

Number One For Rotary Broaching!

SLATER TOOLS™

ROTARY BROACHING™



BROACHES

**Square · Hex · Double Hex
Serration · Torx® Type · J500**

Order Factory Direct: 586-465-5000

24 Hour Fax: 586-465-3030

Monday thru Friday - 8 a.m. till 5 p.m. EST

44725 Trinity Drive · Clinton Township, MI 48038

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LIT-BRT-05-10

At Slater Tools, our Primary Focus is to design, manufacture and deliver the finest, most competitive tools for the turning industry. We will continue doing this by combining qualified dedicated people with state of the art technology.

Our service and quality is the best! From the moment you call us

Our Goal Is To Please.

Our courteous sales staff is trained to answer your questions and to assist your tooling requirements.

Order Factory Direct 8 a.m. to 5 p.m. EST. Monday thru Friday. Submit by fax 24 hours a day. Stock orders placed before 5 p.m. qualify for shipment that same day.

Credit / Payment Terms Same day shipping available for all approved credit. Call for faxable credit forms. All sales subject to terms and conditions of Slater Tools. Accounts are net 30 days, Credit Card, or C.O.D.

For your convenience Slater Tools accepts: Visa , MasterCard, American Express and various purchase cards.

Support Data Maintenance and trouble-shooting data are shipped with each holder order.

Replacement Parts Available from stock for immediate delivery.

Factory Repairs Price quotes and delivery time will be submitted for your approval.

Return Policy Full credit for all unused standard catalog items returned within 30 days of invoiced date. All returns require a return goods authorization number.

Non-Stock Orders allow 3-5 working days on hex and square internal broach tools and all external broach tools. Allow 5-7 working days for all other broach tool orders.

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Welcome to the world of Rotary Broaching . . .

An exclusive, fast, amazing and accurate method of producing internal and external polygon forms on the end of a workpiece while the machine spindle is rotating.

The Rotary Broach Tool Holder is for use on any type CNC or manual turning, milling, drilling or screw machine.

The Rotary Broach Tool holder has an internal live spindle which holds an end cutting broach tool. The Holder along with the cutting broach tool is designed for producing polygon forms while the machine spindle is rotating in a forward or reverse direction.

In a turning or screw machine, the Holder is mounted stationary while its internal live spindle along with the end cutting broach tool rotate with and are driven by the workpiece rotation. While in contact with the work piece, the end cutting broach tool's pressure and contacting points are continually changing contact points on the workpiece (wobbling type action) making broached forms easily produced.

In a milling or drilling machine the Holder is mounted into the machine and rotates with the machine spindle while its internal live spindle with the end cutting broach tool remain stationary upon contact with the workpiece. While the machine spindle is rotating, the end cutting broach tool's pressure and contacting points are continually changing contact points on the workpiece (wobbling type action) making broached forms easily produced.

Form sizes can be broached up to 2 inches in aluminum, 1-1/2 inches in brass and 1 inch in steel. Of course many other materials and depths have been successfully achieved and this is only a partial list of reference.

The practical forming length of rotary broaching is up to 1-1/2 times the distance across flats or the diameter of the inscribed circle profile to be broached.

Internal and external forms require a pilot diameter and a 1/8" chamfer.

(Refer to page 4 for further information)

Cycle times for rotary broaching forms are rapid (Refer to page 5)

Rotary Broach Tool Holders and Broaches are sold separately, and are available from stock for immediate delivery.

Special order size and form broaches require a copy of part drawing stating part material and type and capacity of machine, model number of Rotary Broach Holder and broach tool mounting size. For your convenience, Slater Tools has provided you with easy order faxable forms on pages 21-23.

Upon receipt of special order request, a quote will be submitted for your consideration.

Broach Tool Materials Available:
M-2 H.S.S. (standard) or **P-M4 H.S.S.** (Premium)
Broach Tool Coatings Available:
Titanium Nitride (TiN) or
Titanium Carbonitride (TiCN)

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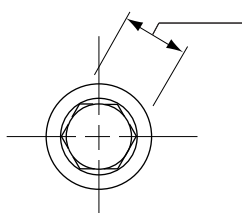
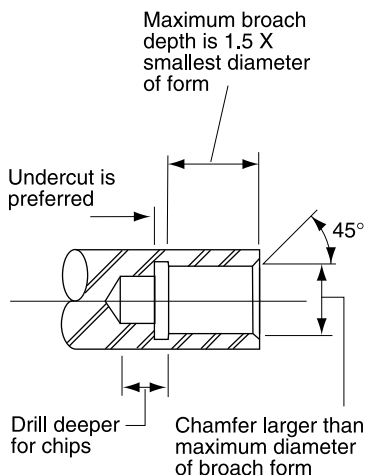
Internal Broaches – Approximate Thrust Lbs. for Broaching

Form	Material						
	Aluminum (6061) 60 Brinell	F.C. Brass (360) 78 Brinell	Screw Stk. (12L14) 163 Brinell	Alloy (8620) 187 Brinell	F.C. S.S. (303SS) 160 Brinell	Super Alloy 200 Brinell	Pre-Heat Treated 277 Brinell
1/8" Square	90	95	120	150	177	200	228
1/2" Square	1430	1670	1910	2385	2623	3100	3534
1" Square	5700	6650	7600	9500	11,400	12,350	14,250
1/8" Hex	41	48	54	68	81	88	148
1/2" Hex	636	742	848	1060	1272	1378	1571
1" Hex	2530	2950	3371	4215	5060	5480	6251
Serrations							
3/8" 14 Teeth	166	133	220	190	331	360	415
Serrations							
1" 36 Teeth	1178	1319	1571	1885	2356	2552	2945

External Broaches – Approximate Thrust Lbs. for Broaching

Form	Material						
	Aluminum (6061) 60 Brinell	F.C. Brass (360) 78 Brinell	Screw Stk. (12L14) 163 Brinell	Alloy (8620) 187 Brinell	F.C. S.S. (303SS) 160 Brinell	Super Alloy 200 Brinell	Pre-Heat Treated 277 Brinell
1/8 Square	114	133	152	190	228	247	285
1/2 Square	1696	979	2262	2827	3393	3676	4241
1" Square	6786	7917	9048	11,310	13,571	14,703	16,964
1/8 Hex	52	61	69	87	104	113	190
1/2 Hex	785	917	1047	1310	1570	1702	1964
1" Hex	3142	3666	4188	5236	6284	6807	7765
Serrations							
3/8 14 Teeth	199	232	265	332	397	431	497
Serrations							
1" 36 Teeth	1414	1650	1885	2356	2827	3063	3535

INTERNAL EXAMPLE:



Pre-drilled hole to be equal to or larger than smallest diameter of broach form

NOTE: For improved tool life, use a larger pre-drilled hole.

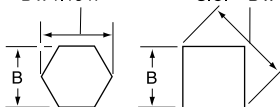
Example:

Hex: $B \times 1.035$
= Pre-drilled hole

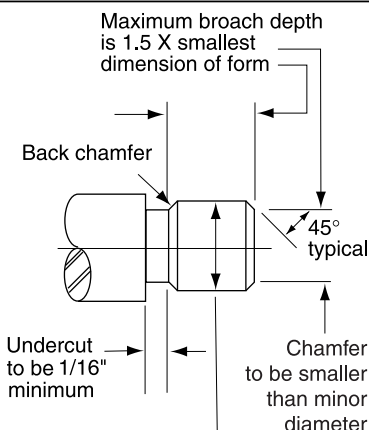
Square: $B \times 1.10$
= Pre-drilled hole

S.C. = $B \times 1.1547$

S.C. = $B \times 1.4142$



EXTERNAL EXAMPLE:



NOTE: For improved tool life, turn diameter smaller.

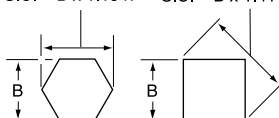
Example:

Hex:
 $\frac{B \times 1.1547 = S.C.}{1.035}$ = Pre-turned diameter

Square:
 $\frac{B \times 1.4142 = S.C.}{1.10}$ = Pre-turned diameter

S.C. = $B \times 1.1547$

S.C. = $B \times 1.4142$



For 100% clean form, turn diameter $\pm .0015$ of major diameter.

Recommended Speeds and Feeds (not to exceed min. or max.)

Internal Applications

A L U M I N U M																
5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"	7/8"	15/16"	1"	1-1/8"	1-1/4"	1-1/2"	1-3/4"	2"
2500/.005				1700/.007				1400/.007				900/.008		600/.009		
F . C . B R A S S																
1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"	7/8"	15/16"	1"	1-1/8"	1-1/4"	1-1/2"	1-3/4"
2250/.005				1500/.007				1200/.006				800/.007		500/.008		
1 2 L 1 4																
3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"	7/8"	15/16"	1"	1-1/8"		
2000/.004				1300/.006				1200/.006				700/.007		600/.009		
A L L O Y																
1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"				
2000/.004				1800/.005				1400/.005				900/.006		800/.007		
S T A I N L E S S S T E E L																
1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"				
2250/.004				2000/.004				1800/.004				1200/.005		1000/.005		

External Applications

A L U M I N U M																	
3/8"	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"	7/8"	15/16"	1"	1-1/8"	1-1/4"	1-3/8"				
1600/.007				1500/.008				1200/.008				1100/.008		900/.008			
F . C . B R A S S																	
5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"	7/8"	15/16"	1"	1-1/8"	1-1/4"	1-1/2"	1-3/8"	1-1/2"	
1600/.007				1600/.008				1300/.007				1100/.007				900/.007	
1 2 L 1 4																	
1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"	7/8"	15/16"	1"	1-1/8"	1-1/4"			
1700/.006				1600/.006				1400/.006				900/.007		800/.007			
A L L O Y																	
1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"						
1800/.005				1500/.005				900/.006				800/.007					
S T A I N L E S S S T E E L																	
1/16"	3/32"	1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"	1/2"	9/16"		
2000/.004				1900/.004				1700/.004				800/.004					

- This chart is available to give you a starting point reference, higher speeds and feeds are possible.
- Recommended RPM can vary from 500 to 3500.
- Speeds and feeds can vary relative to workpiece configuration and material from .004 to .015 i.p.r.
- Feed rates under .004 i.p.r. can cause chips to lose flowing motion creating excessive end loading pressure.
- In all materials, the smaller the broach diameter, the lighter the feed should be.
- When retracting off or out of a part use rapid traverse.

NOTE: Skid marks on workpiece chamfer can be reduced or eliminated by slowing machine spindle and maintaining same feed rate prior to engagement of broach tool to the workpiece. After engagement, increase to recommended speed. Re-chamfering may be required to remove skid marks.

Tech Data

Broach Tool Material

Most rotary broach tools are made from M-2 H.S.S., a material that provides the required edge toughness in an operation which, by nature, does not generate much heat. Other materials available are Powdered Metal (PM4) or coated with TiN or TiCN.

Fluids/Coolants

Fluids play a minor role in rotary broaching. Any type of water or oil base fluid is acceptable. The chip is a flowing type and the amount of heat generated is very minimal. When internal rotary broaching in blind holes, fluids should be applied on the broaching tool tip prior to contacting workpiece and not inside of workpiece pilot hole. Trapped fluid may be unable to escape, causing inability to broach to full depth. For external rotary broaching, fluids may be applied prior to or continuously on workpiece diameter.

Alignment Instructions

It is necessary to align end of broach tool to center line of workpiece diameter by means of adjusting screws located on sides of Holder. Alignment instructions are included with purchase of Tool Holder

Pilot Diameter Preparation For Internal Broaching

A pilot hole diameter with a lead chamfer is required. The pilot hole diameter should be at minimum, equal size to the distance across the flats or inscribed circle diameter of the form to be broached. The lead chamfer diameter must be slightly larger in diameter than the form being broached.

Note: Square and hexagon holes sometimes do not require full form. In these cases, pilot as large as possible. The less material to be broached, the less pressure will be caused while broaching.

The pilot hole depth must be drilled deeper than depth to be broached. There must be enough room at bottom of hole so chips can accumulate without excessive packing.

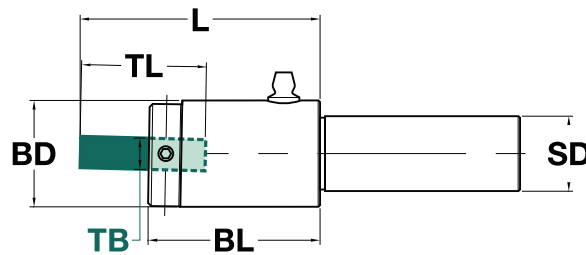
If no chips are allowed, after broaching they can be removed with either a boring tool or a flat bottom drill. A recess at bottom of hole will allow chips to break clean. Recess diameter should be larger than major diameter of form being broached.

