GORILLA MILL HIGH PERFORMANCE CUTTING TOOLS

2019 v3 PRODUCT LINE

GORILLA MILL®

HIGH PERFORMANCE CUTTING TOOLS

2019 PRODUCT LINE

GORILLA MILLS | GORILLA DRILLS | CARBIDE END MILLS | REGRINDS | SPECIALS

WEAPONS OF MASS PRODUCTION®

TABLE OF CONTENTS

HP SB HIGH PERFORMANCE & SUPER BITCHIN' PERFORMANCE CHIMPBREAKERS

3 FLUTE | 5 FLUTE | 7 FLUTE

DM HIGH PERFORMANCE DIE/MOLD CHIMPS

2 FLUTE

HP HIGH PERFORMANCE THREADMILLS

SP STANDARD PERFORMANCE CUTTING TOOLS

2 FLUTE | 3 FLUTE | 4 FLUTE

HIGH PERFORMANCE DRILLS

3X | 5X | 7X

TECHNICAL RESOURCES

TOOL OFFERING

Gorilla Mill gives you countless options for machining in a variety to materials and operations. Choose from different styles to achieve the best performance when Slotting, Traditional Roughing, High Velocity Milling, or Finishing.

= GOOD = BETTER = BEST = MOST BITCHIN'

ALUMINUM & NON-FERROUS MATERIALS (ALUMINUM ALLOYS, COPPER ALLOYS, MAGNESIUM ALLOYS, & ZINC ALLOYS)

NAME	SLOTTING	TRADITIONAL ROUGHING	HIGH-VELOCITY MACHINING	FINISHING	CATALOG PAGE INCH/METRIC
2 Flute Chimps 15° Helix					97
2 Flute Silverback 37° Helix					9
2 Flute Primate 30° Helix					103/113
3 Flute Silverback Variable Helix					10/15
3 Flute Silverback Chimpbreaker Variable Helix					82/85
3 Flute Primate 30° Helix					135/138
3 Flute Silverback Knuckledragger Variable Helix					48/49

STEEL (CARBON STEEL, LOW ALLOY STEEL, TOOLS STEELS)

NAME	SLOTTING	TRADITIONAL ROUGHING	HIGH-VELOCITY MACHINING	FINISHING	CATALOG PAGE INCH/METRIC
3 Flute Primate 30° Helix					135/138
4 Flute Gorilla Mill Variable Helix					21/26
4 Flute Yeti Variable Helix					52/56
5 Flute Gorilla Mill Variable Helix	N/A				34
5 Flute Phenom Variable Helix	N/A				60/64
5 Flute Phenom Chimpbreaker Variable Helix	N/A				86/89
7 Flute Baboon Variable Helix	N/A				67/71
7 Flute Baboon Chimpbreaker Variable Helix	N/A				91/94
4 Flute Sasquatch Variable Helix					76/78
3 Flute Knuckledragger Variable Helix					48/49
4 Flute Knuckledragger Variable Helix					42/44
5 Flute Knuckledragger Variable Helix	N/A				46/47

STAINLESS STEEL

NAME	SLOTTING	TRADITIONAL ROUGHING	HIGH-VELOCITY MACHINING	FINISHING	CATALOG PAGE INCH/METRIC
3 Flute Primate 30° Helix					135/138
4 Flute Gorilla Mill Variable Helix					21/26
4 Flute Yeti Variable Helix					52/56
5 Flute Gorilla Mill Variable Helix	N/A				34

STAINLESS STEEL

NAME	SLOTTING	TRADITIONAL ROUGHING	HIGH-VELOCITY MACHINING	FINISHING	CATALOG PAGE INCH/METRIC
5 Flute Phenom Variable Helix	N/A	🍌🍌🍌	🍌🍌🍌🍌	🍌🍌🍌🍌	60/64
5 Flute Phenom Chimpbreaker Variable Helix	N/A	🍌🍌🍌	🍌🍌🍌🍌	🍌🍌🍌🍌	86/89
7 Flute Baboon Variable Helix	N/A	🍌🍌	🍌🍌🍌🍌	🍌🍌🍌🍌	67/71
7 Flute Baboon Chimpbreaker Variable Helix	N/A	🍌🍌	🍌🍌🍌🍌	🍌🍌🍌🍌	91/94
4 Flute Sasquatch Variable Helix	🍌🍌🍌🍌	🍌🍌🍌🍌	🍌🍌	🍌🍌🍌	76/78
3 Flute Knuckledragger Variable Helix	🍌🍌🍌	🍌🍌🍌🍌	🍌🍌	🍌	48/49
4 Flute Knuckledragger Variable Helix	🍌🍌🍌	🍌🍌🍌🍌	🍌🍌	🍌	42/44
5 Flute Knuckledragger Variable Helix	N/A	🍌🍌	🍌🍌🍌	🍌	46/47

EXOTIC METALS (HIGH NICKEL ALLOYS, TITANIUM ALLOYS, COBALT ALLOYS, HIGH TEMPERATURE ALLOYS)

NAME	SLOTTING	TRADITIONAL ROUGHING	HIGH-VELOCITY MACHINING	FINISHING	CATALOG PAGE INCH/METRIC
3 Flute Primate 30° Helix	🍌🍌	🍌🍌	🍌🍌	🍌🍌	135/138
4 Flute Gorilla Mill Variable Helix	🍌🍌🍌🍌	🍌🍌🍌	🍌🍌	🍌🍌	21/26
4 Flute Yeti Variable Helix	🍌🍌🍌🍌	🍌🍌🍌🍌	🍌🍌🍌	🍌🍌🍌	52/56
5 Flute Gorilla Mill Variable Helix	N/A	🍌🍌	🍌🍌🍌	🍌🍌🍌🍌	34
5 Flute Phenom Variable Helix	N/A	🍌🍌🍌	🍌🍌🍌🍌	🍌🍌🍌🍌	60/64
5 Flute Phenom Chimpbreaker Variable Helix	N/A	🍌🍌🍌	🍌🍌🍌🍌	🍌🍌🍌🍌	86/89
7 Flute Baboon Variable Helix	N/A	🍌🍌	🍌🍌🍌🍌	🍌🍌🍌🍌	67/71
7 Flute Baboon Chimpbreaker Variable Helix	N/A	🍌🍌	🍌🍌🍌🍌	🍌🍌🍌🍌	91/94
4 Flute Sasquatch Variable Helix	🍌🍌🍌🍌	🍌🍌🍌🍌	🍌🍌	🍌🍌🍌	76/78
3 Flute Knuckledragger Variable Helix	🍌🍌🍌	🍌🍌🍌🍌	🍌🍌	🍌	48/49
4 Flute Knuckledragger Variable Helix	🍌🍌🍌	🍌🍌🍌🍌	🍌🍌	🍌	42/44
5 Flute Knuckledragger Variable Helix	N/A	🍌🍌	🍌🍌🍌	🍌	46/47

CAST IRON (NODULAR, GRAY)

NAME	SLOTTING	TRADITIONAL ROUGHING	HIGH-VELOCITY MACHINING	FINISHING	CATALOG PAGE INCH/METRIC
3 Flute Primate 30° Helix	🍌🍌	🍌🍌	🍌🍌	🍌🍌	135/138
4 Flute Gorilla Mill Variable Helix	🍌🍌🍌🍌	🍌🍌🍌	🍌🍌	🍌🍌	21/26
4 Flute Yeti Variable Helix	🍌🍌🍌🍌	🍌🍌🍌🍌	🍌🍌🍌	🍌🍌🍌	52/56
5 Flute Gorilla Mill Variable Helix	N/A	🍌🍌	🍌🍌🍌	🍌🍌🍌🍌	34
5 Flute Phenom Variable Helix	N/A	🍌🍌🍌	🍌🍌🍌🍌	🍌🍌🍌🍌	60/64
5 Flute Phenom Chimpbreaker Variable Helix	N/A	🍌🍌🍌	🍌🍌🍌🍌	🍌🍌🍌🍌	86/89

Continued on next page

CAST IRON (NODULAR, GRAY)					
NAME	SLOTTING	TRADITIONAL ROUGHING	HIGH-VELOCITY MACHINING	FINISHING	CATALOG PAGE INCH/METRIC
7 Flute Baboon Variable Helix	N/A				67/71
7 Flute Baboon Chimpbreaker Variable Helix	N/A				91/94
4 Flute Sasquatch Variable Helix					76/78
3 Flute Knuckledragger Variable Helix					48/49
4 Flute Knuckledragger Variable Helix					42/44
5 Flute Knuckledragger Variable Helix	N/A				46/47

DIE STEEL (H13, P20)					
NAME	SLOTTING	TRADITIONAL ROUGHING	HIGH-VELOCITY MACHINING	FINISHING	CATALOG PAGE INCH/METRIC
2 Flute Chimps 15° Helix					97
3 Flute Primate 30° Helix					135/138
4 Flute Gorilla Mill Variable Helix					21/26
4 Flute Yeti Variable Helix					52/56
5 Flute Gorilla Mill Variable Helix	N/A				34
5 Flute Phenom Variable Helix	N/A				60/64
5 Flute Phenom Chimpbreaker Variable Helix	N/A				86/89
7 Flute Baboon Variable Helix	N/A				67/71
7 Flute Baboon Chimpbreaker Variable Helix	N/A				91/94
4 Flute Sasquatch Variable Helix					76/78
3 Flute Knuckledragger Variable Helix					48/49
4 Flute Knuckledragger Variable Helix					42/44
5 Flute Knuckledragger Variable Helix	N/A				46/47

CUSTOM TOOLING

40+ years of experience producing some of the most complex tools in the industry. Per tool print or part print.

CGC IS NOT LIMITED TO END MILLS.

- Coolant-Fed Tooling
- Form Tools
- Keyseat Cutters
- Dovetail Cutters
- Lollipop Cutters
- Concave Radius Cutters
- Radius Cutters
- Tapered End Mills
- Drill Mills
- Porting Tool
- Step Drills
- Die/Mold Cutters

JUST CALL US AT **866.888.9600** OR EMAIL US AT **ORDERS@CGCTOOL.COM** TO GET YOUR CUSTOM TOOL QUOTED.

HP

2 FLUTE

3 FLUTE

4 FLUTE

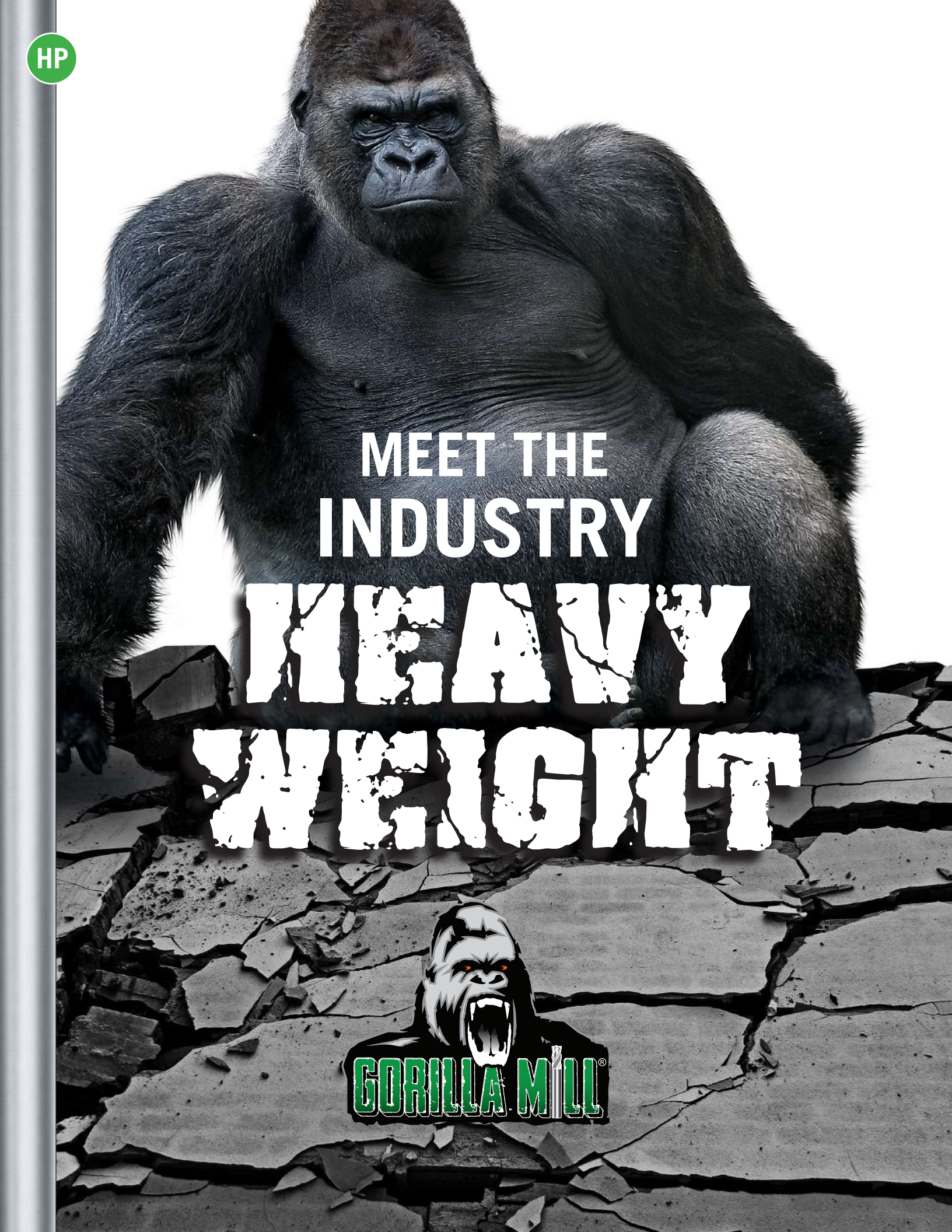
5 FLUTE

HIGH PERFORMANCE
CUTTING TOOLS

GORILLA MILL®

SILVERBACK®
A DESCENDANT OF GORILLA MILLS®

KNUCKLE DRAGGERS
A DESCENDANT OF GORILLA MILLS®


HP
MEET THE
INDUSTRY
HEAVY
WEIGHT
GORILLA MILL®

HIGH PERFORMANCE
2 FLUTE (INCH)

Engineered to repel aluminum. For roughing and finishing of non-ferrous materials, aluminum, copper, brass, plastic, etc. High velocity, high material removal rate. Center cutting.
See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section.
Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

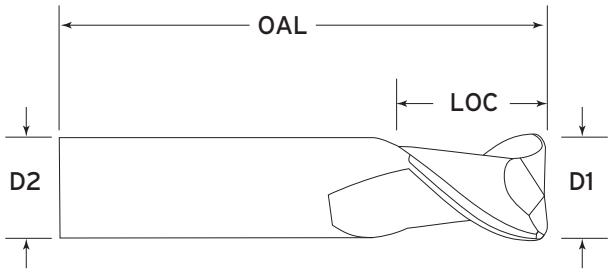
Available in special diameters, lengths, ZrN coating and completely resharpenable.

*NOTE: ALL SPEEDS & FEEDS IN CATALOG ARE RECOMMENDED, APPLICATIONS MAY VARY.

SPEEDS & FEEDS SEE ONLINE CALCULATOR AT GORILLAMILL.COM

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)				
					0.015	0.030	0.060	0.090	0.120
1/8	1/8	1/2	2-1/2	GMA18F2 EDP: 20115	GMA18R2015 EDP: 20117	GMA18R2030 EDP: 20118	—	—	—
3/16	3/16	5/8	3.0	GMA316F2 EDP: 20128	GMA316R2015 EDP: 20130	GMA316R2030 EDP: 20131	—	—	—
1/4	1/4	3/4	3.0	GMA14F2 EDP: 20095	GMA14R2015 EDP: 20098	GMA14R2030 EDP: 20099	GMA14R2060 EDP: 20100	—	—
5/16	5/16	7/8	3.0	GMA516F2 EDP: 20180	GMA516R2015 EDP: 20183	GMA516R2030 EDP: 20184	GMA516R2060 EDP: 20185	—	—
3/8	3/8	7/8	3.0	GMA38F2 EDP: 20163	GMA38R2015 EDP: 20167	GMA38R2030 EDP: 20168	GMA38R2060 EDP: 20169	—	—
7/16	7/16	1.0	3.0	GMA716F2 EDP: 20217	GMA716R2015 EDP: 20219	GMA716R2030 EDP: 20220	GMA716R2060 EDP: 20221	—	—
1/2	1/2	1-1/4	3-1/2	GMA12F2 EDP: 20064	GMA12R2015 EDP: 20069	GMA12R2030 EDP: 20070	GMA12R2060 EDP: 20071	GMA12R2090 EDP: 20072	GMA12R2120 EDP: 20073
5/8	5/8	1-1/4	3-1/2	GMA58F2 EDP: 20193	—	GMA58R2030 EDP: 20197	GMA58R2060 EDP: 20198	GMA58R2090 EDP: 20199	GMA58R2120 EDP: 20200
3/4	3/4	1-1/2	4.0	GMA34F2 EDP: 20133	—	GMA34R2030 EDP: 20138	GMA34R2060 EDP: 20139	GMA34R2090 EDP: 20140	GMA34R2120 EDP: 20141
1.0	1.0	1-1/2	4.0	GMA10F2 EDP: 20031	—	GMA10R2030 EDP: 20035	GMA10R2060 EDP: 20036	GMA10R2090 EDP: 20037	GMA10R2120 EDP: 20038

**Recommended Speeds & Feeds*

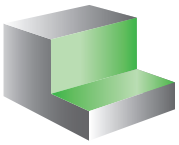


MATERIALS

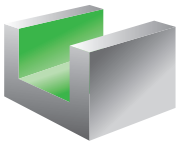
Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)
Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)
Copper (200 Brinell <)	Brass
Copper (200 Brinell >)	Bronze

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



FULL SLOTTING



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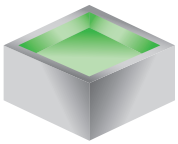
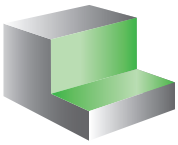


HIGH-VELOCITY



HIGH PERFORMANCE
3 FLUTE (INCH)

Variable flute and variable index. Engineered to repel aluminum. For roughing and finishing of non-ferrous materials, aluminum, copper, brass, plastic, etc. High velocity, high material removal rate. Center cutting. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

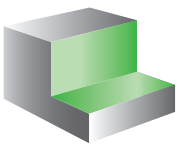
Available in special diameters, lengths and completely resharpenable.

SPEEDS & FEEDS CHART PAGE 14

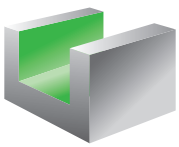
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)					Ballnose
					0.015	0.030	0.060	0.090	0.120	
1/8	1/8	1/2	1-1/2	GMA18F3 EDP: 20116 GMA18F3ZRN EDP: 20425	—	—	—	—	—	GMA18B3 EDP: 20114 GMA18B3ZRN EDP: 20424
3/16	3/16	5/8	2.0	GMA316F3 EDP: 20129 GMA316F3ZRN EDP: 20435	—	—	—	—	—	GMA316B3 EDP: 20127 GMA316B3ZRN EDP: 20434
1/4	1/4	3/4	2-1/2	GMA14F3 EDP: 20096 GMA14F3ZRN EDP: 20409	GMA14R3015 EDP: 20101 GMA14R3015ZRN EDP: 20411	GMA14R3030 EDP: 20102 GMA14R3030ZRN EDP: 20412	GMA14R3060 EDP: 20103 GMA14R3060ZRN EDP: 20413	—	—	GMA14B3 EDP: 20094 GMA14B3ZRN EDP: 20408
	1/4	1-1/2	4.0	GMA14FL3 EDP: 20097 GMA14FL3ZRN EDP: 20410	GMA14RL3015 EDP: 20104 GMA14RL3015ZRN EDP: 20414	GMA14RL3030 EDP: 20105 GMA14RL3030ZRN EDP: 20415	GMA14RL3060 EDP: 20106 GMA14RL3060ZRN EDP: 20416	—	—	—
5/16	5/16	7/8	2-1/2	GMA516F3 EDP: 20181 GMA516F3ZRN EDP: 20475	GMA516R3015 EDP: 20186 GMA516R3015ZRN EDP: 20477	GMA516R3030 EDP: 20187 GMA516R3030ZRN EDP: 20478	GMA516R3060 EDP: 20188 GMA516R3060ZRN EDP: 20479	—	—	GMA516B3 EDP: 20179 GMA516B3ZRN EDP: 20474
	5/16	1-1/2	4.0	GMA516FL3 EDP: 20182 GMA516FL3ZRN EDP: 20476	GMA516RL3015 EDP: 20189 GMA516RL3015ZRN EDP: 20480	GMA516RL3030 EDP: 20190 GMA516RL3030ZRN EDP: 20481	GMA516RL3060 EDP: 20191 GMA516RL3060ZRN EDP: 20482	—	—	—
3/8	3/8	7/8	2-1/2	GMA38F3 EDP: 20164 GMA38F3ZRN EDP: 20462	GMA38R3015 EDP: 20170 GMA38R3015ZRN EDP: 20465	GMA38R3030 EDP: 20171 GMA38R3030ZRN EDP: 20466	GMA38R3060 EDP: 20172 GMA38R3060ZRN EDP: 20467	—	—	GMA38B3 EDP: 20162 GMA38B3ZRN EDP: 20461
	3/8	1.0	2-1/2	GMA38FHL3 EDP: 20165 GMA38FHL3ZRN EDP: 20463	GMA38RHL3015 EDP: 20173 GMA38RHL3015ZRN EDP: 20468	GMA38RHL3030 EDP: 20174 GMA38RHL3030ZRN EDP: 20469	GMA38RHL3060 EDP: 20175 GMA38RHL3060ZRN EDP: 20470	—	—	—
	3/8	2.0	4.0	GMA38FXL3 EDP: 20166 GMA38FXL3ZRN EDP: 20464	GMA38RXL3015 EDP: 20176 GMA38RXL3015ZRN EDP: 20471	GMA38RXL3030 EDP: 20177 GMA38RXL3030ZRN EDP: 20472	GMA38RXL3060 EDP: 20178 GMA38RXL3060ZRN EDP: 20473	—	—	—

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



FULL SLOTTING



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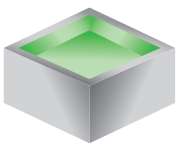
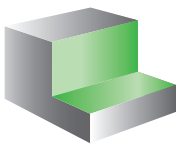


HIGH-VELOCITY



MATERIALS

Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)
Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)
Copper (200 Brinell <)	Brass
Copper (200 Brinell >)	Bronze

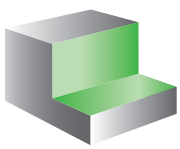
SPEEDS & FEEDS CHART PAGE 14

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)					Ballnose
					0.015	0.030	0.060	0.090	0.120	
7/16	7/16	1.0	2-1/2	GMA716F3 EDP: 20218 GMA716F3ZRN EDP: 20504	GMA716R3015 EDP: 20222 GMA716R3015ZRN EDP: 20505	GMA716R3030 EDP: 20223 GMA716R3030ZRN EDP: 20506	GMA716R3060 EDP: 20224 GMA716R3060ZRN EDP: 20507	GMA716R3090 EDP: 20225 GMA716R3090ZRN EDP: 20508	—	GMA716B3 EDP: 20216 GMA716B3ZRN EDP: 20503
1/2	1/2	1.0	3.0	GMA12FH3 EDP: 20066 GMA12FH3ZRN EDP: 20385	GMA12RH3015 EDP: 20079 GMA12RH3015ZRN EDP: 20393	GMA12RH3030 EDP: 20080 GMA12RH3030ZRN EDP: 20394	GMA12RH3060 EDP: 20081 GMA12RH3060ZRN EDP: 20395	GMA12RH3090 EDP: 20082 GMA12RH3090ZRN EDP: 20396	GMA12RH3120 EDP: 20083 GMA12RH3120ZRN EDP: 20397	—
	1/2	1-1/4	3.0	GMA12F3 EDP: 20065 GMA12F3ZRN EDP: 20384	GMA12R3015 EDP: 20074 GMA12R3015ZRN EDP: 20388	GMA12R3030 EDP: 20075 GMA12R3030ZRN EDP: 20389	GMA12R3060 EDP: 20076 GMA12R3060ZRN EDP: 20390	GMA12R3090 EDP: 20077 GMA12R3090ZRN EDP: 20391	GMA12R3120 EDP: 20078 GMA12R3120ZRN EDP: 20392	GMA12B3 EDP: 20063 GMA12B3ZRN EDP: 20383
	1/2	1-1/2	4.0	GMA12FL3 EDP: 20067 GMA12FL3ZRN EDP: 20386	GMA12RL3015 EDP: 20084 GMA12RL3015ZRN EDP: 20398	GMA12RL3030 EDP: 20085 GMA12RL3030ZRN EDP: 20399	GMA12RL3060 EDP: 20086 GMA12RL3060ZRN EDP: 20400	GMA12RL3090 EDP: 20087 GMA12RL3090ZRN EDP: 20401	GMA12RL3120 EDP: 20088 GMA12RL3120ZRN EDP: 20402	—
	1/2	2.0	4.0	GMA12FXL3 EDP: 20068 GMA12FXL3ZRN EDP: 20387	GMA12RXL3015 EDP: 20089 GMA12RXL3015ZRN EDP: 20403	GMA12RXL3030 EDP: 20090 GMA12RXL3030ZRN EDP: 20404	GMA12RXL3060 EDP: 20091 GMA12RXL3060ZRN EDP: 20405	GMA12RXL3090 EDP: 20092 GMA12RXL3090ZRN EDP: 20406	GMA12RXL3120 EDP: 20093 GMA12RXL3120ZRN EDP: 20407	—

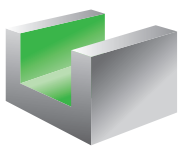
Continued on next page

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



FULL SLOTTING



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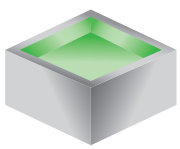
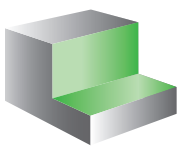


HIGH-VELOCITY



HP HIGH PERFORMANCE 3 FLUTE (INCH)

Variable flute and variable index. Engineered to repel aluminum. For roughing and finishing of non-ferrous materials, aluminum, copper, brass, plastic, etc. High velocity, high material removal rate. Center cutting. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

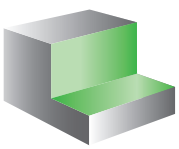
Available in special diameters, lengths and completely resharpenable.

SPEEDS & FEEDS CHART PAGE 14

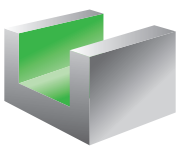
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)					Ballnose
					0.015	0.030	0.060	0.090	0.120	
5/8	5/8	1-1/4	3-1/2	GMA58F3 EDP: 20194 GMA58F3ZRN EDP: 20484	GMA58R3015 EDP: 20201 GMA58R3015ZRN EDP: 20487	GMA58R3030 EDP: 20202 GMA58R3030ZRN EDP: 20488	GMA58R3060 EDP: 20203 GMA58R3060ZRN EDP: 20489	GMA58R3090 EDP: 20204 GMA58R3090ZRN EDP: 20491	GMA58R3120 EDP: 20205 GMA58R3120ZRN EDP: 20492	GMA58B3 EDP: 20192 GMA58B3ZRN EDP: 20483
	5/8	1-5/8	4.0	GMA58FHL3 EDP: 20195 GMA58FHL3ZRN EDP: 20485	GMA58RHL3015 EDP: 20206 GMA58RHL3015ZRN EDP: 20493	GMA58RHL3030 EDP: 20207 GMA58RHL3030ZRN EDP: 20494	GMA58RHL3060 EDP: 20208 GMA58RHL3060ZRN EDP: 20495	GMA58RHL3090 EDP: 20209 GMA58RHL3090ZRN EDP: 20496	GMA58RHL3120 EDP: 20210 GMA58RHL3120ZRN EDP: 20497	—
	5/8	2.0	4.0	GMA58FL3 EDP: 20196 GMA58FL3ZRN EDP: 20486	GMA58RL3015 EDP: 20211 GMA58RL3015ZRN EDP: 20498	GMA58RL3030 EDP: 20212 GMA58RL3030ZRN EDP: 20499	GMA58RL3060 EDP: 20213 GMA58RL3060ZRN EDP: 20500	GMA58RL3090 EDP: 20214 GMA58RL3090ZRN EDP: 20501	GMA58RL3120 EDP: 20215 GMA58RL3120ZRN EDP: 20502	—
3/4	3/4	1-1/2	4.0	GMA34F3 EDP: 20134 GMA34F3ZRN EDP: 20437	GMA34R3015 EDP: 20142 GMA34R3015ZRN EDP: 20441	GMA34R3030 EDP: 20143 GMA34R3030ZRN EDP: 20442	GMA34R3060 EDP: 20144 GMA34R3060ZRN EDP: 20443	GMA34R3090 EDP: 20145 GMA34R3090ZRN EDP: 20444	GMA34R3120 EDP: 20146 GMA34R3120ZRN EDP: 20445	GMA34B3 EDP: 20132 GMA34B3ZRN EDP: 20436
	3/4	1-5/8	4.0	GMA34FHL3 EDP: 20135 GMA34FHL3ZRN EDP: 20438	GMA34RHL3015 EDP: 20147 GMA34RHL3015ZRN EDP: 20446	GMA34RHL3030 EDP: 20148 GMA34RHL3030ZRN EDP: 20447	GMA34RHL3060 EDP: 20149 GMA34RHL3060ZRN EDP: 20448	GMA34RHL3090 EDP: 20150 GMA34RHL3090ZRN EDP: 20449	GMA34RHL3120 EDP: 20151 GMA34RHL3120ZRN EDP: 20450	—
	3/4	2.0	4.0	GMA34FL3 EDP: 20136 GMA34FL3ZRN EDP: 20439	GMA34RL3015 EDP: 20152 GMA34RL3015ZRN EDP: 20451	GMA34RL3030 EDP: 20153 GMA34RL3030ZRN EDP: 20452	GMA34RL3060 EDP: 20154 GMA34RL3060ZRN EDP: 20453	GMA34RL3090 EDP: 20155 GMA34RL3090ZRN EDP: 20454	GMA34RL3120 EDP: 20156 GMA34RL3120ZRN EDP: 20455	—
	3/4	2-1/4	5.0	GMA34FLH3 EDP: 20137 GMA34FLH3ZRN EDP: 20440	GMA34RLH3015 EDP: 20157 GMA34RLH3015ZRN EDP: 20456	GMA34RLH3030 EDP: 20158 GMA34RLH3030ZRN EDP: 20457	GMA34RLH3060 EDP: 20159 GMA34RLH3060ZRN EDP: 20458	GMA34RLH3090 EDP: 20160 GMA34RLH3090ZRN EDP: 20459	GMA34RLH3120 EDP: 20161 GMA34RLH3120ZRN EDP: 20460	—

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



FULL SLOTTING



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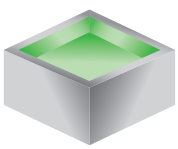
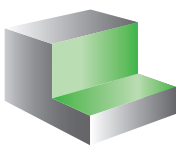


HIGH-VELOCITY



MATERIALS

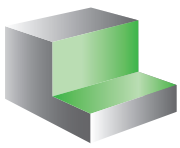
Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)
Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)
Copper (200 Brinell <)	Brass
Copper (200 Brinell >)	Bronze

SPEEDS & FEEDS CHART PAGE 14

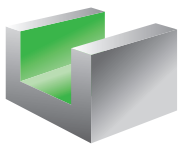
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)					Ballnose
					0.015	0.030	0.060	0.090	0.120	
1.0	1.0	1-1/2	4.0	GMA10F3 EDP: 20032 GMA10F3ZRN EDP: 20356	GMA10R3015 EDP: 20039 GMA10R3015ZRN EDP: 20359	GMA10R3030 EDP: 20040 GMA10R3030ZRN EDP: 20360	GMA10R3060 EDP: 20041 GMA10R3060ZRN EDP: 20361	GMA10R3090 EDP: 20042 GMA10R3090ZRN EDP: 20362	GMA10R3120 EDP: 20043 GMA10R3120ZRN EDP: 20363	GMA10B3 EDP: 20030 GMA10B3ZRN EDP: 20355
	1.0	2.0	4.0	GMA10FL3 EDP: 20033 GMA10FL3ZRN EDP: 20357	GMA10RL3015 EDP: 20044 GMA10RL3015ZRN EDP: 20364	GMA10RL3030 EDP: 20045 GMA10RL3030ZRN EDP: 20365	GMA10RL3060 EDP: 20046 GMA10RL3060ZRN EDP: 20366	GMA10RL3090 EDP: 20047 GMA10RL3090ZRN EDP: 20367	GMA10RL3120 EDP: 20048 GMA10RL3120ZRN EDP: 20368	—
	1.0	2-1/2	5.0	GMA10FXL3 EDP: 20034 GMA10FXL3ZRN EDP: 20358	GMA10RXL3015 EDP: 20049 GMA10RXL3015ZRN EDP: 20369	GMA10RXL3030 EDP: 20050 GMA10RXL3030ZRN EDP: 20370	GMA10RXL3060 EDP: 20051 GMA10RXL3060ZRN EDP: 20371	GMA10RXL3090 EDP: 20052 GMA10RXL3090ZRN EDP: 20372	GMA10RXL3120 EDP: 20053 GMA10RXL3120ZRN EDP: 20373	—

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



FULL SLOTTING



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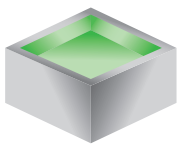
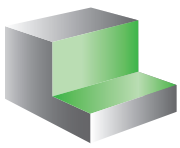


HIGH-VELOCITY



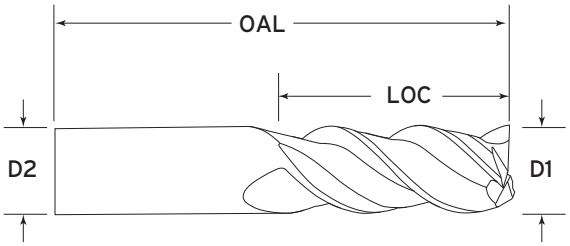
2 & 3 FLUTE (INCH) SPEEDS & FEEDS CHART FULL SLOTTING AND PROFILING, CHIMP LOAD PER TOOTH

WORK PIECE MATERIAL	SFM	1/8"			3/16"			1/4"			5/16"			3/8"		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum	2000	.0014	.0010	.0005	.0018	.0012	.0007	.0022	.0014	.0010	.0027	.0018	.0013	.0031	.0020	.0017
Soft Aluminum (6061)	2000	.0009	.0006	.0004	.0013	.0008	.0005	.0018	.0012	.0007	.0023	.0016	.0009	.0027	.0018	.0014
Copper (200 Brinell <)	500	.0007	.0005	.0005	.0011	.0007	.0007	.0018	.0012	.0009	.0027	.0018	.0012	.0032	.0022	.0014
Copper (200 Brinell >)	400	.0007	.0005	.0004	.0011	.0007	.0005	.0014	.0010	.0007	.0022	.0014	.0009	.0029	.0019	.0013
Cast Aluminum, Silicon (6% <)	1300	.0007	.0005	.0005	.0011	.0007	.0007	.0020	.0013	.0010	.0027	.0018	.0013	.0036	.0024	.0017
Cast Aluminum, Silicon (6% >)	800	.0007	.0005	.0005	.0011	.0007	.0007	.0014	.0010	.0010	.0022	.0014	.0013	.0029	.0019	.0017
Brass	1500	.0007	.0005	.0002	.0009	.0006	.0007	.0013	.0008	.0010	.0020	.0013	.0013	.0027	.0018	.0017
Bronze	600	.0007	.0005	.0004	.0009	.0006	.0005	.0013	.0008	.0007	.0020	.0013	.0009	.0025	.0017	.0013

WORK PIECE MATERIAL	SFM	7/16"			1/2"			5/8"			3/4"			1"		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum	2000	.0040	.0026	.0019	.0045	.0030	.0021	.0054	.0036	.0027	.0063	.0042	.0033	.0072	.0048	.0040
Soft Aluminum (6061)	2000	.0032	.0022	.0017	.0038	.0025	.0020	.0049	.0032	.0024	.0058	.0038	.0028	.0072	.0048	.0033
Copper (200 Brinell <)	500	.0036	.0024	.0017	.0043	.0029	.0020	.0050	.0034	.0024	.0061	.0041	.0028	.0072	.0048	.0033
Copper (200 Brinell >)	400	.0036	.0024	.0015	.0040	.0026	.0017	.0047	.0031	.0020	.0054	.0036	.0023	.0065	.0043	.0027
Cast Aluminum, Silicon (6% <)	1300	.0041	.0028	.0019	.0045	.0030	.0021	.0050	.0034	.0027	.0061	.0041	.0033	.0072	.0048	.0040
Cast Aluminum, Silicon (6% >)	800	.0034	.0023	.0019	.0040	.0026	.0021	.0047	.0031	.0027	.0058	.0038	.0033	.0068	.0046	.0040
Brass	1500	.0031	.0020	.0019	.0036	.0024	.0021	.0045	.0030	.0027	.0054	.0036	.0033	.0063	.0042	.0040
Bronze	600	.0029	.0019	.0015	.0034	.0023	.0017	.0040	.0026	.0020	.0050	.0034	.0023	.0059	.0040	.0027

**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050



HIGH PERFORMANCE
3 FLUTE (METRIC)

Variable flute and variable index. Engineered to repel aluminum. For roughing and finishing of non-ferrous materials, aluminum, copper, brass, plastic, etc. High velocity, high material removal rate. Center cutting. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable.

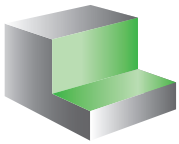
SPEEDS & FEEDS CHART PAGE 17

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Metric)					
					0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
3mm	3mm	8mm	38mm	GMA0300MMFS3 EDP: 20001 GMA0300MMFS3ZRN EDP: 20326	GMA0300MMRS3020 EDP: 20004 GMA0300MMRS3020ZRN EDP: 20329	—	—	—	—	—
	3mm	12mm	38mm	GMA0300MMF3 EDP: 20000 GMA0300MMF3ZRN EDP: 20325	GMA0300MMR3020 EDP: 20002 GMA0300MMR3020ZRN EDP: 20327	—	GMA0300MMR3050 EDP: 20003 GMA0300MMR3050ZRN EDP: 20328	—	—	—
4mm	6mm	8mm	50mm	—	—	GMA0400MMRS3030 EDP: 20008 GMA0400MMRS3030ZRN EDP: 20333	—	—	—	—
	6mm	12mm	50mm	GMA0400MMF3 EDP: 20005 GMA0400MMF3ZRN EDP: 20330	—	GMA0400MMR3030 EDP: 20006 GMA0400MMR3030ZRN EDP: 20331	GMA0400MMR3050 EDP: 20007 GMA0400MMR3050ZRN EDP: 20332	—	—	—
5mm	6mm	10mm	50mm	—	—	GMA0500MMRS3030 EDP: 20012 GMA0500MMRS3030ZRN EDP: 20337	—	—	—	—
	6mm	15mm	65mm	GMA0500MMF3 EDP: 20009 GMA0500MMF3ZRN EDP: 20334	—	GMA0500MMR3030 EDP: 20010 GMA0500MMR3030ZRN EDP: 20335	GMA0500MMR3050 EDP: 20011 GMA0500MMR3050ZRN EDP: 20336	—	—	—
6mm	6mm	12mm	50mm	GMA0600MMFS3 EDP: 20014 GMA0600MMFS3ZRN EDP: 20339	—	GMA0600MMRS3030 EDP: 20017 GMA0600MMRS3030ZRN EDP: 20342	—	—	—	—
	6mm	19mm	65mm	GMA0600MMF3 EDP: 20013 GMA0600MMF3ZRN EDP: 20338	—	GMA0600MMR3030 EDP: 20015 GMA0600MMR3030ZRN EDP: 20340	GMA0600MMR3050 EDP: 20016 GMA0600MMR3050ZRN EDP: 20341	—	—	—
8mm	8mm	12mm	50mm	GMA0800MMFS3 EDP: 20019 GMA0800MMFS3ZRN EDP: 20344	—	—	GMA0800MMRS3050 EDP: 20024 GMA0800MMRS3050ZRN EDP: 20349	—	—	—
	8mm	22mm	65mm	GMA0800MMF3 EDP: 20018 GMA0800MMF3ZRN EDP: 20343	—	GMA0800MMR3030 EDP: 20020 GMA0800MMR3030ZRN EDP: 20345	GMA0800MMR3050 EDP: 20021 GMA0800MMR3050ZRN EDP: 20346	GMA0800MMR3100 EDP: 20022 GMA0800MMR3100ZRN EDP: 20347	GMA0800MMR3150 EDP: 20023 GMA0800MMR3150ZRN EDP: 20348	—

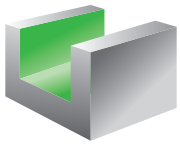
Continued on next page

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING



FULL SLOTTING



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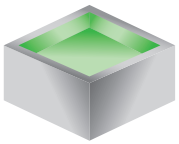
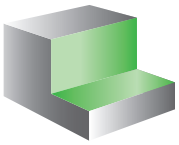


HIGH-VELOCITY



HIGH PERFORMANCE
3 FLUTE (METRIC)

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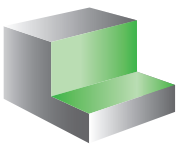
SPEEDS & FEEDS CHART PAGE 17

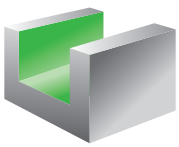
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Metric)					
					0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
10mm	10mm	16mm	50mm	—	—	—	GMA1000MMRS3050 EDP: 20029 / GMA1000MMRS3050ZRN EDP: 20354	—	—	—
	10mm	22mm	70mm	GMA1000MMF3 EDP: 20025 / GMA1000MMF3ZRN EDP: 20350	—	GMA1000MMR3030 EDP: 20026 / GMA1000MMR3030ZRN EDP: 20351	GMA1000MMR3050 EDP: 20027 / GMA1000MMR3050ZRN EDP: 20352	GMA1000MMR3100 EDP: 20028 / GMA1000MMR3100ZRN EDP: 20353	—	—
12mm	12mm	19mm	63mm	GMA1200MMFS3 EDP: 20055 / GMA1200MMFS3ZRN EDP: 20375	—	GMA1200MMRS3030 EDP: 20061 / GMA1200MMRS3030ZRN EDP: 20381	GMA1200MMRS3050 EDP: 20062 / GMA1200MMRS3050ZRN EDP: 20382	—	—	—
	12mm	32mm	75mm	GMA1200MMF3 EDP: 20054 / GMA1200MMF3ZRN EDP: 20374	—	GMA1200MMR3030 EDP: 20056 / GMA1200MMR3030ZRN EDP: 20376	GMA1200MMR3050 EDP: 20057 / GMA1200MMR3050ZRN EDP: 20377	GMA1200MMR3100 EDP: 20058 / GMA1200MMR3100ZRN EDP: 20378	GMA1200MMR3150 EDP: 20059 / GMA1200MMR3150ZRN EDP: 20379	GMA1200MMR3200 EDP: 20060 / GMA1200MMR3200ZRN EDP: 20380
16mm	16mm	19mm	75mm	—	—	GMA1600MMRS3030 EDP: 20112 / GMA1600MMRS3030ZRN EDP: 20422	GMA1600MMRS3050 EDP: 20113 / GMA1600MMRS3050ZRN EDP: 20423	—	—	—
	16mm	32mm	89mm	GMA1600MMF3 EDP: 20107 / GMA1600MMF3ZRN EDP: 20417	—	GMA1600MMR3030 EDP: 20108 / GMA1600MMR3030ZRN EDP: 20418	GMA1600MMR3050 EDP: 20109 / GMA1600MMR3050ZRN EDP: 20419	GMA1600MMR3100 EDP: 20110 / GMA1600MMR3100ZRN EDP: 20420	—	GMA1600MMR3200 EDP: 20111 / GMA1600MMR3200ZRN EDP: 20421
20mm	20mm	22mm	75mm	—	—	—	—	GMA2000MMRS3100 EDP: 20123 / GMA2000MMRS3100ZRN EDP: 20430	—	—
	20mm	38mm	100mm	GMA2000MMF3 EDP: 20119 / GMA2000MMF3ZRN EDP: 20426	—	—	GMA2000MMR3050 EDP: 20120 / GMA2000MMR3050ZRN EDP: 20427	GMA2000MMR3100 EDP: 20121 / GMA2000MMR3100ZRN EDP: 20428	GMA2000MMR3150 EDP: 20122 / GMA2000MMR3150ZRN EDP: 20429	—
25mm	25mm	38mm	100mm	GMA2500MMF3 EDP: 20124 / GMA2500MMF3ZRN EDP: 20431	—	—	—	GMA2500MMR3100 EDP: 20125 / GMA2500MMR3100ZRN EDP: 20432	GMA2500MMR3150 EDP: 20126 / GMA2500MMR3150ZRN EDP: 20433	—

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

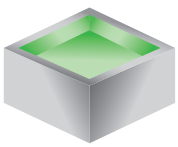
PROFILING



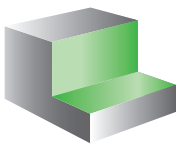
FULL SLOTTING



POCKETING



HIGH-VELOCITY



MATERIALS

Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)
Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)
Copper (200 Brinell <)	Brass
Copper (200 Brinell >)	Bronze

3 FLUTE (METRIC) SPEEDS & FEEDS CHART FULL SLOTTING AND PROFILING, METRIC CHIMP LOAD PER TOOTH

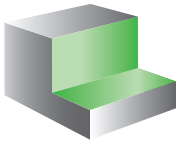
WORK PIECE MATERIAL	SFM	3mm			4mm			5mm			6mm			8mm			10mm			12mm		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum	2000	.0330	.0220	.0120	.0380	.0220	.0050	.0450	.0300	.0170	.0530	.0330	.0220	.0680	.0450	.0330	.0810	.0530	.0450	.1090	.0710	.0500
Soft Aluminum (6061)	2000	.0200	.0120	.0100	.0250	.0120	.0100	.0330	.0200	.0120	.0430	.0270	.0150	.0580	.0400	.0220	.0710	.0480	.0380	.0910	.0580	.0480
Copper (200 Brinell <)	500	.0150	.0100	.0100	.0200	.0120	.0100	.0270	.0170	.0170	.0430	.0270	.0200	.0680	.0450	.0300	.0830	.0580	.0380	.1040	.0680	.0480
Copper (200 Brinell >)	400	.0150	.0100	.0100	.0200	.0100	.0100	.0270	.0170	.0120	.0330	.0220	.0150	.0550	.0350	.0220	.0760	.0500	.0350	.0960	.0610	.0400
Cast Aluminum, Silicon (6% <)	1300	.0150	.0100	.0100	.0200	.0120	.0100	.0270	.0170	.0170	.0480	.0300	.0220	.0680	.0450	.0330	.0940	.0630	.0450	.1090	.0710	.0500
Cast Aluminum, Silicon (6% >)	800	.0150	.0100	.0100	.0200	.0120	.0100	.0270	.0170	.0170	.0330	.0220	.0220	.0550	.0350	.0330	.0760	.0500	.0450	.0960	.0610	.0500
Brass	1500	.0150	.0100	.0100	.0170	.0100	.0100	.0220	.0150	.0170	.0300	.0170	.0220	.0500	.0330	.0330	.0710	.0480	.0450	.0860	.0550	.0500
Bronze	600	.0150	.0100	.0100	.0170	.0100	.0100	.0220	.0150	.0120	.0300	.0170	.0220	.0500	.0330	.0220	.0660	.0450	.0350	.0810	.0530	.0400

WORK PIECE MATERIAL	SFM	16mm			20mm			25mm		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum	2000	.1370	.0910	.0680	.1670	.1140	.0910	.1800	.1190	.1010
Soft Aluminum (6061)	2000	.1240	.0810	.0610	.1540	.1040	.0780	.1800	.1190	.0830
Copper (200 Brinell <)	500	.1270	.0860	.0610	.1620	.1110	.0780	.1800	.1190	.0830
Copper (200 Brinell >)	400	.1190	.0780	.0500	.1440	.0990	.0660	.1620	.1060	.0680
Cast Aluminum, Silicon (6% <)	1300	.1270	.0860	.0680	.1620	.1110	.0910	.1800	.1190	.1010
Cast Aluminum, Silicon (6% >)	800	.1190	.0780	.0680	.1540	.1040	.0910	.1700	.1140	.1010
Brass	1500	.1140	.0760	.0680	.1440	.0990	.0910	.1570	.1040	.1010
Bronze	600	.1010	.0660	.0500	.1340	.0940	.0660	.1470	.0990	.0680

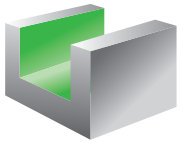
**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

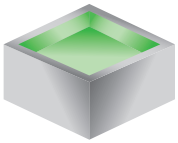
PROFILING



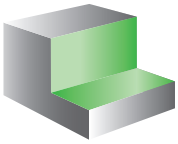
FULL SLOTTING



POCKETING



HIGH-VELOCITY



HP

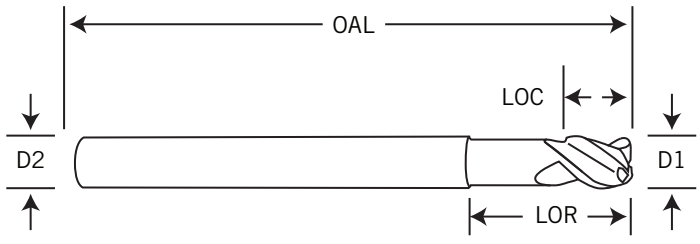
HIGH PERFORMANCE
3 FLUTE NECK RELIEVED (INCH)

Variable flute and variable index design. Engineered to repel aluminum. For roughing and finishing of non-ferrous materials. Extended neck provides clearance for deep pocketing, slotting or profiling. See “Speeds and Feeds” calculator at gorillamill.com or refer to “Speeds and Feeds” chart at the end of this section. Center cutting. 2 flute also available.

Available in special diameters, lengths and completely resharpenable.

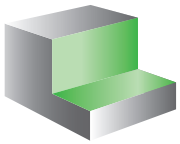
SPEEDS & FEEDS CHART PAGE 20

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	LOR	Sq. End	Corner Radius (Inch)						
						0.015	0.030	0.060	0.090	0.120	0.190	0.250
1/4	1/4	3/8	2-1/2	3/4	GMANR14F30.750 EDP: 20264 GMANR14F30.750ZRN EDP: 20547	GMANR14R30150.750 EDP: 20266 GMANR14R30150.750ZRN EDP: 20549	GMANR14R30300.750 EDP: 20268 GMANR14R30300.750ZRN EDP: 20551	GMANR14R30600.750 EDP: 20270 GMANR14R30600.750ZRN EDP: 20553	—	—	—	—
	1/4	3/8	3.0	1-1/8	GMANR14F31.125 EDP: 20265 GMANR14F31.125ZRN EDP: 20548	GMANR14R30151.125 EDP: 20267 GMANR14R30151.125ZRN EDP: 20550	GMANR14R30301.125 EDP: 20269 GMANR14R30301.125ZRN EDP: 20552	GMANR14R30601.125 EDP: 20271 GMANR14R30601.125ZRN EDP: 20554	—	—	—	—
3/8	3/8	1/2	3.0	1-1/8	GMANR38F31.125 EDP: 20300 GMANR38F31.125ZRN EDP: 20583	GMANR38R30151.125 EDP: 20302 GMANR38R30151.125ZRN EDP: 20585	GMANR38R30301.125 EDP: 20304 GMANR38R30301.125ZRN EDP: 20587	GMANR38R30601.125 EDP: 20306 GMANR38R30601.125ZRN EDP: 20589	GMANR38R30901.125 EDP: 20308 GMANR38R30901.125ZRN EDP: 20591	—	—	—
	3/8	1/2	4.0	2-1/8	GMANR38F32.125 EDP: 20301 GMANR38F32.125ZRN EDP: 20584	GMANR38R30152.125 EDP: 20303 GMANR38R30152.125ZRN EDP: 20586	GMANR38R30302.125 EDP: 20305 GMANR38R30302.125ZRN EDP: 20588	GMANR38R30602.125 EDP: 20307 GMANR38R30602.125ZRN EDP: 20590	GMANR38R30902.125 EDP: 20309 GMANR38R30902.125ZRN EDP: 20592	—	—	—
1/2	1/2	9/16	5.0	1-1/2	GMANR12F31.500 EDP: 20240 GMANR12F31.500ZRN EDP: 20523	GMANR12R30151.500 EDP: 20244 GMANR12R30151.500ZRN EDP: 20527	GMANR12R30301.500 EDP: 20248 GMANR12R30301.500ZRN EDP: 20531	GMANR12R30601.500 EDP: 20252 GMANR12R30601.500ZRN EDP: 20535	GMANR12R30901.500 EDP: 20256 GMANR12R30901.500ZRN EDP: 20539	GMANR12R31201.500 EDP: 20260 GMANR12R31201.500ZRN EDP: 20543	—	—
	1/2	9/16	5.0	2-1/4	GMANR12F32.250 EDP: 20241 GMANR12F32.250ZRN EDP: 20524	GMANR12R30152.250 EDP: 20245 GMANR12R30152.250ZRN EDP: 20528	GMANR12R30302.250 EDP: 20249 GMANR12R30302.250ZRN EDP: 20532	GMANR12R30602.250 EDP: 20253 GMANR12R30602.250ZRN EDP: 20536	GMANR12R30902.250 EDP: 20257 GMANR12R30902.250ZRN EDP: 20540	GMANR12R31202.250 EDP: 20261 GMANR12R31202.250ZRN EDP: 20544	—	—
	1/2	9/16	6.0	3-1/4	GMANR12F33.250 EDP: 20242 GMANR12F33.250ZRN EDP: 20525	GMANR12R30153.250 EDP: 20246 GMANR12R30153.250ZRN EDP: 20529	GMANR12R30303.250 EDP: 20250 GMANR12R30303.250ZRN EDP: 20533	GMANR12R30603.250 EDP: 20254 GMANR12R30603.250ZRN EDP: 20537	GMANR12R30903.250 EDP: 20258 GMANR12R30903.250ZRN EDP: 20541	GMANR12R31203.250 EDP: 20262 GMANR12R31203.250ZRN EDP: 20545	—	—
	1/2	9/16	6.0	4-1/4	GMANR12F34.250 EDP: 20243 GMANR12F34.250ZRN EDP: 20526	GMANR12R30154.250 EDP: 20247 GMANR12R30154.250ZRN EDP: 20530	GMANR12R30304.250 EDP: 20251 GMANR12R30304.250ZRN EDP: 20534	GMANR12R30604.250 EDP: 20255 GMANR12R30604.250ZRN EDP: 20538	GMANR12R30904.250 EDP: 20259 GMANR12R30904.250ZRN EDP: 20542	GMANR12R31204.250 EDP: 20263 GMANR12R31204.250ZRN EDP: 20546	—	—

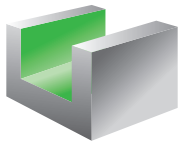


TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



FULL SLOTTING



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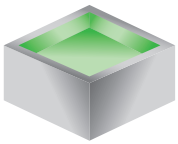
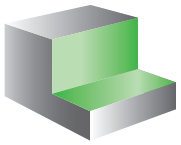


HIGH-VELOCITY



MATERIALS

Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)
Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)
Copper (200 Brinell <)	Brass
Copper (200 Brinell >)	Bronze

SPEEDS & FEEDS CHART PAGE 20

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	LOR	Sq. End	Corner Radius (Inch) 0.015	0.030	0.060	0.090	0.120	0.190	0.250
5/8	5/8	3/4	4.0	1-5/8	GMANR58F31.625 EDP: 20310 GMANR58F31.625ZRN EDP: 20593	—	GMANR58R30301.625 EDP: 20313 GMANR58R30301.625ZRN EDP: 20596	GMANR58R30601.625 EDP: 20316 GMANR58R30601.625ZRN EDP: 20599	GMANR58R30901.625 EDP: 20319 GMANR58R30901.625 EDP: 20602	GMANR58R31201.625 EDP: 20322 GMANR58R31201.625ZRN EDP: 20605	—	—
	5/8	3/4	4.0	2-3/8	GMANR58F32.375 EDP: 20311 GMANR58F32.375ZRN EDP: 20594	—	GMANR58R30302.375 EDP: 20314 GMANR58R30302.375ZRN EDP: 20597	GMANR58R30602.375 EDP: 20317 GMANR58R30602.375ZRN EDP: 20600	GMANR58R30902.375 EDP: 20320 GMANR58R30902.375ZRN EDP: 20603	GMANR58R31202.375 EDP: 20323 GMANR58R31202.375ZRN EDP: 20606	—	—
	5/8	3/4	6.0	3-3/8	GMANR58F33.375 EDP: 20312 GMANR58F33.375ZRN EDP: 20595	—	GMANR58R30303.375 EDP: 20315 GMANR58R30303.375ZRN EDP: 20598	GMANR58R30603.375 EDP: 20318 GMANR58R30603.375ZRN EDP: 20601	GMANR58R30903.375 EDP: 20321 GMANR58R30903.375ZRN EDP: 20604	GMANR58R31203.375 EDP: 20324 GMANR58R31203.375ZRN EDP: 20607	—	—
3/4	3/4	1.0	6.0	1-1/2	GMANR34F31.500 EDP: 20272 GMANR34F31.500ZRN EDP: 20555	—	GMANR34R30301.500 EDP: 20276 GMANR34R30301.500ZRN EDP: 20559	GMANR34R30601.500 EDP: 20280 GMANR34R30601.500ZRN EDP: 20563	GMANR34R30901.500 EDP: 20284 GMANR34R30901.500ZRN EDP: 20567	GMANR34R31201.500 EDP: 20288 GMANR34R31201.500ZRN EDP: 20571	GMANR34R31901.500 EDP: 20292 GMANR34R31901.500ZRN EDP: 20575	GMANR34R32501.500 EDP: 20296 GMANR34R32501.500ZRN EDP: 20579
	3/4	1.0	6.0	2-1/4	GMANR34F32.250 EDP: 20273 GMANR34F32.250ZRN EDP: 20556	—	GMANR34R30302.250 EDP: 20277 GMANR34R30302.250ZRN EDP: 20560	GMANR34R30602.250 EDP: 20281 GMANR34R30602.250ZRN EDP: 20564	GMANR34R30902.250 EDP: 20285 GMANR34R30902.250ZRN EDP: 20568	GMANR34R31202.250 EDP: 20289 GMANR34R31202.250ZRN EDP: 20572	GMANR34R31902.250 EDP: 20293 GMANR34R31902.250ZRN EDP: 20576	GMANR34R32502.250 EDP: 20297 GMANR34R32502.250ZRN EDP: 20580
	3/4	1.0	6.0	3-1/4	GMANR34F33.250 EDP: 20274 GMANR34F33.250ZRN EDP: 20557	—	GMANR34R30303.250 EDP: 20278 GMANR34R30303.250ZRN EDP: 20561	GMANR34R30603.250 EDP: 20282 GMANR34R30603.250ZRN EDP: 20565	GMANR34R30903.250 EDP: 20286 GMANR34R30903.250ZRN EDP: 20569	GMANR34R31203.250 EDP: 20290 GMANR34R31203.250ZRN EDP: 20573	GMANR34R31903.250 EDP: 20294 GMANR34R31903.250ZRN EDP: 20577	GMANR34R32503.250 EDP: 20298 GMANR34R32503.250ZRN EDP: 20581
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1.0	1.0	1-1/8	6.0	3-1/4	GMANR10F33.250 EDP: 20226 GMANR10F33.250ZRN EDP: 20509	—	GMANR10R30303.250 EDP: 20228 GMANR10R30303.250ZRN EDP: 20511	GMANR10R30603.250 EDP: 20230 GMANR10R30603.250ZRN EDP: 20513	GMANR10R30903.250 EDP: 20232 GMANR10R30903.250ZRN EDP: 20515	GMANR10R31203.250 EDP: 20234 GMANR10R31203.250ZRN EDP: 20517	GMANR10R31903.250 EDP: 20236 GMANR10R31903.250ZRN EDP: 20519	GMANR10R32503.250 EDP: 20238 GMANR10R32503.250ZRN EDP: 20521
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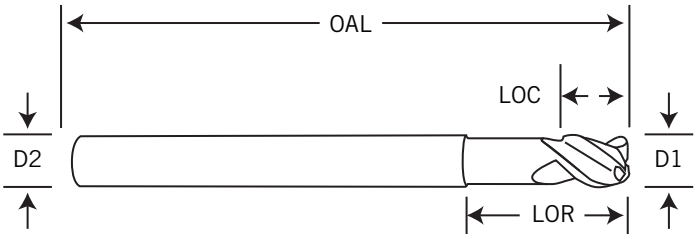
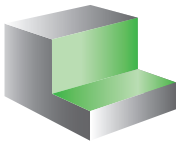
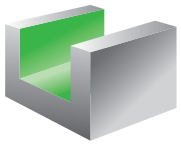


TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

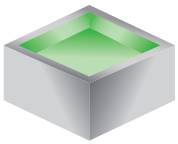
PROFILING



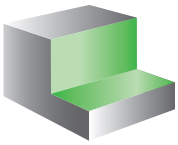
FULL SLOTTING



POCKETING



HIGH-VELOCITY



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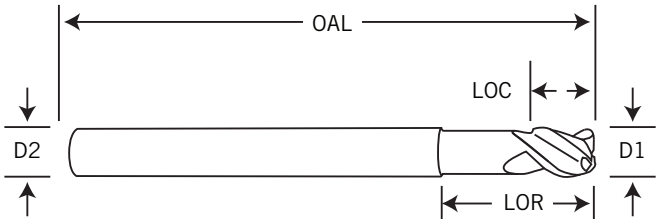

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Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)
Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)
Copper (200 Brinell <)	Brass
Copper (200 Brinell >)	Bronze

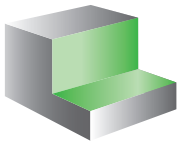
3 FLUTE NECK RELIEVED (INCH) SPEEDS & FEEDS CHART FULL SLOTTING AND PROFILING, CHIMP LOAD PER TOOTH

WORK PIECE MATERIAL	SFM	1/4"			3/8"			1/2"			5/8"			3/4"			1"		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum	1200	.0015	.0008	.0008	.0023	.0015	.0015	.0034	.0023	.0016	.0041	.0027	.0020	.0047	.0032	.0025	.0054	.0036	.0030
Soft Aluminum (6061)	1200	.0014	.0009	.0005	.0020	.0014	.0011	.0029	.0019	.0015	.0037	.0024	.0018	.0044	.0029	.0021	.0054	.0036	.0025
Copper (200 Brinell <)	300	.0014	.0009	.0007	.0024	.0017	.0011	.0032	.0022	.0015	.0038	.0026	.0018	.0046	.0031	.0021	.0054	.0036	.0025
Copper (200 Brinell >)	240	.0011	.0008	.0005	.0022	.0014	.0010	.0030	.0020	.0013	.0035	.0023	.0015	.0041	.0027	.0017	.0049	.0032	.0020
Cast Aluminum, Silicon 6% <	780	.0015	.0010	.0008	.0027	.0018	.0013	.0034	.0023	.0016	.0038	.0026	.0020	.0046	.0031	.0025	.0054	.0036	.0030
Cast Aluminum, Silicon 6% >	480	.0011	.0008	.0008	.0022	.0014	.0013	.0030	.0020	.0016	.0035	.0023	.0020	.0044	.0029	.0025	.0051	.0035	.0030
Brass	900	.0010	.0006	.0008	.0020	.0014	.0013	.0027	.0018	.0016	.0034	.0023	.0020	.0041	.0027	.0025	.0047	.0032	.0030
Bronze	360	.0010	.0006	.0005	.0019	.0013	.0010	.0026	.0017	.0013	.0030	.0020	.0015	.0038	.0026	.0017	.0044	.0030	.0020

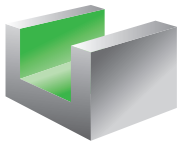
**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

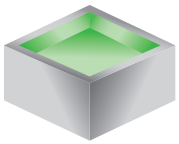
PROFILING



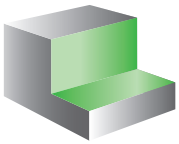
FULL SLOTTING



POCKETING



HIGH-VELOCITY



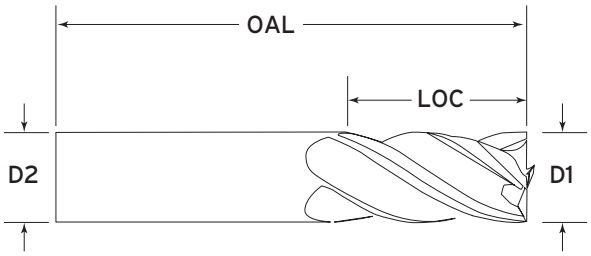
HIGH PERFORMANCE
4 FLUTE (INCH)

Patented variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials including, stainless, inconel, titanium, tool steels and hardened materials. Should be run at specific parameters. See “Speeds and Feeds” calculator at gorillamill.com or refer to “Speeds and Feeds” chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable.

MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inco 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inco 625
Soft Steels, (A36,1018, 8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels, (4340,4140)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)	



GMX-35 COATED

SPEEDS & FEEDS CHART PAGE 25

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End WF= Weldon Flat	Corner Radius (Inch) WF=Weldon Flat							Ballnose WF= Weldon Flat
					0.015	0.030	0.060	0.090	0.120	0.190	0.250	
	1/8	1/4	1-1/2	GM18FS4 EDP: 10309	GM18RS4015 EDP: 10319	GM18RS4030 EDP: 10320	—	—	—	—	—	—
1/8	1/8	1/2	1-1/2	GM18F4 EDP: 10305	GM18R4015 EDP: 10311	GM18R4030 EDP: 10312	—	—	—	—	—	GM18B4 EDP: 10304
	1/8	1.0	3.0	GM18FL4 EDP: 10307	GM18RL4015 EDP: 10315	GM18RL4030 EDP: 10316	—	—	—	—	—	—
5/32	3/16	1/2	2.0	GM532F4 EDP: 10535	GM532R4015 EDP: 10536	GM532R4030 EDP: 10537	—	—	—	—	—	GM532B4 EDP: 10534
	3/16	3/8	2.0	GM316FS4 EDP: 10348	GM316RS4015 EDP: 10358	GM316RS4030 EDP: 10359	—	—	—	—	—	—
3/16	3/16	5/8	2.0	GM316F4 EDP: 10344	GM316R4015 EDP: 10350	GM316R4030 EDP: 10351	—	—	—	—	—	GM316B4 EDP: 10343
	3/16	1-1/4	3.0	GM316FL4 EDP: 10346	GM316RL4015 EDP: 10354	GM316RL4030 EDP: 10355	—	—	—	—	—	—

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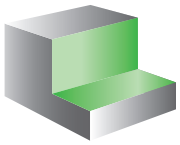
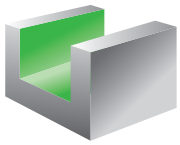
Continued on next page

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



FULL SLOTTING



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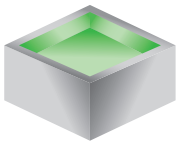
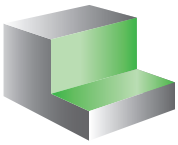


HIGH-VELOCITY



HIGH PERFORMANCE
4 FLUTE (INCH)

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GMX-35 COATED

SPEEDS & FEEDS CHART PAGE 25

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End WF= Weldon Flat	Corner Radius (Inch) WF=Weldon Flat							Ballnose WF= Weldon Flat
					0.015	0.030	0.060	0.090	0.120	0.190	0.250	
1/4	1/4	1/2	2.0	GM14FS4 EDP: 10252	GM14RS4015 EDP: 10270	GM14RS4030 EDP: 10271	GM14RS4060 EDP: 10272	—	—	—	—	—
	1/4	3/4	2-1/2	GM14F4 EDP: 10248	GM14R4015 EDP: 10258	GM14R4030 EDP: 10259	GM14R4060 EDP: 10260	—	—	—	—	GM14B4 EDP: 10247
	1/4	1-1/4	3.0	GM14FL4 EDP: 10250	GM14RL4015 EDP: 10264	GM14RL4030 EDP: 10265	GM14RL4060 EDP: 10266	—	—	—	—	—
	1/4	1-1/2	4.0	GM14FXL4 EDP: 10256	GM14RXL4015 EDP: 10282	GM14RXL4030 EDP: 10283	GM14RXL4060 EDP: 10284	—	—	—	—	—
	1/4	3.0	6.0	GM14FSL4 EDP: 10254	GM14RSL4015 EDP: 10276	GM14RSL4030 EDP: 10277	GM14RSL4060 EDP: 10278	—	—	—	—	—
5/16	5/16	1/2	2.0	GM516FS4 EDP: 10506	GM516RS4015 EDP: 10522	GM516RS4030 EDP: 10523	GM516RS4060 EDP: 10524	—	—	—	—	—
	5/16	7/8	2-1/2	GM516F4 EDP: 10502	GM516R4015 EDP: 10510	GM516R4030 EDP: 10511	GM516R4060 EDP: 10512	—	—	—	—	GM516B4 EDP: 10501
	5/16	1-1/4	3.0	GM516FL4 EDP: 10504	GM516RL4015 EDP: 10516	GM516RL4030 EDP: 10517	GM516RL4060 EDP: 10518	—	—	—	—	—
	5/16	1-1/2	4.0	GM516FXL4 EDP: 10508	GM516RXL4015 EDP: 10528	GM516RXL4030 EDP: 10529	GM516RXL4060 EDP: 10530	—	—	—	—	—
3/8	3/8	5/8	2.0	GM38FS4 EDP: 10460	GM38RS4015 EDP: 10480	GM38RS4030 EDP: 10481	GM38RS4060 EDP: 10482	GM38RS4090 EDP: 10483	—	—	—	—
	3/8	7/8	2-1/2	GM38F4 EDP: 10456	GM38R4015 EDP: 10466	GM38R4030 EDP: 10467	GM38R4060 EDP: 10468	GM38R4090 EDP: 10469	—	—	—	GM38B4 EDP: 10455
	3/8	1-1/4	3.0	GM38FL4 EDP: 10458	GM38RL4015 EDP: 10473	GM38RL4030 EDP: 10474	GM38RL4060 EDP: 10475	GM38RL4090 EDP: 10476	—	—	—	—
	3/8	2.0	4.0	GM38FXL4 EDP: 10464	GM38RXL4015 EDP: 10494	GM38RXL4030 EDP: 10495	GM38RXL4060 EDP: 10496	GM38RXL4090 EDP: 10497	—	—	—	—
	3/8	3.0	6.0	GM38FSL4 EDP: 10462	GM38RSL4015 EDP: 10487	GM38RSL4030 EDP: 10488	GM38RSL4060 EDP: 10489	GM38RSL4090 EDP: 10490	—	—	—	—

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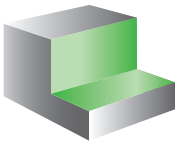
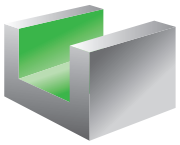
TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



FULL SLOTTING



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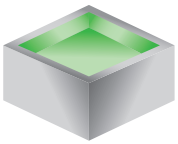
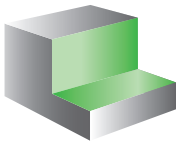


HIGH-VELOCITY



MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inco 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inco 625
Soft Steels, (A36,1018, 8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels, (4340,4140)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)	

GMX-35 COATED

SPEEDS & FEEDS CHART PAGE 25

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End WF= Weldon Flat	Corner Radius (Inch) WF=Weldon Flat							Ballnose WF= Weldon Flat
					0.015	0.030	0.060	0.090	0.120	0.190	0.250	
7/16	7/16	5/8	2-1/2	GM716FS4 EDP: 10595 GM716FS4WF EDP: 10596	GM716RS4015 EDP: 10609 GM716RS4015WF EDP: 10610	GM716RS4030 EDP: 10611 GM716RS4030WF EDP: 10612	GM716RS4060 EDP: 10613 GM716RS4060WF EDP: 10614	GM716RS4090 EDP: 10615 GM716RS4090WF EDP: 10616	—	—	—	—
	7/16	1.0	2-1/2	GM716F4 EDP: 10592 GM716F4WF EDP: 10593	GM716R4015 EDP: 10598 GM716R4015WF EDP: 10599	GM716R4030 EDP: 10600 GM716R4030WF EDP: 10601	GM716R4060 EDP: 10602 GM716R4060WF EDP: 10603	GM716R4090 EDP: 10604 GM716R4090WF EDP: 10605	—	—	—	GM716B4 EDP: 10590 GM716B4WF EDP: 10591
1/2	1/2	5/8	2-1/2	GM12FS4 EDP: 10165 GM12FS4WF EDP: 10166	GM12RS4015 EDP: 10212 GM12RS4015WF EDP: 10213	GM12RS4030 EDP: 10214 GM12RS4030WF EDP: 10215	GM12RS4060 EDP: 10216 GM12RS4060WF EDP: 10217	GM12RS4090 EDP: 10218 GM12RS4090WF EDP: 10219	GM12RS4120 EDP: 10220 GM12RS4120WF EDP: 10221	—	—	—
	1/2	1.0	3.0	GM12FH4 EDP: 10160 GM12FH4WF EDP: 10161	GM12RH4015 EDP: 10187 GM12RH4015WF EDP: 10188	GM12RH4030 EDP: 10189 GM12RH4030WF EDP: 10190	GM12RH4060 EDP: 10191 GM12RH4060WF EDP: 10192	GM12RH4090 EDP: 10193 GM12RH4090WF EDP: 10194	GM12RH4120 EDP: 10195 GM12RH4120WF EDP: 10196	—	—	—
	1/2	1-1/4	3.0	GM12F4 EDP: 10157 GM12F4WF EDP: 10158	GM12R4015 EDP: 10172 GM12R4015WF EDP: 10173	GM12R4030 EDP: 10174 GM12R4030WF EDP: 10175	GM12R4060 EDP: 10176 GM12R4060WF EDP: 10177	GM12R4090 EDP: 10178 GM12R4090WF EDP: 10179	GM12R4120 EDP: 10180 GM12R4120WF EDP: 10181	—	—	GM12B4 EDP: 10155 GM12B4WF EDP: 10156
	1/2	1-1/2	4.0	GM12FL4 EDP: 10163	GM12RL4015 EDP: 10202	GM12RL4030 EDP: 10203	GM12RL4060 EDP: 10204	GM12RL4090 EDP: 10205	GM12RL4120 EDP: 10206	—	—	—
	1/2	2.0	4.0	GM12FXL4 EDP: 10170	GM12RXL4015 EDP: 10237	GM12RXL4030 EDP: 10238	GM12RXL4060 EDP: 10239	GM12RXL4090 EDP: 10240	GM12RXL4120 EDP: 10241	—	—	—
	1/2	3.0	6.0	GM12FSL4 EDP: 10168	GM12RSL4015 EDP: 10227	GM12RSL4030 EDP: 10228	GM12RSL4060 EDP: 10229	GM12RSL4090 EDP: 10230	GM12RSL4120 EDP: 10231	—	—	—
5/8	5/8	3/4	3-1/2	GM58FS4 EDP: 10545 GM58FS4WF EDP: 10546	—	GM58RS4030 EDP: 10570 GM58RS4030WF EDP: 10571	GM58RS4060 EDP: 10572 GM58RS4060WF EDP: 10573	GM58RS4090 EDP: 10574 GM58RS4090WF EDP: 10575	GM58RS4120 EDP: 10576 GM58RS4120WF EDP: 10577	—	—	—
	5/8	1-1/4	3-1/2	GM58F4 EDP: 10540 GM58F4WF EDP: 10541	—	GM58R4030 EDP: 10550 GM58R4030WF EDP: 10551	GM58R4060 EDP: 10552 GM58R4060WF EDP: 10553	GM58R4090 EDP: 10554 GM58R4090WF EDP: 10555	GM58R4120 EDP: 10556 GM58R4120WF EDP: 10557	—	—	GM58B4 EDP: 10538 GM58B4WF EDP: 10539
	5/8	2.0	4.0	GM58FL4 EDP: 10543	—	GM58RL4030 EDP: 10562	GM58RL4060 EDP: 10563	GM58RL4090 EDP: 10564	GM58RL4120 EDP: 10565	—	—	—
	5/8	3.0	6.0	GM58FXL4 EDP: 10548	—	GM58RXL4030 EDP: 10582	GM58RXL4060 EDP: 10583	GM58RXL4090 EDP: 10584	GM58RXL4120 EDP: 10585	—	—	—

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Continued on next page

WELDON FLAT

HIGH PERFORMANCE
4 FLUTE (INCH)

Patented variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials including, stainless, inconel, titanium, tool steels and hardened materials. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

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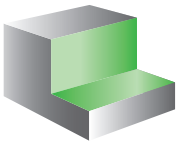
SPEEDS & FEEDS CHART PAGE 25

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End WF= Weldon Flat	Corner Radius (Inch) WF=Weldon Flat							Ballnose WF= Weldon Flat
					0.015	0.030	0.060	0.090	0.120	0.190	0.250	
3/4	3/4	1.0	4.0	GM34FS4 EDP: 10370 GM34FS4WF EDP: 10371	—	GM34RS4030 EDP: 10413 GM34RS4030WF EDP: 10414	GM34RS4060 EDP: 10415 GM34RS4060WF EDP: 10416	GM34RS4090 EDP: 10417 GM34RS4090WF EDP: 10418	GM34RS4120 EDP: 10419 GM34RS4120WF EDP: 10420	GM34RS4190 EDP: 10421 GM34RS4190WF EDP: 10422	GM34RS4250 EDP: 10423 GM34RS4250WF EDP: 10424	—
	3/4	1-1/2	4.0	GM34F4 EDP: 10364 GM34F4WF EDP: 10365	—	GM34R4030 EDP: 10377 GM34R4030WF EDP: 10378	GM34R4060 EDP: 10379 GM34R4060WF EDP: 10380	GM34R4090 EDP: 10381 GM34R4090WF EDP: 10382	GM34R4120 EDP: 10383 GM34R4120WF EDP: 10384	GM34R4190 EDP: 10385 GM34R4190WF EDP: 10386	GM34R4250 EDP: 10387 GM34R4250WF EDP: 10388	GM34B4 EDP: 10362 GM34B4WF EDP: 10363
	3/4	2.0	4.0	GM34FL4 EDP: 10367	—	GM34RL4030 EDP: 10395	GM34RL4060 EDP: 10396	GM34RL4090 EDP: 10397	GM34RL4120 EDP: 10398	GM34RL4190 EDP: 10399	GM34RL4250 EDP: 10400	—
	3/4	2-1/4	5.0	GM34FLH4 EDP: 10369	—	GM34RLH4030 EDP: 10407	GM34RLH4060 EDP: 10408	GM34RLH4090 EDP: 10409	GM34RLH4120 EDP: 10410	GM34RLH4190 EDP: 10411	GM34RLH4250 EDP: 10412	—
	3/4	3.0	6.0	GM34FXL4 EDP: 10375	—	GM34RXL4030 EDP: 10443	GM34RXL4060 EDP: 10444	GM34RXL4090 EDP: 10445	GM34RXL4120 EDP: 10446	GM34RXL4190 EDP: 10447	GM34RXL4250 EDP: 10448	—
	3/4	4.0	7.0	GM34FSL4 EDP: 10373	—	GM34RSL4030 EDP: 10431	GM34RSL4060 EDP: 10432	GM34RSL4090 EDP: 10433	GM34RSL4120 EDP: 10434	GM34RSL4190 EDP: 10435	GM34RSL4250 EDP: 10436	—
1.0	1.0	1.0	4.0	GM10FS4 EDP: 10050 GM10FS4WF EDP: 10051	—	GM10RS4030 EDP: 10093 GM10RS4030WF EDP: 10094	GM10RS4060 EDP: 10095 GM10RS4060WF EDP: 10096	GM10RS4090 EDP: 10097 GM10RS4090WF EDP: 10098	GM10RS4120 EDP: 10099 GM10RS4120WF EDP: 10100	GM10RS4190 EDP: 10101 GM10RS4190WF EDP: 10102	GM10RS4250 EDP: 10103 GM10RS4250WF EDP: 10104	—
	1.0	1-1/2	4.0	GM10F4 EDP: 10044 GM10F4WF EDP: 10045	—	GM10R4030 EDP: 10057 GM10R4030WF EDP: 10058	GM10R4060 EDP: 10059 GM10R4060WF EDP: 10060	GM10R4090 EDP: 10061 GM10R4090WF EDP: 10062	GM10R4120 EDP: 10063 GM10R4120WF EDP: 10064	GM10R4190 EDP: 10065 GM10R4190WF EDP: 10066	GM10R4250 EDP: 10067 GM10R4250WF EDP: 10068	GM10B4 EDP: 10042 GM10B4WF EDP: 10043
	1.0	2.0	4.0	GM10FL4 EDP: 10047	—	GM10RL4030 EDP: 10075	GM10RL4060 EDP: 10076	GM10RL4090 EDP: 10077	GM10RL4120 EDP: 10078	GM10RL4190 EDP: 10079	GM10RL4250 EDP: 10080	—
	1.0	2-1/4	5.0	GM10FLH4 EDP: 10049	—	GM10RLH4030 EDP: 10087	GM10RLH4060 EDP: 10088	GM10RLH4090 EDP: 10089	GM10RLH4120 EDP: 10090	GM10RLH4190 EDP: 10091	GM10RLH4250 EDP: 10092	—
	1.0	3.0	6.0	GM10FXL4 EDP: 10055	—	GM10RXL4030 EDP: 10123	GM10RXL4060 EDP: 10124	GM10RXL4090 EDP: 10125	GM10RXL4120 EDP: 10126	GM10RXL4190 EDP: 10127	GM10RXL4250 EDP: 10128	—
	1.0	4.0	7.0	GM10FSL4 EDP: 10053	—	GM10RSL4030 EDP: 10111	GM10RSL4060 EDP: 10112	GM10RSL4090 EDP: 10113	GM10RSL4120 EDP: 10114	GM10RSL4190 EDP: 10115	GM10RSL4250 EDP: 10116	—

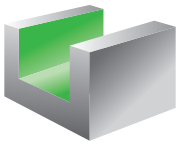
PATENT NO. 7,367,754

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

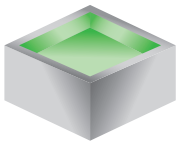
PROFILING



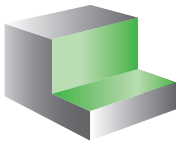
FULL SLOTTING



POCKETING



HIGH-VELOCITY



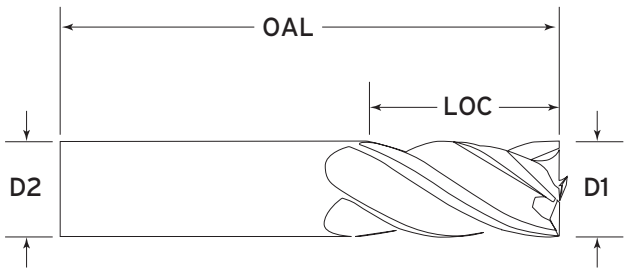
MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inco 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inco 625
Soft Steels, (A36,1018, 8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels, (4340,4140)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)	

4 FLUTE (INCH) COATED SPEEDS & FEEDS CHART. 1X DIAMETER DEEP, FULL SLOTTING

WORK PIECE MATERIAL	SFM	1/8"		3/16"		1/4"		5/16"		3/8"		7/16"		1/2"		5/8"		3/4"		1"	
		RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM
Gray Cast Iron	600	18,336	58.6	12,224	48.8	9,168	43.9	7,334	43.9	6,112	41.5	5,238	46.1	4,584	45.8	3,667	44.1	3,056	42.7	2,292	36.7
Ductile Iron	500	15,280	24.2	10,186	24.5	7,640	27.4	6,112	29.3	5,093	33.1	4,365	36.8	3,820	35.1	3,056	36.8	2,546	35.3	1,910	32.4
Soft Steels, (A36,1018, 8620,1045)	650	19,864	39.7	13,246	37.1	9,932	39.7	7,945	41.2	6,621	39.7	5,675	40.8	4,966	41.7	3,972	42.9	3,310	42.4	2,483	39.7
Alloy Steels, (4340,4140)	400	12,224	19.5	8,149	19.5	6,112	24.4	4,890	29.3	4,074	29.3	3,492	28.1	3,056	29.3	2,444	27.3	2,037	27.6	1,528	24.4
4140 Pre-Hard (38 to 42 Rc)	300	9,168	10.9	6,112	12.2	4,854	15.5	3,667	14.6	3,056	17.1	2,619	18.8	2,292	18.3	1,833	18.3	1,528	18.3	1,146	16.1
Tool Steels (A2,D2,S7)	300	9,168	14.7	6,112	14.6	4,584	14.7	3,667	17.5	3,056	19.6	2,619	20.8	2,292	20.2	1,833	19.1	1,528	18.2	1,146	16.5
Die Steels, (H13,P20)	325	9,932	15.8	6,621	15.8	4,966	21.8	3,972	23.8	3,310	26.4	2,837	26.1	2,483	24.8	1,986	22.2	1,655	22.5	1,241	19.9
Stainless Steel, (303, 304, 316)	350	10,696	17.1	7,130	17.1	5,348	17.1	4,278	20.4	3,565	22.7	3,056	23.2	2,674	23.5	2,139	22.2	1,782	22.7	1,338	19.8
Difficult Stainless Steel, (400 & PH Series)	300	9,168	14.6	6,112	12.2	4,584	12.8	3,667	16.1	3,056	13.8	2,619	17.8	2,292	18.4	1,833	18.4	1,528	18.4	1,146	16.1
Stainless Steel (13-8)	150	4,584	7.3	3,056	6.1	2,292	6.4	1,833	7.3	1,528	7.9	1,309	9.4	1,146	11.9	916	10.2	764	10.1	573	9.3
High Temp. Alloys	250	7,640	12.2	5,093	10.1	3,820	10.6	3,056	13.4	2,546	14.3	2,182	14.1	1,910	14.5	1,528	13.4	1,273	14.3	955	12.7
Titanium (6AL4V)	200	6,112	9.7	4,074	8.1	3,056	8.1	2,444	11.7	2,037	13.1	1,746	13.2	1,528	14.1	1,222	13.3	1,018	13.1	764	12.3
Inco 718	155	4,736	7.5	3,157	6.3	2,368	6.6	1,894	7.6	1,578	8.2	1,353	9.7	1,184	9.5	947	8.7	790	9.5	592	8.3
Inco 625	135	4,125	6.6	2,750	5.5	2,062	5.8	1,650	6.6	1,375	7.1	1,178	8.5	1,031	8.6	825	8.6	687	9.1	515	8.3

**Recommended Speeds & Feeds*



TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

HIGH PERFORMANCE
4 FLUTE (METRIC)

Patented variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials including, stainless, inconel, titanium, tool steels and hardened materials. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable.

