

How it works

Burraway



- 1.** Upon entry, spring tension holds the *replaceable* and *adjustable* cutting blade in the extended position as it removes the burr on the front of the hole.
- 2.** As the feed load increases, the pre-set spring tension is exceeded and the blade retracts automatically as the tool passes through the workpiece. (The crowned and polished top surface of the blade will *not* mar the inside surface of the hole.)
- 3.** Spring tension again causes the blade to extend as it emerges from the ID of the part; the burr is removed on the back side of the hole on the return stroke.

A one-pass solution
to your
hole-deburring
problems!

*BURRAWAY® tools are available in both **inch** and **metric** programs (see tool specifications, pages 6-9). Tools for the **inch** program feature imperial (inch) hardware (adjusting screw); tools for the **metric** program have metric screws. Both are available from stock at standard prices.*



Burraway tools feature an inexpensive, replaceable cutting blade which adjusts to control the amount of edge break.

Design features

All BURRAWAY® tools operate on the same basic principle, but vary slightly in design as determined by tool size:

Type A tools (inch program; for hole sizes from .093 through .203 in.) and **Type MA** tools (metric program; sizes from 2 to 5mm) are a two-piece construction (arbor assembly and adapter). All Type A and MA arbor assemblies are interchangeable with their respective shank adapters.

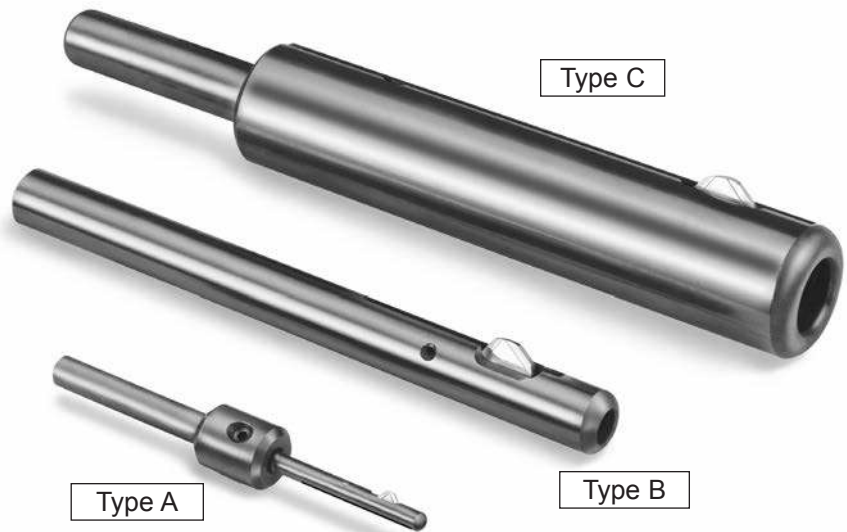
Type B tools (inch program; for hole sizes from .218 through 1.00 in.) and **Type MB** tools (metric program; sizes from 5.5 through 19mm) are a single-piece construction.

Type C tools (inch program; for hole sizes from .750 through 2 in.) and **Type MC** tools (metric program; sizes from 20 through 50mm) are also a single-piece construction.

A tension adjustment mechanism controls the amount of edge break for consistent results from piece to piece. Types A, MA, B, and MB tools have a tension adjustment screw located in the shank end; Types C and MC tools control depth of cut with a tension adjustment rod.

Blade options

BURRAWAY tools are furnished with double-acting blades for burr removal on both the front and back sides of the hole. Blades for front-cutting or back-cutting only are available from stock at no additional charge.



Various blade rake angles and spring tension options are available and recommended for deburring specific material types (see page 10).

Carbide-tipped blades are available upon request for nominal hole sizes of 3/16 inch (4.76mm) and larger. TiN-coated blades are also available upon request.

Standard drill sizes are available from stock. Custom tools – larger sizes, altered standards, or special designs – can also be supplied to suit your particular requirements.

Please furnish a part print and request a quotation. Or, inquire about our free trial and evaluation service: Let us show you how Cogsdill's BURRAWAY tool can help you produce *better-quality parts, with faster production, and at a lower cost!*

A variety of tool designs to meet your needs

Standard BURRAWAY tools are available for *both inch and metric* hole sizes (see pages 6–9).



