



2016 PRODUCT CATALOG

G.W. Schultz Tool
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THE CARBIDE CUTTING TOOL EXPERTS



For over 30 years, GWS founder, Greg Schultz has been involved in manufacturing the highest quality, premium rotary cutting tools.

From the beginning he recognized the need for consistent, long lasting, quality cutters. This commitment has deepened through the years and GWS employees are dedicated to continue their heritage of excellence. GWS leads the field for close tolerance cutters and consistent performance. Keeping an eye on the future, with new materials and new uses of existing materials, we are prepared to meet the demands placed on rotary cutting tools only dreamed of a few years ago.

To serve you better, GWS Tool maintains inventory of popular catalog items with our factory sales agents who are ready to enter and fill your orders 5 days a week during local business hours.



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GW Schultz Tool

MISSION STATEMENT

Through a committed partnership with our customers, our vendors, and our staff, it is the mission of G.W. Schultz Tool to provide those developing and building the future with the finest quality and most innovative carbide cutting tool solutions in the world.

G.W. Schultz Tool specializes in the manufacturing of High Performance Carbide End Mills. We also offer custom Etching, Coating and Re-grinding Services.

Not all standard tools listed are "in stock" items. Please call for availability and delivery time. Minimum quantity order required on Custom/Specialty Tools. Specifications subject to change without notice.









Understanding Nomenclature

Part numbers are composed of letters and numerals referring to different categories (where applicable), as seen in the following examples.

SERIES	PITCH	LOC	SHANK	#FLUTE	CUTTING*	COATING
<u>ART</u> 30 Degree Helix Non-Ferrous		<u>Z</u> Stub		4	<u>0500</u> 1/2 Inch	<u>S</u> TiCN
<u>AGS</u> 30 Degree Helix Non-Ferrous Cobb Style		<u>S</u> Stub		3	<u>1000</u> 1 Inch	
<u>GW</u> 30 Degree Helix General Purpose		<u>XL</u> Extra Long		2	<u>0750</u> 3/4 Inch	<u>X</u> AlTiN
<u>BNA</u> 37 Degree Helix Ball Nose		<u>L</u> Long	<u>SU</u> Undercut	3	<u>0625</u> 5/8 Inch	
<u>HGW</u> Variable Helix		<u>L</u> Long	<u>SU</u> Undercut	4	<u>0250</u> 1/4 Inch	
<u>GSC</u> 20 Degree Helix Hogmill Rougher	<u>M</u> Medium	<u>L</u> Long	<u>SU</u> Undercut	4	<u>0375</u> 3/8 Inch	

*NOTE: In most cases the listed cutting diameter will be equal to the corresponding shank diameter, although there will be some exceptions.

Wear Resistance Coatings

Composition	Key Characteristics	Primary Applications
Titanium Nitride (TiN) 	The General purpose coating for cutting, forming, injection, molding, tribological applications.	Machining of Iron based materials
Zirconium Nitride (ZrN) 	Machining Magnesium and Titanium	Effectively reduces the built up edges when machining Aluminum and Titanium
Titanium Carbo Nitride (TiCN) 	High hardness, good wear resistant, enhanced toughness	Machining difficult steel alloys. High speed cutting where moderate temperatures are generated at the cutting edge
Aluminum Titanium Nitride(AITIN) 	High Performance Coating high aluminum content, high heat resistance	For dry high speed machining, hard machining
nACo 	Nano Composite coating, extremely high nano hardness and high heat resistance	For high performance and normal machining conditions
nACRo 	Nano Composite coating, extremely high scratch and high heat resistance, high coating thickness possible	Especially for hobbing and forming tools

COATING PROCESS	COATING TYPE					
	TiN	ZrN	TiCN	AITIN	nACo	nACRo
Coating Material	TiN	ZrN	TiCN	AITIN	nACo	nACRo
Structure	Monolayer	Monolayer	Gradient	Gradient	Gradient	Gradient
Nano HardnessGPA	24	20	37	38	45	40
Friction Coefficient	0.55	0.4	0.2	0.7	0.45	0.35
Thickness	1-5	1-4	1-4	1-4	1-4	1-7
Thermal Threshold	600°C 1100°F	550°C 1020°F	400°C 750°F	900°C 1650°F	1200°C 2192°F	110°C 2012°F
Color	Golden-Yellow	White-Gold	Blue-Gray	Blue-Black	Violet-Blue	Blue-Gray

NOTE: *Coating thickness will vary based on your custom application P.V.D = Physical Vapour Deposition

Speeds

Solid carbide end mills should be run at higher speeds than high speed steel end mills. Many times, lighter cuts at higher speeds can improve the finish of the workpiece. Speeds should be reduced when milling hard or tough materials and when taking heavy cuts. Speeds should be increased when milling softer materials or when taking light cuts.

Feeds

Generally, the feed per tooth, or chip load, may be maintained by using a two, three or four flute end mill. When peripheral milling, the highest feed rates can be achieved when the width of cut is less than the radius of the end mill. Feed rates may be increased when milling easily machined or abrasive materials. They should also be increased to eliminate chatter. The accompanying table gives recommended starting speeds and feeds for the most commonly used materials.

	MATERIAL	SPEED (SFM)	FEED PER TOOTH				
			1/8" Diameter	1/4" Diameter	1/2" Diameter	3/4" Diameter	1" Diameter
	Aluminum / Aluminum Alloys	850-1300	0.001	0.002	0.004	0.006	0.008
	Brass / Bronze Soft	400-700	0.001	0.002	0.003	0.004	0.006
	Bronze / High Tensile	250-400	0.001	0.002	0.003	0.004	0.006
	Copper / Copper Alloys	450-850	0.001	0.002	0.003	0.004	0.006
	Iron, Hard Cast	250-450	0.001	0.001	0.002	0.003	0.005
	Iron, Soft Cast	200-300	0.001	0.002	0.003	0.005	0.008
	Iron, Malleable	250-400	0.001	0.002	0.003	0.005	0.008
	Monel / Nickel Base Alloys	150-250	0.001	0.001	0.002	0.003	0.004
	Molybdenum	800-1100	0.001	0.002	0.004	0.006	0.008
	Plastic and Related Materials	800-1600	0.002	0.003	0.006	0.010	0.014
	Steel, Hardened up to Rc 35	150-250	0.001	0.001	0.002	0.002	0.003
	Steel, Hardened up to Rc 50	80-150	0.000	0.001	0.001	0.002	0.003
	Steel, Hardened up to Rc 60	35-80	0.000	0.001	0.001	0.002	0.002
	Steel, Low Carbon	275-550	0.001	0.001	0.003	0.005	0.006
	Steel, Tool	100-235	0.001	0.001	0.002	0.003	0.004
	Stainless Steel, Free Machining	250-400	0.001	0.001	0.002	0.003	0.004
	Stainless Steel, Work Hardening	100-250	0.001	0.001	0.002	0.003	0.004
	Titanium Alloys	80-200	0.000	0.001	0.001	0.002	0.004

General Milling Formulas

TO FIND	USING	FORMULA
SFM Surface feet per Minute	RPM - Revolutions per Minute Dia - Diameter of End Mill	$RPM \div 3.82 \times Dia = SFM$
RPM Revolutions per Minute	SFM - Surface feet per Minute Dia - Diameter of End Mill	$SFM \times 3.82 \div Dia = RPM$
IPM Inches per Minute	RPM - Revolutions per Minute IPT - Chipload Inch per Tooth #FL - # of Flutes	$RPM \times IPT \times \#FL = IPM$
IPT Inch per Tooth, Chipload	IPM - Inches per Minute RPM - Revolutions per Minute #FL - # of Flutes	$IPM \div RPM \div \#FL = IPT$
IPR/FR Inch (Feed) per Revolution	IPM - Inches per Minute RPM - Revolutions per Minute	$IPM \div RPM = IPR (FR)$
MR Metal Removal Cubic Inches per Minute	ADC - Axial Depth of Cut RDC - Radial Depth of Cut IPM - Inches per Minute	$ADC \times RDC \times IPM = MR$
HP Horsepower Required	IPM - Inches per Minute RDC - Radial Depth of Cut ADC - Axial Depth of Cut PC - Power Constants	$IPM \times RDC \times ADC \times PC = HP$



G. W. Schultz Tool offers any LOC and OL with any series tool as a modified standard. All products are also available with special coatings to meet your specific requirements.

Order Toll Free: 1-866-866-5497
gwschultz.com



Specialty Tools

Specialty cutting tools come in a variety of shapes and sizes; every application is different and G.W. Schultz Tool is prepared to help you with your particular situation. The information required is basic and will enable us to design the best tool for your application. From the beginning, G.W. Schultz Tool has specialized in custom design and we look forward to working with you in creating a unique tool that meets and often exceeds your expectations.

NOTE: Minimum quantity order required on Specialty/Custom tools. Please call for more information.

If possible, please provide us with a 3D solid model, CAD drawing, or sketch, including the profile you need to cut, and as much of the following information as you can.

What material are you cutting?

What are you doing with the tool? (Plunging / Ramping / Profiling / Pocketing / Slotting)

Let us know what is and is not critical. (What tolerances are required for critical dimensions?)

If it is an ongoing project, let us know what has and has not worked for you in the past.

Expected Delivery

One (1) week or less

Standard or modified standard end mills.

Modify existing stock (add flat, undercut, radius, etc).

Two (2) weeks or less

Standard or modified standard end mills without material.

Repeat special/custom with program and material.

Three (3) weeks or less

Repeat specials with programs without material in stock.

Four (4) weeks or less

Repeat specials requiring pre-form material not in stock.

Five to Six (5-6) weeks or less

Special/custom requiring pre-form materials quote not in stock.

**Coating:

Add coating only (3 day max)



G. W. Schutz Tool offers any LOC and OL with any series tool as a modified standard. All products are also available with special coatings to meet your specific requirements.

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CUSTOM TOOL QUESTIONNAIRE

Data Collection

Type Tool:

Used to Cut What Material:

Coating:

Endwork Style:

Shank Flat:

Number of Flutes:

Shank Diameter:

Overall Length:

Milling Use:

Helix & Rotation:

Notes:

Sales Department Data

Date

Quote #:

Qty:

Line Item:

Phone #:










Technical Contact:

Email:

To download a copy of this form, please visit: <http://gwschultz.com/quotes>

General Purpose

Our original series, the GW SERIES has stood the test of time and is a great "all around" tool designed to meet your general milling needs. Available in various coatings to improve performance and tool life.

Material	GW	GWR	BN
 Aluminum	GOOD	GOOD	GOOD
 Brass	GOOD	GOOD	GOOD
 Copper Alloys	GOOD	GOOD	GOOD
 Iron, Hard Cast	BETTER	BEST	BETTER
 Iron, Soft Cast	BETTER	BEST	BETTER
 Iron, Malleable	BETTER	BEST	BETTER
 Nickel Base Alloys	GOOD	GOOD	GOOD
 Steel, Hardened up to RC 35	GOOD	GOOD	GOOD
 Steel, Hardened up to RC 50	GOOD	GOOD	GOOD
 Steel, Hardened up to RC 60	GOOD	GOOD	GOOD
 Steel, Low Carbon	GOOD	GOOD	GOOD
 Steel, Tool	GOOD	GOOD	GOOD
 Stainless Steel, Free Machining	GOOD	GOOD	GOOD
 Stainless Steel, Work Hardening	GOOD	GOOD	GOOD
 Titanium Alloys	GOOD	GOOD	GOOD
 Inconel	GOOD	GOOD	GOOD
 Plastics	GOOD	GOOD	GOOD



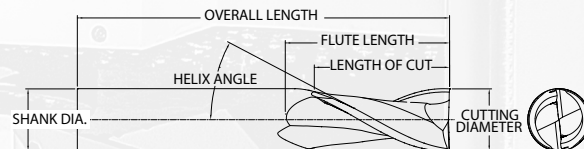
GW 2Series

30° Helix



The GW 2 SERIES is primarily for machining non-ferrous alloys.

- 2 Flutes
- Allows for faster feed rates without chip packing and can be used for plunge, ramp or profile milling.
- LONG (GWL) & EXTRA LONG (GWXL) end mills are standards.
- Available AlTiN coated (other coatings available upon request)
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



GENERAL PURPOSE
Carbide

	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description
Stub	1/32	1/8	0.078	1.500	107269	103827	GWS20032
	1/16	1/8	0.125	1.500	107121	101528	GWS20062
	3/32	1/8	0.188	1.500	107270	103928	GWS20093
	1/8	1/8	0.250	1.500	107271	101529	GWS20125
	5/32	3/16	0.313	2.000	109158	103931	GWS20156
	3/16	3/16	0.375	2.000	109160	102471	GWS20187
	7/32	1/4	0.438	2.000	109161	103935	GWS20218
	1/4	1/4	0.500	2.000	106971	103566	GWS20250
	9/32	5/16	0.500	2.000	109162	103938	GWS20281
	5/16	5/16	0.500	2.000	109164	103941	GWS20312
	3/8	3/8	0.625	2.000	109166	103943	GWS20375
	1/2	1/2	0.625	2.500	109168	103860	GWS20500
	5/8	5/8	0.750	3.000	109170	103925	GWS20625
	3/4	3/4	0.875	3.000	109172	103958	GWS20750
1	1	1.000	4.000	109174	103961	GWS21000	
Standard	1/32	1/8	0.188	1.500	102544	100707	GW20032
	1/16	1/8	0.188	1.500	102559	100709	GW20062
	3/32	1/8	0.313	1.500	102560	100716	GW20093
	1/8	1/8	0.500	1.500	100719	100718	GW20125
	5/32	3/16	0.500	2.000	102561	100721	GW20156
	3/16	3/16	0.625	2.000	102563	100722	GW20187
	7/32	1/4	0.625	2.500	102566	100724	GW20218
	1/4	1/4	0.750	2.500	102568	100725	GW20250
	9/32	5/16	0.750	2.500	102569	100727	GW20281
	5/16	5/16	0.813	2.500	102572	100729	GW20312
	3/8	3/8	0.875	2.500	100733	100731	GW20375
	1/2	1/2	1.000	3.000	102584	100735	GW20500
	5/8	5/8	1.250	3.500	102586	100738	GW20625
	3/4	3/4	1.500	4.000	102598	100740	GW20750
1	1	1.500	4.000	102603	100741	GW21000	
Long	1/8	1/8	0.750	2.000	102604	101099	GWL20125
	3/16	3/16	0.750	2.000	102606	101100	GWL20187
	1/4	1/4	1.125	3.000	102608	101102	GWL20250
	5/16	5/16	1.125	3.000	102610	101103	GWL20312
	3/8	3/8	1.125	3.000	102612	101104	GWL20375
	1/2	1/2	2.000	4.000	102615	101105	GWL20500
	5/8	5/8	2.250	5.000	102616	101106	GWL20625
	3/4	3/4	2.250	5.000	102618	101107	GWL20750
1	1	2.250	5.000	102619	101108	GWL21000	
Extra Long	1/8	1/8	1.125	3.000	102621	101552	GWXL20125
	3/16	3/16	1.125	3.000	102622	101555	GWXL20187
	1/4	1/4	1.500	4.000	103514	101556	GWXL20250
	5/16	5/16	1.625	4.000	103516	101557	GWXL20312
	3/8	3/8	1.750	4.000	102624	101558	GWXL20375
	1/2	1/2	3.000	6.000	102629	101559	GWXL20500
	5/8	5/8	3.000	6.000	102632	101560	GWXL20625
	3/4	3/4	3.000	6.000	102633	101561	GWXL20750
1	1	3.000	6.000	102634	101562	GWXL21000	

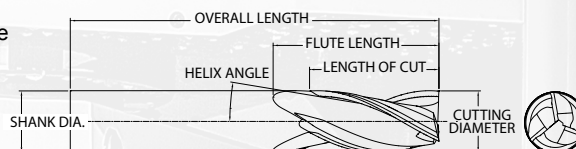
GW 3Series

30° Helix

GENERAL PURPOSE
Carbide

The GW 3 SERIES gives exceptional performance in tool steels including A2, D2, and 4130.