Pilot Diameter Preparation For External Broaching

For external rotary broaching, the turned diameter on the workpiece should be smaller than the major diameter of the form being broached. If full form is required, turn diameter .0008" to .0015" larger than the final diameter.

For starting the external broach tool on workpiece, a lead chamfer is required. A 45° chamfer should be smaller than minor diameter and larger than major diameter. After broaching, the chamfer can be turned off.

INTERNAL ADJUSTMENT FREE TOOL HOLDERS



Swiss Type Adjustment Free - .315 Tool Bore Broaching Capacity .050-.375

STRAIGHT SHANK

TB	TL	BD	BL	L	Shank Dia. (SD) x 2.0"	Order #
.315	1.25	1.06	1.72	2.40	.625"	0600-1
.315	1.25	1.06	1.72	2.40	.750"	0600-2
.315	1.25	1.06	1.72	2.40	1.00"	0600-3
.315	1.25	1.06	1.72	2.40	12mm	0600-12
.315	1.25	1.06	1.72	2.40	16mm	0600-16
.315	1.25	1.06	1.72	2.40	20mm	0600-20
.315	1.25	1.06	1.72	2.40	22mm	0600-22
.315	1.25	1.06	1.72	2.40	25mm	0600-25

Swiss Type Adjustment Free - .315 Tool Bore Broaching Capacity .050-.375

STRAIGHT SHANK

TB	TL	BD	BL	L	Shank Dia. (SD) x 4.0"	Order #
.315	1.25	1.06	1.72	2.40	.750"	0600-2L
.315	1.25	1.06	1.72	2.40	1.00"	0600-3L
.315	1.25	1.06	1.72	2.40	20mm	0600-20L
.315	1.25	1.06	1.72	2.40	22mm	0600-22L
.315	1.25	1.06	1.72	2.40	25mm	0600-25L

Swiss Type Adjustment Free - .500 Tool Bore Broaching Capacity .050-.500

STRAIGHT SHANK

TB	TL	BD	BL	L	Shank Dia. (SD) x 2.0"	Order #
.500	1.75	1.24	2.14	3.19	.625"	0700-1
.500	1.75	1.24	2.14	3.19	.750"	0700-2
.500	1.75	1.24	2.14	3.19	1.00"	0700-3
.500	1.75	1.24	2.14	3.19	16mm	0700-16
.500	1.75	1.24	2.14	3.19	20mm	0700-20
.500	1.75	1.24	2.14	3.19	22mm	0700-22
.500	1.75	1.24	2.14	3.19	25mm	0700-25

Standard Type Adjustment Free - .500 Tool Bore Broaching Capacity .050-.625

STRAIGHT SHANK

TB	TL	BD	BL	L	Shank Dia. (SD) x 3.0"	Order #
.500	1.75	1.50	2.33	3.37	.750"	3700-1
.500	1.75	1.50	2.33	3.37	1.00"	3700-2
.500	1.75	1.50	2.33	3.37	1.25"	3700-3
.500	1.75	1.75	2.33	3.37	1.50"	3700-4
.500	1.75	1.50	2.33	3.37	25mm	3700-25
.500	1.75	1.50	2.33	3.37	32mm	3700-32

Broach Tool Materials Available:

M-2 H.S.S. (standard) or P-M4 H.S.S. (Premium)

Broach Tool Coatings Available:

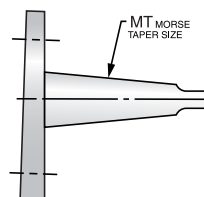
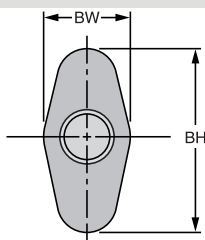
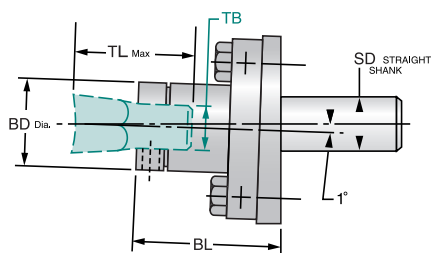
Titanium Nitride (TiN) or Titanium Carbonitride (TiCN)

ORDER FACTORY DIRECT

Additional sizes are available from stock for
IMMEDIATE DELIVERY.



INTERNAL ADJUSTABLE TOOL HOLDERS



Swiss Type - .315 Tool Bore

Broaching Capacity .050-.375

STRAIGHT SHANK

TB	TL	BD	BL	BW	BH	Shank Dia. (SD)	Order #
.315	1.75	1.03	1.75	1.12	2.28	.625	7600-1
.315	1.75	1.03	1.75	1.12	2.28	.750	7600-2
.315	1.75	1.03	1.75	1.12	2.28	12mm	7600-12
.315	1.75	1.03	1.75	1.12	2.28	16mm	7600-16

MORSE TAPER

.315	1.75	1.03	1.75	1.12	2.28	#2 (MT)	7600-52
------	------	------	------	------	------	---------	----------------

Swiss Type - .500 Tool Bore

Broaching Capacity .050-.500

STRAIGHT SHANK

TB	TL	BD	BL	BW	BH	Shank Dia. (SD)	Order #
.500	1.75	1.19	2.16	1.25	2.56	.625	1760-1
.500	1.75	1.19	2.16	1.25	2.56	.750	1760-2
.500	1.75	1.19	2.16	1.25	2.56	16mm	1760-16

MORSE TAPER

.500	1.75	1.19	2.16	1.25	2.56	#2 (MT)	1760-52
------	------	------	------	------	------	---------	----------------

Standard Type

Broaching Capacity .095-.625

STRAIGHT SHANK

TB	TL	BD	BL	BW	BH	Shank Dia. (SD)	Order #
.500	2.25	1.44	2.31	1.50	3.25	.750	3760-1
.500	2.25	1.44	2.31	1.50	3.25	1.00	3760-2
.500	2.25	1.44	2.31	1.50	3.25	1.25	3760-3
.500	2.25	1.44	2.31	1.50	3.25	1.50	3760-4
.500	2.25	1.44	2.31	1.50	3.25	22mm	3760-22
.500	2.25	1.44	2.31	1.50	3.25	25mm	3760-25

MORSE TAPER

TB	TL	BD	BL	BW	BH	Morse Taper (MT)	Order #
.500	2.25	1.44	2.31	1.50	3.25	#2	3760-52
.500	2.25	1.44	2.31	1.50	3.25	#3	3760-53
.500	2.25	1.44	2.31	1.50	3.25	#4	3760-54

Heavy Duty

Broaching Capacity .625-1.125

STRAIGHT SHANK

TB	TL	BD	BL	BW	BH	Shank Dia. (SD)	Order #
.750	3.62	2.62	3.22	2.62	4.38	1.00	7760-1
.750	3.62	2.62	3.22	2.62	4.38	1.25	7760-2
.750	3.62	2.62	3.22	2.62	4.38	1.50	7760-3
.750	3.62	2.62	3.22	2.62	4.38	1.75	7760-4
.750	3.62	2.62	3.22	2.62	4.38	2.00	7760-5

MORSE TAPER

TB	TL	BD	BL	BW	BH	Morse Taper (MT)	Order #
.750	3.62	2.62	3.22	2.62	4.38	#3	7760-53
.750	3.62	2.62	3.22	2.62	4.38	#4	7760-54
.750	3.62	2.62	3.22	2.62	4.38	#5	7760-55



**Built For Speed
and Accuracy.**

Internal broach tools are listed by shank diameter, refer to tool bore size (TB) of holder.

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SLATER TOOLS
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.315 Shank Diameter

1.25 Overall Length

Nominal Size	B	D	HEX ORDER#
.050	.051	.81	306-051
1/16	.064	.81	306-064
5/64	.079	.81	306-079
3/32	.095	.75	306-095
7/64	.111	.75	306-111
1/8	.127	.75	306-127
9/64	.143	.75	306-143
5/32	.159	.75	306-159
11/64	.174	.62	306-174
3/16	.190	.62	306-190
7/32	.222	.62	306-222
1/4	.253	.62	306-253
9/32	.284	.62	306-284
5/16	.316	.62	306-316
11/32	.347	.62	306-347
3/8	.379	.62	306-379
13/32	.410	.62	306-410

.500 Shank Diameter

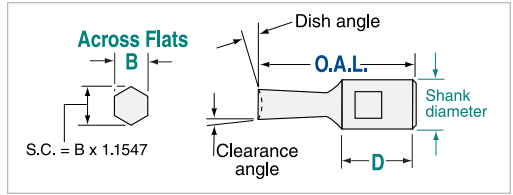
1.75 Overall Length

3/32	.095	1.00	506-095
7/64	.111	1.00	506-111
1/8	.127	1.00	506-127
9/64	.142	1.00	506-142
5/32	.159	1.00	506-159
3/16	.190	1.00	506-190
7/32	.222	.88	506-222
1/4	.253	.88	506-253
9/32	.284	.88	506-284
5/16	.316	.88	506-316
11/32	.347	.75	506-347
3/8	.379	.75	506-379
13/32	.410	.75	506-410
7/16	.442	.75	506-442
15/32	.473	.75	506-473
1/2	.505	.75	506-505
17/32	.536	.75	506-536
9/16	.568	.75	506-568
19/32	.599	.75	506-599
5/8	.631	.75	506-631
21/32	.662	.75	506-662
11/16	.694	.75	506-694
23/32	.725	.75	506-725
3/4	.757	.75	506-757

.750 Shank Diameter

2.75 Overall Length

1/4	.253	1.62	706-253
9/32	.284	1.62	706-284
5/16	.316	1.62	706-316
11/32	.347	1.62	706-347
3/8	.379	1.62	706-379
13/32	.410	1.50	706-410
7/16	.442	1.50	706-442
15/32	.473	1.50	706-473
1/2	.505	1.50	706-505
17/32	.536	1.50	706-536
9/16	.568	1.50	706-568
19/32	.599	1.31	706-599
5/8	.631	1.31	706-631
21/32	.662	1.31	706-662
11/16	.694	1.31	706-694
23/32	.725	1.31	706-725
3/4	.757	1.31	706-757
25/32	.789	1.31	706-789
13/16	.821	1.31	706-821
27/32	.853	1.31	706-853
7/8	.885	1.31	706-885
29/32	.919	1.31	706-919
15/16	.953	1.31	706-953
31/32	.986	1.31	706-986
1	1.020	1.31	706-1.020



Across the flats dimensions conform to IFI and ANSI/ASME standards for maximum tool life.

.315 Shank Diameter

1.25 Overall Length

Nominal Size	B	D	HEX ORDER#
1.30mm	.051	.81	306-051
1.50mm	.061	.81	306-061
2.00mm	.081	.81	306-081
2.50mm	.101	.81	306-101
3.00mm	.121	.75	306-121
4.00mm	.161	.75	306-161
5.00mm	.200	.62	306-200
6.00mm	.240	.62	306-240
7.00mm	.279	.62	306-279
8.00mm	.320	.62	306-320
9.00mm	.358	.62	306-358
10.00mm	.399	.62	306-399
11.00mm	.437	.62	306-437
12.00mm	.478	.62	306-478

.500 Shank Diameter

1.75 Overall Length

2.00mm	.081	1.00	506-081
2.50mm	.101	1.00	506-101
3.00mm	.121	1.00	506-121
4.00mm	.161	1.00	506-161
5.00mm	.200	.88	506-200
6.00mm	.240	.88	506-240
7.00mm	.279	.88	506-279
8.00mm	.320	.88	506-320
9.00mm	.358	.75	506-358
10.00mm	.399	.75	506-399
11.00mm	.437	.75	506-437
12.00mm	.478	.75	506-478
13.00mm	.517	.75	506-517
14.00mm	.557	.75	506-557
15.00mm	.597	.75	506-597
16.00mm	.636	.75	506-636
17.00mm	.678	.75	506-678
18.00mm	.715	.75	506-715
19.00mm	.758	.75	506-758

.750 Shank Diameter

2.75 Overall Length

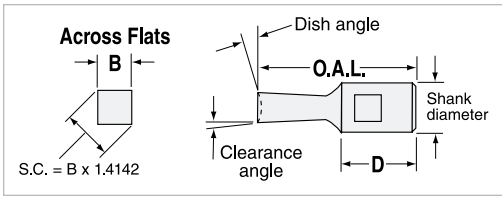
6.00mm	.240	1.62	706-240
7.00mm	.279	1.62	706-279
8.00mm	.320	1.62	706-320
9.00mm	.358	1.62	706-358
10.00mm	.399	1.50	706-399
11.00mm	.437	1.50	706-437
12.00mm	.478	1.50	706-478
13.00mm	.517	1.50	706-517
14.00mm	.557	1.50	706-557
15.00mm	.597	1.31	706-597
16.00mm	.636	1.31	706-636
17.00mm	.678	1.31	706-678
18.00mm	.715	1.31	706-715
19.00mm	.758	1.31	706-758
20.00mm	.795	1.31	706-795
21.00mm	.836	1.31	706-836
22.00mm	.879	1.31	706-879
23.00mm	.916	1.31	706-916
24.00mm	.957	1.31	706-957
25.00mm	.994	1.31	706-994
26.00mm	1.034	1.31	706-1.034

ADDITIONAL HEX SIZES AVAILABLE FROM STOCK FOR IMMEDIATE DELIVERY.

