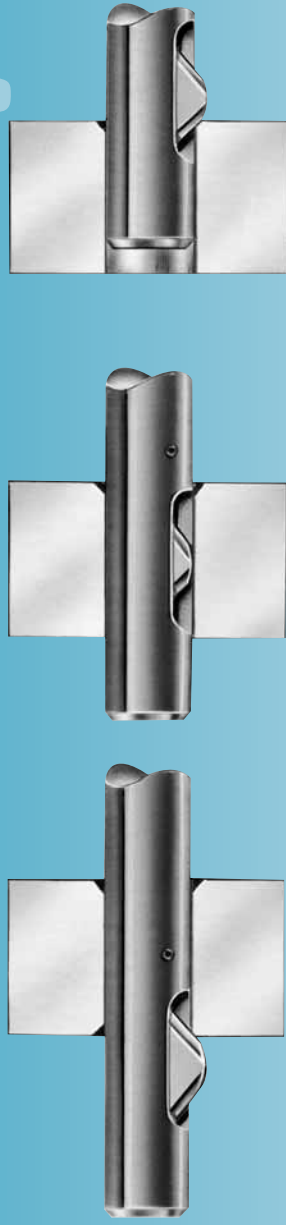



How it works



- 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.

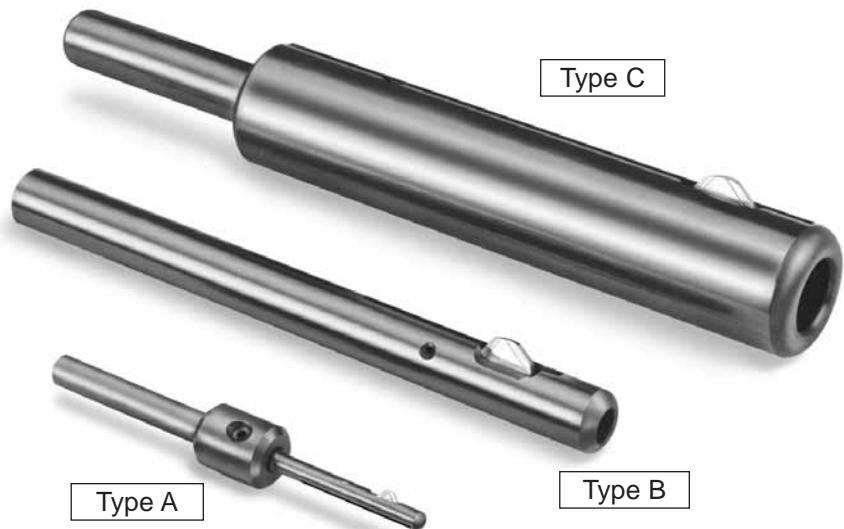
Type B tools (inch program; for hole sizes from .218 through .750 in.) and **Type MB** tools (metric program; sizes from 5.5 through 19mm) are a single-piece construction.

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.

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).

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!*



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

(All dimensions below are in inches)

HOLE SIZE	DEC. EQUIV	DIM. A	DIM. B	DIM. C	BLADE SIZE
7/32	.218	4.50	.87	.56	#1
15/64	.234	4.50	.87	.56	#1
1/4	.250	4.50	.87	.56	#1
17/64	.265	4.50	.87	.56	#1
9/32	.281	4.50	.87	.56	#1
19/64	.296	4.50	.96	.68	#2
5/16	.312	4.50	.96	.68	#2
21/64	.328	4.50	.96	.68	#2
11/32	.343	4.50	.96	.68	#2
23/64	.359	5	1.00	.68	#3
3/8	.375	5	1.00	.68	#3
25/64	.390	5	1.00	.68	#3
13/32	.406	5	1.00	.68	#3
27/64	.421	5.50	1.09	.72	#3-1/2
7/16	.437	5.50	1.09	.72	#3-1/2
29/64	.453	5.50	1.09	.72	#3-1/2
15/32	.468	5.50	1.09	.72	#3-1/2
31/64	.484	5.50	1.09	.72	#3-1/2
1/2	.500	5.50	1.09	.72	#3-1/2
33/64	.515	5.50	1.09	.72	#3-1/2
17/32	.531	5.50	1.09	.72	#3-1/2
35/64	.546	6.44	1.31	.90	#4
9/16	.562	6.44	1.31	.90	#4
37/64	.578	6.44	1.31	.90	#4
19/32	.593	6.44	1.31	.90	#4
39/64	.609	6.44	1.31	.90	#4
5/8	.625	6.44	1.31	.90	#4
41/64	.640	6.44	1.31	.90	#4
21/32	.656	6.44	1.31	.90	#4
43/64	.671	6.44	1.31	.90	#4
11/16	.687	6.44	1.31	.90	#4
3/4	.750	6.44	1.31	.90	#4

Intermediate sizes are available; request quotation.