GMX-35 COATED

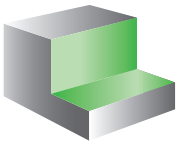
SPEEDS & FEEDS CHART PAGE 28/29

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End WF= Weldon Flat	Corner Radius (Metric) WF=Weldon Flat						Ballnose
					0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm	
3mm	3mm	8mm	38mm	GM0300MMFS4 EDP: 10002	GM0300MMRS4020 EDP: 10005	—	—	—	—	—	—
	3mm	12mm	38mm	GM0300MMF4 EDP: 10001	GM0300MMR4020 EDP: 10003	—	GM0300MMR4050 EDP: 10004	—	—	—	GM0300MMB4 EDP: 10000
4mm	6mm	8mm	50mm	—	—	GM0400MMRS4030 EDP: 10010	—	—	—	—	—
	6mm	12mm	50mm	GM0400MMF4 EDP: 10007	—	GM0400MMR4030 EDP: 10008	GM0400MMR4050 EDP: 10009	—	—	—	GM0400MMB4 EDP: 10006
5mm	6mm	10mm	50mm	—	—	GM0500MMRS4030 EDP: 10015	—	—	—	—	—
	6mm	15mm	65mm	GM0500MMF4 EDP: 10012	—	GM0500MMR4030 EDP: 10013	GM0500MMR4050 EDP: 10014	—	—	—	GM0500MMB4 EDP: 10011
6mm	6mm	12mm	50mm	GM0600MMFS4 EDP: 10018	—	GM0600MMRS4030 EDP: 10021	—	—	—	—	—
	6mm	19mm	65mm	GM0600MMF4 EDP: 10017	—	GM0600MMR4030 EDP: 10019	GM0600MMR4050 EDP: 10020	—	—	—	GM0600MMB4 EDP: 10016
8mm	8mm	12mm	50mm	GM0800MMFS4 EDP: 10024	—	—	GM0800MMRS4050 EDP: 10029	—	—	—	—
	8mm	22mm	65mm	GM0800MMF4 EDP: 10023	—	GM0800MMR4030 EDP: 10025	GM0800MMR4050 EDP: 10026	GM0800MMR4100 EDP: 10027	GM0800MMR4150 EDP: 10028	—	GM0800MMB4 EDP: 10022
10mm	10mm	16mm	50mm	—	—	—	GM1000MMRS4050 EDP: 10040 / GM1000MMRS4050WF EDP: 10041	—	—	—	—
	10mm	22mm	70mm	GM1000MMF4 EDP: 10032 / GM1000MMF4WF EDP: 10033	—	GM1000MMR4030 EDP: 10034 / GM1000MMR4030WF EDP: 10035	GM1000MMR4050 EDP: 10036 / GM1000MMR4050WF EDP: 10037	GM1000MMR4100 EDP: 10038 / GM1000MMR4100WF EDP: 10039	—	—	GM1000MMB4 EDP: 10030 / GM1000MMB4WF EDP: 10031

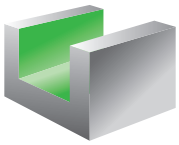
PATENT NO. 7,367,754

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

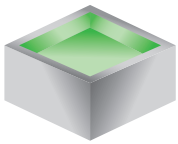
PROFILING



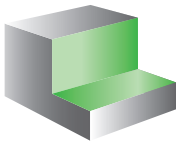
FULL SLOTTING



POCKETING

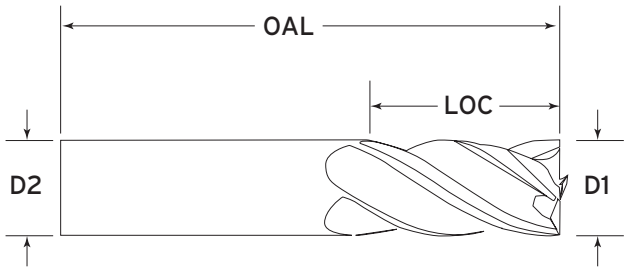


HIGH-VELOCITY



MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inco 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inco 625
Soft Steels, (A36,1018, 8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels, (4340,4140)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)	



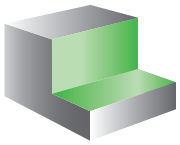
SPEEDS & FEEDS CHART PAGE 28/29

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End WF= Weldon Flat	Corner Radius (Metric) WF=Weldon Flat 0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm	Ballnose
12mm	12mm	19mm	63mm	GM1200MMFS4 EDP: 10139 / GM1200MMFS4WF EDP: 10140	—	GM1200MMRS4030 EDP: 10151 / GM1200MMRS4030WF EDP: 10152	GM1200MMRS4050 EDP: 10153 / GM1200MMRS4050WF EDP: 10154	—	—	—	—
	12mm	32mm	75mm	GM1200MMF4 EDP: 10137 / GM1200MMF4WF EDP: 10138	—	GM1200MMR4030 EDP: 10141 / GM1200MMR4030WF EDP: 10142	GM1200MMR4050 EDP: 10143 / GM1200MMR4050WF EDP: 10144	GM1200MMR4100 EDP: 10145 / GM1200MMR4100WF EDP: 10146	GM1200MMR4150 EDP: 10147 / GM1200MMR4150WF EDP: 10148	GM1200MMR4200 EDP: 10149 / GM1200MMR4200WF EDP: 10150	GM1200MMB4 EDP: 10135 / GM1200MMB4WF EDP: 10136
16mm	16mm	19mm	75mm	—	—	GM1600MMRS4030 EDP: 10300 / GM1600MMRS4030WF EDP: 10301	GM1600MMRS4050 EDP: 10302 / GM1600MMRS4050WF EDP: 10303	—	—	—	—
	16mm	32mm	89mm	GM1600MMF4 EDP: 10290 / GM1600MMF4WF EDP: 10291	—	GM1600MMR4030 EDP: 10292 / GM1600MMR4030WF EDP: 10293	GM1600MMR4050 EDP: 10294 / GM1600MMR4050WF EDP: 10295	GM1600MMR4100 EDP: 10296 / GM1600MMR4100WF EDP: 10297	—	GM1600MMR4200 EDP: 10298 / GM1600MMR4200WF EDP: 10299	GM1600MMB4 EDP: 10288 / GM1600MMB4WF EDP: 10289
20mm	20mm	22mm	75mm	—	—	—	—	GM2000MMRS4100 EDP: 10333 / GM2000MMRS4100WF EDP: 10334	—	—	—
	20mm	38mm	100mm	GM2000MMF4 EDP: 10325 / GM2000MMF4WF EDP: 10326	—	—	GM2000MMR4050 EDP: 10327 / GM2000MMR4050WF EDP: 10328	GM2000MMR4100 EDP: 10329 / GM2000MMR4100WF EDP: 10330	GM2000MMR4150 EDP: 10331 / GM2000MMR4150WF EDP: 10332	—	GM2000MMB4 EDP: 10323 / GM2000MMB4WF EDP: 10324
25mm	25mm	38mm	100mm	GM2500MMF4 EDP: 10337 / GM2500MMF4WF EDP: 10338	—	—	—	GM2500MMR4100 EDP: 10339 / GM2500MMR4100WF EDP: 10340	GM2500MMR4150 EDP: 10341 / GM2500MMR4150WF EDP: 10342	—	GM2500MMB4 EDP: 10335 / GM2500MMB4WF EDP: 10336

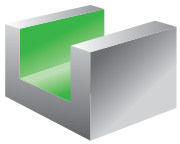
PATENT NO. 7,367,754

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING



FULL SLOTTING



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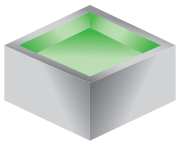
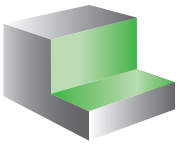


HIGH-VELOCITY



HIGH PERFORMANCE
4 FLUTE (METRIC)

Patented variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials including, stainless, inconel, titanium, tool steels and hardened materials. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" charts. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable.

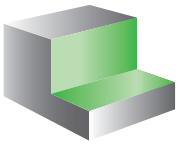
4 FLUTE (METRIC) COATED SPEEDS & FEEDS CHART. 1X DIAMETER DEEP, FULL SLOTTING, METRIC CHIMP LOAD PER TOOTH

WORK PIECE MATERIAL	SFM	3 MM		4 MM		5 MM		6 MM		8 MM		10 MM	
		RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT
Gray Cast Iron	600	19,405	.0200	14,554	.0220	11,643	.0250	9,702	.0300	7,277	.0380	5,821	.0440
Ductile Iron	500	16,171	.0100	12,128	.0120	9,702	.0150	8,085	.0220	6,064	.0300	4,851	.0450
Soft Steels, (A36,1018, 8620,1045)	650	21,022	.0120	15,767	.0150	12,613	.0170	9,702	.0250	7,883	.0330	6,306	.0390
Alloy Steels, (4340,4140)	400	12,937	.0100	9,702	.0120	7,762	.0150	6,468	.0250	4,851	.0380	3,881	.0450
4140 Pre-Hard (38 to 42 Rc)	300	9,702	.0070	7,277	.0100	5,821	.0120	4,851	.0200	3,638	.0250	2,910	.0350
Tool Steels (A2,D2,S7)	300	9,702	.0100	7,277	.0120	5,821	.0150	4,851	.0200	3,638	.0300	2,910	.0400
Die Steels, (H13,P20)	325	10,511	.0100	7,883	.0120	6,306	.0150	5,255	.0270	3,941	.0380	3,153	.0500
Stainless Steel, (303, 304, 316)	350	11,319	.0100	8,489	.0120	6,791	.0150	5,659	.0200	4,244	.0300	3,395	.0400
Difficult Stainless Steel, (400 & PH Series)	300	9,702	.0100	7,277	.0120	5,821	.0130	4,851	.0170	3,638	.0280	2,910	.0380
Stainless Steel (13-8)	150	4,851	.0100	3,638	.0120	2,910	.0130	2,425	.0170	1,819	.0250	1,455	.0340
High Temp. Alloys	250	8,085	.0100	6,064	.0110	4,851	.0120	4,042	.0170	3,032	.0270	2,425	.0360
Titanium (6AL4V)	200	6,468	.0100	4,851	.0110	3,881	.0110	3,234	.0170	2,425	.0300	1,940	.0400
Inco 718	155	5,013	.0100	3,759	.0120	3,007	.0130	2,506	.0180	1,880	.0250	1,503	.0330
Inco 625	135	4,366	.0100	3,274	.0110	2,619	.0120	2,183	.0170	1,637	.0250	1,309	.0330

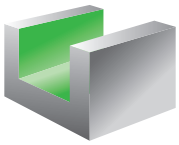
**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

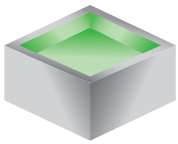
PROFILING



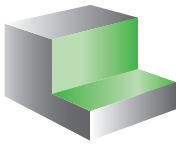
FULL SLOTTING



POCKETING



HIGH-VELOCITY



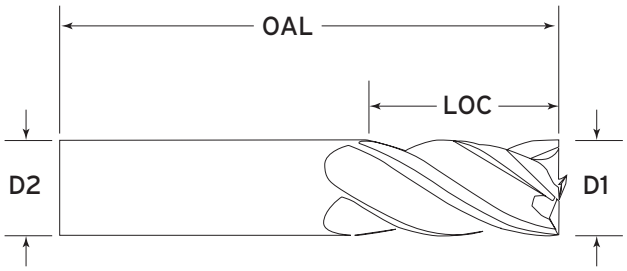
MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inco 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inco 625
Soft Steels, (A36,1018, 8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels, (4340,4140)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)	

4 FLUTE (METRIC) COATED SPEEDS & FEEDS CHART. 1X DIAMETER DEEP, FULL SLOTTING, METRIC CHIMP LOAD PER TOOTH

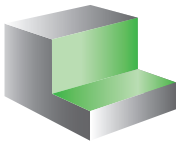
WORK PIECE MATERIAL	SFM	12 MM		16 MM		20 MM		25 MM	
		RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT
Gray Cast Iron	600	4,851	.0610	3,638	.0760	2,910	.0910	2,328	.1050
Ductile Iron	500	4,042	.0580	3,032	.0740	2,425	.0890	1,940	.1030
Soft Steels, (A36,1018, 8620,1045)	650	5,255	.0530	3,941	.0680	3,153	.0860	2,522	.1010
Alloy Steels, (4340,4140)	400	3,234	.0580	2,425	.0710	1,940	.0860	1,552	.1010
4140 Pre-Hard (38 to 42 Rc)	300	2,425	.0500	1,819	.0630	1,455	.0760	1,164	.0890
Tool Steels (A2,D2,S7)	300	2,425	.0550	1,819	.0660	1,455	.0760	1,164	.0910
Die Steels, (H13,P20)	325	2,627	.0630	1,970	.0710	1,576	.0860	1,261	.1010
Stainless Steel, (303, 304, 316)	350	2,829	.0550	2,122	.0660	1,697	.0810	1,358	.0940
Difficult Stainless Steel, (400 & PH Series)	300	2,425	.0500	1,819	.0630	1,455	.0760	1,164	.0890
Stainless Steel (13-8)	150	1,212	.0550	909	.0690	727	.0810	582	.1010
High Temp. Alloys	250	2,021	.0480	1,516	.0560	1,212	.0710	970	.0840
Titanium (6AL4V)	200	1,617	.0580	1,212	.0680	970	.0810	776	.1010
Inco 718	155	1,253	.0510	939	.0590	752	.0760	601	.0940
Inco 625	135	1,091	.0530	818	.0660	655	.0830	524	.1010

**Recommended Speeds & Feeds*

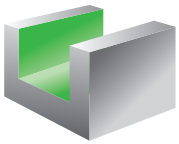


TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

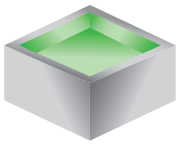
PROFILING



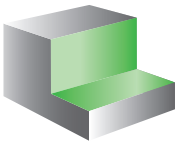
FULL SLOTTING



POCKETING



HIGH-VELOCITY



HIGH PERFORMANCE
4 FLUTE NECK RELIEVED (INCH)

Patented variable flute and variable index design which reduces chatter and vibration. For finishing of stainless, inconel, titanium, tool steels, hardened steels and other ferrous materials. Extended neck provides clearance for deep pocketing, slotting or profiling. Center cutting. See “Speeds and Feeds” calculator at gorillamill.com or refer to “Speeds and Feeds” chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.

GMX-35 COATED

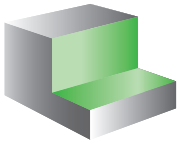
SPEEDS & FEEDS CHART PAGE 32

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	LOR	Sq. End	Corner Radius (Inch)						
						0.015	0.030	0.060	0.090	0.120	0.190	0.250
1/4	1/4	3/8	3.0	3/4	GMNR14F40.750 EDP: 10734	GMNR14R40150.750 EDP: 10740	GMNR14R40300.750 EDP: 10743	GMNR14R40600.750 EDP: 10746	—	—	—	—
	1/4	3/8	4.0	1-1/8	GMNR14F41.125 EDP: 10735	GMNR14R40151.125 EDP: 10741	GMNR14R40301.125 EDP: 10744	GMNR14R40601.125 EDP: 10747	—	—	—	—
	1/4	3/8	4.0	2-1/8	GMNR14F42.125 EDP: 10736	GMNR14R40152.125 EDP: 10742	GMNR14R40302.125 EDP: 10745	GMNR14R40602.125 EDP: 10748	—	—	—	—
3/8	3/8	1/2	4.0	1-1/8	GMNR38F41.125 EDP: 10800	GMNR38R40151.125 EDP: 10808	GMNR38R40301.125 EDP: 10812	GMNR38R40601.125 EDP: 10816	GMNR38R40901.125 EDP: 10820	—	—	—
	3/8	1/2	4.0	2-1/8	GMNR38F42.125 EDP: 10801	GMNR38R40152.125 EDP: 10809	GMNR38R40302.125 EDP: 10813	GMNR38R40602.125 EDP: 10817	GMNR38R40902.125 EDP: 10821	—	—	—
	3/8	1/2	6.0	3-1/8	GMNR38F43.125 EDP: 10802	GMNR38R40153.125 EDP: 10810	GMNR38R40303.125 EDP: 10814	GMNR38R40603.125 EDP: 10818	GMNR38R40903.125 EDP: 10822	—	—	—
	3/8	1/2	6.0	4-1/8	GMNR38F44.125 EDP: 10803	GMNR38R40154.125 EDP: 10811	GMNR38R40304.125 EDP: 10815	GMNR38R40604.125 EDP: 10819	GMNR38R40904.125 EDP: 10823	—	—	—
1/2	1/2	5/8	4.0	1-1/2	GMNR12F41.500 EDP: 10686	GMNR12R40151.500 EDP: 10694	GMNR12R40301.500 EDP: 10698	GMNR12R40601.500 EDP: 10702	GMNR12R40901.500 EDP: 10706	GMNR12R41201.500 EDP: 10710	—	—
	1/2	5/8	4.0	2-1/4	GMNR12F42.250 EDP: 10687	GMNR12R40152.250 EDP: 10695	GMNR12R40302.250 EDP: 10699	GMNR12R40602.250 EDP: 10703	GMNR12R40902.250 EDP: 10707	GMNR12R41202.250 EDP: 10711	—	—
	1/2	5/8	6.0	3-3/8	GMNR12F43.375 EDP: 10688	GMNR12R40153.375 EDP: 10696	GMNR12R40303.375 EDP: 10700	GMNR12R40603.375 EDP: 10704	GMNR12R40903.375 EDP: 10708	GMNR12R41203.375 EDP: 10712	—	—
	1/2	5/8	6.0	4-1/8	GMNR12F44.125 EDP: 10689	GMNR12R40154.125 EDP: 10697	GMNR12R40304.125 EDP: 10701	GMNR12R40604.125 EDP: 10705	GMNR12R40904.125 EDP: 10709	GMNR12R41204.125 EDP: 10713	—	—

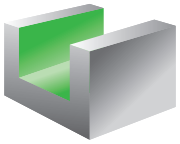
PATENT NO. 7,367,754

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



FULL SLOTTING



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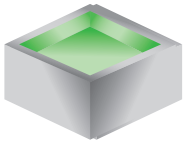
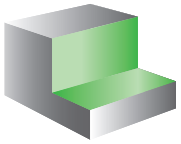


HIGH-VELOCITY



MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inco 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inco 625
Soft Steels, (A36,1018, 8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels, (4340,4140)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)	

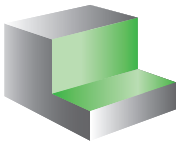
SPEEDS & FEEDS CHART PAGE 32

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	LOR	Sq. End	Corner Radius (Inch)						
						0.015	0.030	0.060	0.090	0.120	0.190	0.250
5/8	5/8	3/4	4.0	1-5/8	GMNR58F41.625 EDP: 10840	—	GMNR58R40301.625 EDP: 10848	GMNR58R40601.625 EDP: 10852	GMNR58R40901.625 EDP: 10856	GMNR58R41201.625 EDP: 10860	—	—
	5/8	3/4	6.0	2-3/8	GMNR58F42.375 EDP: 10841	—	GMNR58R40302.375 EDP: 10849	GMNR58R40602.375 EDP: 10853	GMNR58R40902.375 EDP: 10857	GMNR58R41202.375 EDP: 10861	—	—
	5/8	3/4	6.0	3-3/8	GMNR58F43.375 EDP: 10842	—	GMNR58R40303.375 EDP: 10850	GMNR58R40603.375 EDP: 10854	GMNR58R40903.375 EDP: 10858	GMNR58R41203.375 EDP: 10862	—	—
	5/8	3/4	6.0	4-1/8	GMNR58F44.125 EDP: 10843	—	GMNR58R40304.125 EDP: 10851	GMNR58R40604.125 EDP: 10855	GMNR58R40904.125 EDP: 10859	GMNR58R41204.125 EDP: 10863	—	—
3/4	3/4	1.0	4-1/2	2-1/4	GMNR34F42.250 EDP: 10758	—	GMNR34R40302.250 EDP: 10764	GMNR34R40602.250 EDP: 10767	GMNR34R40902.250 EDP: 10770	GMNR34R41202.250 EDP: 10773	GMNR34R41902.250 EDP: 10776	GMNR34R42502.250 EDP: 10779
	3/4	1.0	6.0	3-1/4	GMNR34F43.250 EDP: 10759	—	GMNR34R40303.250 EDP: 10765	GMNR34R40603.250 EDP: 10768	GMNR34R40903.250 EDP: 10771	GMNR34R41203.250 EDP: 10774	GMNR34R41903.250 EDP: 10777	GMNR34R42503.250 EDP: 10780
	3/4	1.0	6.0	4-1/8	GMNR34F44.125 EDP: 10760	—	GMNR34R40304.125 EDP: 10766	GMNR34R40604.125 EDP: 10769	GMNR34R40904.125 EDP: 10772	GMNR34R41204.125 EDP: 10775	GMNR34R41904.125 EDP: 10778	GMNR34R42504.125 EDP: 10781
1.0	1.0	1-1/8	4-1/2	2-1/4	GMNR10F42.250 EDP: 10620	—	GMNR10R40302.250 EDP: 10626	GMNR10R40602.250 EDP: 10629	GMNR10R40902.250 EDP: 10632	GMNR10R41202.250 EDP: 10635	GMNR10R41902.250 EDP: 10638	GMNR10R42502.250 EDP: 10641
	1.0	1-1/8	6.0	3-1/4	GMNR10F43.250 EDP: 10621	—	GMNR10R40303.250 EDP: 10627	GMNR10R40603.250 EDP: 10630	GMNR10R40903.250 EDP: 10633	GMNR10R41203.250 EDP: 10636	GMNR10R41903.250 EDP: 10639	GMNR10R42503.250 EDP: 10642
	1.0	1-1/8	6.0	4-1/4	GMNR10F44.250 EDP: 10622	—	GMNR10R40304.250 EDP: 10628	GMNR10R40604.250 EDP: 10631	GMNR10R40904.250 EDP: 10634	GMNR10R41204.250 EDP: 10637	GMNR10R41904.250 EDP: 10640	GMNR10R42504.250 EDP: 10643

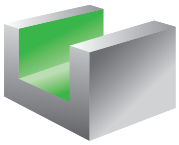
PATENT NO. 7,367,754

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



FULL SLOTTING



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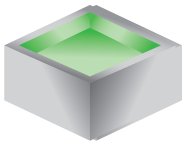
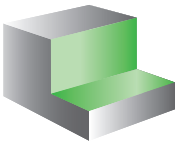


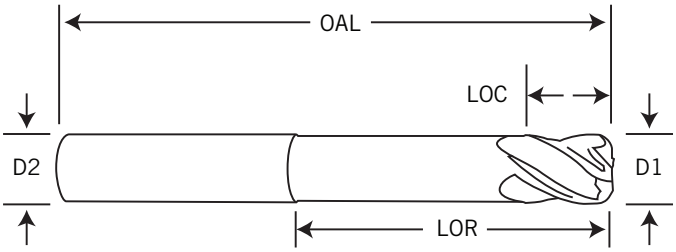
HIGH-VELOCITY



HIGH PERFORMANCE
4 FLUTE NECK RELIEVED (INCH)

Patented variable flute and variable index design which reduces chatter and vibration. For finishing of stainless, inconel, titanium, tool steels, hardened steels and other ferrous materials. Extended neck provides clearance for deep pocketing, slotting or profiling. Center cutting. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart below.

Available in special diameters, lengths and completely resharpenable.



MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inco 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inco 625
Soft Steels, (A36,1018, 8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels, (4340,4140)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)	

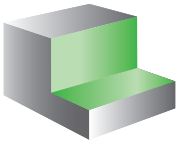
4 FLUTE NECK RELIEVED (INCH) COATED SPEEDS & FEEDS CHART. 1X DIAMETER DEEP, FULL SLOTTING

WORK PIECE MATERIAL	SFM	1/4"		3/8"		1/2"		5/8"		3/4"		1"	
		RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM
Gray Cast Iron	450	6,876	32.9	4,584	31.1	3,438	34.4	2,750	33.1	2,292	32.0	1,719	27.5
Ductile Iron	375	5,730	20.6	3,820	24.8	2,865	26.3	2,292	27.6	1,910	26.5	1,433	24.3
Soft Steels, (A36,1018, 8620,1045)	480	7,449	29.8	4,966	29.8	3,725	31.3	2,979	32.2	2,483	31.8	1,862	29.8
Alloy Steels, (4340,4140)	300	4,584	18.3	3,056	22.0	2,292	22.0	1,833	20.5	1,528	20.7	1,146	18.3
4140 Pre-Hard (38 to 42 Rc)	225	3,641	11.6	2,292	12.8	1,719	13.7	1,375	13.7	1,146	13.7	860	12.1
Tool Steels (A2,D2,S7)	225	3,438	11.0	2,292	14.7	1,719	15.2	1,375	14.3	1,146	13.7	860	12.4
Die Steels, (H13,P20)	245	3,725	16.4	2,483	19.8	1,862	18.6	1,490	16.7	1,241	16.9	931	14.9
Stainless Steel, (303, 304, 316)	260	4,011	12.8	2,674	17.0	2,006	17.6	1,604	16.7	1,337	17.0	1,004	14.9
Difficult Stainless Steel, (400 & PH Series)	225	3,438	9.6	2,292	10.4	1,719	13.8	1,375	13.8	1,146	13.8	860	12.1
Stainless Steel (13-8)	115	1,719	4.8	1,146	5.9	860	8.9	687	7.7	573	7.6	430	7.0
High Temp. Alloys	190	2,865	8.0	1,910	10.7	1,433	10.9	1,146	10.1	955	10.7	716	9.5
Titanium (6AL4V)	150	2,292	6.1	1,528	9.8	1,146	10.6	917	10.0	764	9.8	573	9.2
Inco 718	115	1,776	5.0	1,184	6.2	888	7.1	710	6.5	593	7.1	444	6.2
Inco 625	100	1,547	4.4	1,031	5.3	773	6.5	619	6.5	515	6.8	386	6.2

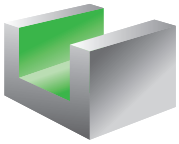
**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

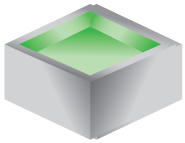
PROFILING



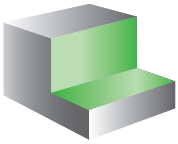
FULL SLOTTING



POCKETING



HIGH-VELOCITY



HIGH PERFORMANCE
5 FLUTE (INCH)

Patented variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials including, stainless, inconel, titanium, tool steels and hardened materials. Should be run at specific parameters. See “Speeds and Feeds” calculator at gorillamill.com or refer to ”Speeds and Feeds” chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable.

MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels (A36,1018,8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)	

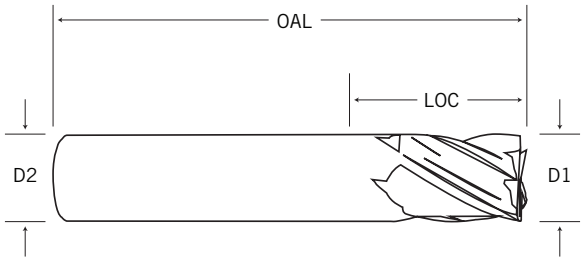
GMX-35 COATED

SPEEDS & FEEDS CHART PAGE 37

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)						
					0.015	0.030	0.060	0.090	0.120	0.190	0.250
1/8	1/8	1/4	1-1/2	GM18FS5 EDP: 10310	GM18RS5015 EDP: 10321	GM18RS5030 EDP: 10322	—	—	—	—	—
	1/8	1/2	1-1/2	GM18F5 EDP: 10306	GM18R5015 EDP: 10313	GM18R5030 EDP: 10314	—	—	—	—	—
	1/8	1.0	3.0	GM18FL5 EDP: 10308	GM18RL5015 EDP: 10317	GM18RL5030 EDP: 10318	—	—	—	—	—
3/16	3/16	3/8	2.0	GM316FS5 EDP: 10349	GM316RS5015 EDP: 10360	GM316RS5030 EDP: 10361	—	—	—	—	—
	3/16	5/8	2.0	GM316F5 EDP: 10345	GM316R5015 EDP: 10352	GM316R5030 EDP: 10353	—	—	—	—	—
	3/16	1-1/4	3.0	GM316FL5 EDP: 10347	GM316RL5015 EDP: 10356	GM316RL5030 EDP: 10357	—	—	—	—	—

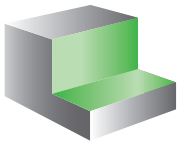
PATENT NO. 7,153,067

Continued on next page



TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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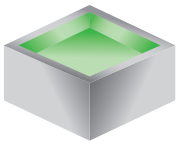
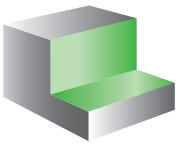


HIGH-VELOCITY



HIGH PERFORMANCE
5 FLUTE (INCH)

Patented variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials including, stainless, inconel, titanium, tool steels and hardened materials. Should be run at specific parameters. See “Speeds and Feeds” calculator at gorillamill.com or refer to ”Speeds and Feeds” chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable.

GMX-35 COATED

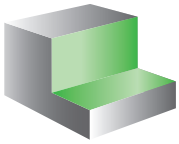
SPEEDS & FEEDS CHART PAGE 37

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)						
					0.015	0.030	0.060	0.090	0.120	0.190	0.250
1/4	1/4	1/2	2.0	GM14FS5 EDP: 10253	GM14RS5015 EDP: 10273	GM14RS5030 EDP: 10274	GM14RS5060 EDP: 10275	—	—	—	—
	1/4	3/4	2-1/2	GM14F5 EDP: 10249	GM14R5015 EDP: 10261	GM14R5030 EDP: 10262	GM14R5060 EDP: 10263	—	—	—	—
	1/4	1-1/4	3.0	GM14FL5 EDP: 10251	GM14RL5015 EDP: 10267	GM14RL5030 EDP: 10268	GM14RL5060 EDP: 10269	—	—	—	—
	1/4	1-1/2	4.0	GM14FXL5 EDP: 10257	GM14RXL5015 EDP: 10285	GM14RXL5030 EDP: 10286	GM14RXL5060 EDP: 10287	—	—	—	—
	1/4	3.0	6.0	GM14FSL5 EDP: 10255	GM14RSL5015 EDP: 10279	GM14RSL5030 EDP: 10280	GM14RSL5060 EDP: 10281	—	—	—	—
5/16	5/16	1/2	2.0	GM516FS5 EDP: 10507	GM516RS5015 EDP: 10525	GM516RS5030 EDP: 10526	GM516RS5060 EDP: 10527	—	—	—	—
	5/16	7/8	2-1/2	GM516F5 EDP: 10503	GM516R5015 EDP: 10513	GM516R5030 EDP: 10514	GM516R5060 EDP: 10515	—	—	—	—
	5/16	1-1/4	3.0	GM516FL5 EDP: 10505	GM516RL5015 EDP: 10519	GM516RL5030 EDP: 10520	GM516RL5060 EDP: 10521	—	—	—	—
	5/16	1-1/2	4.0	GM516FXL5 EDP: 10509	GM516RXL5015 EDP: 10531	GM516RXL5030 EDP: 10532	GM516RXL5060 EDP: 10533	—	—	—	—

PATENT NO. 7,153,067

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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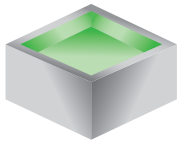
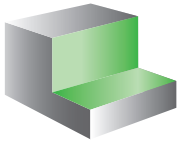


HIGH-VELOCITY



MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels (A36,1018,8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)	

GMX-35 COATED

SPEEDS & FEEDS CHART PAGE 37

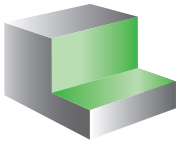
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)						
					0.015	0.030	0.060	0.090	0.120	0.190	0.250
3/8	3/8	5/8	2.0	GM38FS5 EDP: 10461	GM38RS5015 EDP: 10484	GM38RS5030 EDP: 10485	GM38RS5060 EDP: 10486	—	—	—	—
	3/8	7/8	2-1/2	GM38F5 EDP: 10457	GM38R5015 EDP: 10470	GM38R5030 EDP: 10471	GM38R5060 EDP: 10472	—	—	—	—
	3/8	1-1/4	3.0	GM38FL5 EDP: 10459	GM38RL5015 EDP: 10477	GM38RL5030 EDP: 10478	GM38RL5060 EDP: 10479	—	—	—	—
	3/8	2.0	4.0	GM38FXL5 EDP: 10465	GM38RXL5015 EDP: 10498	GM38RXL5030 EDP: 10499	GM38RXL5060 EDP: 10500	—	—	—	—
	3/8	3.0	6.0	GM38FSL5 EDP: 10463	GM38RSL5015 EDP: 10491	GM38RSL5030 EDP: 10492	GM38RSL5060 EDP: 10493	—	—	—	—
7/16	7/16	5/8	2-1/2	GM716FS5 EDP: 10597	GM716RS5015 EDP: 10617	GM716RS5030 EDP: 10618	GM716RS5060 EDP: 10619	—	—	—	—
	7/16	1.0	2-1/2	GM716F5 EDP: 10594	GM716R5015 EDP: 10606	GM716R5030 EDP: 10607	GM716R5060 EDP: 10608	—	—	—	—
1/2	1/2	5/8	2-1/2	GM12FS5 EDP: 10167	GM12RS5015 EDP: 10222	GM12RS5030 EDP: 10223	GM12RS5060 EDP: 10224	GM12RS5090 EDP: 10225	GM12RS5120 EDP: 10226	—	—
	1/2	1.0	3.0	GM12FH5 EDP: 10162	GM12RH5015 EDP: 10197	GM12RH5030 EDP: 10198	GM12RH5060 EDP: 10199	GM12RH5090 EDP: 10200	GM12RH5120 EDP: 10201	—	—
	1/2	1-1/4	3.0	GM12F5 EDP: 10159	GM12R5015 EDP: 10182	GM12R5030 EDP: 10183	GM12R5060 EDP: 10184	GM12R5090 EDP: 10185	GM12R5120 EDP: 10186	—	—
	1/2	1-1/2	4.0	GM12FL5 EDP: 10164	GM12RL5015 EDP: 10207	GM12RL5030 EDP: 10208	GM12RL5060 EDP: 10209	GM12RL5090 EDP: 10210	GM12RL5120 EDP: 10211	—	—
	1/2	2.0	4.0	GM12FXL5 EDP: 10171	GM12RXL5015 EDP: 10242	GM12RXL5030 EDP: 10243	GM12RXL5060 EDP: 10244	GM12RXL5090 EDP: 10245	GM12RXL5120 EDP: 10246	—	—
	1/2	3.0	6.0	GM12FSL5 EDP: 10169	GM12RSL5015 EDP: 10232	GM12RSL5030 EDP: 10233	GM12RSL5060 EDP: 10234	GM12RSL5090 EDP: 10235	GM12RSL5120 EDP: 10236	—	—

PATENT NO. 7,153,067

Continued on next page

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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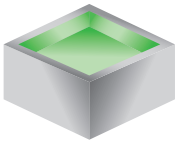
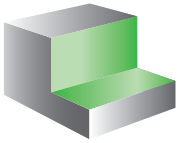


HIGH-VELOCITY



HIGH PERFORMANCE
5 FLUTE (INCH)

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GMX-35 COATED

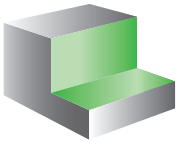
SPEEDS & FEEDS CHART PAGE 37

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)						
					0.015	0.030	0.060	0.090	0.120	0.190	0.250
5/8	5/8	3/4	3-1/2	GM58FS5 EDP: 10547	—	GM58RS5030 EDP: 10578	GM58RS5060 EDP: 10579	GM58RS5090 EDP: 10580	GM58RS5120 EDP: 10581	—	—
	5/8	1-1/4	3-1/2	GM58F5 EDP: 10542	—	GM58R5030 EDP: 10558	GM58R5060 EDP: 10559	GM58R5090 EDP: 10560	GM58R5120 EDP: 10561	—	—
	5/8	2.0	4.0	GM58FL5 EDP: 10544	—	GM58RL5030 EDP: 10566	GM58RL5060 EDP: 10567	GM58RL5090 EDP: 10568	GM58RL5120 EDP: 10569	—	—
	5/8	3.0	6.0	GM58FXL5 EDP: 10549	—	GM58RXL5030 EDP: 10586	GM58RXL5060 EDP: 10587	GM58RXL5090 EDP: 10588	GM58RXL5120 EDP: 10589	—	—
3/4	3/4	1.0	4.0	GM34FS5 EDP: 10372	—	GM34RS5030 EDP: 10425	GM34RS5060 EDP: 10426	GM34RS5090 EDP: 10427	GM34RS5120 EDP: 10428	GM34RS5190 EDP: 10429	GM34RS5250 EDP: 10430
	3/4	1-1/2	4.0	GM34F5 EDP: 10366	—	GM34R5030 EDP: 10389	GM34R5060 EDP: 10390	GM34R5090 EDP: 10391	GM34R5120 EDP: 10392	GM34R5190 EDP: 10393	GM34R5250 EDP: 10394
	3/4	2.0	4.0	GM34FL5 EDP: 10368	—	GM34RL5030 EDP: 10401	GM34RL5060 EDP: 10402	GM34RL5090 EDP: 10403	GM34RL5120 EDP: 10404	GM34RL5190 EDP: 10405	GM34RL5250 EDP: 10406
	3/4	3.0	6.0	GM34FXL5 EDP: 10376	—	GM34RXL5030 EDP: 10449	GM34RXL5060 EDP: 10450	GM34RXL5090 EDP: 10451	GM34RXL5120 EDP: 10452	GM34RXL5190 EDP: 10453	GM34RXL5250 EDP: 10454
	3/4	4.0	7.0	GM34FSL5 EDP: 10374	—	GM34RSL5030 EDP: 10437	GM34RSL5060 EDP: 10438	GM34RSL5090 EDP: 10439	GM34RSL5120 EDP: 10440	GM34RSL5190 EDP: 10441	GM34RSL5250 EDP: 10442
1.0	1.0	1.0	4.0	GM10FS5 EDP: 10052	—	GM10RS5030 EDP: 10105	GM10RS5060 EDP: 10106	GM10RS5090 EDP: 10107	GM10RS5120 EDP: 10108	GM10RS5190 EDP: 10109	GM10RS5250 EDP: 10110
	1.0	1-1/2	4.0	GM10F5 EDP: 10046	—	GM10R5030 EDP: 10069	GM10R5060 EDP: 10070	GM10R5090 EDP: 10071	GM10R5120 EDP: 10072	GM10R5190 EDP: 10073	GM10R5250 EDP: 10074
	1.0	2.0	4.0	GM10FL5 EDP: 10048	—	GM10RL5030 EDP: 10081	GM10RL5060 EDP: 10082	GM10RL5090 EDP: 10083	GM10RL5120 EDP: 10084	GM10RL5190 EDP: 10085	GM10RL5250 EDP: 10086
	1.0	3.0	6.0	GM10FXL5 EDP: 10056	—	GM10RXL5030 EDP: 10129	GM10RXL5060 EDP: 10130	GM10RXL5090 EDP: 10131	GM10RXL5120 EDP: 10132	GM10RXL5190 EDP: 10133	GM10RXL5250 EDP: 10134
	1.0	4.0	7.0	GM10FSL5 EDP: 10054	—	GM10RSL5030 EDP: 10117	GM10RSL5060 EDP: 10118	GM10RSL5090 EDP: 10119	GM10RSL5120 EDP: 10120	GM10RSL5190 EDP: 10121	GM10RSL5250 EDP: 10122

PATENT NO. 7,153,067

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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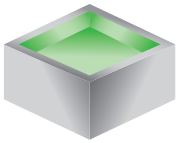
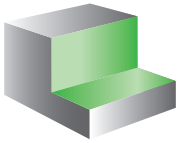


HIGH-VELOCITY



MATERIALS

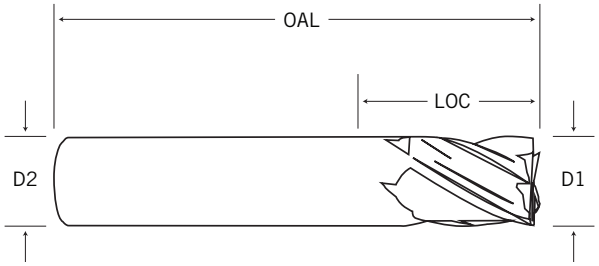
Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels (A36,1018,8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)	

5 FLUTE (INCH) COATED SPEEDS & FEEDS CHART FOR PROFILING, CHIMP LOAD PER TOOTH

WORK PIECE MATERIAL	SFM	1/8"			3/16"			1/4"			5/16"			3/8"		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%	5%	15%	30%	5%	15%	30%	5%	15%	30%	5%	15%	30%
Gray Cast Iron	600	.0018	.0011	.0009	.0023	.0014	.0011	.0028	.0017	.0013	.0035	.0021	.0017	.0039	.0024	.0019
Ductile Iron	500	.0012	.0007	.0006	.0016	.0010	.0008	.0028	.0017	.0013	.0032	.0020	.0015	.0039	.0024	.0019
Soft Steels, (A36,1018,8620,1045)	650	.0012	.0007	.0006	.0016	.0010	.0008	.0023	.0014	.0011	.0030	.0018	.0014	.0035	.0021	.0017
Alloy Steels, (4340,4140)	425	.0009	.0006	.0004	.0014	.0008	.0007	.0023	.0014	.0011	.0035	.0021	.0017	.0041	.0025	.0020
4140 Pre-Hard (38 to 42 Rc)	300	.0007	.0004	.0003	.0009	.0006	.0004	.0014	.0008	.0007	.0018	.0011	.0009	.0025	.0015	.0012
Tool Steels (A2,D2,S7)	300	.0009	.0006	.0004	.0014	.0008	.0007	.0018	.0011	.0009	.0028	.0017	.0013	.0037	.0022	.0018
Die Steels, (H13,P20)	325	.0009	.0006	.0004	.0014	.0008	.0007	.0025	.0015	.0012	.0035	.0021	.0017	.0046	.0028	.0022
Stainless Steel, (303, 304, 316)	350	.0009	.0006	.0004	.0014	.0008	.0007	.0018	.0011	.0009	.0028	.0017	.0013	.0037	.0022	.0018
Difficult Stainless Steel, (400 & PH Series)	325	.0007	.0004	.0003	.0009	.0006	.0004	.0016	.0010	.0008	.0023	.0014	.0011	.0032	.0020	.0015
Stainless Steel (13-8)	140	.0007	.0004	.0003	.0009	.0006	.0004	.0014	.0008	.0007	.0018	.0011	.0009	.0025	.0015	.0012
High Temp. Alloys	400	.0009	.0006	.0004	.0012	.0007	.0006	.0016	.0010	.0008	.0025	.0015	.0012	.0032	.0020	.0015
Titanium (6AL4V)	300	.0009	.0006	.0004	.0012	.0007	.0006	.0016	.0010	.0008	.0028	.0017	.0013	.0037	.0022	.0018
Inconel 718	150	.0007	.0004	.0003	.0009	.0006	.0004	.0014	.0008	.0007	.0018	.0011	.0009	.0025	.0015	.0012
Inconel 625	130	.0007	.0004	.0003	.0009	.0006	.0004	.0014	.0008	.0007	.0018	.0011	.0009	.0025	.0015	.0012

WORK PIECE MATERIAL	SFM	7/16"			1/2"			5/8"			3/4"			1"		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%	5%	15%	30%	5%	15%	30%	5%	15%	30%	5%	15%	30%
Gray Cast Iron	600	.0051	.0031	.0024	.0058	.0035	.0028	.0069	.0042	.0033	.0081	.0049	.0039	.0092	.0056	.0044
Ductile Iron	500	.0048	.0029	.0023	.0055	.0034	.0026	.0067	.0041	.0032	.0076	.0046	.0036	.0087	.0053	.0042
Soft Steels, (A36,1018,8620,1045)	650	.0041	.0025	.0020	.0048	.0029	.0023	.0062	.0038	.0030	.0074	.0045	.0035	.0092	.0056	.0044
Alloy Steels, (4340,4140)	425	.0046	.0028	.0022	.0055	.0034	.0026	.0064	.0039	.0031	.0078	.0048	.0037	.0092	.0056	.0044
4140 Pre-Hard (38 to 42 Rc)	300	.0030	.0018	.0014	.0041	.0025	.0020	.0051	.0031	.0024	.0069	.0042	.0033	.0081	.0049	.0039
Tool Steels (A2,D2,S7)	300	.0046	.0028	.0022	.0051	.0031	.0024	.0060	.0036	.0029	.0069	.0042	.0033	.0083	.0050	.0040
Die Steels, (H13,P20)	325	.0053	.0032	.0025	.0058	.0035	.0028	.0064	.0039	.0031	.0078	.0048	.0037	.0092	.0056	.0044
Stainless Steel, (303, 304, 316)	350	.0044	.0027	.0021	.0051	.0031	.0024	.0060	.0036	.0029	.0074	.0045	.0035	.0087	.0053	.0042
Difficult Stainless Steel, (400 & PH Series)	325	.0039	.0024	.0019	.0046	.0028	.0022	.0055	.0034	.0026	.0069	.0042	.0033	.0081	.0063	.0039
Stainless Steel (13-8)	140	.0030	.0018	.0014	.0041	.0025	.0020	.0051	.0031	.0024	.0069	.0042	.0033	.0081	.0049	.0039
High Temp. Alloys	400	.0037	.0022	.0018	.0044	.0027	.0021	.0051	.0031	.0024	.0064	.0039	.0031	.0076	.0046	.0036
Titanium (6AL4V)	300	.0044	.0027	.0021	.0053	.0032	.0025	.0062	.0038	.0030	.0074	.0045	.0035	.0092	.0072	.0044
Inconel 718	150	.0030	.0018	.0014	.0041	.0025	.0020	.0051	.0031	.0024	.0069	.0042	.0033	.0081	.0049	.0039
Inconel 625	130	.0030	.0018	.0014	.0041	.0025	.0020	.0051	.0031	.0024	.0069	.0042	.0033	.0081	.0049	.0039

**Recommended Speeds & Feeds*



TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

HIGH PERFORMANCE
5 FLUTE NECK RELIEVED (INCH)

Patented variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials including, stainless, inconel, titanium, tool steels and hardened materials. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

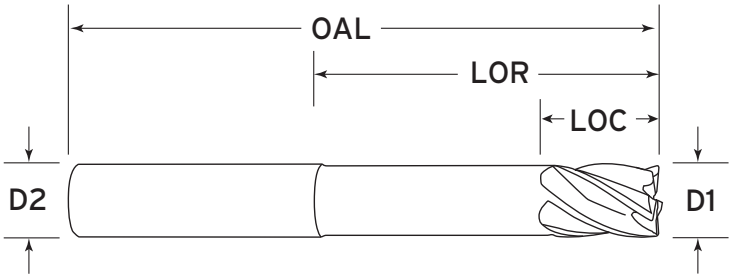
Available in special diameters, lengths and completely resharpenable.

GMX-35 COATED

SPEEDS & FEEDS CHART PAGE 40

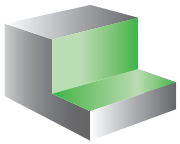
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	LOR	Sq. End	Corner Radius (Inch)						
						0.015	0.030	0.060	0.090	0.120	0.190	0.250
1/4	1/4	3/8	4.0	3/4	GMNR14F50.750 EDP: 10737	GMNR14R50150.750 EDP: 10749	GMNR14R50300.750 EDP: 10752	GMNR14R50600.750 EDP: 10755	—	—	—	—
	1/4	3/8	4.0	1-1/8	GMNR14F51.125 EDP: 10738	GMNR14R50151.125 EDP: 10750	GMNR14R50301.125 EDP: 10753	GMNR14R50601.125 EDP: 10756	—	—	—	—
	1/4	3/8	4.0	2-1/8	GMNR14F52.125 EDP: 10739	GMNR14R50152.125 EDP: 10751	GMNR14R50302.125 EDP: 10754	GMNR14R50602.125 EDP: 10757	—	—	—	—
3/8	3/8	1/2	4.0	1-1/8	GMNR38F51.125 EDP: 10804	GMNR38R50151.125 EDP: 10824	GMNR38R50301.125 EDP: 10828	GMNR38R50601.125 EDP: 10832	GMNR38R50901.125 EDP: 10836	—	—	—
	3/8	1/2	4.0	2-1/8	GMNR38F52.125 EDP: 10805	GMNR38R50152.125 EDP: 10825	GMNR38R50302.125 EDP: 10829	GMNR38R50602.125 EDP: 10833	GMNR38R50902.125 EDP: 10837	—	—	—
	3/8	1/2	6.0	3-1/8	GMNR38F53.125 EDP: 10806	GMNR38R50153.125 EDP: 10826	GMNR38R50303.125 EDP: 10830	GMNR38R50603.125 EDP: 10834	GMNR38R50903.125 EDP: 10838	—	—	—
	3/8	1/2	6.0	4-1/8	GMNR38F54.125 EDP: 10807	GMNR38R50154.125 EDP: 10827	GMNR38R50304.125 EDP: 10831	GMNR38R50604.125 EDP: 10835	GMNR38R50904.125 EDP: 10839	—	—	—
1/2	1/2	5/8	4.0	1-1/2	GMNR12F51.500 EDP: 10690	GMNR12R50151.500 EDP: 10714	GMNR12R50301.500 EDP: 10718	GMNR12R50601.500 EDP: 10722	GMNR12R50901.500 EDP: 10726	GMNR12R51201.500 EDP: 10730	—	—
	1/2	5/8	4.0	2-1/4	GMNR12F52.250 EDP: 10691	GMNR12R50152.250 EDP: 10715	GMNR12R50302.250 EDP: 10719	GMNR12R50602.250 EDP: 10723	GMNR12R50902.250 EDP: 10727	GMNR12R51202.250 EDP: 10731	—	—
	1/2	5/8	6.0	3-3/8	GMNR12F53.375 EDP: 10692	GMNR12R50153.375 EDP: 10716	GMNR12R50303.375 EDP: 10720	GMNR12R50603.375 EDP: 10724	GMNR12R50903.375 EDP: 10728	GMNR12R51203.375 EDP: 10732	—	—
	1/2	5/8	6.0	4-1/8	GMNR12F54.125 EDP: 10693	GMNR12R50154.500 EDP: 10717	GMNR12R50304.125 EDP: 10721	GMNR12R50604.125 EDP: 10725	GMNR12R50904.125 EDP: 10729	GMNR12R51204.125 EDP: 10733	—	—

PATENT NO. 7,153,067



TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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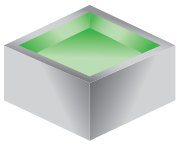
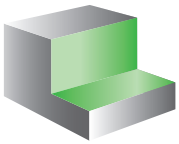


HIGH-VELOCITY



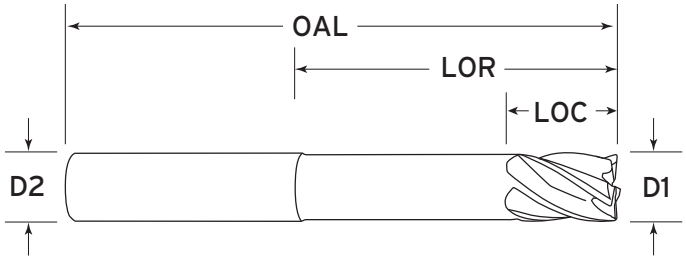
MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels (A36,1018,8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)	

GMX-35 COATED

SPEEDS & FEEDS CHART PAGE 40

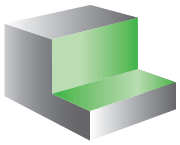
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	LOR	Sq. End	Corner Radius (Inch)						
						0.015	0.030	0.060	0.090	0.120	0.190	0.250
5/8	5/8	3/4	4.0	1-5/8	GMNR58F51.625 EDP: 10844	—	GMNR58R50301.625 EDP: 10864	GMNR58R50601.625 EDP: 10868	GMNR58R50901.625 EDP: 10872	GMNR58R51201.625 EDP: 10876	—	—
	5/8	3/4	6.0	2-3/8	GMNR58F52.375 EDP: 10845	—	GMNR58R50302.375 EDP: 10865	GMNR58R50602.375 EDP: 10869	GMNR58R50902.375 EDP: 10873	GMNR58R51202.375 EDP: 10877	—	—
	5/8	3/4	6.0	3-3/8	GMNR58F53.375 EDP: 10846	—	GMNR58R50303.375 EDP: 10866	GMNR58R50603.375 EDP: 10870	GMNR58R50903.375 EDP: 10874	GMNR58R51203.375 EDP: 10878	—	—
	5/8	3/4	6.0	4-1/8	GMNR58F54.125 EDP: 10847	—	GMNR58R50304.125 EDP: 10867	GMNR58R50604.125 EDP: 10871	GMNR58R50904.125 EDP: 10875	GMNR58R51204.125 EDP: 10879	—	—
3/4	3/4	1.0	6.0	2-1/2	GMNR34F52.500 EDP: 10761	—	GMNR34R50302.500 EDP: 10782	GMNR34R50602.500 EDP: 10785	GMNR34R50902.500 EDP: 10788	GMNR34R51202.500 EDP: 10791	GMNR34R51902.500 EDP: 10794	GMNR34R52502.500 EDP: 10797
	3/4	1.0	6.0	3-3/8	GMNR34F53.375 EDP: 10762	—	GMNR34R50303.375 EDP: 10783	GMNR34R50603.375 EDP: 10786	GMNR34R50903.375 EDP: 10789	GMNR34R51203.375 EDP: 10792	GMNR34R51903.375 EDP: 10795	GMNR34R52503.375 EDP: 10798
	3/4	1.0	6.0	4-1/8	GMNR34F54.125 EDP: 10763	—	GMNR34R50304.125 EDP: 10784	GMNR34R50604.125 EDP: 10787	GMNR34R50904.125 EDP: 10790	GMNR34R51204.125 EDP: 10793	GMNR34R51904.125 EDP: 10796	GMNR34R52504.125 EDP: 10799
1.0	1.0	1-1/8	6.0	2-5/8	GMNR10F52.625 EDP: 10623	—	GMNR10R50302.625 EDP: 10644	GMNR10R50602.625 EDP: 10647	GMNR10R50902.625 EDP: 10650	GMNR10R51202.625 EDP: 10653	GMNR10R51902.625 EDP: 10656	GMNR10R52502.625 EDP: 10659
	1.0	1-1/8	6.0	3-1/4	GMNR10F53.250 EDP: 10624	—	GMNR10R50303.250 EDP: 10645	GMNR10R50603.250 EDP: 10648	GMNR10R50903.250 EDP: 10651	GMNR10R51203.250 EDP: 10654	GMNR10R51903.250 EDP: 10657	GMNR10R52503.250 EDP: 10660
	1.0	1-1/8	7.0	4-1/4	GMNR10F54.250 EDP: 10625	—	GMNR10R50304.250 EDP: 10646	GMNR10R50604.250 EDP: 10649	GMNR10R50904.250 EDP: 10652	GMNR10R51204.250 EDP: 10655	GMNR10R51904.250 EDP: 10658	GMNR10R52504.250 EDP: 10661
1-1/4	1-1/4	1-1/2	5.0	2-1/4	GMNR1250F52.250 EDP: 10662	—	—	GMNR1250R50602.250 EDP: 10666	GMNR1250R50902.250 EDP: 10670	GMNR1250R51202.250 EDP: 10674	GMNR1250R51902.250 EDP: 10678	GMNR1250R52502.250 EDP: 10682
	1-1/4	1-1/2	6.0	2-5/8	GMNR1250F52.625 EDP: 10663	—	—	GMNR1250R50602.625 EDP: 10667	GMNR1250R50902.625 EDP: 10671	GMNR1250R51202.625 EDP: 10675	GMNR1250R51902.625 EDP: 10679	GMNR1250R52502.625 EDP: 10683
	1-1/4	1-1/2	6.0	3-3/8	GMNR1250F53.375 EDP: 10664	—	—	GMNR1250R50603.375 EDP: 10668	GMNR1250R50903.375 EDP: 10672	GMNR1250R51203.375 EDP: 10676	GMNR1250R51903.375 EDP: 10680	GMNR1250R52503.375 EDP: 10684
	1-1/4	1-1/2	6.0	4-1/4	GMNR1250F54.250 EDP: 10665	—	—	GMNR1250R50604.250 EDP: 10669	GMNR1250R50904.250 EDP: 10673	GMNR1250R51204.250 EDP: 10677	GMNR1250R51904.250 EDP: 10681	GMNR1250R52504.250 EDP: 10685



PATENT NO. 7,153,067

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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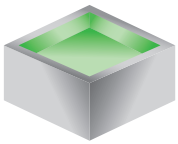
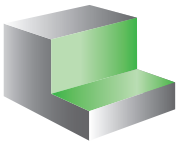


HIGH-VELOCITY



HIGH PERFORMANCE
5 FLUTE NECK RELIEVED (INCH)

Patented variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials including, stainless, inconel, titanium, tool steels and hardened materials. Should be run at specific parameters. See “Speeds and Feeds” calculator at gorillamill.com or refer to”Speeds and Feeds” chart below. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable.

GMX-35 COATED

5 FLUTE NECK RELIEVED (INCH) COATED SPEEDS & FEEDS CHART FOR PROFILING, CHIMP LOAD PER TOOTH

WORK PIECE MATERIAL	SFM	1/4"			SFM	3/8"			SFM	1/2"			SFM	5/8"		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%		5%	15%	30%		5%	15%	30%		5%	15%	30%
Gray Cast Iron	70	.0018	.0011	.0009	100	.0030	.0018	.0014	150	.0041	.0025	.0020	230	.0064	.0039	.0031
Ductile Iron	70	.0016	.0010	.0008	100	.0027	.0017	.0013	150	.0037	.0022	.0017	230	.0060	.0036	.0028
Soft Steels, (A36,1018,8620,1045)	70	.0018	.0011	.0009	100	.0030	.0018	.0014	150	.0041	.0025	.0020	230	.0064	.0039	.0031
Alloy Steels, (4340,4140)	70	.0016	.0010	.0008	100	.0027	.0017	.0013	150	.0037	.0022	.0017	230	.0060	.0036	.0028
4140 Pre-Hard (38 to 42 Rc)	70	.0011	.0007	.0005	100	.0023	.0014	.0011	150	.0034	.0020	.0015	230	.0057	.0034	.0026
Tool Steels (A2,D2,S7)	70	.0016	.0010	.0008	100	.0027	.0017	.0013	150	.0037	.0022	.0020	230	.0060	.0036	.0028
Die Steels, (H13,P20)	70	.0016	.0010	.0008	100	.0027	.0017	.0013	150	.0037	.0022	.0020	230	.0060	.0036	.0028
Stainless Steel, (303, 304, 316)	70	.0018	.0011	.0009	100	.0030	.0018	.0014	150	.0041	.0025	.0020	230	.0064	.0039	.0031
Difficult Stainless Steel, (400 & PH Series)	70	.0011	.0007	.0005	100	.0023	.0014	.0011	150	.0034	.0020	.0015	230	.0057	.0034	.0026
Stainless Steel (13-8)	70	.0011	.0007	.0005	100	.0023	.0014	.0011	150	.0034	.0020	.0015	150	.0062	.0038	.0029
High Temp. Alloys	70	.0018	.0011	.0009	100	.0030	.0018	.0014	150	.0041	.0025	.0020	150	.0064	.0039	.0031
Titanium (6AL4V)	70	.0016	.0010	.0008	100	.0027	.0017	.0013	150	.0037	.0022	.0017	150	.0060	.0036	.0028
Inconel 718	70	.0014	.0008	.0007	100	.0025	.0015	.0012	150	.0035	.0020	.0016	150	.0060	.0036	.0027
Inconel 625	70	.0014	.0008	.0007	100	.0025	.0015	.0012	150	.0035	.0020	.0016	150	.0060	.0036	.0027

WORK PIECE MATERIAL	SFM	3/4"			SFM	1"			SFM	1-1/4"		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%		5%	15%	30%		5%	15%	30%
Gray Cast Iron	300	.0069	.0042	.0033	400	.0092	.0056	.0044	500	.0096	.0059	.0046
Ductile Iron	300	.0066	.0041	.0032	400	.0087	.0053	.0041	500	.0092	.0056	.0044
Soft Steels, (A36,1018,8620,1045)	300	.0069	.0042	.0033	400	.0092	.0056	.0044	600	.0096	.0059	.0046
Alloy Steels, (4340,4140)	300	.0066	.0041	.0032	400	.0087	.0053	.0041	500	.0092	.0056	.0044
4140 Pre-Hard (38 to 42 Rc)	300	.0060	.0036	.0028	300	.0080	.0049	.0038	400	.0090	.0055	.0043
Tool Steels (A2,D2,S7)	300	.0066	.0041	.0032	300	.0092	.0056	.0044	450	.0096	.0059	.0046
Die Steels, (H13,P20)	300	.0066	.0041	.0028	350	.0092	.0056	.0044	500	.0096	.0059	.0046
Stainless Steel, (303, 304, 316)	300	.0069	.0042	.0033	400	.0092	.0056	.0044	450	.0096	.0059	.0046
Difficult Stainless Steel, (400 & PH Series)	300	.0060	.0036	.0028	350	.0080	.0049	.0038	450	.0090	.0055	.0043
Stainless Steel (13-8)	150	.0065	.0040	.0031	150	.0091	.0055	.0043	200	.0095	.0058	.0045
High Temp. Alloys	300	.0069	.0042	.0033	350	.0092	.0056	.0044	400	.0096	.0059	.0046
Titanium (6AL4V)	300	.0066	.0041	.0028	300	.0092	.0056	.0044	350	.0096	.0059	.0046
Inconel 718	150	.0064	.0039	.0027	150	.0090	.0054	.0042	200	.0093	.0056	.0043
Inconel 625	150	.0064	.0039	.0027	150	.0090	.0054	.0042	200	.0093	.0056	.0043

**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

HP

HIGH PERFORMANCE
ROUGHERS

3 FLUTE

4 FLUTE

5 FLUTE

SILVERBACK
A DESCENDANT OF GORILLA MILLS®

KNUCKLE DRAGGERS
A DESCENDANT OF GORILLA MILLS®

HIGH PERFORMANCE
3 & 4 FLUTE ROUGHERS (INCH)

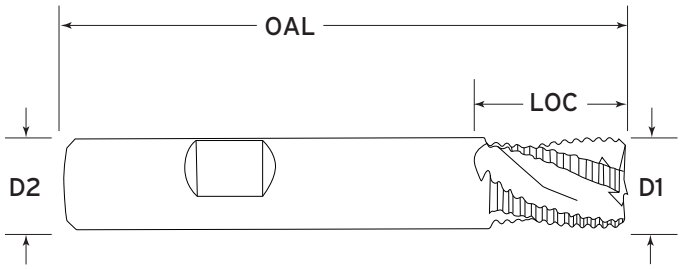
GMS² COATED

Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for extremely aggressive machining applications in all materials including: stainless, Inconel, titanium, tool steels, and alloy and low carbon steels. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable.

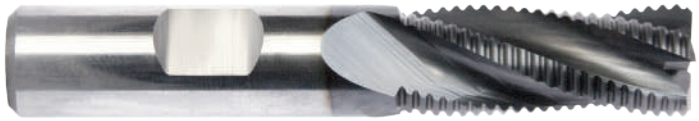
3 FLUTE KNUCKLEDRAGGERS (INCH)

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	45° Chamfered End
1/4	1/4	5/16	2.0	GMKD14CS3 EDP: 50060
	1/4	3/4	2-1/2	GMKD14C3 EDP: 50059



NOTE: Weldon Flats 3/8 and above

GMS² COATED

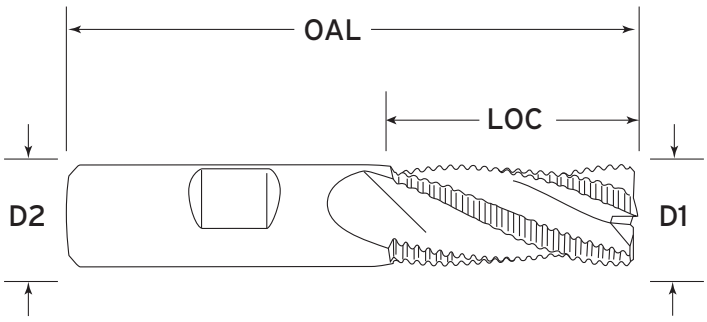


Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for extremely aggressive machining applications in all materials including: stainless, Inconel, titanium, tool steels, and alloy and low carbon steels. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable.