- 3 Flute
- Versatile to handle all non-ferrous applications.
- Available AlTin coated (other coatings available upon request)
- LONG (GWL) & EXTRA LONG (GWXL) end mills are standards.
- Allows for faster feed rates without chip packing and can be used for plunge, ramp or profile milling.
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description
Stub	1/32	1/8	0.078	4.000	104894	104892	GWS30032
	1/16	1/8	0.125	1.500	104896	104897	GWS30062
	3/32	1/8	0.188	1.500	104893	104883	GWS30093
	1/8	1/8	0.250	1.500	106616	105754	GWS30125
	5/32	3/16	0.313	1.500	107049	103944	GWS30156
	3/16	3/16	0.375	2.000	106617	107040	GWS30187
	7/32	1/4	0.438	2.000	107050	112219	GWS30218
	1/4	1/4	0.500	2.000	104898	105755	GWS30250
	9/32	5/16	0.500	2.000	113389	113388	GWS30281
	5/16	5/16	0.500	2.000	113391	113390	GWS30312
	3/8	3/8	0.625	2.000	106618	105810	GWS30375
	1/2	1/2	0.625	2.000	101533	105756	GWS30500
	5/8	5/8	0.750	2.500	113392	106387	GWS30625
	3/4	3/4	0.875	3.000	113394	113393	GWS30750
1	1	1.000	3.000	113396	113395	GWS31000	
Standard	1/32	1/8	0.188	4.000	107051	105489	GW30032
	1/16	1/8	0.188	1.500	105434	100745	GW30062
	3/32	1/8	0.313	1.500	105435	104881	GW30093
	1/8	1/8	0.500	1.500	105436	100751	GW30125
	5/32	3/16	0.500	2.000	105437	105454	GW30156
	3/16	3/16	0.625	2.000	104447	104446	GW30187
	7/32	1/4	0.625	2.500	105438	105513	GW30218
	1/4	1/4	0.750	2.500	105440	100758	GW30250
	9/32	5/16	0.750	2.500	105441	105518	GW30281
	5/16	5/16	0.813	2.500	105443	106014	GW30312
	3/8	3/8	0.875	2.500	105444	105359	GW30375
	1/2	1/2	1.000	3.000	100769	100764	GW30500
	5/8	5/8	1.250	3.500	100771	105598	GW30625
	3/4	3/4	1.500	4.000	100775	100773	GW30750
1	1	1.500	4.000	109095	105933	GW31000	
Long	1/8	1/8	0.750	2.000	109116	105512	GWL30125
	3/16	3/16	0.750	2.000	109117	107674	GWL30187
	1/4	1/4	1.125	3.000	109118	104923	GWL30250
	5/16	5/16	1.125	3.000	109120	109119	GWL30312
	3/8	3/8	1.125	3.000	109121	106851	GWL30375
	1/2	1/2	2.000	4.000	109122	105791	GWL30500
	5/8	5/8	2.250	5.000	109124	109123	GWL30625
	3/4	3/4	2.250	5.000	109125	107370	GWL30750
1	1	2.250	5.000	109127	109126	GWL31000	
Extra Long	1/8	1/8	1.125	3.000	109222	105273	GWXL30125
	3/16	3/16	1.125	3.000	109223	106598	GWXL30187
	1/4	1/4	1.500	4.000	109224	104240	GWXL30250
	5/16	5/16	1.625	4.000	109226	109225	GWXL30312
	3/8	3/8	1.750	4.000	107238	105566	GWXL30375
	1/2	1/2	3.000	6.000	107237	107043	GWXL30500
	5/8	5/8	3.000	6.000	107655	109227	GWXL30625
	3/4	3/4	3.000	6.000	107740	107337	GWXL30750
1	1	3.000	6.000	109229	109228	GWXL31000	

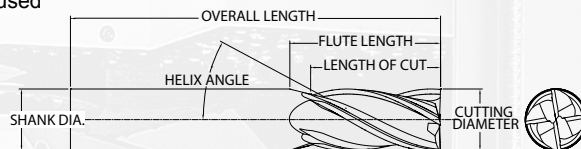
GW 4Series

30° Helix



The GW 4 SERIES provides outstanding performance in cast iron and most ferrous applications.

- 4 Flute
- Excellent performance in magnesiums and hard plastics
- LONG (GWL) & EXTRA LONG (GWXL) end mills are standards.
- Available AlTiN coated (other coatings available upon request)
- Allows for faster feed rates without chip packing and can be used for plunge, ramp or profile milling.
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description
Stub	1/32	1/8	0.078	1.500	107180	103924	GWS40032
	1/16	1/8	0.125	1.500	109176	102278	GWS40062
	3/32	1/8	0.188	1.500	109178	103275	GWS40093
	1/8	1/8	0.250	1.500	103858	101535	GWS40125
	5/32	3/16	0.313	2.000	109180	103932	GWS40156
	3/16	3/16	0.375	2.000	104319	101537	GWS40187
	7/32	1/4	0.438	2.000	109182	103936	GWS40218
	1/4	1/4	0.500	2.000	104050	101538	GWS40250
	9/32	5/16	0.500	2.000	109184	103940	GWS40281
	5/16	5/16	0.500	2.000	104320	101539	GWS40312
	3/8	3/8	0.625	2.000	104049	101540	GWS40375
	1/2	1/2	0.625	2.500	104392	101541	GWS40500
	5/8	5/8	0.750	3.000	103597	101544	GWS40625
3/4	3/4	0.875	3.000	109187	103960	GWS40750	
1	1	1.000	4.000	109189	103962	GWS41000	
Standard	1/32	1/8	0.188	1.500	102547	100777	GW40032
	1/16	1/8	0.188	1.500	100790	100786	GW40062
	3/32	1/8	0.313	1.500	100807	100802	GW40093
	1/8	1/8	0.500	1.500	100827	100819	GW40125
	5/32	3/16	0.500	2.000	100831	100830	GW40156
	3/16	3/16	0.625	2.000	100839	100837	GW40187
	7/32	1/4	0.625	2.500	100848	100847	GW40218
	1/4	1/4	0.750	2.500	100855	100852	GW40250
	9/32	5/16	0.750	2.500	102570	100860	GW40281
	5/16	5/16	0.813	2.500	100868	100864	GW40312
	3/8	3/8	0.875	2.500	100878	100872	GW40375
	1/2	1/2	1.000	3.000	100894	100887	GW40500
	5/8	5/8	1.250	3.500	100897	100896	GW40625
3/4	3/4	1.500	4.000	100904	100900	GW40750	
1	1	1.500	4.000	104299	100906	GW41000	
Long	1/8	1/8	0.750	2.000	102605	101110	GWL40125
	3/16	3/16	0.750	2.000	102607	101113	GWL40187
	1/4	1/4	1.125	3.000	102609	101114	GWL40250
	5/16	5/16	1.125	3.000	102611	101118	GWL40312
	3/8	3/8	1.125	3.000	101125	101120	GWL40375
	1/2	1/2	2.000	4.000	101131	101127	GWL40500
	5/8	5/8	2.250	5.000	102617	101133	GWL40625
	3/4	3/4	2.250	5.000	101136	101134	GWL40750
1	1	2.250	5.000	101138	101137	GWL41000	
Extra Long	1/8	1/8	1.125	3.000	102620	101565	GWXL40125
	3/16	3/16	1.125	3.000	102623	101568	GWXL40187
	1/4	1/4	1.500	4.000	103515	101575	GWXL40250
	5/16	5/16	1.625	4.000	103517	101579	GWXL40312
	3/8	3/8	1.750	4.000	101586	101580	GWXL40375
	1/2	1/2	3.000	6.000	102630	101588	GWXL40500
	5/8	5/8	3.000	6.000	102631	101593	GWXL40625
	3/4	3/4	3.000	6.000	101604	101597	GWXL40750
1	1	3.000	6.000	101612	101605	GWXL41000	

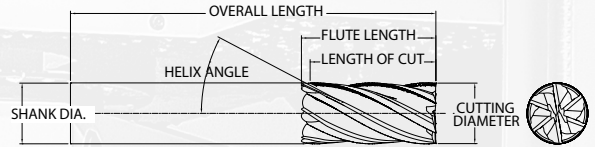
GW 6Series

30° Helix



The GW 6 SERIES is recommended for finishing applications where increased feed rates and maintaining chip load per tooth are desired.

- 6 Flute
- Available AlTiN coated (other coatings available upon request)
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description
Stub	3/16	3/16	0.375	2.000	113367	113366	GWS60187
	7/32	1/4	0.438	2.000	113371	113370	GWS60218
	1/4	1/4	0.500	2.000	113369	113368	GWS60250
	9/32	5/16	0.500	2.000	113375	113374	GWS60281
	5/16	5/16	0.500	2.000	113377	113376	GWS60312
	3/8	3/8	0.625	2.000	113378	107660	GWS60375
	1/2	1/2	0.625	2.500	113380	113379	GWS60500
	5/8	5/8	0.750	3.000	113382	113381	GWS60625
	3/4	3/4	0.875	3.000	113384	113383	GWS60750
	1	1	1.000	4.000	113386	113385	GWS61000
Standard	3/16	3/16	0.625	2.000	102564	100912	GW60187
	7/32	1/4	0.625	2.500	102567	100913	GW60218
	1/4	1/4	0.750	2.500	111102	100914	GW60250
	9/32	5/16	0.750	2.500	102571	100915	GW60281
	5/16	5/16	0.813	2.500	102573	100916	GW60312
	3/8	3/8	0.875	2.500	102574	100917	GW60375
	1/2	1/2	1.000	3.000	102585	100920	GW60500
	5/8	5/8	1.250	3.500	100925	100923	GW60625
	3/4	3/4	1.500	4.000	102599	100926	GW60750
	1	1	1.500	4.000	102602	100928	GW61000

GENERAL PURPOSE
Carbide

GWR 2Series

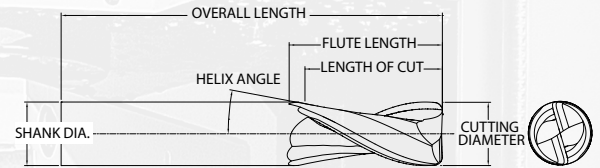
30° Helix-Radius

GENERAL PURPOSE
Carbide



The GWR 2 SERIES is primarily for machining non-ferrous alloys.

- 2 Flutes
- Allows for faster feed rates without chip packing and can be used for plunge, ramp or profile milling.
- Available AlTiN coated (other coatings available upon request)
- Radius improves corner strength
- Special radius available upon request.
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Radius Size	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description
1/32	1/8	0.313	1.500	0.010	102635	101146	GWR20093-01
1/32	1/8	0.313	1.500	0.020	102636	101147	GWR20093-02
1/32	1/8	0.313	1.500	0.030	102637	101148	GWR20093-03
1/8	1/8	0.500	1.500	0.010	113387	101149	GWR20125-01
1/8	1/8	0.500	1.500	0.020	102642	101150	GWR20125-02
1/8	1/8	0.500	1.500	0.030	102643	101151	GWR20125-03
5/32	3/16	0.500	2.000	0.010	102644	101152	GWR20156-01
5/32	3/16	0.500	2.000	0.020	102645	101156	GWR20156-02
5/32	3/16	0.500	2.000	0.030	102646	101157	GWR20156-03
5/32	3/16	0.500	2.000	0.060	102647	101159	GWR20156-06
3/16	3/16	0.625	2.000	0.010	102648	101160	GWR20187-01
3/16	3/16	0.625	2.000	0.020	102649	101161	GWR20187-02
3/16	3/16	0.625	2.000	0.030	102650	101162	GWR20187-03
3/16	3/16	0.625	2.000	0.060	102651	101163	GWR20187-06
7/32	1/4	0.625	2.500	0.010	102652	101164	GWR20218-01
7/32	1/4	0.625	2.500	0.020	102653	101165	GWR20218-02
7/32	1/4	0.625	2.500	0.030	102654	101166	GWR20218-03
7/32	1/4	0.625	2.500	0.060	102655	101167	GWR20218-06
7/32	1/4	0.625	2.500	0.090	102656	101168	GWR20218-09
1/4	1/4	0.750	2.500	0.010	102657	101169	GWR20250-01
1/4	1/4	0.750	2.500	0.020	102658	101170	GWR20250-02
1/4	1/4	0.750	2.500	0.030	102659	101171	GWR20250-03
1/4	1/4	0.750	2.500	0.060	102660	101172	GWR20250-06
1/4	1/4	0.750	2.500	0.090	102661	101173	GWR20250-09
9/32	5/16	0.750	2.500	0.010	102662	101174	GWR20281-01
9/32	5/16	0.750	2.500	0.020	102663	101175	GWR20281-02
9/32	5/16	0.750	2.500	0.030	102665	101176	GWR20281-03
9/32	5/16	0.750	2.500	0.060	102666	101177	GWR20281-06
9/32	5/16	0.750	2.500	0.090	102667	101178	GWR20281-09
9/32	5/16	0.750	2.500	0.125	102668	101179	GWR20281-125
5/16	5/16	0.813	2.500	0.010	102669	101180	GWR20312-01
5/16	5/16	0.813	2.500	0.020	102670	101181	GWR20312-02
5/16	5/16	0.813	2.500	0.030	102671	101182	GWR20312-03
5/16	5/16	0.813	2.500	0.060	102672	101184	GWR20312-06
5/16	5/16	0.813	2.500	0.090	102673	101185	GWR20312-09
5/16	5/16	0.813	2.500	0.125	102674	101186	GWR20312-125