Type A

(All dimensions below are in inches)

HOLE SIZE	DEC. EQUIV	DIM. A	DIM. B	DIM. C	BLADE SIZE
3/32	.093	3.37	.45	.28	3/32*
7/64	.109	3.37	.45	.28	3/32*
1/8	.125	3.37	.45	.25	1/8
9/64	.140	3.37	.45	.25	1/8
5/32	.156	3.37	.45	.25	5/32
11/64	.171	3.37	.45	.25	5/32
3/16	.187	4.12	.72	.44	3/16
13/64	.203	4.12	.72	.44	3/16

*See "Burraway Blade Data," page 10, refer to note under "Blade Replacement."

Intermediate sizes are available; request quotation.

Type C

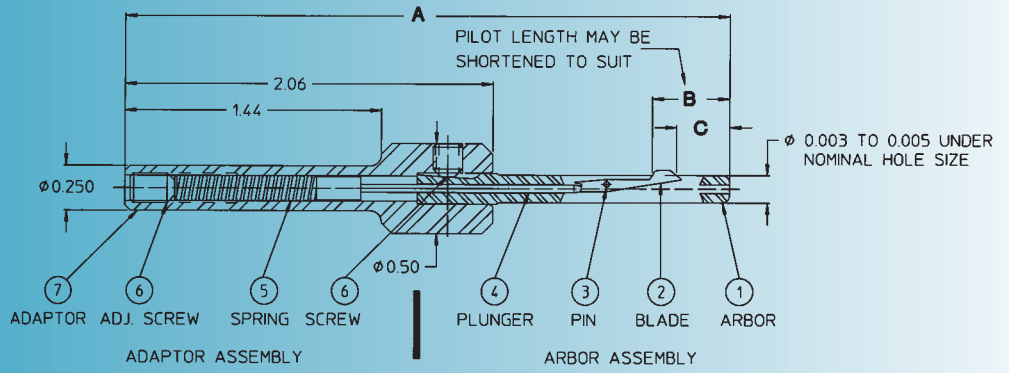
(All dimensions below are in inches)

HOLE SIZE	DEC. EQUIV	BLADE SIZE
3/4	.750	#110
13/16	.812	#110
7/8	.875	#110
15/16	.937	#110
1	1.000	#110
1-1/16	1.062	#110
1-1/8	1.125	#110
1-3/16	1.187	#110
1-1/4	1.250	#110
1-5/16	1.312	#110
1-3/8	1.375	#110
1-1/2	1.500	#110
1-5/8	1.625	#110
1-3/4	1.750	#110
2	2.000	#110

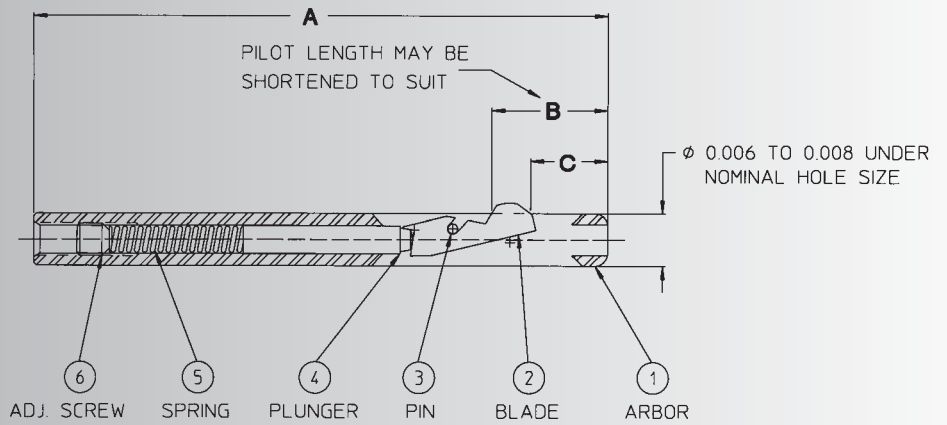
Intermediate sizes, and tools for diameters larger than shown, are available; request quotation.