4 FLUTE KNUCKLEDRAGGERS (INCH)

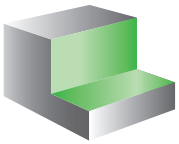
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	45° Chamfered End
5/16	5/16	3/8	2.0	GMKD516CS4 EDP: 50082
	5/16	7/8	2-1/2	GMKD516C4 EDP: 50081
3/8	3/8	9/16	2.0	GMKD38CS4 EDP: 50079
	3/8	7/8	2-1/2	GMKD38C4 EDP: 50077
1/2	1/2	5/8	2-1/2	GMKD12CS4 EDP: 50057
	1/2	1.0	3.0	GMKD12CH4 EDP: 50055
	1/2	1-1/4	3.0	GMKD12C4 EDP: 50053
5/8	5/8	7/8	3-1/2	GMKD58CS4 EDP: 50085
	5/8	1-1/4	3-1/2	GMKD58C4 EDP: 50083
3/4	3/4	1.0	4.0	GMKD34CS4 EDP: 50075
	3/4	1-5/8	4.0	GMKD34C4 EDP: 50073
1.0	1.0	1.0	4.0	GMKD10CS4 EDP: 50045
	1.0	1-3/4	4.0	GMKD10C4 EDP: 50043



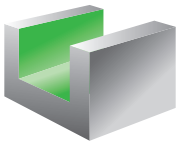
PATENT NO. 7,367,754

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

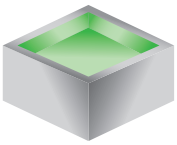
PROFILING



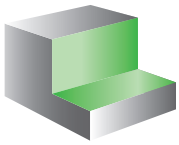
FULL SLOTTING



POCKETING



HIGH-VELOCITY



MATERIALS

Gray Cast Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)
Ductile Iron	Die Steels, (H13,P20)	High Temp. Alloys
Soft Steels, (A36,1018,8620,1045)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)
Alloy Steels, (4340,4140)	Difficult Stainless Steel, (400 & PH Series)	Inconel 718
4140 Pre-Hard (38 to 42 Rc)		Inconel 625

3 FLUTE KNUCKLEDRAGGERS (INCH) SPEEDS & FEEDS CHART. 1X DIAMETER DEEP, FULL SLOTTING.

WORK PIECE MATERIAL	SFM	1/4"	
		RPM	IPM
Gray Cast Iron	750	11,460	34.3
Ductile Iron	550	8,404	25.2
Soft Steels, (A36,1018,8620,1045)	750	11,460	34.3
Alloy Steels, (4340,4140)	500	7,640	18.3
4140 Pre-Hard (38 to 42 Rc)	400	6,112	11.1
Tool Steels (A2,D2,S7)	300	4,584	11.1
Die Steels, (H13,P20)	350	5,348	14.4
Stainless Steel, (303, 304, 316)	400	6,112	14.6
Difficult Stainless Steel, (400 & PH Series)	350	5,348	11.2
Stainless Steel (13-8)	180	2,750	5.7
High Temp. Alloys	275	4,202	12.6
Titanium (6AL4V)	250	3,820	10.3
Inconel 718	180	2,750	6.6
Inconel 625	150	2,292	5.5

4 FLUTE KNUCKLEDRAGGERS (INCH) SPEEDS & FEEDS CHART. 1X DIAMETER DEEP, FULL SLOTTING.

WORK PIECE MATERIAL	SFM	3/8"		1/2"		5/8"		3/4"		1"	
		RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM
Gray Cast Iron	750	7,640	57.8	5,730	52.7	4,584	55.0	3,820	48.9	2,865	45.8
Ductile Iron	550	5,602	42.6	4,202	36.9	3,362	41.7	2,801	35.9	2,101	33.6
Soft Steels, (A36,1018,8620,1045)	750	7,640	67.2	5,730	57.3	4,584	58.6	3,820	48.9	2,865	45.8
Alloy Steels, (4340,4140)	500	5,093	44.8	3,820	42.7	3,056	36.7	2,546	34.6	1,910	30.5
4140 Pre-Hard (38 to 42 Rc)	400	4,075	24.5	3,056	24.5	2,444	23.4	2,037	22.0	1,528	19.6
Tool Steels (A2,D2,S7)	300	3,056	28.1	2,292	22.0	1,833	19.1	1,528	18.3	1,146	16.5
Die Steels, (H13,P20)	350	3,565	34.2	2,674	28.8	2,139	29.1	1,783	24.3	1,337	21.4
Stainless Steel, (303, 304, 316)	400	4,075	35.8	3,056	28.1	2,445	32.3	2,037	28.5	1,528	24.4
Difficult Stainless Steel, (400 & PH Series)	350	3,565	27.1	2,674	23.5	2,140	25.6	1,783	23.5	1,337	21.4
Stainless Steel (13-8)	180	1,834	12.5	1,375	11.1	1,100	11.0	917	11.0	688	9.7
High Temp. Alloys	275	2,801	24.6	2,101	19.3	1,680	20.1	1,400	16.8	1,050	14.7
Titanium (6AL4V)	250	2,547	19.3	1,910	19.1	1,528	20.7	1,273	17.3	955	15.3
Inconel 718	180	1,834	13.8	1,375	12.6	1,100	13.2	917	11.0	688	9.6
Inconel 625	150	1,528	11.6	1,146	10.0	917	10.2	764	9.2	573	8.1

**Recommended Speeds & Feeds*

HIGH PERFORMANCE
3 & 4 FLUTE ROUGHERS (METRIC)

GMS² COATED

Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for extremely aggressive machining applications in all materials including: stainless, Inconel, titanium, tool steels, and alloy and low carbon steels. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

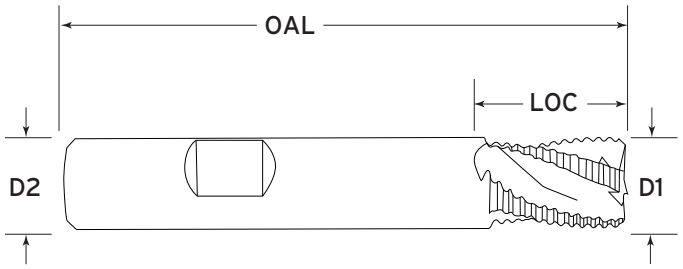
Available in special diameters, lengths and completely resharpenable.

3 FLUTE KNUCKLEDRAGGERS (METRIC)

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	45° Chamfered End
6mm	6mm	12mm	50mm	GMKD0600MMCS3 EDP: 50030
	6mm	19mm	65mm	GMKD0600MMC3 EDP: 50029

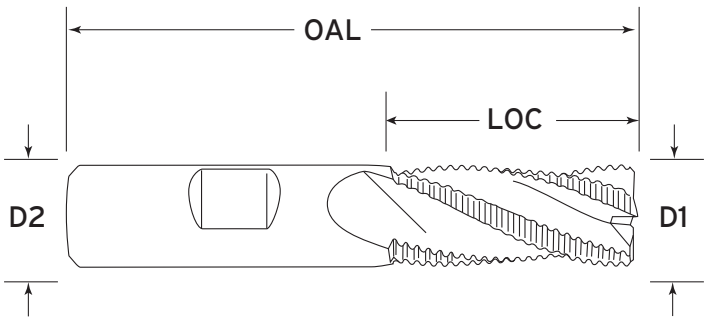
4 FLUTE KNUCKLEDRAGGERS (METRIC)

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	45° Chamfered End
8mm	8mm	12mm	50mm	GMKD0800MMCS4 EDP: 50035
	8mm	22mm	65mm	GMKD0800MMC4 EDP: 50031
	8mm	40mm	100mm	GMKD0800MMCL4 EDP: 50033
10mm	10mm	16mm	50mm	GMKD1000MMCS4 EDP: 50041
	10mm	22mm	70mm	GMKD1000MMC4 EDP: 50037
	10mm	40mm	100mm	GMKD1000MMCL4 EDP: 50039
12mm	12mm	19mm	63mm	GMKD1200MMCS4 EDP: 50051
	12mm	32mm	75mm	GMKD1200MMC4 EDP: 50047
	12mm	50mm	100mm	GMKD1200MMCL4 EDP: 50049
16mm	16mm	19mm	75mm	GMKD1600MMCS4 EDP: 50063
	16mm	32mm	89mm	GMKD1600MMC4 EDP: 50061
20mm	20mm	22mm	75mm	GMKD2000MMCS4 EDP: 50067
	20mm	38mm	100mm	GMKD2000MMC4 EDP: 50065
25mm	25mm	25mm	100mm	GMKD2500MMCS4 EDP: 50071
	25mm	38mm	100mm	GMKD2500MMC4 EDP: 50069



Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for extremely aggressive machining applications in all materials including: stainless, Inconel, titanium, tool steels, and alloy and low carbon steels. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

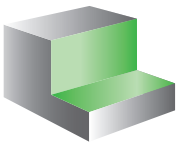
Available in special diameters, lengths and completely resharpenable.



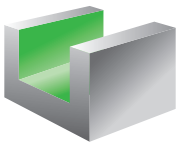
PATENT NO. 7,367,754

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

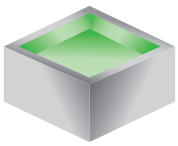
PROFILING



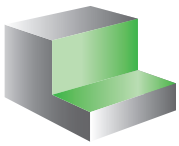
FULL SLOTTING



POCKETING



HIGH-VELOCITY



MATERIALS

Gray Cast Iron
Ductile Iron
Soft Steels, (A36,1018,8620,1045)
Alloy Steels, (4340,4140)
4140 Pre-Hard (38 to 42 Rc)

Tool Steels (A2,D2,S7)
Die Steels, (H13,P20)
Stainless Steel, (303, 304, 316)
Difficult Stainless Steel, (400 & PH Series)

Stainless Steel (13-8)
High Temp. Alloys
Titanium (6AL4V)
Inconel 718
Inconel 625

3 FLUTE KNUCKLEDRAGGERS (METRIC) SPEEDS & FEEDS CHART. 1X DIAMETER DEEP, FULL SLOTTING, METRIC CHIMP LOAD PER TOOTH.

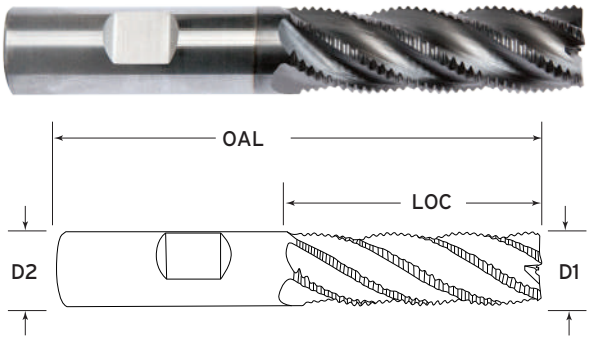
WORK PIECE MATERIAL	SFM	6mm	
		RPM	MMPT
Gray Cast Iron	750	12,128	.0380
Ductile Iron	550	8,894	.0330
Soft Steels, (A36,1018,8620,1045)	750	12,128	.0250
Alloy Steels, (4340,4140)	500	8,085	.0250
4140 Pre-Hard (38 to 42 Rc)	400	6,468	.0200
Tool Steels (A2,D2,S7)	300	4,851	.0250
Die Steels, (H13,P20)	350	5,659	.0330
Stainless Steel, (303, 304, 316)	400	6,468	.0250
Difficult Stainless Steel, (400 & PH Series)	350	5,659	.0200
Stainless Steel (13-8)	180	2,910	.0250
High Temp. Alloys	275	4,447	.0330
Titanium (6AL4V)	250	4,042	.0250
Inconel 718	180	2,910	.0200
Inconel 625	150	2,425	.0220

4 FLUTE KNUCKLEDRAGGERS (METRIC) SPEEDS & FEEDS CHART. 1X DIAMETER DEEP, FULL SLOTTING, METRIC CHIMP LOAD PER TOOTH.

WORK PIECE MATERIAL	SFM	8mm		10mm		12mm		16mm		20mm		25mm	
		RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT
Gray Cast Iron	750	9,096	.0400	7,277	.0480	6,064	.0580	4,548	.0760	3,638	.0910	2,910	.1010
Ductile Iron	550	6,670	.0350	5,336	.0480	4,447	.0550	3,335	.0750	2,668	.0880	2,134	.1010
Soft Steels, (A36,1018,8620,1045)	750	9,096	.0400	7,277	.0550	6,064	.0630	4,548	.0810	3,638	.0940	2,910	.1060
Alloy Steels, (4340,4140)	500	6,064	.0370	4,851	.0550	4,042	.0660	3,032	.0760	2,425	.0920	1,940	.1010
4140 Pre-Hard (38 to 42 Rc)	400	4,851	.0300	3,881	.0380	3,234	.0500	2,425	.0600	1,940	.0760	1,552	.0870
Tool Steels (A2,D2,S7)	300	3,638	.0350	2,910	.0550	2,425	.0610	1,819	.0660	1,455	.0860	1,164	.0980
Die Steels, (H13,P20)	350	4,244	.0350	3,395	.0480	2,829	.0680	2,122	.0860	1,697	.0940	1,358	.1010
Stainless Steel, (303, 304, 316)	400	4,851	.0400	3,881	.0550	3,234	.0590	2,425	.0830	1,940	.0960	1,552	.1010
Difficult Stainless Steel, (400 & PH Series)	350	4,244	.0400	3,395	.0480	2,829	.0560	2,122	.0760	1,697	.0940	1,358	.0980
Stainless Steel (13-8)	180	2,183	.0350	1,746	.0430	1,455	.0510	1,091	.0640	873	.0860	698	.0970
High Temp. Alloys	275	3,335	.0380	2,668	.0550	2,223	.0580	1,667	.0760	1,334	.0890	1,067	.0970
Titanium (6AL4V)	250	3,032	.0400	2,425	.0480	2,021	.0620	1,516	.0860	1,212	.0970	970	.1010
Inconel 718	180	2,183	.0300	1,746	.0470	1,455	.0580	1,091	.0760	873	.0890	698	.0940
Inconel 625	150	1,819	.0300	1,455	.0470	1,212	.0580	909	.0710	727	.0880	582	.0940

**Recommended Speeds & Feeds*

HIGH PERFORMANCE
5 FLUTE ROUGHERS (INCH)



Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for extremely aggressive machining applications in all materials including: stainless, Inconel, titanium, tool steels, and alloy and low carbon steels. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart below. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable.

MATERIALS

Gray Cast Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)
Ductile Iron	Die Steels, (H13,P20)	High Temp. Alloys
Soft Steels, (A36,1018,8620,1045)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)
Alloy Steels, (4340,4140)	Difficult Stainless Steel, (400 & PH Series)	Inconel 718
4140 Pre-Hard (38 to 42 Rc)		Inconel 625

GMS² COATED

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	45° Chamfered End
3/8	3/8	9/16	2.0	GMKD38CS5 EDP: 50080
	3/8	7/8	2-1/2	GMKD38C5 EDP: 50078
1/2	1/2	5/8	2-1/2	GMKD12CS5 EDP: 50058
	1/2	1.0	3.0	GMKD12CH5 EDP: 50056
	1/2	1-1/4	3.0	GMKD12C5 EDP: 50054
5/8	5/8	7/8	3-1/2	GMKD58CS5 EDP: 50086
	5/8	1-1/4	3-1/2	GMKD58C5 EDP: 50084
3/4	3/4	1.0	4.0	GMKD34CS5 EDP: 50076
	3/4	1-5/8	4.0	GMKD34C5 EDP: 50074
1.0	1.0	1.0	4.0	GMKD10CS5 EDP: 50046
	1.0	1-3/4	4.0	GMKD10C5 EDP: 50044

PATENT NO. 7,153,067

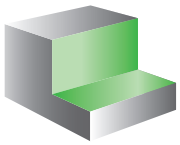
5 FLUTE KNUCKLEDRAGGER (INCH) SPEEDS & FEEDS CHART FOR PROFILING
NOTE: MAX STEP OVER IS 50% OF CUTTER DIAMETER, CHIMP LOAD PER TOOTH

WORK PIECE MATERIAL	SFM	3/8"		1/2"		5/8"		3/4"		1"	
PERCENTAGE OF CUTTER DIAMETER		15%	30%	15%	30%	15%	30%	15%	30%	15%	30%
Gray Cast Iron	850	.0024	.0019	.0035	.0028	.0042	.0033	.0049	.0039	.0056	.0044
Ductile Iron	675	.0024	.0019	.0034	.0026	.0041	.0032	.0046	.0036	.0053	.0042
Soft Steels (A36,1018,8620,1045)	950	.0021	.0017	.0029	.0023	.0038	.0030	.0045	.0035	.0056	.0044
Alloy Steels (4340,4140)	700	.0025	.0020	.0034	.0026	.0039	.0031	.0048	.0037	.0056	.0044
4140 Pre-Hard (38 to 42 Rc)	400	.0015	.0012	.0025	.0020	.0031	.0024	.0042	.0033	.0049	.0039
Tool Steels (A2,D2,S7)	450	.0022	.0018	.0031	.0024	.0036	.0029	.0042	.0033	.0050	.0040
Die Steels (H13,P20)	500	.0028	.0022	.0035	.0028	.0039	.0031	.0048	.0037	.0056	.0044
Stainless Steel (303, 304, 316)	550	.0022	.0018	.0031	.0024	.0036	.0029	.0045	.0035	.0053	.0042
Difficult Stainless Steel (400 & PH Series)	475	.0020	.0015	.0028	.0022	.0034	.0026	.0042	.0033	.0063	.0039
Stainless Steel (13-8)	150	.0015	.0012	.0025	.0020	.0031	.0024	.0042	.0033	.0049	.0039
High Temp. Alloys	400	.0020	.0015	.0027	.0021	.0031	.0024	.0039	.0031	.0046	.0036
Titanium (6AL4V)	375	.0022	.0018	.0032	.0025	.0038	.0030	.0045	.0035	.0072	.0044
Inconel 718	200	.0015	.0012	.0025	.0020	.0031	.0024	.0042	.0033	.0049	.0039
Inconel 625	150	.0015	.0012	.0025	.0020	.0031	.0024	.0042	.0033	.0049	.0039

**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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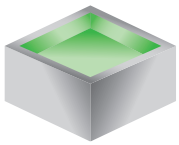
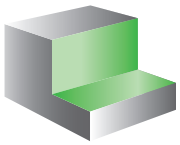
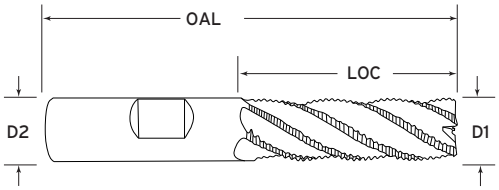


HIGH-VELOCITY



HIGH PERFORMANCE
5 FLUTE ROUGHERS (METRIC)



Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for extremely aggressive machining applications in all materials including: stainless, Inconel, titanium, tool steels, and alloy and low carbon steels. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart below. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

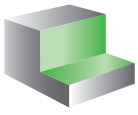
Available in special diameters, lengths and completely resharpenable.

GMS² COATED

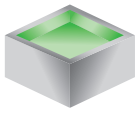
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	45° Chamfered End
8mm	8mm	12mm	50mm	GMKD0800MMCS5 EDP: 50036
	8mm	22mm	65mm	GMKD0800MMC5 EDP: 50032
	8mm	40mm	100mm	GMKD0800MMCL5 EDP: 50034
10mm	10mm	16mm	50mm	GMKD1000MMCS5 EDP: 50042
	10mm	22mm	70mm	GMKD1000MMC5 EDP: 50038
	10mm	40mm	100mm	GMKD1000MMCL5 EDP: 50040
12mm	12mm	19mm	63mm	GMKD1200MMCS5 EDP: 50052
	12mm	32mm	75mm	GMKD1200MMC5 EDP: 50048
	12mm	50mm	100mm	GMKD1200MMCL5 EDP: 50050
16mm	16mm	19mm	75mm	GMKD1600MMCS5 EDP: 50064
	16mm	32mm	89mm	GMKD1600MMC5 EDP: 50062
20mm	20mm	22mm	75mm	GMKD2000MMCS5 EDP: 50068
	20mm	38mm	100mm	GMKD2000MMC5 EDP: 50066
25mm	25mm	25mm	100mm	GMKD2500MMCS5 EDP: 50072
	25mm	38mm	100mm	GMKD2500MMC5 EDP: 50070

PATENT NO. 7,153,067

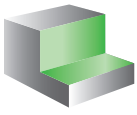
PROFILING



POCKETING



HIGH-VELOCITY



TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

5 FLUTE KNUCKLEDRAGGER (METRIC) SPEEDS & FEEDS CHART FOR PROFILING

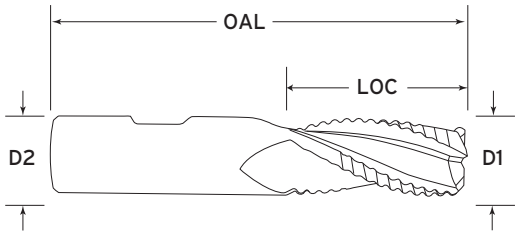
NOTE MAX STEP OVER IS 50% OF CUTTER DIAMETER, METRIC CHIMP LOAD PER TOOTH

WORK PIECE MATERIAL	SFM	8mm		10mm		12mm		16mm	
PERCENTAGE OF CUTTER DIAMETER		15%	30%	15%	30%	15%	30%	15%	30%
Gray Cast Iron	850	.0450	.0360	.0610	.0480	.0830	.0660	.1060	.0830
Ductile Iron	675	.0450	.0360	.0610	.0480	.0810	.0610	.1040	.0810
Soft Steels (A36,1018,8620,1045)	950	.0400	.0320	.0530	.0430	.0680	.0580	.0960	.0760
Alloy Steels (4340,4140)	700	.0470	.0380	.0630	.0500	.0810	.0660	.0990	.0780
4140 Pre-Hard (38 to 42 Rc)	400	.0270	.0220	.0380	.0300	.0580	.0500	.0780	.0610
Tool Steels (A2,D2,S7)	450	.0420	.0340	.0560	.0450	.0730	.0610	.0910	.0730
Die Steels (H13,P20)	500	.0530	.0420	.0710	.0560	.0830	.0710	.0990	.0780
Stainless Steel (303, 304, 316)	550	.0420	.0340	.0560	.0450	.0730	.0610	.0910	.0730
Difficult Stainless Steel (400 & PH Series)	475	.0380	.0270	.0510	.0380	.0660	.0550	.0860	.0660
Stainless Steel (13-8)	150	.0280	.0220	.0380	.0300	.0580	.0500	.0780	.0610
High Temp. Alloys	400	.0380	.0280	.0510	.0380	.0630	.0530	.0780	.0610
Titanium (6AL4V)	375	.0420	.0340	.0560	.0450	.0760	.0630	.0960	.0760
Inconel 718	200	.0280	.0220	.0380	.0300	.0580	.0500	.0780	.0610
Inconel 625	150	.0280	.0220	.0380	.0300	.0580	.0500	.0780	.0610

WORK PIECE MATERIAL	SFM	20mm		25mm	
PERCENTAGE OF CUTTER DIAMETER		15%	30%	15%	30%
Gray Cast Iron	850	.1240	.0990	.1420	.1110
Ductile Iron	675	.1160	.0910	.1340	.1060
Soft Steels (A36,1018,8620,1045)	950	.1140	.0880	.1420	.1110
Alloy Steels (4340,4140)	700	.1210	.0940	.1420	.1110
4140 Pre-Hard (38 to 42 Rc)	400	.1060	.0830	.1240	.0990
Tool Steels (A2,D2,S7)	450	.1060	.0830	.1270	.1010
Die Steels (H13,P20)	500	.1210	.0940	.1420	.1110
Stainless Steel (303, 304, 316)	550	.1140	.0880	.1340	.1060
Difficult Stainless Steel (400 & PH Series)	475	.1060	.0830	.1600	.0990
Stainless Steel (13-8)	150	.1060	.0830	.1240	.0990
High Temp. Alloys	400	.0990	.0780	.1160	.0910
Titanium (6AL4V)	375	.1140	.0880	.1820	.1110
Inconel 718	200	.1060	.0830	.1240	.0990
Inconel 625	150	.1060	.0830	.1240	.0990

**Recommended Speeds & Feeds*

HIGH PERFORMANCE
3 FLUTE ROUGHERS (INCH)



Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for extremely aggressive machining aluminum and non-ferrous applications in all materials including aluminum, copper, brass, plastic, etc. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart below. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable.

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	45° Chamfered End Uncoated	45° Chamfered End ZRN Coated
3/8	3/8	9/16	2.0	GMAKD38CS3 EDP: 50026	GMAKD38CS3ZRN EDP: 50113
	3/8	7/8	2-1/2	GMAKD38C3 EDP: 50025	GMAKD38C3ZRN EDP: 50112
1/2	1/2	5/8	2-1/2	GMAKD12CS3 EDP: 50015	GMAKD12CS3ZRN EDP: 50102
	1/2	1.0	3.0	GMAKD12CH3 EDP: 50014	GMAKD12CH3ZRN EDP: 50101
	1/2	1-1/4	3.0	GMAKD12C3 EDP: 50013	GMAKD12C3ZRN EDP: 50100
5/8	5/8	7/8	3-1/2	GMAKD58CS3 EDP: 50028	GMAKD58CS3ZRN EDP: 50115
	5/8	1-1/4	3-1/2	GMAKD58C3 EDP: 50027	GMAKD58C3ZRN EDP: 50114
3/4	3/4	1.0	4.0	GMAKD34CS3 EDP: 50024	GMAKD34CS3ZRN EDP: 50111
	3/4	1-5/8	4.0	GMAKD34C3 EDP: 50022	GMAKD34C3ZRN EDP: 50109
	3/4	2-1/4	5.0	GMAKD34CLH3 EDP: 50023	GMAKD34CLH3ZRN EDP: 50110
1.0	1.0	1.0	4.0	GMAKD10CS3 EDP: 50009	GMAKD10CS3ZRN EDP: 50096
	1.0	1-3/4	4.0	GMAKD10C3 EDP: 50008	GMAKD10C3ZRN EDP: 50095

MATERIALS

Gray Cast Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)
Ductile Iron	Die Steels, (H13,P20)	High Temp. Alloys
Soft Steels, (A36,1018,8620,1045)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)
Alloy Steels, (4340,4140)	Difficult Stainless Steel, (400 & PH Series)	Inconel 718
4140 Pre-Hard (38 to 42 Rc)		Inconel 625

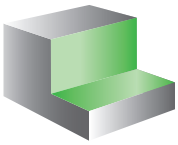
3 FLUTE SILVERBACK KNUCKLEDRAGGERS (INCH) SPEEDS & FEEDS CHART. FULL SLOTTING. CHIMP LOAD PER TOOTH

WORK PIECE MATERIAL	SFM	3/8" SLOT	1/2" SLOT	5/8" SLOT	3/4" SLOT	1" SLOT
Aircraft Aluminum	4000	.0065	.0090	.0110	.0120	.0140
Soft Aluminum (6061)	3000	.0055	.0080	.0090	.0105	.0120
Copper (200 Brinell <)	1800	.0060	.0090	.0095	.0110	.0130
Copper (200 Brinell >)	1800	.0055	.0075	.0090	.0105	.0110
Cast Aluminum, Silicon 6% <	2500	.0065	.0090	.0110	.0120	.0140
Cast Aluminum, Silicon 6% >	2000	.0065	.0090	.0110	.0120	.0140
Brass	2500	.0065	.0090	.0110	.0120	.0140
Bronze	1600	.0055	.0075	.0085	.0100	.0110

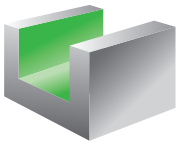
**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

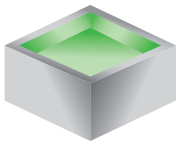
PROFILING



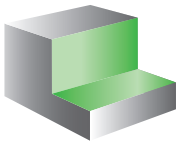
FULL SLOTTING



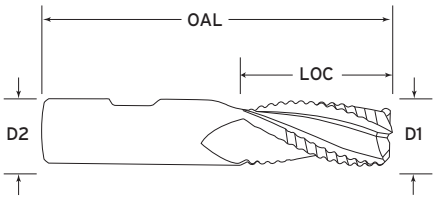
POCKETING



HIGH-VELOCITY



HIGH PERFORMANCE
3 FLUTE ROUGHERS (METRIC)



Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for extremely aggressive machining aluminum and non-ferrous applications in all materials including aluminum, copper, brass, plastic, etc. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart below. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable.

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	45º Chamfered End	
				Uncoated	ZRN Coated
6mm	6mm	12mm	50mm	GMAKD0600MMCS3 EDP: 50001	GMAKD0600MMCS3ZRN EDP: 50088
	6mm	19mm	65mm	GMAKD0600MMC3 EDP: 50000	GMAKD0600MMC3ZRN EDP: 50087
8mm	8mm	12mm	50mm	GMAKD0800MMCS3 EDP: 50004	GMAKD0800MMCS3ZRN EDP: 50091
	8mm	22mm	65mm	GMAKD0800MMC3 EDP: 50002	GMAKD0800MMC3ZRN EDP: 50089
	8mm	40mm	100mm	GMAKD0800MMCL3 EDP: 50003	GMAKD0800MMCL3ZRN EDP: 50090
10mm	10mm	16mm	50mm	GMAKD1000MMCS3 EDP: 50007	GMAKD1000MMCS3ZRN EDP: 50094
	10mm	22mm	70mm	GMAKD1000MMC3 EDP: 50005	GMAKD1000MMC3ZRN EDP: 50092
	10mm	40mm	100mm	GMAKD1000MMCL3 EDP: 50006	GMAKD1000MMCL3ZRN EDP: 50093
12mm	12mm	19mm	63mm	GMAKD1200MMCS3 EDP: 50012	GMAKD1200MMCS3ZRN EDP: 50099
	12mm	32mm	75mm	GMAKD1200MMC3 EDP: 50010	GMAKD1200MMC3ZRN EDP: 50097
	12mm	50mm	100mm	GMAKD1200MMCL3 EDP: 50011	GMAKD1200MMCL3ZRN EDP: 50098
16mm	16mm	19mm	75mm	GMAKD1600MMCS3 EDP: 50017	GMAKD1600MMCS3ZRN EDP: 50104
	16mm	32mm	89mm	GMAKD1600MMC3 EDP: 50016	GMAKD1600MMC3ZRN EDP: 50103
20mm	20mm	22mm	75mm	GMAKD2000MMCS3 EDP: 50019	GMAKD2000MMCS3ZRN EDP: 50106
	20mm	38mm	100mm	GMAKD2000MMC3 EDP: 50018	GMAKD2000MMC3ZRN EDP: 50105
25mm	25mm	25mm	100mm	GMAKD2500MMCS3 EDP: 50021	GMAKD2500MMCS3ZRN EDP: 50108
	25mm	38mm	100mm	GMAKD2500MMC3 EDP: 50020	GMAKD2500MMC3ZRN EDP: 50107

3 FLUTE SILVERBACK KNUCKLEDRAGGERS (METRIC) SPEEDS & FEEDS CHART. FULL SLOTTING, METRIC CHIMP LOAD PER TOOTH

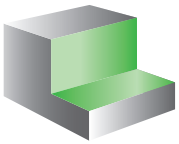
WORK PIECE MATERIAL	SFM	6mm SLOT	8mm SLOT	10mm SLOT	12mm SLOT	16mm SLOT
Aircraft Aluminum	4000	.0990	.1390	.1700	.2150	.2790
Soft Aluminum (6061)	3000	.0910	.1290	.1440	.1900	.2280
Copper (200 Brinell <)	1800	.0760	.1270	.1570	.2150	.2410
Copper (200 Brinell >)	1800	.0760	.1140	.1440	.1770	.2280
Cast Aluminum, Silicon 6% <	2500	.0990	.1390	.1700	.2150	.2790
Cast Aluminum, Silicon 6% >	2000	.0990	.1390	.1700	.2150	.2790
Brass	2500	.1100	.1390	.1700	.2150	.2790
Bronze	1600	.0990	.1140	.1440	.1770	.2150

WORK PIECE MATERIAL	SFM	20mm SLOT	25mm SLOT
Aircraft Aluminum	4000	.3170	.3500
Soft Aluminum (6061)	3000	.2710	.2990
Copper (200 Brinell <)	1800	.2920	.3220
Copper (200 Brinell >)	1800	.2710	.2840
Cast Aluminum, Silicon 6% <	2500	.3170	.3500
Cast Aluminum, Silicon 6% >	2000	.3170	.3500
Brass	2500	.3170	.3500
Bronze	1600	.2660	.2840

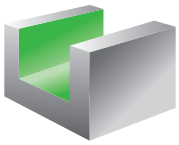
**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING



FULL SLOTTING



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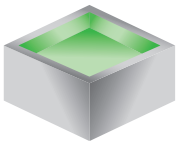
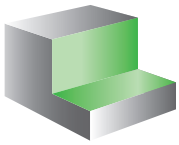


HIGH-VELOCITY



SB

5 FLUTE

7 FLUTE

OPEN UP A CAN ON HIGH COST PRODUCTION

SB

4 FLUTE

5 FLUTE

7 FLUTE

SUPER BITCHIN' PERFORMANCE

CUTTING TOOLS

YETI

A DESCENDANT OF GORILLA MILLS®

PHENUM®

BABOON

A DESCENDANT OF GORILLA MILLS®

SUPER BITCHIN' PERFORMANCE
4 FLUTE (INCH)

Based off the original Patented 4-flute Gorilla Mill, the Gorilla Mill Yeti is built tough for heavy roughing in all materials especially high temperature alloys. Its GMS^2 coating and geometric enhancements allow for work on difficult-to-machine materials including: Inconel, Waspaloy, Hastelloy, Rene, Stellite, 17-4 SS, 15-5 SS, 13-8 SS, and Titanium. The Gorilla Mill Yeti is a monster in full slotting applications with very large material removal rates in all materials. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section.

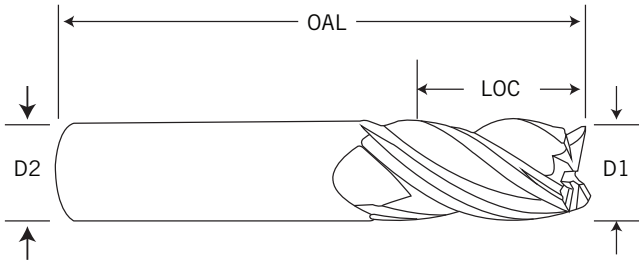
Available in special diameters, lengths and completely resharpenable.

GMS^2 COATED

SPEEDS & FEEDS CHART PAGE 55

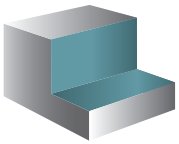
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End WF= Weldon Flat	Corner Radius (Inch) WF=Weldon Flat						
					0.015	0.030	0.060	0.090	0.120	0.190	0.250
1/8	1/8	1/4	1-1/2	GMRF18FS4 EDP: 00175	GMRF18RS4015 EDP: 00178	GMRF18RS4030 EDP: 00179	—	—	—	—	—
	1/8	1/2	1-1/2	GMRF18F4 EDP: 00174	GMRF18R4015 EDP: 00176	GMRF18R4030 EDP: 00177	—	—	—	—	—
3/16	3/16	3/8	2.0	GMRF316FS4 EDP: 00197	GMRF316RS4015 EDP: 00200	GMRF316RS4030 EDP: 00201	—	—	—	—	—
	3/16	5/8	2.0	GMRF316F4 EDP: 00196	GMRF316R4015 EDP: 00198	GMRF316R4030 EDP: 00199	—	—	—	—	—
1/4	1/4	1/2	2.0	GMRF14FS4 EDP: 00146	GMRF14RS4015 EDP: 00154	GMRF14RS4030 EDP: 00155	GMRF14RS4060 EDP: 00156	—	—	—	—
	1/4	3/4	2-1/2	GMRF14F4 EDP: 00144	GMRF14R4015 EDP: 00148	GMRF14R4030 EDP: 00149	GMRF14R4060 EDP: 00150	—	—	—	—
	1/4	1-1/4	3.0	GMRF14FL4 EDP: 00145	GMRF14RL4015 EDP: 00151	GMRF14RL4030 EDP: 00152	GMRF14RL4060 EDP: 00153	—	—	—	—
	1/4	1-1/2	4.0	GMRF14FXL4 EDP: 00147	GMRF14RXL4015 EDP: 00157	GMRF14RXL4030 EDP: 00158	GMRF14RXL4060 EDP: 00159	—	—	—	—
5/16	5/16	1/2	2.0	GMRF516FS4 EDP: 00266	GMRF516RS4015 EDP: 00273	GMRF516RS4030 EDP: 00274	GMRF516RS4060 EDP: 00275	—	—	—	—
	5/16	7/8	2-1/2	GMRF516F4 EDP: 00264	GMRF516R4015 EDP: 00267	GMRF516R4030 EDP: 00268	GMRF516R4060 EDP: 00269	—	—	—	—
	5/16	1-1/4	3.0	GMRF516FL4 EDP: 00265	GMRF516RL4015 EDP: 00270	GMRF516RL4030 EDP: 00271	GMRF516RL4060 EDP: 00272	—	—	—	—

PATENT NO. 7,367,754

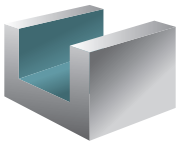


TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



FULL SLOTTING



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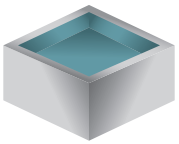
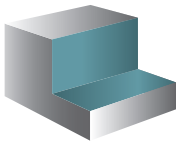


HIGH-VELOCITY



MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inco 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inco 625
Soft Steels, (A36,1018, 8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels, (4340,4140)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)	

SPEEDS & FEEDS CHART PAGE 55

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End WF= Weldon Flat	Corner Radius (Inch) WF=Weldon Flat						
					0.015	0.030	0.060	0.090	0.120	0.190	0.250
3/8	3/8	5/8	2.0	GMRF38FS4 EDP: 00246	GMRF38RS4015 EDP: 00256	GMRF38RS4030 EDP: 00257	GMRF38RS4060 EDP: 00258	GMRF38RS4090 EDP: 00259	—	—	—
	3/8	7/8	2-1/2	GMRF38F4 EDP: 00244	GMRF38R4015 EDP: 00248	GMRF38R4030 EDP: 00249	GMRF38R4060 EDP: 00250	GMRF38R4090 EDP: 00251	—	—	—
	3/8	1-1/4	3.0	GMRF38FL4 EDP: 00245	GMRF38RL4015 EDP: 00252	GMRF38RL4030 EDP: 00253	GMRF38RL4060 EDP: 00254	GMRF38RL4090 EDP: 00255	—	—	—
	3/8	2.0	4.0	GMRF38FXL4 EDP: 00247	GMRF38RXL4015 EDP: 00260	GMRF38RXL4030 EDP: 00261	GMRF38RXL4060 EDP: 00262	GMRF38RXL4090 EDP: 00263	—	—	—
7/16	7/16	5/8	2-1/2	GMRF716FS4 EDP: 00303 GMRF716FS4WF EDP: 00304	GMRF716RS4015 EDP: 00313 GMRF716RS4015WF EDP: 00314	GMRF716RS4030 EDP: 00315 GMRF716RS4030WF EDP: 00316	GMRF716RS4060 EDP: 00317 GMRF716RS4060WF EDP: 00318	GMRF716RS4090 EDP: 00319 GMRF716RS4090WF EDP: 00320	—	—	—
	7/16	1.0	2-1/2	GMRF716F4 EDP: 00301 GMRF716F4WF EDP: 00302	GMRF716R4015 EDP: 00305 GMRF716R4015WF EDP: 00306	GMRF716R4030 EDP: 00307 GMRF716R4030WF EDP: 00308	GMRF716R4060 EDP: 00309 GMRF716R4060WF EDP: 00310	GMRF716R4090 EDP: 00311 GMRF716R4090WF EDP: 00312	—	—	—
1/2	1/2	5/8	2-1/2	GMRF12FS4 EDP: 00101 GMRF12FS4WF EDP: 00102	GMRF12RS4015 EDP: 00129 GMRF12RS4015WF EDP: 00130	GMRF12RS4030 EDP: 00131 GMRF12RS4030WF EDP: 00132	GMRF12RS4060 EDP: 00133 GMRF12RS4060WF EDP: 00134	GMRF12RS4090 EDP: 00135 GMRF12RS4090WF EDP: 00136	GMRF12RS4120 EDP: 00137 GMRF12RS4120WF EDP: 00138	—	—
	1/2	1.0	3.0	GMRF12FH4 EDP: 00098 GMRF12FH4WF EDP: 00099	GMRF12RH4015 EDP: 00114 GMRF12RH4015WF EDP: 00115	GMRF12RH4030 EDP: 00116 GMRF12RH4030WF EDP: 00117	GMRF12RH4060 EDP: 00118 GMRF12RH4060WF EDP: 00119	GMRF12RH4090 EDP: 00120 GMRF12RH4090WF EDP: 00121	GMRF12RH4120 EDP: 00122 GMRF12RH4120WF EDP: 00123	—	—
	1/2	1-1/4	3.0	GMRF12F4 EDP: 00096 GMRF12F4WF EDP: 00097	GMRF12R4015 EDP: 00104 GMRF12R4015WF EDP: 00105	GMRF12R4030 EDP: 00106 GMRF12R4030WF EDP: 00107	GMRF12R4060 EDP: 00108 GMRF12R4060WF EDP: 00109	GMRF12R4090 EDP: 00110 GMRF12R4090WF EDP: 00111	GMRF12R4120 EDP: 00112 GMRF12R4120WF EDP: 00113	—	—
	1/2	1-1/2	4.0	GMRF12FL4 EDP: 00100	GMRF12RL4015 EDP: 00124	GMRF12RL4030 EDP: 00125	GMRF12RL4060 EDP: 00126	GMRF12RL4090 EDP: 00127	GMRF12RL4120 EDP: 00128	—	—
	1/2	1-5/8	4.0	GMRF12FLH4 EDP: 00321	GMRF12RLH4015 EDP: 00322	GMRF12RLH4030 EDP: 00323	GMRF12RLH4060 EDP: 00324	GMRF12RLH4090 EDP: 00325	GMRF12RLH4120 EDP: 00326	—	—
	1/2	2.0	4.0	GMRF12FXL4 EDP: 00103	GMRF12RXL4015 EDP: 00139	GMRF12RXL4030 EDP: 00140	GMRF12RXL4060 EDP: 00141	GMRF12RXL4090 EDP: 00142	GMRF12RXL4120 EDP: 00143	—	—

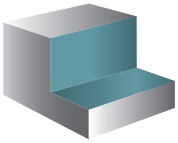
PATENT NO. 7,367,754

Continued on next page

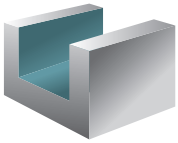
WELDON FLAT

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



FULL SLOTTING



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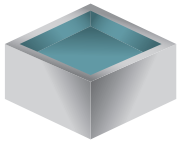
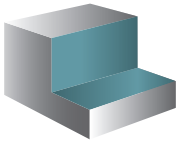


HIGH-VELOCITY



SUPER BITCHIN' PERFORMANCE
4 FLUTE (INCH)

Based off the original Patented 4-flute Gorilla Mill, the Gorilla Mill Yeti is built tough for heavy roughing in all materials especially high temperature alloys. Its GMS² coating and geometric enhancements allow for work on difficult-to-machine materials including: Inconel, Waspaloy, Hastelloy, Rene, Stellite, 17-4 SS, 15-5 SS, 13-8 SS, and Titanium. The Gorilla Mill Yeti is a monster in full slotting applications with very large material removal rates in all materials. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section.

GMS² COATED

Available in special diameters, lengths and completely resharpenable.

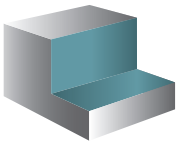
SPEEDS & FEEDS CHART PAGE 55

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End WF= Weldon Flat	Corner Radius (Inch) WF=Weldon Flat						
					0.015	0.030	0.060	0.090	0.120	0.190	0.250
5/8	5/8	3/4	3-1/2	GMRF58FS4 EDP: 00279 GMRF58FS4WF EDP: 00280	—	GMRF58RS4030 EDP: 00293 GMRF58RS4030WF EDP: 00294	GMRF58RS4060 EDP: 00295 GMRF58RS4060WF EDP: 00296	GMRF58RS4090 EDP: 00297 GMRF58RS4090WF EDP: 0298	GMRF58RS4120 EDP: 00299 GMRF58RS4120WF EDP: 00300	—	—
	5/8	1-1/4	3-1/2	GMRF58F4 EDP: 00276 GMRF58F4WF EDP: 00277	—	GMRF58R4030 EDP: 00281 GMRF58R4030WF EDP: 00282	GMRF58R4060 EDP: 00283 GMRF58R4060WF EDP: 00284	GMRF58R4090 EDP: 00285 GMRF58R4090WF EDP: 00286	GMRF58R4120 EDP: 00287 GMRF58R4120WF EDP: 00288	—	—
	5/8	2.0	4.0	GMRF58FL4 EDP: 00278	—	GMRF58RL4030 EDP: 00289	GMRF58RL4060 EDP: 00290	GMRF58RL4090 EDP: 00291	GMRF58RL4120 EDP: 00292	—	—
3/4	3/4	1.0	4.0	GMRF34FS4 EDP: 00206 GMRF34FS4WF EDP: 00207	—	GMRF34RS4030 EDP: 00232 GMRF34RS4030WF EDP: 00233	GMRF34RS4060 EDP: 00234 GMRF34RS4060WF EDP: 00235	GMRF34RS4090 EDP: 00236 GMRF34RS4090WF EDP: 00237	GMRF34RS4120 EDP: 00238 GMRF34RS4120WF EDP: 00239	GMRF34RS4190 EDP: 00240 GMRF34RS4190WF EDP: 00241	GMRF34RS4250 EDP: 00242 GMRF34RS4250WF EDP: 00243
	3/4	1-1/2	4.0	GMRF34F4 EDP: 00202 GMRF34F4WF EDP: 00203	—	GMRF34R4030 EDP: 00208 GMRF34R4030WF EDP: 00209	GMRF34R4060 EDP: 00210 GMRF34R4060WF EDP: 00211	GMRF34R4090 EDP: 00212 GMRF34R4090WF EDP: 00213	GMRF34R4120 EDP: 00214 GMRF34R4120WF EDP: 00215	GMRF34R4190 EDP: 00216 GMRF34R4190WF EDP: 00217	GMRF34R4250 EDP: 00218 GMRF34R4250WF EDP: 00219
	3/4	2.0	4.0	GMRF34FL4 EDP: 00204	—	GMRF34RL4030 EDP: 00220	GMRF34RL4060 EDP: 00221	GMRF34RL4090 EDP: 00222	GMRF34RL4120 EDP: 00223	GMRF34RL4190 EDP: 00224	GMRF34RL4250 EDP: 00225
	3/4	2-1/4	5.0	GMRF34FLH4 EDP: 00205	—	GMRF34RLH4030 EDP: 00226	GMRF34RLH4060 EDP: 00227	GMRF34RLH4090 EDP: 00228	GMRF34RLH4120 EDP: 00229	GMRF34RLH4190 EDP: 00230	GMRF34RLH4250 EDP: 00231
1.0	1.0	1.0	4.0	GMRF10FS4 EDP: 00040 GMRF10FS4WF EDP: 00041	—	GMRF10RS4030 EDP: 00066 GMRF10RS4030WF EDP: 00067	GMRF10RS4060 EDP: 00068 GMRF10RS4060WF EDP: 00069	GMRF10RS4090 EDP: 00070 GMRF10RS4090WF EDP: 00071	GMRF10RS4120 EDP: 00072 GMRF10RS4120WF EDP: 00073	GMRF10RS4190 EDP: 00074 GMRF10RS4190WF EDP: 00075	GMRF10RS4250 EDP: 00076 GMRF10RS4250WF EDP: 00077
	1.0	1-1/2	4.0	GMRF10F4 EDP: 00036 GMRF10F4WF EDP: 00037	—	GMRF10R4030 EDP: 00042 GMRF10R4030WF EDP: 00043	GMRF10R4060 EDP: 00044 GMRF10R4060WF EDP: 00045	GMRF10R4090 EDP: 00046 GMRF10R4090WF EDP: 00047	GMRF10R4120 EDP: 00048 GMRF10R4120WF EDP: 00049	GMRF10R4190 EDP: 00050 GMRF10R4190WF EDP: 00051	GMRF10R4250 EDP: 00052 GMRF10R4250WF EDP: 00053
	1.0	2.0	4.0	GMRF10FL4 EDP: 00038	—	GMRF10RL4030 EDP: 00054	GMRF10RL4060 EDP: 00055	GMRF10RL4090 EDP: 00056	GMRF10RL4120 EDP: 00057	GMRF10RL4190 EDP: 00058	GMRF10RL4250 EDP: 00059
	1.0	2-1/4	5.0	GMRF10FLH4 EDP: 00039	—	GMRF10RLH4030 EDP: 00060	GMRF10RLH4060 EDP: 00061	GMRF10RLH4090 EDP: 00062	GMRF10RLH4120 EDP: 00063	GMRF10RLH4190 EDP: 00064	GMRF10RLH4250 EDP: 00065

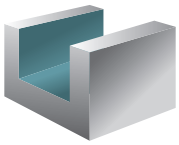
PATENT NO. 7,367,754

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

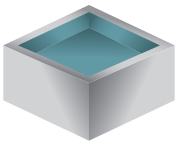
PROFILING



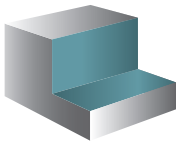
FULL SLOTTING



POCKETING



HIGH-VELOCITY



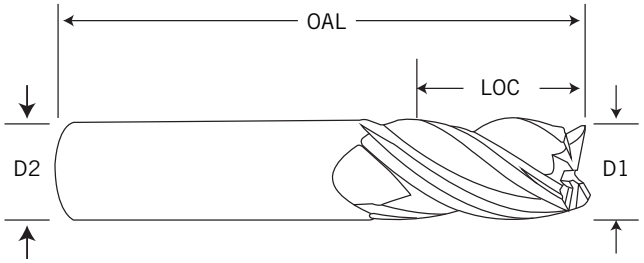
MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inco 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inco 625
Soft Steels, (A36,1018, 8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels, (4340,4140)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)	

4 FLUTE (INCH) COATED SPEEDS & FEEDS CHART. 1X DIAMETER DEEP, FULL SLOTTING

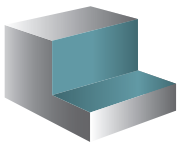
WORK PIECE MATERIAL	SFM	1/8"		3/16"		1/4"		5/16"		3/8"		7/16"		1/2"		5/8"		3/4"		1"	
		RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM
Gray Cast Iron	850	25,976	83.1	17,317	76.2	12,988	72.7	10,390	70.6	8,658	69.2	7,421	71.2	6,494	70.1	5,195	72.7	4,329	69.3	3,247	58.4
Ductile Iron	600	18,336	44.0	12,224	39.1	9,168	51.3	7,334	46.9	6,112	46.4	5,238	50.3	4,584	47.7	3,667	49.8	3,056	47.7	2,292	41.3
Soft Steels, (A36,1018, 8620,1045)	850	25,976	62.3	17,317	62.3	12,988	62.3	10,390	62.3	8,658	58.9	7,421	59.4	6,494	64.9	5,195	68.6	4,329	71.0	3,247	62.3
Alloy Steels, (4340,4140)	600	18,336	40.3	12,224	39.1	9,168	44.0	7,334	46.9	6,112	46.4	5,238	48.2	4,584	47.7	3,667	45.5	3,056	47.7	2,292	41.3
4140 Pre-Hard (38 to 42 Rc)	425	12,988	20.7	8,658	20.8	6,494	20.8	5,195	24.9	4,329	26.0	3,710	29.7	3,247	29.8	2,597	31.2	2,164	29.4	1,623	26.0
Tool Steels (A2,D2,S7)	375	11,460	22.9	7,640	24.4	5,730	22.9	4,584	25.7	3,820	27.5	3,274	28.8	2,865	27.5	2,292	28.4	1,910	29.0	1,432	25.2
Die Steels, (H13,P20)	450	13,752	27.5	9,168	29.3	6,876	35.7	5,500	37.4	4,584	40.3	3,929	37.7	3,438	35.7	2,750	35.2	2,292	38.5	1,719	32.3
Stainless Steel, (303, 304, 316)	450	13,752	27.5	9,168	29.3	6,876	33.0	5,500	35.2	4,584	34.8	3,929	36.1	3,438	35.7	2,750	34.1	2,292	35.7	1,719	31.0
Difficult Stainless Steel, (400 & PH Series)	400	12,224	19.5	8,149	19.5	6,112	22.0	4,889	25.4	4,075	26.1	3,492	27.9	3,056	28.1	2,445	31.3	2,037	32.6	1,528	27.5
Stainless Steel (13-8)	200	6,112	9.8	4,074	9.8	3,056	11.0	2,444	12.7	2,037	13.1	1,746	14.0	1,528	14.0	1,222	15.6	1,019	16.3	764	13.8
High Temp. Alloys	350	10,696	21.4	7,130	20.0	5,348	19.3	4,278	22.2	3,565	22.8	3,056	24.4	2,674	24.6	2,139	27.4	1,782	28.5	1,337	24.0
Titanium (6AL4V)	350	10,696	21.4	7,130	20.0	5,348	19.3	4,278	23.9	3,565	27.1	3,056	26.9	2,674	26.7	2,139	27.4	1,782	28.5	1,337	25.7
Inco 718	225	6,876	11.0	4,584	11.0	3,438	11.0	2,750	11.0	2,292	12.8	1,964	14.1	1,719	15.8	1,375	16.5	1,146	16.0	859	14.1
Inco 625	200	6,112	9.8	4,074	9.8	3,056	9.8	2,444	9.8	2,037	11.4	1,746	12.6	1,528	14.0	1,222	14.6	1,019	14.3	764	12.5

**Recommended Speeds & Feeds*

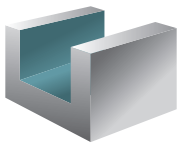


TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



FULL SLOTTING



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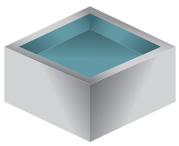
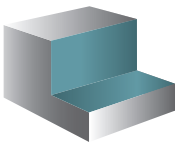


HIGH-VELOCITY



SUPER BITCHIN' PERFORMANCE
4 FLUTE (METRIC)

Based off the original Patented 4-flute Gorilla Mill, the Gorilla Mill Yeti is built tough for heavy roughing in all materials especially high temperature alloys. Its GMS² coating and geometric enhancements allow for work on difficult-to-machine materials including: Inconel, Waspaloy, Hastelloy, Rene, Stellite, 17-4 SS, 15-5 SS, 13-8 SS, and Titanium. The Gorilla Mill Yeti is a monster in full slotting applications with very large material removal rates in all materials. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.

GMS² COATED

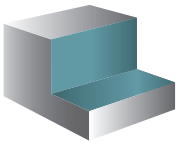
SPEEDS & FEEDS CHART PAGE 58/59

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End WF= Weldon Flat	Corner Radius (Metric) WF=Weldon Flat					
					0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
3mm	3mm	8mm	38mm	GMRF0300MMFS4 EDP: 00002	GMRF0300MMRS4020 EDP: 00005	—	—	—	—	—
	3mm	12mm	38mm	GMRF0300MMF4 EDP: 00001	GMRF0300MMR4020 EDP: 00003	—	GMRF0300MMR4050 EDP: 00004	—	—	—
4mm	6mm	8mm	50mm	—	—	GMRF0400MMRS4030 EDP: 00009	—	—	—	—
	6mm	12mm	50mm	GMRF0400MMF4 EDP: 00006	—	GMRF0400MMR4030 EDP: 00007	GMRF0400MMR4050 EDP: 00008	—	—	—
5mm	6mm	10mm	50mm	—	—	GMRF0500MMRS4030 EDP: 00013	—	—	—	—
	6mm	15mm	65mm	GMRF0500MMF4 EDP: 00010	—	GMRF0500MMR4030 EDP: 00011	GMRF0500MMR4050 EDP: 00012	—	—	—
6mm	6mm	12mm	50mm	GMRF0600MMFS4 EDP: 00015	—	GMRF0600MMRS4030 EDP: 00018	—	—	—	—
	6mm	19mm	65mm	GMRF0600MMF4 EDP: 00014	—	GMRF0600MMR4030 EDP: 00016	GMRF0600MMR4050 EDP: 00017	—	—	—
8mm	8mm	12mm	50mm	GMRF0800MMFS4 EDP: 00020	—	—	GMRF0800MMRS4050 EDP: 00025	—	—	—
	8mm	22mm	65mm	GMRF0800MMF4 EDP: 00019	—	GMRF0800MMR4030 EDP: 00021	GMRF0800MMR4050 EDP: 00022	GMRF0800MMR4100 EDP: 00023	GMRF0800MMR4150 EDP: 00024	—
10mm	10mm	16mm	50mm	—	—	—	GMRF1000MMRS4050 EDP: 00034 GMRF1000MMRS4050WF EDP: 00035	—	—	—
	10mm	22mm	70mm	GMRF1000MMF4 EDP: 00026 GMRF1000MMF4WF EDP: 00027	—	GMRF1000MMR4030 EDP: 00028 GMRF1000MMR4030WF EDP: 00029	GMRF1000MMR4050 EDP: 00030 GMRF1000MMR4050WF EDP: 00031	GMRF1000MMR4100 EDP: 00032 GMRF1000MMR4100WF EDP: 00033	—	—

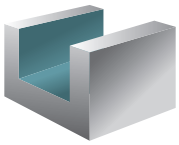
PATENT NO. 7,367,754

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

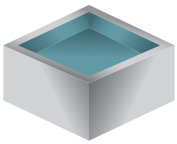
PROFILING



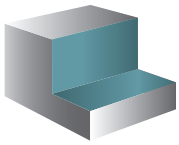
FULL SLOTTING



POCKETING

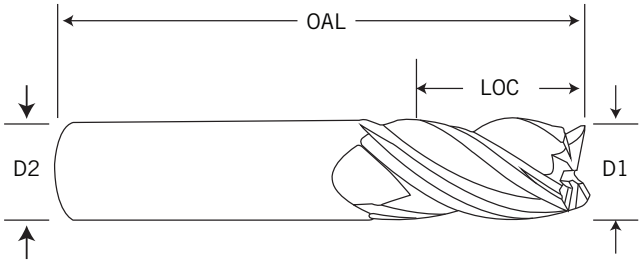


HIGH-VELOCITY



MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inco 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inco 625
Soft Steels, (A36,1018, 8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels, (4340,4140)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)	



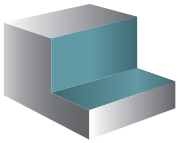
SPEEDS & FEEDS CHART PAGE 58/59

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End WF= Weldon Flat	Corner Radius (Metric) WF=Weldon Flat					
					0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
12mm	12mm	19mm	63mm	GMRF1200MMFS4 EDP: 00080 GMRF1200MMFS4WF EDP: 00081	—	GMRF1200MMRS4030 EDP: 00092 GMRF1200MMRS4030WF EDP: 00093	GMRF1200MMRS4050 EDP: 00094 GMRF1200MMRS4050WF EDP: 00095	—	—	—
	12mm	32mm	75mm	GMRF1200MMF4 EDP: 00078 GMRF1200MMF4WF EDP: 00079	—	GMRF1200MMR4030 EDP: 00082 GMRF1200MMR4030WF EDP: 00083	GMRF1200MMR4050 EDP: 00084 GMRF1200MMR4050WF EDP: 00085	GMRF1200MMR4100 EDP: 00086 GMRF1200MMR4100WF EDP: 00087	GMRF1200MMR4150 EDP: 00088 GMRF1200MMR4150WF EDP: 00089	GMRF1200MMR4200 EDP: 00090 GMRF1200MMR4200WF EDP: 00091
16mm	16mm	19mm	75mm	—	—	GMRF1600MMRS4030 EDP: 00170 GMRF1600MMRS4030WF EDP: 00171	GMRF1600MMRS4050 EDP: 00172 GMRF1600MMRS4050WF EDP: 00173	—	—	—
	16mm	32mm	89mm	GMRF1600MMF4 EDP: 00160 GMRF1600MMF4WF EDP: 00161	—	GMRF1600MMR4030 EDP: 00162 GMRF1600MMR4030WF EDP: 00163	GMRF1600MMR4050 EDP: 00164 GMRF1600MMR4050WF EDP: 00165	GMRF1600MMR4100 EDP: 00166 GMRF1600MMR4100WF EDP: 00167	—	GMRF1600MMR4200 EDP: 00168 GMRF1600MMR4200WF EDP: 00169
20mm	20mm	22mm	75mm	—	—	—	—	GMRF2000MMRS4100 EDP: 00188 GMRF2000MMRS4100WF EDP: 00189	—	—
	20mm	38mm	100mm	GMRF2000MMF4 EDP: 00180 GMRF2000MMF4WF EDP: 00181	—	—	GMRF2000MMR4050 EDP: 00182 GMRF2000MMR4050WF EDP: 00183	GMRF2000MMR4100 EDP: 00184 GMRF2000MMR4100WF EDP: 00185	GMRF2000MMR4150 EDP: 00186 GMRF2000MMR4150WF EDP: 00187	—
25mm	25mm	38mm	100mm	GMRF2500MMF4 EDP: 00190 GMRF2500MMF4WF EDP: 00191	—	—	—	GMRF2500MMR4100 EDP: 00192 GMRF2500MMR4100WF EDP: 00193	GMRF2500MMR4150 EDP: 00194 GMRF2500MMR4150WF EDP: 00195	—

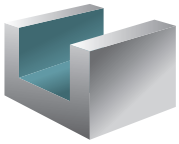
PATENT NO. 7,367,754

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

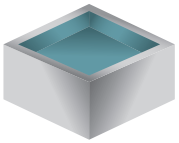
PROFILING



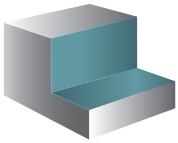
FULL SLOTTING



POCKETING



HIGH-VELOCITY



SUPER BITCHIN' PERFORMANCE
4 FLUTE (METRIC)

Based off the original Patented 4-flute Gorilla Mill, the Gorilla Mill Yeti is built tough for heavy roughing in all materials especially high temperature alloys. Its GMS^2 coating and geometric enhancements allow for work on difficult-to-machine materials including: Inconel, Waspaloy, Hastelloy, Rene, Stellite, 17-4 SS, 15-5 SS, 13-8 SS, and Titanium. The Gorilla Mill Yeti is a monster in full slotting applications with very large material removal rates in all materials. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" charts.

Available in special diameters, lengths and completely resharpenable.

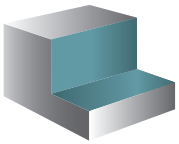
4 FLUTE (METRIC) COATED SPEEDS & FEEDS CHART. 1X DIAMETER DEEP, FULL SLOTTING, METRIC CHIMP LOAD PER TOOTH

WORK PIECE MATERIAL	SFM	3 MM		4 MM		5 MM		6 MM		8 MM		10 MM	
		RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT
Gray Cast Iron	850	27,491	0.020	20,618	0.021	16,495	0.028	13,746	0.030	10,390	0.043	8,247	0.051
Ductile Iron	600	19,405	0.015	14,554	0.018	11,643	0.020	9,703	0.028	7,334	0.040	5,822	0.048
Soft Steels, (A36,1018, 8620,1045)	850	27,491	0.015	20,618	0.019	16,495	0.023	13,746	0.029	10,390	0.038	8,247	0.043
Alloy Steels, (4340,4140)	600	19,405	0.014	14,554	0.017	11,643	0.020	9,703	0.023	7,334	0.040	5,822	0.048
4140 Pre-Hard (38 to 42 Rc)	425	13,745	0.010	10,309	0.013	8,247	0.015	6,873	0.020	5,195	0.030	4,124	0.038
Tool Steels (A2,D2,S7)	375	12,128	0.013	9,096	0.017	7,277	0.020	6,064	0.025	4,584	0.036	3,638	0.045
Die Steels, (H13,P20)	450	14,554	0.013	10,915	0.017	8,732	0.020	7,277	0.028	5,500	0.043	4,366	0.055
Stainless Steel, (303, 304, 316)	450	14,554	0.013	10,915	0.016	8,732	0.020	7,277	0.025	5,500	0.040	4,366	0.049
Difficult Stainless Steel, (400 & PH Series)	400	12,937	0.010	9,703	0.013	7,762	0.015	6,468	0.021	4,889	0.033	3,881	0.041
Stainless Steel (13-8)	200	6,468	0.010	4,851	0.013	3,881	0.015	3,234	0.020	2,444	0.032	1,940	0.040
High Temp. Alloys	350	11,320	0.013	8,490	0.016	6,792	0.018	5,660	0.022	4,278	0.033	3,396	0.041
Titanium (6AL4V)	350	11,320	0.013	8,490	0.016	6,792	0.018	5,660	0.022	4,278	0.036	3,396	0.048
Inco 718	225	7,277	0.010	5,458	0.013	4,366	0.015	3,638	0.019	2,750	0.026	2,183	0.036
Inco 625	200	6,468	0.010	4,851	0.013	3,881	0.015	3,234	0.020	2,444	0.025	1,940	0.035

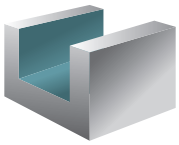
**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING



FULL SLOTTING



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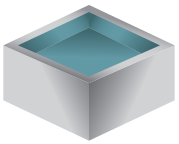
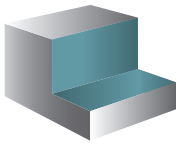


HIGH-VELOCITY



MATERIALS

Gray Cast Iron
Ductile Iron
Soft Steels, (A36,1018, 8620,1045)
Alloy Steels, (4340,4140)

4140 Pre-Hard (38 to 42 Rc)
Tool Steels (A2,D2,S7)
Die Steels, (H13,P20)
Stainless Steel, (303, 304, 316)

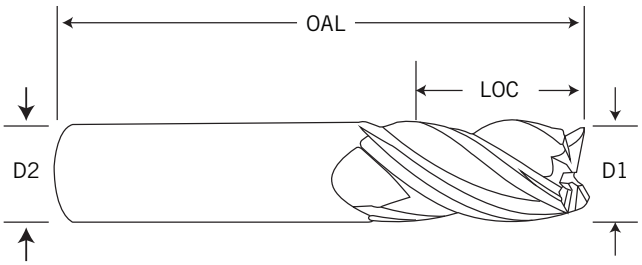
Difficult Stainless Steel, (400 & PH Series)
Stainless Steel (13-8)
High Temp. Alloys
Titanium (6AL4V)

Inco 718
Inco 625

4 FLUTE (METRIC) COATED SPEEDS & FEEDS CHART. 1X DIAMETER DEEP, FULL SLOTTING, METRIC CHIMP LOAD PER TOOTH

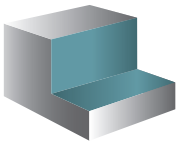
WORK PIECE MATERIAL	SFM	12 MM		16 MM		20 MM		25 MM	
		RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT
Gray Cast Iron	850	6,494	0.068	5,195	0.089	4,123	0.101	3,298	0.114
Ductile Iron	600	4,584	0.066	3,667	0.084	2,911	0.099	2,328	0.114
Soft Steels, (A36,1018, 8620,1045)	850	6,494	0.063	5,195	0.084	4,329	0.105	3,298	0.122
Alloy Steels, (4340,4140)	600	4,584	0.066	3,667	0.089	3,056	0.100	2,328	0.114
4140 Pre-Hard (38 to 42 Rc)	425	3,247	0.050	2,597	0.073	2,164	0.087	1,649	0.101
Tool Steels (A2,D2,S7)	375	2,865	0.061	2,292	0.078	1,910	0.096	1,455	0.111
Die Steels, (H13,P20)	450	3,438	0.066	2,750	0.082	2,292	0.106	1,746	0.119
Stainless Steel, (303, 304, 316)	450	3,438	0.066	2,750	0.078	2,292	0.098	1,746	0.114
Difficult Stainless Steel, (400 & PH Series)	400	3,056	0.059	2,445	0.081	2,037	0.101	1,552	0.114
Stainless Steel (13-8)	200	1,528	0.058	1,222	0.081	1,019	0.101	776	0.115
High Temp. Alloys	350	2,674	0.058	2,139	0.081	1,782	0.102	1,358	0.114
Titanium (6AL4V)	350	2,674	0.063	2,139	0.082	1,782	0.102	1,358	0.122
Inco 718	225	1,719	0.059	1,375	0.076	1,146	0.088	873	0.104
Inco 625	200	1,528	0.058	1,222	0.076	1,019	0.090	776	0.104

**Recommended Speeds & Feeds*

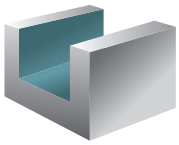


TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

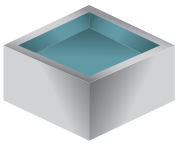
PROFILING



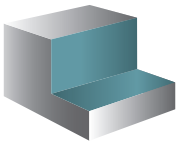
FULL SLOTTING



POCKETING



HIGH-VELOCITY



SUPER BITCHIN' PERFORMANCE
5 FLUTE (INCH)

Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

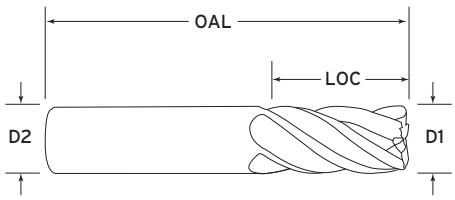
Available in special diameters, lengths and completely resharpenable.

GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

SPEEDS & FEEDS CHART PAGE 63

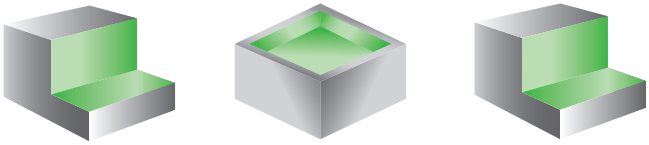
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)						
					0.015	0.030	0.060	0.090	0.120	0.190	0.250
1/4	1/4	1/2	2.0	GMHT14FS5 EDP: 30260	GMHT14RS5015 EDP: 30275	GMHT14RS5030 EDP: 30276	GMHT14RS5060 EDP: 30277	—	—	—	—
	1/4	3/4	2-1/2	GMHT14F5 EDP: 30256	GMHT14R5015 EDP: 30263	GMHT14R5030 EDP: 30264	GMHT14R5060 EDP: 30265	—	—	—	—
	1/4	1-1/4	3.0	GMHT14FL5 EDP: 30258	GMHT14RL5015 EDP: 30269	GMHT14RL5030 EDP: 30270	GMHT14RL5060 EDP: 30271	—	—	—	—
	1/4	2.0	4.0	GMHT14FXL5 EDP: 30262	GMHT14RXL5015 EDP: 30281	GMHT14RXL5030 EDP: 30282	GMHT14RXL5060 EDP: 30283	—	—	—	—
5/16	5/16	1/2	2.0	GMHT516FS5 EDP: 30426	GMHT516RS5015 EDP: 30441	GMHT516RS5030 EDP: 30442	GMHT516RS5060 EDP: 30443	—	—	—	—
	5/16	7/8	2-1/2	GMHT516F5 EDP: 30422	GMHT516R5015 EDP: 30429	GMHT516R5030 EDP: 30430	GMHT516R5060 EDP: 30431	—	—	—	—
	5/16	1.0	2-1/2	GMHT516FH5 EDP: 30424	GMHT516RH5015 EDP: 30435	GMHT516RH5030 EDP: 30436	GMHT516RH5060 EDP: 30437	—	—	—	—
	5/16	2.0	4.0	GMHT516FXL5 EDP: 30428	GMHT516RXL5015 EDP: 30447	GMHT516RXL5030 EDP: 30448	GMHT516RXL5060 EDP: 30449	—	—	—	—
3/8	3/8	5/8	2.0	GMHT38FS5 EDP: 30383	GMHT38RS5015 EDP: 30410	GMHT38RS5030 EDP: 30411	GMHT38RS5060 EDP: 30412	GMHT38RS5090 EDP: 30413	—	—	—
	3/8	7/8	2-1/2	GMHT38F5 EDP: 30377	GMHT38R5015 EDP: 30386	GMHT38R5030 EDP: 30387	GMHT38R5060 EDP: 30388	GMHT38R5090 EDP: 30389	—	—	—
	3/8	1.0	2-1/2	GMHT38FH5 EDP: 30379	GMHT38RH5015 EDP: 30394	GMHT38RH5030 EDP: 30395	GMHT38RH5060 EDP: 30396	GMHT38RH5090 EDP: 30397	—	—	—
	3/8	1-1/4	3.0	GMHT38FL5 EDP: 30381	GMHT38RL5015 EDP: 30402	GMHT38RL5030 EDP: 30403	GMHT38RL5060 EDP: 30404	GMHT38RL5090 EDP: 30405	—	—	—
	3/8	2-1/2	5.0	GMHT38FXL5 EDP: 30385	GMHT38RXL5015 EDP: 30418	GMHT38RXL5030 EDP: 30419	GMHT38RXL5060 EDP: 30420	GMHT38RXL5090 EDP: 30421	—	—	—

PATENT NO. 7,153,067



Based on the original 5 flute Gorilla Mill, the "Phenom" for High Temp Alloys features geometric enhancements that make it uniquely suited for difficult to machine materials.

PROFILING **POCKETING** **HIGH-VELOCITY**



TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels, (A36,1018,8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)	

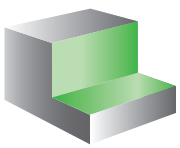
GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

SPEEDS & FEEDS CHART PAGE 63

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch) 0.015	0.030	0.060	0.090	0.120	0.190	0.250
7/16	7/16	5/8	2-1/2	GMHT716FS5 EDP: 30494	GMHT716RS5015 EDP: 30512	GMHT716RS5030 EDP: 30513	GMHT716RS5060 EDP: 30514	GMHT716RS5090 EDP: 30515	—	—	—
	7/16	1.0	2-1/2	GMHT716F5 EDP: 30490	GMHT716R5015 EDP: 30496	GMHT716R5030 EDP: 30497	GMHT716R5060 EDP: 30498	GMHT716R5090 EDP: 30499	—	—	—
	7/16	1-1/2	3-1/2	GMHT716FL5 EDP: 30492	GMHT716RL5015 EDP: 30504	GMHT716RL5030 EDP: 30505	GMHT716RL5060 EDP: 30506	GMHT716RL5090 EDP: 30507	—	—	—
1/2	1/2	5/8	2-1/2	GMHT12FS5 EDP: 30196	GMHT12RS5015 EDP: 30231	GMHT12RS5030 EDP: 30232	GMHT12RS5060 EDP: 30233	GMHT12RS5090 EDP: 30234	GMHT12RS5120 EDP: 30235	—	—
	1/2	1.0	3.0	GMHT12FH5 EDP: 30192	GMHT12RH5015 EDP: 30211	GMHT12RH5030 EDP: 30212	GMHT12RH5060 EDP: 30213	GMHT12RH5090 EDP: 30214	GMHT12RH5120 EDP: 30215	—	—
	1/2	1-1/4	3.0	GMHT12F5 EDP: 30190	GMHT12R5015 EDP: 30201	GMHT12R5030 EDP: 30202	GMHT12R5060 EDP: 30203	GMHT12R5090 EDP: 30204	GMHT12R5120 EDP: 30205	—	—
	1/2	1-5/8	4.0	GMHT12FLH5 EDP: 30194	GMHT12RLH5015 EDP: 30221	GMHT12RLH5030 EDP: 30222	GMHT12RLH5060 EDP: 30223	GMHT12RLH5090 EDP: 30224	GMHT12RLH5120 EDP: 30225	—	—
	1/2	2.0	4.0	GMHT12FXL5 EDP: 30199	GMHT12RXL5015 EDP: 30246	GMHT12RXL5030 EDP: 30247	GMHT12RXL5060 EDP: 30248	GMHT12RXL5090 EDP: 30249	GMHT12RXL5120 EDP: 30250	—	—
	1/2	3-1/4	6.0	GMHT12FSL5 EDP: 30198	GMHT12RSL5015 EDP: 30241	GMHT12RSL5030 EDP: 30242	GMHT12RSL5060 EDP: 30243	GMHT12RSL5090 EDP: 30244	GMHT12RSL5120 EDP: 30245	—	—
5/8	5/8	3/4	3-1/2	GMHT58FS5 EDP: 30456	—	GMHT58RS5030 EDP: 30482	GMHT58RS5060 EDP: 30483	GMHT58RS5090 EDP: 30484	GMHT58RS5120 EDP: 30485	—	—
	5/8	1-1/4	3-1/2	GMHT58F5 EDP: 30450	—	GMHT58R5030 EDP: 30458	GMHT58R5060 EDP: 30459	GMHT58R5090 EDP: 30460	GMHT58R5120 EDP: 30461	—	—
	5/8	1-5/8	4.0	GMHT58FHL5 EDP: 30452	—	GMHT58RHL5030 EDP: 30466	GMHT58RHL5060 EDP: 30467	GMHT58RHL5090 EDP: 30468	GMHT58RHL5120 EDP: 30469	—	—
	5/8	2.0	4.0	GMHT58FL5 EDP: 30454	—	GMHT58RL5030 EDP: 30474	GMHT58RL5060 EDP: 30475	GMHT58RL5090 EDP: 30476	GMHT58RL5120 EDP: 30477	—	—
3/4	3/4	1.0	4.0	GMHT34FS5 EDP: 30320	—	GMHT34RS5030 EDP: 30359	GMHT34RS5060 EDP: 30360	GMHT34RS5090 EDP: 30361	GMHT34RS5120 EDP: 30362	GMHT34RS5190 EDP: 30363	GMHT34RS5250 EDP: 30364
	3/4	1-1/2	4.0	GMHT34F5 EDP: 30314	—	GMHT34R5030 EDP: 30323	GMHT34R5060 EDP: 30324	GMHT34R5090 EDP: 30325	GMHT34R5120 EDP: 30326	GMHT34R5190 EDP: 30327	GMHT34R5250 EDP: 30328
	3/4	1-5/8	4.0	GMHT34FHL5 EDP: 30316	—	GMHT34RHL5030 EDP: 30335	GMHT34RHL5060 EDP: 30336	GMHT34RHL5090 EDP: 30337	GMHT34RHL5120 EDP: 30338	GMHT34RHL5190 EDP: 30339	GMHT34RHL5250 EDP: 30340
	3/4	2-1/4	5.0	GMHT34FLH5 EDP: 30318	—	GMHT34RLH5030 EDP: 30347	GMHT34RLH5060 EDP: 30348	GMHT34RLH5090 EDP: 30349	GMHT34RLH5120 EDP: 30350	GMHT34RLH5190 EDP: 30351	GMHT34RLH5250 EDP: 30352
	3/4	3-1/4	6.0	GMHT34FXL5 EDP: 30322	—	GMHT34RXL5030 EDP: 30371	GMHT34RXL5060 EDP: 30372	GMHT34RXL5090 EDP: 30373	GMHT34RXL5120 EDP: 30374	GMHT34RXL5190 EDP: 30375	GMHT34RXL5250 EDP: 30376

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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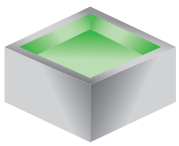
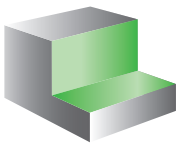


HIGH-VELOCITY



PATENT NO. 7,153,067

Continued on next page

SUPER BITCHIN' PERFORMANCE
5 FLUTE (INCH)

Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

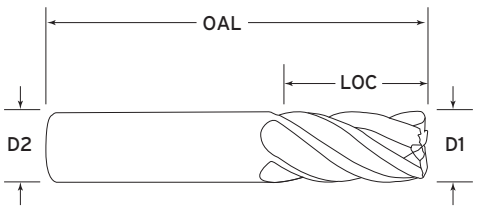
Available in special diameters, lengths and completely resharpenable.

GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

SPEEDS & FEEDS CHART PAGE 63

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)						
					0.015	0.030	0.060	0.090	0.120	0.190	0.250
1.0	1.0	1.0	4.0	GMHT10FS5 EDP: 30051	—	GMHT10RS5030 EDP: 30082	GMHT10RS5060 EDP: 30083	GMHT10RS5090 EDP: 30084	GMHT10RS5120 EDP: 30085	GMHT10RS5190 EDP: 30086	GMHT10RS5250 EDP: 30087
	1.0	1-1/2	4.0	GMHT10F5 EDP: 30047	—	GMHT10R5030 EDP: 30058	GMHT10R5060 EDP: 30059	GMHT10R5090 EDP: 30060	GMHT10R5120 EDP: 30061	GMHT10R5190 EDP: 30062	GMHT10R5250 EDP: 30063
	1.0	2-1/4	5.0	GMHT10FLH5 EDP: 30049	—	GMHT10RLH5030 EDP: 30070	GMHT10RLH5060 EDP: 30071	GMHT10RLH5090 EDP: 30072	GMHT10RLH5120 EDP: 30073	GMHT10RLH5190 EDP: 30074	GMHT10RLH5250 EDP: 30075
	1.0	2-5/8	5.0	GMHT10FXLH5 EDP: 30056	—	GMHT10RXLH5030 EDP: 30112	GMHT10RXLH5060 EDP: 30113	GMHT10RXLH5090 EDP: 30114	GMHT10RXLH5120 EDP: 30115	GMHT10RXLH5190 EDP: 30116	GMHT10RXLH5250 EDP: 30117
	1.0	3-1/4	6.0	GMHT10FXL5 EDP: 30054	—	GMHT10RXL5030 EDP: 30100	GMHT10RXL5060 EDP: 30101	GMHT10RXL5090 EDP: 30102	GMHT10RXL5120 EDP: 30103	GMHT10RXL5190 EDP: 30104	GMHT10RXL5250 EDP: 30105
	1.0	4.0	7.0	GMHT10FSL5 EDP: 30053	—	GMHT10RSL5030 EDP: 30094	GMHT10RSL5060 EDP: 30095	GMHT10RSL5090 EDP: 30096	GMHT10RSL5120 EDP: 30097	GMHT10RSL5190 EDP: 30098	GMHT10RSL5250 EDP: 30099
1-1/4	1-1/4	2.0	4-1/2	GMHT1250F5 EDP: 30142	—	—	GMHT1250R5060 EDP: 30150	GMHT1250R5090 EDP: 30151	GMHT1250R5120 EDP: 30152	GMHT1250R5190 EDP: 30153	GMHT1250R5250 EDP: 30154
	1-1/4	2-5/8	5-1/2	GMHT1250FL5 EDP: 30144	—	—	GMHT1250RL5060 EDP: 30160	GMHT1250RL5090 EDP: 30161	GMHT1250RL5120 EDP: 30162	GMHT1250RL5190 EDP: 30163	GMHT1250RL5250 EDP: 30164
	1-1/4	3-1/4	6.0	GMHT1250FXL5 EDP: 30148	—	—	GMHT1250RXL5060 EDP: 30180	GMHT1250RXL5090 EDP: 30181	GMHT1250RXL5120 EDP: 30182	GMHT1250RXL5190 EDP: 30183	GMHT1250RXL5250 EDP: 30184
	1-1/4	4.0	7.0	GMHT1250FSL5 EDP: 30146	—	—	GMHT1250RSL5060 EDP: 30170	GMHT1250RSL5090 EDP: 30171	GMHT1250RSL5120 EDP: 30172	GMHT1250RSL5190 EDP: 30173	GMHT1250RSL5250 EDP: 30174

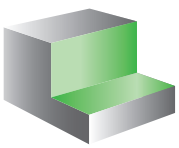
PATENT NO. 7,153,067



Based on the original 5 flute Gorilla Mill, the "Phenom" for High Temp Alloys features geometric enhancements that make it uniquely suited for difficult to machine materials.

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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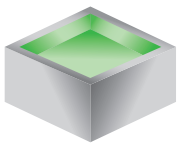
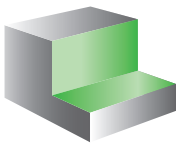


HIGH-VELOCITY



MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels, (A36,1018,8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)	

5 FLUTE PHENOM (INCH) SPEEDS & FEEDS CHART FOR PROFILING, CHIMP LOAD PER TOOTH

NOTE MAX STEP OVER IS 50% OF CUTTER DIAMETER

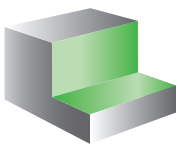
WORK PIECE MATERIAL	SFM	1/4"			5/16"			3/8"			7/16"			1/2"		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%	5%	15%	30%	5%	15%	30%	5%	15%	30%	5%	15%	30%
Gray Cast Iron	675	.0028	.0017	.0013	.0035	.0021	.0017	.0039	.0024	.0019	.0051	.0031	.0024	.0058	.0035	.0028
Ductile Iron	500	.0028	.0017	.0013	.0032	.0020	.0015	.0039	.0024	.0019	.0048	.0029	.0023	.0055	.0034	.0026
Soft Steels (A36,1018, 8620,1045)	800	.0023	.0014	.0011	.0030	.0018	.0014	.0035	.0021	.0017	.0041	.0025	.0020	.0048	.0029	.0023
Alloy Steels (4340,4140)	550	.0023	.0014	.0011	.0035	.0021	.0017	.0041	.0025	.0020	.0046	.0028	.0022	.0055	.0034	.0026
4140 Pre-Hard (38 to 42 Rc)	400	.0014	.0008	.0007	.0018	.0011	.0009	.0025	.0015	.0012	.0030	.0018	.0014	.0041	.0025	.0020
Tool Steels (A2,D2,S7)	350	.0018	.0011	.0009	.0028	.0017	.0013	.0037	.0022	.0018	.0046	.0028	.0022	.0051	.0031	.0024
Die Steels (H13,P20)	400	.0025	.0015	.0012	.0035	.0021	.0017	.0046	.0028	.0022	.0053	.0032	.0025	.0058	.0035	.0028
Stainless Steel (303, 304, 316)	450	.0018	.0011	.0009	.0028	.0017	.0013	.0037	.0022	.0018	.0044	.0027	.0021	.0051	.0031	.0024
Difficult Stainless Steel (400 & PH Series)	400	.0016	.0010	.0008	.0023	.0014	.0011	.0032	.0020	.0015	.0039	.0024	.0019	.0046	.0028	.0022
Stainless Steel (13-8)	150	.0014	.0008	.0007	.0018	.0011	.0009	.0025	.0015	.0012	.0030	.0018	.0014	.0041	.0025	.0020
High Temp. Alloys	275	.0016	.0010	.0008	.0025	.0015	.0012	.0032	.0020	.0015	.0037	.0022	.0018	.0044	.0027	.0021
Titanium (6AL4V)	300	.0016	.0010	.0008	.0028	.0017	.0013	.0037	.0022	.0018	.0044	.0027	.0021	.0053	.0032	.0025
Inconel 718	160	.0014	.0008	.0007	.0018	.0011	.0009	.0025	.0015	.0012	.0030	.0018	.0014	.0041	.0025	.0020
Inconel 625	150	.0014	.0008	.0007	.0018	.0011	.0009	.0025	.0015	.0012	.0030	.0018	.0014	.0041	.0025	.0020

WORK PIECE MATERIAL	SFM	5/8"			3/4"			1"			1-1/4"		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%	5%	15%	30%	5%	15%	30%	5%	15%	30%
Gray Cast Iron	675	.0069	.0042	.0033	.0081	.0049	.0039	.0092	.0056	.0044	.0103	.0063	.0049
Ductile Iron	500	.0067	.0041	.0032	.0076	.0046	.0036	.0087	.0053	.0042	.0097	.0059	.0047
Soft Steels (A36,1018, 8620,1045)	800	.0062	.0038	.0030	.0074	.0045	.0035	.0092	.0056	.0044	.0103	.0063	.0049
Alloy Steels (4340,4140)	550	.0064	.0039	.0031	.0078	.0048	.0037	.0092	.0056	.0044	.0103	.0063	.0049
4140 Pre-Hard (38 to 42 Rc)	400	.0051	.0031	.0024	.0069	.0042	.0033	.0081	.0049	.0039	.0091	.0055	.0044
Tool Steels (A2,D2,S7)	350	.0060	.0036	.0029	.0069	.0042	.0033	.0083	.0050	.0040	.0093	.0056	.0045
Die Steels (H13,P20)	400	.0064	.0039	.0031	.0078	.0048	.0037	.0092	.0056	.0044	.0103	.0063	.0049
Stainless Steel (303, 304, 316)	450	.0060	.0036	.0029	.0074	.0045	.0035	.0087	.0053	.0042	.0097	.0059	.0047
Difficult Stainless Steel (400 & PH Series)	400	.0055	.0034	.0026	.0069	.0042	.0033	.0081	.0063	.0039	.0091	.0055	.0044
Stainless Steel (13-8)	150	.0051	.0031	.0024	.0069	.0042	.0033	.0081	.0049	.0039	.0091	.0055	.0044
High Temp. Alloys	275	.0051	.0031	.0024	.0064	.0039	.0031	.0076	.0046	.0036	.0085	.0052	.0040
Titanium (6AL4V)	300	.0062	.0038	.0030	.0074	.0045	.0035	.0092	.0072	.0044	.0103	.0063	.0049
Inconel 718	160	.0051	.0031	.0024	.0069	.0042	.0033	.0081	.0049	.0039	.0091	.0055	.0044
Inconel 625	150	.0051	.0031	.0024	.0069	.0042	.0033	.0081	.0049	.0039	.0091	.0055	.0044

**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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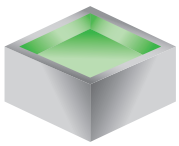
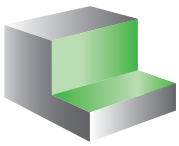


HIGH-VELOCITY



SUPER BITCHIN' PERFORMANCE
5 FLUTE (METRIC)

Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

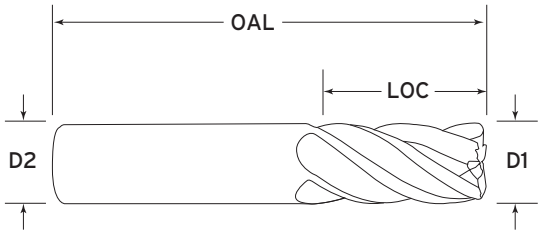
Available in special diameters, lengths and completely resharpenable.

GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

SPEEDS & FEEDS CHART PAGE 66

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Metric)					
					0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
3mm	3mm	8mm	38mm	GMHT0300MMFS5 EDP: 30001	GMHT0300MMRS5020 EDP: 30004	—	—	—	—	—
	3mm	12mm	38mm	GMHT0300MMF5 EDP: 30000	GMHT0300MMR5020 EDP: 30002	—	GMHT0300MMR5050 EDP: 30003	—	—	—
4mm	6mm	8mm	50mm	—	—	GMHT0400MMRS5030 EDP: 30008	—	—	—	—
	6mm	12mm	50mm	GMHT0400MMF5 EDP: 30005	—	GMHT0400MMR5030 EDP: 30006	GMHT0400MMR5050 EDP: 30007	—	—	—
5mm	6mm	10mm	50mm	—	—	GMHT0500MMRS5030 EDP: 30012	—	—	—	—
	6mm	15mm	65mm	GMHT0500MMF5 EDP: 30009	—	GMHT0500MMR5030 EDP: 30010	GMHT0500MMR5050 EDP: 30011	—	—	—
6mm	6mm	12mm	50mm	GMHT0600MMFS5 EDP: 30015	—	GMHT0600MMRS5030 EDP: 30021	—	—	—	—
	6mm	19mm	65mm	GMHT0600MMF5 EDP: 30013	—	GMHT0600MMR5030 EDP: 30017	GMHT0600MMR5050 EDP: 30018	—	—	—
8mm	8mm	12mm	50mm	GMHT0800MMFS5 EDP: 30025	—	—	GMHT0800MMRS5050 EDP: 30035	—	—	—
	8mm	22mm	65mm	GMHT0800MMF5 EDP: 30023	—	GMHT0800MMR5030 EDP: 30027	GMHT0800MMR5050 EDP: 30028	GMHT0800MMR5100 EDP: 30029	GMHT0800MMR5150 EDP: 30030	—
10mm	10mm	16mm	50mm	—	—	—	GMHT1000MMRS5050 EDP: 30045	—	—	—
	10mm	22mm	70mm	GMHT1000MMF5 EDP: 30037	—	GMHT1000MMR5030 EDP: 30039	GMHT1000MMR5050 EDP: 30040	GMHT1000MMR5100 EDP: 30041	—	—

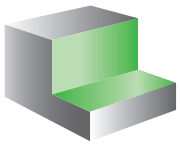
PATENT NO. 7,153,067



Based on the original 5 flute Gorilla Mill, the "Phenom" for High Temp Alloys features geometric enhancements that make it uniquely suited for difficult to machine materials.

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING



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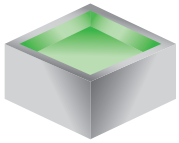
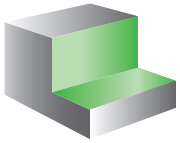


HIGH-VELOCITY



MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels, (A36,1018,8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)	

GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

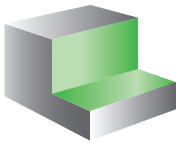
SPEEDS & FEEDS CHART PAGE 66

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Metric)					
					0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
12mm	12mm	19mm	63mm	GMHT1200MMFS5 EDP: 30126	—	GMHT1200MMRS5030 EDP: 30138	GMHT1200MMRS5050 EDP: 30139	—	—	—
	12mm	32mm	75mm	GMHT1200MMF5 EDP: 30124	—	GMHT1200MMR5030 EDP: 30128	GMHT1200MMR5050 EDP: 30129	GMHT1200MMR5100 EDP: 30130	GMHT1200MMR5150 EDP: 30131	GMHT1200MMR5200 EDP: 30132
16mm	16mm	19mm	75mm	—	—	GMHT1600MMRS5030 EDP: 30294	GMHT1600MMRS5050 EDP: 30295	—	—	—
	16mm	32mm	89mm	GMHT1600MMF5 EDP: 30284	—	GMHT1600MMR5030 EDP: 30286	GMHT1600MMR5050 EDP: 30287	GMHT1600MMR5100 EDP: 30288	—	GMHT1600MMR5200 EDP: 30289
20mm	20mm	22mm	75mm	—	—	—	—	GMHT2000MMRS5100 EDP: 30306	—	—
	20mm	38mm	100mm	GMHT2000MMF5 EDP: 30298	—	—	GMHT2000MMR5050 EDP: 30300	GMHT2000MMR5100 EDP: 30301	GMHT2000MMR5150 EDP: 30302	—
25mm	25mm	38mm	100mm	GMHT2500MMF5 EDP: 30308	—	—	—	GMHT2500MMR5100 EDP: 30310	GMHT2500MMR5150 EDP: 30311	—

PATENT NO. 7,153,067

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING



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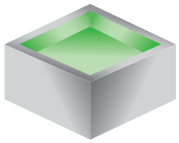
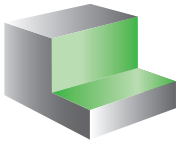


HIGH-VELOCITY



5 FLUTE PHENOM (METRIC) SPEEDS & FEEDS CHART FOR PROFILING, METRIC CHIMP LOAD PER TOOTH NOTE MAX STEP OVER IS 50% OF CUTTER DIAMETER

WORK PIECE MATERIAL	SFM	3mm			4mm			5mm			6mm		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%	5%	15%	30%	5%	15%	30%	5%	15%	30%
Gray Cast Iron	675	.0450	.0270	.0220	.0530	.0330	.0250	.0610	.0380	.0300	.0710	.0430	.0330
Ductile Iron	500	.0300	.0170	.0150	.0350	.0220	.0170	.0430	.0270	.0220	.0710	.0430	.0330
Soft Steels (A36,1018, 8620,1045)	800	.0300	.0170	.0150	.0350	.0220	.0170	.0430	.0270	.0220	.0580	.0350	.0270
Alloy Steels (4340,4140)	550	.0220	.0150	.0100	.0300	.0170	.0150	.0380	.0220	.0200	.0580	.0350	.0270
4140 Pre-Hard (38 to 42 Rc)	400	.0170	.0100	.0070	.0190	.0120	.0080	.0220	.0150	.0100	.0350	.0200	.0170
Tool Steels (A2,D2,S7)	350	.0220	.0150	.0100	.0300	.0170	.0150	.0380	.0220	.0200	.0450	.0270	.0220
Die Steels (H13,P20)	400	.0220	.0150	.0100	.0300	.0170	.0150	.0380	.0220	.0200	.0630	.0380	.0300
Stainless Steel (303, 304, 316)	450	.0220	.0150	.0100	.0300	.0170	.0150	.0380	.0220	.0200	.0450	.0270	.0220
Difficult Stainless Steel (400 & PH Series)	400	.0170	.0100	.0070	.0190	.0120	.0080	.0220	.0150	.0100	.0400	.0250	.0200
Stainless Steel (13-8)	150	.0170	.0100	.0070	.0190	.0120	.0080	.0220	.0150	.0100	.0350	.0200	.0170
High Temp. Alloys	275	.0220	.0150	.0100	.0250	.0150	.0120	.0330	.0200	.0170	.0400	.0250	.0200
Titanium (6AL4V)	300	.0220	.0150	.0100	.0250	.0150	.0120	.0330	.0200	.0170	.0400	.0250	.0200
Inconel 718	160	.0170	.0100	.0070	.0190	.0120	.0080	.0250	.0170	.0120	.0350	.0200	.0170
Inconel 625	150	.0170	.0100	.0070	.0190	.0120	.0080	.0250	.0170	.0120	.0350	.0200	.0170

WORK PIECE MATERIAL	SFM	8mm			10mm			12mm		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%	5%	15%	30%	5%	15%	30%
Gray Cast Iron	675	.0880	.0530	.0430	.1010	.0630	.0500	.1420	.0830	.0660
Ductile Iron	500	.0810	.0500	.0380	.1010	.0630	.0500	.1340	.0810	.0610
Soft Steels (A36,1018, 8620,1045)	800	.0760	.0450	.0350	.0910	.0550	.0450	.1160	.0680	.0530
Alloy Steels (4340,4140)	550	.0880	.0530	.0430	.1060	.0660	.0530	.1340	.0810	.0610
4140 Pre-Hard (38 to 42 Rc)	400	.0450	.0270	.0220	.0660	.0400	.0330	.0990	.0580	.0450
Tool Steels (A2,D2,S7)	350	.0710	.0430	.0330	.0960	.0580	.0480	.1240	.0730	.0550
Die Steels (H13,P20)	400	.0880	.0530	.0430	.1190	.0730	.0580	.1420	.0830	.0660
Stainless Steel (303, 304, 316)	450	.0710	.0430	.0330	.0960	.0580	.0480	.1240	.0730	.0550
Difficult Stainless Steel (400 & PH Series)	400	.0580	.0350	.0270	.0830	.0530	.0400	.1110	.0660	.0500
Stainless Steel (13-8)	150	.0450	.0270	.0220	.0660	.0400	.0330	.0990	.0580	.0450
High Temp. Alloys	275	.0630	.0380	.0300	.0830	.0530	.0400	.1060	.0630	.0480
Titanium (6AL4V)	300	.0710	.0430	.0330	.0960	.0580	.0480	.1290	.0760	.0580
Inconel 718	160	.0450	.0270	.0220	.0660	.0400	.0330	.0990	.0580	.0450
Inconel 625	150	.0450	.0270	.0220	.0660	.0400	.0330	.0990	.0580	.0450

WORK PIECE MATERIAL	SFM	16mm			20mm			25mm		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%	5%	15%	30%	5%	15%	30%
Gray Cast Iron	675	.1750	.1060	.0830	.2100	.1290	.1040	.2330	.1600	.1110
Ductile Iron	500	.1700	.1040	.0810	.1980	.1210	.0960	.2210	.1340	.1060
Soft Steels (A36,1018, 8620,1045)	800	.1570	.0960	.0760	.1930	.1190	.0940	.2330	.1600	.1110
Alloy Steels (4340,4140)	550	.1620	.0990	.0780	.2030	.1270	.0990	.2330	.1600	.1110
4140 Pre-Hard (38 to 42 Rc)	400	.1290	.0780	.0610	.1800	.1110	.0880	.2050	.1240	.0990
Tool Steels (A2,D2,S7)	350	.1520	.0910	.0730	.1800	.1110	.0880	.2100	.1270	.1010
Die Steels (H13,P20)	400	.1620	.0990	.0780	.2030	.1270	.0990	.2330	.1600	.1110
Stainless Steel (303, 304, 316)	450	.1520	.0910	.0730	.1930	.1190	.0940	.2210	.1340	.1060
Difficult Stainless Steel (400 & PH Series)	400	.1390	.0860	.0660	.1800	.1110	.0880	.2050	.1600	.0990
Stainless Steel (13-8)	150	.1290	.0780	.0610	.1800	.1110	.0880	.2050	.1240	.0990
High Temp. Alloys	275	.1290	.0780	.0610	.1670	.1040	.0830	.1930	.1160	.0910
Titanium (6AL4V)	300	.1570	.0960	.0760	.1930	.1190	.0940	.2330	.1820	.1110
Inconel 718	160	.1290	.0780	.0610	.1800	.1110	.0880	.2050	.1240	.0990
Inconel 625	150	.1290	.0780	.0610	.1800	.1110	.0880	.2050	.1240	.0990

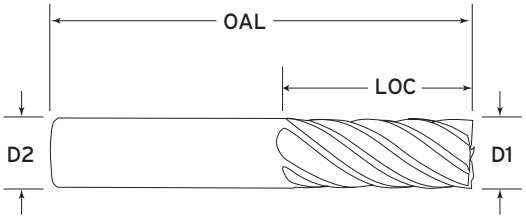
*Recommended Speeds & Feeds

SUPER BITCHIN' PERFORMANCE
7 FLUTE (INCH)

Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable.

GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.



Based on the original 5 flute Gorilla Mill, the "Baboon" for High Temp Alloys features geometric enhancements that make it uniquely suited for difficult to machine materials.

MATERIALS

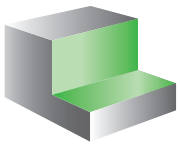
Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels (A36,1018,8620,1045)	Die Steels (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)	

SPEEDS & FEEDS CHART PAGE 70

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)						
					0.015	0.030	0.060	0.090	0.120	0.190	0.250
1/4	1/4	1/2	2.0	GMHT14FS7 EDP: 30261	GMHT14RS7015 EDP: 30278	GMHT14RS7030 EDP: 30279	GMHT14RS7060 EDP: 30280	—	—	—	—
	1/4	3/4	2-1/2	GMHT14F7 EDP: 30257	GMHT14R7015 EDP: 30266	GMHT14R7030 EDP: 30267	GMHT14R7060 EDP: 30268	—	—	—	—
	1/4	1-1/4	3.0	GMHT14FL7 EDP: 30259	GMHT14RL7015 EDP: 30272	GMHT14RL7030 EDP: 30273	GMHT14RL7060 EDP: 30274	—	—	—	—
5/16	5/16	1/2	2.0	GMHT516FS7 EDP: 30427	GMHT516RS7015 EDP: 30444	GMHT516RS7030 EDP: 30445	GMHT516RS7060 EDP: 30446	—	—	—	—
	5/16	7/8	2-1/2	GMHT516F7 EDP: 30423	GMHT516R7015 EDP: 30432	GMHT516R7030 EDP: 30433	GMHT516R7060 EDP: 30434	—	—	—	—
	5/16	1.0	2-1/2	GMHT516FH7 EDP: 30425	GMHT516RH7015 EDP: 30438	GMHT516RH7030 EDP: 30439	GMHT516RH7060 EDP: 30440	—	—	—	—
3/8	3/8	5/8	2.0	GMHT38FS7 EDP: 30384	GMHT38RS7015 EDP: 30414	GMHT38RS7030 EDP: 30415	GMHT38RS7060 EDP: 30416	GMHT38RS7090 EDP: 30417	—	—	—
	3/8	7/8	2-1/2	GMHT38F7 EDP: 30378	GMHT38R7015 EDP: 30390	GMHT38R7030 EDP: 30391	GMHT38R7060 EDP: 30392	GMHT38R7090 EDP: 30393	—	—	—
	3/8	1.0	2-1/2	GMHT38FH7 EDP: 30380	GMHT38RH7015 EDP: 30398	GMHT38RH7030 EDP: 30399	GMHT38RH7060 EDP: 30400	GMHT38RH7090 EDP: 30401	—	—	—
	3/8	1-1/4	3.0	GMHT38FL7 EDP: 30382	GMHT38RL7015 EDP: 30406	GMHT38RL7030 EDP: 30407	GMHT38RL7060 EDP: 30408	GMHT38RL7090 EDP: 30409	—	—	—

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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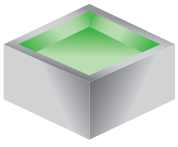
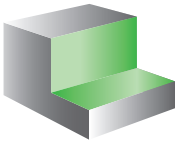


HIGH-VELOCITY



Continued on next page

SUPER BITCHIN' PERFORMANCE
7 FLUTE (INCH)

Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable.

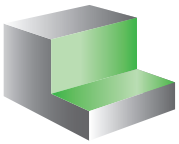
GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

SPEEDS & FEEDS CHART PAGE 70

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)						
					0.015	0.030	0.060	0.090	0.120	0.190	0.250
7/16	7/16	5/8	2-1/2	GMHT716FS7 EDP: 30495	GMHT716RS7015 EDP: 30516	GMHT716RS7030 EDP: 30517	GMHT716RS7060 EDP: 30518	GMHT716RS7090 EDP: 30519	—	—	—
	7/16	1.0	2-1/2	GMHT716F7 EDP: 30491	GMHT716R7015 EDP: 30500	GMHT716R7030 EDP: 30501	GMHT716R7060 EDP: 30502	GMHT716R7090 EDP: 30503	—	—	—
	7/16	1-1/2	3-1/2	GMHT716FL7 EDP: 30493	GMHT716RL7015 EDP: 30508	GMHT716RL7030 EDP: 30509	GMHT716RL7060 EDP: 30510	GMHT716RL7090 EDP: 30511	—	—	—
1/2	1/2	5/8	2-1/2	GMHT12FS7 EDP: 30197	GMHT12RS7015 EDP: 30236	GMHT12RS7030 EDP: 30237	GMHT12RS7060 EDP: 30238	GMHT12RS7090 EDP: 30239	GMHT12RS7120 EDP: 30240	—	—
	1/2	1.0	3.0	GMHT12FH7 EDP: 30193	GMHT12RH7015 EDP: 30216	GMHT12RH7030 EDP: 30217	GMHT12RH7060 EDP: 30218	GMHT12RH7090 EDP: 30219	GMHT12RH7120 EDP: 30220	—	—
	1/2	1-1/4	3.0	GMHT12F7 EDP: 30191	GMHT12R7015 EDP: 30206	GMHT12R7030 EDP: 30207	GMHT12R7060 EDP: 30208	GMHT12R7090 EDP: 30209	GMHT12R7120 EDP: 30210	—	—
	1/2	1-5/8	4.0	GMHT12FLH7 EDP: 30195	GMHT12RLH7015 EDP: 30226	GMHT12RLH7030 EDP: 30227	GMHT12RLH7060 EDP: 30228	GMHT12RLH7090 EDP: 30229	GMHT12RLH7120 EDP: 30230	—	—
	1/2	2.0	4.0	GMHT12FXL7 EDP: 30200	GMHT12RXL7015 EDP: 30251	GMHT12RXL7030 EDP: 30252	GMHT12RXL7060 EDP: 30253	GMHT12RXL7090 EDP: 30254	GMHT12RXL7120 EDP: 30255	—	—
5/8	5/8	3/4	3-1/2	GMHT58FS7 EDP: 30457	—	GMHT58RS7030 EDP: 30486	GMHT58RS7060 EDP: 30487	GMHT58RS7090 EDP: 30488	GMHT58RS7120 EDP: 30489	—	—
	5/8	1-1/4	3-1/2	GMHT58F7 EDP: 30451	—	GMHT58R7030 EDP: 30462	GMHT58R7060 EDP: 30463	GMHT58R7090 EDP: 30464	GMHT58R7120 EDP: 30465	—	—
	5/8	1-5/8	4.0	GMHT58FHL7 EDP: 30453	—	GMHT58RHL7030 EDP: 30470	GMHT58RHL7060 EDP: 30471	GMHT58RHL7090 EDP: 30472	GMHT58RHL7120 EDP: 30473	—	—
	5/8	2.0	4.0	GMHT58FL7 EDP: 30455	—	GMHT58RL7030 EDP: 30478	GMHT58RL7060 EDP: 30479	GMHT58RL7090 EDP: 30480	GMHT58RL7120 EDP: 30481	—	—

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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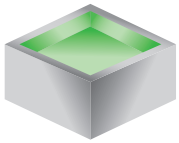
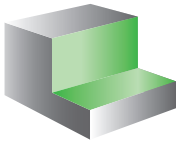


HIGH-VELOCITY



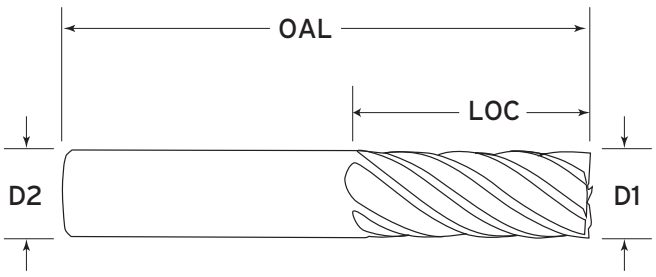
MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels (A36,1018,8620,1045)	Die Steels (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)	

GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

SPEEDS & FEEDS CHART PAGE 70

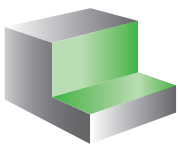
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch) 0.015	0.030	0.060	0.090	0.120	0.190	0.250
3/4	3/4	1.0	4.0	GMHT34FS7 EDP: 30321	—	GMHT34RS7030 EDP: 30365	GMHT34RS7060 EDP: 30366	GMHT34RS7090 EDP: 30367	GMHT34RS7120 EDP: 30368	GMHT34RS7190 EDP: 30369	GMHT34RS7250 EDP: 30370
	3/4	1-1/2	4.0	GMHT34F7 EDP: 30315	—	GMHT34R7030 EDP: 30329	GMHT34R7060 EDP: 30330	GMHT34R7090 EDP: 30331	GMHT34R7120 EDP: 30332	GMHT34R7190 EDP: 30333	GMHT34R7250 EDP: 30334
	3/4	1-5/8	4.0	GMHT34FHL7 EDP: 30317	—	GMHT34RHL7030 EDP: 30341	GMHT34RHL7060 EDP: 30342	GMHT34RHL7090 EDP: 30343	GMHT34RHL7120 EDP: 30344	GMHT34RHL7190 EDP: 30345	GMHT34RHL7250 EDP: 30346
	3/4	2-1/4	5.0	GMHT34FLH7 EDP: 30319	—	GMHT34RLH7030 EDP: 30353	GMHT34RLH7060 EDP: 30354	GMHT34RLH7090 EDP: 30355	GMHT34RLH7120 EDP: 30356	GMHT34RLH7190 EDP: 30357	GMHT34RLH7250 EDP: 30358
1.0	1.0	1.0	4.0	GMHT10FS7 EDP: 30052	—	GMHT10RS7030 EDP: 30088	GMHT10RS7060 EDP: 30089	GMHT10RS7090 EDP: 30090	GMHT10RS7120 EDP: 30091	GMHT10RS7190 EDP: 30092	GMHT10RS7250 EDP: 30093
	1.0	1-1/2	4.0	GMHT10F7 EDP: 30048	—	GMHT10R7030 EDP: 30064	GMHT10R7060 EDP: 30065	GMHT10R7090 EDP: 30066	GMHT10R7120 EDP: 30067	GMHT10R7190 EDP: 30068	GMHT10R7250 EDP: 30069
	1.0	2-1/4	5.0	GMHT10FLH7 EDP: 30050	—	GMHT10RLH7030 EDP: 30076	GMHT10RLH7060 EDP: 30077	GMHT10RLH7090 EDP: 30078	GMHT10RLH7120 EDP: 30079	GMHT10RLH7190 EDP: 30080	GMHT10RLH7250 EDP: 30081
	1.0	2-5/8	5.0	GMHT10FXLH7 EDP: 30057	—	GMHT10RXLH7030 EDP: 30118	GMHT10RXLH7060 EDP: 30119	GMHT10RXLH7090 EDP: 30120	GMHT10RXLH7120 EDP: 30121	GMHT10RXLH7190 EDP: 30122	GMHT10RXLH7250 EDP: 30123
	1.0	3-1/4	6.0	GMHT10FXL7 EDP: 30055	—	GMHT10RXL7030 EDP: 30106	GMHT10RXL7060 EDP: 30107	GMHT10RXL7090 EDP: 30108	GMHT10RXL7120 EDP: 30109	GMHT10RXL7190 EDP: 30110	GMHT10RXL7250 EDP: 30111
1-1/4	1-1/4	2.0	4-1/2	GMHT1250F7 EDP: 30143	—	—	GMHT1250R7060 EDP: 30155	GMHT1250R7090 EDP: 30156	GMHT1250R7120 EDP: 30157	GMHT1250R7190 EDP: 30158	GMHT1250R7250 EDP: 30159
	1-1/4	2-5/8	5-1/2	GMHT1250FL7 EDP: 30145	—	—	GMHT1250RL7060 EDP: 30165	GMHT1250RL7090 EDP: 30166	GMHT1250RL7120 EDP: 30167	GMHT1250RL7190 EDP: 30168	GMHT1250RL7250 EDP: 30169
	1-1/4	3-1/4	6.0	GMHT1250FXL7 EDP: 30149	—	—	GMHT1250RXL7060 EDP: 30185	GMHT1250RXL7090 EDP: 30186	GMHT1250RXL7120 EDP: 30187	GMHT1250RXL7190 EDP: 30188	GMHT1250RXL7250 EDP: 30189
	1-1/4	4.0	7.0	GMHT1250FSL7 EDP: 30147	—	—	GMHT1250RSL7060 EDP: 30175	GMHT1250RSL7090 EDP: 30176	GMHT1250RSL7120 EDP: 30177	GMHT1250RSL7190 EDP: 30178	GMHT1250RSL7250 EDP: 30179



Based on the original 5 flute Gorilla Mill, the “Baboon” for High Temp Alloys features geometric enhancements that make it uniquely suited for difficult to machine materials.

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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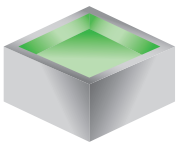
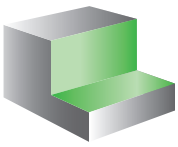


HIGH-VELOCITY



MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels (A36,1018,8620,1045)	Die Steels (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)	

7 FLUTE BABOON (INCH) SPEEDS & FEEDS CHART FOR PROFILING, CHIMP LOAD PER TOOTH

NOTE MAX STEP OVER IS 30% OF CUTTER DIAMETER

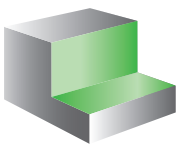
WORK PIECE MATERIAL	SFM	1/4"			5/16"			3/8"			7/16"			1/2"		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%	5%	15%	30%	5%	15%	30%	5%	15%	30%	5%	15%	30%
Gray Cast Iron	800	.0028	.0017	.0013	.0035	.0021	.0017	.0039	.0024	.0019	.0051	.0031	.0024	.0058	.0035	.0028
Ductile Iron	625	.0028	.0017	.0013	.0032	.0020	.0015	.0039	.0024	.0019	.0048	.0029	.0023	.0055	.0034	.0026
Soft Steels (A36,1018, 8620,1045)	900	.0023	.0014	.0011	.0030	.0018	.0014	.0035	.0021	.0017	.0041	.0025	.0020	.0048	.0029	.0023
Alloy Steels (4340,4140)	625	.0023	.0014	.0011	.0035	.0021	.0017	.0041	.0025	.0020	.0046	.0028	.0022	.0055	.0034	.0026
4140 Pre-Hard (38 to 42 Rc)	450	.0014	.0008	.0007	.0018	.0011	.0009	.0025	.0015	.0012	.0030	.0018	.0014	.0041	.0025	.0020
Tool Steels (A2,D2,S7)	400	.0018	.0011	.0009	.0028	.0017	.0013	.0037	.0022	.0018	.0046	.0028	.0022	.0051	.0031	.0024
Die Steels (H13,P20)	450	.0025	.0015	.0012	.0035	.0021	.0017	.0046	.0028	.0022	.0053	.0032	.0025	.0058	.0035	.0028
Stainless Steel (303, 304, 316)	500	.0018	.0011	.0009	.0028	.0017	.0013	.0037	.0022	.0018	.0044	.0027	.0021	.0051	.0031	.0024
Difficult Stainless Steel (400 & PH Series)	450	.0016	.0010	.0008	.0023	.0014	.0011	.0032	.0020	.0015	.0039	.0024	.0019	.0046	.0028	.0022
Stainless Steel (13-8)	180	.0014	.0008	.0007	.0018	.0011	.0009	.0025	.0015	.0012	.0030	.0018	.0014	.0041	.0025	.0020
High Temp. Alloys	325	.0016	.0010	.0008	.0025	.0015	.0012	.0032	.0020	.0015	.0037	.0022	.0018	.0044	.0027	.0021
Titanium (6AL4V)	300	.0016	.0010	.0008	.0028	.0017	.0013	.0037	.0022	.0018	.0044	.0027	.0021	.0053	.0032	.0025
Inconel 718	200	.0014	.0008	.0007	.0018	.0011	.0009	.0025	.0015	.0012	.0030	.0018	.0014	.0041	.0025	.0020
Inconel 625	180	.0014	.0008	.0007	.0018	.0011	.0009	.0025	.0015	.0012	.0030	.0018	.0014	.0041	.0025	.0020

WORK PIECE MATERIAL	SFM	5/8"			3/4"			1"			1-1/4"		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%	5%	15%	30%	5%	15%	30%	5%	15%	30%
Gray Cast Iron	800	.0069	.0042	.0033	.0081	.0049	.0039	.0092	.0056	.0044	.0103	.0063	.0049
Ductile Iron	625	.0067	.0041	.0032	.0076	.0046	.0036	.0087	.0053	.0042	.0097	.0059	.0047
Soft Steels (A36,1018, 8620,1045)	900	.0062	.0038	.0030	.0074	.0045	.0035	.0092	.0056	.0044	.0103	.0063	.0049
Alloy Steels (4340,4140)	625	.0064	.0039	.0031	.0078	.0048	.0037	.0092	.0056	.0044	.0103	.0063	.0049
4140 Pre-Hard (38 to 42 Rc)	450	.0051	.0031	.0024	.0069	.0042	.0033	.0081	.0049	.0039	.0091	.0055	.0044
Tool Steels (A2,D2,S7)	400	.0060	.0036	.0029	.0069	.0042	.0033	.0083	.0050	.0040	.0093	.0056	.0045
Die Steels (H13,P20)	450	.0064	.0039	.0031	.0078	.0048	.0037	.0092	.0056	.0044	.0103	.0063	.0049
Stainless Steel (303, 304, 316)	500	.0060	.0036	.0029	.0074	.0045	.0035	.0087	.0053	.0042	.0097	.0059	.0047
Difficult Stainless Steel (400 & PH Series)	450	.0055	.0034	.0026	.0069	.0042	.0033	.0081	.0063	.0039	.0091	.0055	.0044
Stainless Steel (13-8)	180	.0051	.0031	.0024	.0069	.0042	.0033	.0081	.0049	.0039	.0091	.0055	.0044
High Temp. Alloys	325	.0051	.0031	.0024	.0064	.0039	.0031	.0076	.0046	.0036	.0085	.0052	.0040
Titanium (6AL4V)	300	.0062	.0038	.0030	.0074	.0045	.0035	.0092	.0072	.0044	.0103	.0063	.0049
Inconel 718	200	.0051	.0031	.0024	.0069	.0042	.0033	.0081	.0049	.0039	.0091	.0055	.0044
Inconel 625	180	.0051	.0031	.0024	.0069	.0042	.0033	.0081	.0049	.0039	.0091	.0055	.0044

**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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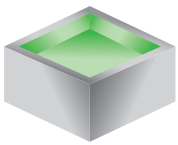
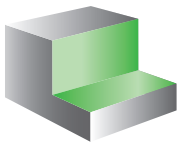


HIGH-VELOCITY



SUPER BITCHIN' PERFORMANCE
7 FLUTE (METRIC)

Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

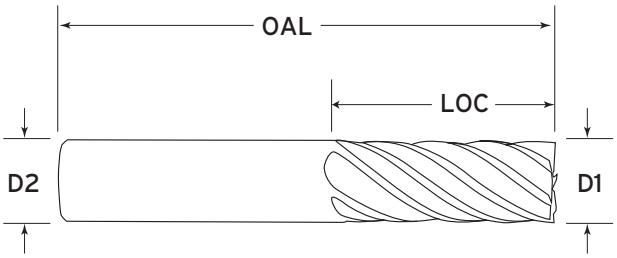
Available in special diameters, lengths and completely resharpenable.

GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

SPEEDS & FEEDS CHART PAGE 73

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Metric)				
					0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
6mm	6mm	12mm	50mm	GMHT0600MMFS7 EDP: 30016	GMHT0600MMRS7030 EDP: 30022	—	—	—	—
	6mm	19mm	65mm	GMHT0600MMF7 EDP: 30014	GMHT0600MMR7030 EDP: 30019	GMHT0600MMR7050 EDP: 30020	—	—	—
8mm	8mm	12mm	50mm	GMHT0800MMFS7 EDP: 30026	—	GMHT0800MMRS7050 EDP: 30036	—	—	—
	8mm	22mm	65mm	GMHT0800MMF7 EDP: 30024	GMHT0800MMR7030 EDP: 30031	GMHT0800MMR7050 EDP: 30032	GMHT0800MMR7100 EDP: 30033	GMHT0800MMR7150 EDP: 30034	—
10mm	10mm	16mm	50mm	—	—	GMHT1000MMRS7050 EDP: 30046	—	—	—
	10mm	22mm	70mm	GMHT1000MMF7 EDP: 30038	GMHT1000MMR7030 EDP: 30042	GMHT1000MMR7050 EDP: 30043	GMHT1000MMR7100 EDP: 30044	—	—

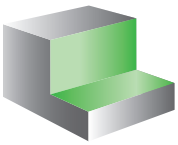
Continued on next page



Based on the original 5 flute Gorilla Mill, the "Baboon" for High Temp Alloys features geometric enhancements that make it uniquely suited for difficult to machine materials.

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING



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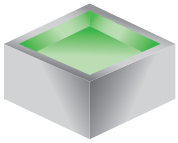
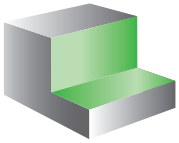


HIGH-VELOCITY



SUPER BITCHIN' PERFORMANCE
7 FLUTE (METRIC)

GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

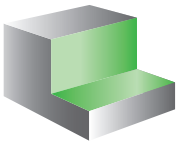
Available in special diameters, lengths and completely resharpenable.

SPEEDS & FEEDS CHART PAGE 73

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Metric)				
					0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
12mm	12mm	19mm	63mm	GMHT1200MMFS7 EDP: 30127	GMHT1200MMRS7030 EDP: 30140	GMHT1200MMRS7050 EDP: 30141	—	—	—
	12mm	32mm	75mm	GMHT1200MMF7 EDP: 30125	GMHT1200MMR7030 EDP: 30133	GMHT1200MMR7050 EDP: 30134	GMHT1200MMR7100 EDP: 30135	GMHT1200MMR7150 EDP: 30136	GMHT1200MMR7200 EDP: 30137
16mm	16mm	19mm	75mm	—	GMHT1600MMRS7030 EDP: 30296	GMHT1600MMRS7050 EDP: 30297	—	—	—
	16mm	32mm	89mm	GMHT1600MMF7 EDP: 30285	GMHT1600MMR7030 EDP: 30290	GMHT1600MMR7050 EDP: 30291	GMHT1600MMR7100 EDP: 30292	—	GMHT1600MMR7200 EDP: 30293
20mm	20mm	22mm	75mm	—	—	—	GMHT2000MMRS7100 EDP: 30307	—	—
	20mm	38mm	100mm	GMHT2000MMF7 EDP: 30299	—	GMHT2000MMR7050 EDP: 30303	GMHT2000MMR7100 EDP: 30304	GMHT2000MMR7150 EDP: 30305	—
25mm	25mm	38mm	100mm	GMHT2500MMF7 EDP: 30309	—	—	GMHT2500MMR7100 EDP: 30312	GMHT2500MMR7150 EDP: 30313	—

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING



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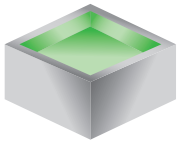
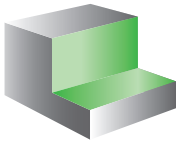


HIGH-VELOCITY



MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels (A36,1018,8620,1045)	Die Steels (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)	

7 FLUTE BABOON (METRIC) SPEEDS & FEEDS CHART FOR PROFILING, METRIC CHIMP LOAD PER TOOTH

NOTE MAX STEP OVER IS 30% OF CUTTER DIAMETER

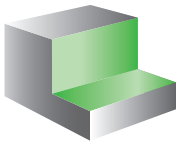
WORK PIECE MATERIAL	SFM	6mm			8mm			10mm			12mm		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%	5%	15%	30%	5%	15%	30%	5%	15%	30%
Gray Cast Iron	800	.0710	.0430	.0330	.0880	.0530	.0430	.1010	.0630	.0500	.1420	.0830	.0660
Ductile Iron	625	.0710	.0430	.0330	.0810	.0500	.0380	.1010	.0630	.0500	.1340	.0810	.0610
Soft Steels (A36,1018, 8620,1045)	900	.0580	.0350	.0270	.0760	.0450	.0350	.0910	.0550	.0450	.1160	.0680	.0530
Alloy Steels (4340,4140)	625	.0580	.0350	.0270	.0880	.0530	.0430	.1060	.0600	.0530	.1340	.0810	.0610
4140 Pre-Hard (38 to 42 Rc)	450	.0350	.0200	.0170	.0450	.0270	.0220	.0660	.0400	.0330	.0990	.0580	.0450
Tool Steels (A2,D2,S7)	400	.0450	.0270	.0220	.0710	.0430	.0330	.0960	.0580	.0480	.1240	.0730	.0550
Die Steels (H13,P20)	450	.0630	.0380	.0300	.0880	.0530	.0430	.1190	.0730	.0580	.1420	.0830	.0660
Stainless Steel (303, 304, 316)	500	.0450	.0270	.0220	.0710	.0430	.0330	.0960	.0580	.0480	.1240	.0730	.0550
Difficult Stainless Steel (400 & PH Series)	450	.0400	.0250	.0200	.0580	.0350	.0270	.0830	.0530	.0400	.1110	.0660	.0500
Stainless Steel (13-8)	180	.0350	.0200	.0170	.0450	.0270	.0220	.0660	.0400	.0330	.0990	.0580	.0450
High Temp. Alloys	325	.0400	.0250	.0200	.0630	.0380	.0300	.0830	.0530	.0400	.1060	.0630	.0480
Titanium (6AL4V)	300	.0400	.0250	.0200	.0710	.0430	.0330	.0960	.0580	.0480	.1290	.0760	.0580
Inconel 718	200	.0350	.0200	.0170	.0450	.0270	.0220	.0660	.0400	.0330	.0990	.0580	.0450
Inconel 625	180	.0350	.0200	.0170	.0450	.0270	.0220	.0660	.0400	.0330	.0990	.0580	.0450

WORK PIECE MATERIAL	SFM	16mm			20mm			25mm		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%	5%	15%	30%	5%	15%	30%
Gray Cast Iron	800	.1750	.1060	.0830	.2100	.1290	.1040	.2330	.1600	.1110
Ductile Iron	625	.1700	.1040	.0810	.1980	.1210	.0960	.2210	.1340	.1060
Soft Steels (A36,1018, 8620,1045)	900	.1570	.0960	.0760	.1930	.1190	.0940	.2330	.1600	.1110
Alloy Steels (4340,4140)	625	.1620	.0990	.0780	.2030	.1270	.0990	.2330	.1600	.1110
4140 Pre-Hard (38 to 42 Rc)	450	.1290	.0780	.0610	.1800	.1110	.0880	.2050	.1240	.0990
Tool Steels (A2,D2,S7)	400	.1520	.0910	.0730	.1800	.1110	.0880	.2100	.1270	.1010
Die Steels (H13,P20)	450	.1620	.0990	.0780	.2030	.1270	.0990	.2330	.1600	.1110
Stainless Steel (303, 304, 316)	500	.1520	.0910	.0730	.1930	.1190	.0940	.2210	.1340	.1060
Difficult Stainless Steel (400 & PH Series)	450	.1390	.0860	.0660	.1800	.1110	.0880	.2050	.1600	.0990
Stainless Steel (13-8)	180	.1290	.0780	.0610	.1800	.1110	.0880	.2050	.1240	.0990
High Temp. Alloys	325	.1290	.0780	.0610	.1670	.1040	.0830	.1930	.1160	.0910
Titanium (6AL4V)	300	.1570	.0960	.0760	.1930	.1190	.0940	.2330	.1820	.1110
Inconel 718	200	.1290	.0780	.0610	.1800	.1110	.0880	.2050	.1240	.0990
Inconel 625	180	.1290	.0780	.0610	.1800	.1110	.0880	.2050	.1240	.0990

**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING



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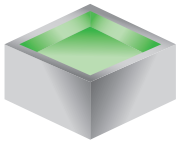
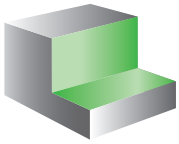


HIGH-VELOCITY



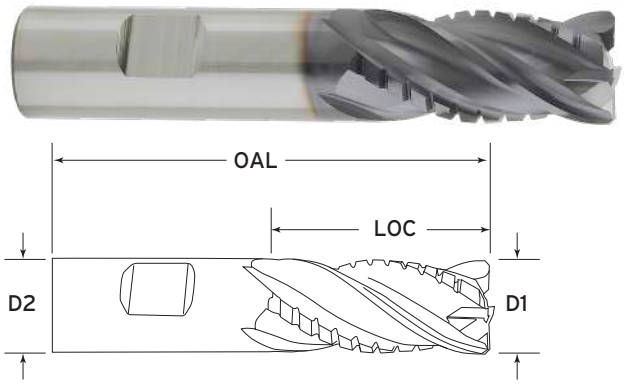
SB

4 FLUTE

SUPER BITCHIN' PERFORMANCE

ROUGHER/FINISHERS

SUPER BITCHIN' PERFORMANCE
4 FLUTE ROUGHER/FINISHER (INCH)



Engineered using Gorilla Mill technology. Extremely high material removal rates while maintaining a superb finish. Recommended for aggressive machining applications in all materials. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Center cutting. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths, and completely resharpenable.

GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

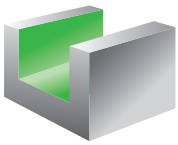
SPEEDS & FEEDS CHART PAGE 77

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	45° Chamfered End	Corner Radius (Inch) 0.015	0.030	0.060	0.090	0.120	0.190	0.250
3/8	3/8	9/16	2.0	GMHX38CS4 EDP: 40112	GMHX38RS4015 EDP: 40117	GMHX38RS4030 EDP: 40118	GMHX38RS4060 EDP: 40119	GMHX38RS4090 EDP: 40120	—	—	—
	3/8	7/8	2-1/2	GMHX38C4 EDP: 40111	GMHX38R4015 EDP: 40113	GMHX38R4030 EDP: 40114	GMHX38R4060 EDP: 40115	GMHX38R4090 EDP: 40116	—	—	—
1/2	1/2	5/8	2-1/2	GMHX12CS4 EDP: 40059	GMHX12RS4015 EDP: 40065	GMHX12RS4030 EDP: 40066	GMHX12RS4060 EDP: 40067	GMHX12RS4090 EDP: 40068	GMHX12RS4120 EDP: 40069	—	—
	1/2	1-1/4	3.0	GMHX12C4 EDP: 40058	GMHX12R4015 EDP: 40060	GMHX12R4030 EDP: 40061	GMHX12R4060 EDP: 40062	GMHX12R4090 EDP: 40063	GMHX12R4120 EDP: 40064	—	—
5/8	5/8	7/8	3-1/2	GMHX58CS4 EDP: 40122	—	GMHX58RS4030 EDP: 40127	GMHX58RS4060 EDP: 40128	GMHX58RS4090 EDP: 40129	GMHX58RS4120 EDP: 40130	—	—
	5/8	1-1/4	3-1/2	GMHX58C4 EDP: 40121	—	GMHX58R4030 EDP: 40123	GMHX58R4060 EDP: 40124	GMHX58R4090 EDP: 40125	GMHX58R4120 EDP: 40126	—	—
3/4	3/4	1.0	4.0	GMHX34CS4 EDP: 40092	—	GMHX34RS4030 EDP: 40105	GMHX34RS4060 EDP: 40106	GMHX34RS4090 EDP: 40107	GMHX34RS4120 EDP: 40108	GMHX34RS4190 EDP: 40109	GMHX34RS4250 EDP: 40110
	3/4	1-5/8	4.0	GMHX34C4 EDP: 40090	—	GMHX34R4030 EDP: 40093	GMHX34R4060 EDP: 40094	GMHX34R4090 EDP: 40095	GMHX34R4120 EDP: 40096	GMHX34R4190 EDP: 40097	GMHX34R4250 EDP: 40098
	3/4	2-1/4	5.0	GMHX34CLH4 EDP: 40091	—	GMHX34RLH4030 EDP: 40099	GMHX34RLH4060 EDP: 40100	GMHX34RLH4090 EDP: 40101	GMHX34RLH4120 EDP: 40102	GMHX34RLH4190 EDP: 40103	GMHX34RLH4250 EDP: 40104
1.0	1.0	1.0	4.0	GMHX10CS4 EDP: 40024	—	GMHX10RS4030 EDP: 40037	GMHX10RS4060 EDP: 40038	GMHX10RS4090 EDP: 40039	GMHX10RS4120 EDP: 40040	GMHX10RS4190 EDP: 40041	GMHX10RS4250 EDP: 40042
	1.0	1-3/4	4.0	GMHX10C4 EDP: 40022	—	GMHX10R4030 EDP: 40025	GMHX10R4060 EDP: 40026	GMHX10R4090 EDP: 40027	GMHX10R4120 EDP: 40028	GMHX10R4190 EDP: 40029	GMHX10R4250 EDP: 40030
	1.0	2-1/4	5.0	GMHX10CLH4 EDP: 40023	—	GMHX10RLH4030 EDP: 40031	GMHX10RLH4060 EDP: 40032	GMHX10RLH4090 EDP: 40033	GMHX10RLH4120 EDP: 40034	GMHX10RLH4190 EDP: 40035	GMHX10RLH4250 EDP: 40036

PATENT NO. 7,367,754

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

FULL SLOTTING



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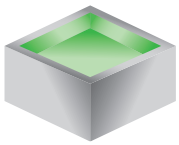


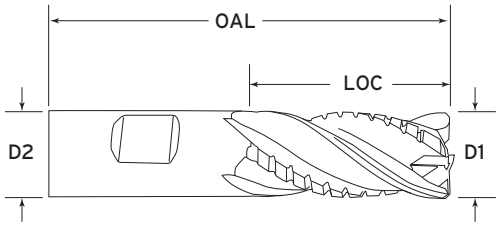
MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inco 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inco 625
Soft Steels, (A36,1018, 8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels, (4340,4140)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)	

4 FLUTE SASQUATCH ROUGHER/FINISHER (INCH) SPEEDS & FEEDS CHART. 1X DIAMETER DEEP, FULL SLOTTING.

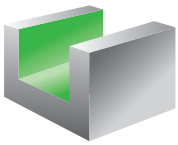
WORK PIECE MATERIAL	SFM	3/8"		1/2"		5/8"		3/4"		1"	
		RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM
Gray Cast Iron	750	7,640	57.8	5,730	52.7	4,584	55.0	3,820	48.9	2,865	45.8
Ductile Iron	550	5,602	42.6	4,202	36.9	3,362	41.7	2,801	35.9	2,101	33.6
Soft Steels (A36,1018,8620,1045)	800	8,150	61.0	6,112	56.2	4,890	58.6	4,075	52.1	3,056	48.9
Alloy Steels (4340,4140)	500	5,093	40.7	3,820	39.7	3,056	35.4	2,547	36.6	1,910	31.3
4140 Pre-Hard (38 to 42 Rc)	380	3,871	23.3	2,903	23.3	2,323	22.3	1,935	20.9	1,452	18.6
Tool Steels (A2,D2,S7)	300	3,056	24.5	2,292	20.2	1,834	19.1	1,528	18.3	1,146	17.4
Die Steels (H13,P20)	350	3,565	31.3	2,674	26.7	2,139	30.8	1,783	27.1	1,337	21.4
Stainless Steel (303, 304, 316)	400	4,075	35.8	3,056	28.1	2,445	32.3	2,037	28.5	1,528	24.4
Difficult Stainless Steel (400 & PH Series)	350	3,565	27.1	2,674	23.5	2,140	25.6	1,783	23.5	1,337	21.4
Stainless Steel (13-8)	180	1,834	12.5	1,375	11.1	1,100	11.0	917	11.0	688	9.7
High Temp. Alloys	275	2,801	21.3	2,101	19.3	1,681	20.1	1,401	16.8	1,051	14.7
Titanium (6AL4V)	250	2,547	17.3	1,910	19.1	1,528	20.7	1,273	17.3	955	16.0
Inco 718	180	1,834	13.8	1,375	12.6	1,100	13.2	917	11.0	688	9.6
Inco 625	150	1,528	11.6	1,146	10.0	917	10.2	764	9.2	573	8.1

**Recommended Speeds & Feeds*



TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

FULL SLOTTING



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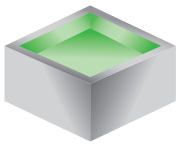
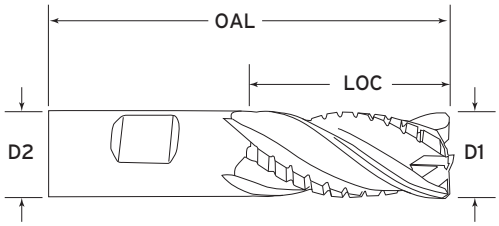


SUPER BITCHIN' PERFORMANCE
4 FLUTE ROUGHER/FINISHER (METRIC)



Engineered using Gorilla Mill technology. Extremely high material removal rates while maintaining a superb finish. Recommended for aggressive machining applications in all materials. Should be run at specific parameters. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section. Center cutting. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths, and completely resharpenable.

GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

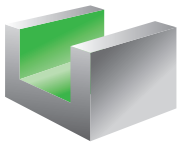
SPEEDS & FEEDS CHART PAGE 79

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	45º Chamfered End	Corner Radius (Metric)				
					0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
8mm	8mm	12mm	50mm	GMHX0800MMCS4 EDP: 40002	—	GMHX0800MMRS4050 EDP: 40011	—	—	—
	8mm	22mm	65mm	GMHX0800MMC4 EDP: 40000	GMHX0800MMR4030 EDP: 40003	GMHX0800MMR4050 EDP: 40004	GMHX0800MMR4100 EDP: 40005	GMHX0800MMR4150 EDP: 40006	—
	8mm	40mm	100mm	GMHX0800MMCL4 EDP: 40001	GMHX0800MMRL4030 EDP: 40007	GMHX0800MMRL4050 EDP: 40008	GMHX0800MMRL4100 EDP: 40009	GMHX0800MMRL4150 EDP: 40010	—
10mm	10mm	16mm	50mm	GMHX1000MMCS4 EDP: 40014	—	GMHX1000MMRS4050 EDP: 40021	—	—	—
	10mm	22mm	70mm	GMHX1000MMC4 EDP: 40012	GMHX1000MMR4030 EDP: 40015	GMHX1000MMR4050 EDP: 40016	GMHX1000MMR4100 EDP: 40017	—	—
	10mm	40mm	100mm	GMHX1000MMCL4 EDP: 40013	GMHX1000MMRL4030 EDP: 40018	GMHX1000MMRL4050 EDP: 40019	GMHX1000MMRL4100 EDP: 40020	—	—
12mm	12mm	19mm	63mm	GMHX1200MMCS4 EDP: 40045	GMHX1200MMRS4030 EDP: 40056	GMHX1200MMRS4050 EDP: 40057	—	—	—
	12mm	32mm	75mm	GMHX1200MMC4 EDP: 40043	GMHX1200MMR4030 EDP: 40046	GMHX1200MMR4050 EDP: 40047	GMHX1200MMR4100 EDP: 40048	GMHX1200MMR4150 EDP: 40049	GMHX1200MMR4200 EDP: 40050
	12mm	50mm	100mm	GMHX1200MMCL4 EDP: 40044	GMHX1200MMRL4030 EDP: 40051	GMHX1200MMRL4050 EDP: 40052	GMHX1200MMRL4100 EDP: 40053	GMHX1200MMRL4150 EDP: 40054	GMHX1200MMRL4200 EDP: 40055
16mm	16mm	19mm	75mm	GMHX1600MMCS4 EDP: 40071	GMHX1600MMRS4030 EDP: 40076	GMHX1600MMRS4050 EDP: 40077	—	—	—
	16mm	32mm	89mm	GMHX1600MMC4 EDP: 40070	GMHX1600MMR4030 EDP: 40072	GMHX1600MMR4050 EDP: 40073	GMHX1600MMR4100 EDP: 40074	—	GMHX1600MMR4200 EDP: 40075
20mm	20mm	22mm	75mm	GMHX2000MMCS4 EDP: 40079	—	—	GMHX2000MMRS4100 EDP: 40083	—	—
	20mm	38mm	100mm	GMHX2000MMC4 EDP: 40078	—	GMHX2000MMR4050 EDP: 40080	GMHX2000MMR4100 EDP: 40081	GMHX2000MMR4150 EDP: 40082	—
25mm	25mm	25mm	100mm	GMHX2500MMCS4 EDP: 40085	—	—	GMHX2500MMRS4100 EDP: 40088	GMHX2500MMRS4150 EDP: 40089	—
	25mm	38mm	100mm	GMHX2500MMC4 EDP: 40084	—	—	GMHX2500MMR4100 EDP: 40086	GMHX2500MMR4150 EDP: 40087	—

PATENT NO. 7,367,754

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

FULL SLOTTING



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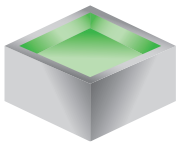


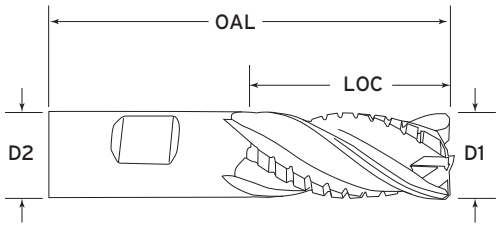
MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inco 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inco 625
Soft Steels, (A36,1018, 8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels, (4340,4140)	Stainless Steel, (303, 304, 316)	Titanium (6AL4V)	

4 FLUTE SASQUATCH ROUGHER/FINISHER (METRIC) SPEEDS & FEEDS CHART. 1X DIAMETER DEEP, FULL SLOTTING, METRIC CHIMP LOAD PER TOOTH

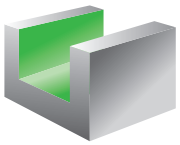
WORK PIECE MATERIAL	SFM	8mm		10mm		12mm		16mm		20mm		25mm	
		RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT
Gray Cast Iron	750	9096	.0380	7277	.0440	6064	.0610	4548	.0760	3638	.0910	2911	.1050
Ductile Iron	550	6670	.0300	5336	.0450	4447	.0580	3335	.0740	2668	.0890	2134	.1030
Soft Steels (A36,1018,8620,1045)	800	9702	.0330	7762	.0390	6468	.0530	4851	.0680	3881	.0860	3104	.1010
Alloy Steels (4340,4140)	500	6064	.0380	4851	.0450	4042	.0580	3032	.0710	2425	.0860	1940	.1010
4140 Pre-Hard (38 to 42 Rc)	380	4609	.0250	3687	.0350	3072	.0500	2304	.0630	1843	.0760	1474	.0890
Tool Steels (A2,D2,S7)	300	3638	.0300	2910	.0400	2425	.0550	1819	.0660	1455	.0760	1164	.0910
Die Steels (H13,P20)	350	4244	.0380	3395	.0500	2830	.0630	2122	.0710	1698	.0860	1358	.1010
Stainless Steel (303, 304, 316)	400	4851	.0300	3881	.0400	3234	.0550	2425	.0660	1940	.0810	1552	.0940
Difficult Stainless Steel (400 & PH Series)	350	4244	.0280	3395	.0380	2830	.0500	2122	.0630	1698	.0760	1358	.0890
Stainless Steel (13-8)	180	2183	.0250	1746	.0340	1455	.0550	1091	.0690	873	.0810	698	.1010
High Temp. Alloys	275	3335	.0270	2668	.0360	2223	.0480	1667	.0560	1334	.0710	1067	.0840
Titanium (6AL4V)	250	3032	.0300	2425	.0400	2021	.0580	1516	.0680	1212	.0810	970	.1010
Inco 718	180	2183	.0250	1746	.0330	1455	.0510	1091	.0590	873	.0760	698	.0940
Inco 625	150	1819	.0250	1455	.0330	1212	.0530	909	.0660	727	.0830	582	.1010

**Recommended Speeds & Feeds*



TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

FULL SLOTTING



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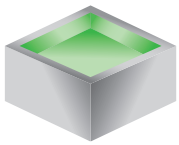

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Download the Gorilla Mill Speeds and Feeds app.

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GET IT ON Google Play

HIGH PERFORMANCE &
SUPER BITCHIN' PERFORMANCE

CHIMPBREAKERS

HP

SB

3 FLUTE

5 FLUTE

7 FLUTE

"Chip control does not mean Bogarting all the Doritos®!"

SILVERBACK CHIMP BREAKERS

PHENOM CHIMP BREAKERS

BABOON CHIMP BREAKERS

HIGH PERFORMANCE
3 FLUTE CHIMPBREAKER (INCH)

3 Flute Chimpbreakers evacuates chips in the toughest applications while decreasing tool pressure. Variable flute, variable index and engineered to repel aluminum. For roughing and finishing of non-ferrous materials, aluminum, copper, brass, plastic, etc. High velocity, high material removal rate. Center cutting. See "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

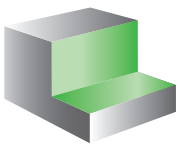
Available in special diameters, lengths and completely resharpenable. THE BEST chip control known to man or ape.

SPEEDS & FEEDS CHART PAGE 84

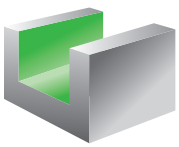
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)				
					0.015	0.030	0.060	0.090	0.120
3/8	3/8	7/8	2-1/2	GMACB38F3 EDP: 20853 GMACB38F3ZRN EDP: 20854	GMACB38R3015 EDP: 20859 GMACB38R3015ZRN EDP: 20860	GMACB38R3030 EDP: 20861 GMACB38R3030ZRN EDP: 20862	GMACB38R3060 EDP: 20863 GMACB38R3060ZRN EDP: 20864	—	—
	3/8	1.0	2-1/2	GMACB38FHL3 EDP: 20855 GMACB38FHL3ZRN EDP: 20856	GMACB38RHL3015 EDP: 20865 GMACB38RHL3015ZRN EDP: 20866	GMACB38RHL3030 EDP: 20867 GMACB38RHL3030ZRN EDP: 20868	GMACB38RHL3060 EDP: 20869 GMACB38RHL3060ZRN EDP: 20870	—	—
1/2	1/2	1.0	3.0	GMACB12FH3 EDP: 20705 GMACB12FH3ZRN EDP: 20706	GMACB12RH3015 EDP: 20721 GMACB12RH3015ZRN EDP: 20722	GMACB12RH3030 EDP: 20723 GMACB12RH3030ZRN EDP: 20724	GMACB12RH3060 EDP: 20725 GMACB12RH3060ZRN EDP: 20726	GMACB12RH3090 EDP: 20727 GMACB12RH3090ZRN EDP: 20728	GMACB12RH3120 EDP: 20729 GMACB12RH3120ZRN EDP: 20730
	1/2	1-1/4	3.0	GMACB12F3 EDP: 20703 GMACB12F3ZRN EDP: 20704	GMACB12R3015 EDP: 20711 GMACB12R3015ZRN EDP: 20712	GMACB12R3030 EDP: 20713 GMACB12R3030ZRN EDP: 20714	GMACB12R3060 EDP: 20715 GMACB12R3060ZRN EDP: 20716	GMACB12R3090 EDP: 20717 GMACB12R3090ZRN EDP: 20718	GMACB12R3120 EDP: 20719 GMACB12R3120ZRN EDP: 20720
	1/2	1-1/2	4.0	GMACB12FL3 EDP: 20707 GMACB12FL3ZRN EDP: 20708	GMACB12RL3015 EDP: 20731 GMACB12RL3015ZRN EDP: 20732	GMACB12RL3030 EDP: 20733 GMACB12RL3030ZRN EDP: 20734	GMACB12RL3060 EDP: 20735 GMACB12RL3060ZRN EDP: 20736	GMACB12RL3090 EDP: 20737 GMACB12RL3090ZRN EDP: 20738	GMACB12RL3120 EDP: 20739 GMACB12RL3120ZRN EDP: 20740

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



FULL SLOTTING



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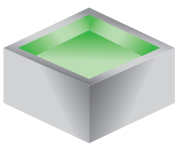
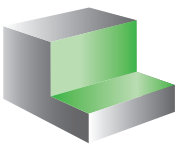


HIGH-VELOCITY



MATERIALS

Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)
Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)
Copper (200 Brinell <)	Brass
Copper (200 Brinell >)	Bronze

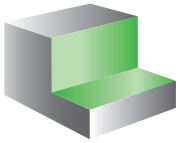
"Chip control does not mean Bogarting all the Doritos®!"

SPEEDS & FEEDS CHART PAGE 84

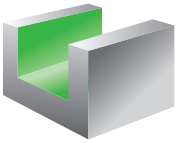
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch) 0.015	0.030	0.060	0.090	0.120
5/8	5/8	1-1/4	3-1/2	GMACB58F3 EDP: 20897 GMACB58F3ZRN EDP: 20898	GMACB58R3015 EDP: 20903 GMACB58R3015ZRN EDP: 20904	GMACB58R3030 EDP: 20905 GMACB58R3030ZRN EDP: 20906	GMACB58R3060 EDP: 20907 GMACB58R3060ZRN EDP: 20908	GMACB58R3090 EDP: 20909 GMACB58R3090ZRN EDP: 20910	GMACB58R3120 EDP: 20911 GMACB58R3120ZRN EDP: 20912
	5/8	1-5/8	4.0	GMACB58FHL3 EDP: 20899 GMACB58FHL3ZRN EDP: 20900	GMACB58RHL3015 EDP: 20913 GMACB58RHL3015ZRN EDP: 20914	GMACB58RHL3030 EDP: 20915 GMACB58RHL3030ZRN EDP: 20916	GMACB58RHL3060 EDP: 20917 GMACB58RHL3060ZRN EDP: 20918	GMACB58RHL3090 EDP: 20919 GMACB58RHL3090ZRN EDP: 20920	GMACB58RHL3120 EDP: 20921 GMACB58RHL3120ZRN EDP: 20922
	5/8	2.0	4.0	GMACB58FL3 EDP: 20901 GMACB58FL3ZRN EDP: 20902	GMACB58RL3015 EDP: 20923 GMACB58RL3015ZRN EDP: 20924	GMACB58RL3030 EDP: 20925 GMACB58RL3030ZRN EDP: 20926	GMACB58RL3060 EDP: 20927 GMACB58RL3060ZRN EDP: 20928	GMACB58RL3090 EDP: 20929 GMACB58RL3090ZRN EDP: 20930	GMACB58RL3120 EDP: 20931 GMACB58RL3120ZRN EDP: 20932
3/4	3/4	1-1/2	4.0	GMACB34F3 EDP: 20803 GMACB34F3ZRN EDP: 20804	GMACB34R3015 EDP: 20811 GMACB34R3015ZRN EDP: 20812	GMACB34R3030 EDP: 20813 GMACB34R3030ZRN EDP: 20814	GMACB34R3060 EDP: 20815 GMACB34R3060ZRN EDP: 20816	GMACB34R3090 EDP: 20817 GMACB34R3090ZRN EDP: 20818	GMACB34R3120 EDP: 20819 GMACB34R3120ZRN EDP: 20820
	3/4	2.0	4.0	GMACB34FL3 EDP: 20807 GMACB34FL3ZRN EDP: 20808	GMACB34RL3015 EDP: 20831 GMACB34RL3015ZRN EDP: 20832	GMACB34RL3030 EDP: 20833 GMACB34RL3030ZRN EDP: 20834	GMACB34RL3060 EDP: 20835 GMACB34RL3060ZRN EDP: 20836	GMACB34RL3090 EDP: 20837 GMACB34RL3090ZRN EDP: 20838	GMACB34RL3120 EDP: 20839 GMACB34RL3120ZRN EDP: 20840
	3/4	2-1/4	5.0	GMACB34FLH3 EDP: 20809 GMACB34FLH3ZRN EDP: 20810	GMACB34RLH3015 EDP: 20841 GMACB34RLH3015ZRN EDP: 20842	GMACB34RLH3030 EDP: 20843 GMACB34RLH3030ZRN EDP: 20844	GMACB34RLH3060 EDP: 20845 GMACB34RLH3060ZRN EDP: 20846	GMACB34RLH3090 EDP: 20847 GMACB34RLH3090ZRN EDP: 20848	GMACB34RLH3120 EDP: 20849 GMACB34RLH3120ZRN EDP: 20850

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



FULL SLOTTING



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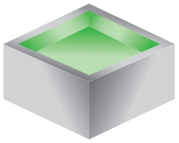
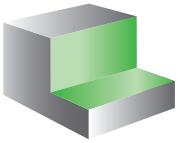


HIGH-VELOCITY



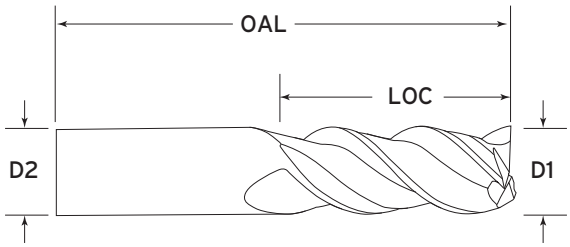
HIGH PERFORMANCE
3 FLUTE CHIMPBREAKER (INCH)

3 Flute Chimpbreakers evacuates chips in the toughest applications while decreasing tool pressure. Variable flute, variable index and engineered to repel aluminum. For roughing and finishing of non-ferrous materials, aluminum, copper, brass, plastic, etc. High velocity, high material removal rate. Center cutting. See "Speeds and Feeds" chart below. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable. THE BEST chip control known to man or ape.