Made to order configurations quoted, allow 3-5 working days upon approval.

Broach Tool Materials Available: **M-2 H.S.S.** (standard) or **P-M4 H.S.S.** (Premium)

Broach Tool Coatings Available: **Titanium Nitride (TiN)** or **Titanium Carbonitride (TiCN)**



ORDER FACTORY DIRECT
Additional sizes are available from stock for
IMMEDIATE DELIVERY.

.315 Shank Diameter

1.25 Overall Length

Nominal Size	B	D	SQUARE ORDER#
1/16	.064	.81	304-064
5/64	.079	.81	304-079
3/32	.095	.75	304-095
7/64	.111	.75	304-111
1/8	.127	.75	304-127
9/64	.143	.75	304-143
5/32	.159	.75	304-159
11/64	.174	.62	304-174
3/16	.190	.62	304-190
7/32	.222	.62	304-222
1/4	.253	.62	304-253
9/32	.284	.62	304-284
5/16	.316	.62	304-316
11/32	.347	.62	304-347
3/8	.379	.62	304-379
13/32	.410	.62	304-410

.500 Shank Diameter

1.75 Overall Length

Nominal Size	B	D	SQUARE ORDER#
3/32	.095	1.00	504-095
7/64	.111	1.00	504-111
1/8	.127	1.00	504-127
9/64	.142	1.00	504-142
5/32	.159	1.00	504-159
3/16	.190	.88	504-190
7/32	.222	.88	504-222
1/4	.253	.88	504-253
9/32	.284	.75	504-284
5/16	.316	.75	504-316
11/32	.347	.75	504-347
3/8	.379	.75	504-379
13/32	.410	.75	504-410
7/16	.442	.75	504-442
15/32	.473	.75	504-473
1/2	.505	.75	504-505
17/32	.536	.75	504-536
9/16	.568	.75	504-568
19/32	.599	.75	504-599
5/8	.631	.75	504-631

.750 Shank Diameter

2.75 Overall Length

Nominal Size	B	D	SQUARE ORDER#
1/4	.253	1.62	704-253
9/32	.284	1.62	704-284
5/16	.316	1.62	704-316
11/32	.347	1.62	704-347
3/8	.379	1.62	704-379
13/32	.410	1.50	704-410
7/16	.442	1.50	704-442
15/32	.473	1.50	704-473
1/2	.505	1.50	704-505
17/32	.536	1.50	704-536
9/16	.568	1.50	704-568
19/32	.599	1.31	704-599
5/8	.631	1.31	704-631
21/32	.662	1.31	704-662
11/16	.694	1.31	704-694
23/32	.725	1.31	704-725
3/4	.757	1.31	704-757
25/32	.788	1.31	704-788
13/16	.819	1.31	704-819



.315 Shank Diameter

1.25 Overall Length

Nominal Size	B	D	SQUARE ORDER#
1.30mm	.051	.81	304-051
1.50mm	.061	.81	304-061
2.00mm	.081	.81	304-081
2.50mm	.101	.75	304-101
3.00mm	.121	.75	304-121
4.00mm	.161	.75	304-161
5.00mm	.200	.62	304-200
6.00mm	.240	.62	304-240
7.00mm	.279	.62	304-279
8.00mm	.320	.62	304-320
9.00mm	.358	.62	304-358
10.00mm	.399	.62	304-399

.500 Shank Diameter

1.75 Overall Length

Nominal Size	B	D	SQUARE ORDER#
2.00mm	.081	1.00	504-081
2.50mm	.101	1.00	504-101
3.00mm	.121	1.00	504-121
4.00mm	.161	1.00	504-161
5.00mm	.200	.88	504-200
6.00mm	.240	.88	504-240
7.00mm	.279	.75	504-279
8.00mm	.320	.75	504-320
9.00mm	.358	.75	504-358
10.00mm	.399	.75	504-399
11.00mm	.437	.75	504-437
12.00mm	.478	.75	504-478
13.00mm	.517	.75	504-517
14.00mm	.557	.75	504-557
15.00mm	.597	.75	504-597

.750 Shank Diameter

2.75 Overall Length

Nominal Size	B	D	SQUARE ORDER#
6.00mm	.240	1.62	704-240
7.00mm	.279	1.62	704-279
8.00mm	.320	1.62	704-320
9.00mm	.358	1.62	704-358
10.00mm	.399	1.50	704-399
11.00mm	.437	1.50	704-437
12.00mm	.478	1.50	704-478
13.00mm	.517	1.50	704-517
14.00mm	.557	1.50	704-557
15.00mm	.597	1.31	704-597
16.00mm	.636	1.31	704-636
17.00mm	.678	1.31	704-678
18.00mm	.715	1.31	704-715
19.00mm	.758	1.31	704-758
20.00mm	.795	1.31	704-795

Specials

• Serration/Spline/Spur/Involute •

Quotation forms available (page 21-23)

Order: 586-465-5000 • Fax: 586-465-3030



INTERNAL DOUBLE HEX

.315 Shank Diameter

1.75 Overall Length

Nominal Size	B	DBL. HEX ORDER#
1/4	.253	342-253
9/32	.284	342-284
5/16	.316	342-316
11/32	.347	342-347
3/8	.379	342-379
13/32	.410	342-410
7/16	.442	342-442
15/32	.473	342-473
1/2	.505	342-505

.500 Shank Diameter

1.75 Overall Length

1/4	.253	502-253
9/32	.284	502-284
5/16	.316	502-316
11/32	.347	502-347
3/8	.379	502-379
13/32	.410	502-410
7/16	.442	502-442
15/32	.473	502-473
1/2	.505	502-505
17/32	.536	502-536
9/16	.568	502-568
19/32	.599	502-599
5/8	.631	502-631
21/32	.662	502-662
11/16	.694	502-694
23/32	.725	502-725

.500 Shank Diameter

2.25 Overall Length

1/4	.253	542-253
9/32	.284	542-284
5/16	.316	542-316
11/32	.347	542-347
3/8	.379	542-379
13/32	.410	542-410
7/16	.442	542-442
15/32	.473	542-473
1/2	.505	542-505
17/32	.536	542-536
9/16	.568	542-568
19/32	.599	542-599
5/8	.631	542-631
21/32	.662	542-662
11/16	.694	542-694
23/32	.725	542-725
3/4	.757	542-757

.750 Shank Diameter

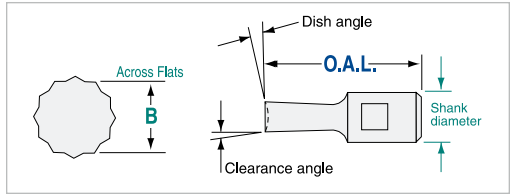
2.75 Overall Length

13/32	.410	702-410
7/16	.442	702-442
15/32	.473	702-473
1/2	.505	702-505
17/32	.536	702-536
9/16	.568	702-568
19/32	.599	702-599
5/8	.631	702-631
21/32	.662	702-662
11/16	.694	702-694
23/32	.725	702-725
3/4	.757	702-757
25/32	.789	702-789
13/16	.821	702-821
27/32	.853	702-853
7/8	.885	702-885
29/32	.919	702-919
15/16	.953	702-953
31/32	.986	702-986
1	1.020	702-1.020

.750 Shank Diameter

3.62 Overall Length

1/2	.505	782-505
17/32	.536	782-536
9/16	.568	782-568
19/32	.599	782-599
5/8	.631	782-631
21/32	.662	782-662
11/16	.694	782-694
23/32	.725	782-725
3/4	.757	782-757
25/32	.789	782-789
13/16	.821	782-821
27/32	.853	782-853
7/8	.885	782-885
29/32	.919	782-919
15/16	.953	782-953
31/32	.986	782-986
1	1.020	782-1.020



Additional sizes are available from stock for immediate delivery. Made to order configurations quoted, allow 5-7 working days upon approval.

.315 Shank Diameter

1.75 Overall Length

Nominal Size	B	DBL. HEX ORDER#
6mm	.240	342-240
7mm	.279	342-279
8mm	.320	342-320
9mm	.358	342-358
10mm	.399	342-399
11mm	.437	342-437
12mm	.478	342-478

.500 Shank Diameter

1.75 Overall Length

6mm	.240	502-240
7mm	.279	502-279
8mm	.320	502-320
9mm	.358	502-358
10mm	.399	502-399
11mm	.437	502-437
12mm	.478	502-478
13mm	.517	502-517
14mm	.557	502-557
15mm	.597	502-597
16mm	.636	502-636
17mm	.678	502-678
18mm	.715	502-715
19mm	.758	502-758

.500 Shank Diameter

2.25 Overall Length

6mm	.240	542-240
7mm	.279	542-279
8mm	.320	542-320
9mm	.358	542-358
10mm	.399	542-399
11mm	.437	542-437
12mm	.478	542-478
13mm	.517	542-517
14mm	.557	542-557
15mm	.597	542-597
16mm	.636	542-636
17mm	.678	542-678
18mm	.715	542-715
19mm	.758	542-758

.750 Shank Diameter

2.75 Overall Length

10mm	.399	702-399
11mm	.437	702-437
12mm	.478	702-478
13mm	.517	702-517
14mm	.557	702-557
15mm	.597	702-597
16mm	.636	702-636
17mm	.678	702-678
18mm	.715	702-715
19mm	.758	702-758
20mm	.795	702-795
21mm	.836	702-836
22mm	.879	702-879
23mm	.916	702-916
24mm	.957	702-957
25mm	.994	702-994
26mm	1.034	702-1.034

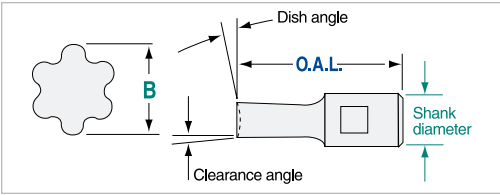
.750 Shank Diameter

3.62 Overall Length

13mm	.517	782-517
14mm	.557	782-557
15mm	.597	782-597
16mm	.636	782-636
17mm	.678	782-678
18mm	.715	782-715
19mm	.758	782-758
20mm	.795	782-795
21mm	.836	782-836
22mm	.879	782-879
23mm	.916	782-916
24mm	.957	782-957
25mm	.994	782-994
26mm	1.034	782-1.034

Broach Tool Materials Available: M-2 H.S.S. (standard) or P-M4 H.S.S. (Premium)

Broach Tool Coatings Available: Titanium Nitride (TiN) or Titanium Carbonitride (TiCN)



Additional sizes are available from stock for immediate delivery. Made to order configurations quoted, allow 5-7 working days upon approval. Sizes conform to AIA standards for maximum tool life. Publication NAS 1800

.315 Shank Diameter 1.25 Overall Length 6-LOBE TYPE

Nominal Size	T-Code	B	ORDER#
.0924	T-08	.0954	348-08S1
.1062	T-10	.1123	348-10S1
.1302	T-15	.1333	348-15S1
.1532	T-20	.1563	348-20S1
.1757	T-25	.1798	348-25S1

.315 Shank Diameter 1.75 Overall Length

.1092	T-10	.1123	348-10
.1302	T-15	.1333	348-15
.1532	T-20	.1563	348-20
.1757	T-25	.1798	348-25
.1977	T-27	.2018	348-27

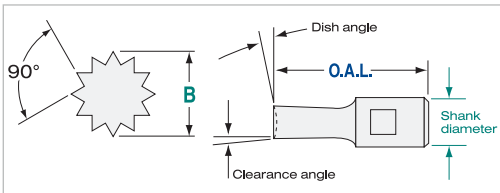
.500 Shank Diameter 1.75 Overall Length

.0924	T-08	.0954	508-08
.1092	T-10	.1123	508-10
.1302	T-15	.1333	508-15
.1532	T-20	.1563	508-20
.1757	T-25	.1798	508-25
.1977	T-27	.2018	508-27
.2187	T-30	.2228	508-30
.2632	T-40	.2683	508-40
.3092	T-45	.3180	508-45
.3492	T-50	.3540	508-50

.750 Shank Diameter 2.75 Overall Length

.1757	T-25	.1798	708-25
.1977	T-27	.2018	708-27
.2187	T-30	.2228	708-30
.2632	T-40	.2683	708-40
.3092	T-45	.3180	708-45
.3492	T-50	.3540	708-50

INTERNAL J500



Additional sizes are available from stock for immediate delivery. Sizes and classes of fit made to order, allow 5-7 working days upon approval. Sizes conform to SAE standards for maximum tool life. Publication NAS 1800.

