

Specialized, High-performance Broaching Tools

Top-quality
materials.
Longer-lasting
coatings.

Standard, Configured, & Special Shapes

5-Day
Delivery!



Dayton Broaching Tools give manufacturers the ability to produce highly specialized, high-demand products for the medical, dental, and aerospace industries—products such as bone screws, dental implants, and aircraft assembly parts. Two standard shapes (square and hex) are available, as well as special shapes and sizes (e.g., six-lobe). Configured broaches are also available—a first in the industry. Longer-lasting coatings include TiN, TiCN, and TiAlN. Fits commercially available holders.

Quality broaching tools for
ultra-precision machining
& screw machine turning

High precision
**Internal
Broaches**



www.daytonprogress.com/broaches

Rotary Broaching

Rotary broaching is a fast, flexible, and accurate method for manufacturing polygon forms (internal and external) on the end of a work piece while it is rotating. Rotary broaching is performed on CNC, turning, milling, drilling, screw machines, or lathes.

Rotary broaching takes only a few seconds; it costs less because it is a single-step operation; it can produce forms to an accuracy of $\leq 0.0005''$; and it can be used to manufacture a broad range of high-precision, high-tech products.

Applications

Looking for new business in the medical, aerospace, automotive, or other high-tech industries? Consider using Dayton internal rotary broaches to produce quality, high-performance products that are in high demand in these dynamic growth markets—products that include bone screws, implants, prostheses, aircraft assembly parts, and more.

Industries Served:

- Appliance
- Automotive
- Aviation
- Dental
- Electronics
- General Manufacturing
- Medical
- Telecommunications

Ordering Information

(Standard Shapes):

Material Steel: PM (powder metal HSS),
CO (cobalt HSS)

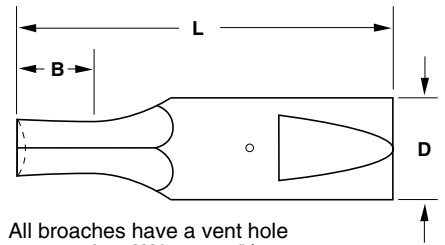
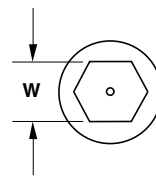
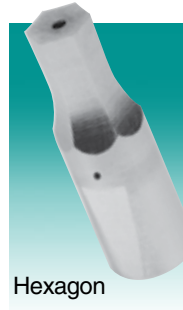
HOW TO ORDER

Specify:	Quantity	Catalog Number
Example:	14	31206HX
	22	51700SQ



All broaches have angled flats except 28mm length, which has a standard flat.

Standard Shapes



All broaches have a vent hole except when W is $< .120''/3.05\text{mm}$.

INCH .315 Shank Dia. 1.25 Overall Length

Shape Size	W	B	PM Cat.#	CO Cat.#
0.050	.0505	5/64	31200HX	31250HX
1/16	.0635	3/32	31201HX	31251HX
5/64	.0786	7/64	31202HX	31252HX
3/32	.0947	9/64	31203HX	31253HX
7/64	.1106	5/32	31204HX	31254HX
1/8	.1265	3/16	31205HX	31255HX
9/64	.1421	7/32	31206HX	31256HX
5/32	.1582	1/4	31207HX	31257HX
3/16	.1895	9/32	31209HX	31259HX
7/32	.2212	11/32	31210HX	31260HX
1/4	.2525	3/8	31211HX	31261HX

.500 Shank Dia. 1.50 Overall Length

Shape Size	W	B	PM Cat.#	CO Cat.#
3/32	.0947	9/64	51500HX	51550HX
7/64	.1106	5/32	51501HX	51551HX
1/8	.1265	3/16	51502HX	51552HX
9/64	.1421	7/32	51503HX	51553HX
5/32	.1582	1/4	51504HX	51554HX
3/16	.1895	9/32	51505HX	51555HX
7/32	.2212	11/32	51506HX	51556HX
1/4	.2525	3/8	51507HX	51557HX
9/32	.2840	7/16	51508HX	51558HX
5/16	.3155	1/2	51509HX	51559HX
11/32	.3467	9/16	51510HX	51560HX
3/8	.3785	9/16	51511HX	51561HX
13/32	.4097	9/16	51512HX	51562HX