MATERIALS

Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)
Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)
Copper (200 Brinell <)	Brass
Copper (200 Brinell >)	Bronze



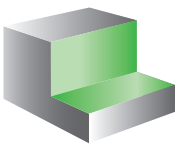
3 FLUTE CHIMPBREAKERS (INCH) SPEEDS & FEEDS CHART
FULL SLOTTING AND PROFILING, CHIMP LOAD PER TOOTH

WORK PIECE MATERIAL	SFM	3/8"			1/2"			5/8"			3/4"		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum	2000	0.0031	0.0020	0.0017	0.0045	0.0030	0.0021	0.0054	0.0036	0.0027	0.0063	0.0042	0.0033
Soft Aluminum (6061)	2000	0.0027	0.0018	0.0014	0.0038	0.0025	0.0020	0.0049	0.0032	0.0024	0.0058	0.0038	0.0028
Copper (200 Brinell <)	500	0.0032	0.0022	0.0014	0.0043	0.0029	0.0020	0.0050	0.0034	0.0024	0.0061	0.0041	0.0028
Copper (200 Brinell >)	400	0.0029	0.0019	0.0013	0.0040	0.0026	0.0017	0.0047	0.0031	0.0020	0.0054	0.0036	0.0023
Cast Aluminum, Silicon (6% <)	1300	0.0036	0.0024	0.0017	0.0045	0.0030	0.0021	0.0050	0.0034	0.0027	0.0061	0.0041	0.0033
Cast Aluminum, Silicon (6% >)	800	0.0029	0.0019	0.0017	0.0040	0.0026	0.0021	0.0047	0.0031	0.0027	0.0058	0.0038	0.0033
Brass	1500	0.0027	0.0018	0.0017	0.0036	0.0024	0.0021	0.0045	0.0030	0.0027	0.0054	0.0036	0.0033
Bronze	600	0.0025	0.0017	0.0013	0.0034	0.0023	0.0017	0.0040	0.0026	0.0020	0.0050	0.0034	0.0023

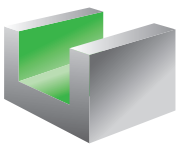
**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

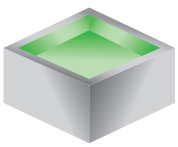
PROFILING



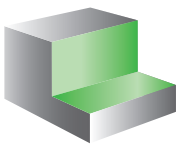
FULL SLOTTING



POCKETING



HIGH-VELOCITY



HIGH PERFORMANCE
3 FLUTE CHIMPBREAKER (METRIC)

3 Flute Chimpbreakers evacuates chips in the toughest applications while decreasing tool pressure. Variable flute, variable index and engineered to repel aluminum. For roughing and finishing of non-ferrous materials, aluminum, copper, brass, plastic, etc. High velocity, high material removal rate. Center cutting. See "Speeds and Feeds" chart below. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable. THE BEST chip control known to man or ape.

SPEEDS & FEEDS CHART BELOW

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Metric)					
					0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
10mm	10mm	22mm	70mm	GMACB1000MMF3 EDP: 20641 GMACB1000MMF3ZRN EDP: 20642	—	GMACB1000MMR3030 EDP: 20643 GMACB1000MMR3030ZRN EDP: 20644	GMACB1000MMR3050 EDP: 20645 GMACB1000MMR3050ZRN EDP: 20646	GMACB1000MMR3100 EDP: 20647 GMACB1000MMR3100ZRN EDP: 20648	—	—
12mm	12mm	32mm	75mm	GMACB1200MMF3 EDP: 20687 GMACB1200MMF3ZRN EDP: 20688	—	GMACB1200MMR3030 EDP: 20691 GMACB1200MMR3030ZRN EDP: 20692	GMACB1200MMR3050 EDP: 20693 GMACB1200MMR3050ZRN EDP: 20694	GMACB1200MMR3100 EDP: 20695 GMACB1200MMR3100ZRN EDP: 20696	GMACB1200MMR3150 EDP: 20697 GMACB1200MMR3150ZRN EDP: 20698	GMACB1200MMR3200 EDP: 20699 GMACB1200MMR3200ZRN EDP: 20700
16mm	16mm	32mm	89mm	GMACB1600MMF3 EDP: 20769 GMACB1600MMF3ZRN EDP: 20770	—	GMACB1600MMR3030 EDP: 20771 GMACB1600MMR3030ZRN EDP: 20772	GMACB1600MMR3050 EDP: 20773 GMACB1600MMR3050ZRN EDP: 20774	GMACB1600MMR3100 EDP: 20775 GMACB1600MMR3100ZRN EDP: 20776	—	GMACB1600MMR3200 EDP: 20777 GMACB1600MMR3200ZRN EDP: 20778
20mm	20mm	38mm	100mm	GMACB2000MMF3 EDP: 20783 GMACB2000MMF3ZRN EDP: 20784	—	—	GMACB2000MMR3050 EDP: 20785 GMACB2000MMR3050ZRN EDP: 20786	GMACB2000MMR3100 EDP: 20787 GMACB2000MMR3100ZRN EDP: 20788	GMACB2000MMR3150 EDP: 20789 GMACB2000MMR3150ZRN EDP: 20790	—

3 FLUTE CHIMPBREAKERS (METRIC) SPEEDS & FEEDS CHART
FULL SLOTTING AND PROFILING, METRIC CHIMP LOAD PER TOOTH

WORK PIECE MATERIAL	SFM	10mm			12mm			16mm			20mm		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum	2000	0.0787	0.0508	0.0432	0.1143	0.0762	0.0533	0.1372	0.0914	0.0686	0.1600	0.1067	0.0838
Soft Aluminum (6061)	2000	0.0686	0.0457	0.0356	0.0965	0.0635	0.0508	0.1245	0.0813	0.0610	0.1473	0.0965	0.0711
Copper (200 Brinell <)	500	0.0813	0.0559	0.0356	0.1092	0.0737	0.0508	0.1270	0.0864	0.0610	0.1549	0.1041	0.0711
Copper (200 Brinell >)	400	0.0737	0.0483	0.0330	0.1016	0.0660	0.0432	0.1194	0.0787	0.0508	0.1372	0.0914	0.0584
Cast Aluminum, Silicon (6% <)	1300	0.0914	0.0610	0.0432	0.1143	0.0762	0.0533	0.1270	0.0864	0.0686	0.1549	0.1041	0.0838
Cast Aluminum, Silicon (6% >)	800	0.0737	0.0483	0.0432	0.1016	0.0660	0.0533	0.1194	0.0787	0.0686	0.1473	0.0965	0.0838
Brass	1500	0.0686	0.0457	0.0432	0.0914	0.0610	0.0533	0.1143	0.0762	0.0686	0.1372	0.0914	0.0838
Bronze	600	0.0635	0.0432	0.0330	0.0864	0.0584	0.0432	0.1016	0.0660	0.0508	0.1270	0.0864	0.0584

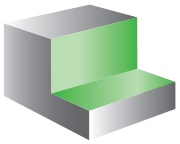
**Recommended Speeds & Feeds*

MATERIALS

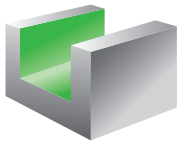
Aircraft Aluminum, (2000,5000, 7000 series)
Soft Aluminum, (6061)
Copper (200 Brinell <)
Copper (200 Brinell >)
Cast Aluminum (6% Silcon & <)
Cast Aluminum (6% Silcon & >)
Brass
Bronze

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING



FULL SLOTTING



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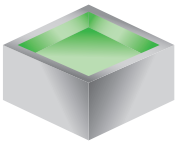
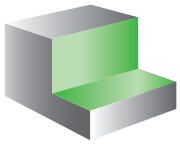


HIGH-VELOCITY



SUPER BITCHIN' PERFORMANCE
5 FLUTE CHIMPBREAKERS (INCH)

GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

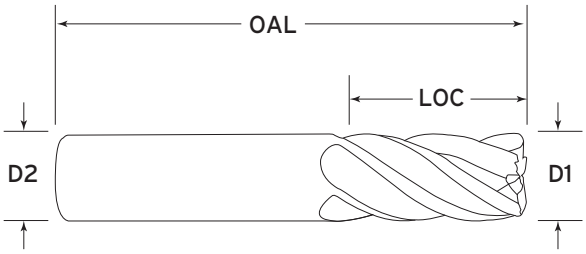
5 Flute Chimpbreakers evacuates chips in the toughest applications while decreasing tool pressure. Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials. Should be run at specific parameters. See "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable. THE BEST chip control known to man or ape.

SPEEDS & FEEDS CHART PAGE 88

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)						
					0.015	0.030	0.060	0.090	0.120	0.190	0.250
3/8	3/8	7/8	2-1/2	GMHTCB38F5 EDP: 30688	GMHTCB38R5015 EDP: 30692	GMHTCB38R5030 EDP: 30693	GMHTCB38R5060 EDP: 30694	GMHTCB38R5090 EDP: 30695	—	—	—
	3/8	1.0	2-1/2	GMHTCB38FH5 EDP: 30689	GMHTCB38RH5015 EDP: 30696	GMHTCB38RH5030 EDP: 30697	GMHTCB38RH5060 EDP: 30698	GMHTCB38RH5090 EDP: 30699	—	—	—
	3/8	1-1/4	3.0	GMHTCB38FL5 EDP: 30690	GMHTCB38RL5015 EDP: 30700	GMHTCB38RL5030 EDP: 30701	GMHTCB38RL5060 EDP: 30702	GMHTCB38RL5090 EDP: 30703	—	—	—
1/2	1/2	1.0	3.0	GMHTCB12FH5 EDP: 30607	GMHTCB12RH5015 EDP: 30616	GMHTCB12RH5030 EDP: 30617	GMHTCB12RH5060 EDP: 30618	GMHTCB12RH5090 EDP: 30619	GMHTCB12RH5120 EDP: 30620	—	—
	1/2	1-1/4	3.0	GMHTCB12F5 EDP: 30606	GMHTCB12R5015 EDP: 30611	GMHTCB12R5030 EDP: 30612	GMHTCB12R5060 EDP: 30613	GMHTCB12R5090 EDP: 30614	GMHTCB12R5120 EDP: 30615	—	—
	1/2	1-5/8	4.0	GMHTCB12FLH5 EDP: 30608	GMHTCB12RLH5015 EDP: 30621	GMHTCB12RLH5030 EDP: 30622	GMHTCB12RLH5060 EDP: 30623	GMHTCB12RLH5090 EDP: 30624	GMHTCB12RLH5120 EDP: 30625	—	—

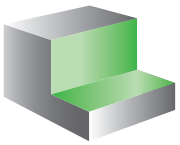
PATENT NO. 7,153,067



Based on the original 5 flute Gorilla Mill, the "Phenom" for High Temp Alloys features geometric enhancements that make it uniquely suited for difficult to machine materials.

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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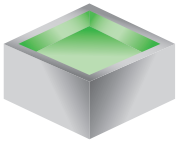
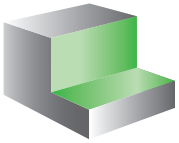


HIGH-VELOCITY



MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels, (A36,1018,8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)	

GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

"Chip control does not mean Bogarting all the Doritos®!"

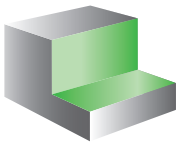
SPEEDS & FEEDS CHART PAGE 88

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)						
					0.015	0.030	0.060	0.090	0.120	0.190	0.250
5/8	5/8	1-1/4	3-1/2	GMHTCB58F5 EDP: 30720	—	GMHTCB58R5030 EDP: 30723	GMHTCB58R5060 EDP: 30724	GMHTCB58R5090 EDP: 30725	GMHTCB58R5120 EDP: 30726	—	—
	5/8	1-5/8	4.0	GMHTCB58FHL5 EDP: 30721	—	GMHTCB58RHL5030 EDP: 30727	GMHTCB58RHL5060 EDP: 30728	GMHTCB58RHL5090 EDP: 30729	GMHTCB58RHL5120 EDP: 30730	—	—
	5/8	2.0	4.0	GMHTCB58FL5 EDP: 30722	—	GMHTCB58RL5030 EDP: 30731	GMHTCB58RL5060 EDP: 30732	GMHTCB58RL5090 EDP: 30733	GMHTCB58RL5120 EDP: 30734	—	—
3/4	3/4	1-1/2	4.0	GMHTCB34F5 EDP: 30660	—	GMHTCB34R5030 EDP: 30664	GMHTCB34R5060 EDP: 30665	GMHTCB34R5090 EDP: 30666	GMHTCB34R5120 EDP: 30667	—	—
	3/4	1-5/8	4.0	GMHTCB34FHL5 EDP: 30661	—	GMHTCB34RHL5030 EDP: 30670	GMHTCB34RHL5060 EDP: 30671	GMHTCB34RHL5090 EDP: 30672	GMHTCB34RHL5120 EDP: 30673	—	—
	3/4	2-1/4	5.0	GMHTCB34FLH5 EDP: 30662	—	GMHTCB34RLH5030 EDP: 30676	GMHTCB34RLH5060 EDP: 30677	GMHTCB34RLH5090 EDP: 30678	GMHTCB34RLH5120 EDP: 30679	—	—

PATENT NO. 7,153,067

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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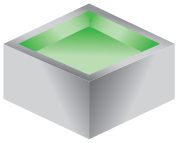
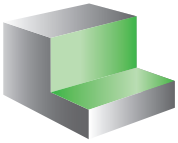


HIGH-VELOCITY



SUPER BITCHIN' PERFORMANCE
5 FLUTE CHIMPBREAKERS (INCH)

GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

5 Flute Chimpbreakers evacuates chips in the toughest applications while decreasing tool pressure. Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials. Should be run at specific parameters. See "Speeds and Feeds" chart below. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

Available in special diameters, lengths and completely resharpenable. THE BEST chip control known to man or ape.

MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels, (A36,1018,8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)	

5 FLUTE PHENOM CHIMPBREAKERS (INCH) SPEEDS & FEEDS CHART FOR PROFILING, CHIMP LOAD PER TOOTH.

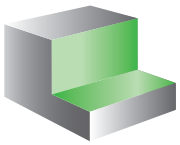
NOTE MAX STEP OVER IS 50% OF CUTTER DIAMETER. NOTE AT 50% STEP OVER YOUR CLPT IS 1 TO 1.

WORK PIECE MATERIAL	SFM	3/8"			1/2"			5/8"			3/4"		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%	5%	15%	30%	5%	15%	30%	5%	15%	30%
Gray Cast Iron	700	0.0037	0.0022	0.0017	0.0055	0.0032	0.0025	0.0066	0.0039	0.0030	0.0078	0.0046	0.0036
Ductile Iron	500	0.0037	0.0022	0.0017	0.0052	0.0031	0.0023	0.0064	0.0038	0.0029	0.0073	0.0043	0.0033
Soft Steels (A36,1018, 8620,1045)	750	0.0033	0.0019	0.0015	0.0045	0.0026	0.0023	0.0059	0.0036	0.0027	0.0071	0.0042	0.0032
Alloy Steels (4340,4140)	550	0.0039	0.0023	0.0018	0.0052	0.0031	0.0023	0.0061	0.0036	0.0028	0.0075	0.0045	0.0034
4140 Pre-Hard (38 to 42 Rc)	350	0.0023	0.0013	0.0010	0.0038	0.0022	0.0018	0.0049	0.0028	0.0023	0.0066	0.0039	0.0031
Tool Steels (A2,D2,S7)	350	0.0035	0.0020	0.0016	0.0048	0.0028	0.0022	0.0057	0.0034	0.0026	0.0066	0.0039	0.0031
Die Steels (H13,P20)	375	0.0044	0.0026	0.0020	0.0055	0.0032	0.0026	0.0061	0.0036	0.0028	0.0075	0.0045	0.0034
Stainless Steel (303, 304, 316)	400	0.0035	0.0020	0.0016	0.0048	0.0028	0.0022	0.0057	0.0033	0.0026	0.0071	0.0042	0.0032
Difficult Stainless Steel (400 & PH Series)	350	0.0030	0.0018	0.0013	0.0043	0.0025	0.0020	0.0052	0.0031	0.0024	0.0066	0.0040	0.0031
Stainless Steel (13-8)	170	0.0023	0.0013	0.0010	0.0038	0.0022	0.0018	0.0049	0.0029	0.0022	0.0066	0.0040	0.0031
High Temp. Alloys	275	0.0030	0.0018	0.0013	0.0041	0.0024	0.0019	0.0049	0.0029	0.0022	0.0061	0.0036	0.0029
Titanium (6AL4V)	275	0.0035	0.0020	0.0016	0.0050	0.0029	0.0022	0.0059	0.0035	0.0027	0.0071	0.0042	0.0032
Inconel 718	160	0.0023	0.0013	0.0010	0.0038	0.0022	0.0018	0.0048	0.0029	0.0022	0.0066	0.0039	0.0031
Inconel 625	170	0.0023	0.0013	0.0010	0.0038	0.0022	0.0018	0.0048	0.0029	0.0022	0.0066	0.0039	0.0031

**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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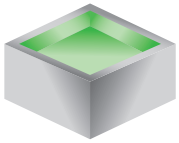
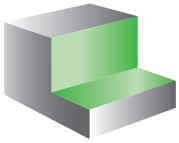


HIGH-VELOCITY



SUPER BITCHIN' PERFORMANCE
5 FLUTE CHIMPBREAKERS (METRIC)

GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

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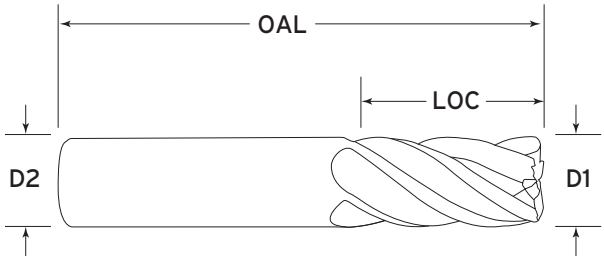
MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels, (A36,1018,8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)	

SPEEDS & FEEDS CHART PAGE 90

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Metric)					
					0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
10mm	10mm	22mm	70mm	GMHTCB1000MMF5 EDP: 30537	—	GMHTCB1000MMR5030 EDP: 30538	GMHTCB1000MMR5050 EDP: 30539	GMHTCB1000MMR5100 EDP: 30540	—	—
12mm	12mm	32mm	75mm	GMHTCB1200MMF5 EDP: 30576	—	GMHTCB1200MMR5030 EDP: 30577	GMHTCB1200MMR5050 EDP: 30578	GMHTCB1200MMR5100 EDP: 30579	GMHTCB1200MMR5150 EDP: 30580	GMHTCB1200MMR5200 EDP: 30581
16mm	16mm	32mm	89mm	GMHTCB1600MMF5 EDP: 30648	—	GMHTCB1600MMR5030 EDP: 30649	GMHTCB1600MMR5050 EDP: 30650	GMHTCB1600MMR5100 EDP: 30651	—	GMHTCB1600MMR5200 EDP: 30652
20mm	20mm	38mm	100mm	GMHTCB2000MMF5 EDP: 30653	—	—	GMHTCB2000MMR5050 EDP: 30654	GMHTCB2000MMR5100 EDP: 30655	GMHTCB2000MMR5150 EDP: 30656	—

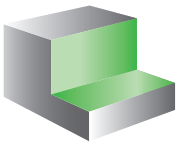
PATENT NO. 7,153,067



Based on the original 5 flute Gorilla Mill, the "Phenom" for High Temp Alloys features geometric enhancements that make it uniquely suited for difficult to machine materials.

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING



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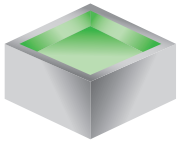
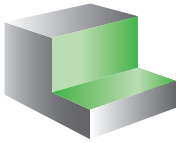


HIGH-VELOCITY



SUPER BITCHIN' PERFORMANCE
5 FLUTE CHIMPBREAKERS (METRIC)

GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

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MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels, (A36,1018,8620,1045)	Die Steels, (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)	

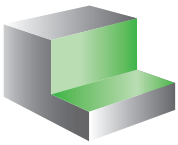
5 FLUTE PHENOM CHIMPBREAKERS (METRIC) SPEEDS & FEEDS CHART FOR PROFILING, METRIC CHIMP LOAD PER TOOTH. NOTE MAX STEP OVER IS 50% OF CUTTER DIAMETER. NOTE AT 50% STEP OVER YOUR CLPT IS 1 TO 1.

WORK PIECE MATERIAL	SFM	10mm			12mm			16mm			20mm		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%	5%	15%	30%	5%	15%	30%	5%	15%	30%
Gray Cast Iron	700	0.0940	0.0559	0.0432	0.1397	0.0813	0.0635	0.1676	0.0991	0.0762	0.1981	0.1168	0.0914
Ductile Iron	500	0.0940	0.0559	0.0432	0.1321	0.0787	0.0584	0.1626	0.0965	0.0737	0.1854	0.1092	0.0838
Soft Steels (A36,1018, 8620,1045)	750	0.0838	0.0483	0.0381	0.1143	0.0660	0.0584	0.1499	0.0914	0.0686	0.1803	0.1067	0.0813
Alloy Steels (4340,4140)	550	0.0991	0.0584	0.0457	0.1321	0.0787	0.0584	0.1549	0.0914	0.0711	0.1905	0.1143	0.0864
4140 Pre-Hard (38 to 42 Rc)	350	0.0584	0.0330	0.0254	0.0965	0.0559	0.0457	0.1245	0.0711	0.0584	0.1676	0.0991	0.0787
Tool Steels (A2,D2,S7)	350	0.0889	0.0508	0.0406	0.1219	0.0711	0.0559	0.1448	0.0864	0.0660	0.1676	0.0991	0.0787
Die Steels (H13,P20)	375	0.1118	0.0660	0.0508	0.1397	0.0813	0.0660	0.1549	0.0914	0.0711	0.1905	0.1143	0.0864
Stainless Steel (303, 304, 316)	400	0.0889	0.0508	0.0406	0.1219	0.0711	0.0559	0.1448	0.0838	0.0660	0.1803	0.1067	0.0813
Difficult Stainless Steel (400 & PH Series)	350	0.0762	0.0457	0.0330	0.1092	0.0635	0.0508	0.1321	0.0787	0.0610	0.1676	0.1016	0.0787
Stainless Steel (13-8)	170	0.0584	0.0330	0.0254	0.0965	0.0559	0.0457	0.1245	0.0737	0.0559	0.1676	0.1016	0.0787
High Temp. Alloys	275	0.0762	0.0457	0.0330	0.1041	0.0610	0.0483	0.1245	0.0737	0.0559	0.1549	0.0914	0.0737
Titanium (6AL4V)	275	0.0889	0.0508	0.0406	0.1270	0.0737	0.0559	0.1499	0.0889	0.0686	0.1803	0.1067	0.0813
Inconel 718	160	0.0584	0.0330	0.0254	0.0965	0.0559	0.0457	0.1219	0.0737	0.0559	0.1676	0.0991	0.0787
Inconel 625	170	0.0584	0.0330	0.0254	0.0965	0.0559	0.0457	0.1219	0.0737	0.0559	0.1676	0.0991	0.0787

**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING



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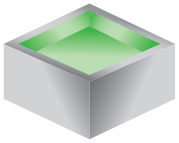
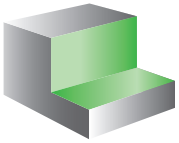


HIGH-VELOCITY



SUPER BITCHIN' PERFORMANCE

7 FLUTE CHIMPBREAKERS (INCH)

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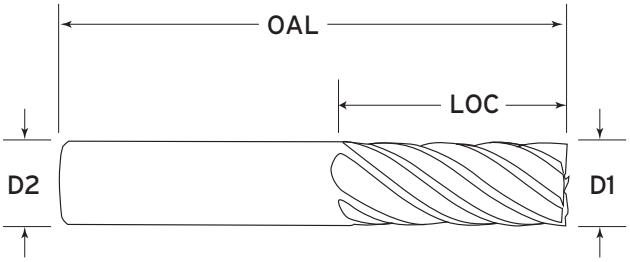


Based on the original 5 flute Gorilla Mill, the "Baboon" for High Temp Alloys features geometric enhancements that make it uniquely suited for difficult to machine materials.

MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels (A36,1018,8620,1045)	Die Steels (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)	

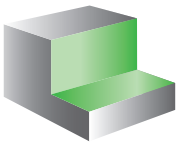
SPEEDS & FEEDS CHART PAGE 93

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)						
					0.015	0.030	0.060	0.090	0.120	0.190	0.250
3/8	3/8	7/8	2-1/2	GMHTCB38F7 EDP: 30880	GMHTCB38R7015 EDP: 30883	GMHTCB38R7030 EDP: 30884	GMHTCB38R7060 EDP: 30885	GMHTCB38R7090 EDP: 30886	—	—	—
	3/8	1.0	2-1/2	GMHTCB38FH7 EDP: 30881	GMHTCB38RH7015 EDP: 30887	GMHTCB38RH7030 EDP: 30888	GMHTCB38RH7060 EDP: 30889	GMHTCB38RH7090 EDP: 30890	—	—	—
	3/8	1-1/4	3.0	GMHTCB38FL7 EDP: 30882	GMHTCB38RL7015 EDP: 30891	GMHTCB38RL7030 EDP: 30892	GMHTCB38RL7060 EDP: 30893	GMHTCB38RL7090 EDP: 30894	—	—	—
1/2	1/2	1.0	3.0	GMHTCB12FH7 EDP: 30816	GMHTCB12RH7015 EDP: 30824	GMHTCB12RH7030 EDP: 30825	GMHTCB12RH7060 EDP: 30826	GMHTCB12RH7090 EDP: 30827	GMHTCB12RH7120 EDP: 30828	—	—
	1/2	1-1/4	3.0	GMHTCB12F7 EDP: 30815	GMHTCB12R7015 EDP: 30819	GMHTCB12R7030 EDP: 30820	GMHTCB12R7060 EDP: 30821	GMHTCB12R7090 EDP: 30822	GMHTCB12R7120 EDP: 30823	—	—
	1/2	1-5/8	4.0	GMHTCB12FLH7 EDP: 30817	GMHTCB12RLH7015 EDP: 30829	GMHTCB12RLH7030 EDP: 30830	GMHTCB12RLH7060 EDP: 30831	GMHTCB12RLH7090 EDP: 30832	GMHTCB12RLH7120 EDP: 30833	—	—

Continued on next page

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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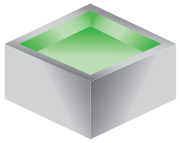
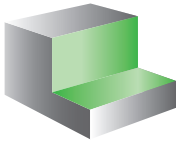


HIGH-VELOCITY



SUPER BITCHIN' PERFORMANCE
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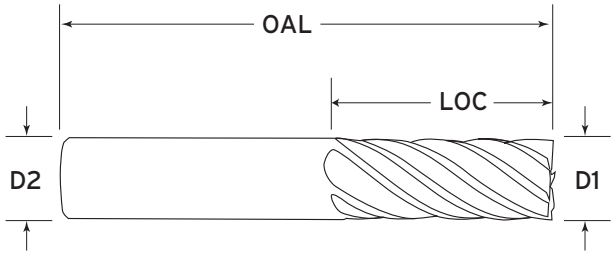
SPEEDS & FEEDS CHART PAGE 93

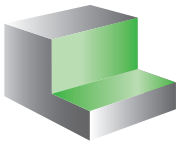
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Inch)						
					0.015	0.030	0.060	0.090	0.120	0.190	0.250
5/8	5/8	1-1/4	3-1/2	GMHTCB58F7 EDP: 30903	—	GMHTCB58R7030 EDP: 30906	GMHTCB58R7060 EDP: 30907	GMHTCB58R7090 EDP: 30908	GMHTCB58R7120 EDP: 30909	—	—
	5/8	1-5/8	4.0	GMHTCB58FHL7 EDP: 30904	—	GMHTCB58RHL7030 EDP: 30910	GMHTCB58RHL7060 EDP: 30911	GMHTCB58RHL7090 EDP: 30912	GMHTCB58RHL7120 EDP: 30913	—	—
	5/8	2.0	4.0	GMHTCB58FL7 EDP: 30905	—	GMHTCB58RL7030 EDP: 30914	GMHTCB58RL7060 EDP: 30915	GMHTCB58RL7090 EDP: 30916	GMHTCB58RL7120 EDP: 30917	—	—
3/4	3/4	1-1/2	4.0	GMHTCB34F7 EDP: 30859	—	GMHTCB34R7030 EDP: 30862	GMHTCB34R7060 EDP: 30863	GMHTCB34R7090 EDP: 30864	GMHTCB34R7120 EDP: 30865	—	—
	3/4	1-5/8	4.0	GMHTCB34FHL7 EDP: 30860	—	GMHTCB34RHL7030 EDP: 30868	GMHTCB34RHL7060 EDP: 30869	GMHTCB34RHL7090 EDP: 30870	GMHTCB34RHL7120 EDP: 30871	—	—
	3/4	2-1/4	5.0	GMHTCB34FLH7 EDP: 30861	—	GMHTCB34RLH7030 EDP: 30874	GMHTCB34RLH7060 EDP: 30875	GMHTCB34RLH7090 EDP: 30876	GMHTCB34RLH7120 EDP: 30877	—	—



Based on the original 5 flute Gorilla Mill, the "Baboon" for High Temp Alloys features geometric enhancements that make it uniquely suited for difficult to machine materials.

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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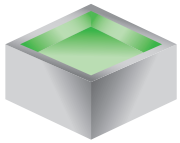
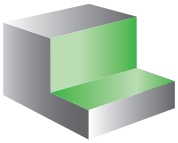


HIGH-VELOCITY



MATERIALS

Gray Cast Iron
Ductile Iron
Soft Steels (A36,1018,8620,1045)
Alloy Steels (4340, 4140)

4140 Pre-Hard (38 to 42 Rc)
Tool Steels (A2,D2,S7)
Die Steels (H13,P20)
Stainless Steel (303, 304, 316)

Difficult Stainless Steel, (400 & PH Series)
Stainless Steel (13-8)
High Temp. Alloys
Titanium (6AL4V)

Inconel 718
Inconel 625

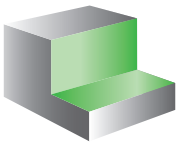
7 FLUTE BABOON CHIMPBREAKERS (INCH) SPEEDS & FEEDS CHART FOR PROFILING, CHIMP LOAD PER TOOTH. NOTE MAX STEP OVER IS 30% OF CUTTER DIAMETER.

WORK PIECE MATERIAL	SFM	3/8"			1/2"			5/8"			3/4"		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%	5%	15%	30%	5%	15%	30%	5%	15%	30%
Gray Cast Iron	700	0.0037	0.0022	0.0017	0.0055	0.0032	0.0025	0.0066	0.0039	0.0030	0.0078	0.0046	0.0036
Ductile Iron	500	0.0037	0.0022	0.0017	0.0052	0.0031	0.0023	0.0064	0.0038	0.0029	0.0073	0.0043	0.0033
Soft Steels (A36,1018, 8620,1045)	750	0.0033	0.0019	0.0015	0.0045	0.0026	0.0023	0.0059	0.0036	0.0027	0.0071	0.0042	0.0032
Alloy Steels (4340,4140)	550	0.0039	0.0023	0.0018	0.0052	0.0031	0.0023	0.0061	0.0036	0.0028	0.0075	0.0045	0.0034
4140 Pre-Hard (38 to 42 Rc)	350	0.0023	0.0013	0.0010	0.0038	0.0022	0.0018	0.0049	0.0028	0.0023	0.0066	0.0039	0.0031
Tool Steels (A2,D2,S7)	350	0.0035	0.0020	0.0016	0.0048	0.0028	0.0022	0.0057	0.0034	0.0026	0.0066	0.0039	0.0031
Die Steels (H13,P20)	375	0.0044	0.0026	0.0020	0.0055	0.0032	0.0026	0.0061	0.0036	0.0028	0.0075	0.0045	0.0034
Stainless Steel (303, 304, 316)	400	0.0035	0.0020	0.0016	0.0048	0.0028	0.0022	0.0057	0.0033	0.0026	0.0071	0.0042	0.0032
Difficult Stainless Steel (400 & PH Series)	350	0.0030	0.0018	0.0013	0.0043	0.0025	0.0020	0.0052	0.0031	0.0024	0.0066	0.0040	0.0031
Stainless Steel (13-8)	170	0.0023	0.0013	0.0010	0.0038	0.0022	0.0018	0.0049	0.0029	0.0022	0.0066	0.0040	0.0031
High Temp. Alloys	275	0.0030	0.0018	0.0013	0.0041	0.0024	0.0019	0.0049	0.0029	0.0022	0.0061	0.0036	0.0029
Titanium (6AL4V)	275	0.0035	0.0020	0.0016	0.0050	0.0029	0.0022	0.0059	0.0035	0.0027	0.0071	0.0042	0.0032
Inconel 718	160	0.0023	0.0013	0.0010	0.0038	0.0022	0.0018	0.0048	0.0029	0.0022	0.0066	0.0039	0.0031
Inconel 625	170	0.0023	0.0013	0.0010	0.0038	0.0022	0.0018	0.0048	0.0029	0.0022	0.0066	0.0039	0.0031

**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



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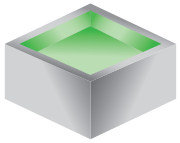
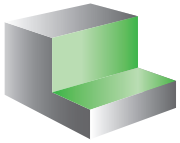


HIGH-VELOCITY



SUPER BITCHIN' PERFORMANCE
7 FLUTE CHIMPBREAKERS (METRIC)

GMS² Coating: Extremely hard and extremely wear- and heat-resistant to over 2012ºF.

7 Flute Chimpbreakers evacuates chips in the toughest applications while decreasing tool pressure. Variable flute and index design which reduces chatter and vibration. Radius corners for stronger edges and part radius. Recommended for aggressive machining applications in all materials. Should be run at specific parameters. See "Speeds and Feeds" chart at the end of this section. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available.

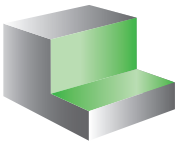
Available in special diameters, lengths and completely resharpenable. THE BEST chip control known to man or ape.

SPEEDS & FEEDS CHART PAGE 95

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End	Corner Radius (Metric)				
					0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
10mm	10mm	22mm	70mm	GMHTCB1000MMF7 EDP: 30753	GMHTCB1000MMR7030 EDP: 30754	GMHTCB1000MMR7050 EDP: 30755	GMHTCB1000MMR7100 EDP: 30756	—	—
12mm	12mm	32mm	75mm	GMHTCB1200MMF7 EDP: 30785	GMHTCB1200MMR7030 EDP: 30786	GMHTCB1200MMR7050 EDP: 30787	GMHTCB1200MMR7100 EDP: 30788	GMHTCB1200MMR7150 EDP: 30789	GMHTCB1200MMR7200 EDP: 30790
16mm	16mm	32mm	89mm	GMHTCB1600MMF7 EDP: 30847	GMHTCB1600MMR7030 EDP: 30848	GMHTCB1600MMR7050 EDP: 30849	GMHTCB1600MMR7100 EDP: 30850	—	GMHTCB1600MMR7200 EDP: 30851
20mm	20mm	38mm	100mm	GMHTCB2000MMF7 EDP: 30852	—	GMHTCB2000MMR7050 EDP: 30853	GMHTCB2000MMR7100 EDP: 30854	GMHTCB2000MMR7150 EDP: 30855	—

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING



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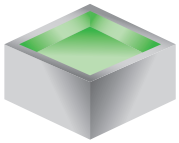
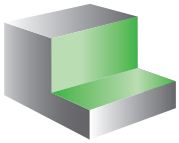


HIGH-VELOCITY



MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13-8)	Inconel 625
Soft Steels (A36,1018,8620,1045)	Die Steels (H13,P20)	High Temp. Alloys	
Alloy Steels (4340, 4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)	

"Chip control does not mean Bogarting all the Doritos®!"

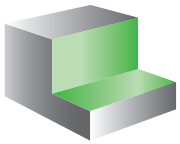
7 FLUTE BABOON CHIMPBREAKERS (METRIC) SPEEDS & FEEDS CHART FOR PROFILING, METRIC CHIMP LOAD PER TOOTH. NOTE MAX STEP OVER IS 30% OF CUTTER DIAMETER.

WORK PIECE MATERIAL	SFM	10mm			12mm			16mm			20mm		
PERCENTAGE OF CUTTER DIAMETER		5%	15%	30%	5%	15%	30%	5%	15%	30%	5%	15%	30%
Gray Cast Iron	700	0.0940	0.0559	0.0432	0.1397	0.0813	0.0635	0.1676	0.0991	0.0762	0.1981	0.1168	0.0914
Ductile Iron	500	0.0940	0.0559	0.0432	0.1321	0.0787	0.0584	0.1626	0.0965	0.0737	0.1854	0.1092	0.0838
Soft Steels (A36,1018, 8620,1045)	750	0.0838	0.0483	0.0381	0.1143	0.0660	0.0584	0.1499	0.0914	0.0686	0.1803	0.1067	0.0813
Alloy Steels (4340,4140)	550	0.0991	0.0584	0.0457	0.1321	0.0787	0.0584	0.1549	0.0914	0.0711	0.1905	0.1143	0.0864
4140 Pre-Hard (38 to 42 Rc)	350	0.0584	0.0330	0.0254	0.0965	0.0559	0.0457	0.1245	0.0711	0.0584	0.1676	0.0991	0.0787
Tool Steels (A2,D2,S7)	350	0.0889	0.0508	0.0406	0.1219	0.0711	0.0559	0.1448	0.0864	0.0660	0.1676	0.0991	0.0787
Die Steels (H13,P20)	375	0.1118	0.0660	0.0508	0.1397	0.0813	0.0660	0.1549	0.0914	0.0711	0.1905	0.1143	0.0864
Stainless Steel (303, 304, 316)	400	0.0889	0.0508	0.0406	0.1219	0.0711	0.0559	0.1448	0.0838	0.0660	0.1803	0.1067	0.0813
Difficult Stainless Steel (400 & PH Series)	350	0.0762	0.0457	0.0330	0.1092	0.0635	0.0508	0.1321	0.0787	0.0610	0.1676	0.1016	0.0787
Stainless Steel (13-8)	170	0.0584	0.0330	0.0254	0.0965	0.0559	0.0457	0.1245	0.0737	0.0559	0.1676	0.1016	0.0787
High Temp. Alloys	275	0.0762	0.0457	0.0330	0.1041	0.0610	0.0483	0.1245	0.0737	0.0559	0.1549	0.0914	0.0737
Titanium (6AL4V)	275	0.0889	0.0508	0.0406	0.1270	0.0737	0.0559	0.1499	0.0889	0.0686	0.1803	0.1067	0.0813
Inconel 718	160	0.0584	0.0330	0.0254	0.0965	0.0559	0.0457	0.1219	0.0737	0.0559	0.1676	0.0991	0.0787
Inconel 625	170	0.0584	0.0330	0.0254	0.0965	0.0559	0.0457	0.1219	0.0737	0.0559	0.1676	0.0991	0.0787

**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING



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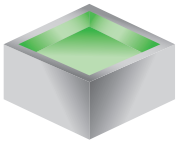
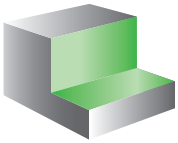


HIGH-VELOCITY

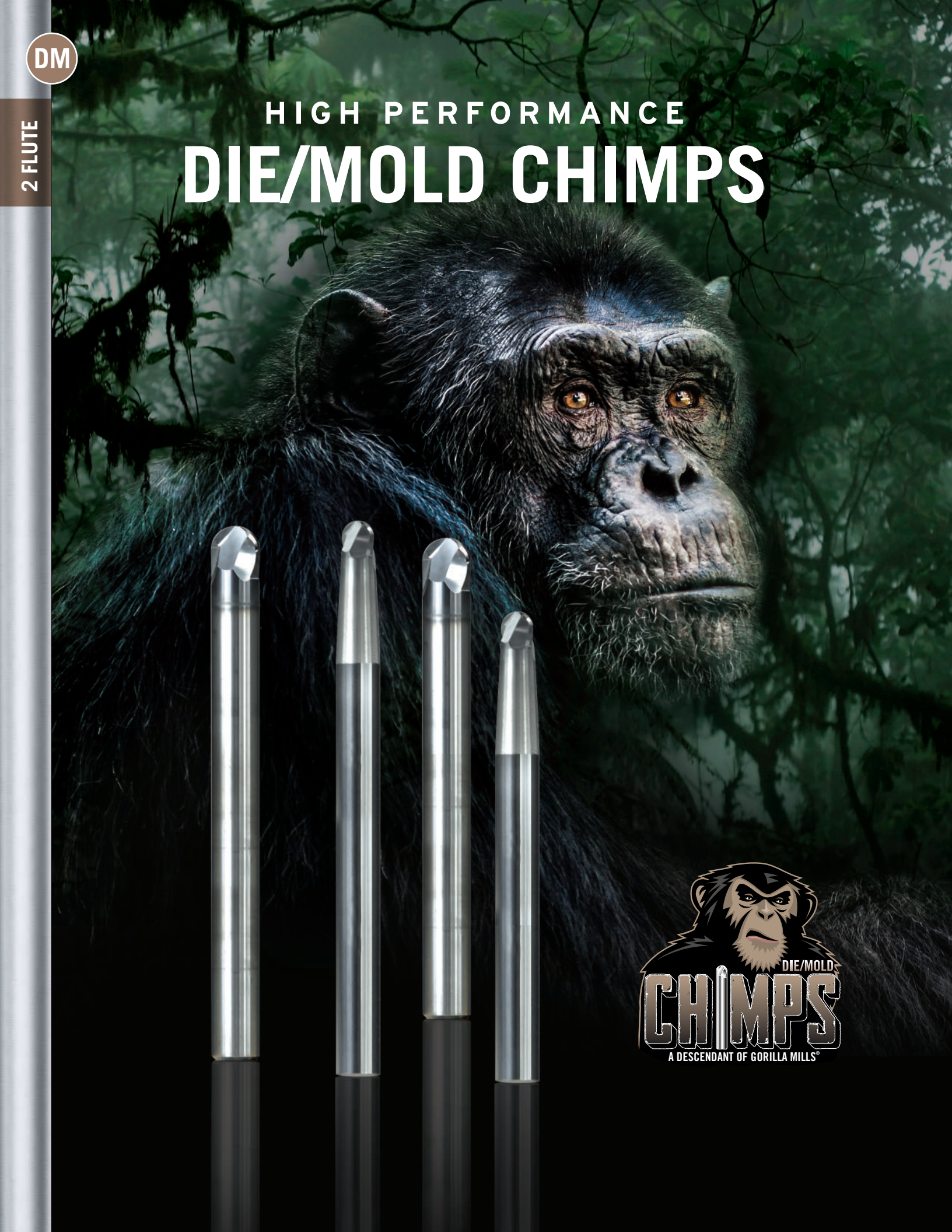


DM

2 FLUTE

HIGH PERFORMANCE

DIE/MOLD CHIMPS



DIE/MOLD CHIMPS

A DESCENDANT OF GORILLA MILLS®

DIE MOLD
2 FLUTE (INCH & METRIC)

Recommended for aggressive machining applications in die, mold and tool steels, (H-13, P-20, A7, D2, etc.). Should be run at specific parameters. Produced with the highest Transverse Rupture Strength (TRS) nano-grain carbide substrate available. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.

MATERIALS

Gray Cast Iron	4140 Pre-Hard (38 to 42 Rc)	Difficult Stainless Steel, (400 & PH Series)	Inconel 718
Ductile Iron	Tool Steels (A2,D2,S7)	Stainless Steel (13.8)	Inconel 625
Soft Steels (A36,1018,8620,1045)	Die Steels (H13,P20)	High Temp. Alloys	
Alloy Steels (4340,4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)	

GMS² COATED

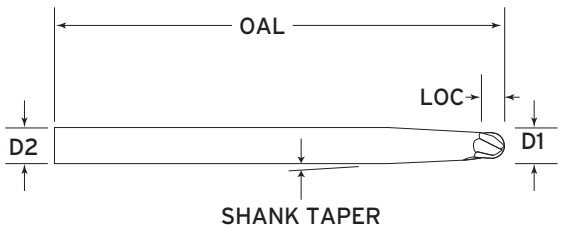
SPEEDS & FEEDS CHART PAGE 98

2 FLUTE CHIMPS (INCH)

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Shank Taper	Ballnose
1/32	1/4	1/32	3.0	3°	DMC132B2TS3 EDP: 60011
1/16	1/4	1/16	3.0	3°	DMC116B2TS3 EDP: 60008
1/8	1/4	1/8	3.0	3°	DMC18B2TS3 EDP: 60013
3/16	1/4	3/16	3.0	3°	DMC316B2TS3 EDP: 60014
1/4	1/4	1/4	3.0	—	DMC14B2 EDP: 60012
5/16	5/16	5/16	4.0	—	DMC516B2 EDP: 60016
3/8	3/8	3/8	4.0	—	DMC38B2 EDP: 60015
1/2	1/2	1/2	4.0	—	DMC12B2 EDP: 60010

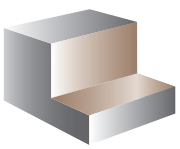
2 FLUTE CHIMPS (METRIC)

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Shank Taper	Ballnose
1mm	6mm	1mm	76mm	3°	DMC0100MMB2TS3 EDP: 60000
2mm	6mm	2mm	76mm	3°	DMC0200MMB2TS3 EDP: 60001
3mm	6mm	3mm	76mm	3°	DMC0300MMB2TS3 EDP: 60002
4mm	6mm	4mm	76mm	3°	DMC0400MMB2TS3 EDP: 60003
5mm	6mm	5mm	76mm	3°	DMC0500MMB2TS3 EDP: 60004
6mm	6mm	6mm	76mm	—	DMC0600MMB2 EDP: 60005
8mm	8mm	8mm	100mm	—	DMC0800MMB2 EDP: 60006
10mm	10mm	10mm	100mm	—	DMC1000MMB2 EDP: 60007
12mm	12mm	12mm	100mm	—	DMC1200MMB2 EDP: 60009

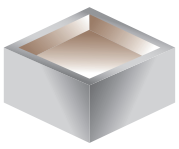


TOLERANCES	TOLERANCES
Cut Dia +.000/-.001	Cut Dia +.000/-.050mm
Shank Dia -.0001/-.0005	Shank Dia -.0025/-.0127mm
LOC +.025/+.050	LOC +.635/+1.270mm
OAL +/-.050	OAL +/-1.270mm

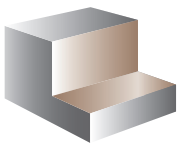
PROFILING



POCKETING



HIGH-VELOCITY



MATERIALS

Gray Cast Iron
Ductile Iron
Soft Steels (A36,1018,8620,1045)
Alloy Steels (4340,4140)

4140 Pre-Hard (38 to 42 Rc)
Tool Steels (A2,D2,S7)
Die Steels (H13,P20)
Stainless Steel (303, 304, 316)

Difficult Stainless Steel, (400 & PH Series)
Stainless Steel (13.8)
High Temp. Alloys
Titanium (6AL4V)

Inconel 718
Inconel 625

NOTE: IF DESIRED RPM CANNOT BE ACHIEVED, PLEASE RUN AT YOUR COMFORTABLE MAXIMUM RPM.

2 FLUTE CHIMPS (INCH) SPEEDS & FEEDS CHART FOR CALCULATING SFM BASED ON EFFECTIVE DIAMETER & FEED PER ADJUSTMENT. NOTE THIS IS IPR (INCHES PER REVOLUTION) FOR THE CHIMP PROFILING.

		1/8"		3/16"		1/4"		5/16"		3/8"		1/2"	
DEPTH OF CUT PER DIAMETER	SFM	.0050	.0100	.0050	.0100	.0050	.0100	.0050	.0100	.0050	.0100	.0050	.0100
EFFECTIVE DIAMETER, FOR SFM CALCULATION		.0490	.0680	.0600	.0840	.0700	.0980	.0780	.1100	.0860	.1210	.0990	.1400
Gray Cast Iron	800	.0078	.0048	.0093	.0063	.0144	.0104	.0160	.0112	.0176	.0124	.0200	.0144
Ductile Iron	680	.0078	.0048	.0093	.0063	.0144	.0104	.0160	.0112	.0176	.0124	.0200	.0144
Soft Steels (A36,1018,8620,1045)	850	.0078	.0048	.0093	.0063	.0144	.0104	.0160	.0112	.0176	.0124	.0200	.0144
Alloy Steels (4340,4140)	850	.0078	.0048	.0093	.0063	.0144	.0104	.0160	.0112	.0176	.0124	.0200	.0144
4140 Pre-Hard (38 to 42 Rc)	850	.0052	.0032	.0062	.0042	.0108	.0078	.0120	.0084	.0132	.0093	.0150	.0108
Tool Steels (A2,D2,S7)	850	.0078	.0048	.0093	.0063	.0144	.0104	.0160	.0112	.0176	.0124	.0200	.0144
Die Steels (H13,P20)	850	.0078	.0048	.0093	.0063	.0144	.0104	.0160	.0112	.0176	.0124	.0200	.0144
Stainless Steel (303, 304, 316)	480	.0078	.0048	.0093	.0063	.0144	.0104	.0160	.0112	.0176	.0124	.0200	.0144
Difficult Stainless Steel (400 & PH Series)	390	.0078	.0048	.0093	.0063	.0144	.0104	.0160	.0112	.0176	.0124	.0200	.0144
Stainless Steel (13-8)	390	.0078	.0048	.0093	.0063	.0144	.0104	.0160	.0112	.0176	.0124	.0200	.0144
High TempO. Alloys	400	.0078	.0048	.0093	.0063	.0144	.0104	.0160	.0112	.0176	.0124	.0200	.0144
Titanium (6AL4V)	200	.0052	.0032	.0062	.0042	.0108	.0078	.0120	.0084	.0132	.0093	.0150	.0108
Inconel 718	150	.0052	.0032	.0062	.0042	.0108	.0078	.0120	.0084	.0132	.0093	.0150	.0108
Inconel 625	150	.0052	.0032	.0062	.0042	.0108	.0078	.0120	.0084	.0132	.0093	.0150	.0108

2 FLUTE CHIMPS (METRIC) SPEEDS & FEEDS CHART FOR CALCULATING SFM BASED ON EFFECTIVE DIAMETER & FEED PER ADJUSTMENT. NOTE THIS IS MM/Rev (MILLIMETERS PER REVOLUTION) FOR THE CHIMP PROFILING.

		3mm		4mm		5mm		6mm		8mm		10mm		12mm	
DEPTH OF CUT PER DIAMETER	SFM	.1270	.2540	.1270	.2540	.1270	.2540	.1270	.2540	.1270	.2540	.1270	.2540	.1270	.2540
EFFECTIVE DIAMETER, FOR SFM CALCULATION		1.219	1.676	1.397	1.956	1.575	2.184	1.727	2.413	2.007	2.794	2.235	3.150	2.464	3.454
Gray Cast Iron	800	.1980	.1220	.2130	.1520	.3250	.2240	.3480	.2510	.4060	.2840	.4620	.3350	.5080	.3660
Ductile Iron	680	.1980	.1220	.2130	.1520	.3250	.2240	.3480	.2510	.4060	.2840	.4620	.3350	.5080	.3660
Soft Steels (A36,1018,8620,1045)	850	.1980	.1220	.2130	.1520	.3250	.2240	.3480	.2510	.4060	.2840	.4620	.3350	.5080	.3660
Alloy Steels (4340,4140)	850	.1980	.1220	.2130	.1520	.3250	.2240	.3480	.2510	.4060	.2840	.4620	.3350	.5080	.3660
4140 Pre-Hard (38 to 42 Rc)	850	.1320	.0810	.1420	.0910	.2440	.1680	.2620	.1880	.3050	.2130	.2510	.3510	.3810	.2740
Tool Steels (A2,D2,S7)	850	.1980	.1220	.2130	.1520	.3250	.2240	.3480	.2510	.4060	.2840	.4620	.3350	.5080	.3660
Die Steels (H13,P20)	850	.1980	.1220	.2130	.1520	.3250	.2240	.3480	.2510	.4060	.2840	.4620	.3350	.5080	.3660
Stainless Steel (303, 304, 316)	480	.1980	.1220	.2130	.1520	.3250	.2240	.3480	.2510	.4060	.2840	.4620	.3350	.5080	.3660
Difficult Stainless Steel (400 & PH Series)	390	.1980	.1220	.2130	.1520	.3250	.2240	.3480	.2510	.4060	.2840	.4620	.3350	.5080	.3660
Stainless Steel (13-8)	390	.1980	.1220	.2130	.0150	.3250	.2240	.3480	.2510	.4060	.2840	.4620	.3350	.5080	.3660
High Temp. Alloys	400	.1980	.1220	.2130	.1520	.3250	.2240	.3480	.2510	.4060	.2840	.4620	.3350	.5080	.3660
Titanium (6AL4V)	200	.1320	.0810	.1420	.0910	.2440	.1680	.2620	.1880	.3050	.2130	.2510	.3510	.3810	.2740
Inconel 718	150	.1320	.0810	.1420	.0910	.2440	.1680	.2620	.1880	.3050	.2130	.2510	.3510	.3810	.2740
Inconel 625	150	.132	.081	.142	.091	.244	.168	.262	.188	.305	.213	.251	.351	.381	.274

**Recommended Speeds & Feeds*

HP

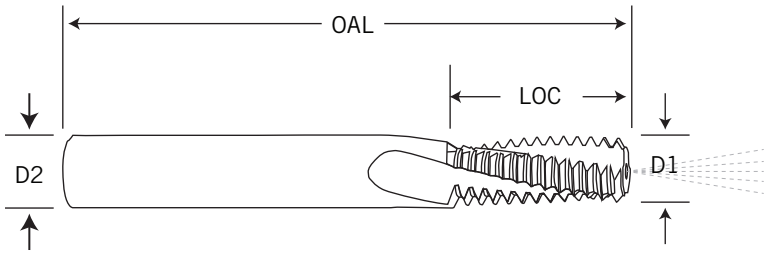
HIGH PERFORMANCE

CARBIDE THREAD MILLS

MISSING LINK
CARBIDE THREAD MILLS

HIGH PERFORMANCE THREADMILLS
COOLANT THRU VARIABLE HELIX/INDEX 1.5xD (INCH)

The 3-flute, 4-flute, and 5-flute Gorilla Mill Missing Link Thread Mills are made versatile through geometric enhancements.
A patented variable helix/index design differentiates the Gorilla Mill Missing Link from the competition, making it the ideal choice for increased tool life and cycle time reduction in threading.
See “Speeds and Feeds” chart at the end of this section.



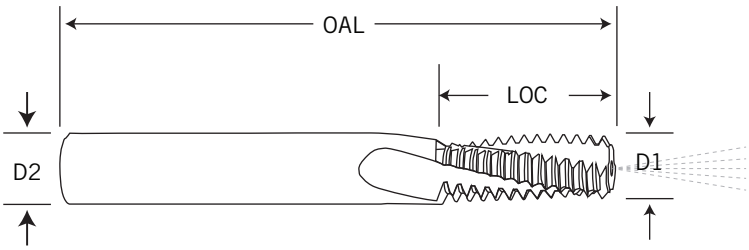
SPEEDS & FEEDS CHART PAGE 102

THREAD/ PITCH	D1 Cutting Dia.	D2 Shank Dia.	MINOR Dia.	LOC	NUMBER OF FLUTES	OAL	ITEM #	EDP
10-24	0.141	3/16	0.150	0.312	3	1.77	GMTMAC10-24UN3FL1.5X	90095
12-24	0.163	1/4	0.177	0.354	3	2.24	GMTMAC12-24UN3FL1.5X	90106
1/4-20	0.192	1/4	0.201	0.375	3	2.24	GMTMAC14-20UN3FL1.5X	90113
5/16-18	0.242	5/16	0.260	0.472	3	2.40	GMTMAC516-18UN3FL1.5X	90129
3/8-16	0.301	5/16	0.315	0.594	3	2.40	GMTMAC38-16UN3FL1.5X	90126
7/16-14	0.354	3/8	0.370	0.678	3	2.87	GMTMAC716-14UN3FL1.5X	90134
1/2-13	0.407	1/2	0.429	0.808	4	3.15	GMTMAC12-13UN4FL1.5X	90103
9/16-12	0.465	1/2	0.484	0.875	4	3.15	GMTMAC916-12UN4FL1.5X	90140

PATENT NO. 7,367,754

COOLANT THRU VARIABLE HELIX/INDEX 1.5xD (METRIC)

The 3-flute, 4-flute, and 5-flute Gorilla Mill Missing Link Thread Mills are made versatile through geometric enhancements.
A patented variable helix/index design differentiates the Gorilla Mill Missing Link from the competition, makingit the ideal choice for increased tool life and cycle time reduction in threading.
See “Speeds and Feeds” chart at the end of this section.



SPEEDS & FEEDS CHART PAGE 102								
THREAD/ PITCH	D1 Cutting Dia.	D2 Shank Dia.	MINOR Dia.	LOC	NUMBER OF FLUTES	OAL	ITEM #	EDP
M3x0.5	0.094	3/16	0.098	0.187	3	45mm	GMTMAC0300MM-0.503FL1.5X	90077
M4x0.7	0.124	3/16	0.129	0.262	3	45mm	GMTMAC0400MM-0.703FL1.5X	90079
M5x0.8	0.159	3/16	0.165	0.299	3	45mm	GMTMAC0500MM-0.803FL1.5X	90083
M6x1.0	0.189	1/4	0.197	0.374	3	57mm	GMTMAC0600MM-1.003FL1.5X	90086
M8x1.25	0.256	5/16	0.268	0.524	3	61mm	GMTMAC0800MM-1.253FL1.5X	90089
M10x1.5	0.323	3/8	0.335	0.620	3	73mm	GMTMAC1000MM-1.503FL1.5X	90093
M12x1.75	0.370	3/8	0.405	0.724	4	73mm	GMTMAC1200MM-1.754FL1.5X	90101
M14x2.0	0.457	1/2	0.472	0.827	4	73mm	GMTMAC1400MM-2.004FL1.5X	90111
M16X2.0	0.535	5/8	0.551	0.984	4	92mm	GMTMAC1600MM-2.004FL1.5X	90117

PATENT NO. 7,367,754

HIGH PERFORMANCE THREADMILLS
COOLANT THRU VARIABLE HELIX/INDEX 1.5xD

RECOMMENDED SPEEDS & FEEDS FOR COOLANT THRU VARIABLE HELIX/INDEX 1.5 X DIAMETER DEEP INCH

TOOL ENTRY SHOULD BE SET AT 60% OF THE FEED RATE. THEN GO TO 100% WHEN ENGAGED WITH MATERIAL.	SFM	10 -24	12 - 24	1/4 - 20	5/16 - 18	3/8 - 16	7/16 - 14	1/2 - 13	9/16 - 12
Gray Cast Iron	400	0.0008	0.0012	0.0015	0.0018	0.0020	0.0024	0.0028	0.0034
Ductile Iron	350	0.0008	0.0012	0.0015	0.0018	0.0020	0.0024	0.0028	0.0034
Soft Steels, (A36,1018,8620,1045)	600	0.0008	0.0012	0.0015	0.0018	0.0020	0.0025	0.0030	0.0039
Alloy Steels, (4340,4140)	450	0.0008	0.0012	0.0015	0.0018	0.0020	0.0024	0.0028	0.0034
4140 Pre-Hard (38 to 42 Rc)	300	0.0004	0.0007	0.0008	0.0011	0.0015	0.0018	0.0020	0.0025
Tool Steels (A2,D2,S7)	350	0.0008	0.0012	0.0015	0.0018	0.0020	0.0024	0.0028	0.0034
Die Steels, (H13,P20)	400	0.0008	0.0012	0.0015	0.0018	0.0020	0.0024	0.0028	0.0034
Stainless Steel, (303, 304, 316)	450	0.0008	0.0012	0.0015	0.0018	0.0020	0.0024	0.0028	0.0034
Difficult Stainless Steel, (400 & PH Series)	400	0.0004	0.0007	0.0008	0.0011	0.0015	0.0018	0.0020	0.0025
Stainless Steel (13-8)	200	0.0004	0.0007	0.0008	0.0011	0.0015	0.0018	0.0020	0.0025
High Temp. Alloys	250	0.0008	0.0012	0.0015	0.0018	0.0020	0.0024	0.0028	0.0034
Titanium (6AL4V)	300	0.0008	0.0012	0.0015	0.0018	0.0020	0.0024	0.0028	0.0034
Inconel 718	200	0.0004	0.0007	0.0008	0.0011	0.0015	0.0018	0.0020	0.0025
Inconel 625	200	0.0004	0.0007	0.0008	0.0011	0.0015	0.0018	0.0020	0.0025

RECOMMENDED SPEEDS & FEEDS FOR COOLANT THRU VARIABLE HELIX/INDEX 1.5 X DIAMETER DEEP METRIC

TOOL ENTRY SHOULD BE SET AT 60% OF THE FEED RATE. THEN GO TO 100% WHEN ENGAGED WITH MATERIAL.	SFM	M3 x 0.5	M4 x 0.7	M5 x 0.8	M6 x 1.0	M8 x 1.25	M10 x 1.5	M12 x 1.75	M14 x 2.0	M16 x 2.0
Gray Cast Iron	400	0.0005	0.0006	0.0010	0.0014	0.0018	0.0021	0.0025	0.0031	0.0039
Ductile Iron	350	0.0005	0.0006	0.0010	0.0014	0.0018	0.0021	0.0025	0.0031	0.0039
Soft Steels, (A36,1018,8620,1045)	600	0.0005	0.0006	0.0010	0.0014	0.0018	0.0022	0.0028	0.0033	0.0043
Alloy Steels, (4340,4140)	450	0.0005	0.0006	0.0010	0.0014	0.0018	0.0021	0.0025	0.0031	0.0039
4140 Pre-Hard (38 to 42 Rc)	300	0.0003	0.0004	0.0005	0.0007	0.0011	0.0016	0.0020	0.0022	0.0028
Tool Steels (A2,D2,S7)	350	0.0005	0.0006	0.0010	0.0014	0.0018	0.0021	0.0025	0.0031	0.0039
Die Steels, (H13,P20)	400	0.0005	0.0006	0.0010	0.0014	0.0018	0.0021	0.0025	0.0031	0.0039
Stainless Steel, (303, 304, 316)	450	0.0005	0.0006	0.0010	0.0014	0.0018	0.0021	0.0025	0.0031	0.0039
Difficult Stainless Steel, (400 & PH Series)	400	0.0003	0.0004	0.0005	0.0007	0.0011	0.0016	0.0020	0.0022	0.0028
Stainless Steel (13-8)	200	0.0003	0.0004	0.0005	0.0007	0.0011	0.0016	0.0020	0.0022	0.0028
High Temp. Alloys	250	0.0005	0.0006	0.0010	0.0014	0.0018	0.0021	0.0025	0.0031	0.0039
Titanium (6AL4V)	300	0.0005	0.0006	0.0010	0.0014	0.0018	0.0021	0.0025	0.0031	0.0039
Inconel 718	200	0.0003	0.0004	0.0005	0.0007	0.0011	0.0016	0.0020	0.0022	0.0028
Inconel 625	200	0.0003	0.0004	0.0005	0.0007	0.0011	0.0016	0.0020	0.0022	0.0028

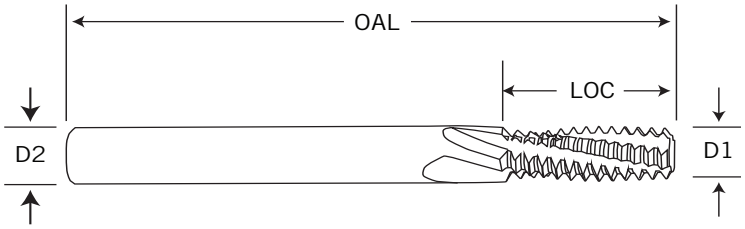
If the RPM's are to high for your machine, run max RPM you are comfortable with.

Note that these Chip Loads are Chip Loads Per Tooth.

SFM should be calculated on minor diameter.

SOLID VARIABLE HELIX/INDEX 2XD (INCH)

The 3-flute, 4-flute, and 5-flute Gorilla Mill Missing Link Thread Mills are made versatile through geometric enhancements.
A patented variable helix/index design differentiates the Gorilla Mill Missing Link from the competition, making it the ideal choice for increased tool life and cycle time reduction in threading.
See “Speeds and Feeds” chart at the end of this section.



SPEEDS & FEEDS CHART PAGE 104

THREAD/ PITCH	D1 Cutting Dia.	D2 Shank Dia.	MINOR Dia.	LOC	NUMBER OF FLUTES	OAL	ITEM #	EDP
10-32	0.121	1/8	0.157	0.312	3	2.0	GMTM10-32UN3FL	90037
10-28	0.121	1/8	0.155	0.321	3	2.0	GMTM10-28UN3FL	90036
12-28	0.150	3/16	0.181	0.464	3	2.5	GMTM12-28UN3FL	90050
1/4-28	0.181	3/16	0.217	0.500	3	2.5	GMTM14-28UN3FL	90056
10-24	0.120	1/8	0.150	0.333	3	2.0	GMTM10-24UN3FL	90035
12-24	0.138	3/16	0.177	0.458	3	2.5	GMTM12-24UN3FL	90049
5/16-24	0.232	1/4	0.268	0.625	3	2.5	GMTM516-24UN3FL	90069
3/8-24	0.291	5/16	0.335	0.750	4	3.0	GMTM38-24UN4FL	90067
1/4-20	0.181	3/16	0.205	0.500	3	2.5	GMTM14-20UN3FL	90055
1/2-20	0.371	3/8	0.453	1.000	4	3.5	GMTM12-20UN4FL	90048
7/16-20	0.335	3/8	0.386	0.900	4	3.5	GMTM716-20UN4FL	90073
5/16-18	0.232	1/4	0.256	0.667	3	2.5	GMTM516-18UN3FL	90068
9/16-18	0.371	3/8	0.504	0.889	4	3.5	GMTM916-18UN4FL	90076
5/8-18	0.496	1/2	0.571	1.278	4	3.5	GMTM58-18UN4FL	90071
3/8-16	0.285	5/16	0.315	0.750	4	3.0	GMTM38-16UN4FL	90066
3/4-16	0.496	1/2	0.689	1.250	4	3.5	GMTM34-16UN4FL	90065
7/16-14	0.305	5/16	0.366	0.786	4	3.0	GMTM716-14UN4FL	90072
1/2-13	0.350	3/8	0.425	0.923	4	3.5	GMTM12-13UN4FL	90045
9/16-12	0.371	3/8	0.484	0.917	4	3.5	GMTM916-12UN4FL	90075
5/8-11	0.469	1/2	0.531	1.273	4	3.5	GMTM58-11UN4FL	90070
3/4-10	0.496	1/2	0.650	1.300	4	3.5	GMTM34-10UN4FL	90064
7/8-9	0.621	5/8	0.768	1.444	4	4.0	GMTM78-9UN4FL	90074
1.0-8	0.621	5/8	0.878	1.375	4	4.0	GMTM1-8UN4FL	90060

PATENT NO. 7,367,754

HIGH PERFORMANCE THREADMILLS
SOLID VARIABLE HELIX/INDEX 2xD (INCH)

RECOMMENDED SPEEDS & FEEDS FOR SOLID VARIABLE HELIX/INDEX 2 X DIAMETER DEEP, INCH

TOOL ENTRY SHOULD BE SET AT 60% OF THE FEED RATE. THEN GO TO 100% WHEN ENGAGED WITH MATERIAL.	SFM	10-32	10-28	12-28	1/4-28	10-24	12-24	5/16-24	3/8-24	1/4-20	1/2-20	7/16-20
Gray Cast Iron	300	0.0005	0.0006	0.0006	0.0006	0.0007	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
Ductile Iron	250	0.0005	0.0006	0.0006	0.0006	0.0007	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
Soft Steels, (A36,1018,8620,1045)	500	0.0005	0.0006	0.0006	0.0006	0.0007	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
Alloy Steels, (4340,4140)	350	0.0005	0.0006	0.0006	0.0006	0.0007	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
4140 Pre-Hard (38 to 42 Rc)	200	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0007	0.0009	0.0010	0.0011	0.0011
Tool Steels (A2,D2,S7)	300	0.0005	0.0006	0.0006	0.0006	0.0007	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
Die Steels, (H13,P20)	300	0.0005	0.0006	0.0006	0.0006	0.0007	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
Stainless Steel, (303, 304, 316)	375	0.0005	0.0006	0.0006	0.0006	0.0007	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
Difficult Stainless Steel, (400 & PH Series)	300	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0007	0.0009	0.0010	0.0011	0.0011
Stainless Steel (13-8)	150	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0007	0.0009	0.0010	0.0011	0.0011
High Temp. Alloys	200	0.0005	0.0006	0.0006	0.0006	0.0007	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
Titanium (6AL4V)	200	0.0005	0.0006	0.0006	0.0006	0.0007	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
Inconel 718	200	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0007	0.0009	0.0010	0.0011	0.0011
Inconel 625	175	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0007	0.0009	0.0010	0.0011	0.0011

RECOMMENDED SPEEDS & FEEDS FOR SOLID VARIABLE HELIX/INDEX 2 X DIAMETER DEEP, INCH

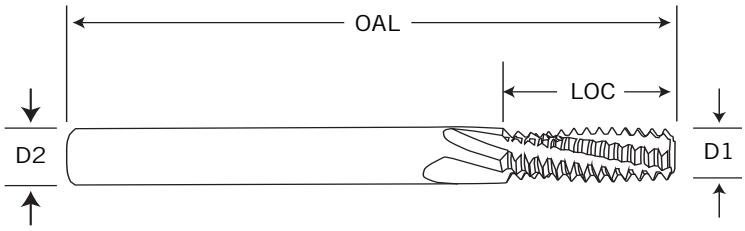
TOOL ENTRY SHOULD BE SET AT 60% OF THE FEED RATE. THEN GO TO 100% WHEN ENGAGED WITH MATERIAL.	SFM	5/16-18	9/16-18	5/8-18	3/8-16	3/4-16	7/16-14	1/2-13	9/16-12	5/8-11	3/4-10	7/8-9	1.0- 8
Gray Cast Iron	300	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044	0.0046	0.0048
Ductile Iron	250	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044	0.0046	0.0048
Soft Steels, (A36,1018,8620,1045)	500	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044	0.0046	0.0048
Alloy Steels, (4340,4140)	350	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044	0.0046	0.0048
4140 Pre-Hard (38 to 42 Rc)	200	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0022	0.0028	0.0030	0.0033	0.0035	0.0037
Tool Steels (A2,D2,S7)	300	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044	0.0046	0.0048
Die Steels, (H13,P20)	300	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044	0.0046	0.0048
Stainless Steel, (303, 304, 316)	375	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044	0.0046	0.0048
Difficult Stainless Steel, (400 & PH Series)	300	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0022	0.0028	0.0030	0.0033	0.0035	0.0037
Stainless Steel (13-8)	150	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0022	0.0028	0.0030	0.0033	0.0035	0.0037
High Temp. Alloys	200	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044	0.0046	0.0048
Titanium (6AL4V)	200	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044	0.0046	0.0048
Inconel 718	200	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0022	0.0028	0.0030	0.0033	0.0035	0.0037
Inconel 625	175	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0022	0.0028	0.0030	0.0033	0.0035	0.0037

If the RPM's are to high for your machine, run max RPM you are comfortable with.

Note that these Chip Loads are Chip Loads Per Tooth.

SFM should be calculated on minor diameter.

HIGH PERFORMANCE THREADMILLS
SOLID VARIABLE HELIX/INDEX 2xD (METRIC)



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See “Speeds and Feeds” chart at the end of this section.