GWR 2Series

30° Helix-Radius

GENERAL PURPOSE
Carbide

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Radius Size	Order #/EDP AITiN Coated	Order #/EDP Uncoated	Description
3/8	3/8	0.875	2.500	0.010	102675	101188	GWR20375-01
3/8	3/8	0.875	2.500	0.020	102676	101189	GWR20375-02
3/8	3/8	0.875	2.500	0.030	102677	101190	GWR20375-03
3/8	3/8	0.875	2.500	0.060	102678	101191	GWR20375-06
3/8	3/8	0.875	2.500	0.090	102680	101192	GWR20375-09
3/8	3/8	0.875	2.500	0.125	102681	101193	GWR20375-125
1/2	1/2	1.000	3.000	0.010	102682	101197	GWR20500-01
1/2	1/2	1.000	3.000	0.020	102683	101201	GWR20500-02
1/2	1/2	1.000	3.000	0.030	102685	101202	GWR20500-03
1/2	1/2	1.000	3.000	0.060	102686	101203	GWR20500-06
1/2	1/2	1.000	3.000	0.090	102687	101204	GWR20500-09
1/2	1/2	1.000	3.000	0.125	102688	101205	GWR20500-125
1/2	1/2	1.000	3.000	0.187	102689	101206	GWR20500-187
5/8	5/8	1.250	3.500	0.010	102692	101207	GWR20625-01
5/8	5/8	1.250	3.500	0.020	102693	101208	GWR20625-02
5/8	5/8	1.250	3.500	0.030	102694	101209	GWR20625-03
5/8	5/8	1.250	3.500	0.060	102695	101210	GWR20625-06
5/8	5/8	1.250	3.500	0.090	102696	101211	GWR20625-09
5/8	5/8	1.250	3.500	0.125	102697	101212	GWR20625-125
5/8	5/8	1.250	3.500	0.187	102698	101213	GWR20625-187
3/4	3/4	1.500	4.000	0.010	102699	101214	GWR20750-01
3/4	3/4	1.500	4.000	0.020	102700	101215	GWR20750-02
3/4	3/4	1.500	4.000	0.030	102701	101216	GWR20750-03
3/4	3/4	1.500	4.000	0.060	102702	101217	GWR20750-06
3/4	3/4	1.500	4.000	0.090	102703	101218	GWR20750-09
3/4	3/4	1.500	4.000	0.125	102704	101219	GWR20750-125
3/4	3/4	1.500	4.000	0.187	102707	101220	GWR20750-187
1	1	1.500	4.000	0.010	102709	101222	GWR21000-01
1	1	1.500	4.000	0.020	102710	101223	GWR21000-02
1	1	1.500	4.000	0.030	102713	102711	GWR21000-03
1	1	1.500	4.000	0.060	102714	101224	GWR21000-06
1	1	1.500	4.000	0.090	102715	101225	GWR21000-09
1	1	1.500	4.000	0.125	102717	101226	GWR21000-125
1	1	1.500	4.000	0.187	102718	101227	GWR21000-187

G. W. Schultz Tool offers any LOC and OL with any series tool as a modified standard. All products are also available with special coatings to meet your specific requirements.

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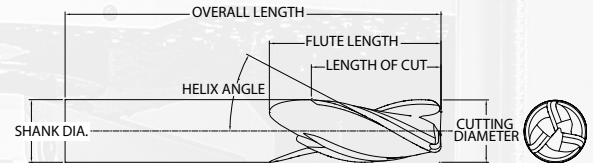
GWR 3Series

30° Helix-Radius



The GWR 3 SERIES gives exceptional performance in tool steels including A2, D2, and 4130.

- 3 Flute
- Versatile to handle all non-ferrous applications.
- Available AlTiN coated (other coatings available upon request)
- Allows for faster feed rates without chip packing and can be used for plunge, ramp or profile milling.
- Radius improves corner strength
- Special radius available upon request
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Radius Size	Order #/EDP AITiN Coated	Order #/EDP Uncoated	Description
3/32	1/8	0.313	1.500	0.010	113398	113397	GWR30093-01
3/32	1/8	0.313	1.500	0.020	113400	113399	GWR30093-02
3/32	1/8	0.313	1.500	0.030	113401	101228	GWR30093-03
1/8	1/8	0.500	1.500	0.010	113403	113402	GWR30125-01
1/8	1/8	0.500	1.500	0.020	113404	102641	GWR30125-02
1/8	1/8	0.500	1.500	0.030	113405	107092	GWR30125-03
5/32	3/16	0.500	2.000	0.010	113407	113406	GWR30156-01
5/32	3/16	0.500	2.000	0.020	113409	113408	GWR30156-02
5/32	3/16	0.500	2.000	0.030	113411	113410	GWR30156-03
5/32	3/16	0.500	2.000	0.060	113413	113412	GWR30156-06
3/16	3/16	0.625	2.000	0.010	113414	105288	GWR30187-01
3/16	3/16	0.625	2.000	0.020	113416	113415	GWR30187-02
3/16	3/16	0.625	2.000	0.030	113417	101229	GWR30187-03
3/16	3/16	0.625	2.000	0.060	113418	114742	GWR30187-06
7/32	1/4	0.625	2.500	0.010	113420	113419	GWR30218-01
7/32	1/4	0.625	2.500	0.020	113422	113421	GWR30218-02
7/32	1/4	0.625	2.500	0.030	113424	113423	GWR30218-03
7/32	1/4	0.625	2.500	0.060	113426	113425	GWR30218-06
7/32	1/4	0.625	2.500	0.090	113428	113427	GWR30218-09
1/4	1/4	0.750	2.500	0.010	113429	101231	GWR30250-01
1/4	1/4	0.750	2.500	0.020	113431	113430	GWR30250-02
1/4	1/4	0.750	2.500	0.030	113432	107093	GWR30250-03
1/4	1/4	0.750	2.500	0.060	113433	107154	GWR30250-06
1/4	1/4	0.750	2.500	0.090	113434	107327	GWR30250-09
9/32	5/16	0.750	2.500	0.010	113436	113435	GWR30281-01
9/32	5/16	0.750	2.500	0.020	113438	113437	GWR30281-02
9/32	5/16	0.750	2.500	0.030	113440	113439	GWR30281-03
9/32	5/16	0.750	2.500	0.060	113442	113441	GWR30281-06
9/32	5/16	0.750	2.500	0.090	113444	113443	GWR30281-09
9/32	5/16	0.750	2.500	0.125	113446	113445	GWR30281-125
5/16	5/16	0.813	2.500	0.010	105109	113447	GWR30312-01
5/16	5/16	0.813	2.500	0.020	113450	113449	GWR30312-02
5/16	5/16	0.813	2.500	0.030	113451	101233	GWR30312-03
5/16	5/16	0.813	2.500	0.060	113452	114743	GWR30312-06
5/16	5/16	0.813	2.500	0.090	113455	113454	GWR30312-09
5/16	5/16	0.813	2.500	0.125	113457	113456	GWR30312-125

GWR 3Series

30° Helix-Radius

GENERAL PURPOSE
Carbide

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Radius Size	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description
3/8	3/8	0.875	2.500	0.010	113458	107088	GWR30375-01
3/8	3/8	0.875	2.500	0.020	113459	105833	GWR30375-02
3/8	3/8	0.875	2.500	0.030	111719	104721	GWR30375-03
3/8	3/8	0.875	2.500	0.060	113460	107089	GWR30375-06
3/8	3/8	0.875	2.500	0.090	113461	107939	GWR30375-09
3/8	3/8	0.875	2.500	0.125	113462	105242	GWR30375-125
1/2	1/2	1.000	3.000	0.010	113464	113463	GWR30500-01
1/2	1/2	1.000	3.000	0.020	106574	105817	GWR30500-02
1/2	1/2	1.000	3.000	0.030	101236	101234	GWR30500-03
1/2	1/2	1.000	3.000	0.060	113465	107097	GWR30500-06
1/2	1/2	1.000	3.000	0.090	113466	111376	GWR30500-09
1/2	1/2	1.000	3.000	0.125	113467	106939	GWR30500-125
1/2	1/2	1.000	3.000	0.187	113469	113468	GWR30500-187
5/8	5/8	1.250	3.500	0.010	113471	113470	GWR30625-01
5/8	5/8	1.250	3.500	0.020	113473	113472	GWR30625-02
5/8	5/8	1.250	3.500	0.030	101239	101238	GWR30625-03
5/8	5/8	1.250	3.500	0.060	113474	107098	GWR30625-06
5/8	5/8	1.250	3.500	0.090	113476	113475	GWR30625-09
5/8	5/8	1.250	3.500	0.125	113478	113477	GWR30625-125
5/8	5/8	1.250	3.500	0.187	113480	113479	GWR30625-187
3/4	3/4	1.500	4.000	0.010	113482	113481	GWR30750-01
3/4	3/4	1.500	4.000	0.020	113484	113483	GWR30750-02
3/4	3/4	1.500	4.000	0.030	101242	107094	GWR30750-03
3/4	3/4	1.500	4.000	0.060	113485	107029	GWR30750-06
3/4	3/4	1.500	4.000	0.090	113486	108146	GWR30750-09
3/4	3/4	1.500	4.000	0.125	113488	106940	GWR30750-125
3/4	3/4	1.500	4.000	0.187	113490	113489	GWR30750-187
1	1	1.500	4.000	0.010	113492	113491	GWR31000-01
1	1	1.500	4.000	0.020	113494	113493	GWR31000-02
1	1	1.500	4.000	0.030	113495	107095	GWR31000-03
1	1	1.500	4.000	0.060	113496	107099	GWR31000-06
1	1	1.500	4.000	0.090	113497	108147	GWR31000-09
1	1	1.500	4.000	0.125	113499	113498	GWR31000-125
1	1	1.500	4.000	0.187	113501	113500	GWR31000-187

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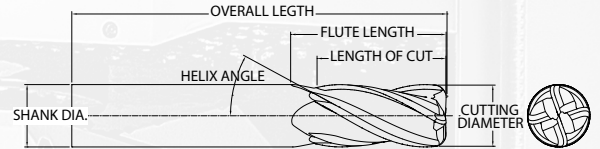


GWR 4Series

30° Helix-Radius

The GWR 4 SERIES provides outstanding performance in cast iron and most ferrous applications.

- 4 Flute
- Excellent performance in magnesiums and hard plastics
- Available AlTiN coated (other coatings available upon request)
- Allows for faster feed rates without chip packing and can be used for plunge, ramp or profile milling.
- Radius improves corner strength
- Special radius available upon request
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Radius Size	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description
1/32	1/8	0.313	1.500	0.010	102719	101247	GWR40093-01
1/32	1/8	0.313	1.500	0.020	102721	101248	GWR40093-02
1/32	1/8	0.313	1.500	0.030	102722	101249	GWR40093-03
1/8	1/8	0.500	1.500	0.010	102724	102723	GWR40125-01
1/8	1/8	0.500	1.500	0.020	102740	101252	GWR40125-02
1/8	1/8	0.500	1.500	0.030	102725	101254	GWR40125-03
5/32	3/16	0.500	2.000	0.010	102726	101258	GWR40156-01
5/32	3/16	0.500	2.000	0.020	102727	101259	GWR40156-02
5/32	3/16	0.500	2.000	0.030	102728	101260	GWR40156-03
5/32	3/16	0.500	2.000	0.060	102729	101261	GWR40156-06
3/16	3/16	0.625	2.000	0.010	102730	101263	GWR40187-01
3/16	3/16	0.625	2.000	0.020	102731	101264	GWR40187-02
3/16	3/16	0.625	2.000	0.030	102732	101265	GWR40187-03
3/16	3/16	0.625	2.000	0.060	102733	101267	GWR40187-06
7/32	1/4	0.625	2.500	0.010	102734	101268	GWR40218-01
7/32	1/4	0.625	2.500	0.020	102735	101269	GWR40218-02
7/32	1/4	0.625	2.500	0.030	102736	101270	GWR40218-03
7/32	1/4	0.625	2.500	0.060	102737	101271	GWR40218-06
7/32	1/4	0.625	2.500	0.090	102738	101272	GWR40218-09
1/4	1/4	0.750	2.500	0.010	102739	101274	GWR40250-01
1/4	1/4	0.750	2.500	0.020	102741	101276	GWR40250-02
1/4	1/4	0.750	2.500	0.030	102742	101277	GWR40250-03
1/4	1/4	0.750	2.500	0.060	102743	101278	GWR40250-06
1/4	1/4	0.750	2.500	0.090	102744	101280	GWR40250-09
9/32	5/16	0.750	2.500	0.010	102745	101281	GWR40281-01
9/32	5/16	0.750	2.500	0.020	102746	101282	GWR40281-02
9/32	5/16	0.750	2.500	0.030	102747	101283	GWR40281-03
9/32	5/16	0.750	2.500	0.060	102748	101284	GWR40281-06
9/32	5/16	0.750	2.500	0.090	102749	101285	GWR40281-09
9/32	5/16	0.750	2.500	0.125	102750	101286	GWR40281-125
5/16	5/16	0.813	2.500	0.010	102751	101287	GWR40312-01
5/16	5/16	0.813	2.500	0.020	102752	101288	GWR40312-02
5/16	5/16	0.813	2.500	0.030	102753	101289	GWR40312-03
5/16	5/16	0.813	2.500	0.060	102754	101290	GWR40312-06
5/16	5/16	0.813	2.500	0.090	102756	101291	GWR40312-09
5/16	5/16	0.813	2.500	0.125	102757	101292	GWR40312-125

GWR 4Series

30° Helix-Radius

GENERAL PURPOSE
Carbide

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Radius Size	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description
3/8	3/8	0.875	2.500	0.010	102758	101294	GWR40375-01
3/8	3/8	0.875	2.500	0.020	102759	101295	GWR40375-02
3/8	3/8	0.875	2.500	0.030	101298	101296	GWR40375-03
3/8	3/8	0.875	2.500	0.060	102760	101300	GWR40375-06
3/8	3/8	0.875	2.500	0.090	102761	101301	GWR40375-09
3/8	3/8	0.875	2.500	0.125	102762	101302	GWR40375-125
1/2	1/2	1.000	3.000	0.010	102763	101306	GWR40500-01
1/2	1/2	1.000	3.000	0.020	102764	101307	GWR40500-02
1/2	1/2	1.000	3.000	0.030	102765	101308	GWR40500-03
1/2	1/2	1.000	3.000	0.060	102766	101309	GWR40500-06
1/2	1/2	1.000	3.000	0.090	102767	101311	GWR40500-09
1/2	1/2	1.000	3.000	0.125	101315	101314	GWR40500-125
1/2	1/2	1.000	3.000	0.187	102769	101316	GWR40500-187
5/8	5/8	1.250	3.500	0.010	102775	101318	GWR40625-01
5/8	5/8	1.250	3.500	0.020	102776	101319	GWR40625-02
5/8	5/8	1.250	3.500	0.030	102777	101320	GWR40625-03
5/8	5/8	1.250	3.500	0.060	102778	101322	GWR40625-06
5/8	5/8	1.250	3.500	0.090	102779	101323	GWR40625-09
5/8	5/8	1.250	3.500	0.125	102780	101324	GWR40625-125
5/8	5/8	1.250	3.500	0.187	113502	101325	GWR40625-187
3/4	3/4	1.500	4.000	0.010	101329	101328	GWR40750-01
3/4	3/4	1.500	4.000	0.020	102782	101330	GWR40750-02
3/4	3/4	1.500	4.000	0.030	102783	101331	GWR40750-03
3/4	3/4	1.500	4.000	0.060	102784	101333	GWR40750-06
3/4	3/4	1.500	4.000	0.090	102785	101335	GWR40750-09
3/4	3/4	1.500	4.000	0.125	102786	101336	GWR40750-125
3/4	3/4	1.500	4.000	0.187	102787	101337	GWR40750-187
1	1	1.500	4.000	0.010	102788	101338	GWR41000-01
1	1	1.500	4.000	0.020	102789	101339	GWR41000-02
1	1	1.500	4.000	0.030	102790	101340	GWR41000-03
1	1	1.500	4.000	0.060	102791	101341	GWR41000-06
1	1	1.500	4.000	0.090	102792	101342	GWR41000-09
1	1	1.500	4.000	0.125	101346	101344	GWR41000-125
1	1	1.500	4.000	0.187	102793	101348	GWR41000-187

G. W. Schultz Tool offers any LOC and OL with any series tool as a modified standard. All products are also available with special coatings to meet your specific requirements.