.500 Shank Diameter J500

Nominal Size	Number of Teeth	Overall Length	B	ORDER#
1/2	36	1.75	.5081	501-5000
5/8	36	1.75	.6338	501-6250
3/4	48	1.75	.7586	501-7500

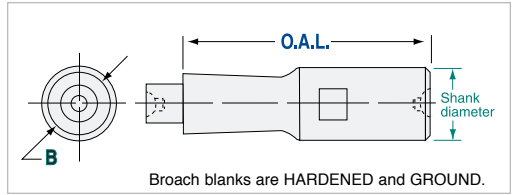
.750 Shank Diameter J500

1/2	36	3.62	.5081	781-5000
5/8	36	3.62	.6338	781-6250
3/4	48	3.62	.7586	781-7500
7/8	48	3.62	.8849	781-8750
1	48	3.62	1.0110	781-1.011

Specials

• Serration/Spline/Spur/Involute •

Quotation forms available (page 21-23)



Broach blanks are HARDENED and GROUND.

Broach Tool Blank Material Available:

M-2 H.S.S. (standard) • Powered Metal (PM4) (premium)

.315 Shank Diameter

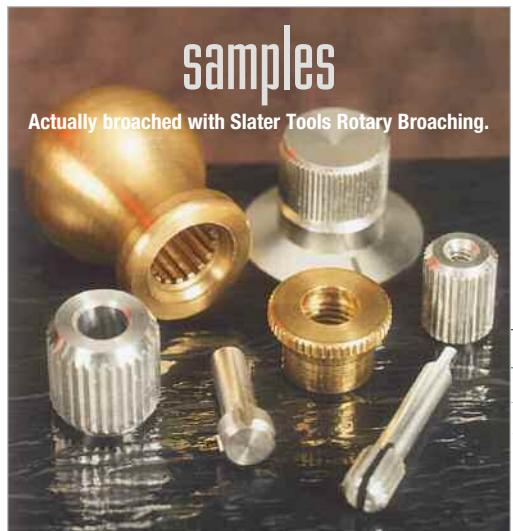
Nominal Size	B Unfinished	1.25 O.A.L. Order #	1.50 O.A.L. Order #	1.75 O.A.L. Order #
13/64	.220	311-200	321-200	341-200
15/64	.250	311-230	321-230	341-230
19/64	.320	311-300	321-300	341-300
3/8	.400	311-380	321-380	341-380
29/64	.470	311-450	321-450	341-450
33/64	.540	311-520	321-520	341-520
19/32	.610	311-590	321-590	341-590

.500 Shank Diameter

Nominal Size	B Unfinished	1.75 O.A.L. Order #	2.00 O.A.L. Order #	2.25 O.A.L. Order #
19/64	.320	511-300	521-300	541-300
3/8	.400	511-380	521-380	541-380
29/64	.470	511-450	521-450	541-450
33/64	.540	511-520	521-520	541-520
19/32	.610	511-590	521-590	541-590
21/32	.680	511-660	521-660	541-660
47/64	.750	511-730	521-730	541-730
13/16	.830	511-810	521-810	541-810
29/32	.920	511-900	521-900	541-900
1	1.020	511-1.000	521-1.000	541-1.000
1-3/64	1.060	511-1.040	521-1.040	541-1.040
1-3/32	1.110	511-1.090	521-1.090	541-1.090

.750 Shank Diameter

Nominal Size	B Unfinished	2.75 O.A.L. Order #	3.12 O.A.L. Order #	3.62 O.A.L. Order #
19/32	.610	711-590	741-590	781-590
21/32	.680	711-660	741-660	781-660
47/64	.750	711-730	741-730	781-730
13/16	.830	711-810	741-810	781-810
29/32	.920	711-900	741-900	781-900
1	1.020	711-1.000	741-1.000	781-1.000
1-3/64	1.060	711-1.040	741-1.040	781-1.040
1-7/64	1.120	711-1.100	741-1.100	781-1.100
1-3/16	1.210	711-1.190	741-1.190	781-1.190
1-21/64	1.350	711-1.330	741-1.330	781-1.330
1-15/32	1.490	711-1.470	741-1.470	781-1.470
1-1/2	1.520	711-1.500	741-1.500	781-1.500
1-5/8	1.650	711-1.630	741-1.630	781-1.630
1-11/16	1.710	711-1.690	741-1.690	781-1.690
1-3/4	1.770	711-1.750	741-1.750	781-1.750
1-7/8	1.900	711-1.880	741-1.880	781-1.880



Actually broached with Slater Tools Rotary Broaching.

INTERNAL SERRATION

.315 Shank Diameter

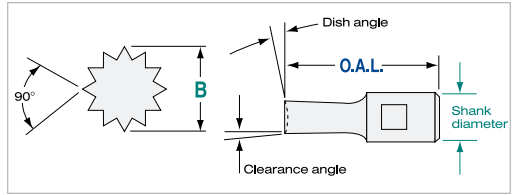
1.75 Overall Length

Nominal Size	No. of Teeth	B	SERRATION ORDER#
5/16	11	.3165	343-3165
	15	.3165	345-3165
	19	.3165	347-3165
11/32	12	.3480	343-3480
	16	.3480	345-3480
	21	.3480	347-3480
3/8	14	.3790	343-3790
	18	.3790	345-3790
	23	.3790	347-3790
13/32	15	.4100	343-4100
	19	.4100	345-4100
	24	.4100	347-4100
7/16	16	.4415	343-4415
	21	.4415	345-4415
	26	.4415	347-4415

.500 Shank Diameter

1.75 Overall Length

Nominal Size	No. of Teeth	B	SERRATION ORDER#
5/16	11	.3165	503-3165
	15	.3165	505-3165
	19	.3165	507-3165
11/32	12	.3480	503-3480
	16	.3480	505-3480
	21	.3480	507-3480
3/8	14	.3790	503-3790
	18	.3790	505-3790
	23	.3790	507-3790
13/32	15	.4100	503-4100
	19	.4100	505-4100
	24	.4100	507-4100
7/16	16	.4415	503-4415
	21	.4415	505-4415
	26	.4415	507-4415
15/32	17	.4730	503-4730
	22	.4730	505-4730
	28	.4730	507-4730
1/2	18	.5040	503-5040
	24	.5040	505-5040
	30	.5040	507-5040
17/32	19	.5350	503-5350
	25	.5350	505-5350
	32	.5350	507-5350
9/16	20	.5665	503-5665
	27	.5665	505-5665
	34	.5665	507-5665
19/32	21	.5980	503-5980
	28	.5980	505-5980
	36	.5980	507-5980

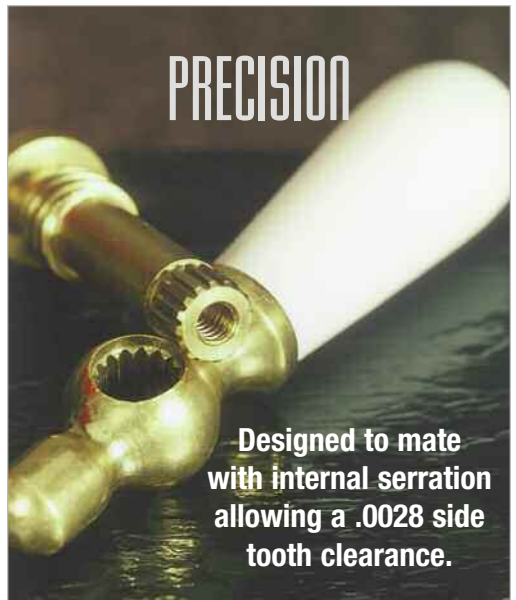


ADDITIONAL SERRATION SIZES
Made to order configurations 5-7 working days.

.500 Shank Diameter

2.25 Overall Length

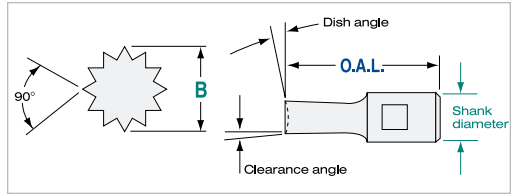
Nominal Size	No. of Teeth	B	SERRATION ORDER#
5/16	11	.3165	543-3165
	15	.3165	545-3165
	19	.3165	547-3165
11/32	12	.3480	543-3480
	16	.3480	545-3480
	21	.3480	547-3480
3/8	14	.3790	543-3790
	18	.3790	545-3790
	23	.3790	547-3790
13/32	15	.4100	543-4100
	19	.4100	545-4100
	24	.4100	547-4100
7/16	16	.4415	543-4415
	21	.4415	545-4415
	26	.4415	547-4415
15/32	17	.4730	543-4730
	22	.4730	545-4730
	28	.4730	547-4730
1/2	18	.5040	543-5040
	24	.5040	545-5040
	30	.5040	547-5040
17/32	19	.5350	543-5350
	25	.5350	545-5350
	32	.5350	547-5350
9/16	20	.5665	543-5665
	27	.5665	545-5665
	34	.5665	547-5665
19/32	21	.5980	543-5980
	28	.5980	545-5980
	36	.5980	547-5980



INTERNAL SERRATION

.750 Shank Diameter 2.75 Overall Length

Nominal Size	No. of Teeth	B	SERRATION ORDER#
5/16	11	.3165	703-3165
	15	.3165	705-3165
	19	.3165	707-3165
11/32	12	.3480	703-3480
	16	.3480	705-3480
	21	.3480	707-3480
3/8	14	.3790	703-3790
	18	.3790	705-3790
	23	.3790	707-3790
13/32	15	.4100	703-4100
	19	.4100	705-4100
	24	.4100	707-4100
7/16	16	.4415	703-4415
	21	.4415	705-4415
	26	.4415	707-4415
15/32	17	.4730	703-4730
	22	.4730	705-4730
	28	.4730	707-4730
1/2	18	.5040	703-5040
	24	.5040	705-5040
	30	.5040	707-5040
17/32	19	.5350	703-5350
	25	.5350	705-5350
	32	.5350	707-5350
9/16	20	.5665	703-5665
	27	.5665	705-5665
	34	.5665	707-5665
19/32	21	.5980	703-5980
	28	.5980	705-5980
	36	.5980	707-5980
5/8	23	.6290	703-6290
	30	.6290	705-6290
	38	.6290	707-6290
21/32	24	.6600	703-6600
	31	.6600	705-6600
	39	.6600	707-6600
11/16	25	.6915	703-6915
	33	.6915	705-6915
	41	.6915	707-6915
23/32	26	.7230	703-7230
	35	.7230	705-7230
	43	.7230	707-7230
3/4	27	.7540	703-7540
	36	.7540	705-7540
	45	.7540	707-7540
25/32	28	.7850	703-7850
	38	.7850	705-7850
	47	.7850	707-7850
13/16	29	.8165	703-8165
	39	.8165	705-8165
	49	.8165	707-8165
27/32	30	.8480	703-8480
	41	.8480	705-8480
	51	.8480	707-8480
7/8	32	.8790	703-8790
	42	.8790	705-8790
	53	.8790	707-8790
29/32	33	.9100	703-9100
	44	.9100	705-9100
	54	.9100	707-9100
15/16	34	.9415	703-9415
	45	.9415	705-9415
	56	.9415	707-9415
31/32	35	.9730	703-9730
	47	.9730	705-9730
	58	.9730	707-9730
1	36	1.0040	703-1.004
	48	1.0040	705-1.004
	60	1.0040	707-1.004