.500 Shank Dia. 1.75 Overall Length

Shape Size	W	B	PM Cat.#	CO Cat.#
3/32	.0947	9/64	51700HX	51750HX
7/64	.1106	5/32	51701HX	51751HX
1/8	.1265	3/16	51702HX	51752HX
9/64	.1421	7/32	51703HX	51753HX
5/32	.1582	1/4	51704HX	51754HX
3/16	.1895	9/32	51705HX	51755HX
7/32	.2212	11/32	51706HX	51756HX
1/4	.2525	3/8	51707HX	51757HX
9/32	.2840	7/16	51708HX	51758HX
5/16	.3155	1/2	51709HX	51759HX
11/32	.3467	9/16	51710HX	51760HX
3/8	.3785	9/16	51711HX	51761HX
13/32	.4097	9/16	51712HX	51762HX

METRIC .315/8mm Shank Dia. 28mm Overall Length

Shape Size	W	B	PM Cat.#	CO Cat.#
1.50mm	0.0605	3/32	32800HX	32850HX
2.00mm	0.0805	7/64	32801HX	32851HX
2.50mm	0.1005	5/32	32802HX	32852HX
3.00mm	0.1205	3/16	32803HX	32853HX
4.00mm	0.1605	1/4	32804HX	32854HX
5.00mm	0.1995	5/16	32805HX	32855HX
6.00mm	0.2395	3/8	32806HX	32856HX

.315/8mm Shank Dia. 31.75mm 1.25 Overall Length

Shape Size	W	B	PM Cat.#	CO Cat.#
1.50mm	0.0605	3/32	31220HX	31270HX
2.00mm	0.0805	7/64	31221HX	31271HX
2.50mm	0.1005	5/32	31222HX	31272HX
3.00mm	0.1205	3/16	31223HX	31273HX
4.00mm	0.1605	1/4	31224HX	31274HX
5.00mm	0.1995	5/16	31225HX	31275HX
6.00mm	0.2395	3/8	31226HX	31276HX

.500/12.7mm Shank Dia. 44.45mm/1.75 Overall Length

Shape Size	W	B	PM Cat.#	CO Cat.#
2.00mm	0.0805	9/64	51720HX	51770HX
2.50mm	0.1005	5/32	51721HX	51771HX
3.00mm	0.1205	3/16	51722HX	51772HX
4.00mm	0.1605	1/4	51723HX	51773HX
5.00mm	0.1995	5/16	51724HX	51774HX
6.00mm	0.2395	3/8	51725HX	51775HX
7.00mm	0.2785	7/16	51726HX	51776HX
8.00mm	0.3185	1/2	51727HX	51777HX
9.00mm	0.3575	9/16	51728HX	51778HX
10.00mm	0.3985	9/16	51729HX	51779HX

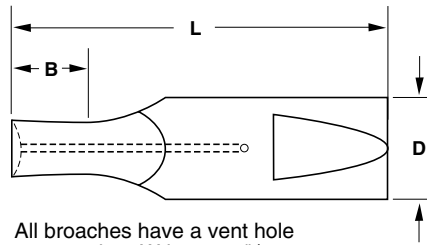
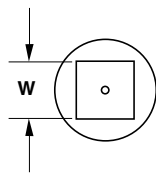


Standard—5 Days
Configured—5 Days
Special—quoted

Standard Shapes



Square



All broaches have a vent hole except when W is < .120"/3.05mm.

INCH .315 Shank Dia. 1.25 Overall Length

Shape Size	W	B	PM Cat.#	CO Cat.#
1/16	.0635	9/64	31201SQ	31251SQ
5/64	.0785	9/64	31202SQ	31252SQ
3/32	.0947	9/64	31203SQ	31253SQ
7/64	.1105	3/16	31204SQ	31254SQ
1/8	.1265	3/16	31205SQ	31255SQ
9/64	.1421	9/32	31206SQ	31256SQ
5/32	.1582	1/4	31207SQ	31257SQ
11/64	.1735	9/32	31208SQ	31258SQ
3/16	.1895	9/32	31209SQ	31259SQ