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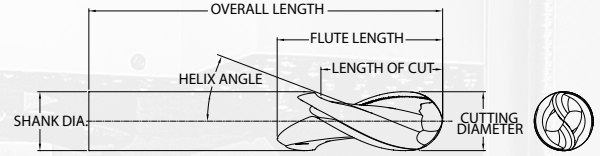
BN 2Series

30° Helix-Ballnose



The BN 2 SERIES is primarily for machining non-ferrous alloys.

- 2 Flutes
- Allows for faster feed rates without chip packing and can be used for plunge, ramp or profile milling.
- LONG (GWL) & EXTRA LONG (GWXL) end mills are standards.
- Available AlTiN coated (other coatings available upon request)
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description	
Stub	1/32	1/8	0.078	1.500	108770	103744	BNS20032	
	1/16	1/8	0.125	1.500	108771	103749	BNS20062	
	3/32	1/8	0.188	1.500	108772	103751	BNS20093	
	1/8	1/8	0.25	1.500	108773	103759	BNS20125	
	5/32	3/16	0.313	2.000	108774	103763	BNS20156	
	3/16	3/16	0.375	2.000	108775	103765	BNS20187	
	7/32	1/4	0.438	2.000	113503	103790	BNS20218	
	1/4	1/4	0.5	2.000	108777	103789	BNS20250	
	9/32	5/16	0.5	2.000	113503	103790	BNS20281	
	5/16	5/16	0.5	2.000	108779	103793	BNS20312	
	3/8	3/8	0.625	2.000	113504	103795	BNS20375	
	1/2	1/2	0.625	2.500	108780	103796	BNS20500	
	5/8	5/8	0.75	3.000	108781	103799	BNS20625	
	3/4	3/4	0.875	3.000	108782	103800	BNS20750	
	1	1	1.000	4.000	108783	103802	BNS21000	
Standard	1/32	1/8	0.188	1.500	103015	100218	BN20032	
	1/16	1/8	0.188	1.500	103306	100219	BN20062	
	3/32	1/8	0.313	1.500	103308	103307	BN20093	
	1/8	1/8	0.500	1.500	100222	100221	BN20125	
	5/32	3/16	0.500	2.000	103310	100224	BN20156	
	3/16	3/16	0.625	2.000	103311	100225	BN20187	
	7/32	1/4	0.625	2.500	103313	100226	BN20218	
	1/4	1/4	0.750	2.500	103314	100228	BN20250	
	9/32	5/16	0.750	2.500	103316	100232	BN20281	
	5/16	5/16	0.813	2.500	100234	100233	BN20312	
	3/8	3/8	0.875	2.500	100236	100235	BN20375	
	1/2	1/2	1.000	3.000	103549	100239	BN20500	
	5/8	5/8	1.250	3.500	103327	100241	BN20625	
	3/4	3/4	1.500	4.000	103333	100242	BN20750	
	1	1	1.500	4.000	103334	100244	BN21000	
Long	1/8	1/8	0.750	2.000	103335	100354	BNL20125	
	5/32	3/16	0.750	2.000	103361	103336	BNL20156	
	3/16	3/16	0.750	2.000	103364	103338	BNL20187	
	7/32	1/4	1.000	3.000	103365	103340	BNL20218	
	1/4	1/4	1.125	3.000	103367	103342	BNL20250	
	9/32	5/16	1.125	3.000	103369	103344	BNL20281	
	5/16	5/16	1.125	3.000	103371	100356	BNL20312	
	3/8	3/8	1.125	3.000	103373	103347	BNL20375	
	1/2	1/2	2.000	4.000	103375	103350	BNL20500	
	5/8	5/8	2.250	5.000	103379	103353	BNL20625	
	3/4	3/4	2.250	5.000	103383	103357	BNL20750	
	1	1	2.250	5.000	103385	103359	BNL21000	
	Extra Long	1/8	1/8	1.125	3.000	103392	103387	BNXL20125
		5/32	3/16	1.125	3.000	103394	103389	BNXL20156
		3/16	3/16	1.125	3.000	103398	103395	BNXL20187
7/32		1/4	1.125	4.000	103401	103399	BNXL20218	
1/4		1/4	1.500	4.000	103405	103404	BNXL20250	
9/32		5/16	1.500	4.000	103410	103407	BNXL20281	
5/16		5/16	1.625	4.000	103412	103411	BNXL20312	
3/8		3/8	1.750	4.000	103417	103414	BNXL20375	
1/2		1/2	3.000	6.000	103426	103422	BNXL20500	
5/8		5/8	3.000	6.000	103563	103431	BNXL20625	
3/4		3/4	3.000	6.000	103439	103438	BNXL20750	
1		1	3.000	6.000	103442	103441	BNXL21000	

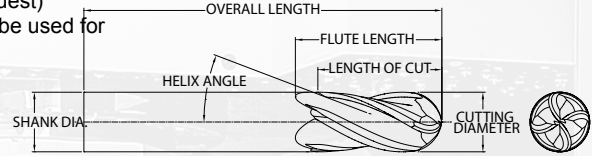
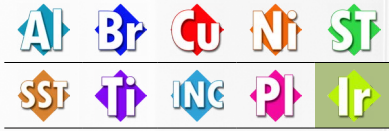


BN 4Series

30° Helix-Ballnose

The BN 4 SERIES provides outstanding performance in cast iron and most ferrous applications.

- 4 Flute
- Excellent performance in magnesiums and hard plastics
- LONG (GWL) & EXTRA LONG (GWXL) end mills are standards.
- Available AlTiN coated (other coatings available upon request)
- Allows for faster feed rates without chip packing and can be used for plunge, ramp or profile milling.
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AITIN Coated	Order #/EDP Uncoated	Description
Stub	1/32	1/8	0.078	1.500	105142	103747	BNS40032
	1/16	1/8	0.125	1.500	108786	103750	BNS40062
	3/32	1/8	0.188	1.500	108788	100378	BNS40093
	1/8	1/8	0.250	1.500	108790	103760	BNS40125
	5/32	3/16	0.313	2.000	108791	103761	BNS40156
	3/16	3/16	0.375	2.000	108793	103763	BNS40187
	7/32	1/4	0.438	2.000	108794	103768	BNS40218
	1/4	1/4	0.500	2.000	106912	103788	BNS40250
	9/32	5/16	0.500	2.000	108796	103791	BNS40281
	5/16	5/16	0.500	2.000	108798	103792	BNS40312
	3/8	3/8	0.625	2.000	108800	103794	BNS40375
	1/2	1/2	0.625	2.500	108802	103797	BNS40500
	5/8	5/8	0.750	3.000	108804	103798	BNS40625
3/4	3/4	0.875	3.000	100379	103801	BNS40750	
1	1	1.000	4.000	108807	103803	BNS41000	
Standard	1/32	1/8	0.188	1.500	100263	100258	BN40032
	1/16	1/8	0.188	1.500	100268	100267	BN40062
	3/32	1/8	0.313	1.500	100272	100271	BN40093
	1/8	1/8	0.500	1.500	100277	100276	BN40125
	5/32	3/16	0.500	2.000	100280	100279	BN40156
	3/16	3/16	0.625	2.000	100284	100282	BN40187
	7/32	1/4	0.625	2.000	103312	100286	BN40218
	1/4	1/4	0.750	2.000	100295	100288	BN40250
	9/32	5/16	0.750	2.000	100298	100297	BN40281
	5/16	5/16	0.813	2.000	103318	100299	BN40312
	3/8	3/8	0.875	2.000	100309	100302	BN40375
	1/2	1/2	1.000	2.500	100316	100311	BN40500
	5/8	5/8	1.250	3.000	100318	112419	BN40625
3/4	3/4	1.500	3.000	100321	100319	BN40750	
1	1	1.500	4.000	100326	100322	BN41000	
Long	1/8	1/8	0.750	2.000	103550	102534	BNL40125
	5/32	3/16	0.750	2.000	103362	103337	BNL40156
	3/16	3/16	0.750	2.000	103363	103339	BNL40187
	7/32	1/4	1.000	3.000	103366	103341	BNL40218
	1/4	1/4	1.125	3.000	103368	100360	BNL40250
	9/32	5/16	1.125	3.000	103370	103345	BNL40281
	5/16	5/16	1.125	3.000	103372	100364	BNL40312
	3/8	3/8	1.125	3.000	100370	100366	BNL40375
	1/2	1/2	2.000	4.000	103376	100371	BNL40500
	5/8	5/8	2.250	5.000	103380	103354	BNL40625
	3/4	3/4	2.250	5.000	103384	103358	BNL40750
	1	1	2.250	5.000	103386	103360	BNL41000
	Extra Long	1/8	1/8	1.125	3.000	103393	103388
5/32		3/16	1.125	3.000	103562	113506	BNXL40156
3/16		3/16	1.125	3.000	103397	103396	BNXL40187
7/32		1/4	1.125	4.000	103402	103400	BNXL40218
1/4		1/4	1.500	4.000	103406	100385	BNXL40250
9/32		5/16	1.500	4.000	103409	103408	BNXL40281
5/16		5/16	1.625	4.000	103413	100389	BNXL40312
3/8		3/8	1.750	4.000	103416	103415	BNXL40375
1/2		1/2	3.000	6.000	103425	103423	BNXL40500
5/8		5/8	3.000	6.000	103433	103432	BNXL40625
3/4		3/4	3.000	6.000	103440	113507	BNXL40750
1		1	3.000	6.000	103443	100406	BNXL41000










G. W. Schultz Tool offers any LOC and OL with any series tool as a modified standard. All products are also available with special coatings to meet your specific requirements.

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Steel Cutting

Roughing

MATERIAL	GS	GSC	SRF	INC
 Aluminum				
 Brass				
 Copper Alloys				
 Iron, Hard Cast Iron, Soft Cast Iron, Malleable	BETTER	BETTER	BETTER	
	BETTER	BETTER	GOOD	
	BETTER	BETTER	BETTER	
 Nickel Base Alloys	BETTER	GOOD	BETTER	
 Steel, Hardened up to RC 35 Steel, Hardened up to RC 50 Steel, Hardened up to RC 60 Steel, Low Carbon Steel, Tool	BETTER	BETTER	BETTER	
	GOOD	GOOD	BETTER	
	BETTER	BETTER	BETTER	
	GOOD	GOOD	BETTER	
 Stainless Steel, Free Machining Stainless Steel, Work Hardening	BETTER	BETTER	BEST	
	BETTER	BETTER	BEST	
 Titanium Alloys				
 Inconel			BETTER	BEST
 Plastics				

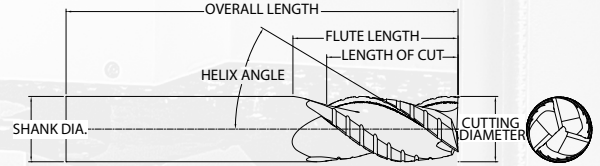
GS 3Series

38° Helix – Rougher Finisher



The GS 3 SERIES is an excellent Rougher Finisher with staggered chip breakers.

- 3 Flute
- Exceptional performance for challenging applications
- The rougher-finisher design will reduce the need for finishing passes.
- Available AlTiN coated (other coatings available upon request)
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description
Standard	1/8	1/8	0.500	1.500	103017	100518	GS30125
	3/16	3/16	0.625	2.000	100523	100521	GS30187
	1/4	1/4	0.750	2.500	103021	100524	GS30250
	5/16	5/16	0.812	2.500	103023	100525	GS30312
	3/8	3/8	0.875	2.500	103025	100526	GS30375
	1/2	1/2	1.000	3.000	100528	100527	GS30500
	5/8	5/8	1.250	3.500	103248	100529	GS30625
	3/4	3/4	1.500	4.000	103251	103249	GS30750
Long	1	1	1.500	4.000	103253	100530	GS31000
	1/8	1/8	0.750	2.000	103254	100641	GSL30125
	3/16	3/16	0.750	2.000	103257	100642	GSL30187
	1/4	1/4	1.125	3.000	103263	100643	GSL30250
	5/16	5/16	1.125	3.000	103266	100644	GSL30312
	3/8	3/8	1.125	3.000	103269	100645	GSL30375
	1/2	1/2	2.000	4.000	103289	100646	GSL30500
	5/8	5/8	2.250	5.000	103292	100647	GSL30625
Extra Long	3/4	3/4	2.250	5.000	103299	103296	GSL30750
	1	1	2.250	5.000	103303	100648	GSL31000
	1/8	1/8	1.125	3.000	109044	109043	GSXL30125
	3/16	3/16	1.125	3.000	109046	109045	GSXL30187
	1/4	1/4	1.500	4.000	109048	109047	GSXL30250
	5/16	5/16	1.625	4.000	109050	109049	GSXL30312
	3/8	3/8	1.750	4.000	109052	109051	GSXL30375
	1/2	1/2	3.000	6.000	109054	109053	GSXL30500
	5/8	5/8	3.000	6.000	109056	109055	GSXL30625
	3/4	3/4	3.000	6.000	109058	109057	GSXL30750
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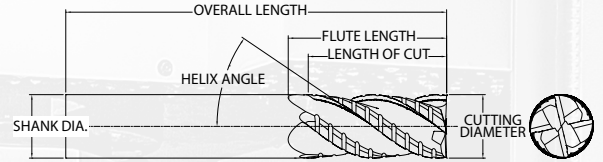
GS 4Series

38° Helix - Rougher Finisher



The GS 4 SERIES is a solid carbide hogger type end mill with exceptional performance.

