

# Somma

**TOOL COMPANY, INC.**

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**PREMIER TOOLING FOR THE  
MANUFACTURING INDUSTRY**

*since 1939*

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TITLE	PAGE	TITLE	PAGE
<b>Broaching, Internal</b>		<b>Reaming</b>	
Swiss Adjustment Free Broach Tool Holders.....	8	ER Collet Floating Reamer Holder .....	113
Swiss Broaching Heads for ER Collet Chucks .....	7	DA Collet Floating Reamer Holder .....	114
Adjustable Broach Tool Holders .....	10	Bushing Style Adjustable Offset Holder.....	115
CNC Adj. Free Broach Tool Holders .....	11	VDI Shank ER Collet Floating Reamer Holder.....	114
Index Punch Broaching .....	17	Morse Taper Shank ER Collet Holder.....	115
Driven Broach Tool Holder for Multi's .....	11	Solid Carbide Reamers .....	116-117
Broaches 8mm Dia x 28mm (#SW).....	9	<b>Swiss Mini Shank Tooling</b>	
Broaches: 8mm Dia. x 1-1/4" (#00) .....	12-14	Series 6 Holders & Diamond Inserts .....	57-63
Broaches: 1/2" Dia. x 1-3/4" (#2).....	12-14	Series 8 Holders & Diamond Inserts .....	65,66,76
Broaches: 3/4" Dia. x 2-3/4" (#HD).....	15 & 16	Series 50 Holders & Diamond Inserts .....	67-69
Gages; Set Up & Go / No Go .....	16	Series 10 Holders & Triangular Inserts.....	70-71
<b>Broaching, External</b>		Series 16 Holders & Triangular Inserts.....	72-73
External Broach Tool Holders .....	18	Series 20 Holders & Triangular Inserts.....	74-75
Driven Broach Tool Holder for Multi's .....	11	<b>Forming &amp; Shaving</b>	
External Broaches .....	19	RQC Quick Change Resharpenable .....	20-29
<b>Drilling</b>		Form & Shave Tool System	
Davenport and B&S Drill Holders .....	118-119	STAI Economical Quick Change .....	30
Quick Change ER Collet System .....	120-123	Form Tool System	
ER Collet, Collet Chucks .....	124-128	Form Tool Calculation Program.....	31
ER Collet Double Ended Collet Chucks .....	129	Spindle Speed/Surface Feet Calculator .....	31
DA & TG Collet, Collet Chucks .....	130-132	Dovetail Form Tool Holders .....	32-33
Automotive Threaded Shank Collet Chuck .....	119	Dovetail Form Tool Blanks.....	34-35
Drill Speeder & Air Speeder .....	133	Dovetail Shave Tool Blanks .....	36
Solid Carbide Drills .....	134-138	Dovetail Checking Gages.....	35
Flat Drill Blanks .....	139	Dovetail Sharpening Fixtures .....	35
Drill Blanks .....	139	Davenport Circ. Tools & Holders .....	38-39
<b>End Working</b>		B&S Circ. Form Tool Holder .....	40
Davenport Countersink.....	86	B&S Circ. Blanks and Form Tools .....	41-44
Countersinking .....	85-90	B&S Universal Tool Post .....	45
Spot Drilling .....	84	Rectangular & Square Form Tool Blanks .....	45
Recess Tool Holders & Tool Blanks .....	101	<b>Box Turning</b>	
Tube End Forming Tooling .....	91-93	Tangi-Square Insert Box Turning.....	78-79
Outside Deburring & Chamfering .....	94-97	Triangular Insert Box Turning .....	80-81
Inside Deburring & Chamfering .....	98-99	H.S.S. Tool Bit Box Turning .....	80-81
<b>Tapping</b>		Rectangular Insert L.H. Box Turning .....	80-81
Tapping / Re-Tapping 2nd Operation Mach.....	106-107	Carbide Insert Tool Bit for L.H. Turning .....	77
Tension / Compression & Tension Only.....	108-109	R&L Turning Tools .....	82-83
ER Collet Tap Holders		Replacement Rolls & Pins.....	77
Non-Releasing Tap Holders.....	110	<b>Endmills</b>	
Releasing Tap Holders .....	111-112	Solid Carbide.....	181-185
Releasing Acorn Die Holders .....	112		

