so as to only remove the cut-off burr without digging into the part.

CAT. NO.	MACHINE SIZE	DIA.	I.D.	WIDTH
SBT-00	#00 B&S	1-3/4	5/8	3/16
SBT-0	#0 B&S	2-1/4	5/8	3/16
SBT-2	#2 B&S	2-3/4	3/4	1/4
SBT-SW	SWISS	25MM(1")	8MM(.315)	3/16

ROLLERS AND PINS FOR BOYAR-SCHULTZ TURNING TOOLS

* Fit all Boyar-Schultz RT, LT, RTC Turning Tools * Made of 52100 Heat Treated Steel * Precision ground all over



TAPERED ROLLS

CAT. NO.	USED ON	O.D.	I.D.	WIDTH
	00RT			
BSR-5020	00LT/00C	5/16	5/32	3/16
BSR-5120	0RT/0LT/0C	1/2	1/4	1/4
BSR-5220	2RT-2LT-2C	5/8	1/4	1/4
BSR-5720	000RT	9/32	1/8	3/16

PINS

CAT. NO.	USED ON	DIA.	LENGTH
	00RT		
BSP-5025	00LT/00C	5/32	17/32
BSP-5125	0RT/0LT/0C	1/4	23/32
BSP-5225	2RT/2LT/2C	1/4	27/32
BSP-5725	000RT	1/8	17/32

SHAVE TOOL ROLL SPACERS FOR 5/16" DIAMETER ROLL PINS

Package of 14 assorted width 5/16" I.D. spacers for positioning shave tool roll.
Can be used on C.J. Winter, Schlitter, Slater, Somma, Davenport and other holders with 5/16" dia. roll pins.

Cat. No.
SP-ROLL PKG



HARDENED 52100 STEEL
- GROUND ALL OVER

ROLLS FOR DOVETAIL SHAVE TOOL HOLDERS

Cat. No.	O.D	I.D.	Width	C'Bore
62-5-5-RL	1"	3/8	11/16	--
62-5-4-RL	1-1/4"	3/8	11/16	--
62-5-5A-RL	1"	1/2	11/16	1/8 x 3/4
62-4-4A-RL	1-1/8"	1/2	11/16	1/8 x 3/4
62-5-4A-RL	1-1/4"	1/2	11/16	1/8 x 3/4

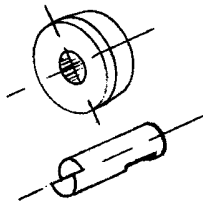
ROLLS FOR SOMMA BOX TOOLS

Cat. No.	O.D	I.D.	Width
ATT00-6	.250	.125	.156
ATT0-6	.432	.188	.250
ATT2-6	.500	.250	.375

ROLLS FOR SOMMA SHAVE TOOL HOLDERS

Cat. No.	O.D	I.D.	Width
QCDS-3A	.875	.312	.375
QCDS-3A-1/2	.875	.312	.500

ROLLER & PIN SETS FOR SOMMA TURNING TOOLS



Cat. No.	O.D	I.D.	C'Bore	Width	Pin Length
TT00RBR-1	.556	.284	.050 X .375	.250	15/32
TT1RBR-1	.615	.315	.062 X .375	.312	19/32
TT2RBR-1	.740	.378	.067 X .450	.375	23/32
TT3RBR-1	.865	.440	.067 X .560	.375	23/32

CAM ROLLERS AND PINS

• HEAT TREATED ALLOY STEEL

For hardness and long life.

*Also used on
Slotting Attachments



- **PRECISION-MADE**
Pin O.D., Roll O.D. & I.D.
ground for accuracy and
smooth operation.

CHECK DIMENSIONAL REQUIREMENTS AND ORDER BY CATALOG NO.

MACHINE USED ON	Cat. No.	Part Name	Used On	B&S Ref. No.	Outside Diameter	Inside Diameter	Length or Width	Cotter Pin or Flat
No. 00 Prior to Serial #128582	*M3963	Pin	Lead Lever & Cross Slides	91-90-83/645	.250	—	1.062	Flat
	M3982	Roller	Lead Lever & Cross Slides	91-215-8	.500	.250	.312	—
	M3965	Pin	Cross & Vertical Slides	91-90-83/700	.250	—	1.062	Cotter Pin
	M3969	Pin	Lead Lever & Cross Slides	91-90-83	.250	—	1.250	Flat

No. 00 Begins with Serial #12852 and #542-00-3300	*M3973	Pin	Lead Lever	91-90-705	.250	—	1.312	Cotter Pin
	M3961	Pin	Cross Slide Some Machines	91-90-645	.250	—	1.000	Flat
	*M3984	Roller	Lead Lever, Cross & Vertical Slides	91-215-211	.500	.250	.375	—
	M3971	Pin	Lead Lever, Cross & Vertical Slides Some Machines	91-90-738	.250	—	1.250	Cotter Pin

No. 0 Prior to Serial #8020	*M3963	Pin	Lead Lever & Cross Slides	91-90-83	.250	—	1.062	Flat
	M3967	Pin	Cross Slide Some Machines	91-90-83	.250	—	1.125	Flat
	*M3986	Roller	Lead Lever & Cross Slides	91-215-9	.562	.250	.375	—

No. 0 Begins with Serial #8020	*M3973	Pin	Lead Lever	91-90-705/738	.250	—	1.312	Cotter Pin
	M3965	Pin	Cross & Vertical Slides	91-90-83/700	.250	—	1.062	Cotter Pin
	*M3988	Roller	Lead Lever, Cross & Vertical Slides	91-215-212	.562	.250	.437	—
	*M3971	Pin	Cross & Vertical Slides Some Machines	91-90-738	.250	—	1.250	Cotter Pin
	*M3986	Roller	Lead Lever, Cross & Vertical Slides Some Machines	91-215-9	.562	.250	.375	—

No. 2 Prior to Serial #7351	*M3975	Pin	Lead Lever & Cross Slides	91-90-82	.312	—	1.187	Flat
	*M3990	Roller	Lead Lever & Cross Slides	91-215-3	.625	.312	.437	—

No. 2 Begins with Serial #7351 and #542-2-3100	*M3977	Pin	Lead Lever*, Cross & Vertical Slides (*Except 542-2-3100)	91-90-752	.312	—	1.312	Cotter Pin
	*M3992	Roller	Lead Lever, Cross & Vertical Slides	91-215-220	.625	.312	.500	—
	M3979	Pin	Lead Lever (Begins Serial 542-2-3100)	42-17185-99	.312	—	1.833	Cotter Pin

No. 2 Ultramatic	M3981	Pin	Lead Lever	42-17185-1	.312	—	2.015	Cotter Pin
	M3994	Roller	Lead Lever	42-21653	.625	.312	.625	—

STEEL CAM BLANKS

For lead, cross-slide and vertical attachment on automatic screw machines. Blanks are 1020 steel, with finished center hole, locating hole, graduated in hundredths and face ground and blued for easy scribing.

STEEL FULL CAM BLANKS				
MACHINE SIZE	CAT. NO.	DIA.	WIDTH	I.D.
No. 00 B&S	CB00-4.5	4-1/2	1/4	1"
	CB00-5	5	1/4	1"
	CB00-5.5	5-1/2	1/4	1"
No. 0 B&S	CB0-6	6	5/16	1-1/8
	CB0-7	7	5/16	1-1/8
No. 2 B&S	CB2-7	7	3/8	1-1/4
	CB2-8	8	3/8	1-1/4
	CB2-9	9	3/8	1-1/4
	CB2-10	10	3/8	1-1/4

STEEL ROUGH CAM BLANKS

Blanks are 1020 steel, with finished center hole and locating hole - but without graduations or bluing. Saving for cam makers who do not require these features. Face ground for scribing.

STEEL ROUGH CAM BLANKS				
MACHINE SIZE	CAT. NO.	DIA.	WIDTH	I.D.
No. 00 B&S	RCB00-4.5	4-1/2	1/4	1"
	RCB00-5	5	1/4	1"
	RCB00-5.5	5-1/2	1/4	1"
No. 0 B&S	RCB0-6	6	5/16	1-1/8
	RCB0-7	7	5/16	1-1/8
No. 2 B&S	RCB2-7	7	3/8	1-1/4
	RCB2-8	8	3/8	1-1/4
	RCB2-9	9	3/8	1-1/4
	RCB2-10	10	3/8	1-1/4

CAMS SHOULD BE CARBURIZED AND DEEP CASE HARDENED FOR LONGEST LIFE.

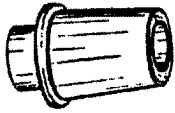


GROUND
BOTH SIDES

SLOTING BUSHINGS FOR BROWN & SHARPE AUTOMATICS

- TAPER SHANKS OF ALL BUSHINGS ARE GROUND
- MADE OF C1117 STEEL

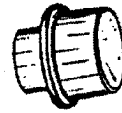
- SHOULD BE CASE HARDENED .005" DEEP AFTER MACHINING FOR BEST RESULTS



STYLE A -- Standard Slotting Bushing with hole in shank.



STYLE B -- Same as Style "A", except WITHOUT hole in shank.

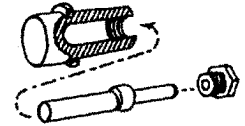


STYLE C -- Has larger head end to accommodate larger capacities of later model machines.

Maximum sizes bushings can pick up:
#00 -- 7/16, #0 -- 5/8, #2 -- 3/4, #22 -- 7/8.
(Note: The #00 size is also available with short shank. When ordering specify "#00 Style C -- SHORT SHANK")



STYLE D -- For use in later model H.S. #00 machines.
Same as Style "A", except with shortened shank to fit lighter swing arm of H.S. machines.



STYLE E -- Has same diameter head as Style C, except head length is longer, as follows:
#00 -- 5/8, #0 -- 3/4, #2 -- 1", #22 -- 1-1/8.

STYLE F -- No. 00 only Used for small work where the ejection slot in bushing would prevent effective holding.

SOMMA	B&S REF. NO.
SB00-A	42-14598-99
SB00-D	42-6640-99
SB0-A	42-14600-99
SB2-A	42-14602-99
SB2-C	42-14603-99
SB22-A	42-14602-1
SB22-C	42-14603-1

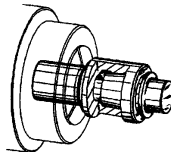
SLOTING BUSHING CATALOG NUMBERS

Machine Size	Style A	Style B	Style C	Style C Short	Style D	Style E	Style F
#00 B&S	SB00-A	SB00-B	SB00-C	SB00-C-S	SB00-D	SB00-E	SB00-F
#0 B&S	SB0-A	SB0-B	SB0-C	—	—	SB0-E	—
#2 B&S	SB2-A	SB2-B	SB2-C	—	—	SB2-E	—
#2 B&S*	SB22-A	SB22-B	SB22-C	—	—	SB22-E	—

* NOTE: SB22 Bushings are for #2B&S Automatic Screw Machines starting with Serial No. 542-2-3100.

SLOTING BUSHING ADAPTERS

SIMPLIFIES machining of B&S Slotting Bushings.
GUARANTEES that all boring operations will be true with taper shank of the bushing.
ELIMINATES the need for indicating.



MACHINE SIZE	CAT. NO.	SHANK DIA.	LENGTH
#00	SBA00	1/2"	1-3/4"
#0	SBA0	5/8"	1-7/8"
#2	SBA2	3/4"	2"
#2	SBA22	7/8"	2"

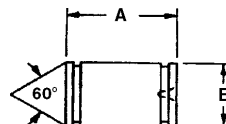
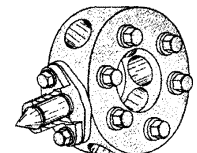


CENTERING TOOL

Saves time...Takes the Guesswork Out of Tool Alignment!

An invaluable aid for the setup man and operator. Saves time, and provides greater accuracy for lining-up floating tool holders when using such tools as flat bottom drills, counter-bores, reamers, trepanning tools, die heads, tap-holders, etc...

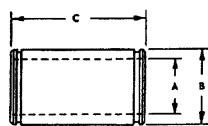
Made of quality material - heat-treated for long service. Centering angle is ground true with body.



CAT. NO.	MACHINE SIZE	DIMENSIONS	
		A	B
CT00	#00	7/8"	1/2"
CT0	#0	1-1/16"	5/8"
CT2	#2	1-13/32"	1"

TURRET BUSHINGS

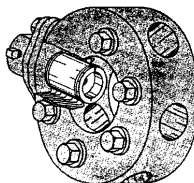
EXTENDS TURRET-TO-SPINDLE CAPACITY of B&S and similar automatic screw machines.



Permits use of smaller tools in larger machines. Shorter body length of smaller size tools means less cut-down, resulting in higher cam lobes.



CAT. NO.	MACHINE SIZE	DIMENSIONS		
		A	B	C
TB000	#00 to #0	5/8"	3/4"	1-5/16"
TB002	#00 to #2	5/8"	1"	1-5/8"
TB02	#0 to #2	3/4"	1"	1-5/8"
TB23	--	1"	1-1/4"	1-3/4"

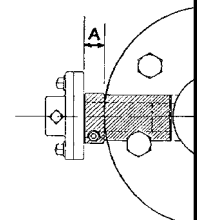


TURRET TOOL ADAPTER

Designed so that the combined body length of adaptor & drill holder equals the body length of the drill holder of the machine used (i.e. body length of tool adaptor plus #0 drill holder is equal to body length of #2 drill holder).



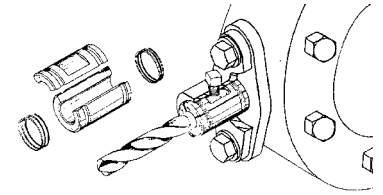
CAT. NO.	MACHINE SIZE	HOLE SIZE	SHANK SIZE	SHANK LENGTH	"A" DIM.
TA000	#00 to #0	5/8"	3/4"	1-1/2"	3/8"
TA002	#00 to #2	5/8"	1"	2"	1/2"
TA02	#0 to #2	3/4"	1"	2"	1/2"



NEW & IMPROVED!

NOW AVAILABLE:

- METRIC ID AND SPECIAL ID BUSHINGS AT SAME PRICE AS EQUIVALENT FRACTIONAL SIZE, MINIMUM QUANTITIES MAY APPLY.
- METRIC ID SIZES NOW LISTED.
- 1-1/4" OD TAP AND DRILL BUSHINGS/PRICE ON APPLICATION
- 1-1/2" OD TAP AND DRILL BUSHINGS/PRICE ON APPLICATION



ACCURATE, LONG-LASTING, TIGHT-GRIPPING UNIQUE DESIGN -- Bushing grips the drill around three-quarters of its circumference, and fits the hole in the floating holder in the same manner. Result? More accurate fitting and line-up of drill and bushing.

***Note: Thin wall bushings have only 1 split instead of 2 and have no retainer springs.**

POSITIVE OPERATION -- Entire length of bushing firmly clamps drill shank. Less chance of drill being pushed back.

HEAT-TREATED FOR LONG LIFE -- Made of quality carburizing steel and heat-treated (not merely cyanided). The only split-type bushing of its type that is ground after heat-treating.

RETAINING SPRINGS

Bushing Size	Cat. No.	Price
#00	MB00-RS	0.50
#0	MB0-RS	0.50
#2	MB2-RS	0.50

BUSHING DIMENSIONS

#00	1/2" O.D. x 3/4" Long
#0	5/8" O.D. x 7/8" Long
#2	1" O.D. x 1-1/4" Long

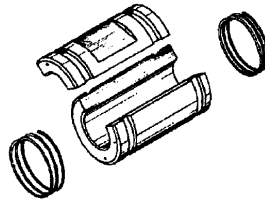
DRILL HOLDER BUSHING SETS AND TAP HOLDER BUSHING SETS NOW AVAILABLE

- NOW YOU CAN ORDER COMPLETE SETS OF DRILL HOLDER BUSHINGS AND TAP HOLDER BUSHINGS, PACKAGED IN A CONVENIENT STORAGE CASE. THE PRICE OF A SET IS 10% LESS THAN WHEN EACH BUSHING IS ORDERED SEPARATELY.
- DRILL BUSHING SETS INCLUDE 1 EACH OF ALL BUSHINGS LISTED BELOW BY COLUMN.

#00 DRILL BUSHINGS 1/2" OD X 3/4" LONG

FRACTIONAL	LETTER	NUMBER			METRIC			
MB00-1/64	MB00-A	MB00-#1	MB00-26	MB00-51	MB00-0.35MM	MB00-1.80MM	MB00-4.40MM	MB00-7.70MM
MB00-1/32	MB00-B	MB00-2	MB00-27	MB00-52	MB00-0.38MM	MB00-1.85MM	MB00-4.50MM	MB00-7.80MM
MB00-3/64	MB00-C	MB00-3	MB00-28	MB00-53	MB00-0.40MM	MB00-1.90MM	MB00-4.60MM	MB00-7.90MM
MB00-1/16	MB00-D	MB00-4	MB00-29	MB00-54	MB00-0.42MM	MB00-1.95MM	MB00-4.70MM	MB00-8.00MM
MB00-5/64	MB00-E	MB00-5	MB00-30	MB00-55	MB00-0.45MM	MB00-2.00MM	MB00-4.80MM	MB00-8.10MM
MB00-3/32	MB00-F	MB00-6	MB00-31	MB00-56	MB00-0.48MM	MB00-2.05MM	MB00-4.90MM	MB00-8.20MM
MB00-7/64	MB00-G	MB00-7	MB00-32	MB00-57	MB00-0.50MM	MB00-2.10MM	MB00-5.00MM	MB00-8.30MM
MB00-1/8	MB00-H	MB00-8	MB00-33	MB00-58	MB00-0.55MM	MB00-2.15MM	MB00-5.10MM	MB00-8.40MM
MB00-9/64	MB00-I	MB00-9	MB00-34	MB00-59	MB00-0.60MM	MB00-2.20MM	MB00-5.20MM	MB00-8.50MM
MB00-5/32	MB00-J	MB00-10	MB00-35	MB00-60	MB00-0.62MM	MB00-2.25MM	MB00-5.30MM	MB00-8.60MM
MB00-11/64	MB00-K	MB00-11	MB00-36	MB00-61	MB00-0.65MM	MB00-2.30MM	MB00-5.40MM	MB00-8.70MM
MB00-3/16	MB00-L	MB00-12	MB00-37	MB00-62	MB00-0.70MM	MB00-2.35MM	MB00-5.50MM	MB00-8.80MM*
MB00-13/64	MB00-M	MB00-13	MB00-38	MB00-63	MB00-0.75MM	MB00-2.40MM	MB00-5.60MM	MB00-8.90MM*
MB00-7/32	MB00-N	MB00-14	MB00-39	MB00-64	MB00-0.80MM	MB00-2.45MM	MB00-5.70MM	MB00-9.00MM*
MB00-15/64	MB00-O	MB00-15	MB00-40	MB00-65	MB00-0.85MM	MB00-2.50MM	MB00-5.80MM	MB00-9.10MM*
MB00-1/4	MB00-P	MB00-16	MB00-41	MB00-66	MB00-0.90MM	MB00-2.60MM	MB00-5.90MM	MB00-9.20MM*
MB00-17/64	MB00-Q	MB00-17	MB00-42	MB00-67	MB00-0.95MM	MB00-2.70MM	MB00-6.00MM	MB00-9.30MM*
MB00-9/32	MB00-R	MB00-18	MB00-43	MB00-68	MB00-1.00MM	MB00-2.80MM	MB00-6.10MM	MB00-9.40MM*
MB00-19/64	MB00-S*	MB00-19	MB00-44	MB00-69	MB00-1.05MM	MB00-2.90MM	MB00-6.20MM	MB00-9.50MM*
MB00-5/16	MB00-T*	MB00-20	MB00-45	MB00-70	MB00-1.10MM	MB00-3.00MM	MB00-6.30MM	MB00-9.60MM*
MB00-21/64	MB00-U*	MB00-21	MB00-46	MB00-71	MB00-1.15MM	MB00-3.10MM	MB00-6.40MM	MB00-9.70MM*
MB00-11/32	MB00-V*	MB00-22	MB00-47	MB00-72	MB00-1.20MM	MB00-3.20MM	MB00-6.50MM	MB00-9.80MM*
MB00-23/64*	MB00-W*	MB00-23	MB00-48	MB00-73	MB00-1.25MM	MB00-3.30MM	MB00-6.60MM	MB00-9.90MM*
MB00-3/8*	MB00-X*	MB00-24	MB00-49	MB00-74	MB00-1.30MM	MB00-3.40MM	MB00-6.70MM	MB00-10.00MM*
MB00-25/64*	MB00-Y*	MB00-25	MB00-50	MB00-75	MB00-1.35MM	MB00-3.50MM	MB00-6.80MM	MB00-10.20MM*
MB00-13/32*	MB00-Z*			MB00-76	MB00-1.40MM	MB00-3.60MM	MB00-6.90MM	MB00-10.50MM*
MB00-27/64*				MB00-77	MB00-1.45MM	MB00-3.70MM	MB00-7.00MM	MB00-10.80MM*
MB00-7/16*				MB00-78	MB00-1.50MM	MB00-3.80MM	MB00-7.10MM	MB00-11.00MM*
MB00-29/64*				MB00-79	MB00-1.55MM	MB00-3.90MM	MB00-7.20MM	MB00-11.20MM*
MB00-15/32*				MB00-80	MB00-1.60MM	MB00-4.00MM	MB00-7.30MM	MB00-11.50MM*
MB00-31/64*					MB00-1.65MM	MB00-4.10MM	MB00-7.40MM	MB00-11.80MM*
					MB00-1.70MM	MB00-4.20MM	MB00-7.50MM	MB00-12.00MM*
					MB00-1.75MM	MB00-4.30MM	MB00-7.60MM	MB00-12.20MM*
MB00-1SET	MB00-2SET	MB00-3SET	MB00-4SET	MB00-5SET	MB00-6SET	MB00-7SET	MB00-8SET	MB00-9SET

***NOTE:** Thin wall bushings have only 1 split instead of 2 and have no retainer springs.



Drill Bushing Sets include 1 each of all bushings listed on this page by column. The sets are packaged in a convenient storage case. The price for a set is 10% less than when each bushing is ordered separately.

#0 DRILL BUSHINGS 5/8" OD X 7/8" LONG

FRACTIONAL	LETTER	NUMBER			METRIC				
MB0-1/16	MB0-A	MB0-#1	MB0-26	MB0-51	MB0-0.35MM	MB0-1.60MM	MB0-3.60MM	MB0-6.50MM	MB0-9.40MM
MB0-5/64	MB0-B	MB0-2	MB0-27	MB0-52	MB0-0.38MM	MB0-1.65MM	MB0-3.70MM	MB0-6.60MM	MB0-9.50MM
MB0-3/32	MB0-C	MB0-3	MB0-28	MB0-53	MB0-0.40MM	MB0-1.70MM	MB0-3.80MM	MB0-6.70MM	MB0-9.60MM
MB0-7/64	MB0-D	MB0-4	MB0-29	MB0-54	MB0-0.42MM	MB0-1.75MM	MB0-3.90MM	MB0-6.80MM	MB0-9.70MM
MB0-1/8	MB0-E	MB0-5	MB0-30	MB0-55	MB0-0.45MM	MB0-1.80MM	MB0-4.00MM	MB0-6.90MM	MB0-9.80MM
MB0-9/64	MB0-F	MB0-6	MB0-31	MB0-56	MB0-0.48MM	MB0-1.85MM	MB0-4.10MM	MB0-7.00MM	MB0-9.90MM
MB0-5/32	MB0-G	MB0-7	MB0-32	MB0-57	MB0-0.50MM	MB0-1.90MM	MB0-4.20MM	MB0-7.10MM	MB0-10.00MM
MB0-11/64	MB0-H	MB0-8	MB0-33	MB0-58	MB0-0.55MM	MB0-1.95MM	MB0-4.30MM	MB0-7.20MM	MB0-10.20MM
MB0-3/16	MB0-I	MB0-9	MB0-34	MB0-59	MB0-0.60MM	MB0-2.00MM	MB0-4.40MM	MB0-7.30MM	MB0-10.50MM
MB0-13/64	MB0-J	MB0-10	MB0-35	MB0-60	MB0-0.62MM	MB0-2.05MM	MB0-4.50MM	MB0-7.40MM	MB0-10.80MM
MB0-7/32	MB0-K	MB0-11	MB0-36	MB0-61	MB0-0.65MM	MB0-2.10MM	MB0-4.60MM	MB0-7.50MM	MB0-11.00MM*
MB0-15/64	MB0-L	MB0-12	MB0-37	MB0-62	MB0-0.70MM	MB0-2.15MM	MB0-4.70MM	MB0-7.60MM	MB0-11.20MM*
MB0-1/4	MB0-M	MB0-13	MB0-38	MB0-63	MB0-0.75MM	MB0-2.20MM	MB0-4.80MM	MB0-7.70MM	MB0-11.50MM*
MB0-17/64	MB0-N	MB0-14	MB0-39	MB0-64	MB0-0.80MM	MB0-2.25MM	MB0-4.90MM	MB0-7.80MM	MB0-11.80MM*
MB0-9/32	MB0-O	MB0-15	MB0-40	MB0-65	MB0-0.85MM	MB0-2.30MM	MB0-5.00MM	MB0-7.90MM	MB0-12.00MM*
MB0-19/64	MB0-P	MB0-16	MB0-41	MB0-66	MB0-0.90MM	MB0-2.35MM	MB0-5.10MM	MB0-8.00MM	MB0-12.20MM*
MB0-5/16	MB0-Q	MB0-17	MB0-42	MB0-67	MB0-0.95MM	MB0-2.40MM	MB0-5.20MM	MB0-8.10MM	MB0-12.50MM*
MB0-21/64	MB0-R	MB0-18	MB0-43	MB0-68	MB0-1.00MM	MB0-2.45MM	MB0-5.30MM	MB0-8.20MM	MB0-12.80MM*
MB0-11/32	MB0-S	MB0-19	MB0-44	MB0-69	MB0-1.05MM	MB0-2.50MM	MB0-5.40MM	MB0-8.30MM	MB0-13.00MM*
MB0-23/64	MB0-T	MB0-20	MB0-45	MB0-70	MB0-1.10MM	MB0-2.60MM	MB0-5.50MM	MB0-8.40MM	MB0-13.20MM*
MB0-3/8	MB0-U	MB0-21	MB0-46	MB0-71	MB0-1.15MM	MB0-2.70MM	MB0-5.60MM	MB0-8.50MM	MB0-13.50MM*
MB0-25/64	MB0-V	MB0-22	MB0-47	MB0-72	MB0-1.20MM	MB0-2.80MM	MB0-5.70MM	MB0-8.60MM	MB0-13.80MM*
MB0-13/32	MB0-W	MB0-23	MB0-48	MB0-73	MB0-1.25MM	MB0-2.90MM	MB0-5.80MM	MB0-8.70MM	MB0-14.00MM*
MB0-27/64	MB0-X	MB0-24	MB0-49	MB0-74	MB0-1.30MM	MB0-3.00MM	MB0-5.90MM	MB0-8.80MM	MB0-14.25MM*
MB0-7/16	MB0-Y	MB0-25	MB0-50	MB0-75	MB0-1.35MM	MB0-3.10MM	MB0-6.00MM	MB0-8.90MM	MB0-14.50MM*
MB0-29/64*	MB0-Z			MB0-76	MB0-1.40MM	MB0-3.20MM	MB0-6.10MM	MB0-9.00MM	MB0-14.75MM*
MB0-15/32*				MB0-77	MB0-1.45MM	MB0-3.30MM	MB0-6.20MM	MB0-9.10MM	MB0-15.00MM*
MB0-31/64*				MB0-78	MB0-1.50MM	MB0-3.40MM	MB0-6.30MM	MB0-9.20MM	MB0-15.25MM*
MB0-1/2*				MB0-79	MB0-1.55MM	MB0-3.50MM	MB0-6.40MM	MB0-9.30MM	MB0-15.50MM*
MB0-33/64*				MB0-80					
MB0-17/32*									
MB0-35/64*									
MB0-9/16*									
MB0-37/64*									
MB0-19/32*									
MB0-39/64*									
MB0-1SET	MB0-2SET	MB0-3SET	MB0-4SET	MB0-5SET	MB0-6SET	MB0-7SET	MB0-8SET	MB0-9SET	MB0-10SET

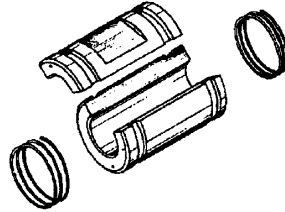


**NOW YOU CAN CALL
SOMMA TOOL IF YOU NEED...**



**BROWN & SHARPE
OR WARNER & SWASEY
TOOLING & REPAIR PARTS**

****NOTE:** Thin wall bushings have only 1 split instead of 2 and have no retainer springs.



Drill Bushing Sets include 1 each of all bushings listed on this page by column. The sets are packaged in a convenient storage case. The price for a set is 10% less than when each bushing is ordered separately.