Specials

• Serration/Spline/Spur/Involute •
Quotation forms available (page 21-23)

.750 Shank Diameter 3.62 Overall Length

Nominal Size	No. of Teeth	B	SERRATION ORDER#
1/2	18	.5040	783-5040
	24	.5040	785-5040
	30	.5040	787-5040
17/32	19	.5350	783-5350
	25	.5350	785-5350
	32	.5350	787-5350
9/16	20	.5665	783-5665
	27	.5665	785-5665
	34	.5665	787-5665
19/32	21	.5980	783-5980
	28	.5980	785-5980
	36	.5980	787-5980
5/8	23	.6290	783-6290
	30	.6290	785-6290
	38	.6290	787-6290
21/32	24	.6600	783-6600
	31	.6600	785-6600
	39	.6600	787-6600
11/16	25	.6915	783-6915
	33	.6915	785-6915
	41	.6915	787-6915
23/32	26	.7230	783-7230
	35	.7230	785-7230
	43	.7230	787-7230
3/4	27	.7540	783-7540
	36	.7540	785-7540
	45	.7540	787-7540
25/32	28	.7850	783-7850
	38	.7850	785-7850
	47	.7850	787-7850
13/16	29	.8165	783-8165
	39	.8165	785-8165
	49	.8165	787-8165
27/32	30	.8480	783-8480
	41	.8480	785-8480
	51	.8480	787-8480
7/8	32	.8790	783-8790
	42	.8790	785-8790
	53	.8790	787-8790
29/32	33	.9100	783-9100
	44	.9100	785-9100
	54	.9100	787-9100
15/16	34	.9415	783-9415
	45	.9415	785-9415
	56	.9415	787-9415
31/32	35	.9730	783-9730
	47	.9730	785-9730
	58	.9730	787-9730
1	36	1.0040	783-1.004
	48	1.0040	785-1.004
	60	1.0040	787-1.004

Broach Tool Materials Available: **M-2 H.S.S.** (standard) or **P-M4 H.S.S.** (Premium)
Broach Tool Coatings Available: **Titanium Nitride(TiN)** or **Titanium Carbonitride (TiCN)**

Order: 586-465-5000 • Fax: 586-465-3030

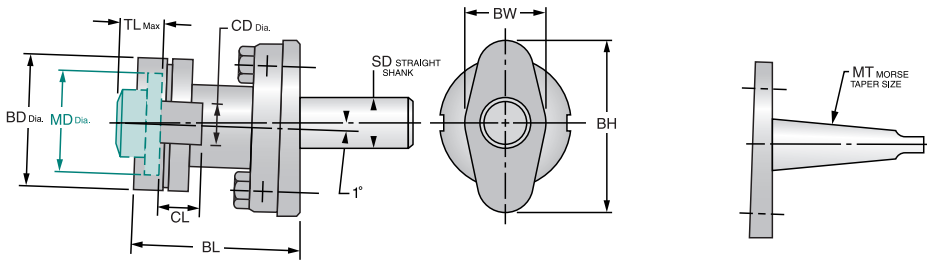
Monday thru Friday 8 a.m. till 5 p.m. EST • 44725 Trinity Drive • Clinton Township, MI 48038

SLATER TOOLS™

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13

EXTERNAL ROTARY BROACHING TOOL HOLDERS



Swiss Type

Broaching Capacity .125-.250

STRAIGHT SHANK

MD	TL	BD	BL	BW	BH	CL	CD	Shank Dia. (SD)	Order #
.9448	1.00	1.62	2.16	1.12	2.28	.56	.31	.625	7700-1
.9448	1.00	1.62	2.16	1.12	2.28	.56	.31	.750	7700-2
.9448	1.00	1.62	2.16	1.12	2.28	.56	.31	12mm	7700-12
.9448	1.00	1.62	2.16	1.12	2.28	.56	.31	16mm	7700-16

MORSE TAPER

.9448	1.00	1.62	2.16	1.12	2.28	.56	.31	#2 (MT)	7700-52
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Larger Capacity Swiss Type

Broaching Capacity .125-.375

STRAIGHT SHANK

MD	TL	BD	BL	BW	BH	CL	CD	Shank Dia. (SD)	Order #
.9448	1.00	1.62	2.47	1.25	2.56	.69	.50	.625	1770-1
.9448	1.00	1.62	2.47	1.25	2.56	.69	.50	.750	1770-2
.9448	1.00	1.62	2.47	1.25	2.56	.69	.50	16mm	1770-16

MORSE TAPER

.9448	1.00	1.62	2.47	1.25	2.56	.69	.50	#2 (MT)	1770-52
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Standard Type

Broaching Capacity .250-.625

STRAIGHT SHANK

MD	TL	BD	BL	BW	BH	CL	CD	Shank Dia. (SD)	Order #
1.5748	1.50	2.25	2.69	2.69	3.25	.69	.50	.750	3770-1
1.5748	1.50	2.25	2.69	2.69	3.25	.69	.50	1.00	3770-2
1.5748	1.50	2.25	2.69	2.69	3.25	.69	.50	1.25	3770-3
1.5748	1.50	2.25	2.69	2.69	3.25	.69	.50	1.50	3770-4
1.5748	1.50	2.25	2.69	2.69	3.25	.69	.50	22mm	3770-22
1.5748	1.50	2.25	2.69	2.69	3.25	.69	.50	25mm	3770-25

MORSE TAPER

MD	TL	BD	BL	BW	BH	CL	CD	Morse Taper (MT)	Order #
1.5748	1.50	2.25	2.69	2.69	3.25	.69	.50	#2	3770-52
1.5748	1.50	2.25	2.69	2.69	3.25	.69	.50	#3	3770-53
1.5748	1.50	2.25	2.69	2.69	3.25	.69	.50	#4	3770-54

Heavy Duty

Broaching Capacity .625-1.00

STRAIGHT SHANK

MD	TL	BD	BL	BW	BH	CL	CD	Shank Dia. (SD)	Order #
1.5748	1.50	2.62	3.90	2.62	4.38	1.25	.75	1.00	7770-1
1.5748	1.50	2.62	3.90	2.62	4.38	1.25	.75	1.25	7770-2
1.5748	1.50	2.62	3.90	2.62	4.38	1.25	.75	1.50	7770-3
1.5748	1.50	2.62	3.90	2.62	4.38	1.25	.75	1.75	7770-4
1.5748	1.50	2.62	3.90	2.62	4.38	1.25	.75	2.00	7770-5

MORSE TAPER

MD	TL	BD	BL	BW	BH	CL	CD	Morse Taper (MT)	Order #
1.5748	1.50	2.62	3.90	2.62	4.38	1.25	.75	#3	7770-53
1.5748	1.50	2.62	3.90	2.62	4.38	1.25	.75	#4	7770-54
1.5748	1.50	2.62	3.90	2.62	4.38	1.25	.75	#5	7770-55

Large Form

Broaching Capacity .875-1.50

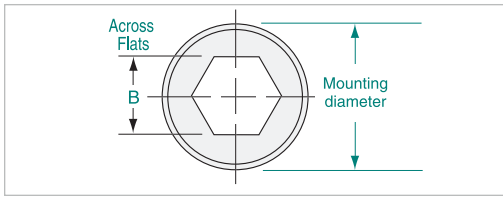
STRAIGHT SHANK

MD	TL	BD	BL	BW	BH	CL	CD	Shank Dia. (SD)	Order #
2.3125	1.75	3.12	3.95	2.62	4.38	1.25	.75	1.00	7773-1
2.3125	1.75	3.12	3.95	2.62	4.38	1.25	.75	1.25	7773-2
2.3125	1.75	3.12	3.95	2.62	4.38	1.25	.75	1.50	7773-3
2.3125	1.75	3.12	3.95	2.62	4.38	1.25	.75	1.75	7773-4
2.3125	1.75	3.12	3.95	2.62	4.38	1.25	.75	2.00	7773-5

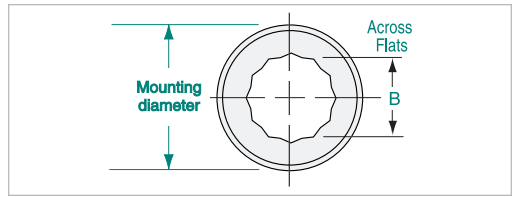
MORSE TAPER

MD	TL	BD	BL	BW	BH	CL	CD	Morse Taper (MT)	Order #
2.3125	1.75	3.12	3.95	2.62	4.38	1.25	.75	#3	7773-53
2.3125	1.75	3.12	3.95	2.62	4.38	1.25	.75	#4	7773-54
2.3125	1.75	3.12	3.95	2.62	4.38	1.25	.75	#5	7773-55

EXTERNAL HEX



EXTERNAL DOUBLE HEX



ADDITIONAL HEX AND DOUBLE HEX SIZES AVAILABLE FROM STOCK FOR IMMEDIATE DELIVERY.
 Made to order configurations quoted, allow 3-5 working days upon approval.

INCH

.9448 Mounting Diameter		.75 Overall Length
Nominal Size	B	HEX ORDER#
1/4	.244	1661-244
9/32	.275	1661-275
5/16	.305	1661-305
11/32	.336	1661-336
1.5748 Mounting Diameter		1.00 Overall Length
1/4	.244	1462-244
9/32	.275	1462-275
5/16	.305	1462-305
11/32	.336	1462-336
3/8	.367	1462-367
13/32	.397	1462-397
7/16	.428	1462-428
15/32	.463	1462-463
1/2	.489	1462-489
17/32	.520	1462-520
9/16	.551	1462-551
19/32	.582	1462-582
5/8	.612	1462-612
21/32	.643	1462-643
11/16	.674	1462-674
23/32	.705	1462-705
3/4	.736	1462-736
2.3125 Mounting Diameter		1.25 Overall Length
11/16	.674	1463-674
23/32	.705	1463-705
3/4	.736	1463-736
25/32	.767	1463-767
13/16	.798	1463-798
27/32	.829	1463-829
7/8	.860	1463-860
29/32	.891	1463-891
15/16	.922	1463-922
31/32	.952	1463-952
1	.982	1463-982

METRIC

.9448 Mounting Diameter		.75 Overall Length
Nominal Size	B	DBL. HEX ORDER#
6mm	.228	1661-228
7mm	.267	1661-267
8mm	.306	1661-306
9mm	.346	1661-346
1.5748 Mounting Diameter		1.00 Overall Length
6mm	.228	1462-228
7mm	.267	1462-267
8mm	.306	1462-306
9mm	.346	1462-346
10mm	.385	1462-385
11mm	.424	1462-424
12mm	.462	1462-462
13mm	.501	1462-501
14mm	.540	1462-540
15mm	.580	1462-580
16mm	.619	1462-619
17mm	.659	1462-659
18mm	.698	1462-698
19mm	.737	1462-737
2.3125 Mounting Diameter		1.25 Overall Length
18mm	.698	1463-698
19mm	.737	1463-737
20mm	.775	1463-775
21mm	.814	1463-814
22mm	.853	1463-853
23mm	.893	1463-893
24mm	.932	1463-932
25mm	.970	1463-970
26mm	1.009	1463-1.009

INCH

.9448 Mounting Diameter		.75 Overall Length
Nominal Size	B	DOUBLE HEX ORDER#
1/4	.244	1621-244
9/32	.275	1621-275
5/16	.305	1621-305
11/32	.337	1621-337
1.5748 Mounting Diameter		1.00 Overall Length
1/4	.244	1422-244
9/32	.275	1422-275
5/16	.305	1422-305
11/32	.337	1422-337
3/8	.368	1422-368
13/32	.399	1422-399
7/16	.429	1422-429
15/32	.462	1422-462
1/2	.493	1422-493
17/32	.524	1422-524
9/16	.555	1422-555
19/32	.587	1422-587
5/8	.618	1422-618
21/32	.649	1422-649
11/16	.681	1422-681
23/32	.712	1422-712
3/4	.743	1422-743
2.3125 Mounting Diameter		1.25 Overall Length
11/16	.681	1423-681
23/32	.712	1423-712
3/4	.743	1423-743
25/32	.774	1423-774
13/16	.805	1423-805
27/32	.835	1423-835
7/8	.866	1423-866
29/32	.897	1423-897
15/16	.929	1423-929
31/32	.960	1423-960
1	.991	1423-991

METRIC

.9448 Mounting Diameter		.75 Overall Length
Nominal Size	B	HEX ORDER#
6mm	.228	1621-228
7mm	.267	1621-267
8mm	.306	1621-306
9mm	.346	1621-346
1.5748 Mounting Diameter		1.00 Overall Length
6mm	.228	1422-228
7mm	.267	1422-267
8mm	.306	1422-306
9mm	.346	1422-346
10mm	.385	1422-385
11mm	.424	1422-424
12mm	.462	1422-462
13mm	.501	1422-501
14mm	.540	1422-540
15mm	.580	1422-580
16mm	.619	1422-619
17mm	.659	1422-659
18mm	.698	1422-698
19mm	.737	1422-737
2.3125 Mounting Diameter		1.25 Overall Length
18mm	.698	1423-698
19mm	.737	1423-737
20mm	.775	1423-775
21mm	.814	1423-814
22mm	.853	1423-853
23mm	.893	1423-893
24mm	.932	1423-932
25mm	.970	1423-970
26mm	1.009	1423-1.009

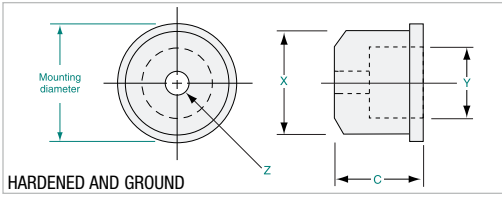
Across the flats dimensions conform to IFI and ANSI/ASME standards for maximum tool life.

