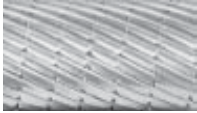


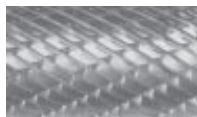
Midget Mill® Classifications



H.S.S. Midget Mills® - Right hand spiral tooth pattern with a **light chipbreaker** originated by Severance Tool. These tools can take more shock than carbide. Mainly used on non-work hardening materials. Materials applications can include M2, M42, cold and hot roll steels, aluminum, cast iron and bronze.



Carbide Midget Mills® - Right hand spiral tooth pattern invented by Rollin Severance, mainly intended for machine applications because of its deep radial flutes. Able to take a substantial amount of material off in an environment where the tool is not allowed to bounce or chatter out of control. Works best with materials applications using carbon steels, cast steels, gray irons, some stainless steel, tungsten, and nickel alloys.



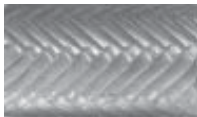
Carbo -Mills™ - Features a **double cut** tooth pattern, first introduced by Severance Tool. Intended for applications where there is substantial stock removal and a rough to medium finish is required. Works best with ferrous, non-work hardening materials. Materials applications can include steels, aluminum, cast iron, and bronze.



Sever-Cuts™ - Developed by Severance Tool, these tools feature a **super coarse** cut designed with very course deep positive flutes with a large flute radius to remove material without loading up. Works best with nonferrous materials including aluminum, copper, bronze, nickel, and magnesium. Can be used with either hand or machine operations.

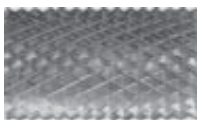


Tangent Mills™ - Are **left hand spiral**, right hand cutting, and are especially designed to control tool wandering on curved surfaces. Ideal for finishing holes in tubing. Works best with Ferrous, non-work hardening materials. Material applications can include M2, M42, cold & hot rolled steels, aluminum, cast iron, and bronze. See catalog page 16 for example.



d-burrs™ - Feature the **Herringbone™** cut invented by Severance Tool for fine finishing of plastic, aluminum, steel, and similar materials. The Herringbone™ Cut features alternating right hand and left hand flutes to give a fine finish on difficult deburring problems. See page 28 for standard shapes and sizes.

Other tooth patterns available as a special cut upon request. Here are a few other examples.



Rasp or Diamond Cut



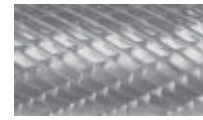
Straight Cut



Chatterless Chamfer Cut™



Curve Tooth Cut



Tuff-Cut

Pitches and their Cut Numbers

The pitches of teeth ground on Severance Midget Mills® are illustrated on page 6, in full scale. The chart at the right relates cut numbers to tool diameters for Fine, Standard, Coarse and Super Coarse pitches. Standard pitch will always be supplied unless otherwise specified. If an unlisted pitch is required, order by cut number.

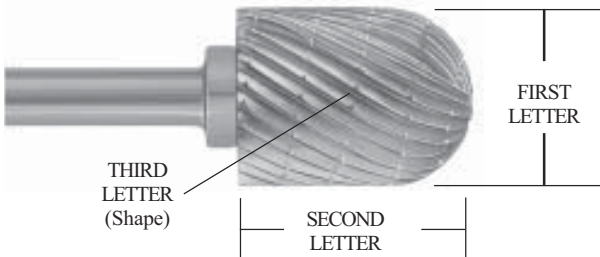
This cut numbering system applies to Severance Midget Mills®, Junior Mills®, Carbo-Mills™, etc., and to hand files. Sever-Cut™ tools all have “super coarse” teeth.

Dia.	Fine	Std.	Coarse	Super Coarse*	Dia.	Fine	Std.	Coarse	Super Coarse*
	Cut #	Cut #	Cut #	(Teeth)		Cut #	Cut #	Cut #	Cut #
3/32"	2	3	5	Per	9/16"	5	7	9	
1/8"	3	4	5	Tool)	5/8"	5	7	9	10
3/16"	3	5	6		3/4"	6	8	10	12
1/4"	4	5	7	4	7/8"	6	8	10	
5/16"	4	6	7		1"	6	8	10	16
3/8"	4	6	8	6	1-1/8"	6	9	11	
7/16"	5	6	8		1-1/4"	6	9	11	
1/2"	5	7	9	8	1-1/2"	7	9	12	

*Super Coarse Cuts are recommended for use on aluminum and other nonferrous materials for heavy, fast, stock removal.

1	2	3	4	5	6	7
.016 pitch 62 teeth/in.	.020 pitch 50 teeth/in.	.025 pitch 40 teeth/in.	.032 pitch 31 teeth/in.	.040 pitch 25 teeth/in.	.050 pitch 20 teeth/in.	.062 pitch 16 teeth/in.
8	9	10	11	12	13	14
.076 pitch 13 teeth/in.	.092 pitch 11 teeth/in.	.111 pitch 9 teeth/in.	.125 pitch 8 teeth/in.	.143 pitch 7 teeth/in.	.166 pitch 6 teeth/in.	.200 pitch 5 teeth/in.

Midget Mills® Identification System



The third letter is the shape of the tool. In some cases, additional descriptive information is also part of the tool number . . . EC for End Cutting, 45 for a 45° angle, etc. All carbide tools carry the suffix, -W.

The First letter designates the largest diameter.
The Second letter designates the length of cutting portion.
The Third letter designates the general shape as illustrated.

A-1/8"	G-1/2"	M-1-1/8"	S-2"	Y-4-1/2"
B-3/16"	H-9/16"	N-1-1/4"	T-2-1/4"	Z-5"
C-1/4"	I-5/8"	O-1-3/8"	U-2-1/2"	
D-5/16"	J-3/4"	P-1-1/2"	V-3"	
E-3/8"	K-7/8"	Q-1-5/8"	W-3-1/2"	
F-7/16"	L-1"	R-1-3/4"	X-4"	

Midget Mills® are identified by a three-letter "tool number."
The first and second letters specify cutting diameter and length.

Standard Shape Designations