Burraway tools are available from stock for standard drill sizes. The tool can deburr two or more in-line holes in one pass.

Standard tool specifications

Inch program

Type B (Inches)

HOLE SIZE	COMPLETE TOOL #	BLADE #	DIM. A	DIM. B	DIM. C
7/32	YB-02188	YB-DAP-1	4.50	0.87	0.56
15/64	YB-02344				
1/4	YB-02500				
17/64	YB-02656				
9/32	YB-02812				
19/64	YB-02969	YB-DAP-2	5.00	1.00	0.68
5/16	YB-03125				
21/64	YB-03281				
11/32	YB-03438				
23/64	YB-03594	YB-DAP-3	5.50	1.09	
3/8	YB-03750				
25/64	YB-03906				
13/32	YB-04062				
27/64	YB-04219	YB-DAP-3-1/2	6.44	1.31	0.90
7/16	YB-04375				
29/64	YB-04531				
15/32	YB-04688				
31/64	YB-04844				
1/2	YB-05000	YB-DAP-4	6.75	1.00	1.56
33/64	YB-05156				
17/32	YB-05312				
35/64	YB-05469				
9/16	YB-05625				
37/64	YB-05781	YB-DAP-5	7.00	1.12	1.68
19/32	YB-05938				
39/64	YB-06094				
5/8	YB-06250				
41/64	YB-06406				
21/32	YB-06562	YB-DAP-6	7.50	1.25	1.88
43/64	YB-06719				
11/16	YB-06875				
3/4	YB-07500				
7/8	YB-08750				
1.00	YB-10000				

Type A (Inches)

HOLE SIZE	COMPLETE TOOL #	BLADE #	DIM. A	DIM. B	DIM. C
3/32	YA-00938	YA-DAP-3/32	3.37	0.45	0.28
7/64	YA-01094				
1/8	YA-01250	YA-DAP-1/8			0.25
9/64	YA-01406				
5/32	YA-01562	YA-DAP-5/32			
11/64	YA-01719				
3/16	YA-01875	YA-DAP-3/16	4.12	0.72	0.44
13/64	YA-02031				

Note: For YA-00938 and YA-01094 blade replacement, refer to page 10 for preferred recommendation(s)

Type C (Inches)

HOLE SIZE	COMPLETE TOOL #	BLADE #
3/4	YC-07500	YC-DAP-110
13/16	YC-08125	
7/8	YC-08750	
15/16	YC-09375	
1.00	YC-10000	
1 1/16	YC-10625	
1 1/8	YC-11250	
1 3/16	YC-11875	
1 1/4	YC-12500	
1 5/16	YC-13125	
1 3/8	YC-13750	
1 1/2	YC-15000	
1 5/8	YC-16250	
1 3/4	YC-17500	
1 7/8	YC-18750	
2.00	YC-20000	

* All tools assembled with a Double-Acting Positive 4° rake (DAP) blade unless otherwise specified.

* Please refer to Blade Data on page 10 for blade options (including Carbide) to suit all materials and applications.

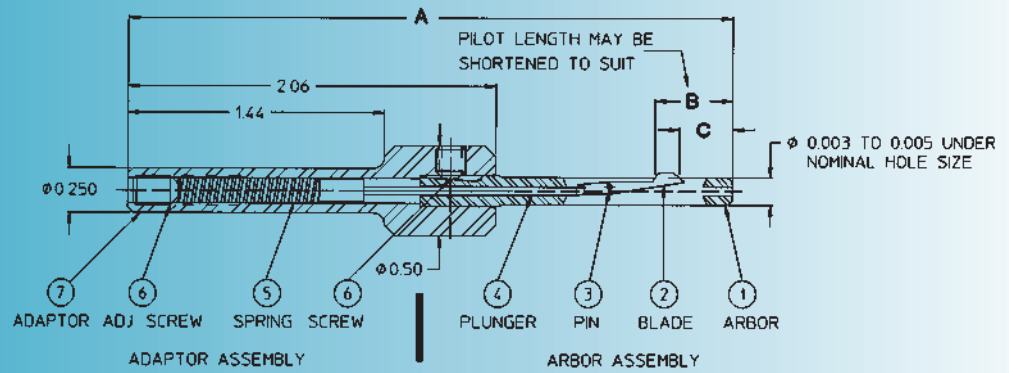
* For tools ordered with any blade other than the DAP series, add -M to the complete tool number and specify blade option required.