SPEEDS & FEEDS CHART PAGE 106

THREAD/ PITCH	D1 Cutting Dia.	D2 Shank Dia.	MINOR Dia.	LOC	NUMBER OF FLUTES	OAL	ITEM #	EDP
M3x0.5	0.087	4mm	0.098	0.236	3	45mm	GMTM0300MM-0.503FL	90023
M4x0.5	0.118	4mm	0.138	0.315	3	45mm	GMTM0400MM-0.503FL	90024
M5x0.5	0.154	4mm	0.177	0.394	3	45mm	GMTM0500MM-0.503FL	90026
M4x0.7	0.110	4mm	0.130	0.331	3	45mm	GMTM0400MM-0.703FL	90025
M6x0.75	0.154	4mm	0.209	0.472	3	45mm	GMTM0600MM-0.753FL	90028
M5x0.8	0.138	4mm	0.165	0.409	3	45mm	GMTM0500MM-0.803FL	90027
M6x1.0	0.154	4mm	0.197	0.472	3	45mm	GMTM0600MM-1.003FL	90029
M8x1.0	0.232	6mm	0.276	0.630	3	57mm	GMTM0800MM-1.003FL	90030
M10x1.0	0.311	8mm	0.354	0.787	3	63mm	GMTM1000MM-1.003FL	90032
M12x1.0	0.390	10mm	0.433	0.945	4	73mm	GMTM1200MM-1.004FL	90042
M8x1.25	0.228	6mm	0.268	0.640	3	57mm	GMTM0800MM-1.253FL	90031
M10x1.25	0.303	8mm	0.346	0.787	3	63mm	GMTM1000MM-1.253FL	90033
M10x1.5	0.303	8mm	0.335	0.827	3	63mm	GMTM1000MM-1.503FL	90034
M12x1.5	0.370	10mm	0.413	0.945	4	73mm	GMTM1200MM-1.504FL	90043
M14x1.5	0.441	12mm	0.492	1.122	4	83mm	GMTM1400MM-1.504FL	90051
M16x1.5	0.469	12mm	0.571	1.299	4	83mm	GMTM1600MM-1.504FL	90057
M12x1.75	0.343	10mm	0.402	0.965	4	73mm	GMTM1200MM-1.754FL	90044
M14x2.0	0.390	10mm	0.472	1.102	4	73mm	GMTM1400MM-2.004FL	90052
M16x2.0	0.469	12mm	0.551	1.260	4	83mm	GMTM1600MM-2.004FL	90058
M18x2.5	0.547	16mm	0.610	1.575	5	92mm	GMTM1800MM-2.505FL	90059
M24x3.0	0.626	16mm	0.827	1.654	4	92mm	GMTM2400MM-3.004FL	90063

PATENT NO. 7,367,754

PATENT NO. 7,153,067

HIGH PERFORMANCE THREADMILLS
SOLID VARIABLE HELIX/INDEX 2xD (METRIC)

RECOMMENDED SPEEDS & FEEDS FOR SOLID VARIABLE HELIX/INDEX 2 X DIAMETER DEEP, METRIC

TOOL ENTRY SHOULD BE SET AT 60% OF THE FEED RATE. THEN GO TO 100% WHEN ENGAGED WITH MATERIAL.	SFM	M3 x 0.5	M4 x 0.5	M5 x 0.5	M4 x 0.7	M6 x .75	M5 x 0.8	M6 x 1.0	M8 x 1.0	M10 x 1.0	M12 x 1.0
Gray Cast Iron	300	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018
Ductile Iron	250	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018
Soft Steels, (A36,1018,8620,1045)	500	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018
Alloy Steels, (4340,4140)	350	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018
4140 Pre-Hard (38 to 42 Rc)	200	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0007	0.0009	0.0010	0.0011
Tool Steels (A2,D2,S7)	300	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018
Die Steels, (H13,P20)	300	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018
Stainless Steel, (303, 304, 316)	375	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018
Difficult Stainless Steel, (400 & PH Series)	300	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0007	0.0009	0.0010	0.0011
Stainless Steel (13-8)	150	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0007	0.0009	0.0010	0.0011
High Temp. Alloys	200	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018
Titanium (6AL4V)	200	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018
Inconel 718	200	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0007	0.0009	0.0010	0.0011
Inconel 625	175	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0007	0.0009	0.0010	0.0011

RECOMMENDED SPEEDS & FEEDS FOR SOLID VARIABLE HELIX/INDEX 2 X DIAMETER DEEP, METRIC

TOOL ENTRY SHOULD BE SET AT 60% OF THE FEED RATE. THEN GO TO 100% WHEN ENGAGED WITH MATERIAL.	SFM	M8 x 1.25	M10 x 1.25	M10 x 1.5	M12 x 1.5	M14 x 1.5	M16 x 1.5	M12 x 1.75	M14 x 2.0	M16 x 2.0	M18 x 2.5	M24 x3.0
Gray Cast Iron	300	0.0018	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044
Ductile Iron	250	0.0018	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044
Soft Steels, (A36,1018,8620,1045)	500	0.0018	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044
Alloy Steels, (4340,4140)	350	0.0018	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044
4140 Pre-Hard (38 to 42 Rc)	200	0.0011	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0022	0.0028	0.0030	0.0033
Tool Steels (A2,D2,S7)	300	0.0018	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044
Die Steels, (H13,P20)	300	0.0018	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044
Stainless Steel, (303, 304, 316)	375	0.0018	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044
Difficult Stainless Steel, (400 & PH Series)	300	0.0011	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0022	0.0028	0.0030	0.0033
Stainless Steel (13-8)	150	0.0011	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0022	0.0028	0.0030	0.0033
High Temp. Alloys	200	0.0018	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044
Titanium (6AL4V)	200	0.0018	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0044
Inconel 718	200	0.0011	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0022	0.0028	0.0030	0.0033
Inconel 625	175	0.0011	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0022	0.0028	0.0030	0.0033

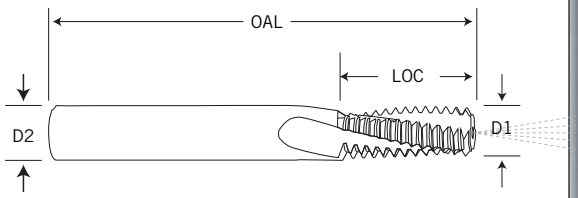
If the RPM's are to high for your machine, run max RPM you are comfortable with.

Note that these Chip Loads are Chip Loads Per Tooth.

SFM should be calculated on minor diameter.

HIGH PERFORMANCE THREADMILLS
COOLANT THRU VARIABLE HELIX/INDEX 2xD (INCH)

The 3-flute, 4-flute, and 5-flute Gorilla Mill Missing Link Thread Mills are made versatile through geometric enhancements.
A patented variable helix/index design differentiates the Gorilla Mill Missing Link from the competition, making it the ideal choice for increased tool life and cycle time reduction in threading.
See “Speeds and Feeds” chart at the end of this section.



SPEEDS & FEEDS CHART PAGE 108 (NPT)								
THREAD/ PITCH	D1 Cutting Dia.	D2 Shank Dia.	MINOR Dia.	LOC	NUMBER OF FLUTES	OAL	ITEM #	EDP
10-32	0.150	3/16	0.150	0.391	3	1.77	GMTMAC10-32UN3FL2X	90097
12-32	0.173	1/4	0.185	0.453	3	2.24	GMTMAC12-32UN3FL2X	90109
12-28	0.169	1/4	0.181	0.446	3	2.24	GMTMAC12-28UN3FL2X	90108
1/4-28	0.203	1/4	0.216	0.518	3	2.24	GMTMAC14-28UN3FL2X	90115
7/16-28	0.371	3/8	0.401	0.875	3	2.87	GMTMAC716-28UN3FL2X	90137
10-24	0.141	3/16	0.150	0.396	3	1.77	GMTMAC10-24UN3FL2X	90096
12-24	0.163	1/4	0.177	0.437	3	2.24	GMTMAC12-24UN3FL2X	90107
5/16-24	0.263	5/16	0.272	0.646	3	2.40	GMTMAC516-24UN3FL2X	90131
3/8-24	0.323	3/8	0.335	0.771	3	2.87	GMTMAC38-24UN3FL2X	90128
9/16-24	0.496	1/2	0.520	1.145	4	3.15	GMTMAC916-24UN4FL2X	90143
1/4-20	0.192	1/4	0.201	0.525	3	2.24	GMTMAC14-20UN3FL2X	90114
7/16-20	0.362	3/8	0.390	0.875	3	2.87	GMTMAC716-20UN3FL2X	90136
1/2-20	0.437	1/2	0.453	1.025	4	3.15	GMTMAC12-20UN4FL2X	90105
3/4-20	0.685	3/4	0.701	1.525	4	4.02	GMTMAC34-20UN4FL2X	90125
5/16-18	0.242	5/16	0.260	0.639	3	2.40	GMTMAC516-18UN3FL2X	90130
9/16-18	0.492	1/2	0.512	1.139	4	3.15	GMTMAC916-18UN4FL2X	90142
5/8-18	0.555	5/8	0.575	1.250	4	3.62	GMTMAC58-18UN4FL2X	90133
3/8-16	0.301	5/16	0.315	0.781	3	2.40	GMTMAC38-16UN3FL2X	90127
3/4-16	0.669	3/4	0.689	1.528	4	4.02	GMTMAC34-16UN4FL2X	90124
7/16-14	0.354	3/8	0.370	0.893	3	2.87	GMTMAC716-14UN3FL2X	90135
7/8-14	0.746	3/4	0.807	1.750	4	4.02	GMTMAC78-14UN4FL2X	90138
1/2-13	0.407	1/2	0.430	1.039	4	3.15	GMTMAC12-13UN4FL2X	90104
9/16-12	0.465	1/2	0.484	1.125	4	3.15	GMTMAC916-12UN4FL2X	90141
1.0-12	0.746	3/4	0.925	2.042	4	4.02	GMTMAC1-12UN4FL2X	90098
5/8-11	0.516	5/8	0.539	1.318	4	3.62	GMTMAC58-11UN4FL2X	90132
3/4-10	0.622	5/8	0.657	1.550	4	3.62	GMTMAC34-10UN4FL2X	90123
7/8-9	0.746	3/4	0.768	1.833	4	4.02	GMTMAC78-9UN4FL2X	90139
1.0-8	0.746	3/4	0.866	2.063	4	4.02	GMTMAC1-8UN4FL2X	90120

PATENT NO. 7,367,754

HIGH PERFORMANCE THREADMILLS
COOLANT THRU VARIABLE HELIX/INDEX 2xD (INCH)

RECOMMENDED SPEEDS & FEEDS FOR COOLANT THRU VARIABLE HELIX/INDEX 2 X DIAMETER DEEP, INCH (NPT)

TOOL ENTRY SHOULD BE SET AT 60% OF THE FEED RATE. THEN GO TO 100% WHEN ENGAGED WITH MATERIAL.	SFM	10-32	12-32	12-28	1/4-28	7/16-28	10-24	12-24	5/16-24	3/8-24	9/16-24	1/4-20	7/16-20	1/2-20	3/4-20
Gray Cast Iron	400	0.0005	0.0006	0.0006	0.0006	0.0015	0.0007	0.0010	0.0014	0.0015	0.0021	0.0016	0.0018	0.0018	0.0025
Ductile Iron	350	0.0005	0.0006	0.0006	0.0006	0.0015	0.0007	0.0010	0.0014	0.0015	0.0021	0.0016	0.0018	0.0018	0.0025
Soft Steels, (A36,1018,8620,1045)	600	0.0005	0.0006	0.0006	0.0006	0.0015	0.0007	0.0010	0.0014	0.0015	0.0021	0.0016	0.0018	0.0018	0.0025
Alloy Steels, (4340,4140)	450	0.0005	0.0006	0.0006	0.0006	0.0015	0.0007	0.0010	0.0014	0.0015	0.0021	0.0016	0.0018	0.0018	0.0025
4140 Pre-Hard (38 to 42 Rc)	300	0.0003	0.0003	0.0004	0.0004	0.0011	0.0005	0.0005	0.0007	0.0009	0.0016	0.0010	0.0011	0.0011	0.0020
Tool Steels (A2,D2,S7)	350	0.0005	0.0006	0.0006	0.0006	0.0015	0.0007	0.0010	0.0014	0.0015	0.0021	0.0016	0.0018	0.0018	0.0025
Die Steels, (H13,P20)	400	0.0005	0.0006	0.0006	0.0006	0.0015	0.0007	0.0010	0.0014	0.0015	0.0021	0.0016	0.0018	0.0018	0.0025
Stainless Steel, (303, 304, 316)	450	0.0005	0.0006	0.0006	0.0006	0.0015	0.0007	0.0010	0.0014	0.0015	0.0021	0.0016	0.0018	0.0018	0.0025
Difficult Stainless Steel, (400 & PH Series)	400	0.0003	0.0003	0.0004	0.0004	0.0011	0.0005	0.0005	0.0007	0.0009	0.0016	0.0010	0.0011	0.0011	0.0020
Stainless Steel (13-8)	200	0.0003	0.0003	0.0004	0.0004	0.0011	0.0005	0.0005	0.0007	0.0009	0.0016	0.0010	0.0011	0.0011	0.0020
High Temp. Alloys	250	0.0005	0.0006	0.0006	0.0006	0.0015	0.0007	0.0010	0.0014	0.0015	0.0021	0.0016	0.0018	0.0018	0.0025
Titanium (6AL4V)	300	0.0005	0.0006	0.0006	0.0006	0.0015	0.0007	0.0010	0.0014	0.0015	0.0021	0.0016	0.0018	0.0018	0.0025
Inconel 718	200	0.0003	0.0003	0.0004	0.0004	0.0011	0.0005	0.0005	0.0007	0.0009	0.0016	0.0010	0.0011	0.0011	0.0020
Inconel 625	200	0.0003	0.0003	0.0004	0.0004	0.0011	0.0005	0.0005	0.0007	0.0009	0.0016	0.0010	0.0011	0.0011	0.0020

RECOMMENDED SPEEDS & FEEDS FOR COOLANT THRU VARIABLE HELIX/INDEX 2 X DIAMETER DEEP, INCH (NPT)

TOOL ENTRY SHOULD BE SET AT 60% OF THE FEED RATE. THEN GO TO 100% WHEN ENGAGED WITH MATERIAL.	SFM	5/16-18	9/16-18	5/8-18	3/8-16	3/4-16	7/16-14	7/8-14	1/2-13	9/16-12	1.0-12	5/8-11	3/4-10	7/8-9	1.0- 8
Gray Cast Iron	400	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0046	0.0031	0.0039	0.0048	0.0041	0.0044	0.0046	0.0048
Ductile Iron	350	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0046	0.0031	0.0039	0.0048	0.0041	0.0044	0.0046	0.0048
Soft Steels, (A36,1018,8620,1045)	600	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0046	0.0031	0.0039	0.0048	0.0041	0.0044	0.0046	0.0048
Alloy Steels, (4340,4140)	450	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0046	0.0031	0.0039	0.0048	0.0041	0.0044	0.0046	0.0048
4140 Pre-Hard (38 to 42 Rc)	300	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0035	0.0022	0.0028	0.0037	0.0030	0.0033	0.0035	0.0037
Tool Steels (A2,D2,S7)	350	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0046	0.0031	0.0039	0.0048	0.0041	0.0044	0.0046	0.0048
Die Steels, (H13,P20)	400	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0046	0.0031	0.0039	0.0048	0.0041	0.0044	0.0046	0.0048
Stainless Steel, (303, 304, 316)	450	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0046	0.0031	0.0039	0.0048	0.0041	0. 0044	0.0046	0.0048
Difficult Stainless Steel, (400 & PH Series)	400	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0035	0.0022	0.0028	0.0037	0.0030	0.0033	0.0035	0.0037
Stainless Steel (13-8)	200	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0035	0.0022	0.0028	0.0037	0.0030	0.0033	0.0035	0.0037
High Temp. Alloys	250	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0046	0.0031	0.0039	0.0048	0.0041	0. 0044	0.0046	0.0048
Titanium (6AL4V)	300	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0046	0.0031	0.0039	0.0048	0.0041	0. 0044	0.0046	0.0048
Inconel 718	200	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0035	0.0022	0.0028	0.0037	0.0030	0.0033	0.0035	0.0037
Inconel 625	200	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0035	0.0022	0.0028	0.0037	0.0030	0.0033	0.0035	0.0037

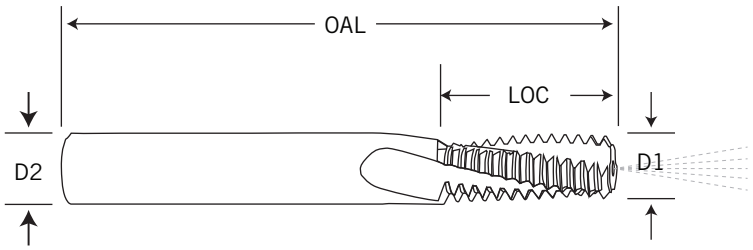
If the RPM's are to high for your machine, run max RPM you are comfortable with.

Note that these Chip Loads are Chip Loads Per Tooth.

SFM should be calculated on minor diameter.

HIGH PERFORMANCE THREADMILLS
COOLANT THRU VARIABLE HELIX/INDEX 2xD (METRIC)

The 3-flute, 4-flute, and 5-flute Gorilla Mill Missing Link Thread Mills are made versatile through geometric enhancements.
A patented variable helix/index design differentiates the Gorilla Mill Missing Link from the competition, making it the ideal choice for increased tool life and cycle time reduction in threading.
See “Speeds and Feeds” chart at the end of this section.



SPEEDS & FEEDS CHART PAGE 110 (NPT)

THREAD/ PITCH	D1 Cutting Dia.	D2 Shank Dia.	MINOR Dia.	LOC	NUMBER OF FLUTES	OAL	ITEM #	EDP
M3x0.5	0.094	3/16	0.098	0.246	3	45mm	GMTMAC0300MM-0.503FL2X	90078
M4x0.5	0.126	3/16	0.138	0.325	3	45mm	GMTMAC0400MM-0.503FL2X	90080
M5x0.5	0.165	1/4	0.177	0.404	3	57mm	GMTMAC0500MM-0.503FL2X	90082
M4x0.7	0.124	3/16	0.129	0.344	3	45mm	GMTMAC0400MM-0.703FL2X	90081
M6x0.75	0.197	1/4	0.209	0.487	3	57mm	GMTMAC0600MM-0.753FL2X	90085
M5x0.8	0.159	3/16	0.165	0.425	3	45mm	GMTMAC0500MM-0.803FL2X	90084
M6x1.0	0.189	1/4	0.197	0.492	3	57mm	GMTMAC0600MM-1.003FL2X	90087
M8x1.0	0.264	5/16	0.276	0.650	3	61mm	GMTMAC0800MM-1.003FL2X	90088
M10x1.0	0.343	3/8	0.354	0.807	3	73mm	GMTMAC1000MM-1.003FL2X	90091
M12x1.0	0.421	1/2	0.433	0.965	4	73mm	GMTMAC1200MM-1.004FL2X	90099
M8x1.25	0.256	5/16	0.268	0.664	3	61mm	GMTMAC0800MM-1.253FL2X	90090
M10x1.25	0.335	3/8	0.346	0.812	3	73mm	GMTMAC1000MM-1.253FL2X	90092
M10X1.5	0.323	3/8	0.335	0.797	3	73mm	GMTMAC1000MM-1.503FL2X	90094
M12X1.5	0.370	3/8	0.413	0.974	3	73mm	GMTMAC1200MM-1.503FL2X	90100
M14X1.5	0.469	1/2	0.492	1.152	4	80mm	GMTMAC1400MM-1.504FL2X	90110
M16X1.5	0.547	5/8	0.571	1.270	4	80mm	GMTMAC1600MM-1.504FL2X	90116
M12x1.75	0.370	3/8	0.405	0.999	4	73mm	GMTMAC1200MM-1.754FL2X	90102
M14x2.0	0.457	1/2	0.472	1.142	4	80mm	GMTMAC1400MM-2.004FL2X	90112
M16x2.0	0.535	5/8	0.551	1.299	4	92mm	GMTMAC1600MM-2.004FL2X	90118
M18x2.5	0.583	5/8	0.598	1.427	4	92mm	GMTMAC1800MM-2.504FL2X	90119
M20x2.5	0.673	3/4	0.687	1.624	4	102mm	GMTMAC2000MM-2.504FL2X	90121
M24x3.0	0.746	3/4	0.827	1.949	4	102mm	GMTMAC2400MM-3.004FL2X	90122

PATENT NO. 7,367,754

HIGH PERFORMANCE THREADMILLS
COOLANT THRU VARIABLE HELIX/INDEX 2xD (METRIC)

RECOMMENDED SPEEDS & FEEDS FOR COOLANT THRU VARIABLE HELIX/INDEX 2 X DIAMETER DEEP, METRIC (NPT)

TOOL ENTRY SHOULD BE SET AT 60% OF THE FEED RATE. THEN GO TO 100% WHEN ENGAGED WITH MATERIAL.	SFM	M3 x 0.5	M4 x 0.5	M5 x 0.5	M4 x 0.7	M6 x .75	M5 x 0.8	M6 x 1.0	M8 x 1.0	M10 x 1.0	M12 x 1.0	M8 x 1.25
Gray Cast Iron	400	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
Ductile Iron	350	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
Soft Steels, (A36,1018,8620,1045)	600	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
Alloy Steels, (4340,4140)	450	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
4140 Pre-Hard (38 to 42 Rc)	300	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0007	0.0009	0.0010	0.0011	0.0011
Tool Steels (A2,D2,S7)	350	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
Die Steels, (H13,P20)	400	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
Stainless Steel, (303, 304, 316)	450	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
Difficult Stainless Steel, (400 & PH Series)	300	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0007	0.0009	0.0010	0.0011	0.0011
Stainless Steel (13-8)	200	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0007	0.0009	0.0010	0.0011	0.0011
High Temp. Alloys	250	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
Titanium (6AL4V)	300	0.0005	0.0006	0.0006	0.0006	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018	0.0018
Inconel 718	200	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0007	0.0009	0.0010	0.0011	0.0011
Inconel 625	200	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	0.0007	0.0009	0.0010	0.0011	0.0011

RECOMMENDED SPEEDS & FEEDS FOR COOLANT THRU VARIABLE HELIX/INDEX 2 X DIAMETER DEEP, METRIC (NPT)

TOOL ENTRY SHOULD BE SET AT 60% OF THE FEED RATE. THEN GO TO 100% WHEN ENGAGED WITH MATERIAL.	SFM	M10 x 1.25	M10 x 1.5	M12 x 1.5	M14 x 1.5	M16 x 1.5	M12 x 1.75	M14 x 2.0	M16 x 2.0	M18 x 2.5	M20 x 2.5	M24 x3.0
Gray Cast Iron	400	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0042	0.0044
Ductile Iron	350	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0042	0. 0044
Soft Steels, (A36,1018,8620,1045)	600	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0042	0. 0044
Alloy Steels, (4340,4140)	450	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0042	0. 0044
4140 Pre-Hard (38 to 42 Rc)	300	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0022	0.0028	0.0030	0.0032	0.0033
Tool Steels (A2,D2,S7)	350	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0042	0. 0044
Die Steels, (H13,P20)	400	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0042	0. 0044
Stainless Steel, (303, 304, 316)	450	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0042	0. 0044
Difficult Stainless Steel, (400 & PH Series)	300	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0022	0.0028	0.0030	0.0032	0.0033
Stainless Steel (13-8)	200	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0022	0.0028	0.0030	0.0032	0.0033
High Temp. Alloys	250	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0042	0. 0044
Titanium (6AL4V)	300	0.0020	0.0021	0.0022	0.0023	0.0025	0.0025	0.0031	0.0039	0.0041	0.0042	0. 0044
Inconel 718	200	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0022	0.0028	0.0030	0.0032	0.0033
Inconel 625	200	0.0014	0.0016	0.0018	0.0019	0.0020	0.0020	0.0022	0.0028	0.0030	0.0032	0.0033

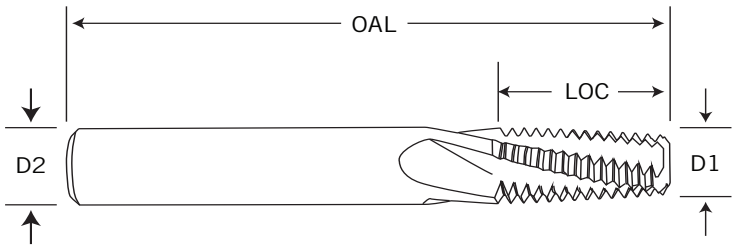
If the RPM's are to high for your machine, run max RPM you are comfortable with.

Note that these Chip Loads are Chip Loads Per Tooth.

SFM should be calculated on minor diameter.

SOLID VARIABLE HELIX/INDEX (NPT & NPTF)

The 3-flute, 4-flute, and 5-flute Gorilla Mill Missing Link Thread Mills are made versatile through geometric enhancements.
A patented variable helix/index design differentiates the Gorilla Mill Missing Link from the competition, making it the ideal choice for increased tool life and cycle time reduction in threading.
See “Speeds and Feeds” chart at the end of this section.



SPEEDS & FEEDS CHART PAGE 112 (NPT)

THREAD/ PITCH	D1 Cutting Dia.	D2 Shank Dia.	MINOR Dia.	LOC	NUMBER OF FLUTES	OAL	ITEM #	EDP
1/16-27NPT	0.209	1/4	0.248 / 0.335	0.407	3	2.5	GMTM116-27NPT3FL	90040
1/4-18NPT	0.305	5/16	0.437 / 0.571	0.611	4	3.0	GMTM14-18NPT4FL	90053
1/2-14NPT	0.496	1/2	0.697 / 0.906	0.929	4	3.5	GMTM12-14NPT4FL	90046
1.0-11.5NPT	0.621	5/8	1.142 / 2.205	1.130	4	4.0	GMTM1-11.5NPT4FL	90038
2.5-8NPT	0.746	3/4	From / 2.618	1.500	4	5.0	GMTM2.5-8NPT4FL	90061

SPEEDS & FEEDS CHART PAGE 112 (NPTF)

THREAD/ PITCH	D1 Cutting Dia.	D2 Shank Dia.	MINOR Dia.	LOC	NUMBER OF FLUTES	OAL	ITEM #	EDP
1/16-27NPTF	0.209	1/4	0.248 / 0.331	0.407	3	2.5	GMTM116-27NPTF3FL	90041
1/4-18NPTF	0.305	5/16	0.437 / 0.579	0.611	4	3.0	GMTM14-18NPTF4FL	90054
1/2-14NPTF	0.496	1/2	0.705 / 0.921	0.929	4	3.5	GMTM12-14NPTF4FL	90047
1.0-11.5NPTF	0.621	5/8	1.158 / 2.213	1.130	4	4.0	GMTM1-11.5NPTF4FL	90039
2.5-8NPTF	0.746	3/4	From / 2.638	1.500	4	5.0	GMTM2.5-8NPTF4FL	90062

PATENT NO. 7,367,754

HIGH PERFORMANCE THREADMILLS
SOLID VARIABLE HELIX/INDEX (NPT & NPTF)

RECOMMENDED SPEEDS & FEEDS FOR SOLID VARIABLE HELIX/INDEX, NPT & NPTF

TOOL ENTRY SHOULD BE SET AT 60% OF THE FEED RATE. THEN GO TO 100% WHEN ENGAGED WITH MATERIAL.	SFM	1/6-27 NPT	1/4-18 NPT	1/2-14 NPT	1-11.5 NPT	2.5-8 NPT	1/16-27 NPTF	1/4-18 NPTF	1/2- 14 NPTF	1-11.5 NPTF	2.5-8 NPTF
Gray Cast Iron	300	0.0008	0.0012	0.0020	0.0025	0.0030	0.0008	0.0012	0.0020	0.0025	0.0030
Ductile Iron	250	0.0010	0.0011	0.0018	0.0023	0.0028	0.0010	0.0011	0.0018	0.0023	0.0028
Soft Steels, (A36,1018,8620,1045)	500	0.0012	0.0021	0.0030	0.0035	0.0040	0.0012	0.0021	0.0030	0.0035	0.0040
Alloy Steels, (4340,4140)	350	0.0012	0.0021	0.0030	0.0035	0.0040	0.0012	0.0021	0.0030	0.0035	0.0040
4140 Pre-Hard (38 to 42 Rc)	200	0.0008	0.0012	0.0018	0.0021	0.0027	0.0008	0.0012	0.0018	0.0021	0.0027
Tool Steels (A2,D2,S7)	300	0.0012	0.0021	0.0030	0.0035	0.0040	0.0012	0.0021	0.0030	0.0035	0.0040
Die Steels, (H13,P20)	300	0.0012	0.0021	0.0030	0.0035	0.0040	0.0012	0.0021	0.0030	0.0035	0.0040
Stainless Steel, (303, 304, 316)	375	0.0012	0.0021	0.0030	0.0035	0.0040	0.0012	0.0021	0.0030	0.0035	0.0040
Difficult Stainless Steel, (400 & PH Series)	300	0.0012	0.0021	0.0030	0.0035	0.0040	0.0012	0.0021	0.0030	0.0035	0.0040
Stainless Steel (13-8)	150	0.0008	0.0012	0.0018	0.0021	0.0027	0.0008	0.0012	0.0018	0.0021	0.0027
High Temp. Alloys	200	0.0012	0.0021	0.0030	0.0035	0.0040	0.0012	0.0021	0.0030	0.0035	0.0040
Titanium (6AL4V)	200	0.0008	0.0012	0.0018	0.0021	0.0027	0.0008	0.0012	0.0018	0.0021	0.0027
Inconel 718	200	0.0008	0.0012	0.0018	0.0021	0.0027	0.0008	0.0012	0.0018	0.0021	0.0027
Inconel 625	175	0.0008	0.0012	0.0018	0.0021	0.0027	0.0008	0.0012	0.0018	0.0021	0.0027

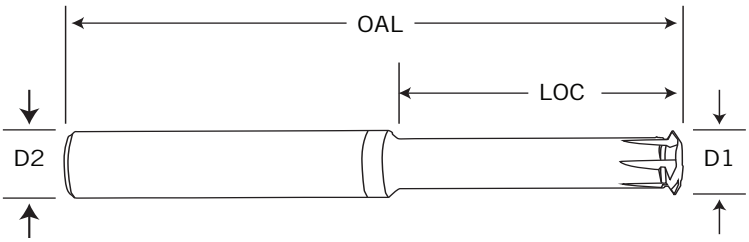
If the RPM's are to high for your machine, run max RPM you are comfortable with.

Note that these Chip Loads are Chip Loads Per Tooth.

SFM should be calculated on minor diameter.

PARTIAL PROFILE – SINGLE PITCH (INCH & METRIC)

The 3-flute, 4-flute, 5-flute, and 6-flute Gorilla Mill Missing Link Thread Mills are made versatile through geometric enhancements. A patented variable helix/index design differentiates the Gorilla Mill Missing Link from the competition, making it the ideal choice for increased tool life and cycle time reduction in threading.
See “Speeds and Feeds” chart at the end of this section.



SPEEDS & FEEDS CHART PAGE 114 (NPT)

THREAD/ PITCH	Recommended Pitch	D1 Cutting Dia.	D2 Shank Dia.	MINOR Dia.	LOC	NUMBER OF FLUTES	OAL	ITEM #	EDP
M5 #10	0.5-.08 32-56	0.154	3/16	–	0.63	4	2.0	GMPPTM0500MM-104FL	90016
M6 #12	0.5-1.0 24-56	0.191	1/4	–	0.79	5	2.5	GMPPTM0600MM-125FL	90017
M8 5/16	0.5-1.25 20-48	0.232	1/4	–	1.00	5	2.5	GMPPTM0800MM-5165FL	90018
M10 7/16	0.5-1.0 24-56	0.370	3/8	–	1.38	6	3.0	GMPPTM1000MM-7166FL	90020
M10 3/8	1.0-1.50 16-24	0.307	5/16	–	1.26	6	2.5	GMPPTM1000MM-3756FL	90019
M12 1/2	1.0-1.75 14-24	0.370	3/8	–	1.50	6	3.0	GMPPTM1200MM-126FL	90021
M13 9/16	1.0-1.75 14-24	0.469	1/2	–	1.77	6	3.5	GMPPTM1300MM-9166FL	90022

HIGH PERFORMANCE THREADMILLS
PARTIAL PROFILE – SINGLE PITCH (INCH & METRIC)

RECOMMENDED SPEEDS & FEEDS FOR PARTIAL PROFILE, SINGLE PITCH, INCH & METRIC (NPT)

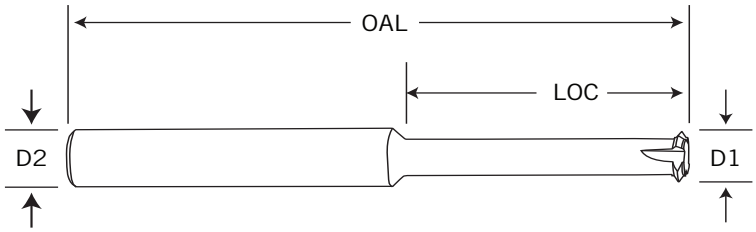
TOOL ENTRY SHOULD BE SET AT 60% OF THE FEED RATE. THEN GO TO 100% WHEN ENGAGED WITH MATERIAL.	SFM	M5 / #10	M6 / #12	M8 / 5/16	M10 / 7/16	M10 / 3/8	M12 / 1/2	M13 / 9/16
Gray Cast Iron	300	0.0010	0.0013	0.0020	0.0027	0.0023	0.0027	0.0031
Ductile Iron	250	0.0010	0.0012	0.0018	0.0026	0.0021	0.0026	0.0030
Soft Steels, (A36,1018,8620,1045)	500	0.0011	0.0018	0.0022	0.0032	0.0028	0.0032	0.0032
Alloy Steels, (4340,4140)	350	0.0011	0.0018	0.0022	0.0032	0.0028	0.0032	0.0032
4140 Pre-Hard (38 to 42 Rc)	200	0.0008	0.0012	0.0018	0.0026	0.0021	0.0026	0.0029
Tool Steels (A2,D2,S7)	300	0.0011	0.0018	0.0022	0.0032	0.0028	0.0032	0.0032
Die Steels, (H13,P20)	300	0.0011	0.0018	0.0022	0.0032	0.0028	0.0032	0.0032
Stainless Steel, (303, 304, 316)	375	0.0010	0.0016	0.0022	0.0032	0.0028	0.0032	0.0032
Difficult Stainless Steel, (400 & PH Series)	300	0.0010	0.0015	0.0022	0.0032	0.0028	0.0032	0.0032
Stainless Steel (13-8)	150	0.0008	0.0012	0.0018	0.0027	0.0021	0.0027	0.0030
High Temp. Alloys	200	0.0010	0.0015	0.0022	0.0032	0.0028	0.0032	0.0031
Titanium (6AL4V)	200	0.0008	0.0012	0.0018	0.0026	0.0021	0.0026	0.0029
Inconel 718	200	0.0008	0.0012	0.0018	0.0026	0.0021	0.0026	0.0029
Inconel 625	175	0.0008	0.0012	0.0018	0.0026	0.0021	0.0026	0.0029

If the RPM's are to high for your machine, run max RPM you are comfortable with.

Note that these Chip Loads are Chip Loads Per Tooth.

SFM should be calculated on minor diameter.

DEEP THREADING – SINGLE PITCH (INCH)



The 3-flute, 4-flute, and 5-flute Gorilla Mill Missing Link Thread Mills are made versatile through geometric enhancements.
A patented variable helix/index design differentiates the Gorilla Mill Missing Link from the competition, making it the ideal choice for increased tool life and cycle time reduction in threading.
See “Speeds and Feeds” chart at the end of this section.

SPEEDS & FEEDS CHART PAGE 116								
THREAD/ PITCH	D1 Cutting Dia.	D2 Shank Dia.	MINOR Dia.	LOC	NUMBER OF FLUTES	OAL	ITEM #	EDP
1/4-20	0.157	5/16	0.205	0.787	3	2.5	GMDTTM14-20UN3FL	90002
1/4-28	0.181	5/16	0.217	0.787	3	2.5	GMDTTM14-28UN3FL	90003
5/16-18	0.205	3/8	0.256	0.984	3	3.0	GMDTTM516-18UN3FL	90008
5/16-24	0.224	3/8	0.268	0.984	3	3.0	GMDTTM516-24UN3FL	90009
3/8-16	0.264	3/8	0.315	1.181	3	3.0	GMDTTM38-16UN3FL	90006
3/8-24	0.291	3/8	0.335	1.181	3	3.0	GMDTTM38-24UN3FL	90007
7/16-14	0.299	1/2	0.366	1.378	4	3.5	GMDTTM716-14UN4FL	90012
7/16-20	0.335	1/2	0.386	1.378	4	3.5	GMDTTM716-20UN4FL	90013
1/2-13	0.350	1/2	0.425	1.575	4	3.5	GMDTTM12-13UN4FL	90000
1/2-20	0.398	1/2	0.453	1.575	4	3.5	GMDTTM12-20UN4FL	90001
9/16-12	0.406	5/8	0.484	1.772	4	4.0	GMDTTM916-12UN4FL	90014
9/16-18	0.445	5/8	0.504	1.772	4	4.0	GMDTTM916-18UN4FL	90015
5/8-11	0.433	5/8	0.531	1.969	4	4.0	GMDTTM58-11UN4FL	90010
5/8-18	0.504	5/8	0.571	1.969	4	4.0	GMDTTM58-18UN4FL	90011
3/4-10	0.531	5/8	0.650	2.362	5	5.0	GMDTTM34-10UN5FL	90004
3/4-16	0.610	5/8	0.689	2.362	5	5.0	GMDTTM34-16UN5FL	90005

HIGH PERFORMANCE THREADMILLS
DEEP THREADING – SINGLE PITCH (INCH)

RECOMMENDED SPEEDS & FEEDS FOR DEEP THREADING, SINGLE PITCH, INCH

TOOL ENTRY SHOULD BE SET AT 60% OF THE FEED RATE. THEN GO TO 100% WHEN ENGAGED WITH MATERIAL.	SFM	1/4-20	1/4-28	5/16-18	5/16-24	3/8-16	3/8-24	7/16-14	7/16-20
Gray Cast Iron	300	0.0007	0.0007	0.0010	0.0010	0.0014	0.0013	0.0018	0.0017
Ductile Iron	250	0.0007	0.0007	0.0010	0.0010	0.0014	0.0013	0.0018	0.0017
Soft Steels, (A36,1018,8620,1045)	500	0.0010	0.0010	0.0015	0.0013	0.0018	0.0016	0.0020	0.0018
Alloy Steels, (4340,4140)	350	0.0010	0.0010	0.0015	0.0013	0.0018	0.0016	0.0020	0.0018
4140 Pre-Hard (38 to 42 Rc)	200	0.0007	0.0007	0.0010	0.0010	0.0014	0.0013	0.0018	0.0017
Tool Steels (A2,D2,S7)	300	0.0010	0.0010	0.0015	0.0013	0.0018	0.0016	0.0020	0.0018
Die Steels, (H13,P20)	300	0.0010	0.0010	0.0015	0.0013	0.0018	0.0016	0.0020	0.0018
Stainless Steel, (303, 304, 316)	375	0.0007	0.0007	0.0010	0.0010	0.0014	0.0013	0.0018	0.0017
Difficult Stainless Steel, (400 & PH Series)	300	0.0007	0.0007	0.0010	0.0010	0.0014	0.0013	0.0018	0.0017
Stainless Steel (13-8)	150	0.0007	0.0007	0.0010	0.0010	0.0014	0.0013	0.0018	0.0017
High Temp. Alloys	200	0.0010	0.0010	0.0015	0.0013	0.0018	0.0016	0.0020	0.0018
Titanium (6AL4V)	200	0.0007	0.0007	0.0010	0.0010	0.0014	0.0013	0.0018	0.0017
Inconel 718	200	0.0007	0.0007	0.0010	0.0010	0.0014	0.0013	0.0018	0.0017
Inconel 625	175	0.0007	0.0007	0.0010	0.0010	0.0014	0.0013	0.0018	0.0017

RECOMMENDED SPEEDS & FEEDS FOR DEEP THREADING, SINGLE PITCH, INCH

TOOL ENTRY SHOULD BE SET AT 60% OF THE FEED RATE. THEN GO TO 100% WHEN ENGAGED WITH MATERIAL.	SFM	1/2-13	1/2-20	9/16-12	9/16-18	5/8-11	5/8-18	3/4-10	3/4-16
Gray Cast Iron	300	0.0020	0.0018	0.0024	0.0024	0.0028	0.0029	0.0032	0.0032
Ductile Iron	250	0.0020	0.0018	0.0024	0.0024	0.0028	0.0029	0.0032	0.0032
Soft Steels, (A36,1018,8620,1045)	500	0.0022	0.0020	0.0026	0.0026	0.0031	0.0031	0.0035	0.0037
Alloy Steels, (4340,4140)	350	0.0022	0.0020	0.0026	0.0026	0.0031	0.0031	0.0035	0.0037
4140 Pre-Hard (38 to 42 Rc)	200	0.0020	0.0018	0.0024	0.0024	0.0028	0.0029	0.0032	0.0032
Tool Steels (A2,D2,S7)	300	0.0022	0.0020	0.0026	0.0026	0.0031	0.0031	0.0035	0.0037
Die Steels, (H13,P20)	300	0.0022	0.0020	0.0026	0.0026	0.0031	0.0031	0.0035	0.0037
Stainless Steel, (303, 304, 316)	375	0.0020	0.0018	0.0024	0.0024	0.0028	0.0029	0.0032	0.0032
Difficult Stainless Steel, (400 & PH Series)	300	0.0020	0.0018	0.0024	0.0024	0.0028	0.0029	0.0032	0.0032
Stainless Steel (13-8)	150	0.0020	0.0018	0.0024	0.0024	0.0028	0.0029	0.0032	0.0032
High Temp. Alloys	200	0.0022	0.0020	0.0026	0.0026	0.0031	0.0031	0.0035	0.0037
Titanium (6AL4V)	200	0.0020	0.0018	0.0024	0.0024	0.0028	0.0029	0.0032	0.0032
Inconel 718	200	0.0020	0.0018	0.0024	0.0024	0.0028	0.0029	0.0032	0.0032
Inconel 625	175	0.0020	0.0018	0.0024	0.0024	0.0028	0.0029	0.0032	0.0032

If the RPM's are to high for your machine, run max RPM you are comfortable with.

Note that these Chip Loads are Chip Loads Per Tooth.

SFM should be calculated on minor diameter.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SP

2 FLUTE

3 FLUTE

4 FLUTE

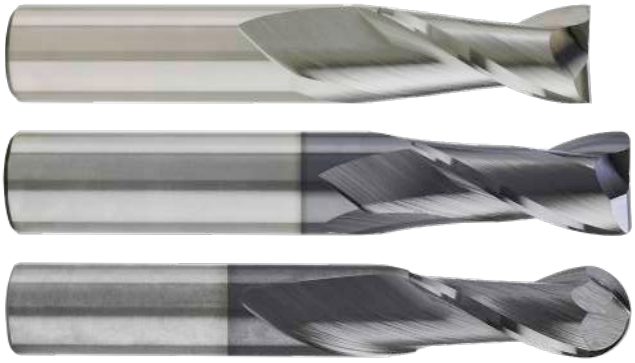
STANDARD PERFORMANCE

CUTTING TOOLS

PRIMATE

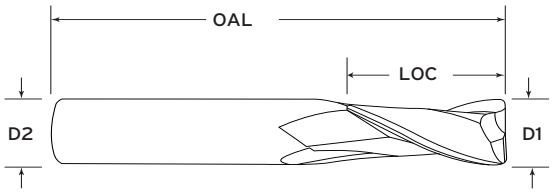
STANDARD CARBIDE END MILLS

STANDARD PERFORMANCE
2 FLUTE (INCH)



Extremely versatile in various materials, center cutting, solid sub-micron carbide. See “Speeds and Feeds” calculator at gorillamill.com or refer to ”Speeds and Feeds” chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.



MATERIALS

Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)	Gray Cast Iron	Die Steels (H13,P20)
Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)	Soft Steels (A36,1018,8620,1045)	Stainless Steel (303, 304, 316)
Copper (200 Brinell <)	Brass	Alloy Steels (4340,4140)	Difficult Stainless Steel (400 & PH Series)
Copper (200 Brinell >)	Bronze	Tool Steels(A2,D2,S7)	High Temp. Alloys
			Titanium (6AL4V)

SPEEDS & FEEDS CHART PAGE 128

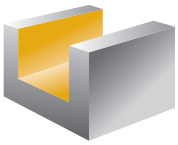
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN 0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	Ballnose COATINGS TL=TiALN TC=TiCN
1/64	1/8	1/32	1-1/2	CEM164F2 EDP: 70672 CEM164F2TL EDP: 70673 CEM164F2TC EDP: 70674	—	—	—	—	—	—	—	—	CEM164B2 EDP: 70666 CEM164B2TL EDP: 70667 CEM164B2TC EDP: 70668
1/32	1/8	5/64	1-1/2	CEM132F2 EDP: 70510 CEM132F2TL EDP: 70511 CEM132F2TC EDP: 70512	—	—	—	—	—	—	—	—	CEM132B2 EDP: 70504 CEM132B2TL EDP: 70505 CEM132B2TC EDP: 70506
3/64	1/8	7/64	1-1/2	CEM364F2 EDP: 71104 CEM364F2TL EDP: 71105 CEM364F2TC EDP: 71106	—	—	—	—	—	—	—	—	CEM364B2 EDP: 71098 CEM364B2TL EDP: 71099 CEM364B2TC EDP: 71100
1/16	1/8	3/16	1-1/2	CEM116F2 EDP: 70318 CEM116F2TL EDP: 70319 CEM116F2TC EDP: 70320	CEM116R2010 EDP: 70327 CEM116R2010TL EDP: 70328 CEM116R2010TC EDP: 70329	CEM116R2015 EDP: 70330 CEM116R2015TL EDP: 70331 CEM116R2015TC EDP: 70332	—	—	—	—	—	—	CEM116B2 EDP: 70312 CEM116B2TL EDP: 70313 CEM116B2TC EDP: 70314

Continued on next page

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING

FULL SLOTTING



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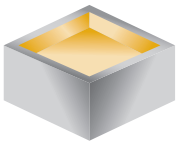
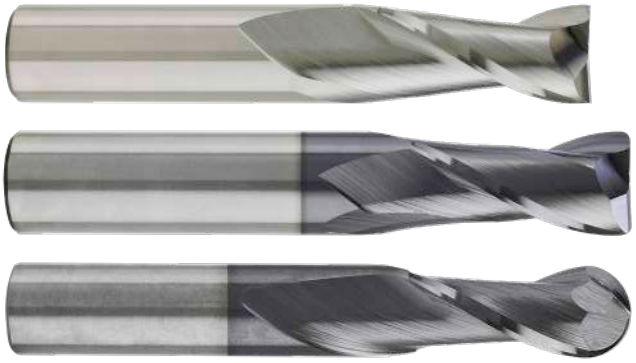


HIGH-VELOCITY

STANDARD PERFORMANCE
2 FLUTE (INCH)



Extremely versatile in various materials, center cutting, solid sub-micron carbide. See “Speeds and Feeds” calculator at gorillamill.com or refer to "Speeds and Feeds” chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.

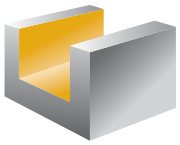
SPEEDS & FEEDS CHART PAGE 128

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN								Ballnose COATINGS TL=TiALN TC=TiCN
					0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	
5/64	1/8	3/16	1-1/2	CEM564F2 EDP: 71293 CEM564F2TL EDP: 71294 CEM564F2TC EDP: 71295	—	—	—	—	—	—	—	—	CEM564B2 EDP: 71287 CEM564B2TL EDP: 71288 CEM564B2TC EDP: 71289
3/32	1/8	3/8	1-1/2	CEM332F2 EDP: 70960 CEM332F2TL EDP: 70961 CEM332F2TC EDP: 70962	CEM332R2010 EDP: 70969 CEM332R2010TL EDP: 70970 CEM332R2010TC EDP: 70971	CEM332R2015 EDP: 70972 CEM332R2015TL EDP: 70973 CEM332R2015TC EDP: 70974	CEM332R2020 EDP: 70975 CEM332R2020TL EDP: 70976 CEM332R2020TC EDP: 70977	—	—	—	—	—	CEM332B2 EDP: 70954 CEM332B2TL EDP: 70955 CEM332B2TC EDP: 70956
7/64	1/8	3/8	1-1/2	CEM764F2 EDP: 71422 CEM764F2TL EDP: 71423 CEM764F2TC EDP: 71424	—	—	—	—	—	—	—	—	CEM764B2 EDP: 71416 CEM764B2TL EDP: 71417 CEM764B2TC EDP: 71418
1/8	1/8	1/2	1-1/2	CEM18F2 EDP: 70708 CEM18F2TL EDP: 70709 CEM18F2TC EDP: 70710	CEM18R2010 EDP: 70729 CEM18R2010TL EDP: 70730 CEM18R2010TC EDP: 70731	CEM18R2015 EDP: 70732 CEM18R2015TL EDP: 70733 CEM18R2015TC EDP: 70734	CEM18R2020 EDP: 70735 CEM18R2020TL EDP: 70736 CEM18R2020TC EDP: 70737	CEM18R2030 EDP: 70738 CEM18R2030TL EDP: 70739 CEM18R2030TC EDP: 70740	—	—	—	—	CEM18B2 EDP: 70690 CEM18B2TL EDP: 70691 CEM18B2TC EDP: 70692
	1/8	3/4	2-1/2	CEM18FL2 EDP: 70717 CEM18FL2TL EDP: 70718 CEM18FL2TC EDP: 70719	—	—	—	—	—	—	—	—	CEM18BL2 EDP: 70696 CEM18BL2TL EDP: 70697 CEM18BL2TC EDP: 70698
	1/8	1.0	3.0	CEM18FXL2 EDP: 70723 CEM18FXL2TL EDP: 70724 CEM18FXL2TC EDP: 70725	—	—	—	—	—	—	—	—	CEM18BXL2 EDP: 70702 CEM18BXL2TL EDP: 70703 CEM18BXL2TC EDP: 70704
9/64	3/16	1/2	2.0	CEM964F2 EDP: 71464 CEM964F2TL EDP: 71465 CEM964F2TC EDP: 71466	—	—	—	—	—	—	—	—	CEM964B2 EDP: 71458 CEM964B2TL EDP: 71459 CEM964B2TC EDP: 71460

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING

FULL SLOTTING



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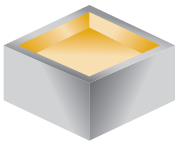

HIGH-VELOCITY

MATERIALS

Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)	Gray Cast Iron	Die Steels (H13,P20)
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Copper (200 Brinell <)	Brass	Alloy Steels (4340,4140)	Difficult Stainless Steel (400 & PH Series)
Copper (200 Brinell >)	Bronze	Tool Steels(A2,D2,S7)	High Temp. Alloys
			Titanium (6AL4V)

SPEEDS & FEEDS CHART PAGE 128

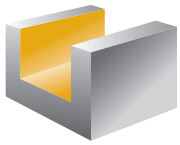
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN								Ballnose COATINGS TL=TiALN TC=TiCN
					0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	
5/32	3/16	1/2	2.0	CEM532F2 EDP: 71278 CEM532F2TL EDP: 71279 CEM532F2TC EDP: 71280	—	—	—	—	—	—	—	—	CEM532B2 EDP: 71272 CEM532B2TL EDP: 71273 CEM532B2TC EDP: 71274
11/64	3/16	5/8	2.0	CEM1164F2 EDP: 70306 CEM1164F2TL EDP: 70307 CEM1164F2TC EDP: 70308	—	—	—	—	—	—	—	—	CEM1164B2 EDP: 70300 CEM1164B2TL EDP: 70301 CEM1164B2TC EDP: 70302
3/16	3/16	5/8	2.0	CEM316F2 EDP: 70909 CEM316F2TL EDP: 70910 CEM316F2TC EDP: 70911	CEM316R2010 EDP: 70930 CEM316R2010TL EDP: 70931 CEM316R2010TC EDP: 70932	CEM316R2015 EDP: 70933 CEM316R2015TL EDP: 70934 CEM316R2015TC EDP: 70935	CEM316R2020 EDP: 70936 CEM316R2020TL EDP: 70937 CEM316R2020TC EDP: 70938	CEM316R2030 EDP: 70939 CEM316R2030TL EDP: 70940 CEM316R2030TC EDP: 70941	—	—	—	—	CEM316B2 EDP: 70891 CEM316B2TL EDP: 70892 CEM316B2TC EDP: 70893
	3/16	1-1/8	3.0	CEM316FL2 EDP: 70918 CEM316FL2TL EDP: 70919 CEM316FL2TC EDP: 70920	—	—	—	—	—	—	—	—	CEM316BL2 EDP: 70897 CEM316BL2TL EDP: 70898 CEM316BL2TC EDP: 70899
	3/16	1-1/8	4.0	CEM316FXL2 EDP: 70924 CEM316FXL2TL EDP: 70925 CEM316FXL2TC EDP: 70926	—	—	—	—	—	—	—	—	CEM316BXL2 EDP: 70903 CEM316BXL2TL EDP: 70904 CEM316BXL2TC EDP: 70905
13/64	1/4	5/8	2-1/2	CEM1364F2 EDP: 70522 CEM1364F2TL EDP: 70523 CEM1364F2TC EDP: 70524	—	—	—	—	—	—	—	—	CEM1364B2 EDP: 70516 CEM1364B2TL EDP: 70517 CEM1364B2TC EDP: 70518
7/32	1/4	5/8	2-1/2	CEM732F2 EDP: 71407 CEM732F2TL EDP: 71408 CEM732F2TC EDP: 71409	—	—	—	—	—	—	—	—	CEM732B2 EDP: 71401 CEM732B2TL EDP: 71402 CEM732B2TC EDP: 71403
15/64	1/4	3/4	2-1/2	CEM1564F2 EDP: 70615 CEM1564F2TL EDP: 70616 CEM1564F2TC EDP: 70617	—	—	—	—	—	—	—	—	CEM1564B2 EDP: 70609 CEM1564B2TL EDP: 70610 CEM1564B2TC EDP: 70611

Continued on next page

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING

FULL SLOTTING



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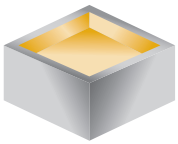
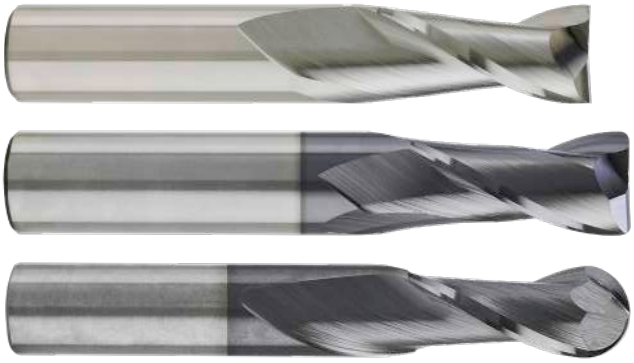


HIGH-VELOCITY

STANDARD PERFORMANCE
2 FLUTE (INCH)



Extremely versatile in various materials, center cutting, solid sub-micron carbide. See “Speeds and Feeds” calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.

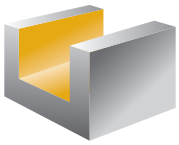
SPEEDS & FEEDS CHART PAGE 128

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN								Ballnose COATINGS TL=TiALN TC=TiCN
					0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	
1/4	1/4	3/4	2-1/2	CEM14F2 EDP: 70552 CEM14F2TL EDP: 70553 CEM14F2TC EDP: 70554	—	CEM14R2015 EDP: 70579 CEM14R2015TL EDP: 70580 CEM14R2015TC EDP: 70581	CEM14R2020 EDP: 70582 CEM14R2020TL EDP: 70583 CEM14R2020TC EDP: 70584	CEM14R2030 EDP: 70585 CEM14R2030TL EDP: 70586 CEM14R2030TC EDP: 70587	CEM14R2045 EDP: 70588 CEM14R2045TL EDP: 70589 CEM14R2045TC EDP: 70590	CEM14R2060 EDP: 70591 CEM14R2060TL EDP: 70592 CEM14R2060TC EDP: 70593	—	—	CEM14B2 EDP: 70528 CEM14B2TL EDP: 70529 CEM14B2TC EDP: 70530
	1/4	1-1/8	3.0	CEM14FL2 EDP: 70561 CEM14FL2TL EDP: 70562 CEM14FL2TC EDP: 70563	—	—	—	—	—	—	—	—	CEM14BL2 EDP: 70534 CEM14BL2TL EDP: 70535 CEM14BL2TC EDP: 70536
	1/4	1-1/2	4.0	CEM14FXL2 EDP: 70567 CEM14FXL2TL EDP: 70568 CEM14FXL2TC EDP: 70569	—	—	—	—	—	—	—	—	CEM14BXL2 EDP: 70540 CEM14BXL2TL EDP: 70541 CEM14BXL2TC EDP: 70542
	1/4	1-1/2	6.0	CEM14FXXL2 EDP: 70573 CEM14FXXL2TL EDP: 70574 CEM14FXXL2TC EDP: 70575	—	—	—	—	—	—	—	—	CEM14BXXL2 EDP: 70546 CEM14BXXL2TL EDP: 70547 CEM14BXXL2TC EDP: 70548
17/64	5/16	3/4	2-1/2	CEM1764F2 EDP: 70684 CEM1764F2TL EDP: 70685 CEM1764F2TC EDP: 70686	—	—	—	—	—	—	—	—	CEM1764B2 EDP: 70678 CEM1764B2TL EDP: 70679 CEM1764B2TC EDP: 70680
9/32	5/16	3/4	2-1/2	CEM932F2 EDP: 71449 CEM932F2TL EDP: 71450 CEM932F2TC EDP: 71451	—	—	—	—	—	—	—	—	CEM932B2 EDP: 71443 CEM932B2TL EDP: 71444 CEM932B2TC EDP: 71445
19/64	5/16	7/8	2-1/2	CEM1964F2 EDP: 70759 CEM1964F2TL EDP: 70760 CEM1964F2TC EDP: 70761	—	—	—	—	—	—	—	—	CEM1964B2 EDP: 70753 CEM1964B2TL EDP: 70754 CEM1964B2TC EDP: 70755

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING

FULL SLOTTING



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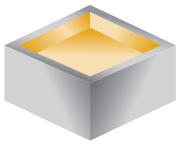
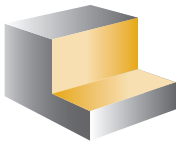


HIGH-VELOCITY



MATERIALS

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Copper (200 Brinell >)	Bronze	Tool Steels(A2,D2,S7)	High Temp. Alloys
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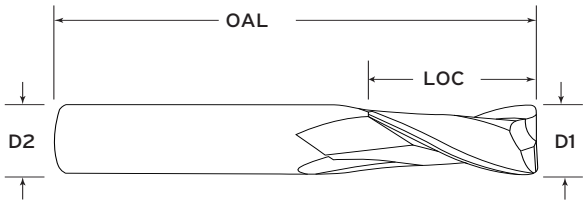


SPEEDS & FEEDS CHART PAGE 128

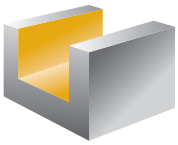
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN								Ballnose COATINGS TL=TiALN TC=TiCN
					0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	
	5/16	7/8	2-1/2	CEM516F2 EDP: 71221 CEM516F2TL EDP: 71222 CEM516F2TC EDP: 71223	—	CEM516R2015 EDP: 71242 CEM516R2015TL EDP: 71243 CEM516R2015TC EDP: 71244	CEM516R2020 EDP: 71245 CEM516R2020TL EDP: 71246 CEM516R2020TC EDP: 71247	CEM516R2030 EDP: 71248 CEM516R2030TL EDP: 71249 CEM516R2030TC EDP: 71250	CEM516R2045 EDP: 71251 CEM516R2045TL EDP: 71252 CEM516R2045TC EDP: 71253	CEM516R2060 EDP: 71254 CEM516R2060TL EDP: 71255 CEM516R2060TC EDP: 71256	—	—	CEM516B2 EDP: 71203 CEM516B2TL EDP: 71204 CEM516B2TC EDP: 71205
5/16	5/16	1-1/8	3.0	CEM516FL2 EDP: 71230 CEM516FL2TL EDP: 71231 CEM516FL2TC EDP: 71232	—	—	—	—	—	—	—	—	CEM516BL2 EDP: 71209 CEM516BL2TL EDP: 71210 CEM516BL2TC EDP: 71211
	5/16	1-5/8	4.0	CEM516FXL2 EDP: 71236 CEM516FXL2TL EDP: 71237 CEM516FXL2TC EDP: 71238	—	—	—	—	—	—	—	—	CEM516BXL2 EDP: 71215 CEM516BXL2TL EDP: 71216 CEM516BXL2TC EDP: 71217
21/64	3/8	7/8	2-1/2	CEM2164F2 EDP: 70804 CEM2164F2TL EDP: 70805 CEM2164F2TC EDP: 70806	—	—	—	—	—	—	—	—	CEM2164B2 EDP: 70798 CEM2164B2TL EDP: 70799 CEM2164B2TC EDP: 70800
23/64	3/8	7/8	2-1/2	CEM2364F2 EDP: 70816 CEM2364F2TL EDP: 70817 CEM2364F2TC EDP: 70818	—	—	—	—	—	—	—	—	CEM2364B2 EDP: 70810 CEM2364B2TL EDP: 70811 CEM2364B2TC EDP: 70812

Continued on next page

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING

FULL SLOTTING



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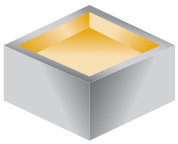
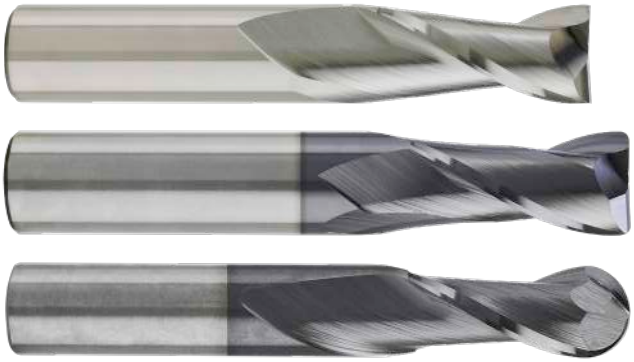


HIGH-VELOCITY

STANDARD PERFORMANCE
2 FLUTE (INCH)



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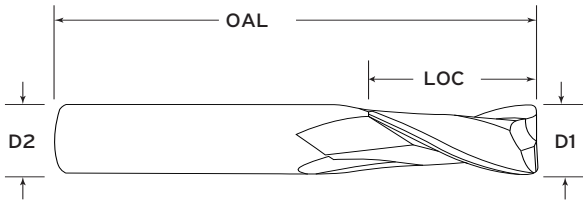


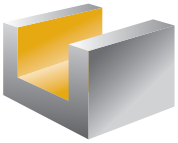
SPEEDS & FEEDS CHART PAGE 128

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN								Ballnose COATINGS TL=TiALN TC=TiCN
					0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	
3/8	3/8	7/8	2-1/2	CEM38F2 EDP: 71140 CEM38F2TL EDP: 71141 CEM38F2TC EDP: 71142	—	CEM38R2015 EDP: 71173 CEM38R2015TL EDP: 71174 CEM38R2015TC EDP: 71175	CEM38R2020 EDP: 71176 CEM38R2020TL EDP: 71177 CEM38R2020TC EDP: 71178	CEM38R2030 EDP: 71179 CEM38R2030TL EDP: 71180 CEM38R2030TC EDP: 71181	CEM38R2045 EDP: 71182 CEM38R2045TL EDP: 71183 CEM38R2045TC EDP: 71184	CEM38R2060 EDP: 71185 CEM38R2060TL EDP: 71186 CEM38R2060TC EDP: 71187	—	—	CEM38B2 EDP: 71110 CEM38B2TL EDP: 71111 CEM38B2TC EDP: 71112
	3/8	1-1/8	3.0	CEM38FL2 EDP: 71149 CEM38FL2TL EDP: 71150 CEM38FL2TC EDP: 71151	—	—	—	—	—	—	—	—	CEM38BL2 EDP: 71116 CEM38BL2TL EDP: 71117 CEM38BL2TC EDP: 71118
	3/8	2.0	4.0	CEM38FXL2 EDP: 71161 CEM38FXL2TL EDP: 71162 CEM38FXL2TC EDP: 71163	—	—	—	—	—	—	—	—	CEM38BXL2 EDP: 71128 CEM38BXL2TL EDP: 71129 CEM38BXL2TC EDP: 71130
	3/8	1-1/2	6.0	CEM38FXXL2 EDP: 71167 CEM38FXXL2TL EDP: 71168 CEM38FXXL2TC EDP: 71169	—	—	—	—	—	—	—	—	CEM38BXXL2 EDP: 71134 CEM38BXXL2TL EDP: 71135 CEM38BXXL2TC EDP: 71136
	3/8	3.0	6.0	CEM38FSL2 EDP: 71155 CEM38FSL2TL EDP: 71156 CEM38FSL2TC EDP: 71157	—	—	—	—	—	—	—	—	CEM38BSL2 EDP: 71122 CEM38BSL2TL EDP: 71123 CEM38BSL2TC EDP: 71124
25/64	7/16	1.0	2-1/2	CEM2564F2 EDP: 70849 CEM2564F2TL EDP: 70850 CEM2564F2TC EDP: 70851	—	—	—	—	—	—	—	—	CEM2564B2 EDP: 70843 CEM2564B2TL EDP: 70844 CEM2564B2TC EDP: 70845
27/64	7/16	1.0	2-1/2	CEM2764F2 EDP: 70861 CEM2764F2TL EDP: 70862 CEM2764F2TC EDP: 70863	—	—	—	—	—	—	—	—	CEM2764B2 EDP: 70855 CEM2764B2TL EDP: 70856 CEM2764B2TC EDP: 70857

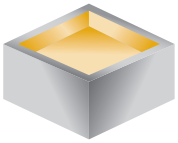
TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING

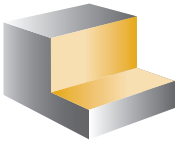
FULL SLOTTING



POCKETING

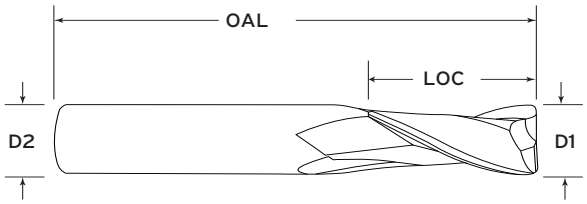


HIGH-VELOCITY



MATERIALS

Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)	Gray Cast Iron	Die Steels (H13,P20)
Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)	Soft Steels (A36,1018,8620,1045)	Stainless Steel (303, 304, 316)
Copper (200 Brinell <)	Brass	Alloy Steels (4340,4140)	Difficult Stainless Steel (400 & PH Series)
Copper (200 Brinell >)	Bronze	Tool Steels(A2,D2,S7)	High Temp. Alloys
			Titanium (6AL4V)

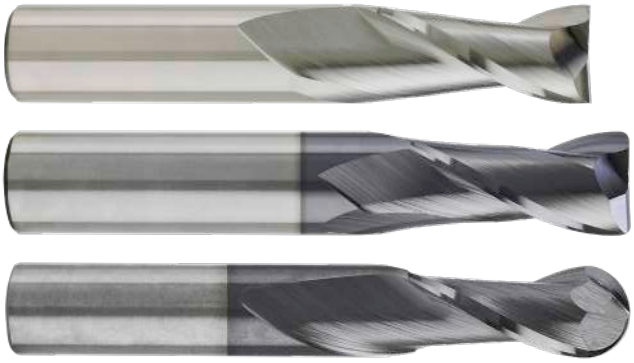


SPEEDS & FEEDS CHART PAGE 128

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN								Ballnose COATINGS TL=TiALN TC=TiCN
					0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	
7/16	7/16	1.0	2-1/2	CEM716F2 EDP: 71392 CEM716F2TL EDP: 71393 CEM716F2TC EDP: 71394	—	—	—	—	—	—	—	—	CEM716B2 EDP: 71386 CEM716B2TL EDP: 71387 CEM716B2TC EDP: 71388
29/64	1/2	1.0	3.0	CEM2964F2 EDP: 70873 CEM2964F2TL EDP: 70874 CEM2964F2TC EDP: 70875	—	—	—	—	—	—	—	—	CEM2964B2 EDP: 70867 CEM2964B2TL EDP: 70868 CEM2964B2TC EDP: 70869
31/64	1/2	1.0	3.0	CEM3164F2 EDP: 70885 CEM3164F2TL EDP: 70886 CEM3164F2TC EDP: 70887	—	—	—	—	—	—	—	—	CEM3164B2 EDP: 70879 CEM3164B2TL EDP: 70880 CEM3164B2TC EDP: 70881
1/2	1/2	1.0	3.0	CEM12F2 EDP: 70429 CEM12F2TL EDP: 70430 CEM12F2TC EDP: 70431	—	CEM12R2015 EDP: 70462 CEM12R2015TL EDP: 70463 CEM12R2015TC EDP: 70464	CEM12R2020 EDP: 70465 CEM12R2020TL EDP: 70466 CEM12R2020TC EDP: 70467	CEM12R2030 EDP: 70468 CEM12R2030TL EDP: 70469 CEM12R2030TC EDP: 70470	CEM12R2045 EDP: 70471 CEM12R2045TL EDP: 70472 CEM12R2045TC EDP: 70473	CEM12R2060 EDP: 70474 CEM12R2060TL EDP: 70475 CEM12R2060TC EDP: 70476	CEM12R2090 EDP: 70477 CEM12R2090TL EDP: 70478 CEM12R2090TC EDP: 70479	CEM12R2125 EDP: 70480 CEM12R2125TL EDP: 70481 CEM12R2125TC EDP: 70482	CEM12B2 EDP: 70399 CEM12B2TL EDP: 70400 CEM12B2TC EDP: 70401
	1/2	1-1/2	4.0	CEM12FL2 EDP: 70438 CEM12FL2TL EDP: 70439 CEM12FL2TC EDP: 70440	—	—	—	—	—	—	—	—	CEM12BL2 EDP: 70405 CEM12BL2TL EDP: 70406 CEM12BL2TC EDP: 70407
	1/2	2.0	4.0	CEM12FXL2 EDP: 70450 CEM12FXL2TL EDP: 70451 CEM12FXL2TC EDP: 70452	—	—	—	—	—	—	—	—	CEM12BXL2 EDP: 70417 CEM12BXL2TL EDP: 70418 CEM12BXL2TC EDP: 70419
	1/2	1-1/2	6.0	CEM12FXXL2 EDP: 70456 CEM12FXXL2TL EDP: 70457 CEM12FXXL2TC EDP: 70458	—	—	—	—	—	—	—	—	CEM12BXXL2 EDP: 70423 CEM12BXXL2TL EDP: 70424 CEM12BXXL2TC EDP: 70425
	1/2	3.0	6.0	CEM12FSL2 EDP: 70444 CEM12FSL2TL EDP: 70445 CEM12FSL2TC EDP: 70446	—	—	—	—	—	—	—	—	CEM12BSL2 EDP: 70411 CEM12BSL2TL EDP: 70412 CEM12BSL2TC EDP: 70413

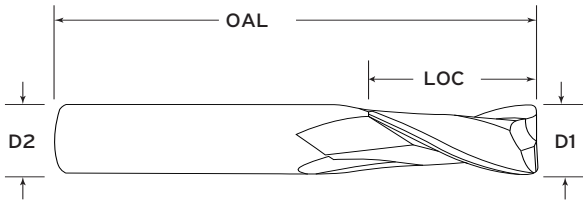
Continued on next page

STANDARD PERFORMANCE
2 FLUTE (INCH)



Extremely versatile in various materials, center cutting, solid sub-micron carbide. See “Speeds and Feeds” calculator at gorillamill.com or refer to “Speeds and Feeds” chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.