- 4 Flute
- Exceptional performance for challenging applications
- The rougher-finisher design will reduce the need for finishing passes.
- Available AlTiN coated (other coatings available upon request)
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description
Standard	1/8	1/8	0.500	1.500	100532	100531	GS40125
	3/16	3/16	0.625	2.000	100542	100540	GS40187
	1/4	1/4	0.750	2.500	100551	100543	GS40250
	5/16	5/16	0.812	2.500	100553	100552	GS40312
	3/8	3/8	0.875	2.500	100557	100554	GS40375
	1/2	1/2	1.000	3.000	100565	100559	GS40500
	5/8	5/8	1.250	3.500	100567	100566	GS40625
	3/4	3/4	1.500	4.000	100571	100568	GS40750
1	1	1.500	4.000	100573	100572	GS41000	
Medium Pitch	3/8	3/8	0.875	2.500	109011	109010	GSCM40375
	1/2	1/2	1.000	3.000	109012	106769	GSCM40500
	5/8	5/8	1.250	3.500	109014	109013	GSCM40625
	3/4	3/4	1.500	4.000	103866	104216	GSCM40750
	1	1	1.500	4.000	109016	109015	GSCM41000
Cobb	3/8	3/8	0.875	2.500	100599	100594	GSC40375
	1/2	1/2	1.000	3.000	100603	100600	GSC40500
	5/8	5/8	1.250	3.500	100605	100604	GSC40625
	3/4	3/4	1.500	4.000	100609	100606	GSC40750
	1	1	1.500	4.000	100612	100610	GSC41000
Course Cobb	3/8	3/8	0.875	2.500	108995	108994	GSCC40375
	1/2	1/2	1.000	3.000	111086	104033	GSCC40500
	5/8	5/8	1.250	3.500	108998	108997	GSCC40625
	3/4	3/4	1.500	4.000	104342	104343	GSCC40750
	1	1	1.500	4.000	109000	108999	GSCC41000
Medium Cobb Long	3/8	3/8	1.125	3.000	109018	109017	GSCML40375
	1/2	1/2	2.000	4.000	109019	104393	GSCML40500
	5/8	5/8	2.250	5.000	104037	104032	GSCML40625
	3/4	3/4	2.250	5.000	109021	109020	GSCML40750
	1	1	2.250	5.000	109023	109022	GSCML41000
Standard Long	3/16	3/16	0.750	2.000	103256	100650	GSL40187
	1/4	1/4	1.125	3.000	103264	100651	GSL40250
	5/16	5/16	1.125	3.000	103267	100653	GSL40312
	3/8	3/8	1.125	3.000	103270	100654	GSL40375
	1/2	1/2	2.000	4.000	100661	100657	GSL40500
	5/8	5/8	2.250	5.000	103293	100663	GSL40625
	3/4	3/4	2.250	5.000	103300	100664	GSL40750
	1	1	2.250	5.000	103304	100665	GSL41000
Course Cobb Long	3/8	3/8	1.125	3.000	109002	109001	GSCCL40375
	1/2	1/2	2.000	4.000	109003	104010	GSCCL40500
	5/8	5/8	2.250	5.000	109005	109004	GSCCL40625
	3/4	3/4	2.250	5.000	109007	109006	GSCCL40750
	1	1	2.250	5.000	109009	109008	GSCCL41000
Standard Extra Long	3/16	3/16	1.125	3.000	109062	109061	GSXL40187
	1/4	1/4	1.500	4.000	109063	105236	GSXL40250
	5/16	5/16	1.625	4.000	109065	109064	GSXL40312
	3/8	3/8	1.750	4.000	109067	109066	GSXL40375
	1/2	1/2	3.000	6.000	109069	109068	GSXL40500
	5/8	5/8	3.000	6.000	109071	109070	GSXL40625
	3/4	3/4	3.000	6.000	109072	100683	GSXL40750
	1	1	3.000	6.000	109073	100685	GSXL41000

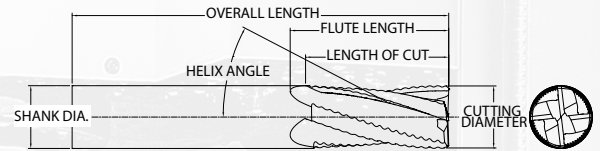
GSC 4Series

20° Helix-Hogmill



The GSC 4 SERIES is a carbide form relief hogger.

- 4 Flute
- An excellent choice for steels and stainless steels where a roughing operation may be used to reduce cycle times.
- Available in fine, medium, and coarse pitch for all of your challenging machining applications.
- Available AlTiN coated (other coatings available upon request)
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description
Standard Length	3/8	3/8	0.875	2.500	100599	100594	GSC40375
	1/2	1/2	1.000	3.000	100603	100600	GSC40500
	5/8	5/8	1.250	3.500	100605	100604	GSC40625
	3/4	3/4	1.500	4.000	100609	100606	GSC40750
Fine Pitch	1	1	1.500	4.000	100612	100610	GSC41000
	3/8	3/8	1.125	3.000	100622	100620	GSCL40375
	1/2	1/2	2.000	4.000	100627	100623	GSCL40500
	5/8	5/8	2.250	5.000	100629	100628	GSCL40625
Long Length Fine Pitch	3/4	3/4	2.250	5.000	100630	103129	GSCL40750
	1	1	2.250	5.000	100632	100631	GSCL41000
	3/8	3/8	0.875	2.500	109011	109010	GSCM40375
	1/2	1/2	1.000	3.000	109012	106769	GSCM40500
Medium Pitch Cobb	5/8	5/8	1.250	3.500	109014	109013	GSCM40625
	3/4	3/4	1.500	4.000	103866	104216	GSCM40750
	1	1	1.500	4.000	109016	109015	GSCM41000
	3/8	3/8	1.125	3.000	109018	109017	GSCML40375
Medium Long Pitch	1/2	1/2	2.000	4.000	109019	104393	GSCML40500
	5/8	5/8	2.250	5.000	104037	104032	GSCML40625
	3/4	3/4	2.250	5.000	109021	109020	GSCML40750
	1	1	2.250	5.000	109023	109022	GSCML41000
Standard Course Cobb	3/8	3/8	0.875	2.500	108995	108994	GSCC40375
	1/2	1/2	1.000	3.000	111086	104033	GSCC40500
	5/8	5/8	1.250	3.500	108998	108997	GSCC40625
	3/4	3/4	1.500	4.000	104342	104343	GSCC40750
Long Course Cobb	1	1	1.500	4.000	109000	108999	GSCC41000
	3/8	3/8	1.125	3.000	109002	109001	GSCCL40375
	1/2	1/2	2.000	4.000	109003	104010	GSCCL40500
	5/8	5/8	2.250	5.000	109005	109004	GSCCL40625
Cobb	3/4	3/4	2.250	5.000	109007	109006	GSCCL40750
	1	1	2.250	5.000	109009	109008	GSCCL41000

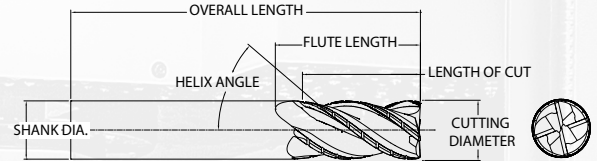
SRF 4Series

Variable Helix-Roughing



The SRF 4 SERIES roughing end mill is specifically designed for tough steel cutting applications that require an aggressive, durable tool.

- 4 Flute
- Variable Helix reduces chatter.
- Cutting metals up to 60Rc
- AlTiN coating is standard for increasing performance and extending tool life.
- Other coatings available upon request.
- Advance geometries allow for faster feed rates and longer tool life.
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AlTiN Coated	Description
Stub	1/8	1/8	0.250	1.500	107988	SRFS40125
	3/16	3/16	0.313	2.000	111252	SRFS40187
	1/4	1/4	0.500	2.000	107794	SRFS40250
	5/16	5/16	0.500	2.000	107990	SRFS40312
	3/8	3/8	0.625	2.000	111253	SRFS40375
	1/2	1/2	0.625	2.500	107904	SRFS40500
	5/8	5/8	0.750	3.000	107992	SRFS40625
	3/4	3/4	0.875	3.000	107919	SRFS40750
	1	1	1.000	4.000	107997	SRFS41000
Standard	1/8	1/8	0.500	1.500	111235	SRF40125
	3/16	3/16	0.625	2.000	111236	SRF40187
	1/4	1/4	0.750	2.500	111237	SRF40250
	5/16	5/16	0.812	2.500	111238	SRF40312
	3/8	3/8	0.875	2.500	111239	SRF40375
	1/2	1/2	1.000	3.000	107905	SRF40500
	5/8	5/8	1.250	3.500	111277	SRF40625
	3/4	3/4	1.500	4.000	111242	SRF40750
	1	1	1.500	4.000	111243	SRF41000
Long	1/4	1/4	1.125	3.000	111244	SRFL40250
	5/16	5/16	1.125	3.000	111245	SRFL40312
	3/8	3/8	1.125	3.000	111246	SRFL40375
	1/2	1/2	2.000	4.000	111247	SRFL40500
	5/8	5/8	2.250	5.000	111248	SRFL40625
	3/4	3/4	2.250	5.000	111249	SRFL40750
	1	1	2.250	5.000	111250	SRFL41000

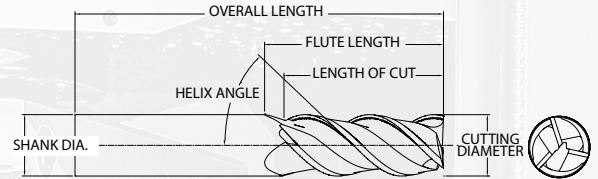
INC 3Series

45° Helix



The INC 3 SERIES is designed specifically for machining inconel.

- 3 Flute
- Offers exceptional performance in high nickel alloys.
- Available in 5 and 6 flute as a modified standard.
- AlTiN coating is standard for increasing performance and extending tool life.
- Other coatings available upon request.
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut













	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP nA Co Coated	Description
Stub	1/8	1/8	0.250	1.500	113330	INCS30125-015
	3/16	3/16	0.312	2.000	113331	INCS30187-015
	1/4	1/4	0.500	2.500	113332	INCS30250-02
	5/16	5/16	0.500	2.500	113333	INCS30312-02
	3/8	3/8	0.625	2.500	113334	INCS30375-02
	1/2	1/2	0.625	3.000	113335	INCS30500-03
	5/8	5/8	0.750	3.500	113336	INCS30625-03
	3/4	3/4	0.875	4.000	113337	INCS30750-03
	1	1	1.000	4.000	113338	INCS31000-03
Standard	1/8	1/8	0.500	1.500	113339	INC30125-015
	3/16	3/16	0.625	2.000	113340	INC30187-015
	1/4	1/4	0.750	2.500	113341	INC30250-02
	5/16	5/16	0.813	3.000	113342	INC30312-02
	3/8	3/8	1.000	3.000	113343	INC30375-02
	1/2	1/2	1.250	3.000	113344	INC30500-03
	5/8	5/8	1.625	3.500	113345	INC30625-03
	3/4	3/4	1.625	4.000	113346	INC30750-03
	1	1	2.000	4.000	113347	INC31000-03

Steel Cutting

High Performance



MATERIAL HGW SGW BGW BND SS MS MSR LS LSC LSBN LSR

MATERIAL	HGW	SGW	BGW	BND	SS	MS	MSR	LS	LSC	LSBN	LSR
 Aluminum											
 Brass											
 Copper Alloys											
 Iron, Hard Cast	GOOD	GOOD	GOOD		GOOD	GOOD	GOOD	BETTER	BETTER	GOOD	BEST
	GOOD	GOOD	GOOD		GOOD	GOOD	GOOD	BEST	BEST	GOOD	BEST
	GOOD	GOOD	GOOD		GOOD	GOOD	GOOD	BEST	BEST	GOOD	BEST
 Nickel Base Alloys	BETTER	BETTER	BETTER		GOOD	GOOD	GOOD	BEST	BEST	GOOD	BEST
	BETTER	BETTER	BETTER			GOOD	GOOD	BEST	BEST	BETTER	BEST
 Steel, Hardened up to RC 35	BETTER	BETTER	BETTER		BETTER	GOOD	GOOD	BEST	BEST	BETTER	BEST
	BETTER	BETTER	BETTER		BETTER	GOOD	GOOD	BEST	BEST	BETTER	BEST
	GOOD	GOOD	GOOD		BETTER			BETTER	BETTER		BEST
	BETTER	BETTER	BETTER	BEST				BEST	BEST		BEST
	BETTER	BETTER	BETTER	BEST				BEST	BEST		BEST
 Stainless Steel, Free Machining	BEST	BEST	BEST	BEST	GOOD	GOOD	GOOD	BEST	BEST	BEST	BEST
	BETTER	BETTER	BETTER		BETTER	BETTER	BETTER	BEST	BEST	BEST	BEST
 Titanium Alloys					BETTER	BETTER	BETTER	BEST	BEST	BETTER	BEST
 Inconel	BETTER	BETTER	BETTER					BETTER	BETTER		BETTER
 Plastics											

STEEL CUTTING
High Performance

HELIX

**ULTIMATE
PERFORMANCE FOR
HARD ALLOYS
AND TOOL STEELS**

SPEEDS & FEEDS

HGW 4

DIAMETER	DEPTH OF CUT	RADIAL ENGAGEMENT	FEEDRATE	RPM
0.1250	0.5000	0.0090	120.0000	12000
0.1870	0.6250	0.0130	180.0000	12000
0.2500	0.7500	0.0180	240.0000	12000
0.3120	0.8120	0.0220	244.0000	9795
0.3750	0.8750	0.0260	244.0000	8149
0.5000	1.0000	0.0350	244.0000	6112
0.5620	1.2500	0.0390	244.0000	5438
0.6250	1.2500	0.0440	244.0000	4890
0.7500	1.5000	0.0530	244.0000	4075
0.8750	1.5000	0.0610	244.0000	3493
1.0000	1.5000	0.0700	244.0000	3056

Performance is contingent upon an adequate tool holder, rigid work holding, tool path and your machine's capabilities.

Suggested Feeds and Speeds for Stainless Steel EX. 17-4PH



VARIABLE HELIX
UNEQUALLY INDEXED



595 County Road 448
Tavares, FL 32778
866.866.5497 | 352.343.8778
www.gwschultz.com

Innovative High Performance Cutting Tools

The HGW 4Series is a high performance end mill designed for cutting hard alloys and tool steels.