#2 DRILL BUSHINGS 1" OD X 1-1/4" LONG							
FRACTIONAL			LETTER		NUMBER		
MB2-1/16	MB2-25/64	MB2-23/32	MB2-A	MB2-N	MB2-#1	MB2-22	MB2-43
MB2-5/64	MB2-13/32	MB2-47/64	MB2-B	MB2-O	MB2-2	MB2-23	MB2-44
MB2-3/32	MB2-27/64	MB2-3/4	MB2-C	MB2-P	MB2-3	MB2-24	MB2-45
MB2-7/64	MB2-7/16	MB2-49/64*	MB2-D	MB2-Q	MB2-4	MB2-25	MB2-46
MB2-1/8	MB2-29/64	MB2-25/32*	MB2-E	MB2-R	MB2-5	MB2-26	MB2-47
MB2-9/64	MB2-15/32	MB2-51/64*	MB2-F	MB2-S	MB2-6	MB2-27	MB2-48
MB2-5/32	MB2-31/64	MB2-13/16*	MB2-G	MB2-T	MB2-7	MB2-28	MB2-49
MB2-11/64	MB2-1/2	MB2-53/64*	MB2-H	MB2-U	MB2-8	MB2-29	MB2-50
MB2-3/16	MB2-33/64	MB2-27/32*	MB2-I	MB2-V	MB2-9	MB2-30	MB2-51
MB2-13/64	MB2-17/32	MB2-55/64*	MB2-J	MB2-W	MB2-10	MB2-31	MB2-52
MB2-7/32	MB2-35/64	MB2-7/8*	MB2-K	MB2-X	MB2-11	MB2-32	MB2-53
MB2-15/64	MB2-9/16	MB2-57/64*	MB2-L	MB2-Y	MB2-12	MB2-33	MB2-54
MB2-1/4	MB2-37/64	MB2-29/32*	MB2-M	MB2-Z	MB2-13	MB2-34	MB2-55
MB2-17/64	MB2-19/32	MB2-59/64*			MB2-14	MB2-35	MB2-56
MB2-9/32	MB2-39/64	MB2-15/16*			MB2-15	MB2-36	MB2-57
MB2-19/64	MB2-5/8	MB2-61/64*			MB2-16	MB2-37	MB2-58
MB2-5/16	MB2-41/64	MB2-31/32*			MB2-17	MB2-38	MB2-59
MB2-21/64	MB2-21/32	MB2-63/64*			MB2-18	MB2-39	MB2-60
MB2-11/32	MB2-43/64				MB2-19	MB2-40	MB2-61
MB2-23/64	MB2-11/16				MB2-20	MB2-41	MB2-62
MB2-3/8	MB2-45/64				MB2-21	MB2-42	MB2-63
MB2-1SET	MB2-2SET	MB2-3SET	MB2-7SET	MB2-8SET	MB2-4SET	MB2-5SET	MB2-6SET

#2 DRILL BUSHINGS 1" OD X 1-1/4" LONG						
METRIC						
MB2-1.20MM	MB2-2.25MM	MB2-4.10MM	MB2-6.20MM	MB2-8.30MM	MB2-11.00MM	MB2-16.25MM
MB2-1.25MM	MB2-2.30MM	MB2-4.20MM	MB2-6.30MM	MB2-8.40MM	MB2-11.20MM	MB2-16.50MM
MB2-1.30MM	MB2-2.35MM	MB2-4.30MM	MB2-6.40MM	MB2-8.50MM	MB2-11.50MM	MB2-16.75MM
MB2-1.35MM	MB2-2.40MM	MB2-4.40MM	MB2-6.50MM	MB2-8.60MM	MB2-11.80MM	MB2-17.00MM
MB2-1.40MM	MB2-2.45MM	MB2-4.50MM	MB2-6.60MM	MB2-8.70MM	MB2-12.00MM	MB2-17.25MM
MB2-1.45MM	MB2-2.50MM	MB2-4.60MM	MB2-6.70MM	MB2-8.80MM	MB2-12.20MM	MB2-17.50MM
MB2-1.50MM	MB2-2.60MM	MB2-4.70MM	MB2-6.80MM	MB2-8.90MM	MB2-12.50MM	MB2-18.00MM
MB2-1.55MM	MB2-2.70MM	MB2-4.80MM	MB2-6.90MM	MB2-9.00MM	MB2-12.80MM	MB2-18.50MM
MB2-1.60MM	MB2-2.80MM	MB2-4.90MM	MB2-7.00MM	MB2-9.10MM	MB2-13.00MM	MB2-19.00MM
MB2-1.65MM	MB2-2.90MM	MB2-5.00MM	MB2-7.10MM	MB2-9.20MM	MB2-13.20MM	MB2-19.50MM*
MB2-1.70MM	MB2-3.00MM	MB2-5.10MM	MB2-7.20MM	MB2-9.30MM	MB2-13.50MM	MB2-20.00MM*
MB2-1.75MM	MB2-3.10MM	MB2-5.20MM	MB2-7.30MM	MB2-9.40MM	MB2-13.80MM	MB2-20.50MM*
MB2-1.80MM	MB2-3.20MM	MB2-5.30MM	MB2-7.40MM	MB2-9.50MM	MB2-14.00MM	MB2-21.00MM*
MB2-1.85MM	MB2-3.30MM	MB2-5.40MM	MB2-7.50MM	MB2-9.60MM	MB2-14.25MM	MB2-21.50MM*
MB2-1.90MM	MB2-3.40MM	MB2-5.50MM	MB2-7.60MM	MB2-9.70MM	MB2-14.50MM	MB2-22.00MM*
MB2-1.95MM	MB2-3.50MM	MB2-5.60MM	MB2-7.70MM	MB2-9.80MM	MB2-14.75MM	MB2-22.50MM*
MB2-2.00MM	MB2-3.60MM	MB2-5.70MM	MB2-7.80MM	MB2-9.90MM	MB2-15.00MM	MB2-23.00MM*
MB2-2.05MM	MB2-3.70MM	MB2-5.80MM	MB2-7.90MM	MB2-10.00MM	MB2-15.25MM	MB2-23.50MM*
MB2-2.10MM	MB2-3.80MM	MB2-5.90MM	MB2-8.00MM	MB2-10.20MM	MB2-15.50MM	MB2-24.00MM*
MB2-2.15MM	MB2-3.90MM	MB2-6.00MM	MB2-8.10MM	MB2-10.50MM	MB2-15.75MM	MB2-24.50MM*
MB2-2.20MM	MB2-4.00MM	MB2-6.10MM	MB2-8.20MM	MB2-10.80MM	MB2-16.00MM	MB2-25.00MM*
MB2-9SET	MB2-10SET	MB2-11SET	MB2-12SET	MB2-13SET	MB2-14SET	MB2-15SET

UNIQUE DESIGN -- Bushing grips the tap around three-quarters of its circumference, and fits the hole in the floating holder in the same manner. Result? More accurate fitting and line-up of tap and bushing.

***Note: Thin wall bushings have only 1 split instead of 2 and have no retainer springs.**

POSITIVE OPERATION -- Entire length of bushing firmly clamps tap shank. Less chance of tap being pushed back.

HEAT-TREATED FOR LONG LIFE --

Made of quality carburizing steel and heat-treated (not merely cyanided). The only split-type bushing of its type ground after heat-treating.

**** NOMINAL OD OF THREAD THAT TAP WILL CUT.**

***** FOR TAPS SMALLER THAN #7 USE #0 TAP HOLDER AND TA02 ADAPTER.**

TAP HOLDER BUSHINGS

SIZE OF TAP USED**	TAP SHANK DIA.	#00	#0	#2
		1/2 OD x 3/4 long CAT. NO.	5/8 OD x 7/8 long CAT. NO.	1" OD x 1-1/4 long CAT. NO.
#0 thru #6	.141	1001	1101	1201
#7-#8-5/32	.168	1002	1102	1202
#9-#10-3/16	.194	1003	1103	1203
#12-7/32	.220	1004	1104	1204
#14-1/4	.255	1005	1105	1205
9/32	.286	1006	1106	1206
5/16	.318	1007	1107	1207
11/32	.349	1008	1108	1208
3/8	.381	1009*	1109	1209
13/32-7/16	.323	1010*	1110	1210
15/32	.354	—	1111	1211
1/2	.367	—	1112	1212
17/32	.398	—	1113	1213
9/16	.429	—	1114	1214
19/32	.460	—	1115*	1215
5/8	.480	—	1116*	1216
21/32	.511	—	1117*	1217
11/16	.542	—	1118*	1218
23/32	.573	—	—	1219
3/4	.590	—	—	1220
25/32	.621	—	—	1221
13/16	.652	—	—	1222
27/32	.684	—	—	1223
7/8	.697	—	—	1224
15/16	.760	—	—	1225*
1"	.800	—	—	1226*
1-1/16-1-1/8	.896	—	—	1227*

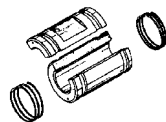


PIPE TAP BUSHINGS

1/16	.312	1050	1150	1250
1/8	.437	1051	1151*	1251
1/4	.562	—	1152*	1252
3/8	.701	—	—	1253
1/2	.688	—	—	1254
5/8	.813	—	—	1255
3/4	.907	—	—	1256*

TAP BUSHING SETS

00TAPSET	= 1001 thru 1051
0TAPSET	= 1101 thru 1152
2ATAPSET	= 1202 thru 1214
2BTAPSET	= 1215 thru 1227
2CTAPSET	= 1250 thru 1256



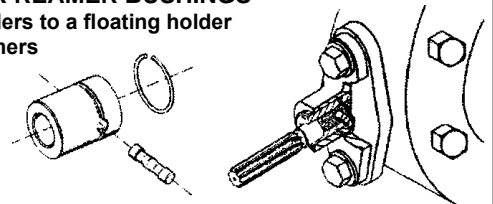
RETAINING SPRINGS FOR ABOVE BUSHINGS

—	MB00-RS	MB0-RS	MB2-RS
---	---------	--------	--------

- The sets are packaged in a convenient storage case.
- The price for a set is 10% less than when each bushing is ordered separately.

FULL-FLOATING ADAPTER REAMER BUSHINGS

Use to convert fixed bore holders to a floating holder
For Stub Screw Machine Reamers



GREATER REAMING ACCURACY - Enables close tolerances to be held - without bellmouth. ONLY THE REAMER FLOATS!

CORRECTS FOR MISALIGNMENT - out of parallelism of turret and spindle... misalignment of hole in workpiece...and inaccuracies in indexing.

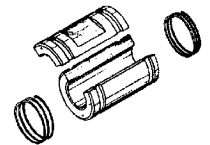
Stub Reamer Size	Machine Size "00" 1/2 O.D.	Distance Reamer Will Project from Face of Floating Holder	Machine Size "0" 5/8 O.D.	Distance Reamer Will Project from Face of Floating Holder	Machine Size "2" 1 O.D.	Distance Reamer Will Project from Face of Floating Holder
	Cat. No.		Cat. No.		Cat. No.	
#00 thru #2 .032 .096	RB00-125	3/4 or 1"				
#3 .0961 .126		1" or 1-1/4"				
#4 thru #7 .1261 .251	RB00-250	1-1/4 or 1-1/2"	RB0-250	1-1/4 or 1-5/8"		
#8 THRU #9 .2511 .313		1-1/4 or 1-1/2"		1-1/4 or 1-5/8"		1-1/4 or 1-5/8"
#10 thru #11 .3131 .376	RB00-375	1-1/2 or 1-3/4"	RB0-375	1-1/2 or 1-7/8"	RB2-375	1-1/2 or 1-7/8"
#12 thru #15 .3761 .505				1-1/2 or 1-7/8"		1-1/2 or 1-7/8"
#16 thru #18 .5051 .692					RB2-625	1-3/4 or 2-1/16"
#19 thru #31 .6921 1.510					RB2-750	1-3/4 or 2-1/16"

REAMER BUSHING PARTS

BUSHING NO.	TORQUE PIN	RETAINING SPRING
RB00-125	RB00-125-TP	RB00-RS
RB00-250	RB00-250-TP	RB00-RS
RB00-375	RB00-375-TP	RB00-RS
RB0-250	RB0-250-TP	RB0-RS
RB0-375	RB0-375-TP	RB0-RS
RB0-500	RB0-500-TP	RB0-RS
RB2-375	RB2-375-TP	RB2-RS
RB2-500	RB2-500-TP	RB2-RS
RB2-625	RB2-625-TP	RB2-RS
RB2-750	RB2-750-TP	RB2-RS

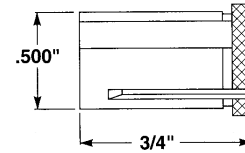
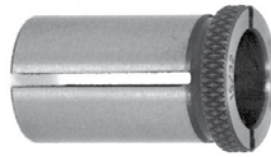
BUSHINGS FOR SOMMA TOOL REAMER HOLDERS (page 83)

REAMER SETS	
00REAMER SET	SET OF 12 #00 REAMER BUSHINGS
0REAMER SET	SET OF 13 #0 REAMER BUSHINGS
2REAMER SET	SET OF 16 #2 REAMER BUSHINGS



REAMER SIZE	BUSHING I.D.	#00 BUSHINGS	#0 BUSHINGS	#2 BUSHINGS
		1/2" O.D. X 3/4" LONG CAT. NO.	5/8" O.D. X 15/16" LONG CAT. NO.	1" O.D. X 1-1/4" LONG CAT. NO.
1/16"	0.059	MB00-.059	MB0-.059	MB2-.059
5/64" & 3/32"	0.088	MB00-.088	MB0-.088	MB2-.088
7/64" & 1/8"	0.119	MB00-.119	MB0-.119	MB2-.119
9/64" & 5/32"	0.151	MB00-.151	MB0-.151	MB2-.151
11/64" & 3/16"	0.181	MB00-.181	MB0-.181	MB2-.181
13/64" & 7/32"	0.208	MB00-.208	MB0-.208	MB2-.208
15/64" & 1/4"	0.241	MB00-.241	MB0-.241	MB2-.241
17/64" & 9/32"	0.250	MB00-1/4	MB0-1/4	MB2-1/4
19/64" - 11/32"	0.281	MB00-K	MB0-K	MB2-K
23/64" - 13/32"	0.312	MB00-5/16	MB0-5/16	MB2-5/16
27/64" - 15/32"	0.375	MB00-3/8	MB0-3/8	MB2-3/8
31/64" - 19/32"	0.437	MB00-7/16	MB0-7/16	MB2-7/16
5/8" - 23/32"	0.562		MB0-9/16	MB2-9/16
3/4" - 27/32"	0.625			MB2-5/8
7/8" - 31/32"	0.750			MB2-3/4
1" - 1-1/8"	0.875			MB2-7/8

HARDENED & GROUND, SPLIT



Inch Fractional

Part Number	Size	Part Number	Size	Part Number	Size	Part Number	Size
1763-00-19-000312	.0312" 1/32"	1763-00-19-001250	.1250" 1/8"	1763-00-19-002187	.2187" 7/32"	1763-00-19-003125	.3125" 5/16"
1763-00-19-000468	.0468" 3/64"	1763-00-19-001406	.1406" 9/64"	1763-00-19-002343	.2343" 15/64"	1763-00-19-003281	.3281" 21/64"
1763-00-19-000625	.0625" 1/16"	1763-00-19-001562	.1562" 5/32"	1763-00-19-002500	.2500" 1/4"	1763-00-19-003437	.3437" 11/32"
1763-00-19-000781	.0781" 5/64"	1763-00-19-001718	.1718" 11/64"	1763-00-19-002656	.2656" 17/64"	1763-00-19-003593	.3593" 23/64"
1763-00-19-000937	.0937" 3/32"	1763-00-19-001875	.1875" 3/16"	1763-00-19-002812	.2812" 9/32"	1763-00-19-003750	.3750" 3/8"
1763-00-19-001093	.1093" 7/64"	1763-00-19-002031	.2031" 13/64"	1763-00-19-002968	.2968" 19/64"	-	-

Tap - No Square

Part Number	Size		Part Number	Size		Part Number	Size		Part Number	Size	
	Bore	Tap		Bore	Tap		Bore	Tap		Bore	Tap
1763-00-18-001410	.141"	#0-6	1763-00-18-002200	.220"	#12	1763-00-18-003230	.323"	7/16"	1763-00-18-003810	.381"	3/8"
1763-00-18-001680	.168"	#8	1763-00-18-002550	.255"	1/4"	1763-00-18-003670	.367"	1/2"	-	-	-
1763-00-18-001940	.194"	#10	1763-00-18-003180	.318"	5/16"	-	-	-	-	-	-

Letter

Part Number	Size	Part Number	Size	Part Number	Size	Part Number	Size
1763-00-16-002340	.2340" A	1763-00-16-002610	.2610" G	1763-00-16-002950	.2950" M	1763-00-16-003480	.3480" S
1763-00-16-002380	.2380" B	1763-00-16-002660	.2660" H	1763-00-16-003020	.3020" N	1763-00-16-003580	.3580" T
1763-00-16-002420	.2420" C	1763-00-16-002720	.2720" I	1763-00-16-003160	.3160" O	1763-00-16-003680	.3680" U
1763-00-16-002460	.2460" D	1763-00-16-002770	.2770" J	1763-00-16-003230	.3230" P	1763-00-16-003770	.3770" V
1763-00-16-002500	.2500" E	1763-00-16-002810	.2810" K	1763-00-16-003320	.3320" Q	-	-
1763-00-16-002570	.2570" F	1763-00-16-002900	.2900" L	1763-00-16-003390	.3390" R	-	-

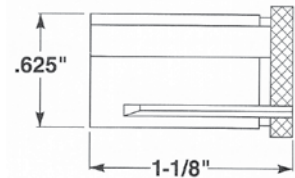
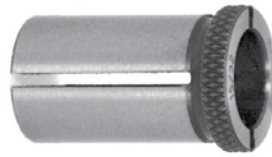
Number

Part Number	Size	Part Number	Size	Part Number	Size	Part Number	Size
1763-00-15-000320	.0320" 67	1763-00-15-000700	.0700" 50	1763-00-15-001130	.1130" 33	1763-00-15-001770	.1770" 16
1763-00-15-000330	.0330" 66	1763-00-15-000730	.0730" 49	1763-00-15-001160	.1160" 32	1763-00-15-001800	.1800" 15
1763-00-15-000350	.0350" 65	1763-00-15-000760	.0760" 48	1763-00-15-001200	.1200" 31	1763-00-15-001820	.1820" 14
1763-00-15-000360	.0360" 64	1763-00-15-000785	.0785" 47	1763-00-15-001285	.1285" 30	1763-00-15-001850	.1850" 13
1763-00-15-000370	.0370" 63	1763-00-15-000810	.0810" 46	1763-00-15-001360	.1360" 29	1763-00-15-001890	.1890" 12
1763-00-15-000380	.0380" 62	1763-00-15-000820	.0820" 45	1763-00-15-001405	.1405" 28	1763-00-15-001910	.1910" 11
1763-00-15-000390	.0390" 61	1763-00-15-000860	.0860" 44	1763-00-15-001440	.1440" 27	1763-00-15-001935	.1935" 10
1763-00-15-000400	.0400" 60	1763-00-15-000890	.0890" 43	1763-00-15-001470	.1470" 26	1763-00-15-001960	.1960" 9
1763-00-15-000410	.0410" 59	1763-00-15-000935	.0935" 42	1763-00-15-001495	.1495" 25	1763-00-15-001990	.1990" 8
1763-00-15-000420	.0420" 58	1763-00-15-000960	.0960" 41	1763-00-15-001520	.1520" 24	1763-00-15-002010	.2010" 7
1763-00-15-000430	.0430" 57	1763-00-15-000980	.0980" 40	1763-00-15-001540	.1540" 23	1763-00-15-002040	.2040" 6
1763-00-15-000465	.0465" 56	1763-00-15-000995	.0995" 39	1763-00-15-001570	.1570" 22	1763-00-15-002055	.2055" 5
1763-00-15-000520	.0520" 55	1763-00-15-001015	.1015" 38	1763-00-15-001590	.1590" 21	1763-00-15-002090	.2090" 4
1763-00-15-000550	.0550" 54	1763-00-15-001040	.1040" 37	1763-00-15-001610	.1610" 20	1763-00-15-002130	.2130" 3
1763-00-15-000595	.0595" 53	1763-00-15-001065	.1065" 36	1763-00-15-001660	.1660" 19	1763-00-15-002210	.2210" 2
1763-00-15-000635	.0635" 52	1763-00-15-001100	.1100" 35	1763-00-15-001695	.1695" 18	1763-00-15-002280	.2280" 1
1763-00-15-000670	.0670" 51	1763-00-15-001110	.1110" 34	1763-00-15-001730	.1730" 17	-	-

Metric

Part Number	Size		Part Number	Size		Part Number	Size		Part Number	Size	
	mm	Inch		mm	Inch		mm	Inch		mm	Inch
1763-00-17-010000	1.0	.0393"	1763-00-17-026000	2.6	.1023"	1763-00-17-042000	4.2	.1653"	1763-00-17-070000	7.0	.2755"
1763-00-17-012000	1.2	.0472"	1763-00-17-028000	2.8	.1102"	1763-00-17-044000	4.4	.1732"	1763-00-17-075000	7.5	.2952"
1763-00-17-014000	1.4	.0551"	1763-00-17-030000	3.0	.1181"	1763-00-17-045000	4.5	.1771"	1763-00-17-080000	8.0	.3149"
1763-00-17-016000	1.6	.0629"	1763-00-17-032000	3.2	.1259"	1763-00-17-046000	4.6	.1811"	1763-00-17-085000	8.5	.3346"
1763-00-17-018000	1.8	.0590"	1763-00-17-034000	3.4	.1338"	1763-00-17-048000	4.8	.1889"	1763-00-17-090000	9.0	.3543"
1763-00-17-020000	2.0	.0787"	1763-00-17-035000	3.5	.1377"	1763-00-17-050000	5.0	.1968"	1763-00-17-095000	9.5	.3740"
1763-00-17-022000	2.2	.0866"	1763-00-17-036000	3.6	.1417"	1763-00-17-055000	5.5	.2165"	1763-00-17-100000	100	.3937"
1763-00-17-024000	2.4	.0944"	1763-00-17-038000	3.8	.1496"	1763-00-17-060000	6.0	.2362"	-	-	-
1763-00-17-025000	2.5	.0984"	1763-00-17-040000	4.0	.1574"	1763-00-17-065000	6.5	.2559"	-	-	-

HARDENED & GROUND, SPLIT



Inch Fractional

Part Number	Size	Part Number	Size	Part Number	Size	Part Number	Size
1765-00-19-000312	.0312" 1/32"	1765-00-19-001562	.1562" 5/32"	1765-00-19-002812	.2812" 9/32"	1765-00-19-004062	.4062" 13/32"
1765-00-19-000468	.0468" 3/64"	1765-00-19-001718	.1718" 11/64"	1765-00-19-002968	.2968" 19/64"	1765-00-19-004218	.4211" 27/64"
1765-00-19-000625	.0625" 1/16"	1765-00-19-001875	.1875" 3/16"	1765-00-19-003125	.3125" 5/16"	1765-00-19-004375	.4375" 7/16"
1765-00-19-000781	.0781" 5/64"	1765-00-19-002031	.2031" 13/64"	1765-00-19-003281	.3281" 21/64"	1765-00-19-004531	.4531" 29/64"
1765-00-19-000937	.0937" 3/32"	1765-00-19-002187	.2187" 7/32"	1765-00-19-003437	.3437" 11/32"	1765-00-19-004687	.4687" 15/32"
1765-00-19-001093	.1093" 7/64"	1765-00-19-002343	.2343" 15/64"	1765-00-19-003593	.3593" 23/64"	1765-00-19-004843	.4843" 31/64"
1765-00-19-001250	.1250" 1/8"	1765-00-19-002500	.2500" 1/4"	1765-00-19-003750	.3750" 3/8"	1765-00-19-005000	.5000" 1/2"
1765-00-19-001406	.1406" 9/64"	1765-00-19-002656	.2656" 17/64"	1765-00-19-003906	.3906" 25/64"	-	-

Letter

Part Number	Size	Part Number	Size	Part Number	Size	Part Number	Size
1765-00-16-002340	.2340" A	1765-00-16-002660	.2660" H	1765-00-16-003160	.3160" O	1765-00-16-003770	.3770" V
1765-00-16-002380	.2380" B	1765-00-16-002720	.2720" I	1765-00-16-003230	.3230" P	1765-00-16-003860	.3860" W
1765-00-16-002420	.2420" C	1765-00-16-002770	.2771" J	1765-00-16-003320	.3320" Q	1765-00-16-003970	.3970" X
1765-00-16-002460	.2460" D	1765-00-16-002810	.2810" K	1765-00-16-003390	.3390" R	1765-00-16-004040	.4040" Y
1765-00-16-002500	.2500" E	1765-00-16-002900	.2900" L	1765-00-16-003480	.3480" S	1765-00-16-004130	.4130" Z
1765-00-16-002570	.2570" F	1765-00-16-002950	.2950" M	1765-00-16-003580	.3580" T	-	-
1765-00-16-002610	.2610" G	1765-00-16-003020	.3020" N	1765-00-16-003680	.3680" U	-	-

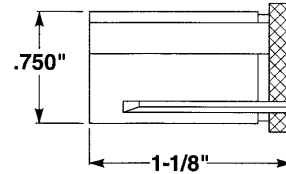
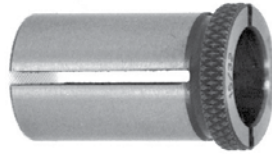
Number

Part Number	Size	Part Number	Size	Part Number	Size	Part Number	Size
1765-00-15-000320	.0320" 67	1765-00-15-000700	.0700" 50	1765-00-15-001130	.1130" 33	1765-00-15-001770	.1770" 16
1765-00-15-000330	.0330" 66	1765-00-15-000730	.0730" 49	1765-00-15-001160	.1160" 32	1765-00-15-001800	.1800" 15
1765-00-15-000350	.0350" 65	1765-00-15-000760	.0760" 48	1765-00-15-001200	.1200" 31	1765-00-15-001820	.1820" 14
1765-00-15-000360	.0360" 64	1765-00-15-000785	.0785" 47	1765-00-15-001285	.1285" 30	1765-00-15-001850	.1850" 13
1765-00-15-000370	.0370" 63	1765-00-15-000810	.0810" 46	1765-00-15-001360	.1360" 29	1765-00-15-001890	.1890" 12
1765-00-15-000380	.0380" 62	1765-00-15-000820	.0820" 45	1765-00-15-001405	.1405" 28	1765-00-15-001910	.1910" 11
1765-00-15-000390	.0390" 61	1765-00-15-000860	.0860" 44	1765-00-15-001440	.1440" 27	1765-00-15-001935	.1935" 10
1765-00-15-000400	.0400" 60	1765-00-15-000890	.0890" 43	1765-00-15-001470	.1470" 26	1765-00-15-001960	.1960" 9
1765-00-15-000410	.0410" 59	1765-00-15-000935	.0935" 42	1765-00-15-001495	.1495" 25	1765-00-15-001990	.1990" 8
1765-00-15-000420	.0420" 58	1765-00-15-000960	.0960" 41	1765-00-15-001520	.1520" 24	1765-00-15-002010	.2010" 7
1765-00-15-000430	.0430" 57	1765-00-15-000980	.0980" 40	1765-00-15-001540	.1540" 23	1765-00-15-002040	.2040" 6
1765-00-15-000465	.0465" 56	1765-00-15-000995	.0995" 39	1765-00-15-001570	.1570" 22	1765-00-15-002055	.2055" 5
1765-00-15-000520	.0520" 55	1765-00-15-001015	.1015" 38	1765-00-15-001590	.1590" 21	1765-00-15-002090	.2090" 4
1765-00-15-000550	.0550" 54	1765-00-15-001040	.1040" 37	1765-00-15-001610	.1610" 20	1765-00-15-002130	.2130" 3
1765-00-15-000595	.0595" 53	1765-00-15-001065	.1065" 36	1765-00-15-001660	.1660" 19	1765-00-15-002210	.2210" 2
1765-00-15-000635	.0635" 52	1765-00-15-001100	.1100" 35	1765-00-15-001695	.1695" 18	1765-00-15-002280	.2280" 1
1765-00-15-000670	.0670" 51	1765-00-15-001110	.1110" 34	1765-00-15-001730	.1730" 17	-	-

Metric

Part Number	Size		Part Number	Size		Part Number	Size		Part Number	Size	
	mm	Inch		mm	Inch		mm	Inch		mm	Inch
1765-00-17-010000	1.0	.0393"	1765-00-17-045000	4.5	.1771"	1765-00-17-075000	7.5	.2952"	1765-00-17-110000	11.0	.4330"
1765-00-17-015000	1.5	.0590"	1765-00-17-050000	5.0	.1968"	1765-00-17-080000	8.0	.3150"	1765-00-17-115000	11.5	.4527"
1765-00-17-020000	2.0	.0787"	1765-00-17-055000	5.5	.2165"	1765-00-17-085000	8.5	.3346"	1765-00-17-120000	12.0	.4724"
1765-00-17-025000	2.5	.0984"	1765-00-17-060000	6.0	.2362"	1765-00-17-090000	9.0	.3543"	1765-00-17-125000	12.5	.4921"
1765-00-17-030000	3.0	.1181"	1765-00-17-061000	6.1	.2402"	1765-00-17-095000	9.5	.3740"	1765-00-17-130000	13.0	.5118"
1765-00-17-035000	3.5	.1377"	1765-00-17-065000	6.5	.2559"	1765-00-17-100000	10.0	.3937"	-	-	-
1765-00-17-040000	4.0	.1574"	1765-00-17-070000	7.4	.2756"	1765-00-17-105000	10.5	.4133"	-	-	-