* Intermediate and larger sizes available upon request for Type A, Type B, and Type C series.

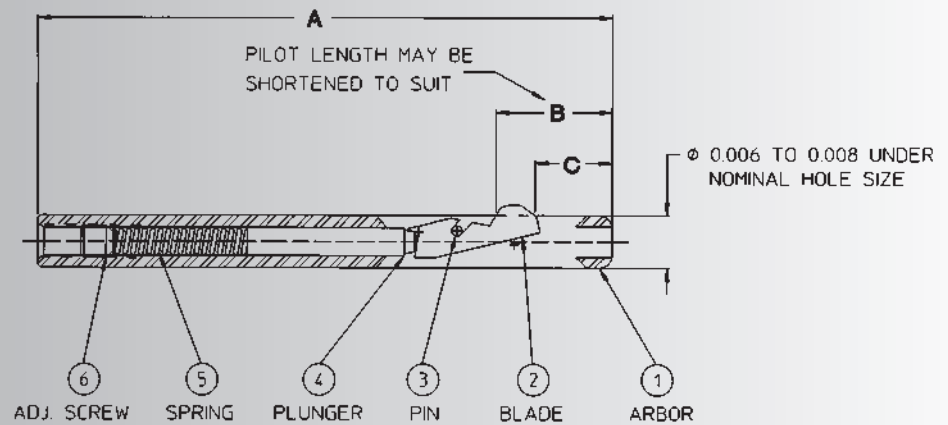
* Complete tool and spare blade numbers are beside the respective hole size. Please refer to page 29 for additional spare parts.

* Optional light duty (LD) spring available upon request when less tension is required for softer materials. Please contact Cogsdill for more information.

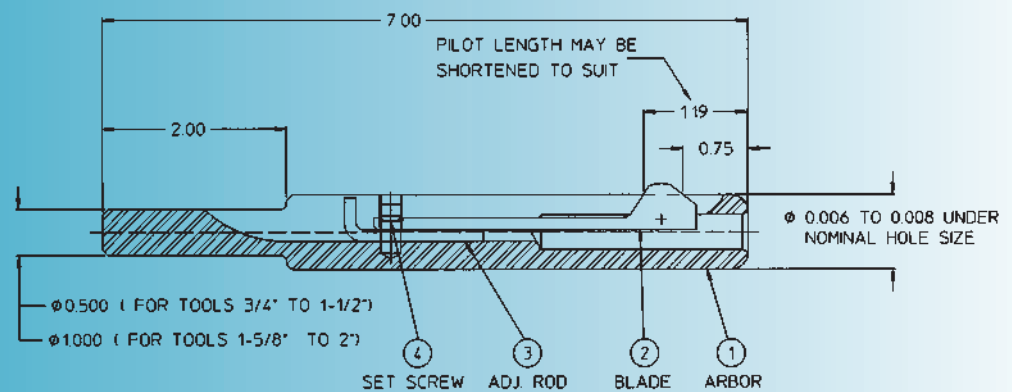
Type A



Type B



Type C



Standard tool specifications

Metric program

Type MB (Metric)

HOLE SIZE	COMPLETE TOOL #	BLADE #	DIM. A	DIM. B	DIM. C
5.5	MYB-5.5	YB-DAP-1	114.0	22.1	14.2
6.0	MYB-6.0				
6.5	MYB-6.5				
7.0	MYB-7.0				
7.5	MYB-7.5	YB-DAP-2	127.0	24.4	17.3
8.0	MYB-8.0				
8.5	MYB-8.5				
9.0	MYB-9.0	YB-DAP-3	140.0	25.4	18.3
9.5	MYB-9.5				
10.0	MYB-10.0	YB-DAP-3-1/2	165.0	33.3	22.9
10.5	MYB-10.5				
11.0	MYB-11.0				
11.5	MYB-11.5				
12.0	MYB-12.0				
12.5	MYB-12.5	YB-DAP-4	165.0	33.3	22.9
13.0	MYB-13.0				
13.5	MYB-13.5				
14.0	MYB-14.0				
14.5	MYB-14.5				
15.0	MYB-15.0				
15.5	MYB-15.5				
16.0	MYB-16.0				
16.5	MYB-16.5				
17.0	MYB-17.0				
17.5	MYB-17.5				
18.0	MYB-18.0				
18.5	MYB-18.5				
19.0	MYB-19.0				