- The unequal indexing and variable helix reduces or eliminates chatter
- The high performance cutting geometries allow for faster metal removal rates
- nACo coating is standard for increasing performance and extending tool life
- Up to 30% longer tool life than what's available in the industry today
- The HGW 4Series is available standard with both a square corner or corner radius
- Available in sizes ranging from 1/8 to 1 inch
- For Standard and Long Radius and Square sizes, please see other tear sheet
- Special corner radius size is available upon request



STEEL CUTTING
High Performance

Stub Length With Radius

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
1/8	1/8	.250	1.50	.005	120542	HGWS40125-005
1/8	1/8	.250	1.50	.015	121556	HGWS40125-015
1/8	1/8	.250	1.50	.030	121557	HGWS40125-03
3/16	3/16	.312	2.00	.005	120543	HGWS40187-005
3/16	3/16	.312	2.00	.015	121558	HGWS40187-015
3/16	3/16	.312	2.00	.030	121559	HGWS40187-03
1/4	1/4	.312	2.00	.005	121560	HGWS40250-005.312
1/4	1/4	.312	2.00	.010	121561	HGWS40250-01.312
1/4	1/4	.312	2.00	.015	121562	HGWS40250-015.312
1/4	1/4	.312	2.00	.030	121563	HGWS40250-03.312
1/4	1/4	.312	2.00	.060	121564	HGWS40250-06.312
1/4	1/4	.500	2.00	.005	121565	HGWS40250-005
1/4	1/4	.500	2.00	.010	120544	HGWS40250-01
1/4	1/4	.500	2.00	.015	121566	HGWS40250-015
1/4	1/4	.500	2.00	.030	121567	HGWS40250-03
1/4	1/4	.500	2.00	.060	121568	HGWS40250-06
5/16	5/16	.500	2.00	.010	120545	HGWS40312-01
5/16	5/16	.500	2.00	.015	121569	HGWS40312-015
5/16	5/16	.500	2.00	.030	121570	HGWS40312-03
5/16	5/16	.500	2.00	.060	121571	HGWS40312-06
3/8	3/8	.437	2.00	.015	121572	HGWS40375-015.437
3/8	3/8	.437	2.00	.030	121573	HGWS40375-03.437
3/8	3/8	.437	2.00	.060	121574	HGWS40375-06.437
3/8	3/8	.625	2.00	.015	120546	HGWS40375-015
3/8	3/8	.625	2.00	.030	121575	HGWS40375-03

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G. W. Schultz Tool offers any LOC and OL with any series tool as a modified standard. All products are also available with special coatings to meet your specific requirements.

Stub Length With Radius

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
3/8	3/8	.625	2.00	.060	121576	HGWS40375-06
1/2	1/2	.625	2.50	.015	120547	HGWS40500-015
1/2	1/2	.625	2.50	.030	120551	HGWS40500-03
1/2	1/2	.625	2.50	.060	121577	HGWS40500-06
1/2	1/2	.625	2.50	.090	121578	HGWS40500-09
1/2	1/2	.625	2.50	.120	121579	HGWS40500-12
5/8	5/8	.750	3.00	.015	121580	HGWS40625-015
5/8	5/8	.750	3.00	.020	120548	HGWS40625-02
5/8	5/8	.750	3.00	.030	121581	HGWS40625-03
5/8	5/8	.750	3.00	.060	121582	HGWS40625-06
5/8	5/8	.750	3.00	.090	121583	HGWS40625-09
5/8	5/8	.750	3.00	.120	121584	HGWS40625-12
3/4	3/4	.875	3.00	.015	121585	HGWS40750-015
3/4	3/4	.875	3.00	.030	120486	HGWS40750-03
3/4	3/4	.875	3.00	.060	121586	HGWS40750-06
3/4	3/4	.875	3.00	.090	121587	HGWS40750-09
3/4	3/4	.875	3.00	.120	121588	HGWS40750-12
1.00	1.00	1.00	4.00	.015	121589	HGWS41000-015
1.00	1.00	1.00	4.00	.030	120549	HGWS41000-03
1.00	1.00	1.00	4.00	.060	121590	HGWS41000-06
1.00	1.00	1.00	4.00	.090	121591	HGWS41000-09
1.00	1.00	1.00	4.00	.120	121592	HGWS41000-12

Stub Length Square End

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
1/8	1/8	.250	1.50		120432	HGWS40125-00
3/16	3/16	.312	2.00		120433	HGWS40187-00
1/4	1/4	.312	2.00		121555	HGWS40250-00.312
1/4	1/4	.500	2.00		120434	HGWS40250-00
5/16	5/16	.500	2.00		120435	HGWS40312-00
3/8	3/8	.437	2.00		122483	HGWS40375-00.437
3/8	3/8	.625	2.00		120436	HGWS40375-00
1/2	1/2	.625	2.50		120437	HGWS40500-00
5/8	5/8	.750	3.00		120438	HGWS40625-00
3/4	3/4	.875	3.00		120439	HGWS40750-00
1.00	1.00	1.00	4.00		120440	HGWS41000-00



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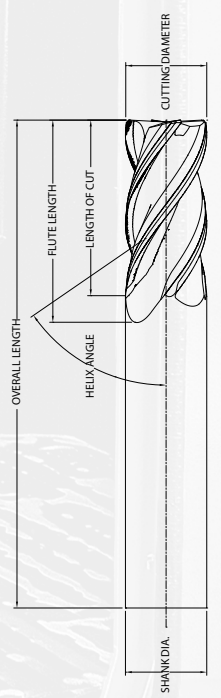
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- The high performance cutting geometries allow for faster metal removal rates
- nACo coating is standard for increasing performance and extending tool life
- Up to 30% longer tool life than what's available in the industry today
- The HGW ⁴Series is available standard with both a square corner or corner radius
- Available in sizes ranging from 1/8 to 1 inch
- For Stub and Long Radius and Square sizes, please see other tear sheet
- Special corner radius size is available upon request



STEEL CUTTING
High Performance

Standard Length With Radius

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
1/8	1/8	.500	1.50	.005	119333	HGW40125-005
1/8	1/8	.500	1.50	.015	121425	HGW40125-015
1/8	1/8	.500	1.50	.030	121426	HGW40125-03
3/16	3/16	.625	2.00	.005	119334	HGW40187-005
3/16	3/16	.625	2.00	.015	121427	HGW40187-015
3/16	3/16	.625	2.00	.030	121428	HGW40187-03
1/4	1/4	.750	2.50	.005	121429	HGW40250-005
1/4	1/4	.750	2.50	.010	119335	HGW40250-01
1/4	1/4	.750	2.50	.015	121430	HGW40250-015
1/4	1/4	.750	2.50	.030	120697	HGW40250-03
1/4	1/4	.750	2.50	.060	120473	HGW40250-06
5/16	5/16	.812	2.50	.010	119336	HGW40312-01
5/16	5/16	.812	2.50	.015	121432	HGW40312-015
5/16	5/16	.812	2.50	.030	121433	HGW40312-03
5/16	5/16	.812	2.50	.060	121434	HGW40312-06
3/8	3/8	.875	2.50	.010	119315	HGW40375-01
3/8	3/8	.875	2.50	.015	119337	HGW40375-015
3/8	3/8	.875	2.50	.030	121435	HGW40375-03
3/8	3/8	.875	2.50	.060	121488	HGW40375-06
1/2	1/2	1.00	3.00	.015	119338	HGW40500-015
1/2	1/2	1.00	3.00	.020	121516	HGW40500-02
1/2	1/2	1.00	3.00	.030	119546	HGW40500-03
1/2	1/2	1.00	3.00	.060	120076	HGW40500-06
1/2	1/2	1.00	3.00	.090	121489	HGW40500-09
1/2	1/2	1.00	3.00	.120	121490	HGW40500-12



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Standard Length With Radius

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
1/2	1/2	1.25	3.00	.015	121491	HGW40500-015 1.25
1/2	1/2	1.25	3.00	.030	121492	HGW40500-03 1.25
1/2	1/2	1.25	3.00	.060	121493	HGW40500-06 1.25
1/2	1/2	1.25	3.00	.090	121494	HGW40500-09 1.25
1/2	1/2	1.25	3.00	.120	121495	HGW40500-12 1.25
1/2	1/2	1.50	3.00	.015	121496	HGW40500-015 1.5
1/2	1/2	1.50	3.00	.030	121497	HGW40500-03 1.5
1/2	1/2	1.50	3.00	.060	121498	HGW40500-06 1.5
1/2	1/2	1.50	3.00	.090	121499	HGW40500-09 1.5
1/2	1/2	1.50	3.00	.120	121500	HGW40500-12 1.5
5/8	5/8	1.25	3.50	.015	121502	HGW40625-015
5/8	5/8	1.25	3.50	.020	119339	HGW40625-02
5/8	5/8	1.25	3.50	.030	121503	HGW40625-03
5/8	5/8	1.25	3.50	.060	121504	HGW40625-06
5/8	5/8	1.25	3.50	.090	121505	HGW40625-09
5/8	5/8	1.25	3.50	.120	121506	HGW40625-12
3/4	3/4	1.50	4.00	.015	121507	HGW40750-015
3/4	3/4	1.50	4.00	.030	119340	HGW40750-03
3/4	3/4	1.50	4.00	.060	121508	HGW40750-06
3/4	3/4	1.50	4.00	.090	121509	HGW40750-09
3/4	3/4	1.50	4.00	.120	121510	HGW40750-12
1.00	1.00	1.50	4.00	.015	121511	HGW41000-015
1.00	1.00	1.50	4.00	.030	119341	HGW41000-03
1.00	1.00	1.50	4.00	.060	121512	HGW41000-06
1.00	1.00	1.50	4.00	.090	121513	HGW41000-09
1.00	1.00	1.50	4.00	.120	121514	HGW41000-12

Standard Length Square End

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
1/8	1/8	.500	1.50		119342	HGW40125-00
3/16	3/16	.625	2.00		119343	HGW40187-00
1/4	1/4	.750	2.50		119344	HGW40250-00
5/16	5/16	.812	2.50		119345	HGW40312-00
3/8	3/8	.875	2.50		119346	HGW40375-00
1/2	1/2	1.00	3.00		119347	HGW40500-00
1/2	1/2	1.25	3.00		121516	HGW40500-00 1.25
1/2	1/2	1.50	3.00		122282	HGW40500-00 1.5
5/8	5/8	1.25	3.50		119348	HGW40625-00
3/4	3/4	1.50	4.00		119349	HGW40750-00
1.00	1.00	1.50	4.00		119350	HGW41000-00

G. W. Schultz Tool offers any LOC and OL with any series tool as a modified standard. All products are also available with special coatings to meet your specific requirements.

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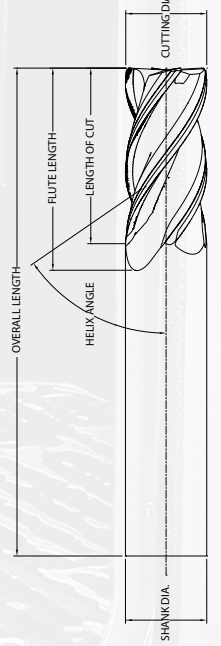


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Innovative High Performance Cutting Tools

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- The high performance cutting geometries allow for faster metal removal rates
- nACo coating is standard for increasing performance and extending tool life
- Up to 30% longer tool life than what's available in the industry today
- The HGW 4Series is available standard with both a square corner or corner radius
- Available in sizes ranging from 1/8 to 1 inch
- For Stub and Standard Radius and Square sizes, please see other tear sheet
- Special corner radius size is available upon request



STEEL CUTTING
High Performance

Long Length With Radius

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
3/16	3/16	.750	2.00	.005	120159	HGWL40187-005
3/16	3/16	.750	2.00	.015	121518	HGWL40187-015
3/16	3/16	.750	2.00	.030	121519	HGWL40187-03
3/16	3/16	.750	2.00	.060	120550	HGWL40187-06
1/4	1/4	1.125	3.00	.005	121521	HGWL40250-005
1/4	1/4	1.125	3.00	.010	120160	HGWL40250-01
1/4	1/4	1.125	3.00	.015	121522	HGWL40250-015
1/4	1/4	1.125	3.00	.030	121523	HGWL40250-03
1/4	1/4	1.125	3.00	.060	121524	HGWL40250-06
5/16	5/16	1.125	3.00	.010	120161	HGWL40312-01
5/16	5/16	1.125	3.00	.015	121525	HGWL40312-015
5/16	5/16	1.125	3.00	.030	121526	HGWL40312-03
5/16	5/16	1.125	3.00	.060	121527	HGWL40312-06
3/8	3/8	1.125	3.00	.010	120162	HGWL40375-01
3/8	3/8	1.125	3.00	.015	121528	HGWL40375-015
3/8	3/8	1.125	3.00	.030	121529	HGWL40375-03
3/8	3/8	1.125	3.00	.060	121530	HGWL40375-06
3/8	3/8	1.125	3.00	.090	121531	HGWL40375-09
3/8	3/8	1.125	3.00	.120	121532	HGWL40375-12
1/2	1/2	1.75	4.00	.015	121533	HGWL40500-015 1.75
1/2	1/2	1.75	4.00	.030	121534	HGWL40500-03 1.75
1/2	1/2	1.75	4.00	.060	121535	HGWL40500-06 1.75
1/2	1/2	1.75	4.00	.090	121536	HGWL40500-09 1.75
1/2	1/2	1.75	4.00	.120	121537	HGWL40500-12 1.75
1/2	1/2	2.00	4.00	.015	120163	HGWL40500-015

Long Length With Radius

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
1/2	1/2	2.00	4.00	.030	121538	HGWL40500-03
1/2	1/2	2.00	4.00	.060	121539	HGWL40500-06
1/2	1/2	2.00	4.00	.090	121540	HGWL40500-09
1/2	1/2	2.00	4.00	.120	121541	HGWL40500-12
5/8	5/8	2.25	5.00	.015	121542	HGWL40625-015
5/8	5/8	2.25	5.00	.020	120164	HGWL40625-02
5/8	5/8	2.25	5.00	.030	121543	HGWL40625-03
5/8	5/8	2.25	5.00	.060	121544	HGWL40625-06
5/8	5/8	2.25	5.00	.090	121545	HGWL40625-09
5/8	5/8	2.25	5.00	.120	121546	HGWL40625-12
3/4	3/4	2.25	5.00	.015	121547	HGWL40750-015
3/4	3/4	2.25	5.00	.030	119723	HGWL40750-03
3/4	3/4	2.25	5.00	.060	121548	HGWL40750-06
3/4	3/4	2.25	5.00	.090	121549	HGWL40750-09
3/4	3/4	2.25	5.00	.120	121550	HGWL40750-12
1.00	1.00	2.25	5.00	.015	121551	HGWL41000-015
1.00	1.00	2.25	5.00	.030	120166	HGWL41000-03
1.00	1.00	2.25	5.00	.060	121552	HGWL41000-06
1.00	1.00	2.25	5.00	.090	121553	HGWL41000-09
1.00	1.00	2.25	5.00	.120	121554	HGWL41000-12

Long Length Square End

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
3/16	3/16	.750	2.00		120151	HGWL40187-00
1/4	1/4	1.125	3.00		120152	HGWL40250-00
5/16	5/16	1.125	3.00		120153	HGWL40312-00
3/8	3/8	1.125	3.00		120154	HGWL40375-00
1/2	1/2	1.75	4.00		121517	HGWL40500-00 1.75
1/2	1/2	2.00	4.00		120155	HGWL40500-00
5/8	5/8	2.25	5.00		120156	HGWL40625-00
3/4	3/4	2.25	5.00		119722	HGWL40750-00
1.00	1.00	2.25	5.00		120158	HGWL41000-00