.500 Shank Dia. 1.50 Overall Length

Shape Size	W	B	PM Cat.#	CO Cat.#
3/32	.0947	9/64	51500SQ	51550SQ
7/64	.1105	7/32	51501SQ	51551SQ
1/8	.1265	3/16	51502SQ	51552SQ
9/64	.1421	1/4	51503SQ	51553SQ
5/32	.1582	1/4	51504SQ	51554SQ
3/16	.1895	9/32	51505SQ	51555SQ
7/32	.2212	11/32	51506SQ	51556SQ
1/4	.2525	3/8	51507SQ	51557SQ
9/32	.2840	7/16	51508SQ	51558SQ
5/16	.3155	1/2	51509SQ	51559SQ
11/32	.3470	9/16	51510SQ	51560SQ

.500 Shank Dia. 1.75 Overall Length

Shape Size	W	B	PM Cat.#	CO Cat.#
3/32	.0947	9/64	51700SQ	51750SQ
7/64	.1105	7/32	51701SQ	51751SQ
1/8	.1265	3/16	51702SQ	51752SQ
9/64	.1421	1/4	51703SQ	51753SQ
5/32	.1582	1/4	51704SQ	51754SQ
3/16	.1895	9/32	51705SQ	51755SQ
7/32	.2212	11/32	51706SQ	51756SQ
1/4	.2525	3/8	51707SQ	51757SQ
9/32	.2840	7/16	51708SQ	51758SQ
5/16	.3155	1/2	51709SQ	51759SQ
11/32	.3470	9/16	51710SQ	51760SQ

METRIC .315/8mm Shank Dia. 28mm Overall Length

Shape Size	W	B	PM Cat.#	CO Cat.#
1.50mm	0.0605	7/64	32800SQ	32850SQ
2.00mm	0.0805	5/32	32801SQ	32851SQ
2.50mm	0.1005	3/16	32802SQ	32852SQ
3.00mm	0.1205	1/4	32803SQ	32853SQ
4.00mm	0.1605	5/16	32804SQ	32854SQ
5.00mm	0.1995	3/8	32805SQ	32855SQ

.315/8mm Shank Dia. 31.75mm/1.25 Overall Length

Shape Size	W	B	PM Cat.#	CO Cat.#
1.50mm	0.0605	7/64	31220SQ	31270SQ
2.00mm	0.0805	5/32	31221SQ	31271SQ
2.50mm	0.1005	3/16	31222SQ	31272SQ
3.00mm	0.1205	1/4	31223SQ	31273SQ
4.00mm	0.1605	5/16	31224SQ	31274SQ
5.00mm	0.1995	3/8	31225SQ	31275SQ

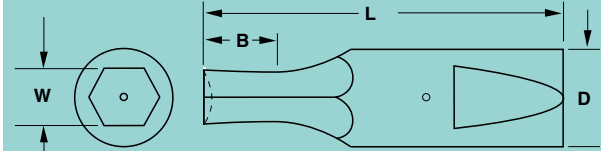
.500/12.7mm Shank Dia. 44.45mm/1.75 Overall Length

Shape Size	W	B	PM Cat.#	CO Cat.#
2.00mm	0.0805	5/32	51720SQ	51770SQ
2.50mm	0.1005	3/16	51721SQ	51771SQ
3.00mm	0.1205	1/4	51722SQ	51772SQ
4.00mm	0.1605	5/16	51723SQ	51773SQ
5.00mm	0.1995	3/8	51724SQ	51774SQ
6.00mm	0.2395	1/2	51725SQ	51775SQ
7.00mm	0.2785	9/16	51726SQ	51776SQ
8.00mm	0.3195	9/16	51727SQ	51777SQ

Configured Shapes

The products shown below are examples of configured products, i.e., standard shaped broaches (i.e., hexagon and square) made with non-standard dimensions. Use a simple single catalog number call-out on the order. No customer prints are required.

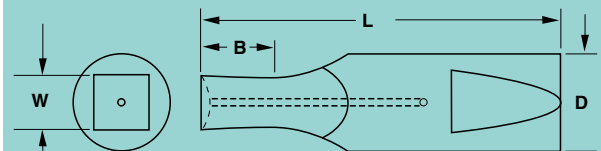
Type
RPN
(Hex)



B length = 1.5 x W unless otherwise specified.
All broaches have a vent hole except when W is < .120"/3.05mm.

RPN	D	W (inch)		L
		Min.	Max.	
31	.315 (8 mm)	.047	.272	28 mm 1.25 in.
50	.500	.094	.432	1.50 in. 1.75 in.

Type
RPS
(Square)



B length = 1.5 x W unless otherwise specified.
All broaches have a vent hole except when W is < .120"/3.05mm.