TITLE	PAGE	TITLE	PAGE
<b>Cutting-Off</b>		<b>Collets / Tool Holding</b>	
Davenport & B&S Circ. C/O .....	46-47	ER8 to ER50 Drill Collets .....	156-160
C/O Blade Holders .....	47	ER11 to ER40 Tap Collets .....	161
T-Type C/O Blades .....	48-50	Erickson® "DA" Drill Collets .....	162-163
Acme C/O Blades .....	50	50TG to 150TG Drill Collets .....	164-167
Johnson Hollow Ground C/O Blades.....	51	50TG to 150TG Tap Collets.....	168
Twin Tip, Empire Style.....	50	Universal® Acura-Flex Drill Collets .....	155
Square Shank Holders W/ Indexable Inserts .....	52-53	Universal® Double Taper Drill Collets .....	161
Dav. & B&S Circ. Indexable Square Insert C/O.....	55	Sandvik® /Balas "C" Series Drill & Tap Collets .....	169
Indexable Square C/O Inserts .....	54	5C Collets .....	170-171
Dav. Circ. Resharpenable Insert C/O Hldr.....	55	R8 Collets .....	171
<b>Knurling</b>		<b>Bushings / Tool Holding</b>	
Davenport Knurling Tools .....	102	Split Drill Bushings .....	142-144
Self Centering Straddle Knurl Tools.....	102	Split Tap Bushings .....	145
Adjustable Straddle Knurl Tools.....	103	B&S Slotting Bushings .....	145
Swiss In-Line & T Style Straddle Knurl Tools .....	104	Type "B" Tool Holder Bushings.....	146-151
Bump Style Single Knurl Tools .....	105	Type "C" Tool Holder Bushings.....	151
Knurls .....	102	Type "DD" & "L" Tool Holder Bushings .....	152
<b>Taper Shank Tooling</b>		Type "LB" & "LBF" Tool Holder Bushings.....	153
Cat. 40 "TG" Collet Chucks .....	173	Type "J" & "Z" Tool Holder Bushings.....	154
Cat. 40 "ER" & "DA" Collet Chucks .....	174	Boring Bar Sleeves.....	141
Cat. 40 Balanced Precision Chuck.....	176	Taper Drill Sockets .....	141
Cat. 40 Straight Shank Adapter.....	177	<b>Workholding</b>	
Cat. 40 Milling Chuck .....	178	Bar Pullers.....	186-187
Cat. 40 Endmill Adapter.....	179	Balas Master Collets, Master Pushers .....	188-191
Cat. 50 "ER" & "DA" Collet Chucks .....	174	& Pads for Warner & Swasey Machines	
Cat. 50 "TG" Collet Chucks .....	175	Swiss Machine Spindle Collets .....	192-193
Cat. 50 Balanced Precision Chuck.....	176	Swiss Carbide Lined Guide Bushings .....	194
Cat. 50 Straight Shank Adapter.....	177	<b>Miscellaneous B&amp;S</b>	
Cat. 50 Milling Chuck .....	178	Cam Blanks .....	140
Cat. 50 Endmill Adapter.....	179	Cam Roller & Pins .....	140
BT40 & 50 Precision & Milling Chucks .....	178	Deburring Tool for Slotting Attachments .....	141

**Customer Service**  
**109 Scott Road Waterbury, CT 06705 USA**  
**(203)-753-2114 • Fax (203)-756-5489**  
**Email: sales@sommatool.com**

*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.*

SALES / SALES ENGINEERS				BROACHING/ TECHNICAL SUPPORT		QC INSERT TOOLING/ TECHNICAL SUPPORT	
NAME	Ext.#	NAME	Ext.#	NAME	Ext.#	NAME	Ext.#
Matt Ciullo	105	Gina Somma	104	Dick Noti	108	Rob Somma	111
Jerry Somma	106	Raphael Santiago	107	Abel Rodrigues	110	Rick Grante	115