HELIX

**ULTIMATE
PERFORMANCE FOR
HARD ALLOYS
AND TOOL STEELS**

SPEEDS & FEEDS

HGW 5

DIAMETER	DEPTH OF CUT	RADIAL ENGAGEMENT	FEEDRATE	RPM
0.1250	0.5000	0.0090	120.0000	12000
0.1870	0.6250	0.0130	180.0000	12000
0.2500	0.7500	0.0180	240.0000	12000
0.3120	0.8120	0.0220	244.0000	9795
0.3750	0.8750	0.0260	244.0000	8149
0.5000	1.0000	0.0350	244.0000	6112
0.5620	1.2500	0.0390	244.0000	5438
0.6250	1.2500	0.0440	244.0000	4890
0.7500	1.5000	0.0530	244.0000	4075
0.8750	1.5000	0.0610	244.0000	3493
1.0000	1.5000	0.0700	244.0000	3056

These machining parameters are contingent upon HP constraints of your machine, tool holding and work piece holding

Suggested Feeds and Speeds for Stainless Steel EX. 17-4PH



HGW⁵ SERIES



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- Regrind and recoating available upon request
- Center Cutting
- Standard & Long sizes, see additional tear sheet
- Special corner radius size is available upon request



Stub Length with Radius

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
1/8	1/8	.250	1.50	.005	120988	HGWS50125-005
1/8	1/8	.250	1.50	.015	121373	HGWS50125-015
1/8	1/8	.250	1.50	.030	121374	HGWS50125-03
3/16	3/16	.3125	2.00	.005	120989	HGWS50187-005
3/16	3/16	.3125	2.00	.015	121375	HGWS50187-015
3/16	3/16	.3125	2.00	.030	121376	HGWS50187-03
1/4	1/4	.312	2.00	.005	121472	HGWS50250-005.312
1/4	1/4	.312	2.00	.010	121481	HGWS50250-01.312
1/4	1/4	.312	2.00	.015	121482	HGWS50250-015.312
1/4	1/4	.312	2.00	.030	121483	HGWS50250-03.312
1/4	1/4	.312	2.00	.060	121484	HGWS50250-06.312
1/4	1/4	.500	2.00	.005	121377	HGWS50250-005
1/4	1/4	.500	2.00	.010	120990	HGWS50250-01
1/4	1/4	.500	2.00	.015	121380	HGWS50250-015
1/4	1/4	.500	2.00	.030	121381	HGWS50250-03
1/4	1/4	.500	2.00	.060	121382	HGWS50250-06
5/16	5/16	.500	2.00	.010	120991	HGWS50312-01
5/16	5/16	.500	2.00	.015	121383	HGWS50312-015
5/16	5/16	.500	2.00	.030	121385	HGWS50312-03
5/16	5/16	.500	2.00	.060	121386	HGWS50312-06
3/8	3/8	.437	2.00	.015	121485	HGWS50375-015.437
3/8	3/8	.437	2.00	.030	121486	HGWS50375-03.437
3/8	3/8	.437	2.00	.060	121487	HGWS50375-06.437
3/8	3/8	.625	2.00	.015	120992	HGWS50375-015
3/8	3/8	.625	2.00	.030	121387	HGWS50375-03

STEEL CUTTING
High Performance

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Stub Length with Radius

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
3/8	3/8	.625	2.00	.060	121388	HGWS50375-06
1/2	1/2	.625	2.50	.015	120993	HGWS50500-015
1/2	1/2	.625	2.50	.030	121389	HGWS50500-03
1/2	1/2	.625	2.50	.060	121390	HGWS50500-06
1/2	1/2	.625	2.50	.090	121391	HGWS50500-09
1/2	1/2	.625	2.50	.120	121392	HGWS50500-12
5/8	5/8	.750	3.00	.015	121393	HGWS50625-015
5/8	5/8	.750	3.00	.020	120994	HGWS50625-02
5/8	5/8	.750	3.00	.030	121394	HGWS50625-03
5/8	5/8	.750	3.00	.060	121395	HGWS50625-06
5/8	5/8	.750	3.00	.090	121396	HGWS50625-09
5/8	5/8	.750	3.00	.120	121398	HGWS50625-12
3/4	3/4	.875	3.00	.015	121399	HGWS50750-015
3/4	3/4	.875	3.00	.030	120995	HGWS50750-03
3/4	3/4	.875	3.00	.060	121400	HGWS50750-06
3/4	3/4	.875	3.00	.090	121401	HGWS50750-09
3/4	3/4	.875	3.00	.120	121402	HGWS50750-12
1.00	1.00	1.00	4.00	.015	121403	HGWS51000-015
1.00	1.00	1.00	4.00	.030	120996	HGWS51000-03
1.00	1.00	1.00	4.00	.060	121404	HGWS51000-06
1.00	1.00	1.00	4.00	.090	121405	HGWS51000-09
1.00	1.00	1.00	4.00	.120	121406	HGWS51000-12

Stub Length Square Corner

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
1/8	1/8	.250	1.50		120979	HGWS50125-00
3/16	3/16	.312	2.00		120980	HGWS50187-00
1/4	1/4	.312	2.00		120184	HGWS50250-00.312
1/4	1/4	.500	2.00		120981	HGWS50250-00
5/16	5/16	.500	2.00		120982	HGWS50312-00
3/8	3/8	.437	2.00		122484	HGWS50375-00.437
3/8	3/8	.625	2.00		120983	HGWS50375-00
1/2	1/2	.625	2.50		120984	HGWS50500-00
5/8	5/8	.750	3.00		120985	HGWS50625-00
3/4	3/4	.875	3.00		120986	HGWS50750-00
1.00	1.00	1.00	4.00		120987	HGWS51000-00



HGW 5 SERIES



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- Center Cutting
- Stub & Long Sizes, see additional tear sheet
- Special corner radius size is available upon request



Standard Length With Radius

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nAco Coated EDP	Description
1/8	1/8	.500	1.50	.005	120945	HGW50125-005
1/8	1/8	.500	1.50	.015	121298	HGW50125-015
1/8	1/8	.500	1.50	.030	121299	HGW50125-03
3/16	3/16	.625	2.00	.005	120946	HGW50187-005
3/16	3/16	.625	2.00	.015	121300	HGW50187-015
3/16	3/16	.625	2.00	.030	121301	HGW50187-03
1/4	1/4	.750	2.50	.005	121302	HGW50250-005
1/4	1/4	.750	2.50	.010	120947	HGW50250-01
1/4	1/4	.750	2.50	.015	121303	HGW50250-015
1/4	1/4	.750	2.50	.030	121304	HGW50250-03
1/4	1/4	.750	2.50	.060	121305	HGW50250-06
5/16	5/16	.812	2.50	.010	120948	HGW50312-01
5/16	5/16	.812	2.50	.015	121312	HGW50312-015
5/16	5/16	.812	2.50	.030	121313	HGW50312-03
5/16	5/16	.812	2.50	.060	121314	HGW50312-06
3/8	3/8	.875	2.50	.010	120481	HGW50375-01
3/8	3/8	.875	2.50	.015	120949	HGW50375-015
3/8	3/8	.875	2.50	.030	121315	HGW50375-03
3/8	3/8	.875	2.50	.060	121316	HGW50375-06
1/2	1/2	1.00	3.00	.015	120950	HGW50500-015
1/2	1/2	1.00	3.00	.020	122033	HGW50500-02
1/2	1/2	1.00	3.00	.030	120648	HGW50500-03
1/2	1/2	1.00	3.00	.060	121317	HGW50500-06
1/2	1/2	1.00	3.00	.090	121318	HGW50500-09
1/2	1/2	1.00	3.00	.120	121319	HGW50500-12

STEEL CUTTING
High Performance

Standard Length With Radius

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
1/2	1/2	1.25	3.00	.015	121457	HGW50500-015 1.25
1/2	1/2	1.25	3.00	.030	121458	HGW50500-03 1.25
1/2	1/2	1.25	3.00	.060	121459	HGW50500-06 1.25
1/2	1/2	1.25	3.00	.090	121460	HGW50500-09 1.25
1/2	1/2	1.25	3.00	.120	121461	HGW50500-12 1.25
1/2	1/2	1.50	3.00	.015	121462	HGW50500-015 1.5
1/2	1/2	1.50	3.00	.030	121463	HGW50500-03 1.5
1/2	1/2	1.50	3.00	.060	121464	HGW50500-06 1.5
1/2	1/2	1.50	3.00	.090	121465	HGW50500-09 1.5
1/2	1/2	1.50	3.00	.120	121466	HGW50500-12 1.5
5/8	5/8	1.25	3.50	.015	121320	HGW50625-015
5/8	5/8	1.25	3.50	.020	119756	HGW50625-02
5/8	5/8	1.25	3.50	.030	121321	HGW50625-03
5/8	5/8	1.25	3.50	.060	121324	HGW50625-06
5/8	5/8	1.25	3.50	.090	121325	HGW50625-09
5/8	5/8	1.25	3.50	.120	121326	HGW50625-12
3/4	3/4	1.50	4.00	.015	121327	HGW50750-015
3/4	3/4	1.50	4.00	.030	119758	HGW50750-03
3/4	3/4	1.50	4.00	.060	121328	HGW50750-06
3/4	3/4	1.50	4.00	.090	121329	HGW50750-09
3/4	3/4	1.50	4.00	.120	121330	HGW50750-12
1.00	1.00	1.50	4.00	.015	121336	HGW51000-015
1.00	1.00	1.50	4.00	.030	119760	HGW51000-03
1.00	1.00	1.50	4.00	.060	121338	HGW51000-06
1.00	1.00	1.50	4.00	.090	121339	HGW51000-09
1.00	1.00	1.50	4.00	.120	121340	HGW51000-12

Standard Length Square End

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
1/8	1/8	.500	1.50		120954	HGW50125-00
3/16	3/16	.625	2.00		120955	HGW50187-00
1/4	1/4	.750	2.50		120956	HGW50250-00
5/16	5/16	.812	2.50		120957	HGW50312-00
3/8	3/8	.875	2.50		120958	HGW50375-00
1/2	1/2	1.00	3.00		119762	HGW50500-00
1/2	1/2	1.25	3.00		121599	HGW50500-00 1.25
1/2	1/2	1.50	3.00		121600	HGW50500-00 1.5
5/8	5/8	1.25	3.50		119764	HGW50625-00
3/4	3/4	1.50	4.00		119765	HGW50750-00
1.00	1.00	1.50	4.00		119766	HGW51000-00



HGW⁵
SERIES

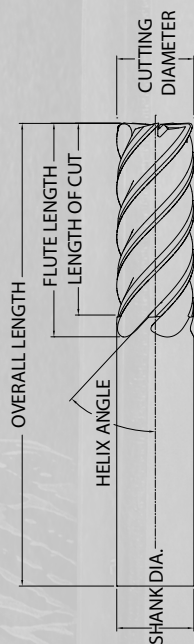


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Long Length With Radius

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
3/16	3/16	.750	2.00	.005	120971	HGWL50187-005
3/16	3/16	.750	2.00	.015	121341	HGWL50187-015
3/16	3/16	.750	2.00	.030	121342	HGWL50187-03
3/16	3/16	.750	2.00	.060	121343	HGWL50187-06
1/4	1/4	1.125	3.00	.005	121344	HGWL50250-005
1/4	1/4	1.125	3.00	.010	120972	HGWL50250-01
1/4	1/4	1.125	3.00	.015	121345	HGWL50250-015
1/4	1/4	1.125	3.00	.030	121346	HGWL50250-03
1/4	1/4	1.125	3.00	.060	121347	HGWL50250-06
5/16	5/16	1.125	3.00	.010	120973	HGWL50312-01
5/16	5/16	1.125	3.00	.015	121348	HGWL50312-015
5/16	5/16	1.125	3.00	.030	121349	HGWL50312-03
5/16	5/16	1.125	3.00	.060	121350	HGWL50312-06
3/8	3/8	1.125	3.00	.010	120974	HGWL50375-01
3/8	3/8	1.125	3.00	.015	121351	HGWL50375-015
3/8	3/8	1.125	3.00	.030	121352	HGWL50375-03
3/8	3/8	1.125	3.00	.060	121353	HGWL50375-06
3/8	3/8	1.125	3.00	.090	121354	HGWL50375-09
3/8	3/8	1.125	3.00	.120	121355	HGWL50375-12
1/2	1/2	1.75	4.00	.015	121467	HGWL50500-015 1.75
1/2	1/2	1.75	4.00	.030	121468	HGWL50500-03 1.75
1/2	1/2	1.75	4.00	.060	121469	HGWL50500-06 1.75
1/2	1/2	1.75	4.00	.090	121470	HGWL50500-09 1.75
1/2	1/2	1.75	4.00	.120	121471	HGWL50500-12 1.75
1/2	1/2	2.00	4.00	.015	120975	HGWL50500-015

STEEL CUTTING
High Performance

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G. W. Schultz Tool offers any LOC and OL with any series tool as a modified standard. All products are also available with special coatings to meet your specific requirements.

Long Length With Radius (cont.)

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
1/2	1/2	2.00	4.00	.030	121356	HGWL50500-03
1/2	1/2	2.00	4.00	.060	121357	HGWL50500-06
1/2	1/2	2.00	4.00	.090	121358	HGWL50500-09
1/2	1/2	2.00	4.00	.120	121359	HGWL50500-12
5/8	5/8	2.25	5.00	.015	121360	HGWL50625-015
5/8	5/8	2.25	5.00	.020	120976	HGWL50625-02
5/8	5/8	2.25	5.00	.030	121361	HGWL50625-03
5/8	5/8	2.25	5.00	.060	121362	HGWL50625-06
5/8	5/8	2.25	5.00	.090	121363	HGWL50625-09
5/8	5/8	2.25	5.00	.120	121364	HGWL50625-12
3/4	3/4	2.25	5.00	.015	121365	HGWL50750-015
3/4	3/4	2.25	5.00	.030	120977	HGWL50750-03
3/4	3/4	2.25	5.00	.060	121366	HGWL50750-06
3/4	3/4	2.25	5.00	.090	121367	HGWL50750-09
3/4	3/4	2.25	5.00	.120	121368	HGWL50750-12
1.00	1.00	2.25	5.00	.015	121369	HGWL51000-015
1.00	1.00	2.25	5.00	.030	120978	HGWL51000-03
1.00	1.00	2.25	5.00	.060	121370	HGWL51000-06
1.00	1.00	2.25	5.00	.090	121371	HGWL51000-09
1.00	1.00	2.25	5.00	.120	121372	HGWL51000-12

Long Length Square End

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Corner Radius	nACo Coated EDP	Description
3/16	3/16	.750	2.00		120963	HGWL50187-00
1/4	1/4	1.125	3.00		120964	HGWL50250-00
5/16	5/16	1.125	3.00		120965	HGWL50312-00
3/8	3/8	1.125	3.00		120966	HGWL50375-00
1/2	1/2	1.75	4.00		121520	HGWL50500-00 1.75
1/2	1/2	2.00	4.00		120967	HGWL50500-00
5/8	5/8	2.25	5.00		120968	HGWL50625-00
3/4	3/4	2.25	5.00		120969	HGWL50750-00
1.00	1.00	2.25	5.00		120970	HGWL51000-00



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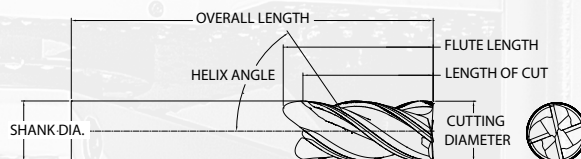
SGW 4Series

38° Helix Unequally Indexed



The SGW 4 SERIES is a high performance end mill that maximizes machine production capabilities while reducing or eliminating chatter.