programm
inch

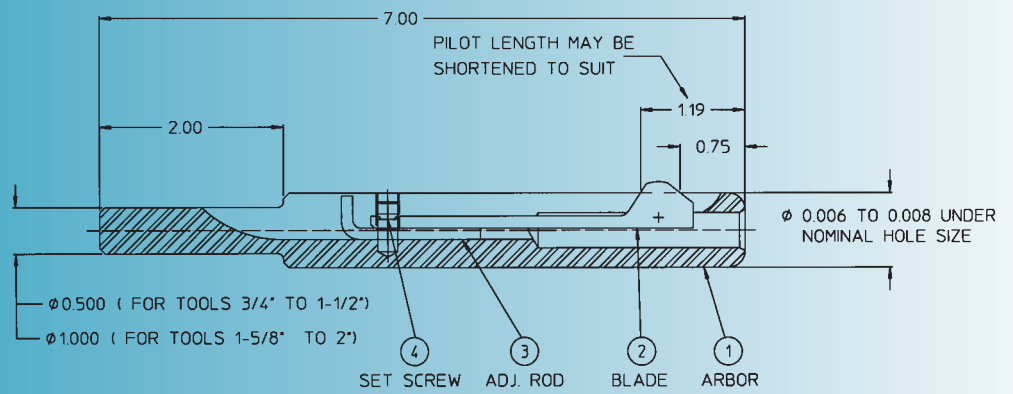
Type A



Type B



Type C



Standard tool specifications

Metric program

Type MB

(All dimensions below are in millimeters)

HOLE SIZE	DIM. A	DIM. B	DIM. C	BLADE SIZE
5.5	114	22.1	14.2	#1
6.0	114	22.1	14.2	#1
6.5	114	22.1	14.2	#1
7.0	114	22.1	14.2	#1
7.5	114	24.4	17.3	#2
8.0	114	24.4	17.3	#2
8.5	114	24.4	17.3	#2
9.0	127	25.4	17.3	#3
9.5	127	25.4	17.3	#3
10.0	127	25.4	17.3	#3
10.5	140	26.2	18.3	#3-1/2
11.0	140	26.2	18.3	#3-1/2
11.5	140	26.2	18.3	#3-1/2
12.0	140	26.2	18.3	#3-1/2
12.5	140	26.2	18.3	#3-1/2
13.0	140	26.2	18.3	#3-1/2
13.5	140	26.2	18.3	#3-1/2
14.0	165	33.3	22.9	#4
14.5	165	33.3	22.9	#4
15.0	165	33.3	22.9	#4
15.5	165	33.3	22.9	#4
16.0	165	33.3	22.9	#4
16.5	165	33.3	22.9	#4
17.0	165	33.3	22.9	#4
17.5	165	33.3	22.9	#4
18.0	165	33.3	22.9	#4
18.5	165	33.3	22.9	#4
19.0	165	33.3	22.9	#4

Intermediate sizes are available; request quotation.

Type MA

(All dimensions below are in millimeters)

HOLE SIZE	DIM. A	DIM. B	DIM. C	BLADE SIZE
2.0	84.6	11.4	6.4	2.0mm*
2.5	84.6	11.4	6.4	3/32*
3.0	84.6	11.4	6.4	3.0mm
3.5	84.6	11.4	6.4	1/8
4.0	84.6	11.4	6.4	5/32
4.5	103.4	18.3	11.2	3/16
5.0	103.4	18.3	11.2	3/16

*See "Burraway Blade Data," page 10, refer to note under "Blade Replacement."

Intermediate sizes are available; request quotation.