HARDENED & GROUND, SPLIT



Inch Fractional

Part Number	Size	Part Number	Size	Part Number	Size	Part Number	Size
1881-00-19-000625	.0625" 1/16"	1881-00-19-002187	.2187" 7/32"	1881-00-19-003750	.3750" 3/8"	1881-00-19-005312	.5312" 17/32"
1881-00-19-000781	.0781" 5/64"	1881-00-19-002343	.2343" 15/64"	1881-00-19-003906	.3906" 25/64"	1881-00-19-005468	.5468" 35/64"
1881-00-19-000937	.0937" 3/32"	1881-00-19-002500	.2500" 1/4"	1881-00-19-004062	.4062" 13/32"	1881-00-19-005625	.5625" 9/16"
1881-00-19-001093	.1093" 7/64"	1881-00-19-002656	.2656" 17/64"	1881-00-19-004218	.4218" 27/64"	1881-00-19-005781	.5781" 37/64"
1881-00-19-001250	.1250" 1/8"	1881-00-19-002812	.2812" 9/32"	1881-00-19-004375	.4375" 7/16"	1881-00-19-005937	.5937" 19/32"
1881-00-19-001406	.1406" 9/64"	1881-00-19-002968	.2968" 19/64"	1881-00-19-004531	.4531" 29/64"	1881-00-19-006093	.6093" 39/64"
1881-00-19-001562	.1562" 5/32"	1881-00-19-003125	.3125" 5/16"	1881-00-19-004687	.4687" 15/32"	1881-00-19-006250	.6250" 5/8"
1881-00-19-001718	.1718" 11/64"	1881-00-19-003281	.3281" 21/64"	1881-00-19-004843	.4843" 31/64"	-	-
1881-00-19-001875	.1875" 3/16"	1881-00-19-003437	.3437" 11/32"	1881-00-19-005000	.5000" 1/2"	-	-
1881-00-19-002031	.2031" 13/64"	1881-00-19-003593	.3593" 23/64"	1881-00-19-005156	.5156" 33/64"	-	-

Letter

Part Number	Size	Part Number	Size	Part Number	Size	Part Number	Size
1881-00-16-002340	.2340" A	1881-00-16-002660	.2660" H	1881-00-16-003160	.3160" O	1881-00-16-003770	.3770" V
1881-00-16-002380	.2380" B	1881-00-16-002720	.2720" I	1881-00-16-003230	.3230" P	1881-00-16-003860	.3860" W
1881-00-16-002420	.2420" C	1881-00-16-002770	.2770" J	1881-00-16-003320	.3320" Q	1881-00-16-003970	.3970" X
1881-00-16-002460	.2460" D	1881-00-16-002810	.2810" K	1881-00-16-003390	.3390" R	1881-00-16-004040	.4040" Y
1881-00-16-002500	.2500" E	1881-00-16-002900	.2900" L	1881-00-16-003480	.3480" S	1881-00-16-004130	.4130" Z
1881-00-16-002570	.2570" F	1881-00-16-002950	.2950" M	1881-00-16-003580	.3580" T	-	-
1881-00-16-002610	.2610" G	1881-00-16-003020	.3020" N	1881-00-16-003680	.3680" U	-	-

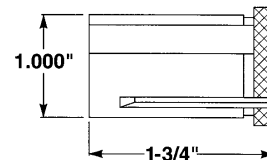
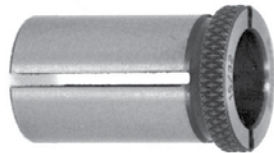
Number

Part Number	Size	Part Number	Size	Part Number	Size	Part Number	Size
1881-00-15-000635	.0635" 52	1881-00-15-000995	.0995" 39	1881-00-15-001470	.1470" 26	1881-00-15-001850	.1850" 13
1881-00-15-000670	.0670" 51	1881-00-15-001015	.1015" 38	1881-00-15-001495	.1495" 25	1881-00-15-001890	.1890" 11
1881-00-15-000700	.0700" 50	1881-00-15-001040	.1040" 37	1881-00-15-001520	.1520" 24	1881-00-15-001910	.1910" 12
1881-00-15-000730	.0730" 49	1881-00-15-001065	.1065" 36	1881-00-15-001540	.1540" 23	1881-00-15-001935	.1935" 10
1881-00-15-000760	.0760" 48	1881-00-15-001100	.1100" 35	1881-00-15-001570	.1570" 22	1881-00-15-001960	.1960" 9
1881-00-15-000785	.0785" 47	1881-00-15-001110	.1110" 34	1881-00-15-001590	.1590" 21	1881-00-15-001990	.1990" 8
1881-00-15-000810	.0810" 46	1881-00-15-001130	.1130" 33	1881-00-15-001610	.1610" 20	1881-00-15-002010	.2010" 7
1881-00-15-000820	.0820" 45	1881-00-15-001160	.1160" 32	1881-00-15-001660	.1660" 19	1881-00-15-002040	.2040" 6
1881-00-15-000860	.0860" 44	1881-00-15-001200	.1200" 31	1881-00-15-001695	.1695" 18	1881-00-15-002055	.2055" 5
1881-00-15-000890	.0890" 43	1881-00-15-001285	.1285" 30	1881-00-15-001730	.1730" 17	1881-00-15-002090	.2090" 4
1881-00-15-000935	.0935" 42	1881-00-15-001360	.1360" 29	1881-00-15-001770	.1770" 16	1881-00-15-002130	.2130" 3
1881-00-15-000960	.0960" 41	1881-00-15-001405	.1405" 28	1881-00-15-001800	.1800" 15	1881-00-15-002210	.2211" 2
1881-00-15-000980	.0980" 40	1881-00-15-001440	.1440" 27	1881-00-15-001820	.1820" 14	1881-00-15-002280	.2280" 1

Metric

Part Number	Size		Part Number	Size		Part Number	Size		Part Number	Size	
	mm	Inch		mm	Inch		mm	Inch		mm	Inch
1881-00-17-010000	1.0	.0393"	1881-00-17-050000	5.0	.1968"	1881-00-17-090000	9.0	.3543"	1881-00-17-130000	13.0	.5118"
1881-00-17-015000	1.5	.0590"	1881-00-17-055000	5.5	.2165"	1881-00-17-095000	9.5	.3740"	1881-00-17-135000	13.5	.5314"
1881-00-17-020000	2.0	.0787"	1881-00-17-060000	6.0	.2362"	1881-00-17-100000	10.0	.3937"	1881-00-17-140000	14.0	.5511"
1881-00-17-025000	2.5	.0984"	1881-00-17-065000	6.5	.2559"	1881-00-17-105000	10.5	.4133"	1881-00-17-145000	14.5	.5708"
1881-00-17-030000	3.0	.1181"	1881-00-17-070000	7.0	.2756"	1881-00-17-110000	11.0	.4330"	1881-00-17-150000	15.0	.5905"
1881-00-17-035000	3.5	.1377"	1881-00-17-075000	7.5	.2952"	1881-00-17-115000	11.5	.4527"	1881-00-17-155000	15.5	.6102"
1881-00-17-040000	4.0	.1574"	1881-00-17-080000	8.0	.3150"	1881-00-17-120000	12.0	.4724"	1881-00-17-160000	16.0	.6299"
1881-00-17-045000	4.5	.1771"	1881-00-17-085000	8.5	.3346"	1881-00-17-125000	12.5	.4921"	-	-	-

HARDENED & GROUND, SPLIT

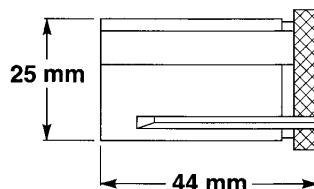


Inch Fractional

Part Number	Size	Part Number	Size	Part Number	Size	Part Number	Size
1893-00-19-000312	.0312" 1/32"	1893-00-19-002500	.2500" 1/4"	1893-00-19-004687	.4687" 15/32"	1893-00-19-006875	.6875" 11/16"
1893-00-19-000468	.0468" 3/64"	1893-00-19-002656	.2656" 17/64"	1893-00-19-004843	.4943" 31/64"	1893-00-19-007031	.7031" 45/64"
1893-00-19-000625	.0625" 1/16"	1893-00-19-002812	.2812" 9/32"	1893-00-19-005000	.5000" 1/2"	1893-00-19-007187	.7187" 23/32"
1893-00-19-000781	.0781" 5/64"	1893-00-19-002968	.2968" 19/64"	1893-00-19-005156	.5156" 33/64"	1893-00-19-007343	.7343" 47/64"
1893-00-19-000937	.0937" 3/32"	1893-00-19-003125	.3125" 5/16"	1893-00-19-005312	.5312" 17/32"	1893-00-19-007500	.7500" 3/4"
1893-00-19-001093	.1093" 7/64"	1893-00-19-003281	.3281" 21/64"	1893-00-19-005468	.5468" 35/64"	1893-00-19-007656	.7656" 49/64"
1893-00-19-001250	.1250" 1/8"	1893-00-19-003437	.3437" 11/32"	1893-00-19-005625	.5625" 9/16"	1893-00-19-007812	.7812" 25/32"
1893-00-19-001406	.1406" 9/64"	1893-00-19-003593	.3593" 23/64"	1893-00-19-005781	.5781" 37/64"	1893-00-19-007968	.7968" 51/64"
1893-00-19-001562	.1562" 5/32"	1893-00-19-003750	.3750" 3/8"	1893-00-19-005937	.5937" 19/32"	1893-00-19-008125	.8125" 13/16"
1893-00-19-001718	.1718" 11/64"	1893-00-19-003906	.3906" 25/64"	1893-00-19-006093	.6093" 39/64"	1893-00-19-008281	.8281" 53/64"
1893-00-19-001875	.1875" 3/16"	1893-00-19-004062	.4062" 13/32"	1893-00-19-006250	.6250" 5/8"	1893-00-19-008437	.8437" 27/32"
1893-00-19-002031	.2031" 13/64"	1893-00-19-004218	.4218" 27/64"	1893-00-19-006406	.6406" 41/64"	1893-00-19-008593	.8593" 55/64"
1893-00-19-002187	.2187" 7/32"	1893-00-19-004375	.4375" 7/16"	1893-00-19-006562	.6562" 21/32"	1893-00-19-008750	.8750" 7/8"
1893-00-19-002343	.2343" 15/64"	1893-00-19-004531	.4531" 29/64"	1893-00-19-006718	.6718" 43/64"	-	-

Metric

Part Number	Size		Part Number	Size		Part Number	Size		Part Number	Size	
	mm	Inch		mm	Inch		mm	Inch		mm	Inch
1893-00-17-010000	1.0	.0393"	1893-00-17-060000	6.0	.2362"	1893-00-17-110000	11.0	.4330"	1893-00-17-160000	16.0	.6299"
1893-00-17-015000	1.5	.0590"	1893-00-17-065000	6.5	.2559"	1893-00-17-115000	11.5	.4527"	1893-00-17-165000	16.5	.6496"
1893-00-17-020000	2.0	.0787"	1893-00-17-070000	7.0	.2756"	1893-00-17-120000	12.0	.4724"	1893-00-17-170000	17.0	.6692"
1893-00-17-025000	2.5	.0984"	1893-00-17-075000	7.5	.2952"	1893-00-17-125000	12.5	.4921"	1893-00-17-175000	17.5	.6889"
1893-00-17-030000	3.0	.1181"	1893-00-17-080000	8.0	.3150"	1893-00-17-130000	13.0	.5118"	1893-00-17-180000	18.0	.7086"
1893-00-17-035000	3.5	.1377"	1893-00-17-085000	8.5	.3346"	1893-00-17-135000	13.5	.5314"	1893-00-17-185000	18.5	.7283"
1893-00-17-040000	4.0	.1574"	1893-00-17-090000	9.0	.3543"	1893-00-17-140000	14.0	.5511"	1893-00-17-190000	19.0	.7480"
1893-00-17-045000	4.5	.1771"	1893-00-17-095000	9.5	.3740"	1893-00-17-145000	14.5	.5708"	1893-00-17-195000	19.5	.7677"
1893-00-17-050000	5.0	.1968"	1893-00-17-100000	10.0	.3937"	1893-00-17-150000	15.0	.5905"	1893-00-17-195000	20.0	.7874"
1893-00-17-055000	5.5	.2165"	1893-00-17-105000	10.5	.4133"	1893-00-17-155000	15.5	.6102"	-	-	-

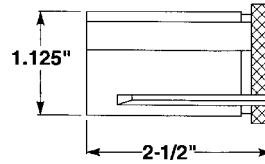
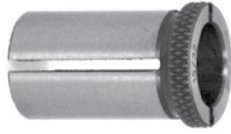


Metric OD & ID

Part Number	Size		Part Number	Size		Part Number	Size		Part Number	Size	
	mm	Inch		mm	Inch		mm	Inch		mm	Inch
2051-00-17-020000	2.0	.0787"	2051-00-17-070000	7.0	.2756"	2051-00-17-120000	12.0	.4724"	2051-00-17-170000	17.0	.6692"
2051-00-17-025000	2.5	.0984"	2051-00-17-075000	7.5	.2952"	2051-00-17-125000	12.5	.4921"	2051-00-17-175000	17.5	.6889"
2051-00-17-030000	3.0	.1181"	2051-00-17-080000	8.0	.3150"	2051-00-17-130000	13.0	.5118"	2051-00-17-180000	18.0	.7086"
2051-00-17-035000	3.5	.1377"	2051-00-17-085000	8.5	.3346"	2051-00-17-135000	13.5	.5314"	2051-00-17-185000	18.5	.7283"
2051-00-17-040000	4.0	.1574"	2051-00-17-090000	9.0	.3543"	2051-00-17-140000	14.0	.5511"	2051-00-17-190000	19.0	.7480"
2051-00-17-045000	4.5	.1771"	2051-00-17-095000	9.5	.3740"	2051-00-17-145000	14.5	.5708"	2051-00-17-195000	19.5	.7677"
2051-00-17-050000	5.0	.1968"	2051-00-17-100000	10.0	.3937"	2051-00-17-150000	15.0	.5905"	2051-00-17-200000	20.0	.7874"
2051-00-17-055000	5.5	.2165"	2051-00-17-105000	10.5	.4133"	2051-00-17-155000	15.5	.6102"	-	-	-
2051-00-17-060000	6.0	.2362"	2051-00-17-110000	11.0	.4330"	2051-00-17-160000	16.0	.6299"	-	-	-
2051-00-17-065000	6.5	.2559"	2051-00-17-115000	11.5	.4527"	2051-00-17-165000	16.5	.6496"	-	-	-

HDB9 Bushings - 1-1/8" OD

HARDENED & GROUND, SPLIT



Inch Fractional

Part Number	Size	Part Number	Size	Part Number	Size	Part Number	Size
1883-00-19-003750	.3750" 3/8"	1883-00-19-005468	.5468" 35/64"	1883-00-19-007187	.7187" 23/32"	1883-00-19-008906	.8906" 57/64"
1883-00-19-003906	.3906" 25/64"	1883-00-19-005625	.5625" 9/16"	1883-00-19-007343	.7343" 47/64"	1883-00-19-009062	.9062" 29/32"
1883-00-19-004062	.4062" 13/32"	1883-00-19-005781	.5781" 37/64"	1883-00-19-007500	.7500" 3/4"	1883-00-19-009218	.9218" 59/64"
1883-00-19-004218	.4218" 27/64"	1883-00-19-005937	.5937" 19/32"	1883-00-19-007656	.7656" 49/64"	1883-00-19-009375	.9375" 15/16"
1883-00-19-004375	.4375" 7/16"	1883-00-19-006093	.6093" 39/64"	1883-00-19-007812	.7812" 25/32"	1883-00-19-009531	.9531" 61/64"
1883-00-19-004531	.4531" 29/64"	1883-00-19-006250	.6250" 5/8"	1883-00-19-007968	.7968" 51/64"	1883-00-19-009687	.9687" 31/32"
1883-00-19-004687	.4687" 15/32"	1883-00-19-006406	.6406" 41/64"	1883-00-19-008125	.8125" 13/16"	1883-00-19-009843	.9843" 63/64"
1883-00-19-004843	.4843" 31/64"	1883-00-19-006562	.6562" 21/32"	1883-00-19-008281	.8281" 53/64"	1883-00-19-010000	1.0000" 1"
1883-00-19-005000	.5000" 1/2"	1883-00-19-006718	.6718" 43/64"	1883-00-19-008437	.8437" 27/32"	-	-
1883-00-19-005156	.5156" 33/64"	1883-00-19-006875	.6875" 11/16"	1883-00-19-008593	.8593" 55/64"	-	-
1883-00-19-005312	.5312" 17/32"	1883-00-19-007031	.7031" 45/64"	1883-00-19-008750	.8750" 7/8"	-	-

Metric

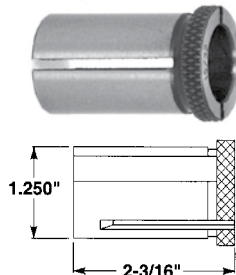
Part Number	Size		Part Number	Size		Part Number	Size		Part Number	Size	
	mm	Inch		mm	Inch		mm	Inch		mm	Inch
1883-00-17-090000	9.0	.3543"	1883-00-17-135000	13.5	.5314"	1883-00-17-180000	18.0	.7086"	1883-00-17-225000	22.5	.8858"
1883-00-17-095000	9.5	.3740"	1883-00-17-140000	14.0	.5511"	1883-00-17-185000	18.5	.7283"	1883-00-17-230000	23.4	.9055"
1883-00-17-100000	10.0	.3937"	1883-00-17-145000	14.5	.5708"	1883-00-17-190000	19.0	.7480"	1883-00-17-235000	23.5	.9251"
1883-00-17-105000	10.5	.4133"	1883-00-17-150000	15.0	.5905"	1883-00-17-195000	19.5	.7677"	1883-00-17-240000	24.0	.9448"
1883-00-17-110000	11.0	.4330"	1883-00-17-155000	15.5	.6102"	1883-00-17-200000	20.0	.7874"	1883-00-17-245000	24.5	.9645"
1883-00-17-115000	11.5	.4527"	1883-00-17-160000	16.0	.6299"	1883-00-17-205000	20.5	.8070"	1883-00-17-250000	25.0	.9842"
1883-00-17-120000	12.0	.4724"	1883-00-17-165000	16.5	.6496"	1883-00-17-210000	21.0	.8267"	-	-	-
1883-00-17-125000	12.5	.4921"	1883-00-17-170000	17.0	.6692"	1883-00-17-215000	21.5	.8464"	-	-	-
1883-00-17-130000	13.0	.5118"	1883-00-17-175000	17.5	.6889"	1883-00-17-220000	22.0	.8661"	-	-	-

HDB10 Bushings - 1-1/4" OD

HARDENED & GROUND, SPLIT

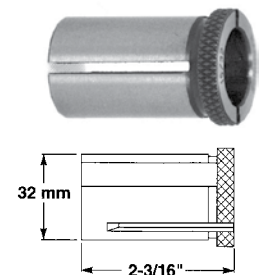
Inch Fractional

Part Number	Size
2043-00-19-003750	.3750" 3/8"
2043-00-19-005000	.5000" 1/2"
2043-00-19-006250	.6250" 5/8"
2043-00-19-007500	.7500" 3/4"
2043-00-19-008750	.8750" 7/8"
2043-00-19-010000	1.0000" 1"



Metric OD & ID

Part Number	Size	
	mm	Inch
2045-00-17-100000	10.0	.3937"
2045-00-17-120000	12.0	.4724"
2045-00-17-160000	16.0	.6299"
2045-00-17-200000	20.0	.7874"
204s-00-17-250000	25.0	.9842"

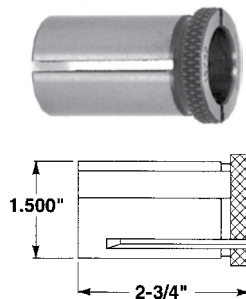


HDB12 Bushings - 1-1/2" OD

HARDENED & GROUND, SPLIT

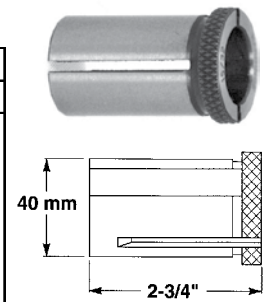
Inch Fractional

Part Number	Size
2047-00-19-003750	.3750" 3/8"
2047-00-19-005000	.5000" 1/2"
2047-00-19-006250	.6250" 5/8"
2047-00-19-007500	.7500" 3/4"
2047-00-19-008750	.8750" 7/8"
2047-00-19-010000	1.0000" 1"
2047-00-19-012500	1.2500" 1-1/4"



Metric OD & ID

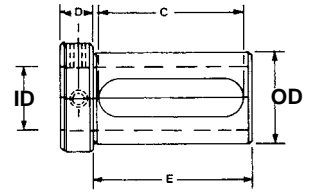
Part Number	Size	
	mm	Inch
2049-00-17-100000	10.0	.3937"
2049-00-17-120000	12.0	.4724"
2049-00-17-160000	16.0	.6299"
2049-00-17-200000	20.0	.7874"
2049-00-17-250000	25.0	.9842"
2049-00-17-320000	32.0	.2598"



TYPE Z TOOLHOLDER BUSHING

The most flexible Toolholder Bushing for all types of CNC Turning Centers, Turret Lathes and Chuckers. The Elongated Slot gives the user a complete interchangeability with all brands of equipment. The added Set Screws in the Head allow for increased rigidity. The bushings are hardened and precision ground concentric. Can also be used for Preset Tooling.

Select the O.D. size that fits your machine and order from the chart below.



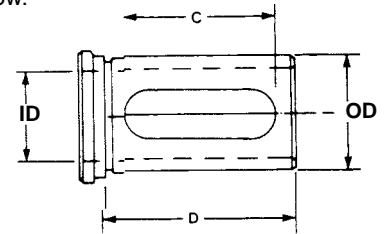
SERIES	SPECIFY CHOICE	CHOOSE FROM STANDARD I.D. SIZES SHOWN		SPECIFY LENGTH CHOICE DIM. E & C							
				Z (STD)		ZS (SHORT)		ZL (LONG)		D	
CAT. NO.	O.D.	O.D.	INCH	METRIC	E	C	E	C	E		C
*6840	3/4"	20MM	1/4, 5/16, 3/8, 1/2	6, 8, 10, 12	2-1/2"	2-3/8"					1/2"
*6841	1"	25MM	1/4, 5/16, 3/8, 1/2, 5/8, 3/4	8, 10, 12, 16, 20	2-3/4"	2-3/8"					1/2"
*6842	1-1/4"	32MM	3/8, 1/2, 5/8, 3/4, 7/8, 1"	10, 12, 16, 20, 25	3"	2-5/8"	2-1/4"	1-7/8"	3-3/4"	3-1/8"	5/8"
*6843	1-1/2"	40MM	3/8, 1/2, 5/8, 3/4, 7/8, 1", 1-1/4	10, 12, 16, 20, 25, 32	3-1/4"	2-7/8"	2-1/2"	2-1/8"	4"	3-5/8"	3/4"
*6844	1-3/4"	45MM	1/2, 5/8, 3/4, 7/8, 1", 1-1/4, 1-1/2	12, 16, 20, 25, 32, 40	3-1/2"	3-1/8"	2-3/4"	2-3/8"	4-1/4"	3-7/8"	3/4"
*6845	2"	50MM	1/2, 5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2, 1-3/4	12, 16, 20, 25, 32, 40, 45	3-3/4"	3-1/2"	3"	2-5/8"	4-1/2"	4-1/8"	3/4"
*6846	2-1/2"	65MM	5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2, 1-3/4, 2, 2-1/4	16, 20, 25, 32, 40, 45, 50	4-1/4"	3-7/8"	3-1/2"	3-1/8"	5"	4-5/8"	3/4"
*6847	3"	80MM	1", 1-1/4, 1-1/2, 1-3/4, 2", 2-1/4, 2-1/2	25, 32, 40, 50, 60, 65	4-3/4"	4-3/8"	3-3/4"	3-3/8"	5-3/4"	5-3/8"	3/4"
*6848	3-1/2"	90MM	1-1/4, 1-1/2, 1-3/4, 2", 2-1/4, 2-1/2, 3"	32, 40, 50, 60, 65	5-1/2"	4-7/8"	4-1/2"	3-7/8"	6-1/2"	5-7/8"	1"
*6849	4"	100MM	1-1/2, 1-3/4, 2", 2-1/4, 2-1/2, 3"	40, 50, 60, 65, 80	6-1/4"	5-5/8"	5"	4-3/8"	7-1/2"	4-3/8"	1"

NOTE: SERIES CATALOG NUMBERS SHOWN ARE FOR INCH O.D./ I.D. COMBINATIONS.

FOR BUSHINGS WITH ANY METRIC DIMENSIONS ADD A LETTER **M** TO THE CATALOG NUMBER TO ORDER, SPECIFY SERIES CAT. NO., O.D. AND I.D. SIZE AND LENGTH CHOICE-Z, ZS OR ZL

TYPE C & CS TOOLHOLDER BUSHING

This CNC Type C Bushing is designed for universal use on all CNC turning machines to adapt a wide variety of Boring Bars, Drills, Reamers and Shank type tools. Precision machine hardened and ground concentric; made in the U.S.A. - BUILT TO LAST! Select the O.D. size that fits your machine and order from the chart below.



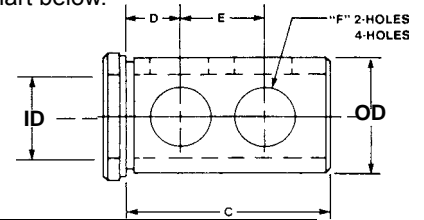
SERIES	SPECIFY CHOICE	CHOOSE FROM STANDARD I.D. SIZES SHOWN		SPECIFY LENGTH CHOICE DIM. C & D				
				C (STD)		CS (SHORT)		
CAT. NO.	O.D.	O.D.	INCH	METRIC	C	D	C	D
*6810	3/4"	20MM	1/4, 5/16, 3/8, 1/2	6, 8, 10, 12	1-1/2"	2"	1-1/8"	1-1/2"
*6811	1"	25MM	1/4, 5/16, 3/8, 1/2, 5/8, 3/4	8, 10, 12, 16, 20	2-3/8"	2-3/4"	1-3/8"	1-3/4"
*6812	1-1/4"	32MM	3/8, 1/2, 5/8, 3/4, 7/8, 1"	10, 12, 16, 20, 25	2-3/4"	3-1/4"	1-3/4"	2-1/8"
*6813	1-1/2"	40MM	3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4	10, 12, 16, 20, 25, 32	3"	3-3/8"	2-1/8"	2-1/2"
*6814	1-3/4"	45MM	1/2, 5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2	12, 16, 20, 25, 32, 40	3-1/8"	3-1/2"	2-5/8"	3"
*6815	2"	50MM	1/2, 5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2, 1-3/4"	12, 16, 20, 25, 32, 40, 45	3-5/8"	4"	3"	3-1/2"
*6816	2-1/2"	65MM	3/4, 1, 1-1/4, 1-1/2, 1-3/4, 2, 2-1/4	20, 25, 32, 40, 45, 50	4-1/8"	4-1/2"	3-1/2"	4"
*6817	3"	80MM	1, 1-1/4, 1-1/2, 1-3/4, 2, 2-1/4, 2-1/2"	25, 32, 40, 45, 50, 60, 65	4-5/8"	5"	4-1/8"	4-1/2"
*6818	3-1/2"	90MM	1, 1-1/4, 1-1/2, 1-3/4, 2, 2-1/4, 2-1/2, 3"	25, 32, 40, 45, 50, 60, 65	5"	5-3/4"	4-3/4"	5-1/4"

NOTE: SERIES CATALOG NUMBERS SHOWN ARE FOR INCH O.D./ I.D. COMBINATIONS.

FOR BUSHINGS WITH ANY METRIC DIMENSIONS ADD A LETTER **M** TO THE CATALOG NUMBER TO ORDER, SPECIFY SERIES CAT. NO., O.D. AND I.D. SIZE AND LENGTH CHOICE-C OR CS

TYPE J TOOLHOLDER BUSHING

This Type J Toolholder Bushing, with long solid body, has clearance holes so that you can clamp directly on the tool with set screws for positive alignment of the cutting edge of the tool. They are hardened and precision ground concentric. Select the O.D. size that fits your machine and order from the chart below.



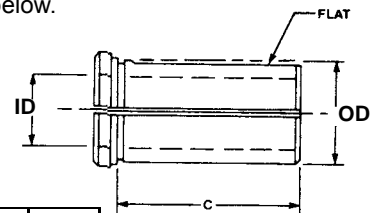
SERIES CAT. NO.	SPECIFY CHOICE		CHOOSE FROM STANDARD I.D. SIZES SHOWN		C	D	E	F	
	O.D.	O.D.	INCH	METRIC				NO. HOLE	DIA HOLE
*6819	3/4"	20MM	1/4, 5/16, 3/8, 1/2	6, 8, 10, 12	1-1/2"	3/8"	13/16"	2	3/8"
*6820	1"	25MM	3/8, 1/2, 5/8, 3/4	10, 12, 16, 20	1-3/4"	7/16"	7/8"	2	5/8"
*6821	1-1/4"	32MM	3/8, 1/2, 5/8, 3/4, 7/8, 1	10, 12, 16, 20, 25	2-1/8"	5/8"	1"	2	3/4"
*6822	1-1/2"	40MM	3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4	10, 12, 16, 20, 25, 32	2-1/2"	11/16"	1-1/8"	2	7/8"
*6823	1-3/4"	45MM	1/2, 5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2	12, 16, 20, 25, 32, 40	3"	3/4"	1-1/4"	2	7/8"
*6824	2"	50MM	1/2, 5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2 1-3/4"	12, 16, 20, 25, 32, 40 45	3-1/2"	3/4"	1-1/2"	2	1"
*6825	2-1/2"	65MM	3/4, 7/8, 1, 1-1/4, 1-1/2, 1-3/4, 2, 2-1/4"	20, 25, 32, 40, 45, 50	4"	7/8"	1-3/4"	2	1-1/4"
*6826	3"	80MM	1, 1-1/4, 1-1/2, 1-3/4, 2, 2-1/4, 2-1/2"	25, 32, 40, 45, 50, 60 65	4-1/2"	1"	2"	4	1-1/4"
*6827	3-1/2"	90MM	1, 1-1/4, 1-1/2, 1-3/4, 2, 2-1/4, 2-1/2, 3	25, 32, 40, 45, 50, 60 65	5-1/4"	1-1/4"	2-1/2"	4	1-1/4"

NOTE: SERIES CATALOG NUMBERS SHOWN ARE FOR INCH O.D./ I.D. COMBINATIONS.