### THE BEST COMBINATION BAR PULLER CUT-OFF TOOL FOR CNC

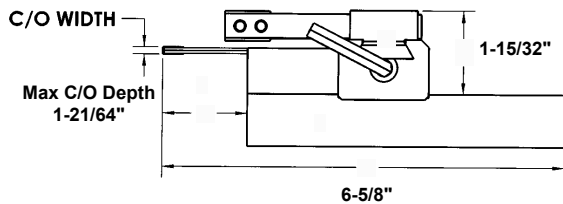
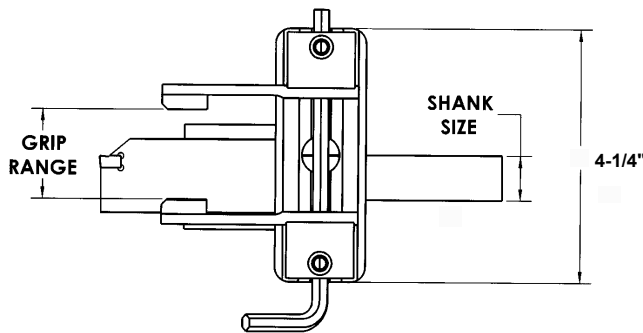
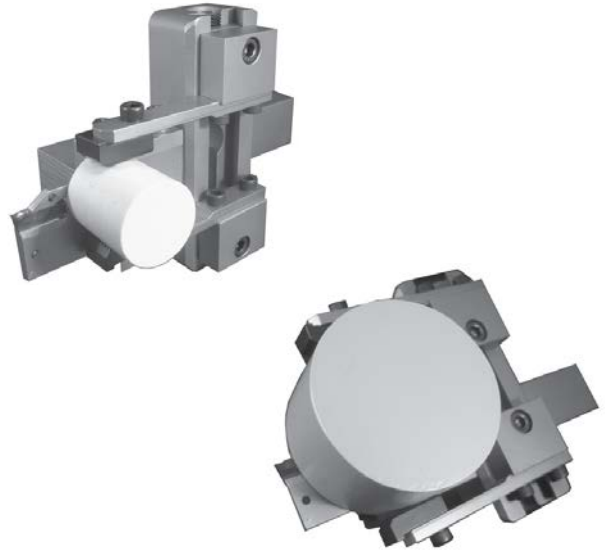
Exclusive features of the Somma design:

**Synchronous adjustment;**

Single wrench turn adjusts both gripping jaws  
 Infinite size adjustment within the gripping range  
 Quick change over adjustment to the next job

**New modular design;**

Allows easy mounting and removal in any wedge lock turret  
 Also allows mounting of the shank in any position in the tool holder pocket



- Gripping range 1/8" to 3-1/4"
- Saves a turret position
- Reduces cycle time - no need to index between cut off and pulling operations
- One complete turn of screw moves both jaws in or out exactly .100"
- Jaw carriers can also be individually adjusted to simplify centering with cut off blade
- Designed to accept competitors' jaws and jaw fingers
- Can be purchased with or without the Cut-Off holder
- Will accept most major brands of Cut-Off holders\*  
 \* (requires modification of the Cut-Off holder)

**REPLACEMENT CUT-OFF BLADE**

CAT. NO.	C/O WIDTH
CO-HLDR-BP*	0.118

\*Sumitomo Brand

(INCLUDES STANDARD INSERT AND INSERT WRENCH)

SQUARE SHANK SIZE	CAT. NO. COMBO. HLDR With CUTOFF	CAT. NO. BAR PULLER Without CUTOFF
3/4"	BPCO/0.750	BPCO-1
1"	BPCO/1.000	BPCO-2
20mm	BPCO/20MM	BPCO-20
25mm	BPCO/25MM	BPCO-25

Designed for right hand use only

**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

**Compatible Cut-Off Holder Brands\***

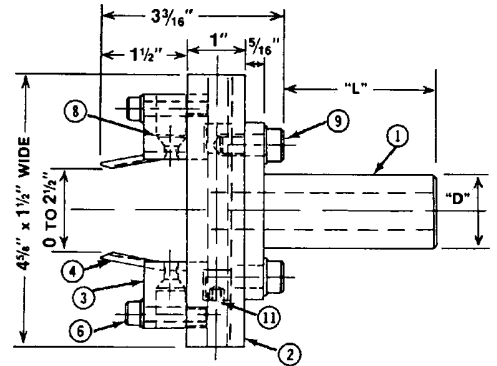
Brand Name	Brand Part Number
Sumitomo	STFH32-3
Iscar	SGFH32-3
Kennametal	DSB5340110
Sandvik	151.2-25-30
Manchester	340-110
Ingersol	TGB 32-3

\*Usage requires cutting blade to length

### BAR PULLER FOR CNC LATHES



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"



- 1/16 DIA MIN TO UP TO 2-1/2" DIA MAX ADJUSTABLE PULLING RANGE FOR BP00 UP TO BP4
- 1/16 DIA MIN TO UP TO 3" DIA MAX. ADJUSTABLE PULLING RANGE FOR BP5
- NO-SPRINGS, TENSION BUILT INTO JAWS FOR UP TO 250 LBS. OF GRIPPING PRESSURE
- JAWS ARE EASILY REPLACED