Type MC

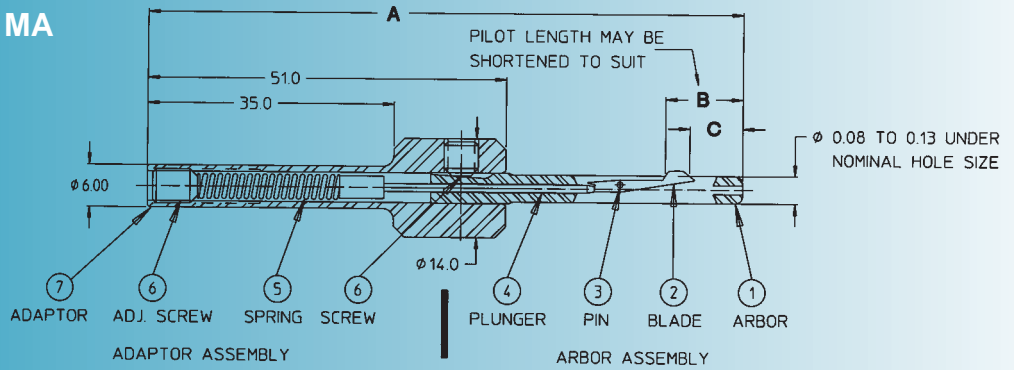
(All dimensions below are in millimeters)

HOLE SIZE	BLADE SIZE
20.0	#110
25.0	#110
30.0	#110
35.0	#110
40.0	#110
45.0	#110
50.0	#110

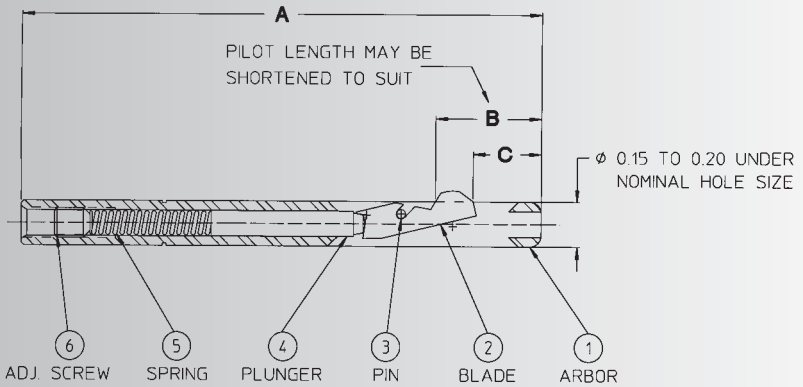
Intermediate sizes and tools for diameters larger than shown are available; request quotation.

metric program

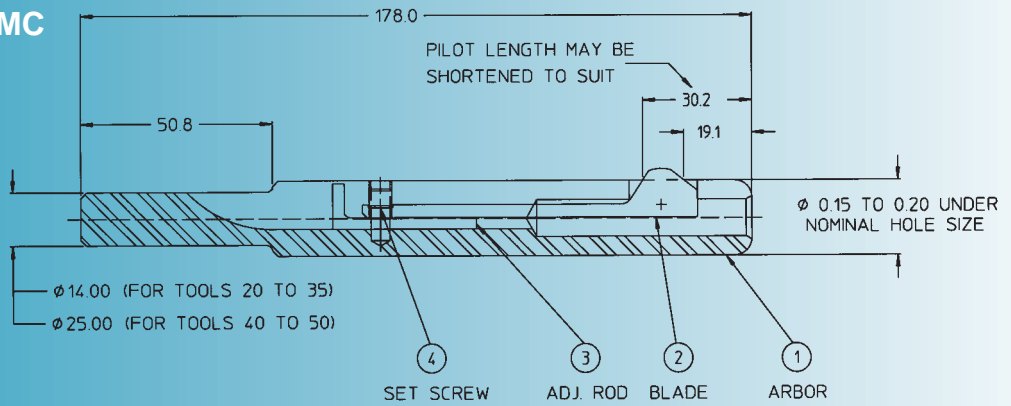
Type MA



Type MB



Type MC



Blade data

Three blade styles

Double-Acting (DA)

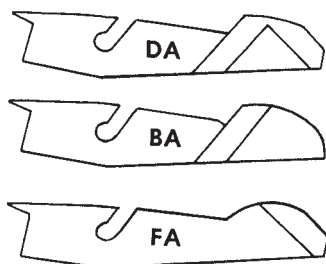
For deburring *both front and back* of holes.