FOR BUSHINGS WITH ANY METRIC DIMENSIONS ADD A LETTER **M** TO THE CATALOG NUMBER TO ORDER, SPECIFY SERIES CAT. NO., O.D. AND I.D. SIZE

TYPE B TOOLHOLDER BUSHING

These split Type B Bushings are manufactured with flexible manufacturing systems, for all Types and sizes of CNC Lathes and Chuckers; are Heat Treated and precision ground concentric. It is used to adapt Drills, Boring Bars, and other Shank Tools. Select the O.D. size that fits your machine and order from the chart below.



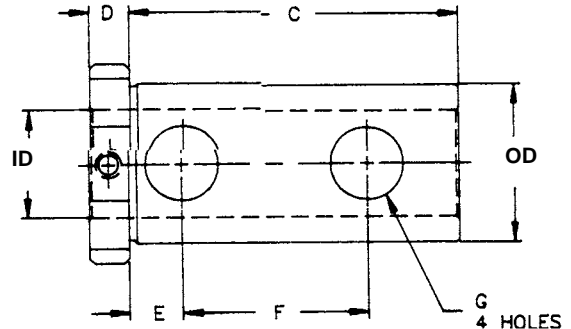
SERIES CAT. NO.	SPECIFY CHOICE		CHOOSE FROM STANDARD I.D. SIZES SHOWN		C
	O.D.	O.D.	INCH	METRIC	
*6801	3/4"	20MM	1/4, 5/16, 3/8, 1/2	6, 8, 10, 12	1-1/2"
*6802	1"	25MM	3/8, 1/2, 5/8, 3/4	10, 12, 16, 20	1-3/4"
*6802.5	1-1/4"	32MM	3/8, 1/2, 5/8, 3/4, 7/8, 1	10, 12, 16, 20, 25	2-1/8"
*6803	1-1/2"	40MM	3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4	10, 12, 16, 20, 25, 32	2-1/2"
*6804	1-3/4"	45MM	1/2, 5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2	10, 12, 16, 20, 25, 32, 40	3"
*6805	2"	50MM	1/2, 5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2 1-3/4"	12, 16, 20, 25, 32, 40	3-1/2"
*6806	2-1/2"	65MM	1/2, 5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2 1-3/4, 2, 2-1/4"	20, 25, 32, 40, 45, 50	4"
*6807	3"	80MM	1, 1-1/4, 1-1/2, 1-3/4, 2, 2-1/4, 2-1/2"	25, 32, 40, 45, 50, 60 65	4-1/2"
*6808	3-1/2"	90MM	1, 1-1/4, 1-1/2, 1-3/4, 2, 2-1/4, 2-1/2, 3	25, 32, 40, 45, 50, 60 65	5-1/4"

NOTE: SERIES CATALOG NUMBERS SHOWN ARE FOR INCH O.D./ I.D. COMBINATIONS.

FOR BUSHINGS WITH ANY METRIC DIMENSIONS ADD A LETTER **M** TO THE CATALOG NUMBER TO ORDER, SPECIFY SERIES CAT. NO., O.D. AND I.D. SIZE

TYPE LB TOOLHOLDER BUSHING

This Type LB Toolholder Bushing with long solid body, has four clearance holes so that you can clamp directly on the tool with Set Screws for positive alignment of the cutting edge of the tool. Manufactured to include clearance notches for coolant. They are hardened and precision ground concentric. Select the O.D. size that fits your machine and order from the chart below.



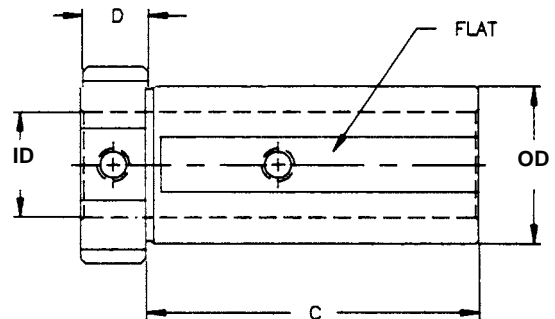
SERIES CAT. NO.	SPECIFY CHOICE		CHOOSE FROM STANDARD I.D. SIZES SHOWN		C	D	E	F	G
	O.D.	O.D.	INCH	METRIC					
*6858	1-1/4"	32MM	3/8, 1/2, 5/8, 3/4, 7/8, 1	10, 12, 16, 20, 25	3-1/8"	3/8"	1/2"	1-3/4"	5/8"
*6859	1-1/2"	40MM	3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4	10, 12, 16, 20, 25, 32	3-1/8"	3/8"	1/2"	1-3/4"	5/8"
*6860	2"	50MM	1/2, 5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2, 1-3/4	12, 16, 20, 25, 32, 40, 45	4-1/2"	1/2"	1/2"	2-3/4"	11/16"

NOTE: SERIES CATALOG NUMBERS SHOWN ARE FOR INCH O.D./ I.D. COMBINATIONS.

FOR BUSHINGS WITH ANY METRIC DIMENSIONS ADD A LETTER M TO THE CATALOG NUMBER TO ORDER, SPECIFY SERIES CAT. NO., O.D. AND I.D. SIZE

TYPE LBF TOOLHOLDER BUSHING

These Type LBF Type Bushings are manufactured with a flat for clamping the Toolholder and two set screws for clamping a variety of Drills, Boring Bars and other Shank Tools. Equipped with two clearance notches for coolant, they are Heat Treated and precision ground concentric. This Universal Style is good for Coolant Through the Tool applications due to its solid configuration. Select the O.D. size that fits your machine and order from the chart below.



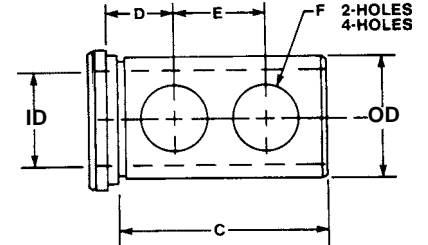
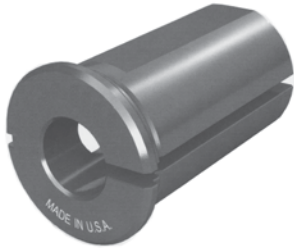
SERIES CAT. NO.	SPECIFY CHOICE		CHOOSE FROM STANDARD I.D. SIZES SHOWN		C	D
	O.D.	O.D.	INCH	METRIC		
*6863	1-1/4"	32MM	3/8, 1/2, 5/8, 3/4, 7/8, 1	10, 12, 16, 20, 25	2.812	5/8"
*6864	1-1/2"	40MM	3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4	10, 12, 16, 20, 25, 32	3.156	5/8"
*6865	2"	50MM	1/2, 5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2, 1-3/4	12, 16, 20, 25, 32, 40, 45	3.750	3/4"

NOTE: SERIES CATALOG NUMBERS SHOWN ARE FOR INCH O.D./ I.D. COMBINATIONS.

FOR BUSHINGS WITH ANY METRIC DIMENSIONS ADD A LETTER M TO THE CATALOG NUMBER TO ORDER, SPECIFY SERIES CAT. NO., O.D. AND I.D. SIZE

TYPE DD TOOLHOLDER BUSHING

With the combination of the industry standard "B" style split bushing and "J" set screw clearance bushing design, we have set a precedent with its new innovative "DD" Double Duty bushing. This new improved "DD" bushing with clearance holes and split milled flat can be used as a conventional "B" style or "J" style bushing. Select the O.D. size that fits your machine and order from the chart below.



SERIES CAT. NO.	SPECIFY CHOICE		CHOOSE FROM STANDARD I.D. SIZES SHOWN		C	D	E	F	
	O.D.	O.D.	INCH	METRIC				NO. HOLE	DIA HOLE
*6830	1-1/2"	40MM	3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4	10, 12, 16, 20, 25, 32	2-1/2"	11/16"	1-1/8"	2	7/8"
*6831	1-3/4"	45MM	1/2, 5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2	12, 16, 20, 25, 32, 40	3"	3/4"	1-1/4"	2	7/8"
*6832	2"	50MM	1/2, 5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2 1-3/4"	12, 16, 20, 25, 32, 40 45	3-1/2"	3/4"	1-1/2"	2	1"
*6833	2-1/2"	65MM	1/2, 5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2 1-3/4, 2, 2-1/4"	20, 25, 32, 40, 45, 50	4"	7/8"	1-3/4"	2	1-1/4"
*6834	3"	80MM	1, 1-1/4, 1-1/2, 1-3/4, 2, 2-1/4, 2-1/2"	25, 32, 40, 45, 50, 60 65	4-1/2"	1"	2"	4	1-1/4"
*6835	3-1/2"	90MM	1-1/2, 1-3/4, 2, 2-1/4, 2-1/2, 3"	25, 32, 40, 45, 50, 60 65	5-1/4"	1-1/4"	2-1/2"	4	1-1/4"

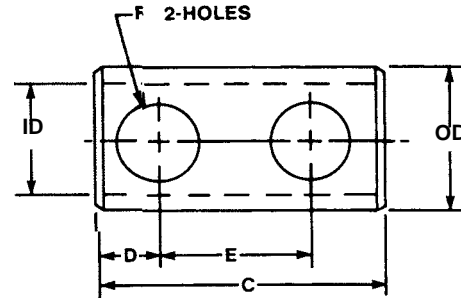
NOTE: SERIES CATALOG NUMBERS SHOWN ARE FOR INCH O.D./ I.D. COMBINATIONS.

FOR BUSHINGS WITH ANY METRIC DIMENSIONS ADD A LETTER **M** TO THE CATALOG NUMBER

TO ORDER, SPECIFY SERIES CAT. NO., O.D. AND I.D. SIZE

TYPE L TOOLHOLDER BUSHING

All "L" style bushings are shoulder-less, have set screw clearance holes opposite the slot and have a split with a flat on the O.D. "L" Style Bushings are used to adapt drills, boring bars and shank tools to any size in a standard turret or toolholder. We have a full selection and assortment of these bushings. Select the O.D. size that fits your machine and order from the chart below.



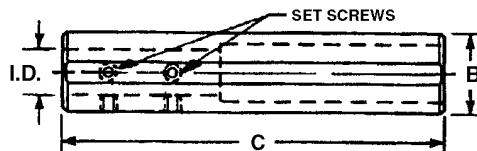
SERIES CAT. NO.	SPECIFY CHOICE		CHOOSE FROM STANDARD I.D. SIZES SHOWN		C	D	E	F	
	O.D.	O.D.	INCH	METRIC				NO. HOLE	DIA HOLE
*6850	1-1/2"	40MM	3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4	10, 12, 16, 20, 25, 32	3"	3/4"	1-5/8"	2	7/8"
*6851	1-3/4"	45MM	1/2, 5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2	12, 16, 20, 25, 32, 40	3"	3/4"	1-5/8"	2	7/8"
*6852	2-1/4"	60MM	5/8, 3/4, 1, 1-1/4, 1-1/2, 1-3/4, 2	16, 20, 25, 32, 40, 50	4-1/2"	7/8"	2"	2	1"
*6853	2-3/4"	70MM	3/4, 1, 1-1/4, 1-1/2, 1-3/4, 2, 2-1/4"	20, 25, 32, 40, 50	4-1/2"	7/8"	2"	2	1"

NOTE: SERIES CATALOG NUMBERS SHOWN ARE FOR INCH O.D./ I.D. COMBINATIONS.

FOR BUSHINGS WITH ANY METRIC DIMENSIONS ADD A LETTER **M** TO THE CATALOG NUMBER

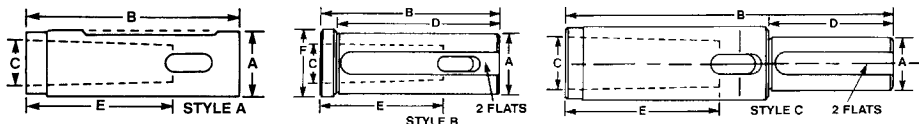
TO ORDER, SPECIFY SERIES CAT. NO., O.D. AND I.D. SIZE

BORING BAR SLEEVES



O.D.	C Length	I.D. Size / Cat. No.														
		B	C	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1"	1-1/4	1-1/2	1-3/4	2"	2-1/2
3/4	5"	53339	53400	53392	53393											
1"	6"			53401	53402											
1-1/2	7"			53411	53412	53413	53414									
1-1/2	8"							53415	53416							
1-3/4	8"					53421	53422	53425	53426	53423						
2"	9"							53431	53432	53433	53434	53435				
2-1/2	10"							53441	53442		53443	53444	53445			
3"	11-1/2"										53450	53451	53452	53453	53454	
4"	14"											53460	53461	53462	53463	

TAPER DRILL SOCKETS SUPERIOR DESIGN/PREMIUM QUALITY



These taper drill sockets are hardened, precision ground, and concentric within .0002 of an inch. They fit directly into tool holders and turrets to positively drive all morse taper shank tools, drills, reamers, and counterbores.

The straight shank style "A" taper drill sockets are manufactured in limited quantities and sizes. Please contact our courteous sales staff for availability and pricing information. Select the O.D. size that fits your machine and order from the chart below.

CAT. NO.	STYLE	SHANK DIA. A	B	MORSE TAPER C	D	E	F
MT1-0075	A	3/4	3-1/4	No. 1	2.313	2-3/16	1
*MT1-1000	B	1	3-3/4	No. 1	3.125	2-3/16	1-1/4
*MT2-1000	B	1	3-3/4	No. 2	3.125	2-5/8	1-1/4
*MT1-1250	B	1-1/4	4	No. 1	3.375	2-3/16	1-1/2
*MT2-1250	B	1-1/4	4	No. 2	3.375	2-5/8	1-1/2
*MT3-1250	B	1-1/4	4	No. 3	4.000	3-1/4	1-1/2
*MT1-1500	B	1-1/2	5	No. 1	4.375	2-3/16	1-3/4
*MT2-1500	B	1-1/2	5	No. 2	4.375	2-5/8	1-3/4
*MT3-1500	B	1-1/2	5	No. 3	4.375	3-1/4	1-3/4
*MT4-1500	B	1-1/2	5-3/4	No. 4	4.375	4-1/8	1-3/4
*MT1-1750	B	1-3/4	5-3/4	No. 1	5.125	2-3/16	2
*MT2-1750	B	1-3/4	5-3/4	No. 2	5.125	2-5/8	2
*MT3-1750	B	1-3/4	5-3/4	No. 3	5.125	3-1/4	2
*MT4-1750	B	1-3/4	5-3/4	No. 4	4.375	4-1/8	2

* Item available in style "A". Call for price and availability.

CAT. NO.	STYLE	SHANK DIA. A	B	MORSE TAPER C	D	E	F
MT5-1750	C	1-3/4	11-1/8	No. 5	4-1/4	5-1/4	2-3/8
MT2-2000	B	2	6-1/8	No. 2	5-1/2	2-5/8	2-1/4
MT3-2000	B	2	6-1/8	No. 3	5-1/2	3-1/4	2-1/4
MT4-2000	B	2	6-1/8	No. 4	5-1/2	4-1/8	2-1/4
MT5-2000	C	2	11-1/8	No. 5	4-1/4	5-1/4	2-3/8
MT2-2500	B	2-1/2	5-3/4	No. 2	5-1/8	2-5/8	2-3/4
MT3-2500	B	2-1/2	6-5/8	No. 3	6	3-1/4	2-3/4
MT4-2500	B	2-1/2	6-5/8	No. 4	6	4-1/8	2-3/4
MT5-2500	B	2-1/2	7-5/8	No. 5	7	5-1/4	2-3/4
MT4-3000	B	3	6-5/8	No. 4	6	4-1/8	3-3/8
MT5-3000	B	3	7-5/8	No. 5	7	5-1/4	3-3/8
MT4-2250	B	2-1/4	6-5/8	No. 4	6	4-1/8	2-1/2
MT5-2250	B	2-1/4	7-5/8	No. 5	7	5-1/4	2-1/2
MT4-2750	B	2-3/4	6-5/8	No. 4	6	4-1/8	3
MT5-2750	B	2-3/4	7-5/8	No. 5	7	5-1/4	3



Somma Tool Company is pleased to announce the availability of Hardinge® Work Holding Products

Hardinge® Inc. is the world's largest manufacturer of spindle tooling and is well known for their unsurpassed quality. Contact Somma Tool for all your Hardinge® requirements. Call Somma to discuss specific Hardinge® catalog requirements you may have.

TOOLHOLDERS

Call Somma for all your
TAPER SHANK TOOLING

Requirements (Not shown in our catalog)



CAT, BT, NMTB, ISO & HSK SHANKS
COLLET CHUCKS, ENDMILL & SHELLMILL ADAPTERS,
TAPPING, HYDRAULIC & BALANCED CHUCKS
TO NAME A FEW.

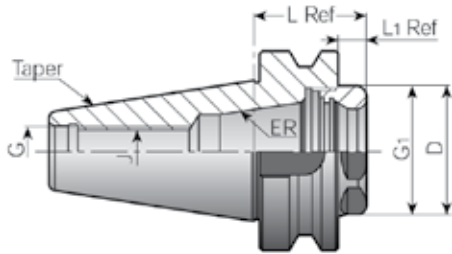


These encapsulated chucks can increase productivity up to 70% due to the cantilevered beam's closeness to the spindle bearings reducing deflection, which improves T.I.R. The deflection under load is proportional to the cube of its length, underlining the importance of minimizing the overhang. Generally, the greater the rigidity of a toolholder, the greater its damping capacity, dynamic stiffness and integrity. Chatter, relative vibratory motion, occurs when the relative dynamic stiffness at the cutting edge is insufficient to perform the cutting operation; consequently, the chip thickness varies causing variances in the magnitude of the cutting force. The toolshank or bar, being elastic, causes deflection and begins to vibrate. In metal removal operations, vibration is the most common cause of unsatisfactory accuracy, finish and poor tool performance. The less deflection (causing less run out) under load enhances metal removal rates, increases productivity and reduces cycle times for a substantial reduction in cost per part.

The increased wall thickness, i.e. more cross-sectional area, at the flange face (I.D. thread) than standard ER nose (O.D. thread) holders, allows for greater gripping power to expand its application range (more cubic inches of metal removal).

The T.I.R. has been measured at (.000 05) and no greater than (.0002) at the nose verses (.0004 to .000 55) of the O.D. ER nose thread-type toolholders. Guaranteed maximum concentricity between the O.D. and I.D. is no greater than (.000 12).

All these holders are balanced to G2.5 @ 20,000 RPM.



SEE PAGES 116 & 117 FOR COLLETS.

CAT. SHANK

Cat. No.	Collet Series	L	L1	D	J	G	G1
CV40ER32E	ER32	1.124	.374	1.574	5/8 X 11UNC	5/8-11	M40 X 1.5
CV40ER40E	ER40	2.124	.374	1.968	5/8 X 11UNC	5/8-11	M50 X 1.5
CV50ER32E	ER32	1.124	.374	1.574	M22 X 1.5	1-8	M40 X 1.5
CV50ER40E	ER40	2.124	.374	1.968	M28 X 1.5	1-8	M50 X 1.5

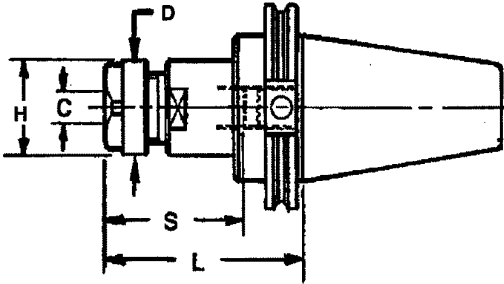


BT SHANK

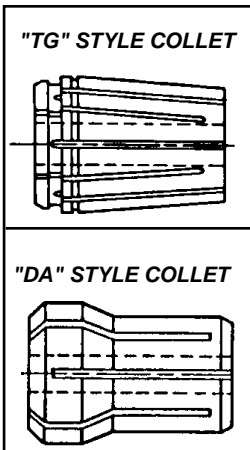
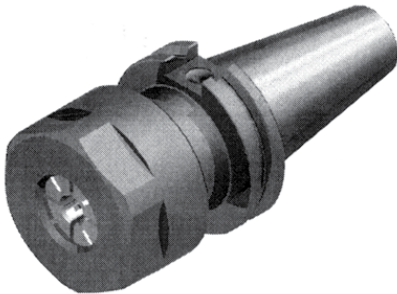
Cat. No.	Collet Series	L	L1	D	J	G	G1
BT40ER32E	ER32	1.437	.374	1.574	M16	M16	M40 X 1.5
BT40ER40E	ER40	1.830	.374	1.968	M16	M16	M50 X 1.5
BT50ER32E	ER32	1.437	.374	1.574	M22 X 1.5	M24	M40 X 1.5
BT50ER40E	ER40	1.830	.374	1.968	M28 X 1.5	M24	M50 X 1.5



CAT. V-FLANGE TAPER COLLET CHUCKS



- DOUBLE-ANGLE COLLET DESIGN PERMITS 1/32" RANGE OF COLLAPSE.
- TG COLLETS HAVE A SINGLE-ANGLE DESIGN FOR SUPERIOR GRIPPING POWER WITH 1/64" RANGE OF COLLAPSE.
- CONCENTRICITY WITHIN 0.0005 TIR AT NOSE.
- ALL TG COLLET CHUCKS ACCEPT EITHER TG, TGHP, TGST OR TGNP COLLETS UTILIZING SAME NOSEPIECE.
- COOLANT CAN BE FED THROUGH CHUCK BY REQUESTING COOLANT FEED STOP SCREWS.
- TAPER IS SHINY AND GROUND TO ACCURACY OF AT-3 OR BETTER. NON-CRITICAL SURFACES ARE BLACK-OXIDED FOR RUST RESISTANCE.

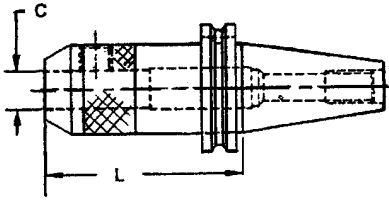


ALSO AVAILABLE FOR
ER COLLETS

TAPER	C CAPACITY	COLLET SERIES	L	D DIAMETER	H HEX	S MIN/MAX	CAT. NO.
40	3/64-25/64	200DA	2.75	1.09	24MM	1.5/2.7	CV40DA208070M
	3/64-25/64	200DA	3"	1.15	1"	1.6/3.0	CV40DA208300
	3/64-25/64	200DA	5.00	1.15	1.0	1.6/5.0	CV40DA208500
	3/64-1/2	50TG	2.79	1.50	--	1.6/2.8	CV40TG050279G
	3/64-1/2	50TG	3.00	1.19	1-1/16	1.8/3.0	CV40TG050300
	3/64-1/2	50TG	4.79	1.50	--	1.6/4.8	CV40TG050479G
	3/64-1/2	50TG	5.00	1.19	1-1/16	1.8/5.0	CV40TG050500
	3/64-1/2	50TG	8.00	1.19	1-1/16	1.8/5.0	CV40TG050800
	3/64-1/2	50TG	10.0	1.19	1-1/16	1.8/5.0	CV40TG0501000
	3/64 -9/16	100DA	2.75	1.44	1.25	1.8/3.3	CV40DA108070M
	1/16-3/4	75TG	2-3/4	2.09	1-7/8	2.2/6.0	CV40TG075275
	1/16-3/4	75TG	5.75	1.97	--	1.9/5.8	CV40TG075579G
	1/16-3/4	75TG	6.00	2.09	1-7/8	2.2/6.0	CV40TG075600
	1/16-3/4	75TG	8.00	1.97	--	1.9/6.0	CV40TG075800G
	1/16-3/4	75TG	10.0	1.97	--	1.9/6.0	CV40TG0751000G
	3/64-3/4	180DA	2.75	1.69	-	1.9/3/3	CV40DA188070M
	3/64-3/4	180DA	3.94	1.69	-	1.9/3.9	CV40DA188100M
	3/64-3/4	180DA	3"	1.73	1-1/2	1.9/2.7	CV40DA188300
	3/64-3/4	180DA	6.0	1.73	1.25	1.9/5.9	CV40DA188600
	3/32-1"	100TG	3"	2.44	2-1/4	2.9/3.5	CV40TG100300
3/32-1"	100TG	4"	2.44	2-1/4	2.9/4.5	CV40TG100400	
3/32-1"	100TG	6"	2.44	2-1/4	2.9/6.3	CV40TG100600	
1/2-1-1/2	150TG	4-7/8	3.50	--	3.2/4.5	CV40TG150488	
50	3/64-1/2	50TG	2.79	1.50	--	1.6/3.3	CV50TG050279G
	3/64-1/2	50TG	3"	1.19	1-1/16	1.9/3.5	CV50TG050300
	3/64-1/2	50TG	4.79	1.50	--	1.6/5.3	CV50TG050479G
	3/64-1/2	50TG	5"	1.19	1-1/16	1.9/5.5	CV50TG050500
	3/64-1/2	50TG	8"	1.19	1-1/16	1.9/5.5	CV50TG050800
	3/64-1/2	50TG	10"	1.19	1-1/16	1.9/5.5	CV50TG0501000
	3/64-1/2	50TG	12"	1.19	1-1/16	1.9/5.5	CV50TG0501200
	1/16-3/4	75TG	2.79	1.97	--	1.9/3.3	CV50TG075279G
	1/16-3/4	75TG	3"	2.09	1-7/8	1.9/3.5	CV50TG075300
	1/16-3/4	75TG	4-1/2	2.09	1-7/8	2.3/4.9	CV50TG075450
	1/16-3/4	75TG	5.79	1.97	--	1.9/6.3	CV50TG075579G
	1/16-3/4	75TG	6"	2.09	1-7/8	1.9/6.5	CV50TG075600
	1/16-3/4	75TG	8"	1.97	--	1.9/6.5	CV50TG075800G
	1/16-3/4	75TG	10"	1.97	--	1.9/6.5	CV50TG0751000G
	1/16-3/4	75TG	12"	1.97	--	1.9/6.5	CV50TG0751200G
	3/32-1"	100TG	3"	2.44	2-1/4	2.9/4.7	CV50TG100300
	3/32-1"	100TG	3-1/2	2.44	2-1/4	2.9/5.2	CV50TG100350
	3/32-1"	100TG	5-1/2	2.44	2-1/4	2.9/7.2	CV50TG100550
	3/32-1"	100TG	7-1/2	2.44	2-1/4	2.9/8.0	CV50TG100750
	1/2-1-1/2	150TG	3"	3.50	--	3.2/4.5	CV50TG150300
1/2-1-1/2	150TG	3-1/2	3.50	--	3.2/5.0	CV50TG150350	
1/2-1-1/2	150TG	5-1/2	3.50	--	3.2/7.0	CV50TG150550	
1/2-1-1/2	150TG	7-1/2	3.50	--	3.2/9.0	CV50TG150750	
1"-2"	200TG	4"	4-1/4	--	3.7/5.2	CV50TG200400	
1"-2"	200TG	6"	4-1/4	--	3.7/7.4	CV50TG200600	
1"-2"	200TG	8"	4-1/4	--	3.7/7.4	CV50TG200800	

SEE PAGES 118 - 122 FOR COLLETS.

CAT. V-FLANGE TAPER END MILL ADAPTER



- TAPER IS HELD TO AN ACCURACY OF AT-3 OR BETTER AND IS GROUND AFTER BLACK- OXIDE. NON-CRITICAL SURFACES ARE BLACK-OXIDED FOR RUST RESISTANCE.
- KNURLED NOSE FOR ADDED SAFETY.
- COMPLETE SELECTION OF RETENTION STUDS AVAILABLE.
- OVER-TIGHTENING SET SCREW CAN CREATE RUNOUT.



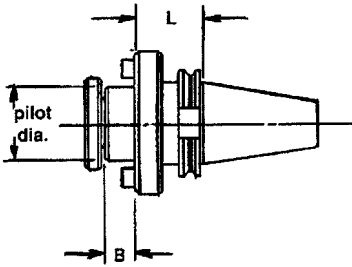
**THIS STUB LENGTH DESIGN DEVIATES FROM ANSI STANDARD (B5.50-1994) TO FACILITATE USE IN SOME SHORT Z-AXIS MACHINING CENTERS. THESE ADAPTERS ACCEPT SINGLE-ENDED END MILLS ONLY.

* ADAPTERS WITH TWO SET SCREWS WILL ACCEPT SINGLE-ENDED END MILLS ONLY.

ALSO AVAILABLE WITH METRIC I.D.'s.