Type MA (Metric)

HOLE SIZE	COMPLETE TOOL #	BLADE #	DIM. A	DIM. B	DIM. C
2.0	MYA-2.0	YA-DAP-2MM	84.6	11.4	6.4
2.3	MYA-2.3	YA-DAP-3/32			
2.5	MYA-2.5	YA-DAP-3MM			
3.0	MYA-3.0	YA-DAP-1/8			
3.5	MYA-3.5	YA-DAP-5/32	103.4	18.3	11.2
4.0	MYA-4.0	YA-DAP-3/16			
4.5	MYA-4.5				
5.0	MYA-5.0				

Note: For MYA-2.0, MYA-2.3, and MYA-2.5 blade replacement, refer to page 10 for preferred recommendation(s)

Type MC (Metric)

HOLE SIZE	COMPLETE TOOL #	BLADE #
20.0	MYC-20.0	YC-DAP-110
25.0	MYC-25.0	
30.0	MYC-30.0	
35.0	MYC-35.0	
40.0	MYC-40.0	
45.0	MYC-45.0	
50.0	MYC-50.0	

* All tools assembled with a Double-Acting Positive 4° rake (DAP) blade unless otherwise specified.

* Please refer to Blade Data on page 10 for blade options to suit all materials and applications.

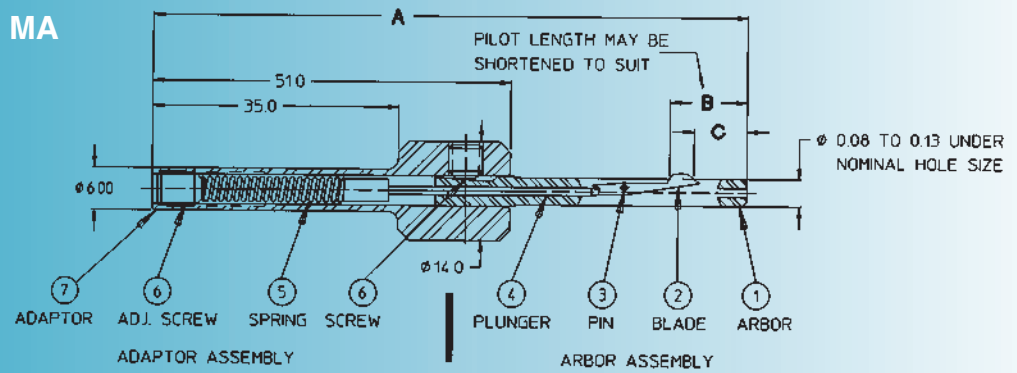
* For tools ordered with any blade other than the DAP series, add -M to the complete tool number and specify blade option required.

* Intermediate and larger sizes available upon request for Type MA, Type MB, and Type MC series.

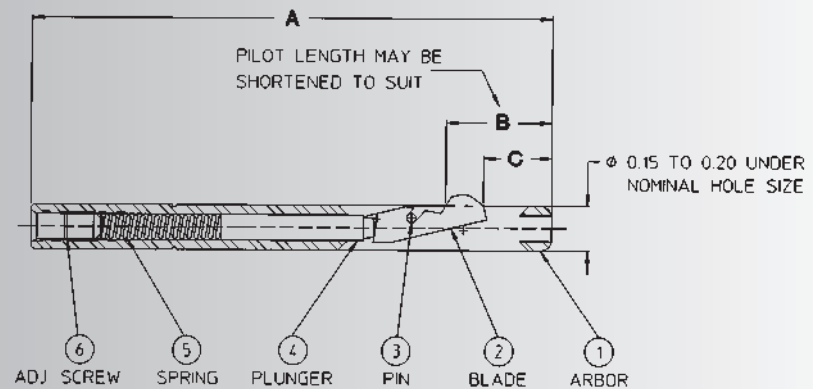
* Complete tool and spare blade numbers are beside the respective hole size. Please refer to page 30 for additional spare parts.

* Optional light duty (LD) spring available upon request when less tension is required for softer materials. Please contact Cogsdill for more information.