Back-Acting (BA)

For deburring *back of hole only*.

Front-Acting (FA)

For deburring *front of hole only*.



Note: Unless otherwise specified, the double-acting blade is furnished with the BURRAWAY tool.

Blade rake angles

The three styles shown above are available from stock as standard items, with positive rake angles. Negative and neutral rake blades are available from stock upon request as a standard option for certain material types (see chart on the right); otherwise, the positive rake blade will be supplied.

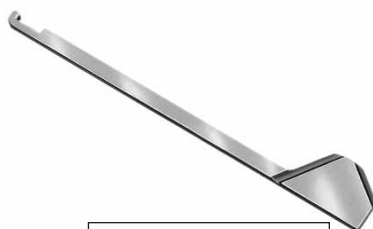
Blade replacement

Blade replacement is easy for tools in nominal sizes from 3.0mm (.118 in.) and larger. When the tension adjustment screw, located in the end of the shank on Type A and B tools, is loosened sufficiently, the open-ended slot allows the blade to slide out freely. The replacement blade is then installed and the tension adjustment screw retightened for the desired amount of spring tension.



Type A and B blade

For Type C tools, loosen the tension adjustment set screw located on the O.D. of the arbor and slide out both the Type C blade and the tension adjustment rod. Replace in reverse order.



Type C blade

Note: BURRAWAY blades for nominal tool sizes of 3/32 and 7/64 inch (.093 and .109) in our inch program, and blades for 2.0 and 2.5mm tools in our metric program, are designed with a pinhole instead of a slot. The open-ended slot is not feasible in this size range due to the small size of the blade. The blade can only be replaced by removing the pivot pin from the arbor, which may cause breakage. We do **not** recommend blade replacement in these smallest tool sizes. We recommend that the entire arbor assembly be replaced.

Blade recommendations for various material types

Material Type	Blade Style Recommendation
Machine steel Tool steel Steel forgings Malleable iron Monel metal Stainless steel Titanium	4° positive rake blade
Cast iron	0° neutral rake blade
Aluminum	0° neutral rake blade
Brass & bronze	4° negative rake blade

Note: Unless you specify otherwise, your tool will be supplied with a double-acting, positive rake blade and a regular-duty spring. Light-duty springs are available upon request for softer non-ferrous materials.

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

Use the same speed and feed rate as you would run a standard HSS drill. The operator will soon acquire a feel for the operation and for the moderate rate of hand feeding which is required to deburr the part.

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.

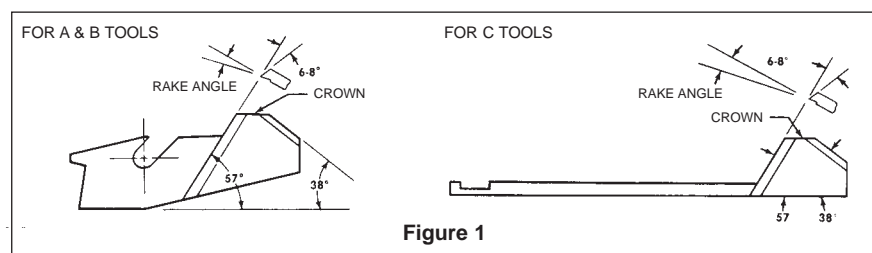


Figure 1

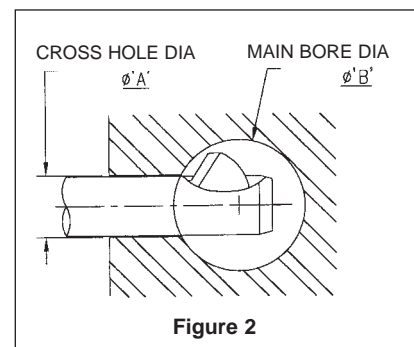


Figure 2

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.

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



Our BURRAWAY® Kit contains five deburring tools in popular hole sizes:

- 1/8 in.
- 5/32 in.
- 3/16 in.
- 7/32 in.
- 1/4 in.

A replacement blade for each tool is included. The kit is packaged in a durable box. The BURRAWAY Kit enables you to have on hand the solution to burr removal problems for hole sizes most frequently encountered.