C CAPACITY	40 V-SHANK		50 V-SHANK	
	L	CAT. NO.	L	CAT. NO.
1/8	1.38	CV40ZEM012138**		
1/8	4.50	CV40EM012450		
3/16	1.38	CV40ZEM018138**	2.50	CV50EM018250
3/16	2.50	CV40EM018250	4.50	CV50EM018450
3/16	4.50	CV40EM018450	6.50	CV50EM018650
1/4	1.38	CV40ZEM025138**	2.50	CV50EM025250
1/4	2.50	CV40EM025250	4.50	CV50EM025450
1/4	4.50	CV40EM025450	6.50	CV50EM025650
5/16	1.38	CV40ZEM031138**	2.50	CV50EM031250
5/16	4.50	CV40EM031450	4.50	CV50EM031450
5/16			6.50	CV50EM031650
3/8	1.38	CV40ZEM038138**	2.50	CV50EM038250
3/8	2.50	CV40EM038250	4.50	CV50EM038450
3/8	4.50	CV40EM038450	6.50	CV50EM038650
3/8	6.50	CV40EM038650	8.50	CV50EM038850
7/16	1.75	CV40ZEM044175**	2.50	CV50EM044250
7/16	4.50	CV40EM044450		
1/2	1.75	CV40ZEM050175**	2.62	CV50EM050262
1/2	2.62	CV40EM050262	4.62	CV50EM050462
1/2	4.62	CV40EM050462	6.62	CV50EM050662
1/2	6.62	CV40EM050662	8.50	CV50EM050850
5/8	1.75	CV40ZEM062175**	3.75	CV50EM062375
5/8	3.75	CV40EM062375	5.75	CV50EM062575
5/8	5.75	CV40EM062575	7.75	CV50EM062775
3/4	1.75	CV40ZEM075175**	3.75	CV50EM075375
3/4	3.75	CV40EM075375	5.75	CV50EM075575
3/4	5.75	CV40EM075575	7.75	CV50EM075775
3/4			10.0	CV50EM0751000
7/8	1.75	CV40ZEM088175**	3.75	CV50EM088375
7/8	4.00	CV40EM088400	5.75	CV50EM088575
7/8	6.00	CV40EM088600	7.75	CV50EM088775
1"	1.75	CV40ZEM100175**	4.00	CV50EM100400
1"	4.00	CV40EM100400	6.00	CV50EM100600
1"	6.00	CV40EM100600	8.00	CV50EM100800
1"			10.0	CV50EM1001000
1-1/4	2.00	CV40ZEM125200**	4.00	CV50EM125400*
1-1/4	4.25	CV40EM125425*	6.00	CV50EM125600*
1-1/4	6.25	CV40EM125625	8.00	CV50EM125800*
1-1/4			10.0	CV50EM1251000
1-1/2	4.62	CV40EM150462*	4.00	CV50EM150400*
1-1/2	6.62	CV40EM150662	6.00	CV50EM150600*
1-1/2			8.00	CV50EM150800*
2"			5.62	CV50EM200562*
2"			7.62	CV50EM200762*
2"			9.62	CV50EM200962*

CAT. V-FLANGE TAPER SHELLMILL ADAPTERS



- COMPLETE SELECTION OF RETENTION STUDS AVAILABLE.
- 2 & 2-1/2" PILOT DIAMETER ADAPTERS HAVE FOUR 5/8-11 TAPPED HOLES ON A 4" BOLT CIRCLE. ON THESE HOLDERS BLACK SCREWS MUST BE ORDERED SEPARATELY.
- TAPER IS HELD TO AN ACCURACY OF AT-3 OR BETTER AND IS GROUND AFTER BLACK-OXIDE. NON-CRITICAL SURFACES ARE BLACK-OXIDED FOR RUST RESISTANCE.



ALSO AVAILABLE
IN METRIC SIZES.

PILOT DIAMETER	40 V-FLANGE SHANK			50 V-FLANGE SHANK		
	B	L	CAT. NO.	B	L	CAT. NO.
1/2	.562	1.38	CV40SM050138	.463	5.50	CV50SM050550
3/4	.688	1.38	CV40SM075138	.688	1.50	CV50SM075150
3/4	.688	3.50	CV40SM075350	.688	3.50	CV50SM075350
3/4	.688	6.50	CV40SM075600	.688	5.50	CV50SM075550
3/4				.688	7.00	CV50SM075700
3/4				.688	9.00	CV50SM075900
1"	.688	2.06	CV40SM100206	.688	2.00	CV50SM100200
1"	.688	4.00	CV40SM100400	.688	4.00	CV50SM100400
1"	.688	6.00	CV40SM100600	.688	6.00	CV50SM100600
1"				.688	8.00	CV50SM100800
1"				.688	10.0	CV50SM1001000
1-1/4	.688	2.12	CV40SM125212	.688	1.50	CV50SM125150
1-1/4	.688	4.00	CV40SM125400	.688	3.50	CV50SM125350
1-1/4				.688	5.50	CV50SM125550
1-1/4				.688	7.00	CV50SM125700
1-1/4				.688	9.00	CV50SM125900
1-1/2	.938	2.41	CV40SM150241	.938	2.50	CV50SM150240
1-1/2	.938	4.00	CV40SM150400	.938	4.00	CV50SM150400
1-1/2				.938	6.00	CV50SM150600
1-1/2				.938	8.00	CV50SM150800
2"				.938	2.40	CV50SM200240
2"				.938	4.00	CV50SM200400
2"				.938	6.00	CV50SM200600
2"				.938	8.00	CV50SM200800
2-1/2				1.12	2.40	CV50SM250240
2-1/2				1.12	4.00	CV50SM250400

HSK SHANK TOOL HOLDERS

A complete line of HSK shank tool holders is available in sizes 40, 50, 63, 80 & 100 forms A, C & E.

Its features include rigidity and positioning accuracy. In comparison to steep taper tooling, higher cutting speeds/revolutions are possible with HSK tooling.

HSK enjoys a good reputation in higher speed and high precision machining applications on machining centers, multi-spindle machines and transfer lines. It is also gaining popularity in the automotive, aerospace, and component industries.

Please call with your requirements.



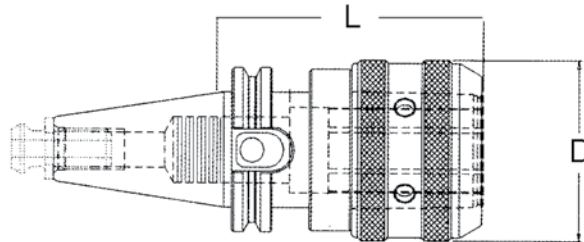
High-Grip Milling chuck provides the strength and precision you need for serious milling jobs.

Features:

- Extreme Grip Up to five times the gripping power of traditional collet chucks
- High Rigidity Vibration-reducing design for outstanding surface finish
- High Precision Unique clamping system guarantees 0.0004" TIR or less at 4 inches
- Coolant-Through Compatible with today's high-speed machining centers with coolant-through spindles.



SHANK TYPE	I.D. SIZE	D	L	CAT. NO.
CAT 40	3/4"	2.05	3.62	CV40HGMC0750
CAT 40	1-1/4"	2.75	4.13	CV40HGMC1250
CAT 50	3/4"	2.05	3.62	CV50HGMC0750
CAT 50	1-1/4"	2.75	4.13	CV50HGMC1250
BT 40	3/4"	2.05	3.31	BT40HGMC0750
BT 40	1-1/4"	2.75	4.33	BT40HGMC1250
BT 50	3/4"	2.05	3.90	BT50HGMC0750
BT 50	1-1/4"	2.75	4.13	BT50HGMC1250



ACCESSORIES FOR 1-1/4" COLLET CHUCKS

COLLETS	
I.D.	CAT. NO.
1/8	125MC0125
3/16	125MC0188
1/4	125MC0250
5/16	125MC0313
3/8	125MC0375
7/16	125MC0438
1/2	125MC0500
9/16	125MC0563
5/8	125MC0625
3/4	125MC0750
7/8	125MC0875
1"	125MC1000

COOLANT NOZZLES	
CAPACITY	CAT. NO.
1/4 - 3/8	CN1250-250
3/8 - 1/2	CN1250-375
5/8 - 3/4	CN1250-625
7/8 - 1-1/4	CN1250-875

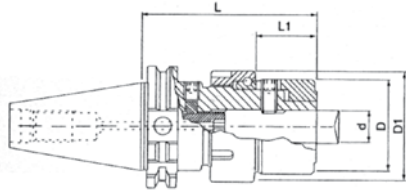
ACCESSORIES FOR 3/4" CHUCKS

COLLETS	
I.D.	CAT. NO.
1/8	75MC0125
3/16	75MC0188
1/4	75MC0250
5/16	75MC0313
3/8	75MC0375
7/16	75MC0438
1/2	75MC0500
9/16	75MC0563
5/8	75MC0625

COOLANT NOZZLES	
CAPACITY	CAT. NO.
1/4 - 3/8	CN750-250
1/2 - 3/4	CN750-500

CAT/V-FLANGE SPECIFICATIONS

Part No.	Shank	d	D	D1	L	L1
CV40PC0250	CAT 40	0.250"	1.122	1.476	3.386	0.984
CV40PC0312	CAT 40	0.312"	1.122	1.476	3.386	0.984
CV40PC0375	CAT 40	0.375"	1.398	1.752	3.780	1.240
CV40PC0437	CAT 40	0.437"	1.496	1.752	3.780	1.240
CV40PC0500	CAT 40	0.500"	1.496	1.752	3.780	1.240
CV40PC0625	CAT 40	0.625"	1.673	1.949	3.858	1.280
CV40PC0750	CAT 40	0.750"	1.909	2.146	3.937	1.358
CV40PC0875	CAT 40	0.875"	1.988	2.224	3.937	1.358
CV40PC1000	CAT 40	1.000"	2.421	2.697	4.173	1.535
CV40PC1125	CAT 40	1.125"	2.520	2.697	4.173	1.535
CV40PC1250	CAT 40	1.250"	2.756	2.894	4.488	1.713
CV50PC0250	CAT 50	0.250"	1.122	1.476	3.386	0.984
CV50PC0312	CAT 50	0.312"	1.122	1.476	3.386	0.984
CV50PC0375	CAT 50	0.375"	1.398	1.752	3.780	1.240
CV50PC0500	CAT 50	0.500"	1.496	1.752	3.780	1.240
CV50PC0625	CAT 50	0.625"	1.673	1.949	3.858	1.280
CV50PC0750	CAT 50	0.750"	1.909	2.146	3.937	1.358
CV50PC0875	CAT 50	0.875"	1.988	2.224	3.937	1.358
CV50PC1000	CAT 50	1.000"	2.421	2.697	4.173	1.535
CV50PC1125	CAT 50	1.125"	2.520	2.697	4.173	1.535
CV50PC1250	CAT 50	1.250"	2.756	2.894	4.488	1.713



Increase Productivity At An Economy Price With This Unique Precision Chuck.

This high precision chuck is designed specifically to meet the demands of today's new generation of machines and cutting tools. It's powerful clamping force and ability to hold tools within 50 millionths T.I.R. eliminate the need for expensive hydraulic chucks and conventional milling chucks.

- Clamping surfaces ground directly from the toolholder body. Holding a cutting tool within 0.0002" T.I.R. is achieved with no adjustments.
- Is ideal for rough milling and finish milling. Because of its unusually high accuracy, it is perfectly suited for holmaking applications that normally require hydraulic chuck or boring operations.
- Ensures greater workpiece accuracy, while delivering increased feed rates and tool life.

BT SPECIFICATIONS

Part No.	Shank	d	D	D1	L	L1 G30
BT40PC0250	BT40	0.250"	1.122	1.476	3.071	0.984
BT40PC0312	BT40	0.312"	1.122	1.476	3.071	0.984
BT40PC0375	BT40	0.375"	1.398	1.752	3.465	1.240
BT40PC0437	BT40	0.437"	1.496	1.752	3.465	1.240
BT40PC0500	BT40	0.500"	1.496	1.752	3.465	1.240
BT40PC0625	BT40	0.625"	1.673	1.949	3.543	1.280
BT40PC0750	BT40	0.750"	1.909	2.146	3.622	1.358
BT40PC0875	BT40	0.875"	1.988	2.224	3.622	1.358
BT40PC1000	BT40	1.000"	2.421	2.697	3.858	1.535
BT40PC1125	BT40	1.125"	2.520	2.697	3.858	1.535
BT40PC1250	BT40	1.250"	2.757	2.894	4.173	1.713
BT50PC0250	BT50	0.250"	1.122	1.476	3.504	0.984
BT50PC0312	BT50	0.312"	1.122	1.476	3.504	0.984
BT50PC0375	BT50	0.375"	1.398	1.752	3.898	1.240
BT50PC0500	BT50	0.500"	1.496	1.752	3.898	1.240
BT50PC0625	BT50	0.625"	1.673	1.949	3.898	1.280
BT50PC0750	BT50	0.750"	1.909	2.146	3.976	1.358
BT50PC0875	BT50	0.875"	1.988	2.224	3.976	1.358
BT50PC1000	BT50	1.000"	2.421	2.697	4.291	1.535
BT50PC1125	BT50	1.125"	2.520	2.697	4.291	1.535
BT50PC1250	BT50	1.250"	2.756	2.894	5.000	1.713

- Patented, vibration-damping structure. This chuck interrupts the transmission of helical vibrations to allow increased RPM and feed rates.
- Guaranteed high accuracies. Tools clamp within 0.0002" T.I.R. with no adjustment. Truing screws that contact directly to the tool shank can be set easily and quickly to achieve T.I.R. within 50 millionths.
- Ideal for todays finest machine tools. These chucks are balanced to 22,000 RPM and are sealed for coolant-through applications.
- Locking screw. In addition to exerting extremely powerful clamping forces, this high precision chuck is equipped with a Weldon type screw to eliminate tool pullout common with standard heavy duty milling chucks.
- Value pricing. These high precision chucks can replace expensive hydraulic chucks and heavy duty milling chucks, yet are available at a fraction of the cost.

ER RIGID TAPPING COLLETS

HAND TAP SIZE	TAP SHANK DIA.	ER40 CAT. NO.	ER32 CAT. NO.	ER25 CAT. NO.	ER20 CAT. NO.	ER16 CAT. NO.	ER11 CAT. NO.
#0 - 6	.141	ER40-0141TH	ER32-0141TH	ER25-0141TH	ER20-0141TH	ER16-0141TH	ER11-0141TH
#8	.168	ER40-0168TH	ER32-0168TH	ER25-0168TH	ER20-0168TH	ER16-0168TH	ER11-0168TH
#10	.194	ER40-0194TH	ER32-0194TH	ER25-0194TH	ER20-0194TH	ER16-0194TH	ER11-0194TH
#12	.220	ER40-0220TH	ER32-0220TH	ER25-0220TH	ER20-0220TH	ER16-0220TH	ER11-0220TH
1/4	.255	ER40-0255TH	ER32-0255TH	ER25-0255TH	ER20-0255TH	ER16-0255TH	ER11-0255TH
5/16	.318	ER40-0318TH	ER32-0318TH	ER25-0318TH	ER20-0318TH	ER16-0318TH	
3/8	.381	ER40-0381TH	ER32-0381TH	ER25-0381TH	ER20-0381TH	ER16-0381TH	
7/16	.323	ER40-0323TH	ER32-0323TH	ER25-0323TH	ER20-0323TH		
1/2	.367	ER40-0367TH	ER32-0367TH	ER25-0367TH	ER20-0367TH		
9/16	.429	ER40-0429TH	ER32-0429TH	ER25-0429TH			
5/8	.480	ER40-0480TH	ER32-0480TH	ER25-0480TH			
11/16	.542	ER40-0542TH	ER32-0542TH				
3/4	.590	ER40-0590TH	ER32-0590TH				
13/16	.652	ER40-0652TH	ER32-0652TH				
7/8	.697	ER40-0697TH					
15/16	.760	ER40-0760TH					
1	.800	ER40-0800TH					
PIPE TAP SIZE							
1/8P (SS)	.313	ER40-0313PT	ER32-0313PT	ER25-0313PT			
1/8P (LS)	.437	ER40-0437PT	ER32-0437PT	ER25-0437PT			
1/4P	.562	ER40-0562PT	ER32-0562PT				
3/8P	.700	ER40-0700PT					
1/2P	.687	ER40-0687PT					



ER Rigid Tapping Collets with Square Drive

For synchronous tapping operations using any ER collet chuck. Collet bore is exact tool diameter, with square drive, for accuracy and rigidity. Available sealed for coolant-through applications, as well as in DIN and JIS standard metric sizes.

ER TAPPING COLLETS W/ AXIAL COMPENSATION

HAND TAP SIZE	TAP SHANK DIA.	ER40 CAT. NO.	ER32 CAT. NO.	ER25 CAT. NO.	ER20 CAT. NO.	ER16 CAT. NO.
#0 - 6	.141	ER40AF-0141TH	ER32AF-0141TH	ER25AF-0141TH	ER20AF-0141TH	ER16AF-0141TH
#8	.168	ER40AF-0168TH	ER32AF-0168TH	ER25AF-0168TH	ER20AF-0168TH	ER16AF-0168TH
#10	.194	ER40AF-0194TH	ER32AF-0194TH	ER25AF-0194TH	ER20AF-0194TH	ER16AF-0194TH
#12	.220	ER40AF-0220TH	ER32AF-0220TH	ER25AF-0220TH	ER20AF-0220TH	
1/4	.255	ER40AF-0255TH	ER32AF-0255TH	ER25AF-0255TH	ER20AF-0255TH	
5/16	.318	ER40AF-0318TH	ER32AF-0318TH	ER25AF-0318TH		
3/8	.381	ER40AF-0381TH	ER32AF-0381TH	ER25AF-0381TH		
7/16	.323	ER40AF-0323TH	ER32AF-0323TH	ER25AF-0323TH		
1/2	.367	ER40AF-0367TH	ER32AF-0367TH	ER25AF-0367TH		
9/16	.429	ER40AF-0429TH	ER32AF-0429TH			
5/8	.480	ER40AF-0480TH				
11/16	.542	ER40AF-0542TH				
PIPE TAP SIZE						
1/8P (LS)	.437	ER40AF-0437PT	ER32AF-0437PT			
1/4P	.562	ER40AF-0562PT				



ER Quick-Change Tapping Collets with Axial Compensation

For use with any ER collet chuck, these tapping collets help prevent tap breakage on machines requiring axial compensation. Friction-free ball-bearing drive. Metric sizes available upon request.

UNIVERSAL® DOUBLE TAPER COLLETS

THE FOLLOWING COLLET CHUCKS ARE AVAILABLE FOR THESE COLLETS:

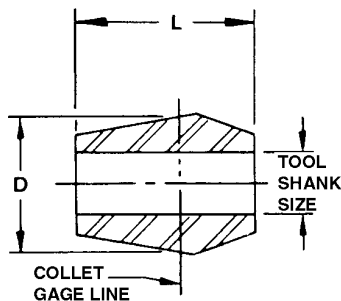
- STRAIGHT SHANK
- MORSE TAPER SHANK
- JACOBS INTERNAL TAPER
- BRIDGEPORT R8 SHANK
- #9 B&S TAPER SHANK

CALL FOR PRICE AND AVAILABILITY.

How to Order:

- Order by part number listed and tool shank size.
- Available in all letter, number & fractional sizes within range.
- Other sizes available to special order.

COLLET RANGE	TYPE	COLLET PART NO.	D	L
1/16 to 1/4	OW	*55021	.39	.50
1/8 to 3/8	WW	*55060	.59	.75
1/8 to 1/2	Y	*55097	.80	1.06
1/4 to 3/4	Z	*55132	1.12	1.50
3/8 to 1"	ZZ	*55165	1.56	2.00
3/4 to 1-1/2	XZ	*55194	2.20	2.50



V-FLANGE CHUCK COLLETS

COLLET CAP	ER40		ER32		ER25		ER20		ER16		ER11
	STD	SEALED*	STD	SEALED*	STD	SEALED*	STD	SEALED*	STD	SEALED*	STD
1/16					ER25-1/16		ER20-1/16		ER16-1/16		ER11-1/16
3/32			ER32-3/32		ER25-3/32		ER20-3/32		ER16-3/32		ER11-3/32
1/8	ER40-1/8	ERC40-1/8	ER32-1/8	ERC32-1/8	ER25-1/8	ERC25-1/8	ER20-1/8	ERC20-1/8	ER16-1/8	ERC16-1/8	ER11-1/8
5/32	ER40-5/32	ERC40-5/32	ER32-5/32	ERC32-5/32	ER25-5/32	ERC25-5/32	ER20-5/32	ERC20-5/32	ER16-5/32	ERC16-5/32	ER11-5/32
3/16	ER40-3/16	ERC40-3/16	ER32-3/16	ERC32-3/16	ER25-3/16	ERC25-3/16	ER20-3/16	ERC20-3/16	ER16-3/16	ERC16-3/16	ER11-3/16
7/32	ER40-7/32	ERC40-7/32	ER32-7/32	ERC32-7/32	ER25-7/32	ERC25-7/32	ER20-7/32	ERC20-7/32	ER16-7/32	ERC16-7/32	ER11-7/32
1/4	ER40-1/4	ERC40-1/4	ER32-1/4	ERC32-1/4	ER25-1/4	ERC25-1/4	ER20-1/4	ERC20-1/4	ER16-1/4	ERC16-1/4	ER11-1/4
9/32	ER40-9/32	ERC40-9/32	ER32-9/32	ERC32-9/32	ER25-9/32	ERC25-9/32	ER20-9/32	ERC20-9/32	ER16-9/32	ERC16-9/32	
5/16	ER40-5/16	ERC40-5/16	ER32-5/16	ERC32-5/16	ER25-5/16	ERC25-5/16	ER20-5/16	ERC20-5/16	ER16-5/16	ERC16-5/16	
11/32	ER40-11/32	ERC40-11/32	ER32-11/32	ERC32-11/32	ER25-11/32	ERC25-11/32	ER20-11/32	ERC20-11/32	ER16-11/32	ERC16-11/32	
3/8	ER40-3/8	ERC40-3/8	ER32-3/8	ERC32-3/8	ER25-3/8	ERC25-3/8	ER20-3/8	ERC20-3/8	ER16-3/8	ERC16-3/8	
13/32	ER40-13/32	ERC40-13/32	ER32-13/32	ERC32-13/32	ER25-13/32	ERC25-13/32	ER20-13/32	ERC20-13/32	ER16-13/32	ERC16-13/32	
7/16	ER40-7/16	ERC40-7/16	ER32-7/16	ERC32-7/16	ER25-7/16	ERC25-7/16	ER20-7/16	ERC20-7/16			
15/32	ER40-15/32	ERC40-15/32	ER32-15/32	ERC32-15/32	ER25-15/32	ERC25-15/32	ER20-15/32	ERC20-15/32			
1/2	ER40-1/2	ERC40-1/2	ER32-1/2	ERC32-1/2	ER25-1/2	ERC25-1/2	ER20-1/2	ERC20-1/2			
17/32	ER40-17/32	ERC40-17/32	ER32-17/32	ERC32-17/32	ER25-17/32	ERC25-17/32					
9/16	ER40-9/16	ERC40-9/16	ER32-9/16	ERC32-9/16	ER25-9/16	ERC25-9/16					
19/32	ER40-19/32	ERC40-19/32	ER32-19/32	ERC32-19/32	ER25-19/32	ERC25-19/32					
5/8	ER40-5/8	ERC40-5/8	ER32-5/8	ERC32-5/8	ER25-5/8	ERC25-5/8					
21/32	ER40-21/32	ERC40-21/32	ER32-21/32	ERC32-21/32							
11/16	ER40-11/16	ERC40-11/16	ER32-11/16	ERC32-11/16							
23/32	ER40-23/32	ERC40-23/32	ER32-23/32	ERC32-23/32							
3/4	ER40-3/4	ERC40-3/4	ER32-3/4	ERC32-3/4							
25/32	ER40-25/32	ERC40-25/32									
13/16	ER40-13/16	ERC40-13/16									
27/32	ER40-27/32	ERC40-27/32									
7/8	ER40-7/8	ERC40-7/8									
29/32	ER40-29/32	ERC40-29/32									
15/16	ER40-15/16	ERC40-15/16									
31/32	ER40-31/32	ERC40-31/32									
1"	ER40-1	ERC40-1									

**COMPLETE RANGE OF TOOLHOLDERS
AVAILABLE FOR THESE COLLETS, INCLUDING:
VDI, CAT, MAS, NMTB, MORSE TAPER
AND STRAIGHT SHANK COLLET CHUCKS
AND TAPPING SYSTEMS.**



ENGLISH COLLET SETS

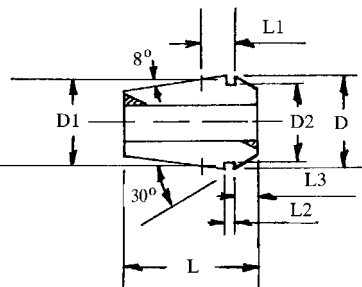
NON-SEALED COLLETS HAVE:

**1/32" COLLAPSE RANGE
PER COLLET, EXCEPT FOR
ER8, ER11 & ER12 WHICH HAVE A
.019 COLLAPSING RANGE.**

*NOTE STANDARD COOLANT SEALED COLLETS (1000 PSI) **DO NOT** HAVE AN I.D. GRIPPING RANGE. THEY ARE MANUFACTURED TO HOLD THE SIZE LISTED

CAT. NO.	COLLET SERIES	CONTENTS OF COLLET SETS
ER11-2SET	ER11	7 COLLETS - 1/16 TO 1/4 X 1/32" INCREMENTS
ER16-2SET	ER16	12 COLLETS - 1/16 TO 13/32 X 1/32" INCREMENTS
ER20-2SET	ER20	15 COLLETS - 1/16 TO 1/2 X 1/32" INCREMENTS
ER25-2SET	ER25	19 COLLETS - 1/16 TO 5/8 X 1/32" INCREMENTS
ER32-2SET	ER32	22 COLLETS - 3/32 TO 3/4 X 1/32" INCREMENTS
ER40-2SET	ER40	29 COLLETS - 1/8 TO 1" X 1/32" INCREMENTS

ALL DIMENSIONS ARE IN MILLIMETERS



COLLET	L	L1	L2	L3	D	D1	D2
ER8*	13.5	2.98	1.2	1.5	8.5	8.0	6.5
ER11	18.0	3.80	2.0	2.5	11.5	11.0	9.5
ER16	19.5	--	--	--	12.0	--	--
ER16	27.5	6.26	2.7	4.0	17.0	16.0	13.8
ER20	31.5	6.36	2.8	4.8	21.0	20.0	17.4
ER25	34.0	6.66	3.1	5.0	26.0	25.0	22.0
ER32	40.0	7.16	3.6	5.5	33.0	32.0	29.2
ER40	46.0	7.66	4.1	7.0	41.0	40.0	36.2
ER50	60.0	12.60	5.5	8.5	52.0	50.0	46.2

*NOTE: ER8 Collet is without 30° nose taper

Extreme Accuracy: 16 slots for rigid clamping and extra concentricity.

Wide Clamping Range: For fewer changes and a low cost per set that covers a continuous range of sizes.

Versatility: Interchangeable with Schaublin, RD and ESX type collets, and compatible VDI tooling.

Ideal for Tool Extensions: High accuracy for long-reach applications.

Multiple Applications. Same collets can be used for drilling, milling, and reaming.

Precision Manufacturing: High grade spring steel is hardened and precision ground, with rigid quality control.

FOR HIGH PRECISION COLLETS, ADD "HP" TO THE PART # SHOWN

COLLET CAP. MM	ER40			ER32			ER25		
	STD	SEALED*	SEALED W/ 2 JETS	STD	SEALED*	SEALED W/ 2 JETS	STD	SEALED*	SEALED W/ 2 JETS
2-1							ER25-2	ERC25-2	
3-2				ER32-3	ERC32-3		ER25-3	ERC25-3	
4-3	ER40-4	ERC40-4	ERCC40-4	ER32-4	ERC32-4	ERCC32-4	ER25-4	ERC25-4	ERCC25-4
5-4	ER40-5	ERC40-5	ERCC40-5	ER32-5	ERC32-5	ERCC32-5	ER25-5	ERC25-5	ERCC25-5
6-5	ER40-6	ERC40-6	ERCC40-6	ER32-6	ERC32-6	ERCC32-6	ER25-6	ERC25-6	ERCC25-6
7-6	ER40-7	ERC40-7	ERCC40-7	ER32-7	ERC32-7	ERCC32-7	ER25-7	ERC25-7	ERCC25-7
8-7	ER40-8	ERC40-8	ERCC40-8	ER32-8	ERC32-8	ERCC32-8	ER25-8	ERC25-8	ERCC25-8
9-8	ER40-9	ERC40-9	ERCC40-9	ER32-9	ERC32-9	ERCC32-9	ER25-9	ERC25-9	ERCC25-9
10-9	ER40-10	ERC40-10	ERCC40-10	ER32-10	ERC32-10	ERCC32-10	ER25-10	ERC25-10	ERCC25-10
11-10	ER40-11	ERC40-11	ERCC40-11	ER32-11	ERC32-11	ERCC32-11	ER25-11	ERC2511-	ERCC25-11
12-11	ER40-12	ERC40-12	ERCC40-12	ER32-12	ERC32-12	ERCC32-12	ER25-12	ERC25-12	ERCC25-12
13-12	ER40-13	ERC40-13	ERCC40-13	ER32-13	ERC32-13	ERCC32-13	ER25-13	ERC25-13	ERCC25-13
14-13	ER40-14	ERC40-14	ERCC40-14	ER32-14	ERC32-14	ERCC32-14	ER25-14	ERC25-14	ERCC25-14
15-14	ER40-15	ERC40-15	ERCC40-15	ER32-15	ERC32-15	ERCC32-15	ER25-15	ERC25-15	ERCC25-15
16-15	ER40-16	ERC40-16	ERCC40-16	ER32-16	ERC32-16	ERCC32-16	ER25-16	ERC25-16	ERCC25-16
17-16	ER40-17	ERC40-17	ERCC40-17	ER32-17	ERC32-17	ERCC32-17			
18-17	ER40-18	ERC40-18	ERCC40-18	ER32-18	ERC32-18	ERCC32-18			
19-18	ER40-19	ERC40-19	ERCC40-19	ER32-19	ERC32-19	ERCC32-19			
20-19	ER40-20	ERC40-20	ERCC40-20	ER32-20	ERC32-20	ERCC32-20			
21-20	ER40-21	ERC40-21	ERCC40-21						
22-21	ER40-22	ERC40-22	ERCC40-22						
23-22	ER40-23	ERC40-23	ERCC40-23						
24-23	ER40-24	ERC40-24	ERCC40-24						
25-24	ER40-25	ERC40-25	ERCC40-25						
26-25	ER40-26	ERC40-26	ERCC40-26						

**NON-SEALED COLLETS HAVE:
1/32" COLLAPSE RANGE
PER COLLET, EXCEPT FOR
ER8, ER11 & ER12 WHICH HAVE A
.019 COLLAPSING RANGE.**

SEALED WITH 2 JETS



METRIC COLLET SETS

COLLET CAP. MM	ER20			ER16		
	STD	SEALED*	SEALED W/ 2 JETS	STD	SEALED*	SEALED W/ 2 JETS
1.0-0.5	ER20-1			ER16-1		
1.5-1	ER20-1.5			ER16-1.5		
2-1	ER20-2			ER16-2	ERC16-2	
2.5-1.5	ER20-2.5			ER16-2.5		
3-2	ER20-3	ERC20-3		ER16-3	ERC16-3	
3.5-2.5	ER20-3.5			ER16-3.5		
4-3	ER20-4	ERC20-4	ERCC20-4	ER16-4	ERC16-4	ERCC16-4
4.5-3.5	ER20-4.5			ER16-4.5		
5-4	ER20-5	ERC20-5	ERCC20-5	ER16-5	ERC16-5	ERCC16-5
5.5-4.5	ER20-5.5			ER16-5.5		
6-5	ER20-6	ERC20-6	ERCC20-6	ER16-6	ERC16-6	ERCC16-6
6.5-5.5	ER20-6.5			ER16-6.5		
7-6	ER20-7	ERC20-7	ERCC20-7	ER16-7	ERC16-7	ERCC16-7
7.5-6.5	ER20-7.5			ER16-7.5		
8-7	ER20-8	ERC20-8	ERCC20-8	ER16-8	ERC16-8	ERCC16-8
8.5-7.5	ER20-8.5			ER16-8.5		
9-8	ER20-9	ERC20-9	ERCC20-9	ER16-9	ERC16-9	ERCC16-9
9.5-8.5	ER20-9.5			ER16-9.5		
10-9	ER20-10	ERC20-10	ERCC20-10	ER16-10	ERC16-10	ERCC16-10
10.5-9.5	ER20-10.5					
11-10	ER20-11	ERC20-11	ERCC20-11			
11.5-10.5	ER20-11.5					
12-11	ER20-12	ERC20-12	ERCC20-12			
12.5-11.5	ER20-12.5					
13-12	ER20-13	ERC20-13	ERCC20-13			

CAT. NO.	COLLET SERIES	CONTENTS OF COLLET SETS
ER8-1SET	ER8	9 COLLETS-1 TO 5MM X .5MM INCREMENTS
ER11-1SET	ER11	13 COLLETS-1 TO 7MM X .5MM INCREMENTS
ER16-1SET	ER16	10 COLLETS-1 TO 10MM X 1MM INCREMENTS
ER20-1SET	ER20	12 COLLETS-2 TO 13MM X 1MM INCREMENTS
ER25-1SET	ER25	15 COLLETS-2 TO 16MM X 1MM INCREMENTS
ER32-1SET	ER32	18 COLLETS-3 TO 20MM X 1MM INCREMENTS
ER40-1SET	ER40	23 COLLETS-4 TO 26MM X 1MM INCREMENTS
ER50-1SET	ER50	12 COLLETS-12 TO 34MM X 2MM INCREMENTS

* THE STANDARD SEALED COLLETS (1000 PSI) DO NOT HAVE AN I.D GRIPPING RANGE, THEY ARE MADE TO HOLD THE LARGER SIZE LISTED ON THE CHART. NOTE: THE SEALED COLLETS WITH 2 COOLANT JETS (1450 PSI) DO HAVE THE I.D. GRIPPING RANGE SHOWN ON THE CHART.