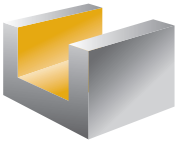
SPEEDS & FEEDS CHART PAGE 128

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN								Ballnose COATINGS TL=TiALN TC=TiCN
					0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	
33/64	9/16	1-1/8	3-1/2	CEM3364F2 EDP: 70993 CEM3364F2TL EDP: 70994 CEM3364F2TC EDP: 70995	—	—	—	—	—	—	—	—	CEM3364B2 EDP: 70987 CEM3364B2TL EDP: 70988 CEM3364B2TC EDP: 70989
35/64	9/16	1-1/8	3-1/2	CEM3564F2 EDP: 71092 CEM3564F2TL EDP: 71093 CEM3564F2TC EDP: 71094	—	—	—	—	—	—	—	—	CEM3564B2 EDP: 71086 CEM3564B2TL EDP: 71087 CEM3564B2TC EDP: 71088
9/16	9/16	1-1/4	3-1/2	CEM916F2 EDP: 71434 CEM916F2TL EDP: 71435 CEM916F2TC EDP: 71436	—	—	—	—	—	—	—	—	CEM916B2 EDP: 71428 CEM916B2TL EDP: 71429 CEM916B2TC EDP: 71430
5/8	5/8	1-1/4	3-1/2	CEM58F2 EDP: 71323 CEM58F2TL EDP: 71324 CEM58F2TC EDP: 71325	—	CEM58R2015 EDP: 71350 CEM58R2015TL EDP: 71351 CEM58R2015TC EDP: 71352	CEM58R2020 EDP: 71353 CEM58R2020TL EDP: 71354 CEM58R2020TC EDP: 71355	CEM58R2030 EDP: 71356 CEM58R2030TL EDP: 71357 CEM58R2030TC EDP: 71358	CEM58R2045 EDP: 71359 CEM58R2045TL EDP: 71360 CEM58R2045TC EDP: 71361	CEM58R2060 EDP: 71362 CEM58R2060TL EDP: 71363 CEM58R2060TC EDP: 71364	CEM58R2090 EDP: 71365 CEM58R2090TL EDP: 71366 CEM58R2090TC EDP: 71367	—	CEM58B2 EDP: 71299 CEM58B2TL EDP: 71300 CEM58B2TC EDP: 71301
	5/8	2-1/4	5.0	CEM58FL2 EDP: 71332 CEM58FL2TL EDP: 71333 CEM58FL2TC EDP: 71334	—	—	—	—	—	—	—	—	CEM58BL2 EDP: 71305 CEM58BL2TL EDP: 71306 CEM58BL2TC EDP: 71307
	5/8	2.0	6.0	CEM58FXL2 EDP: 71338 CEM58FXL2TL EDP: 71339 CEM58FXL2TC EDP: 71340	—	—	—	—	—	—	—	—	CEM58BXL2 EDP: 71311 CEM58BXL2TL EDP: 71312 CEM58BXL2TC EDP: 71313
	5/8	3.0	6.0	CEM58FXXL2 EDP: 71344 CEM58FXXL2TL EDP: 71345 CEM58FXXL2TC EDP: 71346	—	—	—	—	—	—	—	—	CEM58BXXL2 EDP: 71317 CEM58BXXL2TL EDP: 71318 CEM58BXXL2TC EDP: 71319

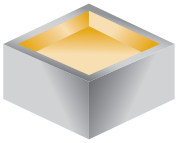
TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING

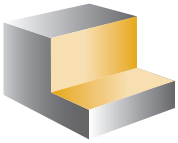
FULL SLOTTING



POCKETING

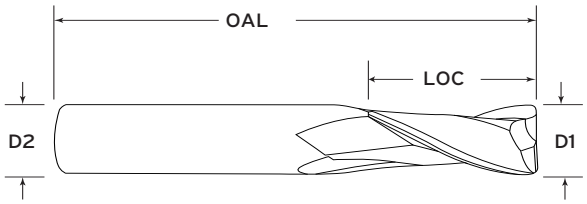


HIGH-VELOCITY



MATERIALS

Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)	Gray Cast Iron	Die Steels (H13,P20)
Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)	Soft Steels (A36,1018,8620,1045)	Stainless Steel (303, 304, 316)
Copper (200 Brinell <)	Brass	Alloy Steels (4340,4140)	Difficult Stainless Steel (400 & PH Series)
Copper (200 Brinell >)	Bronze	Tool Steels(A2,D2,S7)	High Temp. Alloys
			Titanium (6AL4V)



SPEEDS & FEEDS CHART PAGE 128

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN								Ballnose COATINGS TL=TiALN TC=TiCN
					0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	
3/4	3/4	1-1/2	4.0	CEM34F2 EDP: 71017 CEM34F2TL EDP: 71018 CEM34F2TC EDP: 71019	—	CEM34R2015 EDP: 71044 CEM34R2015TL EDP: 71045 CEM34R2015TC EDP: 71046	CEM34R2020 EDP: 71047 CEM34R2020TL EDP: 71048 CEM34R2020TC EDP: 71049	CEM34R2030 EDP: 71050 CEM34R2030TL EDP: 71051 CEM34R2030TC EDP: 71052	CEM34R2045 EDP: 71053 CEM34R2045TL EDP: 71054 CEM34R2045TC EDP: 71055	CEM34R2060 EDP: 71056 CEM34R2060TL EDP: 71057 CEM34R2060TC EDP: 71058	CEM34R2090 EDP: 71059 CEM34R2090TL EDP: 71060 CEM34R2090TC EDP: 71061	CEM34R2125 EDP: 71062 CEM34R2125TL EDP: 71063 CEM34R2125TC EDP: 71064	CEM34B2 EDP: 70999 CEM34B2TL EDP: 71000 CEM34B2TC EDP: 71001
	3/4	2.0	6.0	CEM34FXL2 EDP: 71032 CEM34FXL2TL EDP: 71033 CEM34FXL2TC EDP: 71034	—	—	—	—	—	—	—	—	CEM34BXL2 EDP: 71005 CEM34BXL2TL EDP: 71006 CEM34BXL2TC EDP: 71007
	3/4	3.0	6.0	CEM34FXXL2 EDP: 71038 CEM34FXXL2TL EDP: 71039 CEM34FXXL2TC EDP: 71040	—	—	—	—	—	—	—	—	CEM34BXXL2 EDP: 71011 CEM34BXXL2TL EDP: 71012 CEM34BXXL2TC EDP: 71013
	3/4	4.0	7.0	CEM34FSL2 EDP: 71026 CEM34FSL2TL EDP: 71027 CEM34FSL2TC EDP: 71028	—	—	—	—	—	—	—	—	—
1.0	1.0	1-1/2	4.0	CEM10F2 EDP: 70231 CEM10F2TL EDP: 70232 CEM10F2TC EDP: 70233	—	CEM10R2015 EDP: 70258 CEM10R2015TL EDP: 70259 CEM10R2015TC EDP: 70260	CEM10R2020 EDP: 70261 CEM10R2020TL EDP: 70262 CEM10R2020TC EDP: 70263	CEM10R2030 EDP: 70264 CEM10R2030TL EDP: 70265 CEM10R2030TC EDP: 70266	CEM10R2045 EDP: 70267 CEM10R2045TL EDP: 70268 CEM10R2045TC EDP: 70269	CEM10R2060 EDP: 70270 CEM10R2060TL EDP: 70271 CEM10R2060TC EDP: 70272	CEM10R2090 EDP: 70273 CEM10R2090TL EDP: 70274 CEM10R2090TC EDP: 70275	CEM10R2125 EDP: 70276 CEM10R2125TL EDP: 70277 CEM10R2125TC EDP: 70278	CEM10B2 EDP: 70207 CEM10B2TL EDP: 70208 CEM10B2TC EDP: 70209
	1.0	2.0	6.0	CEM10FXL2 EDP: 70246 CEM10FXL2TL EDP: 70247 CEM10FXL2TC EDP: 70248	—	—	—	—	—	—	—	—	CEM10BXL2 EDP: 70219 CEM10BXL2TL EDP: 70220 CEM10BXL2TC EDP: 70221
	1.0	3.0	6.0	CEM10FXXL2 EDP: 70252 CEM10FXXL2TL EDP: 70253 CEM10FXXL2TC EDP: 70254	—	—	—	—	—	—	—	—	CEM10BXXL2 EDP: 70225 CEM10BXXL2TL EDP: 70226 CEM10BXXL2TC EDP: 70227
	1.0	4.0	7.0	CEM10FSL2 EDP: 70240 CEM10FSL2TL EDP: 70241 CEM10FSL2TC EDP: 70242	—	—	—	—	—	—	—	—	CEM10BSL2 EDP: 70213 CEM10BSL2TL EDP: 70214 CEM10BSL2TC EDP: 70215

2 FLUTE PRIMATE (INCH) SPEEDS & FEEDS CHART, FULL SLOTTING AND PROFILING, CHIMP LOAD PER TOOTH

WORK PIECE MATERIAL	SFM	1/8"			3/16"			1/4"			5/16"			3/8"		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum (2000,5000 & 7000 series)	800	.0014	.0010	.0007	.0018	.0012	.0008	.0022	.0014	.0010	.0027	.0018	.0015	.0031	.0020	.0018
Soft Aluminum (6061)	650	.0009	.0006	.0005	.0013	.0008	.0005	.0018	.0012	.0012	.0023	.0016	.0015	.0027	.0018	.0014
Copper (200 Brinell <)	400	.0007	.0005	.0005	.0011	.0007	.0006	.0018	.0012	.0010	.0027	.0018	.0012	.0032	.0022	.0015
Copper (200 Brinell >)	400	.0007	.0005	.0004	.0011	.0007	.0005	.0014	.0010	.0007	.0022	.0014	.0012	.0029	.0019	.0013
Cast Aluminum, Silicon 6% <	500	.0007	.0005	.0005	.0011	.0007	.0007	.0020	.0013	.0010	.0027	.0018	.0015	.0036	.0024	.0018
Cast Aluminum, Silicon 6% >	400	.0007	.0005	.0005	.0011	.0007	.0007	.0014	.0012	.0010	.0022	.0014	.0013	.0029	.0019	.0017
Brass	800	.0007	.0005	.0004	.0009	.0006	.0005	.0013	.0010	.0008	.0020	.0013	.0012	.0027	.0018	.0016
Bronze	400	.0007	.0005	.0004	.0009	.0006	.0005	.0013	.0008	.0006	.0020	.0013	.0010	.0025	.0019	.0014

WORK PIECE MATERIAL	SFM	7/16"			1/2"			5/8"			3/4"			1"		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum (2000,5000 & 7000 series)	800	.0040	.0026	.0020	.0045	.0030	.0023	.0054	.0036	.0030	.0063	.0042	.0035	.0072	.0048	.0040
Soft Aluminum (6061)	650	.0032	.0022	.0020	.0038	.0025	.0023	.0049	.0032	.0030	.0058	.0038	.0035	.0072	.0048	.0040
Copper (200 Brinell <)	400	.0036	.0024	.0017	.0043	.0029	.0020	.0050	.0034	.0023	.0061	.0041	.0029	.0072	.0048	.0033
Copper (200 Brinell >)	400	.0036	.0024	.0017	.0040	.0026	.0020	.0047	.0031	.0023	.0054	.0036	.0029	.0065	.0043	.0033
Cast Aluminum, Silicon 6% <	500	.0041	.0028	.0020	.0045	.0030	.0023	.0050	.0034	.0030	.0061	.0041	.0035	.0072	.0048	.0040
Cast Aluminum, Silicon 6% >	400	.0034	.0023	.0020	.0040	.0026	.0023	.0047	.0032	.0030	.0058	.0038	.0033	.0068	.0046	.0040
Brass	800	.0031	.0020	.0019	.0036	.0024	.0021	.0045	.0030	.0027	.0054	.0036	.0033	.0063	.0042	.0040
Bronze	400	.0029	.0020	.0017	.0034	.0023	.0020	.0040	.0030	.0027	.0050	.0038	.0031	.0059	.0045	.0040

2 FLUTE PRIMATE (INCH) COATED SPEEDS & FEEDS CHART, 1X DIAMETER DEEP, FULL SLOTTING

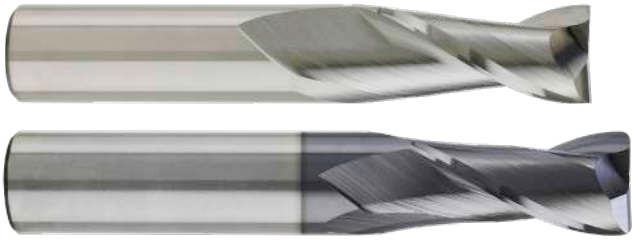
RECOMMENDED RPM AND FEED RATES FOR COATED STANDARD 2 FLUTE CARBIDE END MILLS

Work Piece Material	SFM	1/8"		1/4"		5/16"		3/8"		7/16"		1/2"		5/8"		3/4"		1"	
		RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM
Gray Cast Iron	300	9,168	14.6	4,584	10.1	3,667	14.6	3,056	15.2	2,619	14.1	2,292	13.7	1,833	12.8	1,528	12.2	1,146	10.3
Soft Steels (A36,1018,8620,1045)	225	6,876	9.6	3,438	6.8	2,750	6.6	2,292	6.4	1,964	6.2	1,719	6.1	1,375	6.1	1,146	6.8	860	6.0
Alloy Steels (4340,4140)	140	4,278	3.4	2,139	3.4	1,711	3.4	1,426	3.4	1,222	3.2	1,069	3.2	855	3.4	713	3.5	535	3.2
Tool Steels(A2,D2,S7)	125	3,820	3.1	1,910	3.1	1,528	3.1	1,273	3.1	1,091	2.5	955	2.6	764	3.1	637	3.1	477	2.8
Die Steels (H13,P20)	125	3,820	3.1	1,910	3.1	1,528	3.1	1,273	3.1	1,091	2.5	955	2.6	764	3.1	637	3.1	477	2.8
Stainless Steel (303, 304, 316)	175	5,348	5.3	2,674	4.8	2,139	6.4	1,782	6.4	1,528	5.5	1,337	5.3	1,070	5.3	891	5.3	668	4.6
Difficult Stainless Steel (400 & PH Series)	100	3,056	3.1	1,528	2.4	1,222	2.5	1,018	2.6	873	2.4	764	2.2	611	2.4	509	2.5	382	2.3
High Temp. Alloys	80	2,444	1.9	1,222	1.6	977	1.7	815	1.7	698	1.7	611	1.7	489	1.7	407	1.8	305	1.8
Titanium (6AL4V)	60	1,833	2.2	916	1.6	733	1.7	611	1.7	524	1.6	458	1.6	367	1.6	305	1.8	229	1.6

NOTE: Run UNCOATED endmills 25% less on SFM

**Recommended Speeds & Feeds*

STANDARD PERFORMANCE
2 FLUTE (METRIC)



Extremely versatile in various materials, center cutting, solid sub-micron carbide. See “Speeds and Feeds” calculator at gorillamill.com or refer to ”Speeds and Feeds” chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.

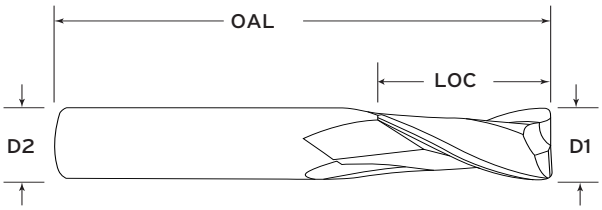
MATERIALS

Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)	Gray Cast Iron	Die Steels (H13,P20)
Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)	Soft Steels (A36,1018,8620,1045)	Stainless Steel (303, 304, 316)
Copper (200 Brinell <)	Brass	Alloy Steels (4340,4140)	Difficult Stainless Steel (400 & PH Series)
Copper (200 Brinell >)	Bronze	Tool Steels(A2,D2,S7)	High Temp. Alloys
			Titanium (6AL4V)

SPEEDS & FEEDS CHART PAGE 133/134

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Metric) COATINGS: TL=TiALN, TC=TiCN 0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
3mm	3mm	8mm	38mm	CEM0300MMFS2 EDP: 70009 CEM0300MMFS2TL EDP: 70010 CEM0300MMFS2TC EDP: 70011	CEM0300MMRS2020 EDP: 70030 CEM0300MMRS2020TL EDP: 70031 CEM0300MMRS2020TC EDP: 70032	—	—	—	—	—
	3mm	12mm	38mm	CEM0300MMF2 EDP: 70000 CEM0300MMF2TL EDP: 70001 CEM0300MMF2TC EDP: 70002	CEM0300MMR2020 EDP: 70018 CEM0300MMR2020TL EDP: 70019 CEM0300MMR2020TC EDP: 70020	—	CEM0300MMR2050 EDP: 70021 CEM0300MMR2050TL EDP: 70022 CEM0300MMR2050TC EDP: 70023	—	—	—
4mm	6mm	8mm	50mm	—	—	CEM0400MMRS2030 EDP: 70057 CEM0400MMRS2030TL EDP: 70058 CEM0400MMRS2030TC EDP: 70059	—	—	—	—
	6mm	12mm	50mm	CEM0400MMF2 EDP: 70036 CEM0400MMF2TL EDP: 70037 CEM0400MMF2TC EDP: 70038	—	CEM0400MMR2030 EDP: 70045 CEM0400MMR2030TL EDP: 70046 CEM0400MMR2030TC EDP: 70047	CEM0400MMR2050 EDP: 70048 CEM0400MMR2050TL EDP: 70049 CEM0400MMR2050TC EDP: 70050	—	—	—

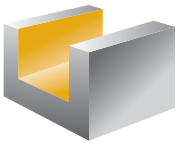
Continued on next page



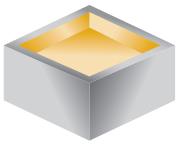
TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING

FULL SLOTTING

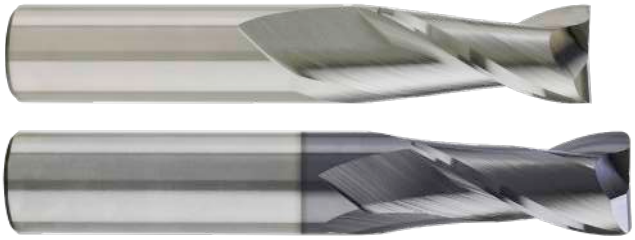


POCKETING



HIGH-VELOCITY

STANDARD PERFORMANCE
2 FLUTE (METRIC)



Extremely versatile in various materials, center cutting, solid sub-micron carbide. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.

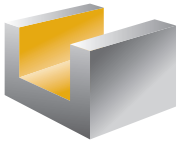
SPEEDS & FEEDS CHART PAGE 133/134

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Metric) COATINGS: TL=TiALN, TC=TiCN					
					0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
5mm	6mm	10mm	50mm	—	—	CEM0500MMRS2030 EDP: 70084 CEM0500MMRS2030TL EDP: 70085 CEM0500MMRS2030TC EDP: 70086	—	—	—	—
	6mm	15mm	65mm	CEM0500MMF2 EDP: 70063 CEM0500MMF2TL EDP: 70064 CEM0500MMF2TC EDP: 70065	—	CEM0500MMR2030 EDP: 70072 CEM0500MMR2030TL EDP: 70073 CEM0500MMR2030TC EDP: 70074	CEM0500MMR2050 EDP: 70075 CEM0500MMR2050TL EDP: 70076 CEM0500MMR2050TC EDP: 70077	—	—	—
6mm	6mm	12mm	50mm	CEM0600MMFS2 EDP: 70099 CEM0600MMFS2TL EDP: 70100 CEM0600MMFS2TC EDP: 70101	—	CEM0600MMRS2030 EDP: 70120 CEM0600MMRS2030TL EDP: 70121 CEM0600MMRS2030TC EDP: 70122	—	—	—	—
	6mm	19mm	65mm	CEM0600MMF2 EDP: 70090 CEM0600MMF2TL EDP: 70091 CEM0600MMF2TC EDP: 70092	—	CEM0600MMR2030 EDP: 70108 CEM0600MMR2030TL EDP: 70109 CEM0600MMR2030TC EDP: 70110	CEM0600MMR2050 EDP: 70111 CEM0600MMR2050TL EDP: 70112 CEM0600MMR2050TC EDP: 70113	—	—	—
8mm	8mm	12mm	50mm	CEM0800MMFS2 EDP: 70135 CEM0800MMFS2TL EDP: 70136 CEM0800MMFS2TC EDP: 70137	—	—	CEM0800MMRS2050 EDP: 70168 CEM0800MMRS2050TL EDP: 70169 CEM0800MMRS2050TC EDP: 70170	—	—	—
	8mm	22mm	65mm	CEM0800MMF2 EDP: 70126 CEM0800MMF2TL EDP: 70127 CEM0800MMF2TC EDP: 70128	—	CEM0800MMR2030 EDP: 70144 CEM0800MMR2030TL EDP: 70145 CEM0800MMR2030TC EDP: 70146	CEM0800MMR2050 EDP: 70147 CEM0800MMR2050TL EDP: 70148 CEM0800MMR2050TC EDP: 70149	CEM0800MMR2100 EDP: 70150 CEM0800MMR2100TL EDP: 70151 CEM0800MMR2100TC EDP: 70152	CEM0800MMR2150 EDP: 70153 CEM0800MMR2150TL EDP: 70154 CEM0800MMR2150TC EDP: 70155	—
10mm	10mm	16mm	50mm	—	—	—	CEM1000MMRS2050 EDP: 70201 CEM1000MMRS2050TL EDP: 70202 CEM1000MMRS2050TC EDP: 70203	—	—	—
	10mm	22mm	70mm	CEM1000MMF2 EDP: 70174 CEM1000MMF2TL EDP: 70175 CEM1000MMF2TC EDP: 70176	—	CEM1000MMR2030 EDP: 70183 CEM1000MMR2030TL EDP: 70184 CEM1000MMR2030TC EDP: 70185	CEM1000MMR2050 EDP: 70186 CEM1000MMR2050TL EDP: 70187 CEM1000MMR2050TC EDP: 70188	CEM1000MMR2100 EDP: 70189 CEM1000MMR2100TL EDP: 70190 CEM1000MMR2100TC EDP: 70191	—	—

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING

FULL SLOTTING



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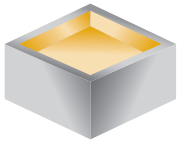


HIGH-VELOCITY

MATERIALS

Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)	Gray Cast Iron	Die Steels (H13,P20)
Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)	Soft Steels (A36,1018,8620,1045)	Stainless Steel (303, 304, 316)
Copper (200 Brinell <)	Brass	Alloy Steels (4340,4140)	Difficult Stainless Steel (400 & PH Series)
Copper (200 Brinell >)	Bronze	Tool Steels(A2,D2,S7)	High Temp. Alloys
			Titanium (6AL4V)

SPEEDS & FEEDS CHART PAGE 133/134

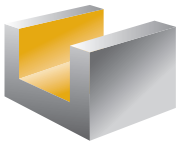
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Metric) COATINGS: TL=TiALN, TC=TiCN					
					0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
12mm	12mm	19mm	63mm	CEM1200MMFS2 EDP: 70348 CEM1200MMFS2TL EDP: 70349 CEM1200MMFS2TC EDP: 70350	—	CEM1200MMRS2030 EDP: 70387 CEM1200MMRS2030TL EDP: 70388 CEM1200MMRS2030TC EDP: 70389	CEM1200MMRS2050 EDP: 70390 CEM1200MMRS2050TL EDP: 70391 CEM1200MMRS2050TC EDP: 70392	—	—	—
	12mm	32mm	75mm	CEM1200MMF2 EDP: 70339 CEM1200MMF2TL EDP: 70340 CEM1200MMF2TC EDP: 70341	—	CEM1200MMR2030 EDP: 70357 CEM1200MMR2030TL EDP: 70358 CEM1200MMR2030TC EDP: 70359	CEM1200MMR2050 EDP: 70360 CEM1200MMR2050TL EDP: 70361 CEM1200MMR2050TC EDP: 70362	CEM1200MMR2100 EDP: 70363 CEM1200MMR2100TL EDP: 70364 CEM1200MMR2100TC EDP: 70365	CEM1200MMR2150 EDP: 70366 CEM1200MMR2150TL EDP: 70367 CEM1200MMR2150TC EDP: 70368	CEM1200MMR2200 EDP: 70369 CEM1200MMR2200TL EDP: 70370 CEM1200MMR2200TC EDP: 70371
16mm	16mm	19mm	75mm	—	—	CEM1600MMRS2030 EDP: 70654 CEM1600MMRS2030TL EDP: 70655 CEM1600MMRS2030TC EDP: 70656	CEM1600MMRS2050 EDP: 70657 CEM1600MMRS2050TL EDP: 70658 CEM1600MMRS2050TC EDP: 70659	—	—	—
	16mm	32mm	89mm	CEM1600MMF2 EDP: 70621 CEM1600MMF2TL EDP: 70622 CEM1600MMF2TC EDP: 70623	—	CEM1600MMR2030 EDP: 70630 CEM1600MMR2030TL EDP: 70631 CEM1600MMR2030TC EDP: 70632	CEM1600MMR2050 EDP: 70633 CEM1600MMR2050TL EDP: 70634 CEM1600MMR2050TC EDP: 70635	CEM1600MMR2100 EDP: 70636 CEM1600MMR2100TL EDP: 70637 CEM1600MMR2100TC EDP: 70638	—	CEM1600MMR2200 EDP: 70639 CEM1600MMR2200TL EDP: 70640 CEM1600MMR2200TC EDP: 70641

Continued on next page

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING

FULL SLOTTING



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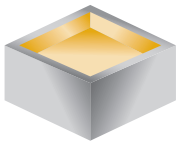
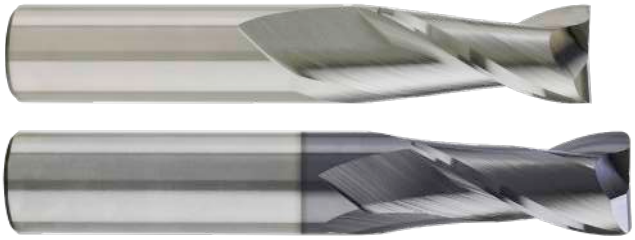


HIGH-VELOCITY

STANDARD PERFORMANCE
2 FLUTE (METRIC)



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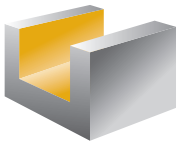
SPEEDS & FEEDS CHART PAGE 133/134

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Metric) COATINGS: TL=TiALN, TC=TiCN					
					0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
20mm	20mm	22mm	75mm	—	—	—	—	CEM2000MMRS2100 EDP: 70792 CEM2000MMRS2100TL EDP: 70793 CEM2000MMRS2100TC EDP: 70794	—	—
	20mm	38mm	100mm	CEM2000MMF2 EDP: 70765 CEM2000MMF2TL EDP: 70766 CEM2000MMF2TC EDP: 70767	—	—	CEM2000MMR2050 EDP: 70774 CEM2000MMR2050TL EDP: 70775 CEM2000MMR2050TC EDP: 70776	CEM2000MMR2100 EDP: 70777 CEM2000MMR2100TL EDP: 70778 CEM2000MMR2100TC EDP: 70779	CEM2000MMR2150 EDP: 70780 CEM2000MMR2150TL EDP: 70781 CEM2000MMR2150TC EDP: 70782	—
25mm	25mm	38mm	100mm	CEM2500MMF2 EDP: 70822 CEM2500MMF2TL EDP: 70823 CEM2500MMF2TC EDP: 70824	—	—	—	CEM2500MMR2100 EDP: 70831 CEM2500MMR2100TL EDP: 70832 CEM2500MMR2100TC EDP: 70833	CEM2500MMR2150 EDP: 70834 CEM2500MMR2150TL EDP: 70835 CEM2500MMR2150TC EDP: 70836	—

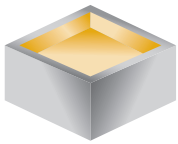
TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING

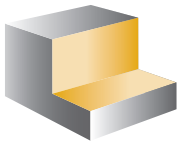
FULL SLOTTING



POCKETING



HIGH-VELOCITY



MATERIALS

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Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)	Soft Steels (A36,1018,8620,1045)	Stainless Steel (303, 304, 316)
Copper (200 Brinell <)	Brass	Alloy Steels (4340,4140)	Difficult Stainless Steel (400 & PH Series)
Copper (200 Brinell >)	Bronze	Tool Steels(A2,D2,S7)	High Temp. Alloys
			Titanium (6AL4V)

2 FLUTE PRIMATE (METRIC) SPEEDS & FEEDS CHART FOR FULL SLOTTING AND PROFILING, METRIC CHIMP LOAD PER TOOTH

WORK PIECE MATERIAL	SFM	3mm			4mm			5mm			6mm			8mm		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum (2000,5000 & 7000 series)	800	.0350	.0250	.0170	.0400	.0270	.0180	.0450	.0300	.0200	.0530	.0330	.0220	.0680	.0450	.0380
Soft Aluminum (6061)	650	.0220	.0150	.0120	.0270	.0180	.0130	.0330	.0200	.0150	.0430	.0270	.0270	.0580	.0400	.0380
Copper (200 Brinell <)	400	.0170	.0120	.0120	.0230	.0140	.0130	.0270	.0170	.0150	.0430	.0270	.0220	.0680	.0450	.0300
Copper (200 Brinell >)	400	.0170	.0120	.0100	.0220	.0140	.0120	.0270	.0170	.0120	.0330	.0220	.0150	.0550	.0350	.0300
Cast Aluminum, Silicon 6% <	500	.0170	.0120	.0120	.0220	.0150	.0140	.0270	.0170	.0170	.0480	.0300	.0220	.0680	.0450	.0380
Cast Aluminum, Silicon 6% >	400	.0170	.0120	.0120	.0220	.0150	.0140	.0270	.0170	.0170	.0330	.0270	.0250	.0550	.0350	.0330
Brass	800	.0170	.0120	.0100	.0140	.0130	.0110	.0220	.0150	.0120	.0300	.0220	.0170	.0500	.0330	.0300
Bronze	400	.0170	.0120	.0100	.0140	.0130	.0110	.0220	.0150	.0120	.0300	.0200	.0150	.0500	.0330	.0250

WORK PIECE MATERIAL	SFM	10mm			12mm			16mm			20mm			25mm		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum (2000,5000 & 7000 series)	800	.0780	.0500	.0450	.1110	.0730	.0530	.1370	.0910	.0760	.1640	.1090	.0880	.1820	.1240	.1010
Soft Aluminum (6061)	650	.0680	.0450	.0350	.0960	.0630	.0550	.1240	.0810	.0760	.1520	.0990	.0880	.1820	.1240	.1010
Copper (200 Brinell <)	400	.0810	.0550	.0380	.1040	.0680	.0500	.1270	.0860	.0580	.1600	.1060	.0780	.1820	.1240	.0860
Copper (200 Brinell >)	400	.0730	.0480	.0330	.0960	.0630	.0500	.1190	.0780	.0580	.1440	.0940	.0780	.1670	.1110	.0860
Cast Aluminum, Silicon 6% <	500	.0910	.0610	.0450	.1090	.0760	.0530	.1270	.0860	.0760	.1600	.1060	.0880	.1820	.1240	.1010
Cast Aluminum, Silicon 6% >	400	.0730	.0480	.0430	.0960	.0660	.0530	.1190	.0810	.0760	.1520	.1040	.0830	.1750	.1140	.1010
Brass	800	.0680	.0450	.0400	.0860	.0530	.0500	.1140	.0760	.0680	.1440	.0960	.0830	.1620	.1090	.1010
Bronze	400	.0630	.0480	.0350	.0810	.0530	.0500	.1010	.0760	.0680	.1340	.1040	.0810	.1520	.1140	.1010

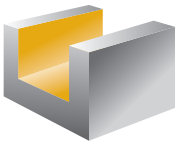
NOTE: Run UNCOATED endmills 25% less on SFM

**Recommended Speeds & Feeds*

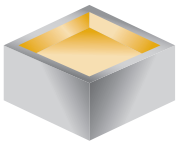
TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING

FULL SLOTTING



POCKETING



HIGH-VELOCITY

MATERIALS

Aircraft Aluminum, (2000,5000, 7000 series)
Soft Aluminum, (6061)
Copper (200 Brinell <)
Copper (200 Brinell >)

Cast Aluminum (6% Silcon & <)
Cast Aluminum (6% Silcon & >)
Brass
Bronze

Gray Cast Iron
Soft Steels (A36,1018,8620,1045)
Alloy Steels (4340,4140)
Tool Steels(A2,D2,S7)

Die Steels (H13,P20)
Stainless Steel (303, 304, 316)
Difficult Stainless Steel (400 & PH Series)
High Temp. Alloys
Titanium (6AL4V)

2 FLUTE PRIMATE (METRIC) COATED SPEEDS & FEEDS CHART, 1X DIAMETER DEEP, FULL SLOTTING, METRIC CHIMP LOAD PER TOOTH

RECOMMENDED RPM AND FEED RATES FOR COATED STANDARD 2 FLUTE CARBIDE END MILLS

Work Piece Material	SFM	3mm		4mm		5mm		6mm		8mm		10mm	
		RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT
Gray Cast Iron	300	9702	.0200	7277	.0220	5821	.0240	4851	.0280	3638	.0500	2910	.0630
Soft Steels (A36,1018,8620,1045)	225	7277	.0170	5457	.0200	4366	.0230	3638	.0250	2729	.0300	2183	.0350
Alloy Steels (4340,4140)	140	4527	.0100	3395	.0130	2716	.0160	2264	.0200	1698	.0250	1358	.0300
Tool Steels(A2,D2,S7)	125	4042	.0100	3032	.0130	2425	.0160	2021	.0200	1516	.0250	1212	.0300
Die Steels (H13,P20)	125	4042	.0100	3032	.0130	2425	.0160	2021	.0200	1516	.0250	1212	.0300
Stainless Steel (303, 304, 316)	175	5660	.0120	4245	.0160	3396	.0200	2830	.0220	2122	.0380	1698	.0450
Difficult Stainless Steel (400 & PH Series)	100	3234	.0120	2425	.0140	1940	.0170	1617	.0200	1212	.0260	970	.0320
High Temp. Alloys	80	2587	.0100	1940	.0120	1552	.0140	1293	.0160	970	.0220	776	.0260
Titanium (6AL4V)	60	1940	.0150	1455	.0170	1164	.0200	970	.0220	727	.0290	582	.0350

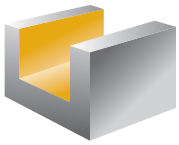
Work Piece Material	SFM	12mm		16mm		20mm		25mm	
		RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT
Gray Cast Iron	300	2425	.0750	1819	.0880	1455	.1040	1164	.1140
Soft Steels (A36,1018,8620,1045)	225	1819	.0450	1364	.0560	1091	.0760	873	.0880
Alloy Steels (4340,4140)	140	1132	.0380	848	.0500	679	.0670	543	.0760
Tool Steels(A2,D2,S7)	125	1010	.0350	758	.0510	606	.0650	485	.0740
Die Steels (H13,P20)	125	1010	.0350	758	.0510	606	.0670	485	.0740
Stainless Steel (303, 304, 316)	175	1415	.0500	1061	.0630	849	.0780	679	.0870
Difficult Stainless Steel (400 & PH Series)	100	808	.0370	606	.0500	485	.0680	388	.0760
High Temp. Alloys	80	646	.0350	485	.0440	388	.0640	310	.0750
Titanium (6AL4V)	60	485	.0440	363	.0550	291	.0720	232	.0880

NOTE: Run UNCOATED endmills 25% less on SFM

**Recommended Speeds & Feeds*

PROFILING

FULL SLOTTING



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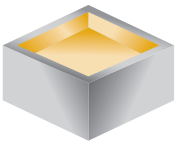


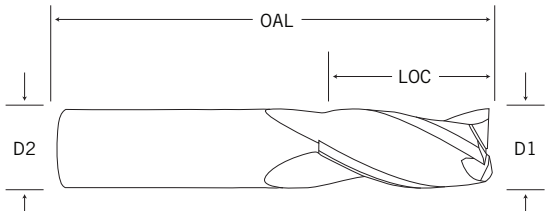
HIGH-VELOCITY

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

STANDARD PERFORMANCE
3 FLUTE (INCH)

Extremely versatile in various materials, center cutting, solid sub-micron carbide. See “Speeds and Feeds” calculator at gorillamill.com or refer to “Speeds and Feeds” chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.



SPEEDS & FEEDS CHART PAGE 137				
D1 Cutting Dia.	**D2** Shank Dia.	**LOC**	**OAL**	**Sq. End** COATINGS TL=TiALN TC=TiCN
1/16	1/8	3/16	1-1/2	CEM116F3 EDP: 70321 CEM116F3TL EDP: 70322 CEM116F3TC EDP: 70323
3/32	1/8	3/8	1-1/2	CEM332F3 EDP: 70963 CEM332F3TL EDP: 70964 CEM332F3TC EDP: 70965
1/8	1/8	1/2	1-1/2	CEM18F3 EDP: 70711 CEM18F3TL EDP: 70712 CEM18F3TC EDP: 70713
5/32	3/16	1/2	2.0	CEM532F3 EDP: 71281 CEM532F3TL EDP: 71282 CEM532F3TC EDP: 71283

SPEEDS & FEEDS CHART PAGE 137				
D1 Cutting Dia.	**D2** Shank Dia.	**LOC**	**OAL**	**Sq. End** COATINGS TL=TiALN TC=TiCN
3/16	3/16	5/8	2.0	CEM316F3 EDP: 70912 CEM316F3TL EDP: 70913 CEM316F3TC EDP: 70914
7/32	1/4	5/8	2-1/2	CEM732F3 EDP: 71410 CEM732F3TL EDP: 71411 CEM732F3TC EDP: 71412
1/4	1/4	3/4	2-1/2	CEM14F3 EDP: 70555 CEM14F3TL EDP: 70556 CEM14F3TC EDP: 70557
9/32	5/16	3/4	2-1/2	CEM932F3 EDP: 71452 CEM932F3TL EDP: 71453 CEM932F3TC EDP: 71454

Continued on next page

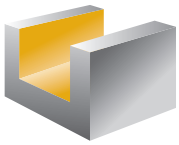
MATERIALS

Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)	Gray Cast Iron	Die Steels (H13,P20)
Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)	Soft Steels (A36,1018,8620,1045)	Stainless Steel (303, 304, 316)
Copper (200 Brinell <)	Brass	Alloy Steels (4340,4140)	Difficult Stainless Steel (400 & PH Series)
Copper (200 Brinell >)	Bronze	Tool Steels(A2,D2,S7)	High Temp. Alloys
			Titanium (6AL4V)

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING

FULL SLOTTING



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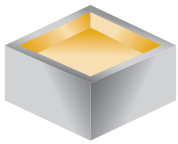
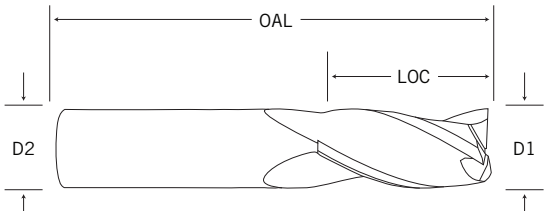


HIGH-VELOCITY

STANDARD PERFORMANCE
3 FLUTE (INCH)

Extremely versatile in various materials, center cutting, solid sub-micron carbide. See “Speeds and Feeds” calculator at gorillamill.com or refer to “Speeds and Feeds” chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.



SPEEDS & FEEDS CHART PAGE 137				
D1 Cutting Dia.	**D2** Shank Dia.	**LOC**	**OAL**	**Sq. End** COATINGS TL=TiALN TC=TiCN
5/16	5/16	7/8	2-1/2	CEM516F3 EDP: 71224 CEM516F3TL EDP: 71225 CEM516F3TC EDP: 71226
3/8	3/8	7/8	2-1/2	CEM38F3 EDP: 71143 CEM38F3TL EDP: 71144 CEM38F3TC EDP: 71145
7/16	7/16	1.0	2-1/2	CEM716F3 EDP: 71395 CEM716F3TL EDP: 71396 CEM716F3TC EDP: 71397
1/2	1/2	1.0	3.0	CEM12F3 EDP: 70432 CEM12F3TL EDP: 70433 CEM12F3TC EDP: 70434

SPEEDS & FEEDS CHART PAGE 137				
D1 Cutting Dia.	**D2** Shank Dia.	**LOC**	**OAL**	**Sq. End** COATINGS TL=TiALN TC=TiCN
9/16	9/16	1-1/4	3-1/2	CEM916F3 EDP: 71437 CEM916F3TL EDP: 71438 CEM916F3TC EDP: 71439
5/8	5/8	1-1/4	3-1/2	CEM58F3 EDP: 71326 CEM58F3TL EDP: 71327 CEM58F3TC EDP: 71328
3/4	3/4	1-1/2	4.0	CEM34F3 EDP: 71020 CEM34F3TL EDP: 71021 CEM34F3TC EDP: 71022
1.0	1.0	1-1/2	4.0	CEM10F3 EDP: 70234 CEM10F3TL EDP: 70235 CEM10F3TC EDP: 70236

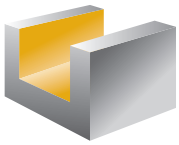
MATERIALS

Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)	Gray Cast Iron	Die Steels (H13,P20)
Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)	Soft Steels (A36,1018,8620,1045)	Stainless Steel (303, 304, 316)
Copper (200 Brinell <)	Brass	Alloy Steels (4340,4140)	Difficult Stainless Steel (400 & PH Series)
Copper (200 Brinell >)	Bronze	Tool Steels(A2,D2,S7)	High Temp. Alloys
			Titanium (6AL4V)

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING

FULL SLOTTING



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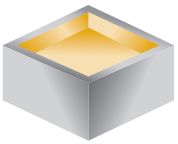


HIGH-VELOCITY

3 FLUTE PRIMATE (INCH) SPEEDS & FEEDS CHART FOR FULL SLOTTING AND PROFILING, CHIMP LOAD PER TOOTH

WORK PIECE MATERIAL	SFM	1/8"			3/16"			1/4"			5/16"			3/8"		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum (2000,5000 & 7000 series)	800	.0014	.0010	.0007	.0018	.0012	.0008	.0022	.0014	.0010	.0027	.0018	.0015	.0031	.0020	.0018
Soft Aluminum (6061)	650	.0009	.0006	.0005	.0013	.0008	.0005	.0018	.0012	.0012	.0023	.0016	.0015	.0027	.0018	.0014
Copper (200 Brinell <)	400	.0007	.0005	.0005	.0011	.0007	.0006	.0018	.0012	.0010	.0027	.0018	.0012	.0032	.0022	.0015
Copper (200 Brinell >)	400	.0007	.0005	.0004	.0011	.0007	.0005	.0014	.0010	.0007	.0022	.0014	.0012	.0029	.0019	.0013
Cast Aluminum, Silicon 6% <	500	.0007	.0005	.0005	.0011	.0007	.0007	.0020	.0013	.0010	.0027	.0018	.0015	.0036	.0024	.0018
Cast Aluminum, Silicon 6% >	400	.0007	.0005	.0005	.0011	.0007	.0007	.0014	.0012	.0010	.0022	.0014	.0013	.0029	.0019	.0017
Brass	800	.0007	.0005	.0004	.0009	.0006	.0005	.0013	.0010	.0008	.0020	.0013	.0012	.0027	.0018	.0016
Bronze	400	.0007	.0005	.0004	.0009	.0006	.0005	.0013	.0008	.0006	.0020	.0013	.0010	.0025	.0019	.0014

WORK PIECE MATERIAL	SFM	7/16"			1/2"			5/8"			3/4"			1"		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum (2000,5000 & 7000 series)	800	.0040	.0026	.0020	.0045	.0030	.0023	.0054	.0036	.0030	.0063	.0042	.0035	.0072	.0048	.0040
Soft Aluminum (6061)	650	.0032	.0022	.0020	.0038	.0025	.0023	.0049	.0032	.0030	.0058	.0038	.0035	.0072	.0048	.0040
Copper (200 Brinell <)	400	.0036	.0024	.0017	.0043	.0029	.0020	.0050	.0034	.0023	.0061	.0041	.0029	.0072	.0048	.0033
Copper (200 Brinell >)	400	.0036	.0024	.0017	.0040	.0026	.0020	.0047	.0031	.0023	.0054	.0036	.0029	.0065	.0043	.0033
Cast Aluminum, Silicon 6% <	500	.0041	.0028	.0020	.0045	.0030	.0023	.0050	.0034	.0030	.0061	.0041	.0035	.0072	.0048	.0040
Cast Aluminum, Silicon 6% >	400	.0034	.0023	.0020	.0040	.0026	.0023	.0047	.0032	.0030	.0058	.0038	.0033	.0068	.0046	.0040
Brass	800	.0031	.0020	.0019	.0036	.0024	.0021	.0045	.0030	.0027	.0054	.0036	.0033	.0063	.0042	.0040
Bronze	400	.0029	.0020	.0017	.0034	.0023	.0020	.0040	.0030	.0027	.0050	.0038	.0031	.0059	.0045	.0040

NOTE: Run UNCOATED endmills 25% less on SFM

**Recommended Speeds & Feeds*

3 FLUTE PRIMATES (INCH) COATED SPEEDS & FEEDS CHART, 1X DIAMETER DEEP

RECOMMENDED RPM AND FEED RATES FOR COATED STANDARD 3 FLUTE CARBIDE END MILLS

WORK PIECE MATERIAL	SFM	1/8"		1/4"		5/16"		3/8"		7/16"		1/2"		5/8"		3/4"		1"	
		RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM
Gray Cast Iron	300	9,168	21.9	4,584	15.1	3,667	21.9	3,056	22.8	2,619	21.1	2,292	20.6	1,833	19.2	1,528	18.3	1,146	15.5
Soft Steels (A36,1018,8620,1045)	225	6,876	14.4	3,438	10.3	2,750	9.9	2,292	9.6	1,964	9.3	1,719	9.2	1,375	9.1	1,146	10.3	860	9.1
Alloy Steels (4340,4140)	140	4,278	5.1	2,139	5.1	1,711	5.1	1,426	5.1	1,222	4.8	1,069	4.8	855	5.1	713	5.3	535	4.8
Tool Steels(A2,D2,S7)	125	3,820	4.6	1,910	4.6	1,528	4.6	1,273	4.6	1,091	4.2	955	4.2	764	4.5	637	4.7	477	4.3
Die Steels (H13,P20)	125	3,820	4.6	1,910	4.6	1,528	4.6	1,273	4.6	1,091	4.2	955	4.2	764	4.5	637	4.7	477	4.3
Stainless Steel (303, 304, 316)	175	5,348	7.9	2,674	7.2	2,139	9.6	1,782	9.6	1,528	8.7	1,337	7.9	1,070	8.1	891	8.1	668	6.9
Difficult Stainless Steel, (400 & PH Series)	100	3,056	4.6	1,528	3.6	1,222	3.6	1,018	3.9	873	3.6	764	3.3	611	3.6	509	3.8	382	3.4
High Temp. Alloys	80	2,444	2.9	1,222	2.5	977	2.6	815	2.9	698	2.7	611	2.5	489	2.6	407	2.7	305	2.7
Titanium (6AL4V)	60	1,833	3.3	916	2.4	733	2.6	611	2.5	524	2.4	458	2.4	367	2.4	305	2.7	229	2.4

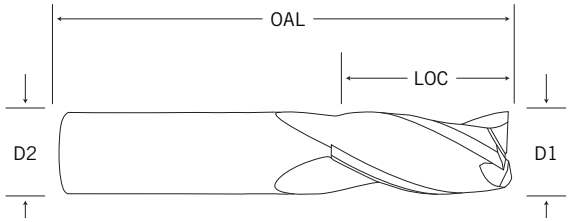
NOTE: Run UNCOATED endmills 25% less on SFM

**Recommended Speeds & Feeds*

STANDARD PERFORMANCE
3 FLUTE (METRIC)

Extremely versatile in various materials, center cutting, solid sub-micron carbide. See “Speeds and Feeds” calculator at gorillamill.com or refer to “Speeds and Feeds” chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.



SPEEDS & FEEDS CHART PAGE 139/140

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN
3mm	3mm	8mm	38mm	CEM0300MMFS3 EDP: 70012
				CEM0300MMFS3TL EDP: 70013
				CEM0300MMFS3TC EDP: 70014
	3mm	12mm	38mm	CEM0300MMF3 EDP: 70003
				CEM0300MMF3TL EDP: 70004
				CEM0300MMF3TC EDP: 70005
4mm	6mm	12mm	50mm	CEM0400MMF3 EDP: 70039
				CEM0400MMF3TL EDP: 70040
				CEM0400MMF3TC EDP: 70041
5mm	6mm	15mm	65mm	CEM0500MMF3 EDP: 70066
				CEM0500MMF3TL EDP: 70067
				CEM0500MMF3TC EDP: 70068

SPEEDS & FEEDS CHART PAGE 139/140

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN
6mm	6mm	12mm	50mm	CEM0600MMFS3 EDP: 70102
				CEM0600MMFS3TL EDP: 70103
				CEM0600MMFS3TC EDP: 70104
	6mm	19mm	65mm	CEM0600MMF3 EDP: 70093
				CEM0600MMF3TL EDP: 70094
				CEM0600MMF3TC EDP: 70095
8mm	8mm	12mm	50mm	CEM0800MMFS3 EDP: 70138
				CEM0800MMFS3TL EDP: 70139
				CEM0800MMFS3TC EDP: 70140
	8mm	22mm	65mm	CEM0800MMF3 EDP: 70129
				CEM0800MMF3TL EDP: 70130
				CEM0800MMF3TC EDP: 70131
10mm	10mm	22mm	70mm	CEM1000MMF3 EDP: 70177
				CEM1000MMF3TL EDP: 70178
				CEM1000MMF3TC EDP: 70179

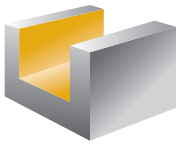
SPEEDS & FEEDS CHART PAGE 139/140

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN
12mm	12mm	19mm	63mm	CEM1200MMFS3 EDP: 70351
				CEM1200MMFS3TL EDP: 70352
				CEM1200MMFS3TC EDP: 70353
	12mm	32mm	75mm	CEM1200MMF3 EDP: 70342
				CEM1200MMF3TL EDP: 70343
				CEM1200MMF3TC EDP: 70344
16mm	16mm	32mm	89mm	CEM1600MMF3 EDP: 70624
				CEM1600MMF3TL EDP: 70625
				CEM1600MMF3TC EDP: 70626
20mm	20mm	38mm	100mm	CEM2000MMF3 EDP: 70768
				CEM2000MMF3TL EDP: 70769
				CEM2000MMF3TC EDP: 70770
25mm	25mm	38mm	100mm	CEM2500MMF3 EDP: 70825
				CEM2500MMF3TL EDP: 70826
				CEM2500MMF3TC EDP: 70827

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING

FULL SLOTTING



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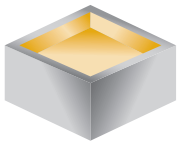
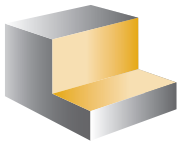


HIGH-VELOCITY



MATERIALS

Aircraft Aluminum, (2000,5000, 7000 series)	Cast Aluminum (6% Silcon & <)	Gray Cast Iron	Die Steels (H13,P20)
Soft Aluminum, (6061)	Cast Aluminum (6% Silcon & >)	Soft Steels (A36,1018,8620,1045)	Stainless Steel (303, 304, 316)
Copper (200 Brinell <)	Brass	Alloy Steels (4340,4140)	Difficult Stainless Steel (400 & PH Series)
Copper (200 Brinell >)	Bronze	Tool Steels(A2,D2,S7)	High Temp. Alloys
			Titanium (6AL4V)

3 FLUTE PRIMATE (METRIC) SPEEDS & FEEDS CHART FOR FULL SLOTTING AND PROFILING, METRIC CHIMP LOAD PER TOOTH

WORK PIECE MATERIAL	SFM	3mm			4mm			5mm			6mm			8mm		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum (2000,5000 & 7000 series)	800	.0350	.0250	.0150	.0400	.0270	.0190	.0460	.0290	.0210	.0530	.0330	.0220	.0680	.0450	.0380
Soft Aluminum (6061)	650	.0220	.0150	.0120	.0280	.0190	.0180	.0350	.0230	.0230	.0430	.0270	.0250	.0580	.0400	.0380
Copper (200 Brinell <)	400	.0170	.0120	.0120	.0250	.0160	.0150	.0350	.0220	.0210	.0430	.0270	.0250	.0680	.0450	.0300
Copper (200 Brinell >)	400	.0170	.0120	.0100	.0250	.0160	.0140	.0350	.0220	.0210	.0330	.0220	.0150	.0550	.0350	.0300
Cast Aluminum, Silicon 6% <	500	.0170	.0120	.0120	.0250	.0160	.0140	.0350	.0230	.0210	.0480	.0300	.0220	.0680	.0450	.0380
Cast Aluminum, Silicon 6% >	400	.0170	.0120	.0120	.0250	.0160	.0140	.0350	.0230	.0210	.0330	.0270	.0220	.0550	.0350	.0330
Brass	800	.0170	.0120	.0100	.0250	.0160	.0120	.0350	.0230	.0150	.0300	.0220	.0170	.0500	.0330	.0300
Bronze	400	.0170	.0120	.0100	.0250	.0160	.0120	.0350	.0220	.0140	.0300	.0170	.0150	.0500	.0330	.0250

WORK PIECE MATERIAL	SFM	10mm			12mm			16mm			20mm			25mm		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum (2000,5000 & 7000 series)	800	.0830	.0530	.0480	.1090	.0730	.0550	.1370	.0910	.0760	.1670	.1110	.0910	.1820	.1210	.1010
Soft Aluminum (6061)	650	.0730	.0480	.0500	.0910	.0610	.0550	.1240	.0810	.0760	.1540	.1010	.0910	.1820	.1210	.1010
Copper (200 Brinell <)	400	.0860	.0580	.0400	.1040	.0710	.0480	.1270	.0860	.0580	.1620	.1090	.0760	.1820	.1210	.0830
Copper (200 Brinell >)	400	.0780	.0500	.0350	.0960	.0630	.0480	.1190	.0780	.0580	.1440	.0960	.0760	.1650	.1090	.0830
Cast Aluminum, Silicon 6% <	500	.0960	.0630	.0480	.1090	.0730	.0550	.1270	.0860	.0760	.1620	.1090	.0910	.1820	.1210	.1010
Cast Aluminum, Silicon 6% >	400	.0780	.0500	.0450	.0960	.0630	.0550	.1190	.0810	.0760	.1540	.1010	.0860	.1720	.1160	.1010
Brass	800	.0730	.0480	.0430	.0860	.0580	.0500	.1140	.0760	.0680	.1440	.0960	.0860	.1600	.1060	.1010
Bronze	400	.0680	.0500	.0380	.0810	.0550	.0480	.1010	.0760	.0680	.1340	.1010	.0810	.1500	.1140	.1010

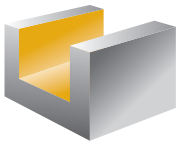
**Recommended Speeds & Feeds*

Continued on next page

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING

FULL SLOTTING



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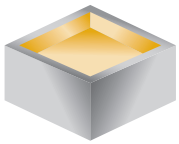


HIGH-VELOCITY

3 FLUTE PRIMATE (METRIC) COATED SPEEDS & FEEDS CHART, 1X DIAMETER DEEP, FULL SLOTTING METRIC CHIMP LOAD PER TOOTH

RECOMMENDED RPM AND FEED RATES FOR COATED STANDARD 3 FLUTE CARBIDE END MILLS

WORK PIECE MATERIAL	SFM	3mm		4mm		5mm		6mm		8mm		10mm	
		RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT
Gray Cast Iron	300	9702	.0200	7277	.0220	5821	.0240	4851	.0280	3638	.0500	2425	.0750
Soft Steels (A36,1018,8620,1045)	225	7277	.0170	5457	.0200	4366	.0230	3638	.0250	2729	.0300	1819	.0450
Alloy Steels (4340,4140)	140	4527	.0100	3395	.0130	2716	.0160	2264	.0200	1698	.0250	1132	.0380
Tool Steels(A2,D2,S7)	125	4042	.0100	3032	.0130	2425	.0160	2021	.0200	1516	.0250	1010	.0350
Die Steels (H13,P20)	125	4042	.0100	3032	.0130	2425	.0160	2021	.0200	1516	.0250	1010	.0350
Stainless Steel (303, 304, 316)	175	5660	.0120	4245	.0160	3396	.0200	2830	.0220	2122	.0380	1415	.0500
Difficult Stainless Steel (400 & PH Series)	100	3234	.0120	2425	.0140	1940	.0170	1617	.0200	1212	.0260	808	.0370
High Temp. Alloys	80	2587	.0100	1940	.0120	1552	.0140	1293	.0160	970	.0220	646	.0350
Titanium (6AL4V)	60	1940	.0150	1455	.0170	1164	.0200	970	.0220	727	.0290	485	.0440

WORK PIECE MATERIAL	SFM	12mm		16mm		20mm		25mm	
		RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT
Gray Cast Iron	300	2079	.0810	1617	.0970	1164	.1140	1164	.1140
Soft Steels (A36,1018,8620,1045)	225	1559	.0500	1212	.0660	873	.0880	873	.0880
Alloy Steels (4340,4140)	140	970	.0440	754	.0590	543	.0760	543	.0760
Tool Steels(A2,D2,S7)	125	866	.0430	673	.0580	485	.0740	485	.0740
Die Steels (H13,P20)	125	866	.0430	673	.0590	485	.0740	485	.0740
Stainless Steel (303, 304, 316)	175	1212	.0560	943	.0710	679	.0870	679	.0870
Difficult Stainless Steel (400 & PH Series)	100	693	.0440	539	.0590	388	.0760	388	.0760
High Temp. Alloys	80	554	.0390	431	.0540	310	.0750	310	.0750
Titanium (6AL4V)	60	415	.0480	323	.0630	232	.0880	232	.0880

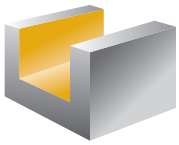
NOTE: Run UNCOATED endmills 25% less on SFM

**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING

FULL SLOTTING



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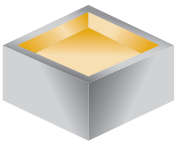

HIGH-VELOCITY

STANDARD PERFORMANCE
4 FLUTE (INCH)

Extremely versatile in various materials, center cutting, solid sub-micron carbide. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.

MATERIALS

Gray Cast Iron	Tool Steels (A2,D2,S7)	Difficult Stainless Steel (400 & PH Series)
Soft Steels (A36,1018,8620,1045)	Die Steels (H13,P20)	High Temp. Alloys
Alloy Steels (4340,4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)

SPEEDS & FEEDS CHART PAGE 150

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN 0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	Ballnose COATINGS TL=TiALN TC=TiCN
1/64	1/8	1/32	1-1/2	CEM164F4 EDP: 70675 CEM164F4TL EDP: 70676 CEM164F4TC EDP: 70677	—	—	—	—	—	—	—	—	CEM164B4 EDP: 70669 CEM164B4TL EDP: 70670 CEM164B4TC EDP: 70671
1/32	1/8	5/64	1-1/2	CEM132F4 EDP: 70513 CEM132F4TL EDP: 70514 CEM132F4TC EDP: 70515	—	—	—	—	—	—	—	—	CEM132B4 EDP: 70507 CEM132B4TL EDP: 70508 CEM132B4TC EDP: 70509
3/64	1/8	7/64	1-1/2	CEM364F4 EDP: 71107 CEM364F4TL EDP: 71108 CEM364F4TC EDP: 71109	—	—	—	—	—	—	—	—	CEM364B4 EDP: 71101 CEM364B4TL EDP: 71102 CEM364B4TC EDP: 71103
1/16	1/8	3/16	1-1/2	CEM116F4 EDP: 70324 CEM116F4TL EDP: 70325 CEM116F4TC EDP: 70326	CEM116R4010 EDP: 70333 CEM116R4010TL EDP: 70334 CEM116R4010TC EDP: 70335	CEM116R4015 EDP: 70336 CEM116R4015TL EDP: 70337 CEM116R4015TC EDP: 70338	—	—	—	—	—	—	CEM116B4 EDP: 70315 CEM116B4TL EDP: 70316 CEM116B4TC EDP: 70317

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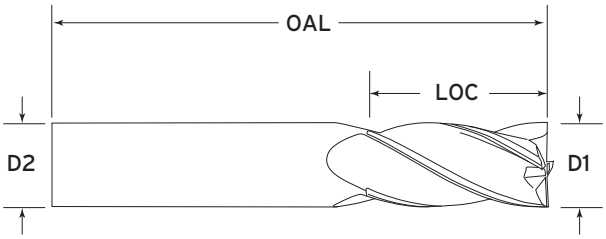
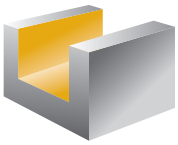


TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING

FULL SLOTTING



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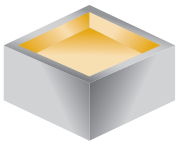

HIGH-VELOCITY

STANDARD PERFORMANCE
4 FLUTE (INCH)

Extremely versatile in various materials, center cutting, solid sub-micron carbide. See “Speeds and Feeds” calculator at gorillamill.com or refer to ”Speeds and Feeds” chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.

SPEEDS & FEEDS CHART PAGE 150

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN								Ballnose COATINGS TL=TiALN TC=TiCN
					0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	
5/64	1/8	3/16	1-1/2	CEM564F4 EDP: 71296 CEM564F4TL EDP: 71297 CEM564F4TC EDP: 71298	—	—	—	—	—	—	—	—	CEM564B4 EDP: 71290 CEM564B4TL EDP: 71291 CEM564B4TC EDP: 71292
3/32	1/8	3/8	1-1/2	CEM332F4 EDP: 70966 CEM332F4TL EDP: 70967 CEM332F4TC EDP: 70968	CEM332R4010 EDP: 70978 CEM332R4010TL EDP: 70979 CEM332R4010TC EDP: 70980	CEM332R4015 EDP: 70981 CEM332R4015TL EDP: 70982 CEM332R4015TC EDP: 70983	CEM332R4020 EDP: 70984 CEM332R4020TL EDP: 70985 CEM332R4020TC EDP: 70986	—	—	—	—	—	CEM332B4 EDP: 70957 CEM332B4TL EDP: 70958 CEM332B4TC EDP: 70959
7/64	1/8	3/8	1-1/2	CEM764F4 EDP: 71425 CEM764F4TL EDP: 71426 CEM764F4TC EDP: 71427	—	—	—	—	—	—	—	—	CEM764B4 EDP: 71419 CEM764B4TL EDP: 71420 CEM764B4TC EDP: 71421
1/8	1/8	1/2	1-1/2	CEM18F4 EDP: 70714 CEM18F4TL EDP: 70715 CEM18F4TC EDP: 70716	CEM18R4010 EDP: 70741 CEM18R4010TL EDP: 70742 CEM18R4010TC EDP: 70743	CEM18R4015 EDP: 70744 CEM18R4015TL EDP: 70745 CEM18R4015TC EDP: 70746	CEM18R4020 EDP: 70747 CEM18R4020TL EDP: 70748 CEM18R4020TC EDP: 70749	CEM18R4030 EDP: 70750 CEM18R4030TL EDP: 70751 CEM18R4030TC EDP: 70752	—	—	—	—	CEM18B4 EDP: 70693 CEM18B4TL EDP: 70694 CEM18B4TC EDP: 70695
	1/8	3/4	2-1/2	CEM18FL4 EDP: 70720 CEM18FL4TL EDP: 70721 CEM18FL4TC EDP: 70722	—	—	—	—	—	—	—	—	CEM18BL4 EDP: 70699 CEM18BL4TL EDP: 70700 CEM18BL4TC EDP: 70701
	1/8	1.0	3.0	CEM18FXL4 EDP: 70726 CEM18FXL4TL EDP: 70727 CEM18FXL4TC EDP: 70728	—	—	—	—	—	—	—	—	CEM18BXL4 EDP: 70705 CEM18BXL4TL EDP: 70706 CEM18BXL4TC EDP: 70707
9/64	3/16	1/2	2.0	CEM964F4 EDP: 71467 CEM964F4TL EDP: 71468 CEM964F4TC EDP: 71469	—	—	—	—	—	—	—	—	CEM964B4 EDP: 71461 CEM964B4TL EDP: 71462 CEM964B4TC EDP: 71463
5/32	3/16	1/2	2.0	CEM532F4 EDP: 71284 CEM532F4TL EDP: 71285 CEM532F4TC EDP: 71286	—	—	—	—	—	—	—	—	CEM532B4 EDP: 71275 CEM532B4TL EDP: 71276 CEM532B4TC EDP: 71277

MATERIALS

Gray Cast Iron	Tool Steels (A2,D2,S7)	Difficult Stainless Steel (400 & PH Series)
Soft Steels (A36,1018,8620,1045)	Die Steels (H13,P20)	High Temp. Alloys
Alloy Steels (4340,4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)

SPEEDS & FEEDS CHART PAGE 150

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN								Ballnose COATINGS TL=TiALN TC=TiCN
					0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	
11/64	3/16	5/8	2.0	CEM1164F4 EDP: 70309 CEM1164F4TL EDP: 70310 CEM1164F4TC EDP: 70311	—	—	—	—	—	—	—	—	CEM1164B4 EDP: 70303 CEM1164B4TL EDP: 70304 CEM1164B4TC EDP: 70305
3/16	3/16	5/8	2.0	CEM316F4 EDP: 70915 CEM316F4TL EDP: 70916 CEM316F4TC EDP: 70917	CEM316R4010 EDP: 70942 CEM316R4010TL EDP: 70943 CEM316R4010TC EDP: 70944	CEM316R4015 EDP: 70945 CEM316R4015TL EDP: 70946 CEM316R4015TC EDP: 70947	CEM316R4020 EDP: 70948 CEM316R4020TL EDP: 70949 CEM316R4020TC EDP: 70950	CEM316R4030 EDP: 70951 CEM316R4030TL EDP: 70952 CEM316R4030TC EDP: 70953	—	—	—	—	CEM316B4 EDP: 70894 CEM316B4TL EDP: 70895 CEM316B4TC EDP: 70896
	3/16	1-1/8	3.0	CEM316FL4 EDP: 70921 CEM316FL4TL EDP: 70922 CEM316FL4TC EDP: 70923	—	—	—	—	—	—	—	—	CEM316BL4 EDP: 70900 CEM316BL4TL EDP: 70901 CEM316BL4TC EDP: 70902
	3/16	1-1/8	4.0	CEM316FXL4 EDP: 70927 CEM316FXL4TL EDP: 70928 CEM316FXL4TC EDP: 70929	—	—	—	—	—	—	—	—	CEM316BXL4 EDP: 70906 CEM316BXL4TL EDP: 70907 CEM316BXL4TC EDP: 70908
13/64	1/4	5/8	2-1/2	CEM1364F4 EDP: 70525 CEM1364F4TL EDP: 70526 CEM1364F4TC EDP: 70527	—	—	—	—	—	—	—	—	CEM1364B4 EDP: 70519 CEM1364B4TL EDP: 70520 CEM1364B4TC EDP: 70521
7/32	1/4	5/8	2-1/2	CEM732F4 EDP: 71413 CEM732F4TL EDP: 71414 CEM732F4TC EDP: 71415	—	—	—	—	—	—	—	—	CEM732B4 EDP: 71404 CEM732B4TL EDP: 71405 CEM732B4TC EDP: 71406
15/64	1/4	3/4	2-1/2	CEM1564F4 EDP: 70618 CEM1564F4TL EDP: 70619 CEM1564F4TC EDP: 70620	—	—	—	—	—	—	—	—	CEM1564B4 EDP: 70612 CEM1564B4TL EDP: 70613 CEM1564B4TC EDP: 70614

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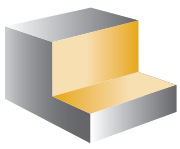
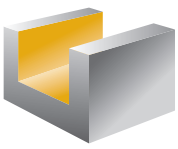
TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING



FULL SLOTTING



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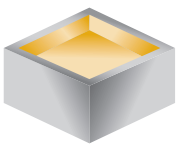
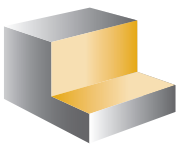


HIGH-VELOCITY



STANDARD PERFORMANCE
4 FLUTE (INCH)

Extremely versatile in various materials, center cutting, solid sub-micron carbide. See “Speeds and Feeds” calculator at gorillamill.com or refer to ”Speeds and Feeds” chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.

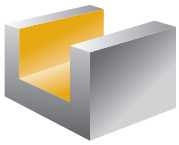
SPEEDS & FEEDS CHART PAGE 150

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN								Ballnose COATINGS TL=TiALN TC=TiCN
					0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	
1/4	1/4	3/4	2-1/2	CEM14F4 EDP: 70558 CEM14F4TL EDP: 70559 CEM14F4TC EDP: 70560	—	CEM14R4015 EDP: 70594 CEM14R4015TL EDP: 70595 CEM14R4015TC EDP: 70596	CEM14R4020 EDP: 70597 CEM14R4020TL EDP: 70598 CEM14R4020TC EDP: 70599	CEM14R4030 EDP: 70600 CEM14R4030TL EDP: 70601 CEM14R4030TC EDP: 70602	CEM14R4045 EDP: 70603 CEM14R4045TL EDP: 70604 CEM14R4045TC EDP: 70605	CEM14R4060 EDP: 70606 CEM14R4060TL EDP: 70607 CEM14R4060TC EDP: 70608	—	—	CEM14B4 EDP: 70531 CEM14B4TL EDP: 70532 CEM14B4TC EDP: 70533
	1/4	1-1/8	3.0	CEM14FL4 EDP: 70564 CEM14FL4TL EDP: 70565 CEM14FL4TC EDP: 70566	—	—	—	—	—	—	—	—	CEM14BL4 EDP: 70537 CEM14BL4TL EDP: 70538 CEM14BL4TC EDP: 70539
	1/4	1-1/2	4.0	CEM14FXL4 EDP: 70570 CEM14FXL4TL EDP: 70571 CEM14FXL4TC EDP: 70572	—	—	—	—	—	—	—	—	CEM14BXL4 EDP: 70543 CEM14BXL4TL EDP: 70544 CEM14BXL4TC EDP: 70545
	1/4	1-1/2	6.0	CEM14FXXL4 EDP: 70576 CEM14FXXL4TL EDP: 70577 CEM14FXXL4TC EDP: 70578	—	—	—	—	—	—	—	—	CEM14BXXL4 EDP: 70549 CEM14BXXL4TL EDP: 70550 CEM14BXXL4TC EDP: 70551
17/64	5/16	3/4	2-1/2	CEM1764F4 EDP: 70687 CEM1764F4TL EDP: 70688 CEM1764F4TC EDP: 70689	—	—	—	—	—	—	—	—	CEM1764B4 EDP: 70681 CEM1764B4TL EDP: 70682 CEM1764B4TC EDP: 70683
9/32	5/16	3/4	2-1/2	CEM932F4 EDP: 71455 CEM932F4TL EDP: 71456 CEM932F4TC EDP: 71457	—	—	—	—	—	—	—	—	CEM932B4 EDP: 71446 CEM932B4TL EDP: 71447 CEM932B4TC EDP: 71448
19/64	5/16	7/8	2-1/2	CEM1964F4 EDP: 70762 CEM1964F4TL EDP: 70763 CEM1964F4TC EDP: 70764	—	—	—	—	—	—	—	—	CEM1964B4 EDP: 70756 CEM1964B4TL EDP: 70757 CEM1964B4TC EDP: 70758

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING

FULL SLOTTING



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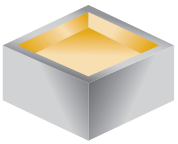
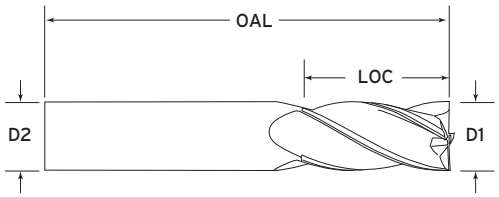


HIGH-VELOCITY

MATERIALS

Gray Cast Iron	Tool Steels (A2,D2,S7)	Difficult Stainless Steel (400 & PH Series)
Soft Steels (A36,1018,8620,1045)	Die Steels (H13,P20)	High Temp. Alloys
Alloy Steels (4340,4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)



SPEEDS & FEEDS CHART PAGE 150

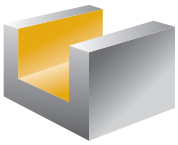
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN								Ballnose COATINGS TL=TiALN TC=TiCN
					0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	
	5/16	7/8	2-1/2	CEM516F4 EDP: 71227 CEM516F4TL EDP: 71228 CEM516F4TC EDP: 71229	—	CEM516R4015 EDP: 71257 CEM516R4015TL EDP: 71258 CEM516R4015TC EDP: 71259	CEM516R4020 EDP: 71260 CEM516R4020TL EDP: 71261 CEM516R4020TC EDP: 71262	CEM516R4030 EDP: 71263 CEM516R4030TL EDP: 71264 CEM516R4030TC EDP: 71265	CEM516R4045 EDP: 71266 CEM516R4045TL EDP: 71267 CEM516R4045TC EDP: 71268	CEM516R4060 EDP: 71269 CEM516R4060TL EDP: 71270 CEM516R4060TC EDP: 71271	—	—	CEM516B4 EDP: 71206 CEM516B4TL EDP: 71207 CEM516B4TC EDP: 71208
5/16	5/16	1-1/8	3.0	CEM516FL4 EDP: 71233 CEM516FL4TL EDP: 71234 CEM516FL4TC EDP: 71235	—	—	—	—	—	—	—	—	CEM516BL4 EDP: 71212 CEM516BL4TL EDP: 71213 CEM516BL4TC EDP: 71214
	5/16	1-5/8	4.0	CEM516FXL4 EDP: 71239 CEM516FXL4TL EDP: 71240 CEM516FXL4TC EDP: 71241	—	—	—	—	—	—	—	—	CEM516BXL4 EDP: 71218 CEM516BXL4TL EDP: 71219 CEM516BXL4TC EDP: 71220
21/64	3/8	7/8	2-1/2	CEM2164F4 EDP: 70807 CEM2164F4TL EDP: 70808 CEM2164F4TC EDP: 70809	—	—	—	—	—	—	—	—	CEM2164B4 EDP: 70801 CEM2164B4TL EDP: 70802 CEM2164B4TC EDP: 70803
23/64	3/8	7/8	2-1/2	CEM2364F4 EDP: 70819 CEM2364F4TL EDP: 70820 CEM2364F4TC EDP: 70821	—	—	—	—	—	—	—	—	CEM2364B4 EDP: 70813 CEM2364B4TL EDP: 70814 CEM2364B4TC EDP: 70815

Continued on next page

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING

FULL SLOTTING



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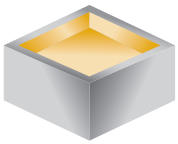


HIGH-VELOCITY

STANDARD PERFORMANCE
4 FLUTE (INCH)

Extremely versatile in various materials, center cutting, solid sub-micron carbide. See “Speeds and Feeds” calculator at gorillamill.com or refer to ”Speeds and Feeds” chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.

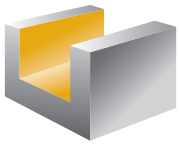
SPEEDS & FEEDS CHART PAGE 150

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN								Ballnose COATINGS TL=TiALN TC=TiCN
					0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	
3/8	3/8	7/8	2-1/2	CEM38F4 EDP: 71146 CEM38F4TL EDP: 71147 CEM38F4TC EDP: 71148	—	CEM38R4015 EDP: 71188 CEM38R4015TL EDP: 71189 CEM38R4015TC EDP: 71190	CEM38R4020 EDP: 71191 CEM38R4020TL EDP: 71192 CEM38R4020TC EDP: 71193	CEM38R4030 EDP: 71194 CEM38R4030TL EDP: 71195 CEM38R4030TC EDP: 71196	CEM38R4045 EDP: 71197 CEM38R4045TL EDP: 71198 CEM38R4045TC EDP: 71199	CEM38R4060 EDP: 71200 CEM38R4060TL EDP: 71201 CEM38R4060TC EDP: 71202	—	—	CEM38B4 EDP: 71113 CEM38B4TL EDP: 71114 CEM38B4TC EDP: 71115
	3/8	1-1/8	3.0	CEM38FL4 EDP: 71152 CEM38FL4TL EDP: 71153 CEM38FL4TC EDP: 71154	—	—	—	—	—	—	—	—	CEM38BL4 EDP: 71119 CEM38BL4TL EDP: 71120 CEM38BL4TC EDP: 71121
	3/8	2.0	4.0	CEM38FXL4 EDP: 71164 CEM38FXL4TL EDP: 71165 CEM38FXL4TC EDP: 71166	—	—	—	—	—	—	—	—	CEM38BXL4 EDP: 71131 CEM38BXL4TL EDP: 71132 CEM38BXL4TC EDP: 71133
	3/8	1-1/2	6.0	CEM38FXXL4 EDP: 71170 CEM38FXXL4TL EDP: 71171 CEM38FXXL4TC EDP: 71172	—	—	—	—	—	—	—	—	CEM38BXXL4 EDP: 71137 CEM38BXXL4TL EDP: 71138 CEM38BXXL4TC EDP: 71139
	3/8	3.0	6.0	CEM38FSL4 EDP: 71158 CEM38FSL4TL EDP: 71159 CEM38FSL4TC EDP: 71160	—	—	—	—	—	—	—	—	CEM38BSL4 EDP: 71125 CEM38BSL4TL EDP: 71126 CEM38BSL4TC EDP: 71127
25/64	7/16	1.0	2-1/2	CEM2564F4 EDP: 70852 CEM2564F4TL EDP: 70853 CEM2564F4TC EDP: 70854	—	—	—	—	—	—	—	—	CEM2564B4 EDP: 70846 CEM2564B4TL EDP: 70847 CEM2564B4TC EDP: 70848
27/64	7/16	1.0	2-1/2	CEM2764F4 EDP: 70864 CEM2764F4TL EDP: 70865 CEM2764F4TC EDP: 70866	—	—	—	—	—	—	—	—	CEM2764B4 EDP: 70858 CEM2764B4TL EDP: 70859 CEM2764B4TC EDP: 70860

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING

FULL SLOTTING



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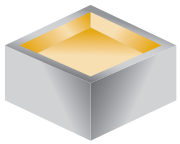
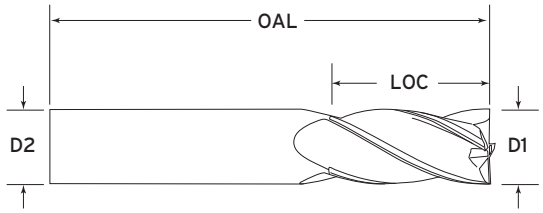


HIGH-VELOCITY

MATERIALS

Gray Cast Iron	Tool Steels (A2,D2,S7)	Difficult Stainless Steel (400 & PH Series)
Soft Steels (A36,1018,8620,1045)	Die Steels (H13,P20)	High Temp. Alloys
Alloy Steels (4340,4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)



SPEEDS & FEEDS CHART PAGE 150

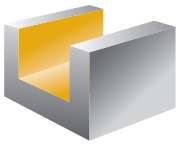
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN 0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	Ballnose COATINGS TL=TiALN TC=TiCN
7/16	7/16	1.0	2-1/2	CEM716F4 EDP: 71398 CEM716F4TL EDP: 71399 CEM716F4TC EDP: 71400	—	—	—	—	—	—	—	—	CEM716B4 EDP: 71389 CEM716B4TL EDP: 71390 CEM716B4TC EDP: 71391
29/64	1/2	1.0	3.0	CEM2964F4 EDP: 70876 CEM2964F4TL EDP: 70877 CEM2964F4TC EDP: 70878	—	—	—	—	—	—	—	—	CEM2964B4 EDP: 70870 CEM2964B4TL EDP: 70871 CEM2964B4TC EDP: 70872
31/64	1/2	1.0	3.0	CEM3164F4 EDP: 70888 CEM3164F4TL EDP: 70889 CEM3164F4TC EDP: 70890	—	—	—	—	—	—	—	—	CEM3164B4 EDP: 70882 CEM3164B4TL EDP: 70883 CEM3164B4TC EDP: 70884
1/2	1/2	1.0	3.0	CEM12F4 EDP: 70435 CEM12F4TL EDP: 70436 CEM12F4TC EDP: 70437	—	CEM12R4015 EDP: 70483 CEM12R4015TL EDP: 70484 CEM12R4015TC EDP: 70485	CEM12R4020 EDP: 70486 CEM12R4020TL EDP: 70487 CEM12R4020TC EDP: 70488	CEM12R4030 EDP: 70489 CEM12R4030TL EDP: 70490 CEM12R4030TC EDP: 70491	CEM12R4045 EDP: 70492 CEM12R4045TL EDP: 70493 CEM12R4045TC EDP: 70494	CEM12R4060 EDP: 70495 CEM12R4060TL EDP: 70496 CEM12R4060TC EDP: 70497	CEM12R4090 EDP: 70498 CEM12R4090TL EDP: 70499 CEM12R4090TC EDP: 70500	CEM12R4125 EDP: 70501 CEM12R4125TL EDP: 70502 CEM12R4125TC EDP: 70503	CEM12B4 EDP: 70402 CEM12B4TL EDP: 70403 CEM12B4TC EDP: 70404
	1/2	1-1/2	4.0	CEM12FL4 EDP: 70441 CEM12FL4TL EDP: 70442 CEM12FL4TC EDP: 70443	—	—	—	—	—	—	—	—	CEM12BL4 EDP: 70408 CEM12BL4TL EDP: 70409 CEM12BL4TC EDP: 70410
	1/2	2.0	4.0	CEM12FXL4 EDP: 70453 CEM12FXL4TL EDP: 70454 CEM12FXL4TC EDP: 70455	—	—	—	—	—	—	—	—	CEM12BXL4 EDP: 70420 CEM12BXL4TL EDP: 70421 CEM12BXL4TC EDP: 70422
	1/2	1-1/2	6.0	CEM12FXXL4 EDP: 70459 CEM12FXXL4TL EDP: 70460 CEM12FXXL4TC EDP: 70461	—	—	—	—	—	—	—	—	CEM12BXXL4 EDP: 70426 CEM12BXXL4TL EDP: 70427 CEM12BXXL4TC EDP: 70428
	1/2	3.0	6.0	CEM12FSL4 EDP: 70447 CEM12FSL4TL EDP: 70448 CEM12FSL4TC EDP: 70449	—	—	—	—	—	—	—	—	CEM12BSL4 EDP: 70414 CEM12BSL4TL EDP: 70415 CEM12BSL4TC EDP: 70416

Continued on next page

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING

FULL SLOTTING



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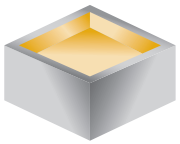
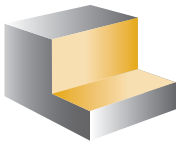


HIGH-VELOCITY



STANDARD PERFORMANCE
4 FLUTE (INCH)

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Available in special diameters, lengths and completely resharpenable.