Broach Tool Materials Available: **M-2 H.S.S.** (standard) or **P-M4 H.S.S.** (Premium)

Broach Tool Coatings Available: **Titanium Nitride (TiN)** or **Titanium Carbonitride (TiCN)**

Order: 586-465-5000 • Fax: 586-465-3030





Broach Tool Blank Material Available:
M-2 H.S.S. (standard) • Powered Metal (PM4) (premium)

.9448 Mounting Diameter

C	X	Y	Z	BLANK ORDER#
.50	.75	.44	.09	1001-2
.62	.75	.44	.09	1001-4
.75	.75	.44	.09	1001-6
1.00	.75	.44	.09	1001-8

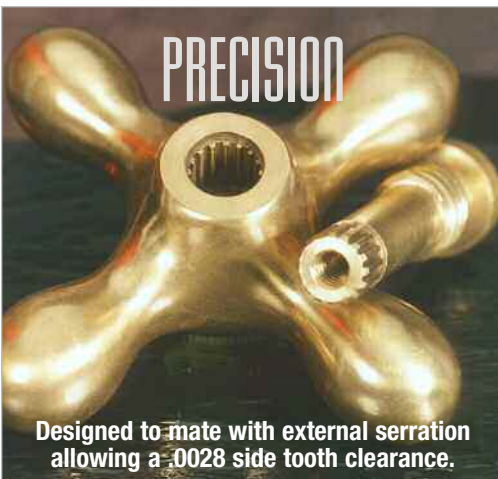
1.5748 Mounting Diameter

.75	1.40	.75	.12	1002-2
1.00	1.40	.75	.12	1002-4
1.25	1.40	.75	.12	1002-6
1.50	1.40	.75	.12	1002-8

2.3125 Mounting Diameter

1.00	2.06	1.38	.50	1003-2
1.25	2.06	1.38	.50	1003-4
1.50	2.06	1.38	.50	1003-6
1.75	2.06	1.38	.50	1003-8

Available From Stock - Wire Ready!



.9448 Mounting Diameter

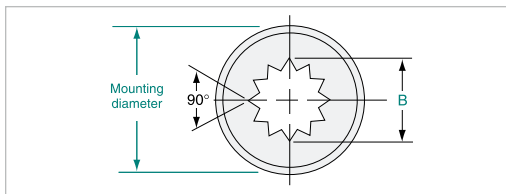
Nominal Size	No. of Teeth	B	.50 Overall Length SERRATION ORDER#
5/16	11	.3085	1131-3085
	15	.3085	1151-3085
	19	.3085	1171-3085
11/32	12	.3400	1131-3400
	16	.3400	1151-3400
	21	.3400	1171-3400
3/8	14	.3710	1131-3710
	18	.3710	1151-3710
	23	.3710	1171-3710

.9448 Mounting Diameter

Nominal Size	No. of Teeth	B	1.00 Overall Length SERRATION ORDER#
5/16	11	.3085	1831-3085
	15	.3085	1851-3085
	19	.3085	1871-3085
11/32	12	.3400	1831-3400
	16	.3400	1851-3400
	21	.3400	1871-3400
3/8	14	.3710	1831-3710
	18	.3710	1851-3710
	23	.3710	1871-3710

1.5748 Mounting Diameter

Nominal Size	No. of Teeth	B	.75 Overall Length SERRATION ORDER#
5/16	11	.3085	1232-3085
	15	.3085	1252-3085
	19	.3085	1272-3085
11/32	12	.3400	1232-3400
	16	.3400	1252-3400
	21	.3400	1272-3400
3/8	14	.3710	1232-3710
	18	.3710	1252-3710
	23	.3710	1272-3710
13/32	15	.4020	1232-4020
	19	.4020	1252-4020
	24	.4020	1272-4020
7/16	16	.4335	1232-4335
	21	.4335	1252-4335
	26	.4335	1272-4335
15/32	17	.4650	1232-4650
	22	.4650	1252-4650
	28	.4650	1272-4650
1/2	18	.4960	1232-4960
	24	.4960	1252-4960
	30	.4960	1272-4960
17/32	19	.5270	1232-5270
	25	.5270	1252-5270
	32	.5270	1272-5270
9/16	20	.5585	1232-5585
	27	.5585	1252-5585
	34	.5585	1272-5585
19/32	21	.5900	1232-5900
	28	.5900	1252-5900
	36	.5900	1272-5900
5/8	23	.6210	1232-6210
	30	.6210	1252-6210
	38	.6210	1272-6210
21/32	24	.6520	1232-6520
	31	.6520	1252-6520
	39	.6520	1272-6520
11/16	25	.6835	1232-6835
	33	.6835	1252-6835
	41	.6835	1272-6835
23/32	26	.7150	1232-7150
	35	.7150	1252-7150
	43	.7150	1272-7150
3/4	27	.7460	1232-7460
	36	.7460	1252-7460
	45	.7460	1272-7460
25/32	28	.7770	1232-7770
	38	.7770	1252-7770
	47	.7770	1272-7770
13/16	29	.8085	1232-8085
	39	.8085	1252-8085
	49	.8085	1272-8085
27/32	30	.8400	1232-8400
	41	.8400	1252-8400
	51	.8400	1272-8400
7/8	32	.8710	1232-8710
	42	.8710	1252-8710
	53	.8710	1272-8710

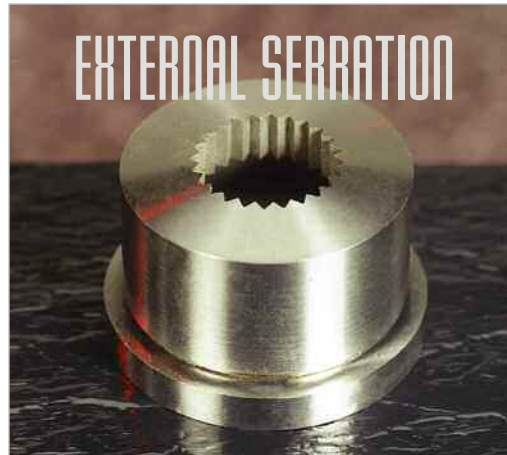


ADDITIONAL SERRATION SIZES
 available from stock for immediate delivery.
 Made to order configurations, 5-7 working days.

1.5748 Mounting Diameter			1.50 Overall Length
Nominal Size	No. of Teeth	B	SERRATION ORDER#
5/16	11	.3085	1832-3085
	15	.3085	1852-3085
	19	.3085	1872-3085
11/32	12	.3400	1832-3400
	16	.3400	1852-3400
	21	.3400	1872-3400
3/8	14	.3710	1832-3710
	18	.3710	1852-3710
	23	.3710	1872-3710
13/32	15	.4020	1832-4020
	19	.4020	1852-4020
	24	.4020	1872-4020
7/16	16	.4335	1832-4335
	21	.4335	1852-4335
	26	.4335	1872-4335
15/32	17	.4650	1832-4650
	22	.4650	1852-4650
	28	.4650	1872-4650
1/2	18	.4960	1832-4960
	24	.4960	1852-4960
	30	.4960	1872-4960
17/32	19	.5270	1832-5270
	25	.5270	1852-5270
	32	.5270	1872-5270
9/16	20	.5585	1832-5585
	27	.5585	1852-5585
	34	.5585	1872-5585
19/32	21	.5900	1832-5900
	28	.5900	1852-5900
	36	.5900	1872-5900
5/8	23	.6210	1832-6210
	30	.6210	1852-6210
	38	.6210	1872-6210
21/32	24	.6520	1832-6520
	31	.6520	1852-6520
	39	.6520	1872-6520
11/16	25	.6835	1832-6835
	33	.6835	1852-6835
	41	.6835	1872-6835
23/32	26	.7150	1832-7150
	35	.7150	1852-7150
	43	.7150	1872-7150
3/4	27	.7460	1832-7460
	36	.7460	1852-7460
	45	.7460	1872-7460

2.3125 Mounting Diameter			1.00 Overall Length
Nominal Size	No. of Teeth	B	SERRATION ORDER#
3/4	27	.7460	1233-7460
	36	.7460	1253-7460
	45	.7460	1273-7460
25/32	28	.7770	1233-7770
	38	.7770	1253-7770
	47	.7770	1273-7770
13/16	29	.8085	1233-8085
	39	.8085	1253-8085
	49	.8085	1273-8085
27/32	30	.8400	1233-8400
	41	.8400	1253-8400
	51	.8400	1273-8400
7/8	32	.8710	1233-8710
	42	.8710	1253-8710
	53	.8710	1273-8710
29/32	33	.9020	1233-9020
	44	.9020	1253-9020
	54	.9020	1273-9020
15/16	34	.9335	1233-9335
	45	.9335	1253-9335
	56	.9335	1273-9335
31/32	35	.9650	1233-9650
	47	.9650	1253-9650
	58	.9650	1273-9650
1	36	.9960	1233-9960
	48	.9960	1253-9960
	60	.9960	1273-9960

2.3125 Mounting Diameter			1.75 Overall Length
Nominal Size	No. of Teeth	B	SERRATION ORDER#
3/4	27	.7460	1833-7460
	36	.7460	1853-7460
	45	.7460	1873-7460
25/32	28	.7770	1833-7770
	38	.7770	1853-7770
	47	.7770	1873-7770
13/16	29	.8085	1833-8085
	39	.8085	1853-8085
	49	.8085	1873-8085
27/32	30	.8400	1833-8400
	41	.8400	1853-8400
	51	.8400	1873-8400
7/8	32	.8710	1833-8710
	42	.8710	1853-8710
	53	.8710	1873-8710
29/32	33	.9020	1833-9020
	44	.9020	1853-9020
	54	.9020	1873-9020
15/16	34	.9335	1833-9335
	45	.9335	1853-9335
	56	.9335	1873-9335
31/32	35	.9650	1833-9650
	47	.9650	1853-9650
	58	.9650	1873-9650
1	36	.9960	1833-9960
	48	.9960	1853-9960
	60	.9960	1873-9960



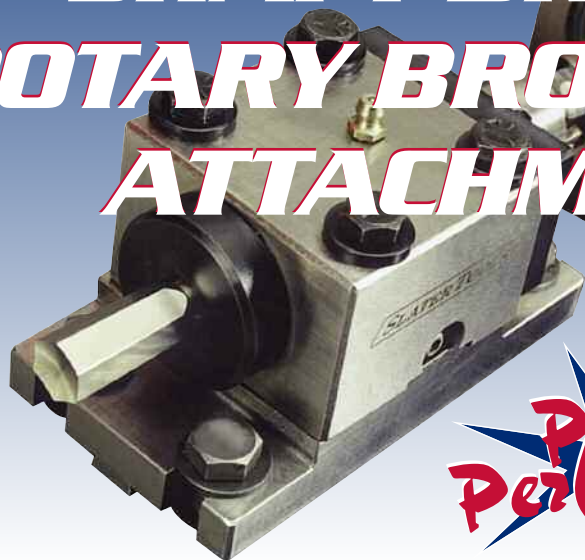
Broach Tool Materials Available: **M-2 H.S.S.** (standard) or **P-M4 H.S.S.** (Premium)
 Broach Tool Coatings Available: **Titanium Nitride (TiN)** or **Titanium Carbonitride (TiCN)**

Order: 586-465-5000 • Fax: 586-465-3030



BROACHING ON THE SCREW MACHINE

SHAFT-DRIVEN ROTARY BROACHING ATTACHMENT



**Proven
Performance**

It is synchronized (1:1 ratio)
with the spindle by means of a spline shaft and pick-off gear.