COLLET CAP MM	ER12 STD	ER11 STD	ER8 STD
1.0-0.5	ER12-1	ER11-1	ER8-1
1.5-1.0	ER12-1.5	ER11-1.5	ER8-1.5
2.0-1.5	ER12-2	ER11-2	ER8-2
2.5-2.0	ER12-2.5	ER11-2.5	ER8-2.5
3.0-2.5	ER12-3	ER11-3	ER8-3
3.5-3.0	ER12-3.5	ER11-3.5	ER8-3.5
4.0-3.5	ER12-4	ER11-4	ER8-4
4.5-4.0	ER12-4.5	ER11-4.5	ER8-4.5
5.0-4.5	ER12-5	ER11-5	ER8-5
5.5-5.0	ER12-5.5	ER11-5.5	
6.0-5.5	ER12-6	ER11-6	
6.5-6.0	ER12-6.5	ER11-6.5	
7.0-6.5	ER12-7	ER11-7	

FOR HIGH PRECISION COLLETS, ADD "HP" TO THE PART # SHOWN

SWISS

CNC

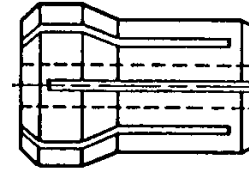
MULTI-
SPINDLE

BROWN &
SHARPE

DAVENPORT

FRACTIONAL SIZES

COLLET CAPACITY	SERIES 100 DA COLLETS		SERIES 200 DA COLLETS		SERIES 300 DA COLLETS	
	STANDARD CAT. NO.	COOLANT CAT. NO.	STANDARD CAT. NO.	COOLANT CAT. NO.	STANDARD CAT. NO.	COOLANT CAT. NO.
1/32					300DA0031	
3/64	100DA0047		200DA0047		300DA0047	
1/16	100DA0062		200DA0062		300DA0062	
5/64	100DA0078		200DA0078		300DA0078	
3/32	100DA0094		200DA0094		300DA0094	
7/64	100DA0109		200DA0109		300DA0109	
1/8	100DA0125	100DAC0125	200DA0125	200DAC0125	300DA0125	300DAC0125
9/64	100DA0141	100DAC0141	200DA0141	200DAC0141	300DA0141	300DAC0141
5/32	100DA0156	100DAC0156	200DA0156	200DAC0156	300DA0156	300DAC0156
11/64	100DA0172	100DAC0172	200DA0172	200DAC0172	300DA0172	300DAC0172
3/16	100DA0188	100DAC0188	200DA0188	200DAC0188	300DA0188	300DAC0188
13/64	100DA0203	100DAC0203	200DA0203	200DAC0203	300DA0203	300DAC0203
7/32	100DA0219	100DAC0219	200DA0219	200DAC0219	300DA0219	300DAC0219
15/64	100DA0234	100DAC0234	200DA0234	200DAC0234	300DA0234	300DAC0234
1/4	100DA0250	100DAC0250	200DA0250	200DAC0250	300DA0250	300DAC0250
17/64	100DA0266	100DAC0266	200DA0266	200DAC0266		
9/32	100DA0281	100DAC0281	200DA0281	200DAC0281		
19/64	100DA0297	100DAC0297	200DA0297	200DAC0297		
5/16	100DA0312	100DAC0312	200DA0312	200DAC0312		
21/64	100DA0328	100DAC0328	200DA0328	200DAC0328		
11/32	100DA0344	100DAC0344	200DA0344	200DAC0344		
23/64	100DA0359	100DAC0359	200DA0359	200DAC0359		
3/8	100DA0375	100DAC0375	200DA0375	200DAC0375		
25/64	100DA0391	100DAC0391	200DA0391	200DAC0391		
13/32	100DA0406	100DAC0406				
27/64	100DA0422	100DAC0422				
7/16	100DA0438	100DAC0438				
29/64	100DA0453	100DAC0453				
15/32	100DA0469	100DAC0469				
31/64	100DA0484	100DAC0484				
1/2	100DA0500	100DAC0500				
33/64	100DA0516	100DAC0516				
17/32	100DA0531	100DAC0531				
35/64	100DA0547	100DAC0547				
9/16	100DA0562	100DAC0562				



SERIES#	L	D
100	1.438	.769
200	1.188	.539
300	1.000	.375

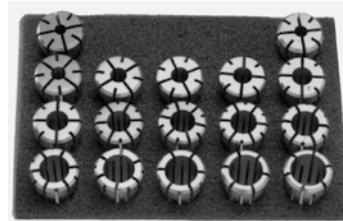
- STANDARD COLLETS COLLAPSE 1/32"
- COOLANT SEALED COLLETS COLLAPSE 1/64"
- COOLANT SEALED COLLETS CAN OPERATE AT UP TO 1000 P.S.I.

METRIC SIZES

COLLET CAPACITY	SERIES 100 CAT. NO.	SERIES 200 CAT. NO.	SERIES 300 CAT. NO.
1.0	100DA010M	200DA010M	300DA010M
1.5	100DA015M	200DA015M	300DA015M
2.0	100DA020M	200DA020M	300DA020M
2.5	100DA025M	200DA025M	300DA025M
3.0	100DA030M	200DA030M	300DA030M
3.5	100DA035M	200DA035M	300DA035M
4.0	100DA040M	200DA040M	300DA040M
4.5	100DA045M	200DA045M	300DA045M
5.0	100DA050M	200DA050M	300DA050M
5.5	100DA055M	200DA055M	300DA055M
6.0	100DA060M	200DA060M	300DA060M
6.5	100DA065M	200DA065M	
7.0	100DA070M	200DA070M	
7.5	100DA075M	200DA075M	
8.0	100DA080M	200DA080M	
8.5	100DA085M	200DA085M	
9.0	100DA090M	200DA090M	
9.5	100DA095M	200DA095M	
10.0	100DA100M	200DA100M	
10.5	100DA105M		
11.0	100DA110M		
11.5	100DA115M		
12.0	100DA120M		
12.5	100DA125M		
13.0	100DA130M		
13.5	100DA135M		
14.0	100DA140M		
14.5	100DA145M		
15.0	100DA150M		



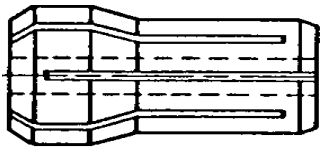
WHY BUY A COPY WHEN
YOU CAN HAVE THE
"ORIGINAL"



Additional savings available with collet sets, call for price and availability.

Cat. No.	Collet Series	Contents of Collet Sets
S303SET	300	8 COLLETS 3/64, 5/64, 3/32 THRU 1/4 X 32NDS
S304SET	300	9 COLLETS 1/8 THRU 1/4 X 1/64 INCREMENTS
S305SET	300	5 COLLETS 1/8 THRU 1/4 X 1/32 INCREMENTS
S203SET	200	9 COLLETS 1/8 THRU 3/8 X 1/32 INCREMENTS
S204SET	200	17 COLLETS 1/8 THRU 3/8 IN 1/64 INCREMENTS
S103SET	100	11 COLLETS 1/4 THRU 9/16 IN 1/32 INCREMENTS
S104SET	100	21 COLLETS 1/4 THRU 9/16 IN 1/64 INCREMENTS

V-FLANGE CHUCK
COLLETS



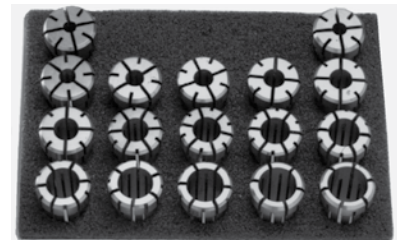
SERIES	L	D
180	1.625	1.035
400	2.00	1.455

- STANDARD COLLETS COLLAPSE 1/32"
- COOLANT COLLETS COLLAPSE 1/64"
- COOLANT SEALED COLLETS CAN OPERATE AT UP TO 1000 P.S.I.

COLLET CAPACITY	SERIES 400 DA		SERIES 180 DA COLLETS	
	STANDARD CAT. NO.	STANDARD CAT. NO.	STANDARD CAT. NO.	COOLANT CAT. NO.
3/64			180DA0047	
1/16			180DA0062	
5/64			180DA0078	
3/32	400DA0094		180DA0094	
7/64	400DA0109		180DA0109	
1/8	400DA0125		180DA0125	
9/64	400DA0141		180DA0141	
5/32	400DA0156		180DA0156	
11/64	400DA0172		180DA0172	
3/16	400DA0188		180DA0188	
13/64	400DA0203		180DA0203	
7/32	400DA0219		180DA0219	
15/64	400DA0234		180DA0234	
1/4	400DA0250		180DA0250	180DAC0250
17/64	400DA0266		180DA0266	180DAC0266
9/32	400DA0281		180DA0281	180DAC0281
19/64	400DA0297		180DA0297	180DAC0297
5/16	400DA0312		180DA0312	180DAC0312
21/64	400DA0328		180DA0328	180DAC0328
11/32	400DA0344		180DA0344	180DAC0344
23/64	400DA0359		180DA0359	180DAC0359
3/8	400DA0375		180DA0375	180DAC0375
25/64	400DA0391		180DA0391	180DAC0391
13/32	400DA0406		180DA0406	180DAC0406
27/64	400DA0422		180DA0422	180DAC0422
7/16	400DA0438		180DA0438	180DAC0438
29/64	400DA0453		180DA0453	180DAC0453
15/32	400DA0469		180DA0469	180DAC0469
31/64	400DA0484		180DA0484	180DAC0484
1/2	400DA0500		180DA0500	180DAC0500
33/64	400DA0516		180DA0516	180DAC0516
17/32	400DA0531		180DA0531	180DAC0531
35/64	400DA0547		180DA0547	180DAC0547
9/16	400DA0562		180DA0562	180DAC0562
37/64	400DA0578		180DA0578	180DAC0578
19/32	400DA0594		180DA0594	180DAC0594
39/64	400DA0609		180DA0609	180DAC0609
5/8	400DA0625		180DA0625	180DAC0625
41/64	400DA0641		180DA0641	180DAC0641
21/32	400DA0656		180DA0656	180DAC0656
43/64	400DA0672		180DA0672	180DAC0672
11/16	400DA0688		180DA0688	180DAC0688
45/64	400DA0703		180DA0703	180DAC0703
23/32	400DA0719		180DA0719	180DAC0719
47/64	400DA0734		180DA0734	180DAC0734
3/4	400DA0750		180DA0750	180DAC0750
49/64	400DA0766			
25/32	400DA0781			
51/64	400DA0797			
13/16	400DA0812			
53/64	400DA0828			
27/32	400DA0844			
55/64	400DA0859			
7/8	400DA0875			
57/64	400DA0891			
29/32	400DA0906			
59/64	400DA0922			
15/16	400DA0938			
61/64	400DA0953			
31/32	400DA0969			
63/64	400DA0984			
1"	400DA1000			

METRIC

COLLET CAPACITY	SERIES 180 DA	
	STANDARD CAT. NO.	STANDARD CAT. NO.
1.0	180DA010M	
1.5	180DA015M	
2.0	180DA020M	
2.5	180DA025M	
3.0	180DA030M	
3.5	180DA035M	
4.0	180DA040M	
4.5	180DA045M	
5.0	180DA050M	
5.5	180DA055M	
6.0	180DA060M	
6.5	180DA065M	
7.0	180DA070M	
7.5	180DA075M	
8.0	180DA080M	
8.5	180DA085M	
9.0	180DA090M	
9.5	180DA095M	
10.0	180DA100M	
10.5	180DA105M	
11.0	180DA110M	
11.5	180DA115M	
12.0	180DA120M	
12.5	180DA125M	
13.0	180DA130M	
13.5	180DA135M	
14.0	180DA140M	
14.5	180DA145M	
15.0	180DA150M	
15.5	180DA155M	
16.0	180DA160M	
16.5	180DA165M	
17.0	180DA170M	
17.5	180DA175M	
18.0	180DA180M	
18.5	180DA185M	
19.0	180DA190M	
19.5	180DA195M	
20.0	180DA200M	



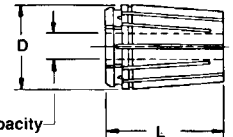
Additional savings available with collet sets, call for price and availability.

Cat. No.	Collet Series	Contents of Collet Sets
S183SET	180	17 COLLETS 1/4 THRU 3/4 IN 1/32 INCREMENTS
S184SET	180	33 COLLETS 1/4 THRU 3/4 IN 1/64 INCREMENTS
S403SET	400	21 COLLETS 3/8 THRU 1" IN 1/32 INCREMENTS
S404SET	400	41 COLLETS 3/8 THRU 1" IN 1/64 INCREMENTS

V-FLANGE CHUCK COLLETS

COLLET CAPACITY	150TG SERIES	COLLET CAPACITY	100TG SERIES		75TG SERIES		50TG SERIES		SINGLE ANGLE COLLET EXTRACTORS CAT. NO. 50TGCE 75TGCE 100TGCE 150TGCE
	STANDARD CAT. NO.		STANDARD CAT. NO.	COOLANT CAT. NO.	STANDARD CAT. NO.	COOLANT CAT. NO.	STANDARD CAT. NO.	COOLANT CAT. NO.	
3/8	150TG0375	3/64							
1/2	150TG0500	1/16			75TG0062		50TG0047		
33/64	150TG0516	5/64			75TG0078		50TG0062		
17/32	150TG0531	3/32	100TG0094		75TG0094		50TG0078		
35/64	150TG0547	7/64	100TG0109		75TG0109		50TG0094		
9/16	150TG0562	1/8	100TG0125		75TG0125		50TG0109		
37/64	150TG0578	9/64	100TG0141		75TG0141		50TG0125	50TGC0125	
19/32	150TG0594	5/32	100TG0156		75TG0156		50TG0141	50TGC0141	
39/64	150TG0609	11/64	100TG0172		75TG0172		50TG0156	50TGC0156	
5/8	150TG0625	3/16	100TG0188		75TG0188		50TG0172	50TGC0172	
41/64	150TG0641	13/64	100TG0203		75TG0203		50TG0188	50TGC0188	
21/32	150TG0656	7/32	100TG0219		75TG0219		50TG0203	50TGC0203	
43/64	150TG0672	15/64	100TG0234		75TG0234		50TG0219	50TGC0219	
11/16	150TG0688	1/4	100TG0250	100TGC0250	75TG0250	75TGC0250	50TG0234	50TGC0234	
45/64	150TG0703	17/64	100TG0266	100TGC0266	75TG0266	75TGC0266	50TG0250	50TGC0250	
23/32	150TG0719	9/32	100TG0281	100TGC0281	75TG0281	75TGC0281	50TG0266	50TGC0266	
47/64	150TG0734	19/64	100TG0297	100TGC0297	75TG0297	75TGC0297	50TG0281	50TGC0281	
3/4	150TG0750	5/16	100TG0312	100TGC0312	75TG0312	75TGC0312	50TG0297	50TGC0297	
49/64	150TG0766	21/64	100TG0328	100TGC0328	75TG0328	75TGC0328	50TG0312	50TGC0312	
25/32	150TG0781	11/32	100TG0344	100TGC0344	75TG0344	75TGC0344	50TG0328	50TGC0328	
51/64	150TG0797	23/64	100TG0359	100TGC0359	75TG0359	75TGC0359	50TG0344	50TGC0344	
13/16	150TG0812	3/8	100TG0375	100TGC0375	75TG0375	75TGC0375	50TG0359	50TGC0359	
53/64	150TG0828	25/64	100TG0391	100TGC0391	75TG0391	75TGC0391	50TG0375	50TGC0375	
27/32	150TG0844	13/32	100TG0406	100TGC0406	75TG0406	75TGC0406	50TG0391	50TGC0391	
55/64	150TG0859	27/64	100TG0422	100TGC0422	75TG0422	75TGC0422	50TG0406	50TGC0406	
7/8	150TG0875	7/16	100TG0438	100TGC0438	75TG0438	75TGC0438	50TG0422	50TGC0422	
57/64	150TG0891	29/64	100TG0453	100TGC0453	75TG0453	75TGC0453	50TG0438	50TGC0438	
29/32	150TG0906	15/32	100TG0469	100TGC0469	75TG0469	75TGC0469	50TG0453	50TGC0453	
59/64	150TG0922	31/64	100TG0484	100TGC0484	75TG0484	75TGC0484	50TG0469	50TGC0469	
15/16	150TG0938	1/2	100TG0500	100TGC0500	75TG0500	75TGC0500	50TG0484	50TGC0484	
61/64	150TG0953	33/64	100TG0516	100TGC0516	75TG0516	75TGC0516	50TG0500	50TGC0500	
63/64	150TG0969	17/32	100TG0531	100TGC0531	75TG0531	75TGC0531	50TG0516	50TGC0516	
31/32	150TG0984	35/64	100TG0547	100TGC0547	75TG0547	75TGC0547	50TG0531	50TGC0531	
63/64	150TG0984	9/16	100TG0562	100TGC0562	75TG0562	75TGC0562			
1"	150TG1000	37/64	100TG0578	100TGC0578	75TG0578	75TGC0578			
1-1/64	150TG1016	19/32	100TG0594	100TGC0594	75TG0594	75TGC0594			
1-1/32	150TG1031	39/64	100TG0609	100TGC0609	75TG0609	75TGC0609			
1-3/64	150TG1047	5/8	100TG0625	100TGC0625	75TG0625	75TGC0625			
1-1/16	150TG1062	41/64	100TG0641	100TGC0641	75TG0641	75TGC0641			
1-5/64	150TG1078	21/32	100TG0656	100TGC0656	75TG0656	75TGC0656			
1-3/32	150TG1094	43/64	100TG0672	100TGC0672	75TG0672	75TGC0672			
1-7/64	150TG1109	11/16	100TG0688	100TGC0688	75TG0688	75TGC0688			
1-1/8	150TG1125	45/64	100TG0703	100TGC0703	75TG0703	75TGC0703			
1-9/64	150TG1141	23/32	100TG0719	100TGC0719	75TG0719	75TGC0719			
1-5/32	150TG1156	47/64	100TG0734	100TGC0734	75TG0734	75TGC0734			
1-11/64	150TG1172	3/4	100TG0750	100TGC0750	75TG0750	75TGC0750			
1-3/16	150TG1187	49/64	100TG0766	100TGC0766					
1-13/64	150TG1203	25/32	100TG0781	100TGC0781					
1-7/32	150TG1219	51/64	100TG0797	100TGC0797					
1-15/16	150TG1234	13/16	100TG0812	100TGC0812					
1-1/4	150TG1250	53/64	100TG0828	100TGC0828					
1-17/64	150TG1266	27/32	100TG0844	100TGC0844					
1-9/32	150TG1281	55/64	100TG0859	100TGC0859					
1-19/64	150TG1297	7/8	100TG0875	100TGC0875					
1-5/16	150TG1312	57/64	100TG0891	100TGC0891					
1-21/64	150TG1328	29/32	100TG0906	100TGC0906					
1-11/32	150TG1344	59/64	100TG0922	100TGC0922					
1-23/64	150TG1359	15/16	100TG0938	100TGC0938					
1-3/8	150TG1375	61/64	100TG0953	100TGC0953					
1-25/64	150TG1391	31/32	100TG0969	100TGC0969					
1-13/32	150TG1406	63/64	100TG0984	100TGC0984					
1-27/64	150TG1422	1"	100TG1000	100TGC1000					
1-7/16	150TG1438								
1-29/64	150TG1453								
1-15/32	150TG1469								
1-31/64	150TG1484								
1-1/2	150TG1500								

SERIES	L	D
50TG	1.438	.760
75TG	1.844	1.062
100TG	2.375	1.379
150TG	3.000	2.001
200TG	3.250	2.671

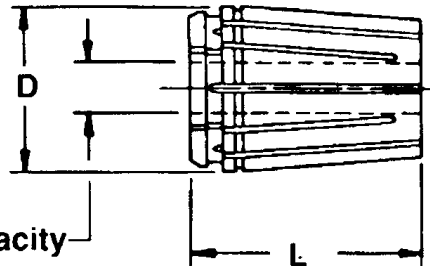


- PROVIDES TREMENDOUS GRIP AND ACCURACY FOR ALL DRILLING APPLICATIONS.
- 1/64" RANGE OF COLLAPSE ON STANDARD COLLETS.
- GRIPS ON BACK TAPER AND MARGIN OF DRILL TO PROVIDE FOR MAXIMUM FEED RATES AND MORE ACCURATE HOLES.
- MANUFACTURED TO DIN 6499 CLASS 2 ACCURACY.
- ALSO AVAILABLE WITH DIN 6499 CLASS 1 ACCURACY.
- COOLANT COLLETS CAN OPERATE AT UP TO 1500 P.S.I.
- COOLANT COLLETS DO NOT HAVE A COLLAPSING RANGE.

SINGLE ANGLE COLLET SETS

CAT. NO.	COLLET SERIES	CONTENTS OF COLLET SETS
S50TG1SET	50TG	32 COLLETS - 3/64 THRU 17/32 X 1/64 INCR.
S50TG2SET	50TG	15 COLLETS - 3/32 THRU 17/32 X 1/32 INCR.
S75TG1SET	75TG	45 COLLETS - 1/16 THRU 3/4 X 1/64 INCR.
S75TG2SET	75TG	23 COLLETS - 1/16 THRU 3/4 X 1/32 INCR.
S75TG3SET	75TG	33 COLLETS - 1/4 THRU 3/4 X 1/64 INCR.
S75TG4SET	75TG	17 COLLETS - 1/4 THRU 3/4 X 1/32 INCR.
S100TG1SET	100TG	59 COLLETS - 3/32 THRU 1" X 1/64 INCR.
S100TG2SET	100TG	30 COLLETS - 3/32 THRU 1" X 1/32 INCR.
S100TG3SET	100TG	41 COLLETS - 3/8 THRU 1" X 1/64 INCR.
S100TG4SET	100TG	21 COLLETS - 3/8 THRU 1" X 1/32 INCR.
S150TG2SET	150TG	33 COLLETS - 1/2 THRU 1-1/2 X 1/32 INCR.
S150TG4SET	150TG	25 COLLETS - 3/4 THRU 1-1/2 X 1/32 INCR.

COLLET CAPACITY	150TG SERIES	100TG SERIES		75TG SERIES		50TG SERIES	
	STANDARD CAT. NO.	STANDARD CAT. NO.	COOLANT CAT. NO.	STANDARD CAT. NO.	COOLANT CAT. NO.	STANDARD CAT. NO.	COOLANT CAT. NO.
1.50						50TG015M	
2.00						50TG020M	
2.50						50TG025M	
3.0						50TG030M	
3.5						50TG035M	
4.0						50TG040M	
4.5						50TG045M	
5.0						50TG050M	
5.5						50TG055M	
6.0						50TG060M	
6.5						50TG065M	
7.0						50TG070M	
7.5						50TG075M	
8.0						50TG080M	
8.5						50TG085M	
9.0						50TG090M	
9.5						50TG095M	
10.0						50TG100M	
10.5						50TG105M	
11.0						50TG110M	
11.5						50TG115M	
12.0	150TG120M					50TG120M	
12.5						50TG125M	
13.0	150TG130M					50TG130M	
13.5						50TG135M	
14.0	150TG140M						
14.5							
15.0	150TG150M						
15.5							
16.0	150TG160M						
16.5							
17.0							
17.5							
18.0	150TG180M						
18.5							
19.0	150TG190M						
19.5							
20.0	150TG200M						
20.5							
21.0	150TG210M						
21.5							
22.0	150TG220M						
22.5							
23.0							
23.5							
24.0							
24.5							
25.0	150TG250M						
25.5							
26.0	150TG260M						
27.0	150TG270M						
28.0	150TG280M						
30.0	150TG300M						
32.0	150TG320M						
34.0	150TG340M						
35.0	150TG350M						
36.0	150TG360M						
38.0	150TG380M						
40.0	150TG400M						



collet capacity

SERIES	L	D
50TG	1.438	.760
75TG	1.844	1.062
100TG	2.375	1.379
150TG	3.000	2.001
200TG	3.250	2.671

TG - TREMENDOUS GRIP METRIC SIZES

- PROVIDES TREMENDOUS GRIP AND ACCURACY FOR ALL DRILLING APPLICATIONS.
- 1/64" RANGE OF COLLAPSE.
- GRIPS ON BACK TAPER AND MARGIN OF DRILL TO PROVIDE FOR MAXIMUM FEED RATES AND MORE ACCURATE HOLES.
- MANUFACTURED TO DIN 6499 CLASS 2 ACCURACY.

Versatile: The TGST tap collets have the same overall dimensions as other Erickson TG style collets. The same collet chuck used to hold drills, reamers, endmills, etc. can now be used to hold taps as well.

Accurate: High performance TGST tap collets are manufactured to the same high quality standards as other Erickson collets. When assembled properly in an Erickson collet chuck, TGST tap collets are guaranteed to easily allow tapping of Class 3B threads.

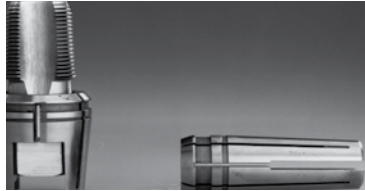
Tremendous Grip: When properly installed in an Erickson collet chuck, the TGST tap collet prevents axial or radial slippage of the tap or collet from the effects of torque.

Positive Drive: TGST tap collets grip on the tap square to positively drive the tap.

Economical Price: Compared to other solid tapping systems, the TGST tap collets provide high performance at a low cost.



STD TAP COLLET	D	L
50TGST	.760	1.438
75TGST	1.062	1.843
100TGST	1.379	2.375
150TGST	2.001	3.000



COOLANT TAP COLLET	D	L
50TGSTC	.760	1.438
75TGSTC	1.062	1.843
100TGSTC	1.379	2.375

NOTE: GRAY SHADED AREAS ARE PRICED ON APPLICATION.