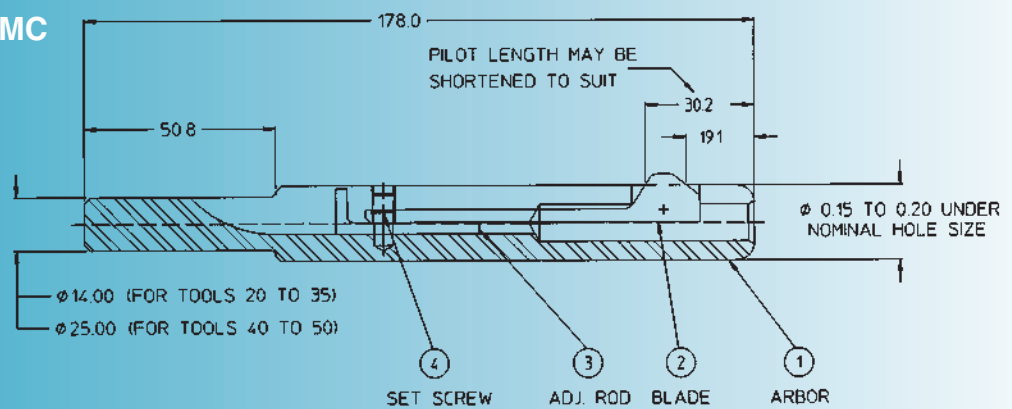
Type MA



Type MB



Type MC



Blade data

Three Blade Styles



Double-Acting (DA)

For deburring both front and back of holes



Back-Acting (BA)

For deburring back of hole only



Front-Acting (FA)

For deburring front of hole only

Speed / Feed Recommendations and Blade Rake Angle Options

MATERIAL	HSS BLADES / CP TOOLING		CARBIDE BLADES (0° ONLY)		BLADE STYLE RECOMMENDATION
	SFM	FEED (IPR)	SFM	FEED (IPR)	
Machine Steel	80-130	.005-.008	240-270	.005-.008	4° Positive Rake Blade (DAP, BAP, or FAP)
Tool Steel	40-50		60-120		
Steel Forgings					
Malleable Iron	80-90	.005-.008	80-180	.005-.008	
Monel Metal	30-50				
Stainless Steel	30-50	.005-.008	80-250	.005-.008	
Titanium	25-45				
Cast Iron	40-60	.005-.008	105-240	.008-.012	0° Neutral Rake Blade (DAZ, BAZ, or FAZ)
Aluminum	100-160		250-400		
Brass & Bronze	100-300	.005-.010	175-300	.006-.010	4° Negative Rake blade (DAN, BAN, or FAN)
Plastic / Nylatron					
Composites	Not Recommended		150-200	.001-.010	0° Neutral Rake (DAZ, BAZ, FAZ)

* All tools are assembled with Double-Acting Positive (DAP) blades unless otherwise specified

* Coated blades available upon request. Please contact Cogsdill for pricing and availability.

* For Carbide blades 3/16 series and above, specify "C" in place of the three letter blade style (DAP, etc):
Example: YA-DAP-3/16 carbide blade is coded "YA-C-3/16"

* Above noted speeds and feeds are basic guidelines and may vary per application

Feed / Speed Formulas:

Inches

$$\text{RPM} = (3.82 \times \text{SFM}) \div \text{Diameter}$$

$$\text{SFM} = 0.262 \times \text{Diameter} \times \text{RPM}$$

$$\text{IPM} = \text{IPR (feed)} \times \text{RPM (speed)}$$

Metric

$$\text{RPM} = (318 \times \text{M/min}) \div \text{Diameter}$$

$$\text{M/Min} = (\text{RPM} \times \text{Diameter}) \div 318$$

$$\text{Mm/Min} = \text{RPM} \times \text{Mm/Rev}$$

Blade Replacement: Type A / Type B Tooling

Blade replacement is performed with ease for tools from .118 (3.0mm) and larger. When the tension adjustment screw located at the end of the shank is loosened, the open ended slot allows the blade to slide out freely. The replacement blade can be installed and the adjustment screw retightened back to the desired spring tension.