#### BAR PULLER PARTS

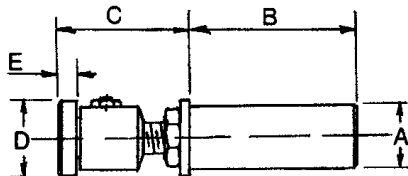
PART NO.	CAT. NO.
1. Shank	Call
2. Body	BP4-2 BP5-2
3. Slide	BP4-3 BP4-4
4. Jaw	
6. Slide Clamp Screw & Washer	VFDH0-5
8. Jaw Screw	BP4-8
9. Clamp Screw & Washer	FDH2-4
11. Adjusting Screw	BP4-11

#### 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

#### ADJUSTABLE REVOLVING STOPS WITH INTERCHANGEABLE HEADS

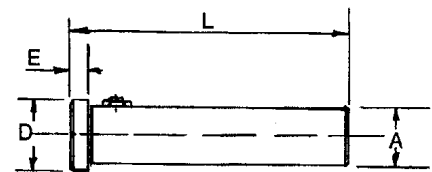
- STOP WASHER - PREVENTS PUSHBACK
- SMALL HOLE IN FACE OF HEAD - ELIMINATES LENGTH VARIATIONS



#### 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

#### REVOLVING STOPS WITH INTERCHANGEABLE HEADS



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

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
RSA2-40S	1-5/8	1/4	HARD
RSA2-4S	1-1/8	3/4	SOFT
RSA2-40SS	1-5/8	3/4	SOFT

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



## 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

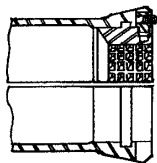
Conventional (solid) collets and feed fingers

Master collets and collet pads in the following styles:

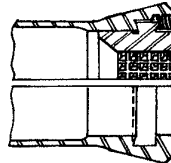
Martin, "CB", "CT", New Britain, Stationary, Draw In & Pushout Types

Master Feed Fingers (Pushers) in "A" "PB", and "PN" styles

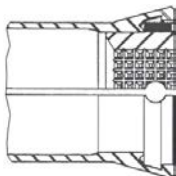
#### MARTIN MASTER COLLETS AND PADS



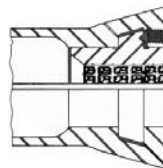
#### "CB" MASTER COLLETS AND PADS



#### 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

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		2049	471	Rd. 2-1/2 Hex. 2-3/16 Sq. 1-3/4
3AB	M3995	1553	3397-1021 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

#### "A" MASTER PUSHERS AND PADS

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

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	7243	2042-1001	2241	820	Rd. 4"
	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					
No. 5 (2-1/2")	M-2250	1249-1023	1249-1023	2049	471	Rd. 2-1/2 Hex. 2-3/16 Sq. 1-3/4
	M-1740					
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-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
	M-92					
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		2066	



**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 6 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
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 6 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"	3300-1120	1473	2003E
Six Spindle			
1AB	3897-1028	7200-1AB	2200E
2-1/4"	2530-1070	7200-1AB	2200E
Five Spindle			
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

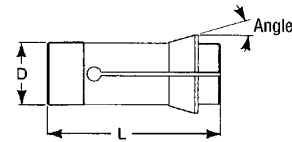
### NON-LOOSENING SCREWS FOR COLLET PADS

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

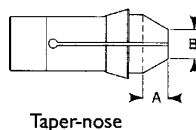
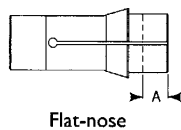
Balas Number	Thread Size
9080-1	1/2-20 X 5/8
9080-2	3/8-24 X 9/16
9080-3	3/8-24 X 11/32
9080-4	5/16-24 X 11/32

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	Bearing Diameter	Overall Length	RATED COLLET CAPACITY			
						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.

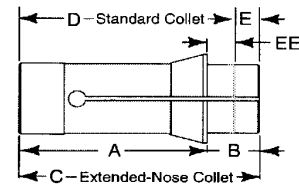
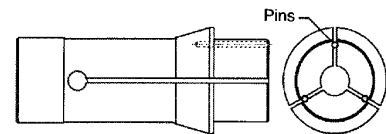


An **Emergency Collet** may be used when a standard collet is not in your current inventory. It can be machined to the desired bore size and used until a hardened collet arrives.

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

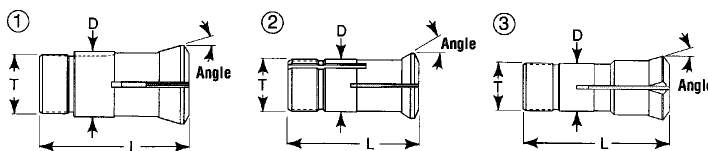
Millimeters in parentheses ( )



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 ( )



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