HAND TAP SIZE	A TAP SHANK DIAMETER	C TAP SQUARE WIDTH	150TGST	100TGST SERIES		75TGST SERIES		50TGST SERIES	
			STANDARD CAT. NO.	STANDARD CAT. NO.	COOLANT CAT. NO.	STANDARD CAT. NO.	COOLANT CAT. NO.	STANDARD CAT. NO.	COOLANT CAT. NO.
#0-6	.141	.110		100TGST6		75TGST6		50TGST6	
#8	.168	.131		100TGST8		75TGST8		50TGST8	
#10	.194	.152		100TGST10		75TGST10		50TGST10	
#12	.220	.165		100TGST12		75TGST12		50TGST12	
#14-1/4	.255	.191		100TGST025	100TGSTC025	75TGST025	75TGSTC025	50TGST025	50TGSTC025
5/16	.318	.238		100TGST031	100TGSTC031	75TGST031	75TGSTC031	50TGST031	50TGSTC031
3/8	.381	.286		100TGST037	100TGSTC037	75TGST037	75TGSTC037	50TGST037	50TGSTC037
7/16	.323	.242		100TGST043	100TGSTC043	75TGST043	75TGSTC043	50TGST043	50TGSTC043
1/2	.367	.275		100TGST050	100TGSTC050	75TGST050	75TGSTC050	50TGST050	50TGSTC050
9/16	.429	.322		100TGST056	100TGSTC056	75TGST056	75TGSTC056	50TGST056	50TGSTC056
5/8	.480	.360		100TGST062	100TGSTC062	75TGST062	75TGSTC062	50TGST062	50TGSTC062
11/16	.542	.406		100TGST068	100TGSTC068	75TGST068	75TGSTC068		
3/4	.590	.442		100TGST075	100TGSTC075	75TGST075	75TGSTC075		
13/16	.652	.489		100TGST081	100TGSTC081	75TGST081	75TGSTC081		
7/8	.697	.523		100TGST087	100TGSTC087	75TGST087	75TGSTC087		
15/16	.760	.570		100TGST094	100TGSTC094				
1	.800	.600	150TGST100	100TGST100	100TGSTC100				
1-1/8	.896	.672	150TGST112	100TGST112	100TGSTC112				
1-1/4	1.021	.766	150TGST125						
1-3/8	1.108	.831	150TGST137						
1-1/2	1.233	.925	150TGST150						
1-5/8	1.305	.979	150TGST162						
1-3/4	1.430	1.072	150TGST175						
PIPE TAP SIZE									
1/16&1/8(SS)P	.313	.234		100TGST006P	100TGSTC006P	75TGST006P	75TGSTC006P	50TGST006P	
1/8(LS)P	.438	.328		100TGST012P	100TGSTC012P	75TGST012P	75TGSTC012P	50TGST012P	
1/4P	.563	.421		100TGST025P	100TGSTC025P	75TGST025P	75TGSTC025P		
3/8P	.700	.531		100TGST037P	100TGSTC037P	75TGST037P	75TGSTC037P		
1/2P	.688	.515		100TGST050P	100TGSTC050P	75TGST050P	75TGSTC050P		
3/4P	.906	.679	150TGST075P	100TGST075P	100TGSTC075P				
1P	1.125	.843	150TGST100P						
1-1/4P	1.313	.984	150TGST125P						
1-1/2P	1.500	1.125	150TGST150P						

TAP COLLET SETS

ALSO AVAILABLE FOR METRIC TAPS

Cat. No.	Collet Series	Contents of Collets Sets
S50TGSTSETS	50TGST	13 COLLETS #0 THRU 1/8" PIPE TAP LONG
S75TGSTSET	75TGST	20 COLLETS - #0 THRU 1/2" PIPE TAP
S100TGSTSET	100TGST	24 COLLETS - #0 THRU 3/4" PIPE TAP

Note: For best performance from your TGST collets, be sure the collet chuck cavity, collet, and locknut are clean and free of nicks, burrs, and other impediments. Use a light machine oil to lubricate the chuck cavity and collet. Tighten the 75TG locknut to 100 ft./lbs. and the 100TG locknut to 150 ft./lbs. of tightening torque.

INTERCHANGEABLE WITH UNIVERSAL ENGINEERING ACURA-FLEX* STYLE COLLETS

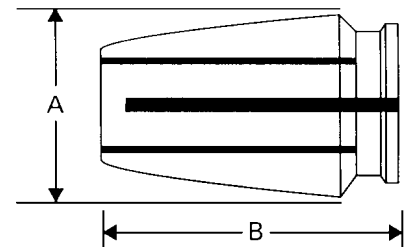
• ALSO AVAILABLE WITH SEALED SLOTS
FOR UP TO 650 PSI COOLANT FEED.



Collet Chucks for these holders are
available on request.

1/64 COLLAPSE RANGE PER COLLET

Collet Series	A	B
AF25	.438	1.000
AF38	.563	1.030
AF50	.720	1.160
AF75	1.130	2.020
AF100	1.446	2.500



COLLET SETS

Cat. No.	Collet Series	Contents of Collets Sets
AF25-SET	AF25	12 COLLETS-1/16 TO 1/4 BY 1/64 INCREMENTS
AF38-SET	AF38	20 COLLETS-1/16 TO 3/8 BY 1/64 INCREMENTS
AF50-SET	AF50	25 COLLETS-7/64 TO 1/2 BY 1/64 INCREMENTS
AF75-1SET	AF75	42 COLLETS-7/64 TO 3/4 BY 1/64 INCREMENTS
AF75-2SET	AF75	21 COLLETS-1/8 TO 3/4 BY 1/32 INCREMENTS
AF75-3SET	AF75	11 COLLETS-1/8 TO 3/4 BY 1/16 INCREMENTS
AF100-1SET	AF100	51 COLLETS-7/32 TO 1" BY 1/64 INCREMENTS
AF100-2SET	AF100	26 COLLETS-7/32 TO 1" BY 1/32 INCREMENTS
AF100-3SET	AF100	13 COLLETS-1/4 TO 1" BY 1/16 INCREMENTS

*ACURA-FLEX IS A REGISTERED TRADEMARK OF UNIVERSAL ENGINEERING.

Bore	Series AF100 Cat. No.	Series AF75 Cat. No.	Series AF50 Cat. No.	Series AF38 Cat. No.	Series AF25 Cat. No.
5/64				AF38-5/64	AF25-5/64
3/32				AF38-3/32	AF25-3/32
7/64		AF75-7/64	AF50-7/64	AF38-7/64	AF25-7/64
3MM				AF38-3	AF25-3
1/8		AF75-1/8	AF50-1/8	AF38-1/8	AF25-1/8
9/64		AF75-9/64	AF50-9/64	AF38-9/64	AF25-9/64
5/32		AF75-5/32	AF50-5/32	AF38-5/32	AF25-5/32
11/64		AF75-11/64	AF50-11/64	AF38-11/64	AF25-11/64
3/16		AF75-3/16	AF50-3/16	AF38-3/16	AF25-3/16
5MM		AF75-5	AF50-5	AF38-5	AF25-5
13/64	AF100-13/64	AF75-13/64	AF50-13/64	AF38-13/64	AF25-13/64
7/32	AF100-7/32	AF75-7/32	AF50-7/32	AF38-7/32	AF25-7/32
15/64	AF100-15/64	AF75-15/64	AF50-15/64	AF38-15/64	AF25-15/64
1/4	AF100-1/4	AF75-1/4	AF50-1/4	AF38-1/4	AF25-1/4
17/64	AF100-17/64	AF75-17/64	AF50-17/64	AF38-17/64	
7MM	AF100-7	AF75-7	AF50-7	AF38-7	
9/32	AF100-9/32	AF75-9/32	AF50-9/32	AF38-9/32	
19/64	AF100-19/64	AF75-19/64	AF50-19/64	AF38-19/64	
5/16	AF100-5/16	AF75-5/16	AF50-5/16	AF38-5/16	
21/64	AF100-21/64	AF75-21/64	AF50-21/64	AF38-21/64	
11/32	AF100-11/32	AF75-11/32	AF50-11/32	AF38-11/32	
9MM	AF100-9	AF75-9	AF50-9	AF38-9	
23/64	AF100-23/64	AF75-23/64	AF50-23/64	AF38-23/64	
3/8	AF100-3/8	AF75-3/8	AF50-3/8	AF38-3/8	
25/64	AF100-25/64	AF75-25/64	AF50-25/64		
13/32	AF100-13/32	AF75-13/32	AF50-13/32		
27/64	AF100-27/64	AF75-27/64	AF50-27/64		
7/16	AF100-7/16	AF75-7/16	AF50-7/16		
29/64	AF100-29/64	AF75-29/64	AF50-29/64		
15/32	AF100-15/32	AF75-15/32	AF50-15/32		
31/64	AF100-31/64	AF75-31/64	AF50-31/64		
1/2	AF100-1/2	AF75-1/2	AF50-1/2		
33/64	AF100-33/64	AF75-33/64			
17/32	AF100-17/32	AF75-17/32			
35/64	AF100-35/64	AF75-35/64			
9/16	AF100-9/16	AF75-9/16			
37/64	AF100-37/64	AF75-37/64			
19/32	AF100-19/32	AF75-19/32			
39/64	AF100-39/64	AF75-39/64			
5/8	AF100-5/8	AF75-5/8			
41/64	AF100-41/64	AF75-41/64			
21/32	AF100-21/32	AF75-21/32			
43/64	AF100-43/64	AF75-43/64			
11/16	AF100-11/16	AF75-11/16			
45/64	AF100-45/64	AF75-45/64			
23/32	AF100-23/32	AF75-23/32			
47/64	AF100-47/64	AF75-47/64			
3/4	AF100-3/4	AF75-3/4			
49/64	AF100-49/64	AF75-49/64			
25/32	AF100-25/32	AF75-25/32			
51/64	AF100-51/64				
13/16	AF100-13/16				
53/64	AF100-53/64				
27/32	AF100-27/32				
55/64	AF100-55/64				
7/8	AF100-7/8				
57/64	AF100-57/64				
29/32	AF100-29/32				
59/64	AF100-59/64				
15/16	AF100-15/16				
61/64	AF100-61/64				
31/32	AF100-31/32				
63/64	AF100-63/64				
1	AF100-1				



Balas Toolholding Formerly offered by Sandvik



Collet chucks for C3, C4, C6, C8 & C12 flexi-grip collets



Contact Somma for Balas / Sandvik flexi-grip collet chucks with straight, morse, automotive, B&S and steep taper shanks.

DRILL COLLETS

	SERIES C3	SERIES C4	SERIES C6	SERIES C8
COLLET	CAT. NO.	CAT. NO.	CAT. NO.	CAT. NO.
1/16"	C3-0063			
5/64"	C3-0078			
3/32"	C3-0094			
7/64"	C3-0109			
1/8"	C3-0125			
9/64"	C3-0141			
5/32"	C3-0156			
11/64"	C3-0172			
3/16"	C3-0188	C4-0188		
13/64"	C3-0203	C4-0203		
7/32"	C3-0219	C4-0219		
15/64"	C3-0234	C4-0234		
1/4"	C3-0250	C4-0250	C6-0250	
17/64"	C3-0266	C4-0266		
9/32"	C3-0281	C4-0281	C6-0281	
19/64"	C3-0297	C4-0297		
5/16"	C3-0313	C4-0313	C6-0313	
21/64"	C3-0328	C4-0328		
11/32"	C3-0344	C4-0344	C6-0344	
23/64"	C3-0359	C4-0359		
3/8"	C3-0375	C4-0375	C6-0375	C8-0375
25/64"		C4-0391		
13/32"		C4-0406	C6-0406	C8-0406
27/64"		C4-0422		
7/16"		C4-0438	C6-0438	C8-0438
29/64"		C4-0453		
15/32"		C4-0469	C6-0469	C8-0469
31/64"		C4-0484		
1/2"		C4-0500	C6-0500	C8-0500
17/32"			C6-0531	C8-0531
9/16"			C6-0563	C8-0563
19/32"			C6-0594	C8-0594
5/8"			C6-0625	C8-0625
21/32"			C6-0656	C8-0656
11/16"			C6-0688	C8-0688
23/32"			C6-0719	C8-0719
3/4"			C6-0750	C8-0750
25/32"				C8-0781
13/16"				C8-0813
27/32"				C8-0844
7/8"				C8-0875
29/32"				C8-0906
15/16"				C8-0938
31/32"				C8-0969
1"				C8-1000

"C" SERIES FLEXI-GRIP COLLETS

Previously offered by Sandvik

The popular C3, C4, C6 and C8 series Flexi-Grip drill collets along with the STC4 series tap collets are now available for immediate delivery.

Somma Tool has redesigned the C6 and C8 series collets which allows for much lower pricing than in the past. These redesigned collets are completely interchangeable with the old design.

C12 and C16 series collets are also available, price on application.

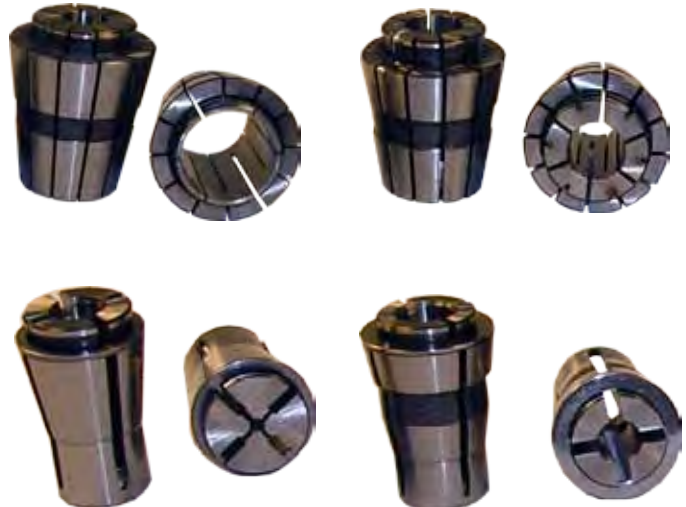
TAP COLLETS

HAND TAP	SERIES STC4
SIZE	CAT. NO.
#0-6	STC4-0141TH
#8	STC4-0168TH
#10	STC4-NO.10TH
#12	STC4-NO.12TH
1/4"	STC4-0250TH
9/32"	STC4-0281TH
5/16"	STC4-0313TH
3/8"	STC4-0375TH
7/16"	STC4-0438TH
15/32"	STC4-0469TH
1/2"	STC4-0500TH
9/16"	STC4-0563TH
5/8"	STC4-0625TH

PIPE TAP	SERIES STC4
SIZE	CAT. NO.
1/16"	STC4-0063PT
1/8"	STC4-0125PT

Collet Nuts, Washers & Thrust Bearings for these collets are available from stock.

1/64" collapsing range on all collets





Balas Workholding



Collets, Pushers and Pads

Contact Somma Tool Company for all Balas workholding products. Balas is the originator of

Martin Master Collets & "A" Style Master Pushers



Somma Tool offers

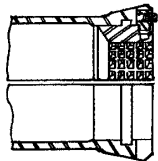
Conventional (solid) collets and feed fingers

Master collets and collet pads in the following styles:

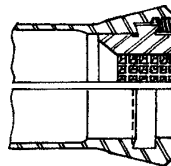
Martin, "CB", "CT", New Britain, Stationary, Draw In & Pushout Types

Master Feed Fingers (Pushers) in "A" "PB", and "PN" styles

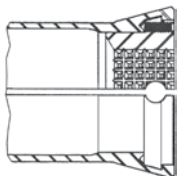
MARTIN MASTER COLLETS AND PADS



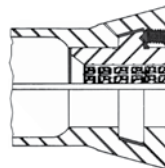
"CB" MASTER COLLETS AND PADS



NEW BRITAIN MASTER COLLETS AND PADS



"CT" MASTER COLLETS AND PADS



Call Somma with your machine brand, the capacity of the machine and the machine model number.

EX: 1" New Britain model 61. Describe the item that you need

to our knowledgeable sales staff, who will then determine the proper part number to quote.

Proudly made in the U.S.A.

FOR WARNER & SWASEY AUTOMATICS

MARTIN MASTER COLLETS AND PADS

"A" MASTER PUSHERS AND PADS

Machine Size	Model No.	MASTER COLLETS		PADS		
		Balas Number	W & S Reference No.	Balas Number	W & S Reference No.	Max. Capacity
0AB	M4415	1473	3300-1120	2003G	3300	Rd. 1-1/4 Hex. 1-1/16 Sq. 7/8
1AB	M3880	7200-1AB	2530 3897-1028	2200	2530	Rd. 2-1/4 Hex. 1-15/16 Sq. 1-19/32
2AB	M3925 M3380	1051B	3397-1112	2137	3397	Rd. 3" Hex. 2-9/16 Sq. 2-1/8
2AB	M3925 M3380	NOT MARTIN STYLE 3397-1021 3397-1021		2049	471	Rd. 2-1/2 Hex. 2-3/16 Sq. 1-3/4
3AB	M3995	1553	3999-1001	2047	3999	Rd. 4-1/2 Hex. 3-7/8 Sq. 3-9/16
3/4" Six Spindle	M3330	1472	3330	2001	3330	Rd. 13/16 Hex. 23/32 Sq. 19/32
1-1/4" Six Spindle	M3300	1473	3300-1120	2003G	3300	Rd. 1-1/4 Hex. 1-1/16 Sq. 7/8
1-3/4" Five Spindle	M2500	7199	2500-1120	2199	2500	Rd. 1-3/4 Hex. 1-17/32 Sq. 1-1/4
2-1/4" Five Spindle	M2530	7200-1AB	2530 1070	2200	2530	Rd. 2-1/4 Hex. 1-15/16 Sq. 1-19/32

Machine Size	Model No.	"A" MASTER PUSHER		PADS		
		Balas Number	W & S Reference No.	Balas Number	W&S Reference No.	Max. Capacity
0AB	M4415	4473	3300-1080	5102	3300	Rd. 1-1/4 Hex. 1-1/16 Sq. 7/8
1AB	M3880	4200	2530-1080	5200	2530	Rd. 2-1/8 Hex. 1-27/32 Sq. 1-1/2
2AB	M3925 M3380	4051	3398-1033	5069	3398	Rd. 2-13/16 Hex. 2-7/16 Sq. 1-31/32
3AB	M3995	4553	3998-1021	5026	3998	Rd. 4-7/16 Hex. 3-13/16 Sq. 3-3/8
3/4" Six Spindle	M3330	4472	3330-1130	5055	3330	Rd. 3/4 Hex. 11/16 Sq. 9/16
1-1/4" Six Spindle	M3300	4473	3300-1080	5102	3300	Rd. 1-1/4 Hex. 1-1/16 Sq. 7/8
1-3/4" Five Spindle	M2500	4199	2500-1130	5199	2500	Rd. 1-3/4 Hex. 1-17/32 Sq. 1-1/4
2-1/4" Five Spindle	M2530	4200	2530-1080	5200	2530	Rd. 2-1/8 Hex. 1-27/32 Sq. 1-1/2

Collet Pads and Steel pusher pads are available with round, hexagon or square holes in .001" increments, fractional or metric sizes.

FOR WARNER & SWASEY N/C TURRET LATHES



Steel pusher pads are available with round, hexagon or square holes in .001" increments, fractional or metric sizes.

Collet pads are available with round, round serrated, hexagon or square holes in .001" increments, fractional or metric sizes.



"A" MASTER PUSHERS AND PADS (PULLERS)

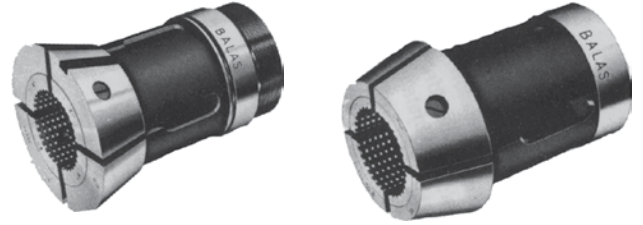
Machine Size	Model No.	"A" MASTER PUSHERS		PADS		
		Balas Number	W & S Reference No.	Balas Number	W&S Reference No.	Max. Capacity
SC15 (3-1/2")	M4820	4065	4838-1200	5006	4838	Rd. 3"
SC15 (4-5/8")	M4820	4065	4838-1200	5006	4838	Rd. 3"
		4553	3998-1021	5026	3998	Rd. 4"
1SC	M5000	4200	2530-1080	5200	2530	Rd. 2-1/8"
2SC	M5040	4065	4838-1200	5006	4838	Rd. 3"
2SCL	M5080	4065	4838-1200	5006	4838	Rd. 3"
		4553	3998-1021	5026	3998	Rd. 4"

MARTIN MASTER COLLETS AND PADS

Machine Size	Model No.	MASTER COLLETS		PADS		
		Balas Number	W&S Reference No.	Balas Number	W&S Reference No.	Max. Capacity
SC15 (3-1/2")	M4820	1558	4836-1200	2010	4836	Rd. 2-5/8 Hex. 2-3/16 Sq. 1-13/16
SC15 (4-5/8")	M4820	1559	4826-1200	2157	4826	Rd. 4" Hex. 3-1/2 Sq. 2-7/8
1SC	M5000	1566	5014-10062"	2200	2530	Rd. 2-1/4 Hex. 1-15/16 Sq. 1-19/32
		1567	5034-10012-1/4"	2200	2530	Rd. 3"
2SC	M5040	1569	5054-1003	2137	3397	Hex. 2-9/16 Sq. 2-1/8
2SCL	M5080	1571	5094-1004	2016	5094	Rd. 4-1/2 Hex. 3-7/8 Sq. 3-3/16

V-FLANGE CHUCK COLLETS

Collet pads are available with round, round serrated, hexagon or square holes in .001" increments, fractional or metric sizes.



MASTER COLLETS AND PADS

Machine Size	Model No.	MASTER COLLETS		PADS		
		Balas Number	W&S Reference No.	Balas Number	W&S Reference No.	Max. Capacity
No. 2MC	M-2600	7552	2609-1007	2552	2609	Rd. 1-1/4
	M-2650	—	2611-1001	—	—	Hex. 1-1/16 Sq. 7/8
No. 3 16" EC	M-1200	7219	461-1002	2023	461	Rd. 1-1/2 Hex. 1-5/16 Sq. 1"
	M-4630	7267	462-1002			
No. 2 No. 2EC	M-2070	7211	1369-1008	2023	461	Rd. 1-1/2 Hex. 1-5/16 Sq. 1-1/16
	M-1330					
No. 3 (1-3/4")	M-1200	7220	1369-1003	2064	1129	Rd. 1-3/4 Hex. 1-1/2 Sq. 1-1/4
	M-4630					
No. 4 (2")	M-4640	7215	1129-1002	2064	1129	Rd. 2" Hex. 1-3/4 Sq. 1-3/8
	M-2240	7224	1129-1016			
No. 4	M-4640	7224	1929-1039	2023	461	Rd. 1-1/2 Hex. 1-5/16 Sq. 1-1/16
	M-2240					
No. 5 1A (2-1/2")	M-2250	7229	471-1001	2049	471	Rd. 2-1/2 Hex. 2-3/16 Sq. 1-3/4
	M-3400		2199-1002			
No. 5 1A (2")	M-2250	1249-1018	1249-1018	2064	1129	Rd. 2" Hex. 1-3/4 Sq. 1-3/8
	M-3400	1249-1023	1249-1023			
No. 5 (3")	M-4660	7339	4669-1001	2339	4669	Rd. 3" Hex. 2-5/8 Sq. 2-1/8
No. 5 (2-1/2")	M-4660	4-4669-1008	4669-1008	2049	471	Rd. 2-1/2 Hex. 2-3/16 Sq. 1-3/4
No. 5 (4-1/2")	M-2770	2779-1001	2779-1001	2204	2779	Rd. 4-1/2 Hex. 3-7/8 Sq. 3-3/16
No. 5 (2-1/2")	M-2770	2779-1031	2779-1031	2049	471	Rd. 2-1/2 Hex. 2-3/16 Sq. 1-3/4
No. 6OS	M-382	7232	387-1028	2085	185	Rd. 2" Hex. 1-11/16 Sq. 1-3/8
No. 5 2-1/4 No. 6NS	M-342	7233-1	357-1003	2065	357	Rd. 2-1/4 Hex. 1-15/16 Sq. 1-9/16
	M-432		357-1003			
	M-340	7233	357-1008			

Now Available!

**Tooling & Repair Parts
Warner & Swasey
Call Somma.**

CHUCK JAWS & PADS FOR SADDLE TYPE TURRET LATHES

Machine Size	Model No.	MASTER CHUCK JAWS		JAW PADS		
		W & S Master Chuck Jaw Reference No.	Balas Number	W & S Reference No.	Balas Number	Capacity
2A (2-1/2")	M-492	493-1016	7105	493	2104	Rd. 2-1/2 Sq. 1-3/4 Hex. 2-1/8
1A (3")	M-3400 M-470	404-1008	7222	404	2096	Rd. 3-1/4 Sq. 2-3/8 Hex. 2-3/4
2A (3-1/2")	M-3470 M-510	404-1008	7222	404	2096	Rd. 3-1/4 Sq. 2-3/8 Hex. 2-3/4
2A (4-1/2") 3A (4-1/2")	M-3470 M-3500 M-1950	533-1008	7226	533	2226	Rd. 4-1/2 Sq. 3-3/16 Hex. 3-7/8
3A (6")	M-3500 M-1950	1959-7	7230	1959	2230	Rd. 6" Sq. 4-1/2 Hex. 5-3/16

SEE PAGE 126 FOR ORDERING INSTRUCTIONS

PUSHERS AND PADS FOR BAR FEED MECHANISMS ON TURRET LATHES

Machine Size	Model No.	"A" MASTER PUSHER			PADS	
		Balas Number	Balas Number	Max. Capacity	Balas Number	Max. Capacity
No. 1 No. 1 No. 2 Hand No. 2 EC Hand	M-1270 M-2620 M-1330 M-2660	4009	5001	Rd. 35/64 Hex. 1/2 Sq. 13/32		
No. 2 Power No. 2 Power	M-1330 M-2660	4238-L 4238-M 4238-H	5055	Rd. 13/16 Hex. 23/32 Sq. 9/16		

Steel pusher pads are available with round, hexagon or square holes in .001" increments, fractional or metric sizes.

SEE PAGE 126 FOR ORDERING INSTRUCTIONS



STOCK DELIVERY
Keep extra sets in your toolroom for immediate use - Can be used over and over by boring out to larger sizes!!
SOFT MACHINABLE - 4150 STEEL
Install pad into master collet - Load into machine - insert pins Chuck down - Drill and finish bore - Remove pins!!
CENTER HOLE 5/16" DIAMETER.

EMERGENCY COLLET PADS

Machine Size	W & S Master Collet No.	Balas Master Collet No.	Balas Number
No. 3	461-1002	7219	2023E
No. 4	1129-1002	7215	2064E
No. 5-1A	471-1001	7229	2049E
No. 5-3"	4669-1001	7339	2339E
No. 5-4 1/2"	2779-1001	2779-1001	2204E
0AB	3300-1120	1473	2003E
1-1/4" Six Spindle	3300-1120	1473	2003E
1AB	3897-1028	7200-1AB	2200E
2-1/4" Five Spindle	2530-1070	7200-1AB	2200E
2AB	3397-1112	1051	2137E
2SCL	5094-1004	1571	2016E

SQUARE LUGS FOR MARTIN MASTER COLLET PADS

COMPLETE LUG AND SCREW SET	
BALAS NUMBER	SIZE OF LUG
8003	3/8 Sq.
8004-1	5/16 Sq.
8015-3	1/2 Sq.
8067	3/4 Sq.

SCREW PLUGS ONLY	
BALAS NUMBER	THREAD SIZE
8003-SCR	1/16 Pipe
8004-1-SCR	1/4/2028
8015-3-SCR	1/8 Pipe
8067-SCR	1/4 Pipe

"L" WRENCHES FOR "A" STYLE MASTER PUSHERS

Balas No.	8005-1	8006-1	8022-1	8022-2	8022-3	8029-1
Width of Wrench	.395/.400	.460/.465	.335/.340	.305/.310	.365/.370	.270/.275

"L" WRENCHES FOR DIAL ADJUSTABLE PUSHERS WITH KEY SHAPE END

Balas No.	8022-1-A	8029-1-A
Width of Wrench	.335/.340	.270/.275
Width of Key	1/8	1/8

NON-LOOSENING SCREWS FOR COLLET PADS

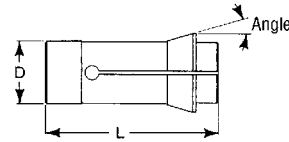
Balas Number	For Pad Nos.	Thread Size
SCR-2023	2023	5/16-24 x 5/16
SCR-2049	2049,2339	3/8-24 x 15/32
SCR-2064	2064,2552	5/16-24 x 13/32
SCR-2096	2096,2204,2226	5/16-18 x 9/16
SCR-2104	2104	5/16-18 x 3/8

SCREWS FOR "CB" MASTER COLLETS

Balas Number	Thread Size
9080-1	1/2-20 X 5/8
9080-2	3/8-24 X 9/16
9080-3	3/8-24 X 11/32
9080-4	5/16-24 X 11/32

V-FLANGE CHUCK COLLETS

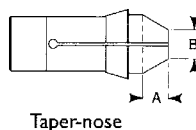
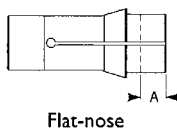
These Swiss-type Collets are ground to precise size and TIR to meet precision machining requirements with a standard accuracy that rivals the industry.