Blade Replacement: Type C Tooling

For Type C tooling, loosen the tension adjustment screw located on the arbor OD and slide out both the blade and the tension adjustment rod. Replace in reverse order making sure the adjustment screw is seated securely in the notched area at the blade rear.



Blade Replacement: YA-00938, YA-01094 / MYA-2.0, MYA-2.3, & MYA-2.5 Tooling

Note: BURRAWAY™ blades for nominal tool sizes 3/32 & 7/64 (.093 & .109) in our inch program, and blades for 2.0, 2.3, & 2.5 mm tools in our metric program are designed with a pinhole for assembly instead of the slotted blade design. The open-ended slot is not feasible in this size range due to the small blade size. The blade can only be replaced by removing the pivot pin from the arbor, which can cause damage or breakage. We do not recommend blade replacement in these smallest tool sizes. We recommend that the entire arbor assembly be replaced, which consists of the blade, arbor, and plunger. Please refer to pages 29-30 for correct part number and arbor assemblies.



Tool adjustment & operating recommendations

Versatile and easy to use

The BURRAWAY® can be used on portable power tools and drill motors, drill presses, automatic equipment, CNC machines, or on virtually any type of shop equipment. No special operator skills are required.

Fast and easy adjustment

The amount of stock removed will vary with the hardness of the material. Adjust the set screw in the shank end of the tool to obtain the desired edge break. (Caution: Be careful not to over-adjust; if the spring is compressed to a solid condition, the blade will not be able to retract.)

If adjustment fails to produce the desired results, a different blade rake angle or a light-duty spring may be required. Please submit part prints for development of the most efficient tooling for the application.

Speeds and feeds

Refer to Speed and Feed chart on page 10.

Blade life and regrinding

BURRAWAY blades generally last about four to ten times longer than the drill used to make the hole. Due to the low cost of replacement blades, most of our customers prefer to replace worn blades with new ones.

However, the blades can be reground and reused. Blades can generally take from five to ten regrinds of .010 inch (0.25mm) each before they must be discarded. Regrind clearance angles as shown in Figure 1 below.

Tool maintenance

The BURRAWAY tool should be inspected periodically for chips, grit, and foreign particles in the slot from which the blade projects. Clean as necessary.

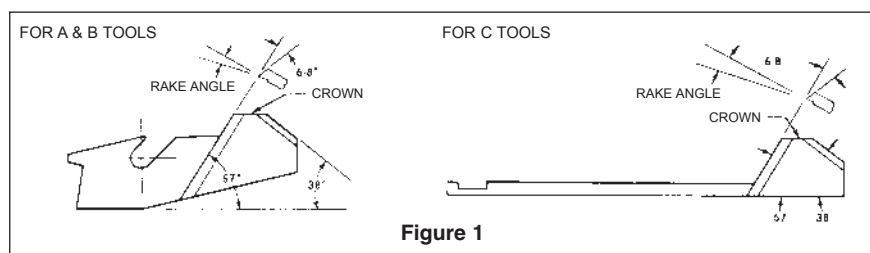


Figure 1

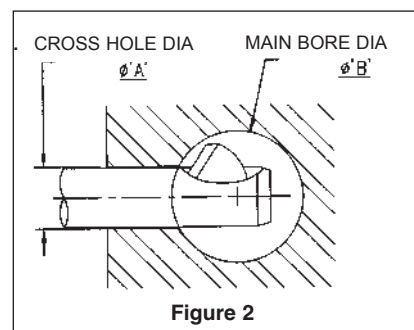


Figure 2

Cross-hole deburring

Burraway tools will tend to cut an elliptical chamfer when deburring a hole drilled through the wall of a larger hole (i.e., the amount of edge break will be inconsistent). If the ratio of the main bore diameter "B" to the cross-hole diameter "A" is less than 3/1 (refer to Figure 2), the Burraway is not recommended. If the ratio is 3/1 or greater, the standard Burraway tool should be tested and may provide satisfactory results. If not, consider using a tool with a special Burraway blade with a 45° angle, run at speeds of 40-100 RPM; contact our engineering department.

If the ratio is questionable, our Burr-Off tool may be considered (see page 12). While it will tend to cut a greater ellipse, it will also resist breakage on steep side walls. Neither the Burraway nor the Burr-Off is recommended for holes that do not intersect squarely or diametrically.

Burraway® Kit