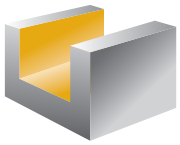
SPEEDS & FEEDS CHART PAGE 150

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN								Ballnose COATINGS TL=TiALN TC=TiCN
					0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	
33/64	9/16	1-1/8	3-1/2	CEM3364F4 EDP: 70996 CEM3364F4TL EDP: 70997 CEM3364F4TC EDP: 70998	—	—	—	—	—	—	—	—	CEM3364B4 EDP: 70990 CEM3364B4TL EDP: 70991 CEM3364B4TC EDP: 70992
35/64	9/16	1-1/8	3-1/2	CEM3564F4 EDP: 71095 CEM3564F4TL EDP: 71096 CEM3564F4TC EDP: 71097	—	—	—	—	—	—	—	—	CEM3564B4 EDP: 71089 CEM3564B4TL EDP: 71090 CEM3564B4TC EDP: 71091
9/16	9/16	1-1/4	3-1/2	CEM916F4 EDP: 71440 CEM916F4TL EDP: 71441 CEM916F4TC EDP: 71442	—	—	—	—	—	—	—	—	CEM916B4 EDP: 71431 CEM916B4TL EDP: 71432 CEM916B4TC EDP: 71433
5/8	5/8	1-1/4	3-1/2	CEM58F4 EDP: 71329 CEM58F4TL EDP: 71330 CEM58F4TC EDP: 71331	—	CEM58R4015 EDP: 71368 CEM58R4015TL EDP: 71369 CEM58R4015TC EDP: 71370	CEM58R4020 EDP: 71371 CEM58R4020TL EDP: 71372 CEM58R4020TC EDP: 71373	CEM58R4030 EDP: 71374 CEM58R4030TL EDP: 71375 CEM58R4030TC EDP: 71376	CEM58R4045 EDP: 71377 CEM58R4045TL EDP: 71378 CEM58R4045TC EDP: 71379	CEM58R4060 EDP: 71380 CEM58R4060TL EDP: 71381 CEM58R4060TC EDP: 71382	CEM58R4090 EDP: 71383 CEM58R4090TL EDP: 71384 CEM58R4090TC EDP: 71385	—	CEM58B4 EDP: 71302 CEM58B4TL EDP: 71303 CEM58B4TC EDP: 71304
	5/8	2-1/4	5.0	CEM58FL4 EDP: 71335 CEM58FL4TL EDP: 71336 CEM58FL4TC EDP: 71337	—	—	—	—	—	—	—	—	CEM58BL4 EDP: 71308 CEM58BL4TL EDP: 71309 CEM58BL4TC EDP: 71310
	5/8	2.0	6.0	CEM58FXL4 EDP: 71341 CEM58FXL4TL EDP: 71342 CEM58FXL4TC EDP: 71343	—	—	—	—	—	—	—	—	CEM58BXL4 EDP: 71314 CEM58BXL4TL EDP: 71315 CEM58BXL4TC EDP: 71316
	5/8	3.0	6.0	CEM58FXXL4 EDP: 71347 CEM58FXXL4TL EDP: 71348 CEM58FXXL4TC EDP: 71349	—	—	—	—	—	—	—	—	CEM58BXXL4 EDP: 71320 CEM58BXXL4TL EDP: 71321 CEM58BXXL4TC EDP: 71322

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING

FULL SLOTTING



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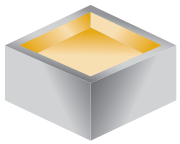
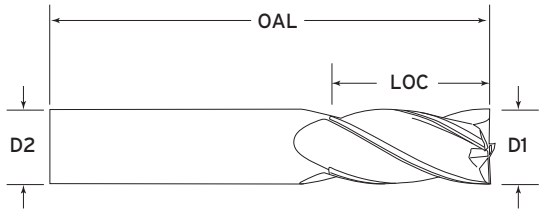


HIGH-VELOCITY

MATERIALS

Gray Cast Iron	Tool Steels (A2,D2,S7)	Difficult Stainless Steel (400 & PH Series)
Soft Steels (A36,1018,8620,1045)	Die Steels (H13,P20)	High Temp. Alloys
Alloy Steels (4340,4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)

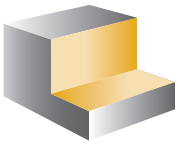


SPEEDS & FEEDS CHART PAGE 150

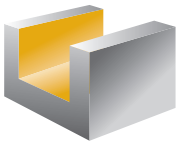
D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Inch) COATINGS: TL=TiALN, TC=TiCN								Ballnose COATINGS TL=TiALN TC=TiCN
					0.010	0.015	0.020	0.030	0.045	0.060	0.090	0.125	
3/4	3/4	1-1/2	4.0	CEM34F4 EDP: 71023 CEM34F4TL EDP: 71024 CEM34F4TC EDP: 71025	—	CEM34R4015 EDP: 71065 CEM34R4015TL EDP: 71066 CEM34R4015TC EDP: 71067	CEM34R4020 EDP: 71068 CEM34R4020TL EDP: 71069 CEM34R4020TC EDP: 71070	CEM34R4030 EDP: 71071 CEM34R4030TL EDP: 71072 CEM34R4030TC EDP: 71073	CEM34R4045 EDP: 71074 CEM34R4045TL EDP: 71075 CEM34R4045TC EDP: 71076	CEM34R4060 EDP: 71077 CEM34R4060TL EDP: 71078 CEM34R4060TC EDP: 71079	CEM34R4090 EDP: 71080 CEM34R4090TL EDP: 71081 CEM34R4090TC EDP: 71082	CEM34R4125 EDP: 71083 CEM34R4125TL EDP: 71084 CEM34R4125TC EDP: 71085	CEM34B4 EDP: 71002 CEM34B4TL EDP: 71003 CEM34B4TC EDP: 71004
	3/4	2.0	6.0	CEM34FXL4 EDP: 71035 CEM34FXL4TL EDP: 71036 CEM34FXL4TC EDP: 71037	—	—	—	—	—	—	—	—	CEM34BXL4 EDP: 71008 CEM34BXL4TL EDP: 71009 CEM34BXL4TC EDP: 71010
	3/4	3.0	6.0	CEM34FXXL4 EDP: 71041 CEM34FXXL4TL EDP: 71042 CEM34FXXL4TC EDP: 71043	—	—	—	—	—	—	—	—	CEM34BXXL4 EDP: 71014 CEM34BXXL4TL EDP: 71015 CEM34BXXL4TC EDP: 71016
	3/4	4.0	7.0	CEM34FSL4 EDP: 71029 CEM34FSL4TL EDP: 71030 CEM34FSL4TC EDP: 71031	—	—	—	—	—	—	—	—	—
1.0	1.0	1-1/2	4.0	CEM10F4 EDP: 70237 CEM10F4TL EDP: 70238 CEM10F4TC EDP: 70239	—	CEM10R4015 EDP: 70279 CEM10R4015TL EDP: 70280 CEM10R4015TC EDP: 70281	CEM10R4020 EDP: 70282 CEM10R4020TL EDP: 70283 CEM10R4020TC EDP: 70284	CEM10R4030 EDP: 70285 CEM10R4030TL EDP: 70286 CEM10R4030TC EDP: 70287	CEM10R4045 EDP: 70288 CEM10R4045TL EDP: 70289 CEM10R4045TC EDP: 70290	CEM10R4060 EDP: 70291 CEM10R4060TL EDP: 70292 CEM10R4060TC EDP: 70293	CEM10R4090 EDP: 70294 CEM10R4090TL EDP: 70295 CEM10R4090TC EDP: 70296	CEM10R4125 EDP: 70297 CEM10R4125TL EDP: 70298 CEM10R4125TC EDP: 70299	CEM10B4 EDP: 70210 CEM10B4TL EDP: 70211 CEM10B4TC EDP: 70212
	1.0	2.0	6.0	CEM10FXL4 EDP: 70249 CEM10FXL4TL EDP: 70250 CEM10FXL4TC EDP: 70251	—	—	—	—	—	—	—	—	CEM10BXL4 EDP: 70222 CEM10BXL4TL EDP: 70223 CEM10BXL4TC EDP: 70224
	1.0	3.0	6.0	CEM10FXXL4 EDP: 70255 CEM10FXXL4TL EDP: 70256 CEM10FXXL4TC EDP: 70257	—	—	—	—	—	—	—	—	CEM10BXXL4 EDP: 70228 CEM10BXXL4TL EDP: 70229 CEM10BXXL4TC EDP: 70230
	1.0	4.0	7.0	CEM10FSL4 EDP: 70243 CEM10FSL4TL EDP: 70244 CEM10FSL4TC EDP: 70245	—	—	—	—	—	—	—	—	CEM10BSL4 EDP: 70216 CEM10BSL4TL EDP: 70217 CEM10BSL4TC EDP: 70218

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

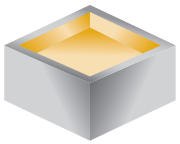
PROFILING



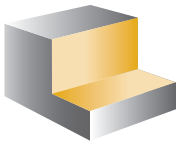
FULL SLOTTING



POCKETING



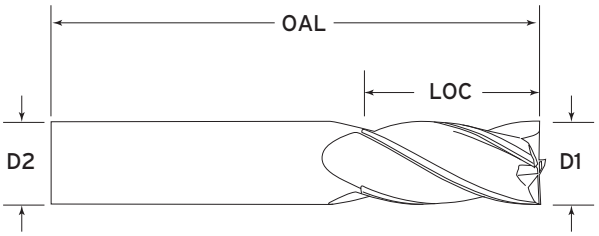
HIGH-VELOCITY



STANDARD PERFORMANCE
4 FLUTE (INCH)

Extremely versatile in various materials, center cutting, solid sub-micron carbide. See “Speeds and Feeds” calculator at gorillamill.com or refer to ”Speeds and Feeds” chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.



4 FLUTE PRIMATE (INCH) COATED SPEEDS & FEEDS CHART, 1X DIAMETER DEEP, FULL SLOTTING

RECOMMENDED RPM AND FEED RATES FOR COATED STANDARD 4 FLUTE CARBIDE END MILLS

WORK PIECE MATERIAL	SFM	1/8"		1/4"		5/16"		3/8"		7/16"		1/2"		5/8"		3/4"		1"	
		RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM
Gray Cast Iron	300	9,168	29.3	4,584	20.1	3,667	29.3	3,056	30.5	2,619	28.2	2,292	27.5	1,833	25.6	1,528	24.4	1,146	20.6
Soft Steels (A36,1018,8620,1045)	225	6,876	19.2	3,438	13.8	2,750	13.2	2,292	12.8	1,964	12.5	1,719	12.3	1,375	12.1	1,146	13.7	860	12.0
Alloy Steels (4340,4140)	140	4,278	6.8	2,139	6.8	1,711	6.8	1,426	6.8	1,222	6.4	1,069	6.4	855	6.8	713	7.1	535	6.4
Tool Steels(A2,D2,S7)	125	3,820	6.1	1,910	6.1	1,528	6.1	1,273	6.1	1,091	5.6	955	5.7	764	6.1	637	6.3	477	5.7
Die Steels (H13,P20)	125	3,820	6.1	1,910	6.1	1,528	6.1	1,273	6.1	1,091	5.6	955	5.7	764	6.1	637	6.3	477	5.7
Stainless Steel (303, 304, 316)	175	5,348	10.6	2,674	9.6	2,139	12.8	1,782	12.8	1,528	11.6	1,337	10.6	1,070	10.7	891	10.7	668	9.3
Difficult Stainless Steel (400 & PH Series)	100	3,056	6.1	1,528	4.9	1,222	4.9	1,018	5.3	873	4.8	764	4.5	611	4.9	509	5.1	382	4.6
High Temp. Alloys	80	2,444	3.9	1,222	3.4	977	3.5	815	3.9	698	3.6	611	3.4	489	3.5	407	3.7	305	3.6
Titanium (6AL4V)	60	1,833	4.4	916	3.3	733	3.5	611	3.4	524	3.3	458	3.3	367	3.2	305	3.6	229	3.2

NOTE: Run UNCOATED endmills 25% less on SFM

**Recommended Speeds & Feeds*

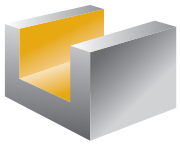
MATERIALS

Gray Cast Iron	Tool Steels (A2,D2,S7)	Difficult Stainless Steel (400 & PH Series)
Soft Steels (A36,1018,8620,1045)	Die Steels (H13,P20)	High Temp. Alloys
Alloy Steels (4340,4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)

TOLERANCES
Cut Dia +.000/-.002
Shank Dia -.0001/-.0005
LOC +.025/+.050
OAL +/-.050

PROFILING

FULL SLOTTING



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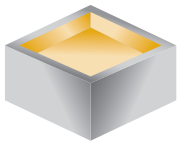
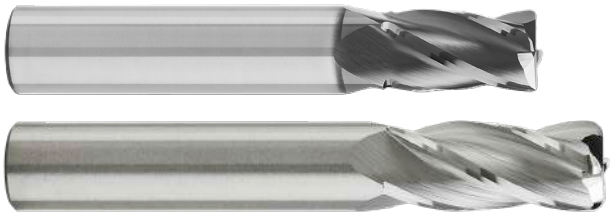


HIGH-VELOCITY

STANDARD PERFORMANCE
4 FLUTE (METRIC)



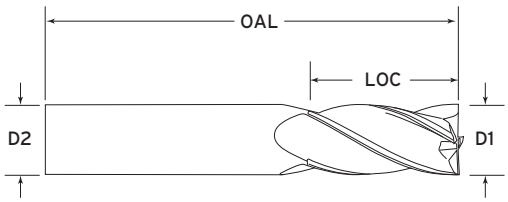
Extremely versatile in various materials, center cutting, solid sub-micron carbide. See "Speeds and Feeds" calculator at gorillamill.com or refer to "Speeds and Feeds" chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.

SPEEDS & FEEDS CHART PAGES 154/155

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Metric) COATINGS: TL=TiALN, TC=TiCN					
					0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
3mm	3mm	8mm	38mm	CEM0300MMFS4 EDP: 70015 CEM0300MMFS4TL EDP: 70016 CEM0300MMFS4TC EDP: 70017	CEM0300MMRS4020 EDP: 70033 CEM0300MMRS4020TL EDP: 70034 CEM0300MMRS4020TC EDP: 70035	—	—	—	—	—
	3mm	12mm	38mm	CEM0300MMF4 EDP: 70006 CEM0300MMF4TL EDP: 70007 CEM0300MMF4TC EDP: 70008	CEM0300MMR4020 EDP: 70024 CEM0300MMR4020TL EDP: 70025 CEM0300MMR4020TC EDP: 70026	—	CEM0300MMR4050 EDP: 70027 CEM0300MMR4050TL EDP: 70028 CEM0300MMR4050TC EDP: 70029	—	—	—
4mm	6mm	8mm	50mm	—	—	CEM0400MMRS4030 EDP: 70060 CEM0400MMRS4030TL EDP: 70061 CEM0400MMRS4030TC EDP: 70062	—	—	—	—
	6mm	12mm	50mm	CEM0400MMF4 EDP: 70042 CEM0400MMF4TL EDP: 70043 CEM0400MMF4TC EDP: 70044	—	CEM0400MMR4030 EDP: 70051 CEM0400MMR4030TL EDP: 70052 CEM0400MMR4030TC EDP: 70053	CEM0400MMR4050 EDP: 70054 CEM0400MMR4050TL EDP: 70055 CEM0400MMR4050TC EDP: 70056	—	—	—
5mm	6mm	10mm	50mm	—	—	CEM0500MMRS4030 EDP: 70087 CEM0500MMRS4030TL EDP: 70088 CEM0500MMRS4030TC EDP: 70089	—	—	—	—
	6mm	15mm	65mm	CEM0500MMF4 EDP: 70069 CEM0500MMF4TL EDP: 70070 CEM0500MMF4TC EDP: 70071	—	CEM0500MMR4030 EDP: 70078 CEM0500MMR4030TL EDP: 70079 CEM0500MMR4030TC EDP: 70080	CEM0500MMR4050 EDP: 70081 CEM0500MMR4050TL EDP: 70082 CEM0500MMR4050TC EDP: 70083	—	—	—

Continued on next page



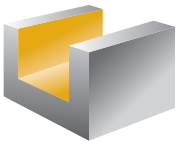
MATERIALS

Gray Cast Iron	Tool Steels(A2,D2,S7)	Difficult Stainless Steel (400 & PH Series)
Soft Steels (A36,1018,8620,1045)	Die Steels (H13,P20)	High Temp. Alloys
Alloy Steels (4340,4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)

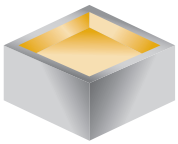
TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING

FULL SLOTTING

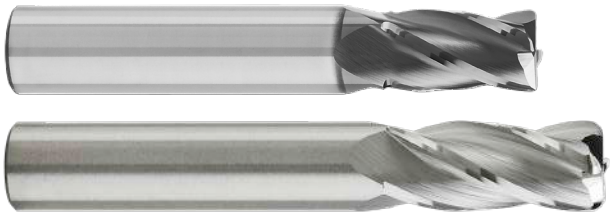


POCKETING



HIGH-VELOCITY

STANDARD PERFORMANCE
4 FLUTE (METRIC)



Extremely versatile in various materials, center cutting, solid sub-micron carbide. See “Speeds and Feeds” calculator at gorillamill.com or refer to ”Speeds and Feeds” chart at the end of this section.

Available in special diameters, lengths and completely resharpenable.

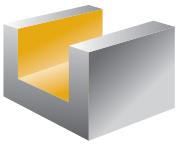
SPEEDS & FEEDS CHART PAGES 154/155

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Metric) COATINGS: TL=TiALN, TC=TiCN					
					0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
6mm	6mm	12mm	50mm	CEM0600MMFS4 EDP: 70105 CEM0600MMFS4TL EDP: 70106 CEM0600MMFS4TC EDP: 70107	—	CEM0600MMRS4030 EDP: 70123 CEM0600MMRS4030TL EDP: 70124 CEM0600MMRS4030TC EDP: 70125	—	—	—	—
	6mm	19mm	65mm	CEM0600MMF4 EDP: 70096 CEM0600MMF4TL EDP: 70097 CEM0600MMF4TC EDP: 70098	—	CEM0600MMR4030 EDP: 70114 CEM0600MMR4030TL EDP: 70115 CEM0600MMR4030TC EDP: 70116	CEM0600MMR4050 EDP: 70117 CEM0600MMR4050TL EDP: 70118 CEM0600MMR4050TC EDP: 70119	—	—	—
8mm	8mm	12mm	50mm	CEM0800MMFS4 EDP: 70141 CEM0800MMFS4TL EDP: 70142 CEM0800MMFS4TC EDP: 70143	—	—	CEM0800MMRS4050 EDP: 70171 CEM0800MMRS4050TL EDP: 70172 CEM0800MMRS4050TC EDP: 70173	—	—	—
	8mm	22mm	65mm	CEM0800MMF4 EDP: 70132 CEM0800MMF4TL EDP: 70133 CEM0800MMF4TC EDP: 70134	—	CEM0800MMR4030 EDP: 70156 CEM0800MMR4030TL EDP: 70157 CEM0800MMR4030TC EDP: 70158	CEM0800MMR4050 EDP: 70159 CEM0800MMR4050TL EDP: 70160 CEM0800MMR4050TC EDP: 70161	CEM0800MMR4100 EDP: 70162 CEM0800MMR4100TL EDP: 70163 CEM0800MMR4100TC EDP: 70164	CEM0800MMR4150 EDP: 70165 CEM0800MMR4150TL EDP: 70166 CEM0800MMR4150TC EDP: 70167	—
10mm	10mm	16mm	50mm	—	—	—	CEM1000MMRS4050 EDP: 70204 CEM1000MMRS4050TL EDP: 70205 CEM1000MMRS4050TC EDP: 70206	—	—	—
	10mm	22mm	70mm	CEM1000MMF4 EDP: 70180 CEM1000MMF4TL EDP: 70181 CEM1000MMF4TC EDP: 70182	—	CEM1000MMR4030 EDP: 70192 CEM1000MMR4030TL EDP: 70193 CEM1000MMR4030TC EDP: 70194	CEM1000MMR4050 EDP: 70195 CEM1000MMR4050TL EDP: 70196 CEM1000MMR4050TC EDP: 70197	CEM1000MMR4100 EDP: 70198 CEM1000MMR4100TL EDP: 70199 CEM1000MMR4100TC EDP: 70200	—	—

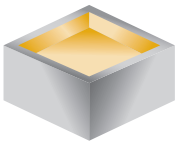
TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING

FULL SLOTTING



POCKETING



HIGH-VELOCITY

MATERIALS

Gray Cast Iron	Tool Steels(A2,D2,S7)	Difficult Stainless Steel (400 & PH Series)
Soft Steels (A36,1018,8620,1045)	Die Steels (H13,P20)	High Temp. Alloys
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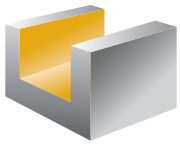
SPEEDS & FEEDS CHART PAGES 154/155

D1 Cutting Dia.	D2 Shank Dia.	LOC	OAL	Sq. End COATINGS TL=TiALN TC=TiCN	Corner Radius (Metric) COATINGS: TL=TiALN, TC=TiCN					
					0.20mm	0.30mm	0.50mm	1.0mm	1.5mm	2.0mm
12mm	12mm	19mm	63mm	CEM1200MMFS4 EDP: 70354 CEM1200MMFS4TL EDP: 70355 CEM1200MMFS4TC EDP: 70356	—	CEM1200MMRS4030 EDP: 70393 CEM1200MMRS4030TL EDP: 70394 CEM1200MMRS4030TC EDP: 70395	CEM1200MMRS4050 EDP: 70396 CEM1200MMRS4050TL EDP: 70397 CEM1200MMRS4050TC EDP: 70398	—	—	—
	12mm	32mm	75mm	CEM1200MMF4 EDP: 70345 CEM1200MMF4TL EDP: 70346 CEM1200MMF4TC EDP: 70347	—	CEM1200MMR4030 EDP: 70372 CEM1200MMR4030TL EDP: 70373 CEM1200MMR4030TC EDP: 70374	CEM1200MMR4050 EDP: 70375 CEM1200MMR4050TL EDP: 70376 CEM1200MMR4050TC EDP: 70377	CEM1200MMR4100 EDP: 70378 CEM1200MMR4100TL EDP: 70379 CEM1200MMR4100TC EDP: 70380	CEM1200MMR4150 EDP: 70381 CEM1200MMR4150TL EDP: 70382 CEM1200MMR4150TC EDP: 70383	CEM1200MMR4200 EDP: 70384 CEM1200MMR4200TL EDP: 70385 CEM1200MMR4200TC EDP: 70386
16mm	16mm	19mm	75mm	—	—	CEM1600MMRS4030 EDP: 70660 CEM1600MMRS4030TL EDP: 70661 CEM1600MMRS4030TC EDP: 70662	CEM1600MMRS4050 EDP: 70663 CEM1600MMRS4050TL EDP: 70664 CEM1600MMRS4050TC EDP: 70665	—	—	—
	16mm	32mm	89mm	CEM1600MMF4 EDP: 70627 CEM1600MMF4TL EDP: 70628 CEM1600MMF4TC EDP: 70629	—	CEM1600MMR4030 EDP: 70642 CEM1600MMR4030TL EDP: 70643 CEM1600MMR4030TC EDP: 70644	CEM1600MMR4050 EDP: 70645 CEM1600MMR4050TL EDP: 70646 CEM1600MMR4050TC EDP: 70647	CEM1600MMR4100 EDP: 70648 CEM1600MMR4100TL EDP: 70649 CEM1600MMR4100TC EDP: 70650	—	CEM1600MMR4200 EDP: 70651 CEM1600MMR4200TL EDP: 70652 CEM1600MMR4200TC EDP: 70653
20mm	20mm	22mm	75mm	—	—	—	—	CEM2000MMRS4100 EDP: 70795 CEM2000MMRS4100TL EDP: 70796 CEM2000MMRS4100TC EDP: 70797	—	—
	20mm	38mm	100mm	CEM2000MMF4 EDP: 70771 CEM2000MMF4TL EDP: 70772 CEM2000MMF4TC EDP: 70773	—	—	CEM2000MMR4050 EDP: 70783 CEM2000MMR4050TL EDP: 70784 CEM2000MMR4050TC EDP: 70785	CEM2000MMR4100 EDP: 70786 CEM2000MMR4100TL EDP: 70787 CEM2000MMR4100TC EDP: 70788	CEM2000MMR4150 EDP: 70789 CEM2000MMR4150TL EDP: 70790 CEM2000MMR4150TC EDP: 70791	—
25mm	25mm	38mm	100mm	CEM2500MMF4 EDP: 70828 CEM2500MMF4TL EDP: 70829 CEM2500MMF4TC EDP: 70830	—	—	—	CEM2500MMR4100 EDP: 70837 CEM2500MMR4100TL EDP: 70838 CEM2500MMR4100TC EDP: 70839	CEM2500MMR4150 EDP: 70840 CEM2500MMR4150TL EDP: 70841 CEM2500MMR4150TC EDP: 70842	—

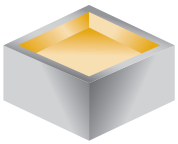
TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING

FULL SLOTTING

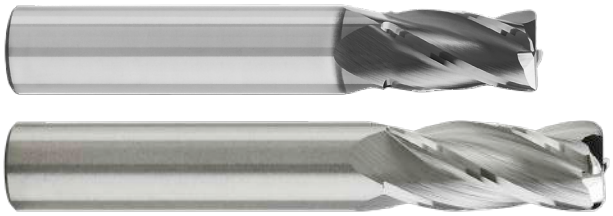


POCKETING



HIGH-VELOCITY

STANDARD PERFORMANCE
4 FLUTE (METRIC)



Extremely versatile in various materials, center cutting, solid sub-micron carbide. See “Speeds and Feeds” calculator at gorillamill.com or refer to ”Speeds and Feeds” charts.

Available in special diameters, lengths and completely resharpenable.

4 FLUTE PRIMATE (METRIC) SPEEDS & FEEDS CHART FOR FULL SLOTTING AND PROFILING, METRIC CHIMP LOAD PER TOOTH

WORK PIECE MATERIAL	SFM	3mm			4mm			5mm			6mm			8mm		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum (2000,5000 & 7000 series)	800	.0350	.0250	.0150	.0400	.0270	.0190	.0460	.0290	.0210	.0530	.0330	.0220	.0680	.0450	.0380
Soft Aluminum (6061)	650	.0220	.0150	.0120	.0280	.0190	.0180	.0350	.0230	.0230	.0430	.0270	.0250	.0580	.0400	.0380
Copper (200 Brinell <)	400	.0170	.0120	.0120	.0250	.0160	.0150	.0350	.0220	.0210	.0430	.0270	.0250	.0680	.0450	.0300
Copper (200 Brinell >)	400	.0170	.0120	.0100	.0250	.0160	.0140	.0350	.0220	.0210	.0330	.0220	.0150	.0550	.0350	.0300
Cast Aluminum, Silicon 6% <	500	.0170	.0120	.0120	.0250	.0160	.0140	.0350	.0230	.0210	.0480	.0300	.0220	.0680	.0450	.0380
Cast Aluminum, Silicon 6% >	400	.0170	.0120	.0120	.0250	.0160	.0140	.0350	.0230	.0210	.0330	.0270	.0220	.0550	.0350	.0330
Brass	800	.0170	.0120	.0100	.0250	.0160	.0120	.0350	.0230	.0150	.0300	.0220	.0170	.0500	.0330	.0300
Bronze	400	.0170	.0120	.0100	.0250	.0160	.0120	.0350	.0220	.0140	.0300	.0170	.0150	.0500	.0330	.0250

WORK PIECE MATERIAL	SFM	10mm			12mm			16mm			20mm			25mm		
PERCENTAGE OF CUTTER DIAMETER		10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot	10%	20%	Slot
Aircraft Aluminum (2000,5000 & 7000 series)	800	.0830	.0530	.0480	.1090	.0730	.0550	.1370	.0910	.0760	.1670	.1110	.0910	.1820	.1210	.1010
Soft Aluminum (6061)	650	.0730	.0480	.0500	.0910	.0610	.0550	.1240	.0810	.0760	.1540	.1010	.0910	.1820	.1210	.1010
Copper (200 Brinell <)	400	.0860	.0580	.0400	.1040	.0710	.0480	.1270	.0860	.0580	.1620	.1090	.0760	.1820	.1210	.0830
Copper (200 Brinell >)	400	.0780	.0500	.0350	.0960	.0630	.0480	.1190	.0780	.0580	.1440	.0960	.0760	.1650	.1090	.0830
Cast Aluminum, Silicon 6% <	500	.0960	.0630	.0480	.1090	.0730	.0550	.1270	.0860	.0760	.1620	.1090	.0910	.1820	.1210	.1010
Cast Aluminum, Silicon 6% >	400	.0780	.0500	.0450	.0960	.0630	.0550	.1190	.0810	.0760	.1540	.1010	.0860	.1720	.1160	.1010
Brass	800	.0730	.0480	.0430	.0860	.0580	.0500	.1140	.0760	.0680	.1440	.0960	.0860	.1600	.1060	.1010
Bronze	400	.0680	.0500	.0380	.0810	.0550	.0480	.1010	.0760	.0680	.1340	.1010	.0810	.1500	.1140	.1010

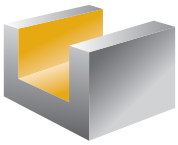
NOTE: Run UNCOATED endmills 25% less on SFM

**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING

FULL SLOTTING



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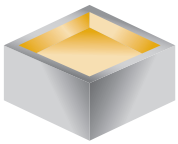


HIGH-VELOCITY

MATERIALS

Gray Cast Iron	Tool Steels(A2,D2,S7)	Difficult Stainless Steel (400 & PH Series)
Soft Steels (A36,1018,8620,1045)	Die Steels (H13,P20)	High Temp. Alloys
Alloy Steels (4340,4140)	Stainless Steel (303, 304, 316)	Titanium (6AL4V)

4 FLUTE PRIMATE (METRIC) COATED SPEEDS & FEEDS CHART. 1X DIAMETER DEEP, FULL SLOTTING, METRIC CHIMP LOAD PER TOOTH

RECOMMENDED RPM AND FEED RATES FOR COATED STANDARD 4 FLUTE CARBIDE END MILLS

WORK PIECE MATERIAL	SFM	3mm		4mm		5mm		6mm		8mm		10mm	
		RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT
Gray Cast Iron	300	9702	.0200	7277	.0220	5821	.0240	4851	.0280	3638	.0500	2425	.0750
Soft Steels (A36,1018,8620,1045)	225	7277	.0170	5457	.0200	4366	.0230	3638	.0250	2729	.0300	1819	.0450
Alloy Steels (4340,4140)	140	4527	.0100	3395	.0130	2716	.0160	2264	.0200	1698	.0250	1132	.0380
Tool Steels(A2,D2,S7)	125	4042	.0100	3032	.0130	2425	.0160	2021	.0200	1516	.0250	1010	.0350
Die Steels (H13,P20)	125	4042	.0100	3032	.0130	2425	.0160	2021	.0200	1516	.0250	1010	.0350
Stainless Steel (303, 304, 316)	175	5660	.0120	4245	.0160	3396	.0200	2830	.0220	2122	.0380	1415	.0500
Difficult Stainless Steel (400 & PH Series)	100	3234	.0120	2425	.0140	1940	.0170	1617	.0200	1212	.0260	808	.0370
High Temp. Alloys	80	2587	.0100	1940	.0120	1552	.0140	1293	.0160	970	.0220	646	.0350
Titanium (6AL4V)	60	1940	.0150	1455	.0170	1164	.0200	970	.0220	727	.0290	485	.0440

WORK PIECE MATERIAL	SFM	12mm		16mm		20mm		25mm	
		RPM	MMPT	RPM	MMPT	RPM	MMPT	RPM	MMPT
Gray Cast Iron	300	2079	.0810	1617	.0970	1164	.1140	1164	.1140
Soft Steels (A36,1018,8620,1045)	225	1559	.0500	1212	.0660	873	.0880	873	.0880
Alloy Steels (4340,4140)	140	970	.0440	754	.0590	543	.0760	543	.0760
Tool Steels(A2,D2,S7)	125	866	.0430	673	.0580	485	.0740	485	.0740
Die Steels (H13,P20)	125	866	.0430	673	.0590	485	.0740	485	.0740
Stainless Steel (303, 304, 316)	175	1212	.0560	943	.0710	679	.0870	679	.0870
Difficult Stainless Steel (400 & PH Series)	100	693	.0440	539	.0590	388	.0760	388	.0760
High Temp. Alloys	80	554	.0390	431	.0540	310	.0750	310	.0750
Titanium (6AL4V)	60	415	.0480	323	.0630	232	.0880	232	.0880

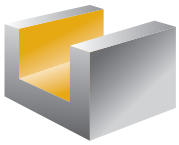
NOTE: Run UNCOATED endmills 25% less on SFM

**Recommended Speeds & Feeds*

TOLERANCES
Cut Dia +.000/-.050mm
Shank Dia -.0025/-.0127mm
LOC +.635/+1.270mm
OAL +/-1.270mm

PROFILING

FULL SLOTTING



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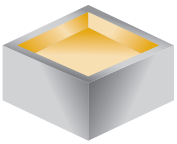


HIGH-VELOCITY

GORILLA DRILLS

GDX-59 Coated

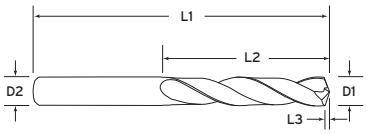
SFM Find Right RPM = (SFM X 3.82 / Diameter = RPM)

Materials	Examples	Solid		Coolant	
		3 X SFM	5 X SFM	5 X SFM	7 X SFM
Low Carbon Steel	1018 / A36	350	350	600	550
Alloy Steel (up to 35Rc)	4140 (Soft)	300	275	500	450
Alloy Steel (36-45Rc)	4140 Pre - Hard	200	175	300	275
Aluminum	6061-T6	1200	1000	1400	1400
Aircraft Aluminum	5000 / 7000	1400	1100	1600	1500
Austenetic Stainless Steel	304 / 316	200	175	325	300
High Temp Alloys	Inconel, Hastelloy, Waspelloy	180	150	225	200
Precipitation Hardened Stainless Steel	15-5 PH, 17-4 PH	200	150	225	200
Titanium	6AL4V	200	180	300	250
Gray Cast Iron	A48 Class 20 / G4000	450	400	600	550
Ductile Cast Iron	A536 / 60-40-18	350	375	550	500

Note: This is IPR. Find Right IPM = RPM X IPR = IPM

Materials	Examples	1/32"	1/16"	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"
Low Carbon Steel	1018 / A36	0.0011	0.0013	0.0020	0.0044	0.0066	0.0074	0.0082	0.0092
Alloy Steel (up to 35Rc)	4140 (Soft)	0.0011	0.0013	0.0020	0.0040	0.0066	0.0074	0.0082	0.0092
Alloy Steel (36-45Rc)	4140 Pre - Hard	0.0007	0.0009	0.0012	0.0020	0.0040	0.0056	0.0064	0.0075
Aluminum	6061-T6	0.0012	0.0014	0.0021	0.0035	0.0050	0.0062	0.0082	0.0092
Aircraft Aluminum	5000 / 7000	0.0014	0.0016	0.0030	0.0044	0.0055	0.0068	0.0085	0.0100
Austenetic Stainless Steel	304 / 316	0.0011	0.0013	0.0020	0.0040	0.0066	0.0074	0.0086	0.0096
High Temp Alloys	Inconel, Hastelloy, Waspelloy	0.0007	0.0009	0.0014	0.0025	0.0050	0.0062	0.0082	0.0092
Precipitation Hardened Stainless Steel	15-5 PH, 17-4 PH	0.0007	0.0009	0.0012	0.0025	0.0040	0.0056	0.0066	0.0078
Titanium	6AL4V	0.0007	0.0009	0.0012	0.0030	0.0045	0.0060	0.0080	0.0092
Gray Cast Iron	A48 Class 20 / G4000	0.0011	0.0013	0.0020	0.0044	0.0066	0.0074	0.0086	0.0098
Ductile Cast Iron	A536 / 60-40-18	0.0009	0.0011	0.0020	0.0042	0.0063	0.0074	0.0086	0.0098

Solid Carbide High Performance



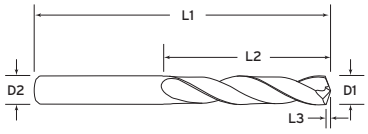
Solid Short Length 3X

The Gorilla Drill is a general-purpose high performance and high penetration solid carbide drill capable of machining a vast range of work materials. Gorilla Drills are suitable for high efficiency precision machining. Up to 50% faster than standard carbide drills. Edge prepped for maximum tool life and SFM.

SOLID SHORT LENGTH DRILLS GDX-59 COATED

DIAMETER		SHANK	LOF	OAL	POINT LENGTH		
D1	Decimal/Size	D2	L2	L1	L3	Item#	EDP
#31	0.1200	1/8	0.7500	2.2500	0.0190	GD1200X3	80000
1/8	0.1250	1/8	0.7500	2.2500	0.0190	GD1250X3	80002
#30	0.1285	5/32	0.8750	2.5000	0.0200	GD1285X3	80004
3.3mm	0.1299	4mm	22mm	63mm	0.51mm	GD1299X3	80006
#29	0.1360	5/32	0.8750	2.5000	0.0210	GD1360X3	80007
9/64	0.1406	5/32	0.8750	2.5000	0.0220	GD1406X3	80009
3.8mm	0.1496	4mm	22mm	63mm	0.59mm	GD1496X3	80011
5/32	0.1562	5/32	0.8750	2.5000	0.0240	GD1562X3	80012
#21	0.1590	3/16	1.0000	2.5000	0.0250	GD1590X3	80014
4.1mm	0.1614	5mm	26mm	63mm	0.64mm	GD1614X3	80016
4.3mm	0.1693	5mm	26mm	63mm	0.67mm	GD1693X3	80017
11/64	0.1719	3/16	1.0000	2.5000	0.0270	GD1719X3	80018
4.4mm	0.1732	5mm	26mm	63mm	0.68mm	GD1732X3	80020
3/16	0.1875	3/16	1.0000	2.5000	0.0290	GD1875X3	80021
4.9mm	0.1929	5mm	26mm	63mm	0.76mm	GD1929X3	80023
5mm	0.1968	5mm	26mm	63mm	0.77mm	GD1968X3	80024
13/64	0.2031	15/64	1.1250	3.0000	0.0310	GD2031X3	80026
5.3mm	0.2087	6mm	30mm	76mm	0.82mm	GD2087X3	80028
5.5mm	0.2165	6mm	30mm	76mm	0.85mm	GD2165X3	80030
7/32	0.2187	15/64	1.1250	3.0000	0.0340	GD2187X3	80031
#2	0.2210	15/64	1.1250	3.0000	0.0340	GD2210X3	80033
5.7mm	0.2244	6mm	30mm	76mm	0.88mm	GD2244X3	80035
5.8mm	0.2283	6mm	30mm	76mm	0.90mm	GD2283X3	80036
15/64	0.2344	15/64	1.1250	3.0000	0.0360	GD2344X3	80037
6mm	0.2362	6mm	30mm	76mm	0.93mm	GD2362X3	80039
6.2mm	0.2441	8mm	35mm	82mm	0.96mm	GD2441X3	80041
1/4	0.2500	1/4	1.2500	3.0000	0.0390	GD2500X3	80043
F	0.2570	5/16	1.3750	3.2500	0.0400	GD2570X3	80045
17/64	0.2656	5/16	1.3750	3.2500	0.0410	GD2656X3	80047
7mm	0.2756	8mm	35mm	82mm	1.08mm	GD2756X3	80049
9/32	0.2812	5/16	1.5000	3.2500	0.0440	GD2812X3	80051
19/64	0.2969	5/16	1.5000	3.2500	0.0460	GD2969X3	80053

Solid Carbide High Performance



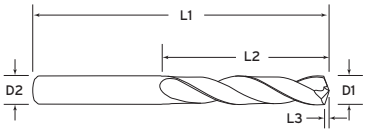
Solid Short Length 3X

The Gorilla Drill is a general-purpose high performance and high penetration solid carbide drill capable of machining a vast range of work materials. Gorilla Drills are suitable for high efficiency precision machining. Up to 50% faster than standard carbide drills. Edge prepped for maximum tool life and SFM.

SOLID SHORT LENGTH DRILLS GDX-59 COATED

DIAMETER		SHANK	LOF	OAL	POINT LENGTH		
D1	Decimal/Size	D2	L2	L1	L3	Item#	EDP
5/16	0.3125	5/16	1.5000	3.2500	0.0480	GD3125X3	80055
8mm	0.3150	8mm	38mm	82mm	1.24mm	GD3150X3	80057
21/64	0.3281	25/64	1.6870	3.5000	0.0510	GD3281X3	80059
8.5mm	0.3346	10mm	43mm	89mm	1.32mm	GD3346X3	80061
11/32	0.3438	25/64	1.6870	3.5000	0.0530	GD3438X3	80063
9mm	0.3543	10mm	43mm	89mm	1.39mm	GD3543X3	80065
23/64	0.3594	25/64	1.6870	3.5000	0.0560	GD3594X3	80067
9.25mm	0.3642	10mm	43mm	89mm	1.43mm	GD3642X3	80069
3/8	0.3750	25/64	1.6870	3.5000	0.0580	GD3750X3	80071
25/64	0.3906	25/64	1.6870	3.5000	0.0610	GD3906X3	80074
10mm	0.3937	10mm	43mm	89mm	1.55mm	GD3937X3	80076
13/32	0.4062	15/32	2.0000	4.0000	0.0630	GD4062X3	80078
10.5mm	0.4134	12mm	51mm	101mm	1.63mm	GD4134X3	80080
27/64	0.4219	15/32	2.0000	4.0000	0.0650	GD4219X3	80082
11mm	0.4331	12mm	51mm	101mm	1.70mm	GD4331X3	80084
7/16	0.4375	15/32	2.0000	4.0000	0.0680	GD4375X3	80086
11.5mm	0.4527	12mm	51mm	101mm	1.78mm	GD4527X3	80088
15/32	0.4688	15/32	2.0000	4.0000	0.0730	GD4688X3	80090
12mm	0.4724	12mm	51mm	101mm	1.86mm	GD4724X3	80092
31/64	0.4844	1/2	2.0000	4.0000	0.0750	GD4844X3	80094
1/2	0.5000	1/2	2.0000	4.0000	0.0770	GD5000X3	80096
13mm	0.5118	14mm	54mm	107mm	2.01mm	GD5118X3	80098
33/64	0.5156	35/64	2.1250	4.2500	0.0800	GD5156X3	80100
17/32	0.5312	35/64	2.1250	4.2500	0.0820	GD5312X3	80102
35/64	0.5469	35/64	2.1250	4.2500	0.0850	GD5469X3	80104
9/16	0.5625	5/8	2.3750	4.6250	0.0870	GD5625X3	80106
19/32	0.5938	5/8	2.3750	4.6250	0.0920	GD5938X3	80108
5/8	0.6250	5/8	2.3750	4.6250	0.0970	GD6250X3	80110
16mm	0.6299	16mm	60mm	117mm	2.48mm	GD6299X3	80112
21/32	0.6562	45/64	2.5000	4.8100	0.1020	GD6562X3	80114
11/16	0.6875	45/64	2.5000	4.8100	0.1070	GD6875X3	80115
3/4	0.7500	3/4	2.7500	5.2500	0.1160	GD7500X3	80116
20mm	0.7874	20mm	70mm	133mm	3.10mm	GD7874X3	80117

Solid Carbide High Performance

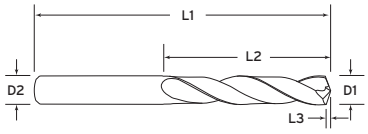


Solid Regular Length 5X

The Gorilla Drill is a general-purpose high performance and high penetration solid carbide drill capable of machining a vast range of work materials. Gorilla Drills are suitable for high efficiency precision machining. Up to 50% faster than standard carbide drills. Edge prepped for maximum tool life and SFM.

SOLID REGULAR LENGTH DRILLS GDX-59 COATED

DIAMETER		SHANK	LOF	OAL	POINT LENGTH		
D1	Decimal/Size	D2	L2	L1	L3	Item#	EDP
#31	0.1200	1/8	1.1250	2.5000	0.0190	GD1200X5	80001
1/8	0.1250	1/8	1.1250	2.5000	0.0190	GD1250X5	80003
#30	0.1285	5/32	1.2600	2.7500	0.0200	GD1285X5	80005
#29	0.1360	5/32	1.2600	2.7500	0.0210	GD1360X5	80008
9/64	0.1406	5/32	1.2600	2.7500	0.0220	GD1406X5	80010
5/32	0.1562	5/32	1.2600	2.7500	0.0240	GD1562X5	80013
#21	0.1590	3/16	1.5000	3.1500	0.0250	GD1590X5	80015
11/64	0.1719	3/16	1.5000	3.1500	0.0270	GD1719X5	80019
3/16	0.1875	3/16	1.5000	3.1500	0.0290	GD1875X5	80022
5mm	0.1968	5mm	38mm	80mm	0.77mm	GD1968X5	80025
13/64	0.2031	15/64	1.5800	3.2300	0.0310	GD2031X5	80027
5.3mm	0.2087	6mm	40mm	82mm	0.82mm	GD2087X5	80029
7/32	0.2187	15/64	1.5800	3.2300	0.0340	GD2187X5	80032
#2	0.2210	15/64	1.5800	3.2300	0.0340	GD2210X5	80034
15/64	0.2344	15/64	1.5800	3.2300	0.0360	GD2344X5	80038
6mm	0.2362	6mm	40mm	82mm	0.93mm	GD2362X5	80040
6.2mm	0.2441	8mm	48mm	91mm	0.96mm	GD2441X5	80042
1/4	0.2500	1/4	1.7400	3.2500	0.0390	GD2500X5	80044
F	0.2570	5/16	1.8900	3.5800	0.0400	GD2570X5	80046
17/64	0.2656	5/16	1.8900	3.5800	0.0410	GD2656X5	80048
7mm	0.2756	8mm	48mm	91mm	1.08mm	GD2756X5	80050
9/32	0.2812	5/16	1.8900	3.5800	0.0440	GD2812X5	80052
19/64	0.2969	5/16	1.8900	3.5800	0.0460	GD2969X5	80054
5/16	0.3125	5/16	1.8900	3.5800	0.0480	GD3125X5	80056
8mm	0.3150	8mm	48mm	91mm	1.24mm	GD3150X5	80058
21/64	0.3281	25/64	2.1700	4.0600	0.0510	GD3281X5	80060
8.5mm	0.3346	10mm	55mm	103mm	1.32mm	GD3346X5	80062
11/32	0.3438	25/64	2.1700	4.0600	0.0530	GD3438X5	80064
9mm	0.3543	10mm	55mm	103mm	1.39mm	GD3543X5	80066
23/64	0.3594	25/64	2.1700	4.0600	0.0560	GD3594X5	80068
9.25mm	0.3642	10mm	55mm	103mm	1.43mm	GD3642X5	80070
3/8	0.3750	25/64	2.1700	4.0600	0.0580	GD3750X5	80072



Solid Regular Length 5X

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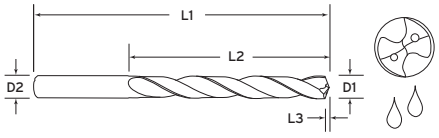
SOLID REGULAR LENGTH DRILLS GDX-59 COATED

DIAMETER		SHANK	LOF	OAL	POINT LENGTH		
D1	Decimal/Size	D2	L2	L1	L3	Item#	EDP
9.6mm	0.3780	10mm	55mm	103mm	1.49mm	GD3780X5	80073
25/64	0.3906	25/64	2.1700	4.0600	0.0610	GD3906X5	80075
10mm	0.3937	10mm	55mm	103mm	1.55mm	GD3937X5	80077
13/32	0.4062	15/32	2.3600	4.7200	0.0630	GD4062X5	80079
10.5mm	0.4134	12mm	60mm	120mm	1.63mm	GD4134X5	80081
27/64	0.4219	15/32	2.3600	4.7200	0.0650	GD4219X5	80083
11mm	0.4331	12mm	60mm	120mm	1.70mm	GD4331X5	80085
7/16	0.4375	15/32	2.6000	4.7200	0.0680	GD4375X5	80087
11.5mm	0.4527	12mm	66mm	120mm	1.78mm	GD4527X5	80089
15/32	0.4688	15/32	2.6000	4.7200	0.0730	GD4688X5	80091
12mm	0.4724	12mm	66mm	120mm	1.86mm	GD4724X5	80093
31/64	0.4844	1/2	2.8300	4.7500	0.0750	GD4844X5	80095
1/2	0.5000	1/2	2.8300	4.7500	0.0770	GD5000X5	80097
13mm	0.5118	14mm	72mm	125mm	2.01mm	GD5118X5	80099
33/64	0.5156	35/64	3.0300	5.2800	0.0800	GD5156X5	80101
17/32	0.5312	35/64	3.0300	5.2800	0.0820	GD5312X5	80103
35/64	0.5469	35/64	3.0300	5.2800	0.0850	GD5469X5	80105
9/16	0.5625	5/8	3.1500	5.5100	0.0870	GD5625X5	80107
19/32	0.5938	5/8	3.2300	5.7500	0.0920	GD5938X5	80109
5/8	0.6250	5/8	3.2300	5.7500	0.0970	GD6250X5	80111
16mm	0.6299	16mm	82mm	146mm	2.48mm	GD6299X5	80113

Coolant Fed Carbide High Performance



Coolant Regular Length 5X

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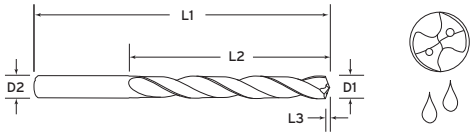
COOLANT REGULAR LENGTH DRILLS GDX-59 COATED

DIAMETER		SHANK	LOF	OAL	POINT LENGTH		
D1	Decimal/Size	D2	L2	L1	L3	Item#	EDP
#31	0.1200	1/8	1.1250	3.0000	0.0190	GDC1200X5	80118
1/8	0.1250	1/8	1.1250	3.0000	0.0190	GDC1250X5	80120
#30	0.1285	5/32	1.2600	3.1500	0.0200	GDC1285X5	80122
#29	0.1360	5/32	1.2600	3.1500	0.0210	GDC1360X5	80124
9/64	0.1406	5/32	1.2600	3.1500	0.0220	GDC1406X5	80126
3.9mm	0.1535	4mm	32mm	80mm	0.60mm	GDC1535X5	80128
5/32	0.1562	5/32	1.2600	3.1500	0.0240	GDC1562X5	80129
#21	0.1590	3/16	1.5000	3.2300	0.0250	GDC1590X5	80132
4.3mm	0.1693	5mm	38mm	82mm	0.67mm	GDC1693X5	80134
11/64	0.1719	3/16	1.5000	3.2300	0.0270	GDC1719X5	80135
3/16	0.1875	3/16	1.5000	3.2300	0.0290	GDC1875X5	80137
5mm	0.1968	5mm	38mm	81mm	0.77mm	GDC1968X5	80139
13/64	0.2031	15/64	1.5800	3.2300	0.0310	GDC2031X5	80141
5.3mm	0.2087	6mm	40mm	82mm	0.82mm	GDC2087X5	80143
7/32	0.2187	15/64	1.5800	3.2300	0.0340	GDC2187X5	80144
#2	0.2210	15/64	1.5800	3.2300	0.0340	GDC2210X5	80146
15/64	0.2344	15/64	1.5800	3.2300	0.0360	GDC2344X5	80148
6mm	0.2362	6mm	40mm	82mm	0.93mm	GDC2362X5	80150
6.2mm	0.2441	8mm	48mm	91mm	0.96mm	GDC2441X5	80152
1/4	0.2500	1/4	1.7400	3.3000	0.0390	GDC2500X5	80154
F	0.2570	5/16	1.8900	3.5800	0.0400	GDC2570X5	80156
17/64	0.2656	5/16	1.8900	3.5800	0.0410	GDC2656X5	80158
7mm	0.2756	8mm	48mm	91mm	1.08mm	GDC2756X5	80160
9/32	0.2812	5/16	1.8900	3.5800	0.0440	GDC2812X5	80162
19/64	0.2969	5/16	1.8900	3.5800	0.0460	GDC2969X5	80164
5/16	0.3125	5/16	1.8900	3.5800	0.0480	GDC3125X5	80166
8mm	0.3150	8mm	48mm	91mm	1.24mm	GDC3150X5	80168
21/64	0.3281	25/64	2.1700	4.0600	0.0510	GDC3281X5	80170
8.5mm	0.3346	10mm	55mm	103mm	1.32mm	GDC3346X5	80172
11/32	0.3438	25/64	2.1700	4.0600	0.0530	GDC3438X5	80174
9mm	0.3543	10mm	55mm	103mm	1.39mm	GDC3543X5	80176
23/64	0.3594	25/64	2.1700	4.0600	0.0560	GDC3594X5	80178
9.25mm	0.3642	10mm	55mm	103mm	1.43mm	GDC3642X5	80180

Coolant Fed Carbide High Performance



Coolant Regular Length 5X

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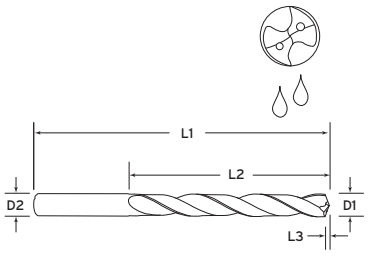
COOLANT REGULAR LENGTH DRILLS GDX-59 COATED

DIAMETER		SHANK	LOF	OAL	POINT LENGTH		
D1	Decimal/Size	D2	L2	L1	L3	Item#	EDP
3/8	0.3750	25/64	2.1700	4.0600	0.0580	GDC3750X5	80182
25/64	0.3906	25/64	2.1700	4.0600	0.0610	GDC3906X5	80184
10mm	0.3937	10mm	55mm	103mm	1.55mm	GDC3937X5	80186
13/32	0.4062	15/32	2.3600	4.7200	0.0630	GDC4062X5	80188
10.5mm	0.4134	12mm	60mm	120mm	1.63mm	GDC4134X5	80190
27/64	0.4219	15/32	2.3600	4.7200	0.0650	GDC4219X5	80192
11mm	0.4331	12mm	60mm	120mm	1.70mm	GDC4331X5	80194
7/16	0.4375	15/32	2.6000	4.7200	0.0680	GDC4375X5	80196
11.5mm	0.4527	12mm	66mm	120mm	1.78mm	GDC4527X5	80198
15/32	0.4688	15/32	2.6000	4.7200	0.0730	GDC4688X5	80200
12mm	0.4724	12mm	66mm	120mm	1.86mm	GDC4724X5	80202
31/64	0.4844	1/2	2.8300	4.7500	0.0750	GDC4844X5	80204
1/2	0.5000	1/2	2.8300	4.7500	0.0770	GDC5000X5	80206
13mm	0.5118	14mm	72mm	126mm	2.01mm	GDC5118X5	80208
33/64	0.5156	35/64	3.0300	5.2800	0.0800	GDC5156X5	80209
17/32	0.5312	35/64	3.0300	5.2800	0.0820	GDC5312X5	80210
35/64	0.5469	35/64	3.0300	5.2800	0.0850	GDC5469X5	80211
9/16	0.5625	5/8	3.1500	5.5100	0.0870	GDC5625X5	80212
19/32	0.5938	5/8	3.2300	5.7500	0.0920	GDC5938X5	80213
5/8	0.6250	5/8	3.2300	5.7500	0.0970	GDC6250X5	80214
16mm	0.6299	16mm	82mm	146mm	2.48mm	GDC6299X5	80215
21/32	0.6562	45/64	3.5400	6.2200	0.1020	GDC6562X5	80216
11/16	0.6875	45/64	3.7400	6.2200	0.1070	GDC6875X5	80217
3/4	0.7500	3/4	3.9400	6.3000	0.1160	GDC7500X5	80218
20mm	0.7874	20mm	100mm	160mm	3.10mm	GDC7874X5	80219

Coolant Fed Carbide High Performance



Coolant Long Length 7X

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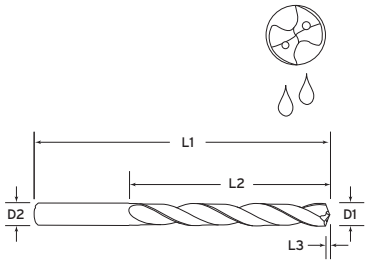
COOLANT LONG LENGTH DRILLS GDX-59 COATED

DIAMETER		SHANK	LOF	OAL	POINT LENGTH		
D1	Decimal/Size	D2	L2	L1	L3	Item#	EDP
#31	0.1200	1/8	1.5000	3.5000	0.0190	GDC1200X7	80119
1/8	0.1250	1/8	1.5000	3.5000	0.0190	GDC1250X7	80121
#30	0.1285	5/32	1.7500	3.6250	0.0200	GDC1285X7	80123
#29	0.1360	5/32	1.7500	3.6250	0.0210	GDC1360X7	80125
9/64	0.1406	5/32	1.7500	3.6250	0.0220	GDC1406X7	80127
5/32	0.1562	5/32	1.7500	3.6250	0.0270	GDC1562X7	80130
4mm	0.1575	4mm	44mm	92mm	0.62mm	GDC1575X7	80131
#21	0.1590	3/16	1.7500	3.9400	0.0250	GDC1590X7	80133
11/64	0.1719	3/16	1.7500	3.9400	0.0270	GDC1719X7	80136
3/16	0.1875	3/16	1.7500	3.9400	0.0290	GDC1875X7	80138
5mm	0.1968	5mm	45mm	100mm	0.77mm	GDC1968X7	80140
13/64	0.2031	15/64	2.0000	3.9400	0.0310	GDC2031X7	80142
7/32	0.2187	15/64	2.0000	3.9400	0.0340	GDC2187X7	80145
#2	0.2210	15/64	2.0000	3.9400	0.0340	GDC2210X7	80147
15/64	0.2344	15/64	2.0000	3.9400	0.0360	GDC2344X7	80149
6mm	0.2362	6mm	51mm	100mm	0.93mm	GDC2362X7	80151
6.2mm	0.2441	8mm	60mm	109mm	0.96mm	GDC2441X7	80153
1/4	0.2500	1/4	2.2500	4.3100	0.0390	GDC2500X7	80155
F	0.2570	5/16	2.3750	4.3100	0.0400	GDC2570X7	80157
17/64	0.2656	5/16	2.3750	4.3100	0.0410	GDC2656X7	80159
7mm	0.2756	8mm	60mm	109mm	1.08mm	GDC2756X7	80161
9/32	0.2812	5/16	2.7500	4.6250	0.0440	GDC2812X7	80163
19/64	0.2969	5/16	2.7500	4.6250	0.0460	GDC2969X7	80165
5/16	0.3125	5/16	2.7500	4.6250	0.0480	GDC3125X7	80167
8mm	0.3150	8mm	70mm	118mm	1.24mm	GDC3150X7	80169
21/64	0.3281	25/64	3.1500	5.0000	0.0510	GDC3281X7	80171
8.5mm	0.3346	10mm	80mm	127mm	1.32mm	GDC3346X7	80173
11/32	0.3438	25/64	3.1500	5.0000	0.0530	GDC3438X7	80175
9mm	0.3543	10mm	80mm	127mm	1.39mm	GDC3543X7	80177
23/64	0.3594	25/64	3.3400	5.3120	0.0560	GDC3594X7	80179

Coolant Fed Carbide High Performance



Coolant Long Length 7X

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COOLANT LONG LENGTH DRILLS GDX-59 COATED

DIAMETER		SHANK	LOF	OAL	POINT LENGTH		
D1	Decimal/Size	D2	L2	L1	L3	Item#	EDP
9.25mm	0.3642	10mm	85mm	136mm	1.43mm	GDC3642X7	80181
3/8	0.3750	25/64	3.3400	5.3120	0.0580	GDC3750X7	80183
25/64	0.3906	25/64	3.3400	5.3120	0.0610	GDC3906X7	80185
10mm	0.3937	10mm	85mm	136mm	1.55mm	GDC3937X7	80187
13/32	0.4062	15/32	3.6250	5.8750	0.0630	GDC4062X7	80189
10.5mm	0.4134	12mm	93mm	149mm	1.63mm	GDC4134X7	80191
27/64	0.4219	15/32	3.6250	5.8750	0.0650	GDC4219X7	80193
11mm	0.4331	12mm	93mm	149mm	1.70mm	GDC4331X7	80195
7/16	0.4375	15/32	4.0000	6.1000	0.0680	GDC4375X7	80197
11.5mm	0.4527	12mm	102mm	155mm	1.78mm	GDC4527X7	80199
15/32	0.4688	15/32	4.0000	6.1000	0.0730	GDC4688X7	80201
12mm	0.4724	12mm	102mm	155mm	1.86mm	GDC4724X7	80203
31/64	0.4844	1/2	4.3120	6.2990	0.0750	GDC4844X7	80205
1/2	0.5000	1/2	4.3120	6.2990	0.0770	GDC5000X7	80207

GORILLA DRILLS

NOT EXACTLY WHAT WE HAD IN MIND WHEN WE SAY HIGH PERFORMANCE FOR ANY APPLICATION.

A general-purpose high performance and high penetration solid carbide drill capable of machining a vast range of work materials. Suitable for high efficiency precision machining and up to 50% faster than standard carbide drills. Not recommended for personal grooming.

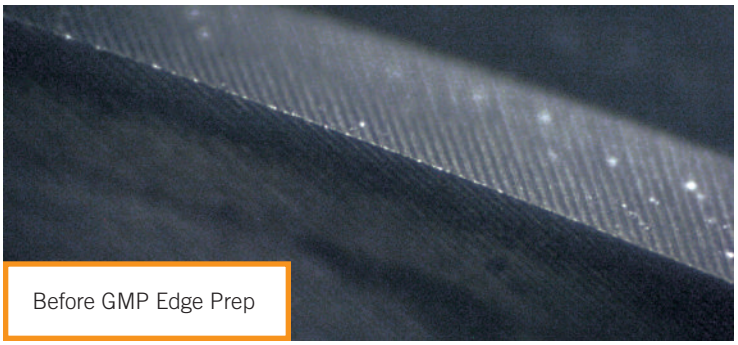
GMP Edge Prep

Tool edge preparation is one of the four main factors in successful cutting tool manufacturing. The other three factors include tool substrate composition, tool geometry, and proper coating. While considerable resources have been channeled into making the processes of tool composition, tool geometry and coating more reliable and repeatable, tool edge preparation is fast becoming a necessity on all cutting tools manufactured of cemented carbide because of increased performance demands.

Edge defects are present in nearly all tools prior to edge prep. The defects are the result of the grinding process. Although microscopic in size, these defects must be eliminated to achieve optimum tool performance.

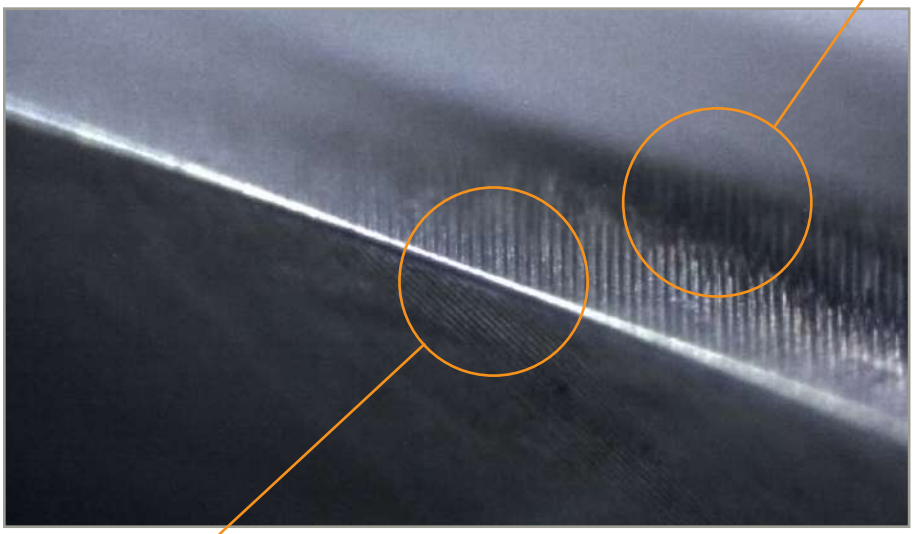
The tool edge preparation process, adds strength to the tool cutting edge, lengthens usable tool life, minimizes the propensity of the edge to chip, improves part quality and consistency, and enhances work piece surface finish.

With GMP Edge Prep, we have taken edge preparation to the next level, making it a science. Now the technology and equipment exists to overcome nearly all the current processing problems and to produce a tool that will yield optimum performance in any given operation or application.



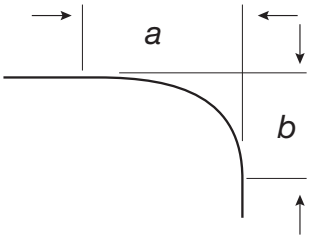
Before GMP Edge Prep

Seen here at 145x magnification the “ridges” created by the grinding process can create a fracture point on the sharp cutting edge of carbide.



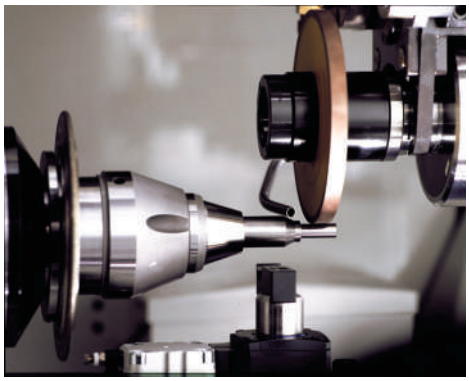
GMP technology hones these “ridges” in a controlled environment to reduce the fracturing that occurs to the cutting edge during the milling process while greatly increasing tool life and enhancing finish.

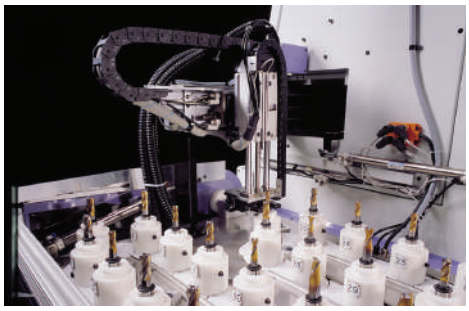
GMP Hone Shape

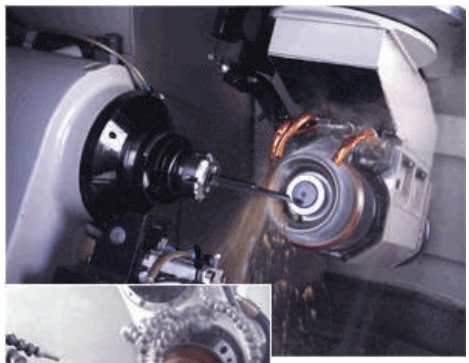


Regrinds

The vast majority of your tooling that CGC/Gorilla Mill or anyone else manufactures can be re-sharpened and recoated to “like new” condition on one of our state-of-the-art CNC tool and cutter grinders at a fraction of a new tool’s cost. At CGC/Gorilla Mill, our goal is to show cost savings while maintaining a high accuracy rate. Whether it’s Gorilla Mills®, or other variable end mills, standard end mills, Gorilla Drills or any other high performance drills, CGC/Gorilla Mill has over 40 years of knowledge and experience to help your bottom line.

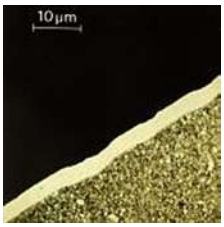






Strong Protection for Regrinds

How do you pack a gorilla for a trip? If your gorilla is a CGC end mill heading back to CGC tool for regrinding, you pack it in our proprietary monkey grinding box. This heavy-duty, mini crate with interior padding is perfect for protecting your end mills in transit. Simply request the box from us. Then all you’ve got to do is place your end mills inside and close the box using the built-in fasteners. We also recommend you wrap the box with a fiber tape for secure shipping. After we’ve reground your mills, we’ll ship them back to you in the same secure package. Just keep the crate and use for the next re-grinding.



Gorilla Coatings

Gorilla coatings are just a few thousandths of a millimeter thick but harder than steel; these low-friction coatings are extremely wear-resistant and chemically inert. The optimum coating is determined on the basis of both conditions of use and economic considerations.

GMX-35

Newly formulated, special high-performance coating for high speed machining. GMX-35 performance surpasses all conventional coatings. This universal high-performance coating is especially designed for milling and drilling. Also suitable for dry machining.

GMS²

Introducing a revolutionary, newly formulated, PVD coating process. GMS² marks a breakthrough in PVD deposition technology. The performance and hardness stem from the coating's unique structure. GMS² is specifically designed to punish high temp alloys.

GDX-59

Introducing a revolutionary, newly formulated, PVD coating process. This process marks a breakthrough in PVD deposition technology. The performance and hardness of GDX-59 greatly increases tool life in drilling applications.

Coating	TiAlN	ZrN	GMX-35	GDX-59	GMS²
Structure	Multilayer	Monolayer	Gradient	Gradient	Gradient
Nanohardness (GPa)	28	20	32	35	32
Friction (fretting) coefficient	0.6	0.4	0.35	0.35	0.30
Thickness (µm)	2-4	2-4	2-4	2-4	2-4
Maximum Working Temperature	700° C (1290° F)	550° C (1020° F)	1100° C (2012° F)	1000° C (1832° F)	1100° C (2012° F)
Color	violet	pale yellow	silver-gray	silver-gray	bright -gray

Standard coating process temperature is 475° C (890° F).

WEAPONS OF MASS PRODUCTION®

Fraction or Drill Size	Decimal Equivalent	Tap Size
80	0.0135	
79	0.0145	
1/ 64	0.0156	
78	0.0160	
77	0.0180	
76	0.0200	
75	0.0210	
74	0.0225	
73	0.0240	
72	0.0250	
71	0.0260	
70	0.0280	
69	0.0292	
68	0.0310	
1/ 32	0.0313	
67	0.0320	
66	0.0330	
65	0.0350	
64	0.0360	
63	0.0370	
62	0.0380	
61	0.0390	
60	0.0400	
59	0.0410	
58	0.0420	
57	0.0430	
56	0.0465	
3/ 64	0.0469	0-80
1.25 MM	0.0492	M1.6 X .35
55	0.0520	
54	0.0550	
53	0.0595	1-64,72
1/ 16	0.0625	
1.6 MM	0.0630	M2 X .4
52	0.0635	
51	0.0670	
50	0.0700	2-56,64
49	0.0730	
48	0.0760	
5/ 64	0.0781	3-48
47	0.0785	
2.05 MM	0.0807	M2.5 X .45
46	0.0810	
45	0.0820	
44	0.0860	
43	0.0890	4-40
42	0.0935	
3/ 32	0.0937	4-48
41	0.0960	
40	0.0980	
2.5 MM	0.0984	M3 X .5
39	0.0995	
38	0.1015	5-40
37	0.1040	5-44
36	0.1065	6-32
7/ 64	0.1093	
35	0.1100	
34	0.1110	
33	0.1130	6-40
2.9 MM	0.1142	M3.5 X .6
32	0.1160	
31	0.1200	
1/8	0.1250	
30	0.1285	
3.3 MM	0.1299	M4 X .7
29	0.0136	8-32,36
28	0.1405	
9/ 64	0.1406	
27	0.1440	
3.7 MM	0.1457	M4.5 X .75
26	0.1470	10-24
25	0.1495	
24	0.1520	
23	0.1540	
5/32	0.1562	
22	0.1570	
21	0.1590	10-32
20	0.1610	
4.2 MM	0.1654	M5 X .8
19	0.1660	
18	0.1695	
11/64	0.1719	
17	0.1730	
16	0.1770	12-24
15	0.1800	12-28
14	0.1820	
13	0.1850	
3/16	0.1875	
12	0.1890	
11	0.1910	
10	0.1935	
9	0.1960	
5.0 MM	0.1969	M6 X 1.0
8	0.1990	
Fraction or Drill Size	Decimal Equivalent	Tap Size
7	0.2010	1/4-20
13/64	0.2031	
6	0.2040	
5	0.2055	
4	0.2090	
3	0.2130	1/4-28
7/32	0.2187	
2	0.2210	
1	0.2280	
A	0.2340	
15/64	0.2344	
6.0 MM	0.2362	M7 X 1.0
B	0.2380	
C	0.2420	
D	0.2460	
1/4 E	0.2500	
F	0.2570	5/16-18
G	0.2610	
17/64	0.2656	
H	0.2660	
6.8 MM	0.2677	M8 X 1.25
I	0.2720	5/16-24
J	0.2770	
K	0.2810	
9/32	0.2812	
L	0.2900	
M	0.2950	
19/64	0.2968	
N	0.3020	
5/16	0.3125	3/8-16
O	0.3160	
P	0.3230	
21/64	0.3281	
Q	0.3320	3/8-24
8.5 MM	0.3346	M10 X 1.5
R	0.3390	
11/32	0.3437	
S	0.3480	
T	0.3580	
23/64	0.3594	
U	0.3680	7/16-14
3/ 8	0.3750	
V	0.3770	
W	0.3860	
25/64	0.3906	7/16-20
X	0.3970	
10.2 MM	0.4016	M12 X 1.75
Y	0.4040	
13/32	0.4062	
Z	0.4130	
27/64	0.4219	1/2-13
7/16	0.4375	
29/64	0.4531	1/2-20
15/32	0.4687	
12 MM	0.4724	M14 X 2.0
31/64	0.4843	9/16-12
1/ 2	0.5000	
33/64	0.5156	9/16-18
17/32	0.5312	5/8-11
35/64	0.5469	
14 MM	0.5512	M16 X 2.0
9/16	0.5625	
37/64	0.5781	5/8-18
19/32	0.5937	
39/64	0.6094	
15.5 MM	0.6102	M18 X 2.5
5/ 8	0.6250	
41/64	0.6406	
21/32	0.6562	3/4-10
43/64	0.6719	
11/16	0.6875	3/4-16
17.5 MM	0.6890	M20 X 2.5
45/64	0.7031	
23/32	0.7187	
47/64	0.7344	
3/ 4	0.7500	
49/64	0.7656	7/8-9
25/32	0.7812	
51/64	0.7969	
13/16	0.8125	7/8-14
21 MM	0.8268	M24 X 3.0
53/64	0.8281	
27/32	0.8437	
55/64	0.8594	
7/ 8	0.8750	1-8
57/64	0.8906	
29/32	0.9062	
59/64	0.9219	
15/16	0.9375	1-14
61/64	0.9531	
31/32	0.9687	
63/64	0.9844	1-1/8-7
1.0	1.0000	

GORILLA MILL FAMILY TREE

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