Machine Tool Builder	Collet Model No.	Cat. No.	Head Angle	D		L	RATED COLLET CAPACITY			
				Bearing Diameter	Overall Length		Round Smooth Min./Max.	Round Serrated Min./Max.	Hex Min./Max.	Square Min./Max.
Tsugami	BS38	4735	15° 15'	1.889" (47.98)	3.937" (100)	.008" to 1.562" (.20 to 39.67)	-	.250" to 1.344" (6.35 to 34.14)	.250" to 1.093" (6.35 to 27.76)	
Tornos	F20-201	4709	15°	.7864" (19.99)	2.126" (54)	.008" to .499" * (.20 to 12.67)	.500" to .630" * (12.70 to 16.00)	.0625" to .545" (1.58 to 13.84)	.0625" to .445" (1.58 to 11.30)	
Maier	F32-221	3731	15°	1.260" (32)	2.953" (75)	.200" to 1.062" (5.08 to 26.98)	-	.250" to .813" (6.35 to 20.65)	.250" to .750" (6.35 to 19.05)	
Peterman, Strohm, Tornos, Tsugami, Citizen	TF8	4701	15° 35'	.3148" (8)	1.614" (41)	.008" to .250" (.20 to 6.35)	-	.0625" to .216" (1.58 to 5.49)	.0625" to .176" (1.58 to 4.47)	
Peterman, Strohm, Tornos, Citizen, Star	TF10	4703	20°	.3935" (10)	1.870" (48)	.008" to .281" (.20 to 7.14)	-	.0625" to .243" (1.58 to 6.17)	.0625" to .198" (1.58 to 5.03)	
Tornos	TF13	4707	16°	.5115" (13)	2.520" (64)	.008" to .394" (.20 to 10.01)	-	.0625" to .341" (1.58 to 8.66)	.0625" to .279" (1.58 to 7.09)	
Citizen, Maier, Star, Tornos, Tsugami	TF15	4607	16°	.5903" (15)	2.520" (64)	.008" to .499" * (.20 to 12.67)	1/2" Only * (12.7)	.0625" to .433" (1.58 to 10.99)	.0625" to .353" (1.58 to 8.96)	
Citizen, KSI, Hanwha, Tornos	TF16	4609	16°	.6297" (16)	2.520" (64)	.008" to .499" * (.20 to 12.67)	1/2" Only * (12.7)	.0625" to .433" (1.58 to 10.99)	.0625" to .353" (1.58 to 8.96)	
Maier, Star, Tornos, Tsugami, Traub	TF20	4611	16°	.7869" (19.99)	2.638" (67)	.008" to .499" * (.20 to 12.67)	.500" to .625" * (12.70 to 15.87)	.0625" to .541" (1.58 to 13.74)	.0625" to .442" (1.58 to 11.22)	
Tsugami	TF24	4713	15° 20'	.9367" (23.79)	2.440" (62)	.008" to .499" * (.20 to 12.67)	.500" to .688" * (12.70 to 17.48)	.0625" to .595" (1.58 to 15.11)	.0625" to .486" (1.58 to 12.34)	
Citizen, Hanwha, Hardinge, KSI, Maier, Star, Tornos, Tsugami, Methods	TF25	4613	16°	.9840" (25)	3.032" (77)	.008" to .499" * (.20 to 12.67)	.500" to .813" * (12.70 to 20.65)	.0625" to .704" (1.58 to 17.88)	.0625" to .574" (1.58 to 14.57)	
Citizen, Hanwha, Hardinge, Star, Tornos, Tsugami, Methods	TF30	4615	16°	1.1808" (30)	3.149" (80)	.008" to .499" * (.20 to 12.67)	.500" to 1" * (12.70 to 25.40)	.093" to .866" (2.36 to 21.99)	.093" to .707" (2.36 to 17.95)	
Star, Tornos	TF34	4617	16°	1.3382" (34)	3.154" (80.11)	.008" to .499" * (.20 to 12.67)	.500" to 1.125" * (12.70 to 28.57)	.093" to .974" (2.36 to 24.73)	.093" to .795" (2.36 to 20.19)	
Citizen, Hanwha, KSI, Maier, Star, Tornos, Tsugami, Methods	TF37	4619	16°	1.4563" (37)	3.622" (92)	.008" to .499" * (.20 to 12.67)	.500" to 1.265" * (12.70 to 32.13)	.093" to 1.095" (2.36 to 27.81)	.093" to .895" (2.36 to 22.73)	
Citizen	TF37SP	4629	16° 7'	1.456" (36.98)	3.622" (92)	.008" to 1.250" (.20 to 31.75)	-	.093" to 1.082" (2.36 to 27.48)	.093" to .883" (2.36 to 22.43)	
Tsugami	TF43	4737	16°	1.693" (43)	3.622" (92)	.008" to 1.496" (.20 - 38.00)	-	.250" to 1.296" (6.35 to 32.92)	.250" to 1.058" (6.35 to 26.87)	
KSI	TF44	OA	16.5°	1.732" (44)	3.622" (92)	.200" to 1.490" (5.08 to 37.85)	-	.250" to 1.250" (6.35 to 31.75)	.250" to .875" (6.35 to 22.23)	
Star	TF48 same as B42	3719	14° 50'	1.889" (48)	3.688" (94)	.008" to .499" * (.20 to 12.67)	.500" to 1.657" ** (12.70 to 42.09)	1/32" to 1-13/32" (.79 to 35.71)	1/32" to 15/32" (.79 to 29.36)	
Tornos	161	4711	15°	1.1808" (30)	2.560" (65)	.008" to .499" * (.20 to 12.67)	.500" to 1.000" * (12.70 to 25.40)	.093" to .866" (2.36 to 22.00)	.093" to .707" (2.36 to 17.96)	
Hardinge	166	4677	15°	1.259" (32)	2.559" (65)	.008" to .499" * (.20 to 12.67)	.500" to 1.125" * (12.70 to 28.57)	.250" to .969" (6.35 to 24.61)	.250" to .797" (6.35 to 20.24)	
Hardinge	S16-HMS	4621	15° 40'	.9372" (24)	2.441" (62)	.008" to .686" (.20 to 17.47)	-	.0625" to .595" (1.58 to 15.11)	.0625" to .486" (1.58 to 12.34)	
Hardinge	S20-HM	4623	16°	1.1021" (28)	3.032" (77)	.008" to .499" * (.20 to 12.67)	.500" to .813" * (12.70 to 20.65)	.0625" to .704" (3.17 to 17.88)	.0625" to .574" (3.17 to 14.57)	
Hardinge	S25-HM	4625	16°	1.2989" (33)	3.149" (80)	.008" to .499" * (.20 to 12.67)	.500" to 1.031" * (12.70 to 26.19)	.093" to .892" (2.36 to 22.65)	.093" to .729" (2.36 to 18.51)	
Hardinge	S25-HS	4627	16°	1.1808" (30)	3.149" (80)	.008" to 1" (.20 to 25.4)	-	.093" to .866" (2.36 to 21.99)	.093" to .707" (2.36 to 17.95)	

* Round collets in sizes of .500" and over have circular serrations. **TF48 collets in sizes of .500" and over have square serrations. Millimeters in parentheses ()

Extended-Nose Collets feature added nose length, flat or tapered, for doing pick-off work or to compensate for tooling interferences. Please provide collet model (above), hole size, length of extension (A) required, and nose diameter (B) when ordering. The (B) dimension must be a minimum of .125" larger than the hole size.



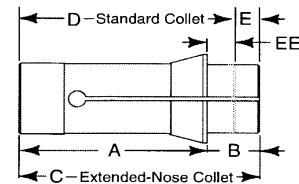
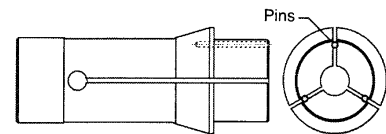


An **Emergency Collet** may be used when a standard collet is not in your current inventory. It can be machined to the desired bore size and used until a hardened collet arrives.

The Extended-Nose Emergency Collet features added nose length. This feature may be necessary when doing pick-off work or to compensate for tooling interferences. The head of the collet is heat-treated to 40 Rockwell for easy machining.

Standard Emergency Collets

Style	Collet Part Number	A	B	C	D	EE	Pin Part Number
TF15	4681-12-12-000000	2.284" (58)	—	—	2.520" (64)	.236" (5.99)	7723-00-00-000000 1/8" Dia. x 3/8" Long
TF16	4683-12-12-000000	2.284" (58)	—	—	2.520" (64)	.236" (5.99)	7723-00-00-000000 1/8" Dia. x 3/8" Long
TF20	4685-12-12-000000	2.362" (60)	—	—	2.638" (67)	.276" (7.01)	7723-00-00-000000 1/8" Dia. x 3/8" Long
TF25	4687-12-12-000000	2.638" (67)	—	—	3.032" (77)	.394" (10.00)	7723-00-00-000000 1/8" Dia. x 3/8" Long
TF30	4689-12-12-000000	2.760" (70)	—	—	3.149" (79.98)	.389" (9.88)	7723-00-00-000000 1/8" Dia. x 3/8" Long
TF34	4691-12-12-000000	2.760" (70)	—	—	3.154" (80.11)	.394" (10.00)	7723-00-00-000000 1/8" Dia. x 3/8" Long
TF37	4693-12-12-000000	3.230" (82)	—	—	3.622" (92)	.392" (9.95)	7723-00-00-000000 1/8" Dia. x 3/8" Long
S16-HMS	4695-12-12-000000	2.165" (55)	—	—	2.441" (62)	.276" (7.01)	7723-00-00-000000 1/8" Dia. x 3/8" Long
S25-HS	4697-12-12-000000	2.677" (68)	—	—	3.149" (80)	.472" (11.98)	7723-00-00-000000 1/8" Dia. x 3/8" Long
0166	4677-12-12-000000	2.325" (59)	—	—	2.559" (65)	.234" (6)	7723-00-00-000000 1/8" Dia. x 3/8" Long



Extended-Nose Emergency Collets

Style	Collet Part Number	A	B	C	D	E	Pin Part Number
TF15	4681-12-00-000000	2.284" (58)	.424" (10.76)	2.708" (68.78)	2.520" (64)	.188" (4.77)	7722-00-00-000000 1/8" Dia. x 43/64" Long
TF16	4683-12-00-000000	2.284" (58)	.424" (10.76)	2.708" (68.78)	2.520" (64)	.188" (4.77)	7722-00-00-000000 1/8" Dia. x 43/64" Long
TF20	4685-12-00-000000	2.362" (60)	.464" (11.78)	2.826" (71.78)	2.638" (67)	.188" (7.31)	7724-00-00-000000 1/8" Dia. x 47/64" Long
TF25	4687-12-00-000000	2.638" (67)	.644" (16.35)	3.282" (83.36)	3.032" (77)	.250" (6.35)	7730-00-00-000000 1/8" Dia. x 57/64" Long
TF30	4689-12-00-000000	2.760" (70)	.889" (22.58)	3.649" (92.68)	3.149" (79.98)	.500" (12.70)	7726-00-00-000000 1/8" Dia. x 1-11/64" Long
TF34	4691-12-00-000000	2.760" (70)	.894" (22.70)	3.654" (92.81)	3.154" (80.11)	.500" (12.70)	7726-00-00-000000 1/8" Dia. x 1-11/64" Long
TF37	4693-12-00-000000	3.230" (82)	.892" (22.65)	4.122" (104.69)	3.622" (92)	.500" (12.70)	7726-00-00-000000 1/8" Dia. x 1-11/64" Long
S16-HMS	4695-12-00-000000	2.165" (55)	.464" (11.78)	2.629" (66.78)	2.441" (62)	.188" (4.77)	7724-00-00-000000 1/8" Dia. x 47/64" Long
S25-HS	4697-12-00-000000	2.677" (68)	.972" (24.68)	3.649" (92.68)	3.149" (80)	.500" (12.70)	7728-00-00-000000 1/8" Dia. x 1-17/64" Long
0166	4677-12-00-000000	2.325" (59)	.984" (25)	3.309" (84.05)	2.559" (65)	.750" (19.05)	7726-00-00-000000 1/8" Dia. x 1/64" Long

Note: Emergency Collets have a 1/16" (1.58mm) pilot hole

Column "A" metric dimensions are rounded to nearest millimeter

Column "B" and "C" are the exact conversion of the inch dimensions

Millimeters in parentheses ()

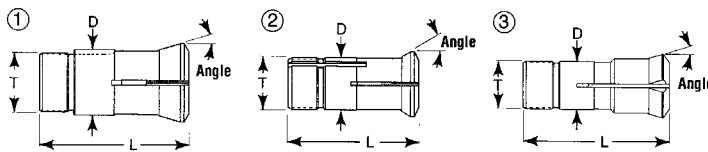


These round Swiss Guide Bushings are carbide-lined to keep the stock clean and unmarked. Specials are available in hardened steel, Meehanite lining, angular & zig-zag slotted and extruded shapes.



Machine Tool Builder	Guide Bushing			Head Angle	D Bearing Diameter	L Overall Length	T Thread Diameter	GUIDE BUSHING CAPACITY			
	Fig.	Model No.	Cat. No.					Carbide-Lined		Hardened Steel	
								Round Min./Max.	Hexagon Min./Max.	Square Min./Max.	
Citizen, Tornos, Peterman	2	0201	4639	30°	.9447" (24)	2.410" (61.21)	M24 x 1	.0625" to 5/8" (1.58 to 15.87)	.125" to .541" (3.17 to 13.74)	.125" to .442" (3.17 to 11.22)	
Citizen®, Hanwha, Hardinge, KSI, Maier, Tsugami, Star	1	CD25	4651	10°	1.3384" (34)	3.445" (87.5)	M34 x 1	3/32" to 11/32" (2.38 to 26.19)	.093" to .893" (2.36 to 22.68)	.093" to .729" (2.36 to 18.52)	
Citizen, Peterman	1	PD4	4675	16°	.3542" (9)	1.727" (44)	M8 x .75	.030" to .188" (.76 to 4.79)	.0625" to .163" (1.58 to 4.14)	.0625" to .133" (1.58 to 3.37)	
Hardinge	1	S20HGB	4657	16°	1.1810" (30)	2.756" (70)	M28 x 1	3/32" to 13/16" (2.38 to 20.63)	.125" to .684" (3.17 to 17.37)	.125" to .558" (3.17 to 14.17)	
Citizen, Hanwha, KSI, Maier, Tsugami, Bechler, Strohm, Tornos	2	SD125R	4633	30°	.7085" (18)	2.370" (60.20)	M18 x 1	1/32" to 1/2" (.79 to 12.70)	.0625" to .433" (1.58 to 10.99)	.0625" to .353" (1.58 to 8.96)	
Star	1	SNC15	4637	12° 30'	.8266" (21)	2.263" (57.5)	M18 x 1	1/32" to 9/16" (.79 to 14.28)	.125" to .487" (3.17 to 12.36)	.125" to .397" (3.17 to 10.08)	
Tsugami	1	STM38	4739	16°	1.889" (47.98)	3.220" (81.79)	M46 x 1	1/4" to 1.496" (6.35 to 40)	1/4" to 1.295" (6.35 to 32.89)	1/4" to 1.058" (6.35 to 26.87)	
Tornos	3	T-200	4719	20° 5'	1.3383" (34)	5.920" (150.36)	M32 x 1.5	.1093" to 1.000" (2.77 to 25.40)	.1875" to .866" (4.76 to 21.99)	.1875" to .707" (4.76 to 17.95)	
Citizen, Tornos (CAM), Tsugami	1	TD7	4679	16°	.4329" (11)	2.120" (53.85)	M10 x .75	.030" to .250" (.76 to 6.35)	.0625" to .219" (1.59 to 5.56)	.0625" to .177" (1.59 to 4.5)	
Citizen, Star, Tornos, Bechler	1	TD10	4631	16°	.6298" (16)	2.377" (60.37)	M14 x 1	1/32" to 13/32" (.79 to 10.31)	.0625" to .351" (1.58 to 8.91)	.0625" to .287" (1.58 to 7.28)	
Tsugami, Tornos	1	TD20	4635	16°	.8660" (22)	2.686" (68.22)	M19 x 1	1/16" to 17/32" (1.58 to 13.49)	.0625" to .460" (1.58 to 11.68)	.0625" to .375" (1.58 to 9.52)	
Maier, Star, Tsugami, Traub	1	TD20R	4641	16°	.8660" (22)	2.686" (68.22)	M22 x 1	1/16" to 5/8" (1.58 to 15.87)	.0625" to .541" (1.58 to 13.74)	.0625" to .442" (1.58 to 11.22)	
Tsugami, Tornos, Bechler	2	TD25	4647	30°	1.1022" (28)	3.228" (82)	M25 x 1	3/32" to 25/32" (2.38 to 19.84)	.125" to .649" (3.18 to 16.48)	.125" to .530" (3.18 to 13.46)	
Maier, Hardinge, Star	1	TD25S	4649	16°	1.1022" (28)	3.228" (82)	M25 x 1	3/32" to 25/32" (2.38 to 19.84)	.125" to .649" (3.17 to 16.48)	.125" to .530" (3.17 to 13.46)	
Citizen, Hanwha, KSI	1	TD25NS	4659	16°	1.1022" (28)	3.228" (82)	M25 x 1	.0900" to 25/32" (2.28 to 19.84)	.125" to .649" (3.17 to 16.48)	.125" to .530" (3.17 to 13.46)	
Tsugami	1	TD26	4733	16°	1.0236" (26)	3.031" (76.99)	M25 x 1	1/16" to .781" (1.58 to 19.84)	1/16" to .676" (1.58 to 17.17)	1/16" to .552" (1.58 to 14.02)	
Citizen, Maier, Tsugami, Tornos	2	TD32	4653	20° 40'	1.6526" (41.29)	3.220" (81.79)	M40 x 1	3/16" to 1-17/64" (4.76 to 32.15)	.250" to 1.0826" (6.35 to 27.50)	.250" to .883" (6.35 to 22.42)	
Hanwha, KSI, Star, Tornos	1	TD32S	4655	16°	1.6526" (41.29)	3.232" (82.09)	M40 x 1	3/16" to 1-17/64" (4.76 to 32.15)	.250" to 1.0826" (6.35 to 27.50)	.250" to .883" (6.35 to 22.42)	
KSI	3	TD38	O/A	16°	1.811" (46)	3.622" (92)	M45 x 1	1/4" to 17/16" (6.35 to 36.50)	.250" to 1.250" (6.35 to 31.75)	.250" to 1.000" (6.35 to 25.40)	
Citizen, Tornos	2	TSD20	4645	30°	1.2597" (32)	2.805" (71.24)	M32 x 1	.060" to 13/16" (1.52 to 20.63)	.125" to .703" (3.17 to 17.85)	.125" to .574" (3.17 to 14.57)	
Hardinge, Tsugami	1	TSG-20R	4643	16°	.9054" (23)	2.835" (72)	M22 x 1	.030" to 11/16" (.76 to 17.46)	.0625" to .595" (1.58 to 15.11)	.0625" to .486" (1.58 to 12.34)	

Millimeters in parentheses ()

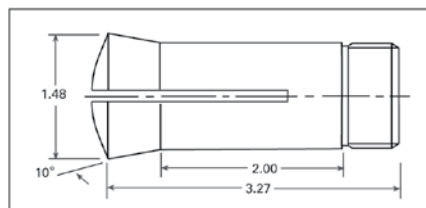
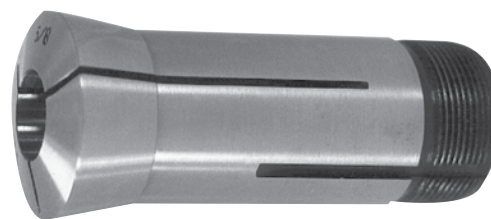


5C COLLET SYSTEM INCH SIZES

ROUND COLLETS			
SIZE	PART#	SIZE	PART#
1/16	5C-1/16RNS	37/64	5C-37/64RNS
5/64	5C-5/64RNS	19/32	5C-19/32RNS
3/32	5C-3/32RNS	39/64	5C-39/64RNS
7/64	5C-7/64RNS	5/8	5C-5/8RNS
1/8	5C-1/8RNS	41/64	5C-41/64RNS
9/64	5C-9/64RNS	21/32	5C-21/32RNS
5/32	5C-5/32RNS	43/64	5C-43/64RNS
11/64	5C-11/64RNS	11/16	5C-11/16RNS
3/16	5C-3/16RNS	45/64	5C-45/64RNS
13/64	5C-13/64RNS	23/32	5C-23/32RNS
7/32	5C-7/32RNS	47/64	5C-47/64RNS
15/64	5C-15/64RNS	3/4	5C-3/4RNS
1/4	5C-1/4RNS	49/64	5C-49/64RNS
17/64	5C-17/64RNS	25/32	5C-25/32RNS
9/32	5C-9/32RNS	51/64	5C-51/64RNS
19/64	5C-19/64RNS	13/16	5C-13/16RNS
5/16	5C-5/16RNS	53/64	5C-53/64RNS
21/64	5C-21/64RNS	27/32	5C-27/32RNS
11/32	5C-11/32RNS	55/64	5C-55/64RNS
23/64	5C-23/64RNS	7/8	5C-7/8RNS
3/8	5C-3/8RNS	57/64	5C-57/64RNS
25/64	5C-25/64RNS	29/32	5C-29/32RNS
13/32	5C-13/32RNS	59/64	5C-59/64RNS
27/64	5C-27/64RNS	15/16	5C-15/16RNS
7/16	5C-7/16RNS	61/64	5C-61/64RNS
29/64	5C-29/64RNS	31/32	5C-31/32RNS
15/32	5C-15/32RNS	63/64	5C-63/64RNS
31/64	5C-31/64RNS	1"	5C-1RNS
1/2	5C-1/2RNS	1-1/64	5C-1-1/64RNS
33/64	5C-33/64RNS	1-1/32	5C-1-1/32RNS
17/32	5C-17/32RNS	1-3/64	5C-1-3/64RNS
35/64	5C-35/64RNS	1-1/16	5C-1-1/16RNS
9/16	5C-9/16RNS		

HEX COLLETS	
SIZE	PART#
1/8	5C-1/8HNS
3/16	5C-3/16HNS
1/4	5C-1/4HNS
5/16	5C-5/16HNS
3/8	5C-3/8HNS
7/16	5C-7/16HNS
1/2	5C-1/2HNS
9/16	5C-9/16HNS
5/8	5C-5/8HNS
11/16	5C-11/16HNS
3/4	5C-3/4HNS
13/16	5C-13/16HNS
7/8	5C-7/8HNS

SQUARE COLLETS	
SIZE	PART#
1/8	5C-1/8SNS
3/16	5C-3/16SNS
1/4	5C-1/4SNS
5/16	5C-5/16SNS
3/8	5C-3/8SNS
7/16	5C-7/16SNS
1/2	5C-1/2SNS
9/16	5C-9/16SNS
5/8	5C-5/8SNS
11/16	5C-11/16SNS
3/4	5C-3/4SNS



5C COLLET SETS

PART#	SIZE
5C-7SET	7 Pc. Set - 1/4-1" in 1/8" Incr.
5C-15SET	15 Pc. Set - 1/8-1" in 1/16" Incr.
5C-17SET	17 Pc. Set - 1/16" - 1-1/16" in 1/16" Incr.
5C-33SET	33 Pc. Set - 1/16" - 1-1/16" in 1/32" Incr.
5C-65SET	65 Pc. Set - 1/16" - 1-1/16" in 1/64" Incr.

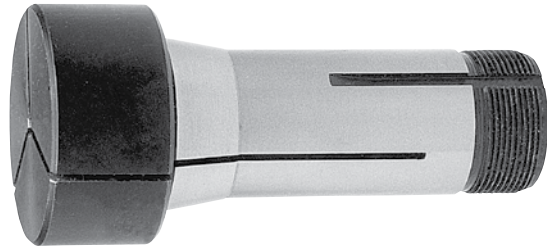
5C COLLET SYSTEM METRIC SIZES

SIZE	PART#	SIZE	PART#	SIZE	PART#	SIZE	PART#
3mm	5C-3RNS	9mm	5C-9RNS	15mm	5C-15RNS	21mm	5C-21RNS
4mm	5C-4RNS	10mm	5C-10RNS	16mm	5C-16RNS	22mm	5C-22RNS
5mm	5C-5RNS	11mm	5C-11RNS	17mm	5C-17RNS	23mm	5C-23RNS
6mm	5C-6RNS	12mm	5C-12RNS	18mm	5C-18RNS	24mm	5C-24RNS
7mm	5C-7RNS	13mm	5C-13RNS	19mm	5C-19RNS	25mm	5C-25RNS
8mm	5C-8RNS	14mm	5C-14RNS	20mm	5C-20RNS	26mm	5C-26RNS

5C COLLET ACCESSORIES

5C STEP COLLET

PART. NO.	DESCRIPTION
5C-2STEP	2" 5C STEP COLLET
5C-3STEP	3" 5C STEP COLLET
5C-4STEP	4" 5C STEP COLLET
5C-5STEP	5" 5C STEP COLLET
5C-6STEP	6" 5C STEP COLLET



5C COLLET ADJUSTABLE BACKSTOP

PART NO.	DESCRIPTION
5C-STOP	ADJUSTABLE BACKSTOP FOR 5C COLLETS



5C EMERGENCY COLLET

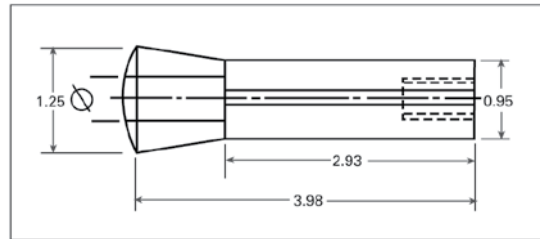
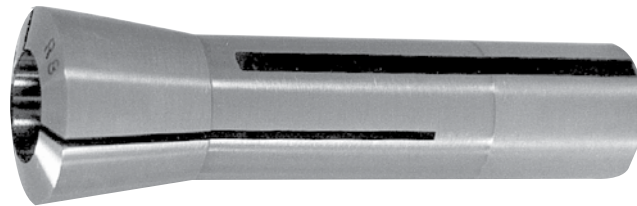
PART NO.	DESCRIPTION
5CE	5C EMERGENCY COLLET WITH PINS

R8 COLLETS INCH AND METRIC SIZES

R8 COLLETS	
SIZE	PART#
1/16	R8-1/16RNS
3/32	R8-3/32RNS
1/8	R8-1/8RNS
5/32	R8-5/32RNS
3/16	R8-3/16RNS
7/32	R8-7/32RNS
1/4	R8-1/4RNS
9/32	R8-9/32RNS
5/16	R8-5/16RNS
11/32	R8-11/32RNS
3/8	R8-3/8RNS
13/32	R8-13/32RNS
7/16	R8-7/16RNS
15/32	R8-15/32RNS
1/2	R8-1/2RNS
17/32	R8-17/32RNS
9/16	R8-9/16RNS
19/32	R8-19/32RNS
5/8	R8-5/8RNS
21/32	R8-21/32RNS
11/16	R8-11/16RNS
23/32	R8-23/32RNS
3/4	R8-3/4RNS
7/8	R8-7/8RNS

R8 COLLET SETS

PART#	SIZE
R8-6SET	6 Pc. Set - 1/8-3/4" in 1/8" Incr.
R8-11SET	11 Pc. Set - 1/8-3/4" in 1/16" Incr.
R8-23SET	23 Pc. Set - 1/16-3/4" in 1/32" Incr.

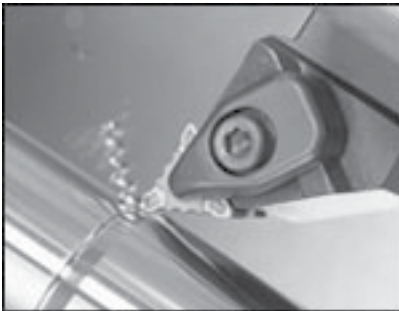


R8 ROUND COLLETS - METRIC SIZES

SIZE	PART#	SIZE	PART#	SIZE	PART#	SIZE	PART#
3mm	R8-3RNS	8mm	R8-8RNS	13mm	R8-13RNS	18mm	R8-18RNS
4mm	R8-4RNS	9mm	R8-9RNS	14mm	R8-14RNS	19mm	R8-19RNS
5mm	R8-5RNS	10mm	R8-10RNS	15mm	R8-15RNS	20mm	R8-20RNS
6mm	R8-6RNS	11mm	R8-11RNS	16mm	R8-16RNS	21mm	R8-21RNS
7mm	R8-7RNS	12mm	R8-12RNS	17mm	R8-17RNS	22mm	R8-22RNS

Somma Tool is now a full line distributor for Sumitomo High Precision Turning Tools and Carbide, CBN, and Diamond Inserts. Sumitomo offers a complete line of Swiss Tooling, steel and carbide Boring Bars, solid carbide cutoff & grooving holders at very competitive pricing. Somma Tool has found Sumitomo carbide inserts to be superior to the major brands previously used in our shop. Call Somma with your current insert manufacture's part number, grade and application to receive a quote. We believe you will be very pleased with the quality, performance and price.

Call Somma to request a full line Sumitomo catalog.



Turning/Boring Systems

Improve surface finishes and productivity using products from our wide range of turning and boring systems. Our ever-evolving line features the ingenuity and rigidity to handle your most demanding application requirements.



Milling Systems

Solid carbide end mills are ideal for machining most steels and hard-to-cut materials such as Inconel®, stainless steels, titanium alloys and tool and die steels. Sumitomo has established itself as a world leader in the aerospace industry with this group of products. Our wide range of indexable end mills feature advanced, high performance characteristics. They are available to perform a variety of operations, including shoulder milling, slotting, ramping, pocketing, drilling and helical boring.



Drill Systems

Sumitomo leads the industry in the design and application of solid carbide drills for steel, cast iron and exotic material drilling applications.



CBN and PCD Grades

Through advanced metallurgy research, Sumitomo provides a wide variety of polycrystalline cubic boron nitrides (CBN) and polycrystalline diamonds (PCD) that contribute to the advancement of technology and cutting tool performance. Ideal for high-speed, high-hardness applications, our CBN can take on alloy steels with hardnesses greater than 45 Rockwell C, as well as a variety of types of cast irons and cast steels. Our PCD grades DA2200, DA150, DA200 and DA90 provide the toughness of cemented carbide and wear resistance of diamond. It was specially developed for machining of non-ferrous materials. This truly revolutionary grade is available for turning, milling, boring and other demanding machining applications.