This attachment has several advantages:

**It eliminates any twisting of the form
and skidding on the work piece chamfer.**

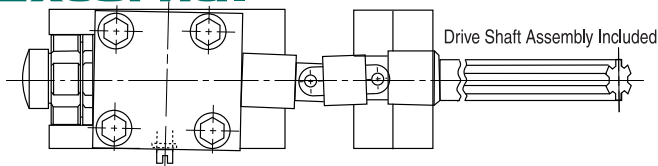
**It also increases the broach tool life
and deeper forms can be obtained.**

Slater Tools offers a variety of attachment sizes for internal and external work.

This attachment is available for use on these multi-spindle machines

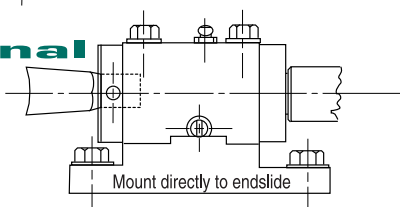
Acme • New Britain • Cone • Warner & Swasey • Wickman

External



Drive Shaft Assembly Included

Internal



Mount directly to endslide



CALL THE EXPERTS

ACME

INTERNAL

ORDER#	Machine Types	Broach Shank Dia.
BRA-11106	5/8 RA6 Flat Base	.500
BRA-11116	9/16 RA6, 9/16 RAN6, 1" RA6, 1" RAN6 Flat Base	.500
BRA-11126	1-1/4 RA6, RB6 Flat Base	.500
BRA-11136	1-5/8 RA6, 1-5/8 RB6, 2" RAS6, 2" RB6 Flat Base	.500
BRA-11146	2-5/8 RB6 Flat Base	.500
BRA-11208	3/4 RA8 Flat Base	.500
BRA-11218	1-1/4 RB8, 1-5/8 RBN8 Flat Base	.500
BRA-11228	1-5/8 RA8, RB8, 2" RB8 Flat Base	.500
BRA-11238	2-1/4 RA8, RB8, 2-5/8 RA8, RB8 Flat Base	.500
BRA-12017	7/8, 1" RA4, R4, 9/16, 1" RA6 Angular Base	.500
BRA-12027	1-3/8, 1-5/8 R4, RA4, 1-5/8 RB4, 2" RAS4, 1" RAS6, R6, 1-1/4 R6, RA6, 1-5/8 R6 Angular Base	.500
BRA-12057	2-5/8, 3", 3-5/16, 3-1/2 R4, 2", 2-1/4, 2-5/8 R6, RA6 Angular Base	.500
BRA-11416	9/16 RA6, RAN6, 1" RA6, RAN6 Flat Base	.750
BRA-11426	1-1/4 RA6, RB6 Flat Base	.750
BRA-11436	1-5/8 RA6, RB6, 2" RA6, RAS6 Flat Base	.750
BRA-11446	2-5/8 RB6 Flat Base	.750
BRA-11508	3/4 RA8 Flat Base	.750
BRA-11518	1-1/4 RB8, 1-5/8 RBN8 Flat Base	.750
BRA-11528	1-5/8 RA8, RB8, 2" RB8 Flat Base	.750
BRA-11538	2-1/4 RA8, RB8, 2-5/8 RA8, RB8 Flat Base	.750
BRA-12327	1-3/8, 1-5/8 R4, RA4, 1-5/8 RB4 & 2" RAS4, 1" RAS6, 1", 1-1/4, 1-5/8 R6 & 1-1/4 RA6 Angular Base	.750
BRA-12357	2-5/8, 3", 3-5/16, 3-1/2 R4, 2", 2-1/4, 2-5/8 R6, RA6 Angular Base	.750

EXTERNAL

ORDER#	Machine Types	Broach Mounting Dia.
BRA-13106	5/8 RA6 Flat Base	.9448
BRA-13116	9/16 RA6, RAN6, 1" RA6, RAN6 Flat Base	.9448
BRA-13126	1-1/4 RA6, RB6 Flat Base	.9448
BRA-13136	1-5/8 RA6, RB6, 2" RAS6, RB6 Flat Base	.9448
BRA-13146	2-5/8 RB6 Flat Base	.9448
BRA-13208	3/4 RA8 Flat Base	.9448
BRA-13218	1-1/4 RB8, 1-5/8 RBN8 Flat Base	.9448
BRA-13228	1-5/8 RA8, RB8, 2" RB8 Flat Base	.9448
BRA-13238	2-1/4 RA8, RB8, 2-5/8 RA8, RB8 Flat Base	.9448
BRA-14017	7/8, 1" R4, RA4, 9/16, 1" RA6 Angular Base	.9448
BRA-14027	1-3/8, 1-5/8 R4, RA4, 1-5/8 RB4, 2" RAS4, 1" RAS6, R6, 1-1/4 R6, RA6, 1-5/8 R6 Angular Base	.9448
BRA-14057	2-5/8, 3", 3-5/16, 3-1/2 R4, 2", 2-1/4, 2-5/8, R6, RA6 Angular Base	.9448
BRA-13416	9/16, 1" RA6, RAN6 Flat Base	1.5748
BRA-13426	1-1/4 RA6, RB6 Flat Base	1.5748
BRA-13436	1-5/8, 2" RA6, RB6 Flat Base	1.5748
BRA-13446	2-5/8 RB6 Flat Base	1.5748
BRA-13508	3/4 RA8 Flat Base	1.5748
BRA-13518	1-1/4 RB6, 1-5/8 RBN8 Flat Base	1.5748
BRA-13528	1-5/8 RA8, RB8, 2" RB8 Flat Base	1.5748
BRA-13538	2-1/4 RA8, RB8, 2-5/8 RA8, RB8 Flat Base	1.5748
BRA-14327	1-3/8, 1-5/8 R4, RA4, 1-5/8 RB4, 2" RAS4, 1" R6, RAS6, 1-1/4, 1-5/8 R6, RA6 Angular Base	1.5748
BRA-14357	2-5/8, 3", 3-5/16, 3-1/2 R4, 2", 2-1/4, 2-5/8 R6, RA6 Angular Base	1.5748

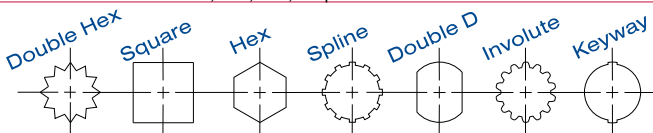
New Britain

INTERNAL

ORDER#	Machine Types	Broach Shank Dia.
BRA-21116	Model 51, 60, 61, 6 Spindle Dovetail Base	.500
BRA-21126	Model 52, 6 Spindle Dovetail Base	.500
BRA-21146	Model 61, 62, 6 Spindle Dovetail Base	.500
BRA-21166	Model 601, 6 Spindle Dovetail Base	.500
BRA-21176	Model 656, 6 Spindle Dovetail Base	.500
BRA-21186	Model C-657, 6 Spindle Dovetail Base	.500
BRA-21218	Model 81, 8 Spindle Dovetail Base	.500
BRA-21228	Model 82, 8 Spindle Dovetail Base	.500
BRA-21248	Model 812, 816, 817, 8 Spindle Dovetail Base	.500
BRA-21416	Model 51, 60, 61, 6 Spindle Dovetail Base	.750
BRA-21426	Model 52, 6 Spindle Dovetail Base	.750
BRA-21446	Model 61, 62, 6 Spindle Dovetail Base	.750
BRA-21466	Model 601 6 Spindle Dovetail Base	.750
BRA-21476	Model 656, 6 Spindle Dovetail Base	.750
BRA-21486	Model C-657, 6 Spindle Dovetail Base	.750
BRA-21518	Model 81, 8 Spindle Dovetail Base	.750
BRA-21528	Model 82, 8 Spindle Dovetail Base	.750
BRA-21548	Model 812, 816, 817, 8 Spindle Dovetail Base	.750

EXTERNAL

ORDER#	Machine Types	Broach Mounting Dia.
BRA-23116	Model 812, 816, 817 8 Spindle Dovetail Base	.9448
BRA-23126	Model 52, 6 Spindle Dovetail Base	.9448
BRA-23146	Model 61, 62, 6 Spindle Dovetail Base	.9448
BRA-23166	Model 601, 6 Spindle Dovetail Base	.9448
BRA-23176	Model 656, 6 Spindle Dovetail Base	.9448
BRA-23186	Model C-657 6 Spindle Dovetail Base	.9448
BRA-23218	Model 81, 8 Spindle Dovetail Base	.9448
BRA-23228	Model 82, 8 Spindle Dovetail Base	.9448
BRA-23248	Model 812, 816, 817 8 Spindle Dovetail Base	.9448
BRA-23416	Model 51, 60, 61, 6 Spindle Dovetail Base	1.5748
BRA-23426	Model 52, 6 Spindle Dovetail Base	1.5748
BRA-23446	Model 61,62, 6 Spindle Dovetail Base	1.5748
BRA-23466	Model 601, 6 Spindle Dovetail Base	1.5748
BRA-23476	Model 656, 6 Spindle Dovetail Base	1.5748
BRA-23486	Model C-657, 6 Spindle Dovetail Base	1.5748
BRA-23518	Model 81, 8 Spindle Dovetail Base	1.5748
BRA-23528	Model 82, 8 Spindle Dovetail Base	1.5748
BRA-23548	Model 812, 816, 817, 8 Spindle Dovetail Base	1.5748



Broach Tool Materials Available: **M-2 H.S.S.** (standard) or **P-M4 H.S.S.** (Premium)

Broach Tool Coatings Available: **Titanium Nitride (TiN)** or Titanium Carbonitride (TiCN)

Order: **586-465-5000** • Fax: **586-465-3030**

Monday thru Friday 8 a.m. till 5 p.m. EST • 44725 Trinity Drive • Clinton Township, MI 48038

SLATER TOOLS
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CONE INTERNAL

ORDER#	Machine Types	Broach Shank Dia.
BRA-31016	TV 1", A6 1", 1-1/4, 6 Spindle Flat Base	.500
BRA-31018	C8 2-1/4, C8 2-5/8, 8 Spindle Flat Base	.500
BRA-31036	A6, TA 1-5/8 6 Spindle Flat Base	.500
BRA-31046	C6 2-1/4, C6 2-5/8, 6 Spindle Flat Base	.500
BRA-37006	B, QE, QF, 9/16, 6 Spindle Radius Base	.500
BRA-37016	TS, TC, TB, 1", 6 Spindle Radius Base	.500
BRA-37018	A8, VK, 1", 8 Spindle Radius Base	.500
BRA-37026	SW, SX, TG, SY 1" 6 Spindle Radius Base	.500
BRA-37028	VL, VV, 1-1/4, VM, WW, 1-1/2, VB, A8, VN, VF, 1-5/8, XX 1-7/8, 8 Spindle Radius Base	.500
BRA-37036	TF 1-5/8 6 Spindle Radius Base	.500
BRA-37038	GL 2-1/4, GK 2-5/8, 8 Spindle Radius Base	.500
BRA-37046	TP, SN 2", 6 Spindle Radius Base	.500
BRA-37056	SD 2-1/4, SE 2-5/8, 6 Spindle Radius Base	.500
BRA-31316	TV 1", A6 1", 1-1/4 6 Spindle Flat Base	.750
BRA-31318	C8 2-1/4, C8 2-5/8 8 Spindle Flat Base	.750
BRA-31336	A6, TA 1-5/8 6 Spindle Flat Base	.750
BRA-31346	C6 2-1/4, C6 2-5/8, 6 Spindle Flat Base	.750
BRA-37316	TS, TC, TB 1", 6 Spindle Radius Base	.750
BRA-37318	A8, VK 1", 8 Spindle Radius Base	.750
BRA-37326	SW, SX, TG, SY 1" 6 Spindle Radius Base	.750
BRA-37328	VL, VV 1-1/4, VM, WW 1-1/2, VB, A8, VN, VF 1-5/8, XX 1-7/8, 8 Spindle Radius Base	.750
BRA-37336	TF 1-5/8, 6 Spindle Radius Base	.750
BRA-37338	GL 2-1/4, GK 2-5/8, 8 Spindle Radius Base	.750
BRA-37346	TP, SN 2", 6 Spindle Radius Base	.750
BRA-37356	SD 2-1/4, SE 2-5/8, 6 Spindle Radius Base	.750