RPN	D	W (inch)		L
		Min.	Max.	
31	.315 (8 mm)	.063	.222	28 mm 1.25 in.
50	.500	.094	.353	1.50 in. 1.75 in.

Ordering Information

(Configured Shapes):

Material Steel: PM (powder metal HSS),
CO (cobalt HSS)

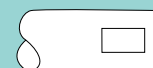
HOW TO ORDER

Specify:	Qty.	Type	D	L	Steel	*W	Coating
Example:	17	RPN	31	150	PM	W1500	XCN
	29	RPS	50	175	CO	W1995	XAN

*Across flats (actual dimension), as shown in drawings.



Standard—5 Days
Configured—5 Days
Special—quoted



All broaches have angled flats except 28mm length, which has a standard flat.

Surface Coatings

Available on all internal broaches

Dayton high-precision internal broaches can be treated to increase hardness, improve wear, etc. The available treatments and added delivery times are shown below.

Surface Coatings

Code / Added Delivery	Description	Material
XNT— DayTiN® + 3 days	Titanium Nitride	PM, CO
XCN— TiCN + 3 days	Titanium Carbonitride	PM, CO
XAN— DayTAN® + 4 days	TiAlN— Titanium Aluminum Nitride	PM, CO

DAYLube™ NanoCeramic Lubricating Grease



**LASTS
10 TIMES
LONGER!**

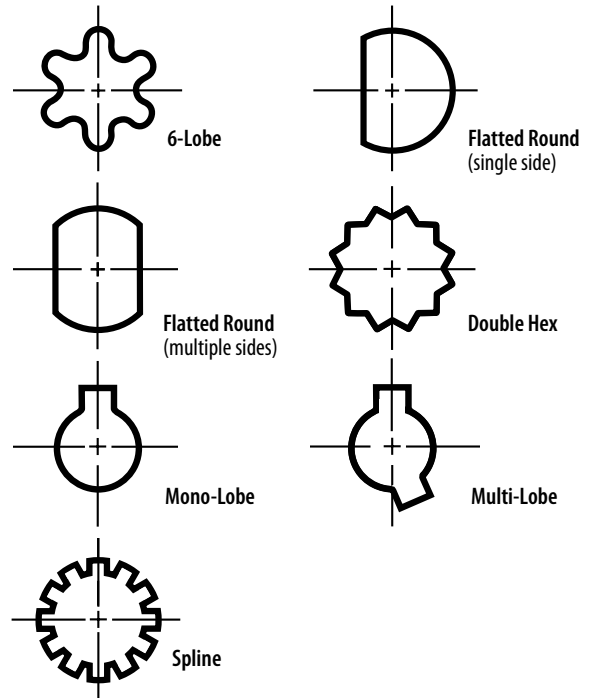
Dayton's DAYLube™ high-performance lubricating grease is ideal for rotary broach holders that require lubrication. DAYLube™ provides a lower coefficient of friction at all temperatures, and keeps your line up and running longer.

DAYLube™ is available in 16 oz. tubes, 16 oz. jars, and 1 and 5 gallon buckets.

Note: DAYLube™ components are fabricated over a calcium sulfonate thickener within a mid-viscosity petroleum-based paste. When replacing old grease in your holder, check any standard Grease Compatibility Chart to ensure an appropriate match.

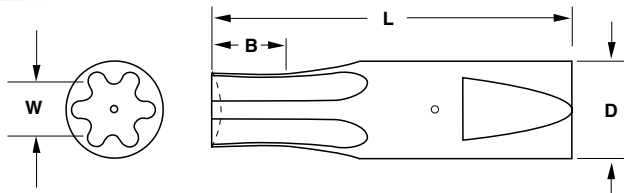
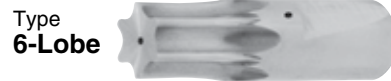
Special Shapes

Special products are broaches made with non-standard shapes. Customer prints are required with these orders. Additional per print shapes and sizes include the following:



All products packaged individually for protection.

An example of a special product (i.e., a broach made with a non-standard shape) is shown below.



In the 6-lobe shape above, available sizes include a .315 shank diameter with a 1.25 overall length with lobe sizes that vary from T5 to T45, plus a .500 shank diameter with a 1.75 overall length with lobe sizes that vary from T5 to T55.

Delivery time on special product varies, depending on the configuration, materials, and quantity.

All special product orders require a customer print, showing the size of the point selected.