EXTERNAL

ORDER#	Machine Types	Broach Mounting Dia.
BRA-33016	TV 1", A6 1", 1-1/4 6 Spindle Flat Base	.9448
BRA-33018	C8 2-1/4, C8 2-5/8, 8 Spindle Flat Base	.9448
BRA-33036	A6, TA 1-5/8, 6 Spindle Flat Base	.9448
BRA-33046	C6 2-1/4, C6 2-5/8, 6 Spindle	.9448
BRA-38006	B, QE, QF 9/16, 6 Spindle Radius Base	.9448
BRA-38016	TS, TC, TB 1", 6 Spindle Radius Base	.9448
BRA-38018	A8, VK 1", 8 Spindle Radius Base	.9448
BRA-38026	SW, SX, TG, SY 1" 6 Spindle Radius Base	.9448
BRA-38028	VL, VV 1-1/4, VM, WW 1-1/2, VB, A8, VN, VF 1-5/8, XX 1-7/8, 8 Spindle Radius Base	.9448
BRA-38036	TF 1-5/8, 6 Spindle Radius Base	.9448
BRA-38038	GL 2-1/4, GK 2-5/8, 8 Spindle Radius Base	.9448
BRA-38046	TP, SN 2", 6 Spindle Radius Base	.9448
BRA-38056	SD 2-1/4, SE 2-5/8, 6 Spindle Radius Base	.9448
BRA-33316	TV 1", A6 1", 1-1/4, 6 Spindle Flat Base	1.5748
BRA-33318	C8 2-1/4, C8 2-5/8 8 Spindle Flat Base	1.5748
BRA-33336	A6, TA 1-5/8 6 Spindle Flat Base	1.5748
BRA-33346	C6 2-1/4, C6 2-5/8, 6 Spindle Flat Base	1.5748
BRA-38316	TS, TC, TB 1" 6 Spindle Radius Base	1.5748
BRA-38318	A8, VK 1", 8 Spindle Radius Base	1.5748
BRA-38326	SW, SX, TG, SY 1" 6 Spindle Radius Base	1.5748
BRA-38328	VL, VV 1-1/4, VM, WW 1-1/2, VB, A8, VN, VF 1-5/8, XX 1-7/8, 8 Spindle Radius Base	1.5748
BRA-38336	TF 1-5/8, 6 Spindle Radius Base	1.5748
BRA-38338	GL 2-1/4, GK 2-5/8, 8 Spindle Radius Base	1.5748
BRA-38346	TP, SN 2", 6 Spindle Radius Base	1.5748
BRA-38356	SD 2-1/4, SE 2-5/8, 6 Spindle Radius Base	1.5748

Warner & Swasey

INTERNAL

ORDER#	Machine Types	Broach Shank Dia.
BRA-51015	1-3/4 M-2500, 2-1/4 M-2530, 5 Spindle Flat Base	.500
BRA-51016	3/4 M-3330, 1-1/4 M-3300, 6 Spindle Flat Base	.500
BRA-51315	1-3/4 M-2500, 2-1/4 M2530, 5 Spindle Flat Base	.750
BRA-51316	3/4 M-3330, 1-1/4 M-3300, 6 Spindle Flat Base	.750

EXTERNAL

ORDER#	Machine Types	Broach Mounting Dia.
BRA-53015	1-3/4 M-2500, 2-1/4 M-2530, 5 Spindle Flat Base	.9448
BRA-53016	3/4 M-3330, 1-1/4 M-3300, 6 Spindle Flat Base	.9448
BRA-53315	1-3/4 M-2500, 2-1/4 M-2530, 5 Spindle Flat Base	1.5748
BRA-53316	3/4 M-3330, 1-1/4 M-3300, 6 Spindle Flat Base	1.5748

Wickman

INTERNAL

ORDER#	Machine Types	Broach Shank Dia.
BRA-61015	1-3/8, 5 Spindle Flat Base	.500
BRA-61016	5/8, 6 Spindle Flat Base	.500
BRA-61018	1-3/4, 8 Spindle Flat Base	.500
BRA-61025	1-3/4, 2-1/4, 5 Spindle Flat Base	.500
BRA-61026	1", 6 Spindle Flat Base	.500
BRA-61036	1-3/8, 1-3/4, 6 Spindle Flat Base	.500
BRA-61046	2-1/4, 6 Spindle Flat Base	.500
BRA-61056	2-5/8, 6 Spindle Flat Base	.500
BRA-61315	1-3/8, 5 Spindle Flat Base	.750
BRA-61318	1-3/4, 8 Spindle Flat Base	.750
BRA-61325	1-3/4, 2-1/4, 5 Spindle Flat Base	.750
BRA-61326	1", 6 Spindle Flat Base	.750
BRA-61336	1-3/8, 1-3/4, 6 Spindle Flat Base	.750
BRA-61346	2-1/4, 6 Spindle Flat Base	.750
BRA-61356	2-5/8, 6 Spindle Flat Base	.750

EXTERNAL

ORDER#	Machine Types	Broach Mounting Dia.
BRA-63015	1-3/8, 5 Spindle Flat Base	.9448
BRA-63016	5/8, 6 Spindle Flat Base	.9448
BRA-63018	1-3/4, 8 Spindle Flat Base	.9448
BRA-63025	1-3/4, 2-1/4, 5 Spindle Flat Base	.9448
BRA-63026	1", 6 Spindle Flat Base	.9448
BRA-63036	1-3/8, 1-3/4, 6 Spindle Flat Base	.9448
BRA-63046	2-1/4, 6 Spindle Flat Base	.9448
BRA-63056	2-5/8, 6 Spindle Flat Base	.9448
BRA-63315	1-3/8, 5 Spindle Flat Base	1.5748
BRA-63318	1-3/4, 8 Spindle Flat Base	1.5748
BRA-63325	1-3/4, 2-1/4, 5 Spindle Flat Base	1.5748
BRA-63326	1", 6 Spindle Flat Base	1.5748
BRA-63336	1-3/8, 1-3/4, 6 Spindle Flat Base	1.5748
BRA-63346	2-1/4, 6 Spindle Flat Base	1.5748
BRA-63356	2-5/8, 6 Spindle Flat Base	1.5748

5-7 WORKING DAYS UPON APPROVAL.

Order By Fax

The following information is required to process your order. Please be as detailed as possible, leaving no entries blank.

SERRATION BROACHES

Date: _____ Quote Order P.O.#: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Contact Name: _____

Phone: _____ Fax: _____

Machine being used: _____

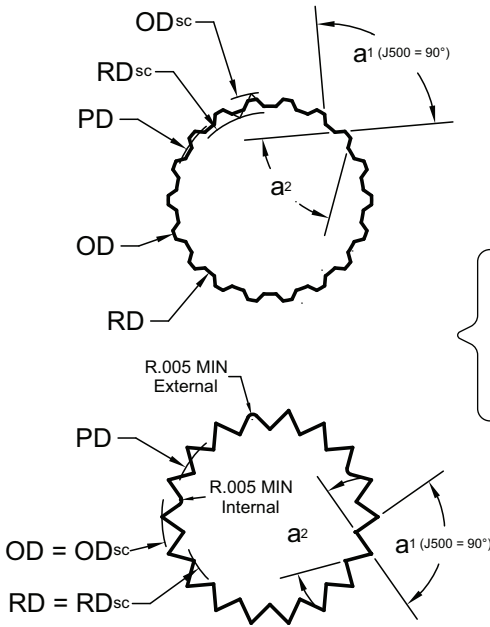
Material to broach: _____ Quantity to run: _____

Broaching Depth: _____ Rotary Broach Tool Holder: _____

Please check the type of form: External Internal

SERRATED FORMS

Fill in Blanks as Shown



Number of Teeth in 360° (N): _____
and
 MAX Major Diameter (OD): _____
and
 MIN Minor Diameter (RD): _____

and

Major @ Sharp Corner (OD_{sc}): _____
or
 Minor @ Sharp Corner (RD_{sc}): _____
or
 [($OD_{sc} + RD_{sc}$) / 2] Pitch Diameter (PD): _____

and

Outer Angle (a^1): _____
or
 Inner Angle (a^2): _____



Broach Tool Materials Available: **M-2 H.S.S.** (standard) or **P-M4 H.S.S.** (Premium)
 Broach Tool Coatings Available: **Titanium Nitride(TiN)** or **Titanium Carbonitride (TiCN)**

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5-7 WORKING DAYS
UPON APPROVAL.

Order By Fax

The following information is required to process your order. Please be as detailed as possible, leaving no entries blank.

SPLINE BROACHES

Date: _____ Quote Order P.O. #: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Contact Name: _____

Phone: _____ Fax: _____

Machine being used: _____

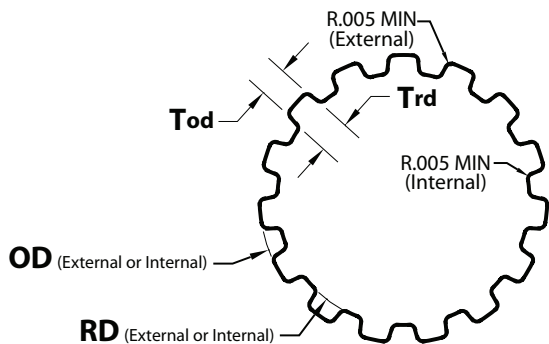
Material to broach: _____ Quantity to run: _____

Broaching Depth: _____ Rotary Broach Tool Holder: _____

SPLINE FORMS

Please fill in all blanks, Also provide drawing or notes on this form if other dimensions or special features are required.

Please check the type of form: External Internal



Number of Teeth in 360° (N): _____

MAX Major Diameter (OD): _____

MIN Minor Diameter (RD): _____

Tooth Width at Sharp Corners

on OD (Tod): _____

on RD (Trd): _____

(When Tod = Trd - Provide Only Tod)



Broach Tool Materials Available: **M-2 H.S.S.** (standard) or **P-M4 H.S.S.** (Premium)

Broach Tool Coatings Available: **Titanium Nitride (TiN)** or **Titanium Carbonitride (TiCN)**

Order By Fax

5-7 WORKING DAYS
UPON APPROVAL.

The following information is required to process your order.
Please be as detailed as possible, leaving no entries blank.

SPUR GEAR OR INVOLUTE BROACHES

Date: _____ Quote Order P.O. #: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Contact Name: _____

Phone: _____ Fax: _____

Machine being used: _____

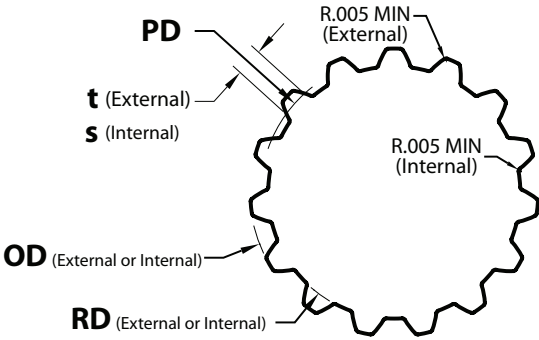
Material to broach: _____ Quantity to run: _____

Broaching Depth: _____ Rotary Broach Tool Holder: _____

INVOLUTE FORMS

Please fill in all blanks, Also provide drawing or notes on this form if other dimensions or special features are required.

Please check the type of form: External Internal



Number of Teeth in 360° (N): _____

MAX Major Diameter (OD): _____

MIN Minor Diameter (RD): _____

Pitch Diameter (PD) _____

Diametral Pitch (P): _____

Pressure Angle (Ø): _____

Actual Circular Tooth Thickness (t)
or Actual Circular Space Width (s): _____



Broach Tool Materials Available: **M-2 H.S.S.** (standard) or **P-M4 H.S.S.** (Premium)
Broach Tool Coatings Available: **Titanium Nitride (TiN)** or **Titanium Carbonitride (TiCN)**

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