- 4 Flute
- It allows faster metal removal while increasing tool life substantially.
- The SGW 4 Series comes with a wiper flat feature on the bottom that enhances surface finishes and a chamfer for longer tool life.
- Optimal for steels & stainless steels up to 35rc
- Upon request, this tool can be made with a square corner or with a corner radius.
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut
- AlTiN coating is standard for increasing performance and extending tool life.



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AlTiN Coated	Description
Stub	1/8	1/8	0.250	1.500	106347	SGWS40125
	3/16	3/16	0.313	2.000	106352	SGWS40187
	1/4	1/4	0.500	2.000	104431	SGWS40250
	5/16	5/16	0.500	2.000	106270	SGWS40312
	3/8	3/8	0.625	2.000	104429	SGWS40375
	1/2	1/2	0.625	2.500	104430	SGWS40500
	5/8	5/8	0.750	3.000	104428	SGWS40625
	3/4	3/4	0.875	3.000	104427	SGWS40750
	1	1	1.000	4.000	104426	SGWS41000
Standard	1/8	1/8	0.500	1.500	106348	SGW40125
	3/16	3/16	0.625	2.000	106351	SGW40187
	1/4	1/4	0.750	2.500	104413	SGW40250
	5/16	5/16	0.812	2.500	106238	SGW40312
	3/8	3/8	0.875	2.500	104414	SGW40375
	1/2	1/2	1.000	3.000	104415	SGW40500
	5/8	5/8	1.250	3.500	104416	SGW40625
	3/4	3/4	1.500	4.000	104424	SGW40750
	1	1	1.500	4.000	104425	SGW41000
Long	1/4	1/4	1.125	3.000	104432	SGWL40250
	5/16	5/16	1.125	3.000	109495	SGWL40312
	3/8	3/8	1.125	3.000	104433	SGWL40375
	1/2	1/2	2.000	4.000	104434	SGWL40500
	5/8	5/8	2.250	5.000	104436	SGWL40625
	3/4	3/4	2.250	5.000	104437	SGWL40750
	1	1	2.250	5.000	104438	SGWL41000

STEEL CUTTING
High Performance

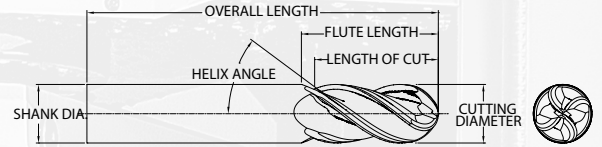


BGW 4Series

38° Helix-Ballnose Unequally Indexed

The BGW 4 SERIES is our high performance ball nose end mill that allows for faster material removal and longer tool life.

- 4 Flute
- It allows faster metal removal while increasing tool life substantially.
- Optimal for steels & stainless steels up to 35rc
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut
- AlTiN coating is standard for increasing performance and extending tool life.



STEEL CUTTING
High Performance

	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AlTiN Coated	Description
Stub	1/8	1/8	0.250	1.500	113777	BGWS40125
	3/16	3/16	0.313	2.000	113509	BGWS40187
	1/4	1/4	0.500	2.000	113510	BGWS40250
	5/16	5/16	0.500	2.000	113511	BGWS40312
	3/8	3/8	0.625	2.000	113512	BGWS40375
	1/2	1/2	0.625	2.500	113513	BGWS40500
	5/8	5/8	0.750	3.000	113514	BGWS40625
	3/4	3/4	0.875	3.000	113515	BGWS40750
	1	1	1.000	4.000	113516	BGWS41000
Standard	1/8	1/8	0.500	1.500	114384	BGW40125
	3/16	3/16	0.625	2.000	108654	BGW40187
	1/4	1/4	0.750	2.500	106356	BGW40250
	5/16	5/16	0.812	2.500	108656	BGW40312
	3/8	3/8	0.875	2.500	106357	BGW40375
	1/2	1/2	1.000	3.000	106336	BGW40500
	5/8	5/8	1.250	3.500	108659	BGW40625
	3/4	3/4	1.500	4.000	108660	BGW40750
	1	1	1.500	4.000	108661	BGW41000
Long	1/4	1/4	1.125	3.000	113517	BGWL40250
	5/16	5/16	1.125	3.000	108663	BGWL40312
	3/8	3/8	1.125	3.000	108401	BGWL40375
	1/2	1/2	2.000	4.000	111119	BGWL40500
	5/8	5/8	2.250	5.000	113518	BGWL40625
	3/4	3/4	2.250	5.000	113519	BGWL40750
	1	1	2.250	5.000	113520	BGWL41000

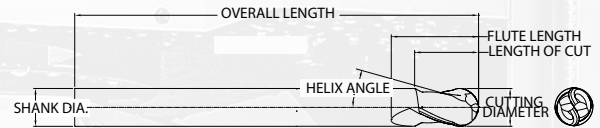
BND 2Series

30° Helix-Ballnose



The BND 2 SERIES end mill was developed for extended life in high speed machining of heat-treated dies that molds up to 60rc.

- 2 Flute
- nACo coating is standard for increasing performance and extending tool life.
- Other coatings available upon request.
- 5 degree draft angle from the rear of the cutting edge.
- Special lengths, draft angles, and metric sizes are available upon request.
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP nACo Coated	Description
Standard	1/32	1/8	0.032	3.000	100333	BND20032
	1/16	1/8	0.062	3.000	100334	BND20062
	3/32	1/8	0.093	3.000	100335	BND20093
	1/8	1/8	0.125	3.000	100336	BND20125
	5/32	3/16	0.156	3.000	100338	BND20156
	3/16	3/16	0.187	3.000	100342	BND20187
	1/4	1/4	0.250	3.000	100346	BND20250
	5/16	5/16	0.312	3.000	100348	BND20312
	3/8	3/8	0.375	3.500	100349	BND20375
	1/2	1/2	0.500	4.000	100351	BND20500

STEEL CUTTING
High Performance

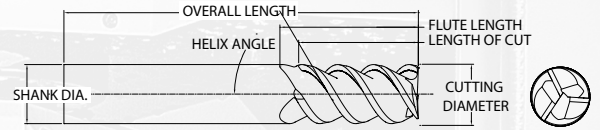
SS 3Series

60° Helix



The SS 3 SERIES is a 60 degree helix end mill, for high temp alloys including inconel, hastalloy, waspalloy, titanium, etc.

- 3 Flute
- Available AlTiN coated (other coatings available upon request).
- Exceptional for roughing and profiling
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description
Standard	1/8	1/8	0.500	1.500	102109	102108	SS30125
	5/32	3/16	0.500	2.000	103033	102110	SS30156
	3/16	3/16	0.625	2.000	102113	102111	SS30187
	7/32	1/4	0.625	2.500	103035	102114	SS30218
	1/4	1/4	0.750	2.500	102116	102115	SS30250
	9/32	5/16	0.750	2.500	102118	102117	SS30281
	5/16	5/16	0.813	2.500	102121	102119	SS30312
	3/8	3/8	0.875	2.500	102124	102122	SS30375
	1/2	1/2	1.000	3.000	102127	102125	SS30500
	5/8	5/8	1.125	3.500	102129	102128	SS30625
	3/4	3/4	1.500	4.000	103042	102130	SS30750
	1	1	1.500	4.000	102132	102131	SS31000

STEEL CUTTING
High Performance

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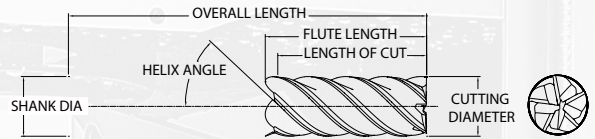
G. W. Schultz Tool offers any LOC and OL with any series tool as a modified standard. All products are also available with special coatings to meet your specific requirements.

MS 5Series

45° Helix

The MS 5 SERIES end mill was developed for machining stainless steel, exotic steel, very tough alloys, and 4140.

- 5 Flute
- This series is made from a high strength carbide to stand up to the cutting pressure (for increased cutting pressure performance).
- Available AlTiN coated (other coatings available upon request)
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description
1/8	1/8	0.500	1.500	105612	101684	MS50125
3/16	3/16	0.625	2.000	101687	101686	MS50187
1/4	1/4	0.750	2.500	107486	101690	MS50250
5/16	5/16	0.812	2.500	113521	101693	MS50312
3/8	3/8	1.000	2.500	101698	101695	MS50375
1/2	1/2	1.250	3.000	101704	101702	MS50500
5/8	5/8	1.625	3.500	103475	101706	MS50625
3/4	3/4	1.625	4.000	103476	101708	MS50750
1	1	2.000	4.000	103477	101710	MS51000

STEEL CUTTING
High Performance

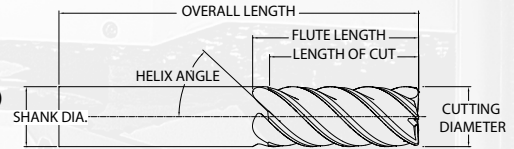
MSR 5Series

45° Helix



The MSR 5 SERIES end mill was developed for machining stainless steel, exotic steel, very tough alloys, and 4140 but it comes standard with a corner radius.

- 5 Flute
- This series is made from a high strength carbide to stand up to the cutting pressure (for increased cutting pressure performance).
- Radius improves corner strength
- Special radius available upon request
- Available AlTiN coated (other coatings available upon request)
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Radius	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description
1/8	1/8	0.500	1.500	0.015	103478	101849	MSR50125-015
3/16	3/16	0.625	2.000	0.015	103479	101850	MSR50187-015
1/4	1/4	0.750	2.500	0.020	103480	109343	MSR50250-02
5/16	5/16	0.812	2.500	0.020	103483	103482	MSR50312-02
3/8	3/8	1.000	2.500	0.020	101855	103484	MSR50375-02
1/2	1/2	1.250	3.000	0.030	103486	111466	MSR50500-03
5/8	5/8	1.625	3.500	0.030	103488	103487	MSR50625-03
3/4	3/4	1.625	4.000	0.030	103490	103489	MSR50750-03
1	1	2.000	4.000	0.030	103492	103491	MSR51000-03

STEEL CUTTING
High Performance

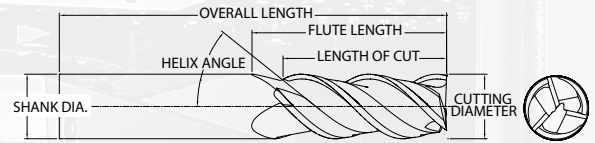
LS 3Series

45° Helix



The LS 3 SERIES provides many benefits to the user for aggressive cutting of mild steel, more difficult stainless steels, and titanium materials.

- 3 Flute
- The series is also available in 5 and 6 flute as a modified standard.
- The technology of the tool includes a specifically designed chip ejection cavity that accelerates the chip evacuation while maintaining outstanding flute body strength.
- The aggressive helix lifts the chip vertically adding additional benefits to the increased ejection velocity to help reduce chip compaction in deep cavity situations.
- Tool life and durability are significantly improved through the use of very high quality micro grain carbide substrates and ultra-precision grinding methods.
- The premium series coatings combined with the geometric technologies provide for fantastic friction coefficients and thermal dissipation characteristics.
- Allows for higher cutting edge velocities and thicker chip loads while requiring less horsepower at the spindle.
- Optimize this series with a high feed tool path to achieve an improved metal removal rate.
- Available nCo coated (other coatings available upon request)
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP nCo Coated	Description
Stub	1/8	1/8	0.250	1.500	113188	LSS30125
	3/16	3/16	0.312	2.000	113189	LSS30187
	1/4	1/4	0.375	2.500	113190	LSS30250
	5/16	5/16	0.437	2.500	113191	LSS30312
	3/8	3/8	0.500	2.500	113192	LSS30375
	1/2	1/2	0.625	3.000	113193	LSS30500
	5/8	5/8	0.750	3.500	113194	LSS30625
	3/4	3/4	1.000	4.000	114344	LSS30750
Standard	1	1	1.250	4.000	113195	LSS31000
	1/8	1/8	0.500	1.500	101677	LS30125
	3/16	3/16	0.625	2.000	102431	LS30187
	1/4	1/4	0.750	2.500	113196	LS30250
	5/16	5/16	0.813	0.000	103472	LS30312
	3/8	3/8	1.000	3.000	107004	LS30375
	1/2	1/2	1.250	3.000	112895	LS30500
	5/8	5/8	1.625	3.500	113197	LS30625
Long	3/4	3/4	1.625	4.000	113198	LS30750
	1	1	2.000	4.000	113199	LS31000
	1/4	1/4	1.125	3.000	113200	LSL30250
	5/16	5/16	1.125	3.000	113201	LSL30312
	3/8	3/8	1.500	4.000	113202	LSL30375
	1/2	1/2	2.250	4.000	113203	LSL30500
	5/8	5/8	2.500	5.000	113204	LSL30625
	3/4	3/4	2.500	5.000	113205	LSL30750
Extra Long	1	1	2.500	6.000	113206	LSL31000
	1/4	1/4	1.500	4.000	113207	LSXL30250
	5/16	5/16	1.625	4.000	113208	LSXL30312
	3/8	3/8	1.750	4.000	113209	LSXL30375
	1/2	1/2	3.000	6.000	113210	LSXL30500
	5/8	5/8	3.000	6.000	113211	LSXL30625
	3/4	3/4	3.000	6.000	113212	LSXL30750
	1	1	3.000	6.000	113213	LSXL31000

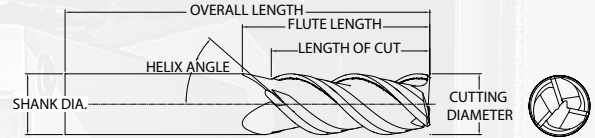
LSC 3Series

45° Helix



The LSC 3 SERIES provides many benefits to the user for aggressive cutting of mild Steel, more difficult stainless steels, and titanium materials.

- 3 Flute
- The series is also available in 5 and 6 flute as a special and is provided with a chamfer.
- The technology of the tool includes a specifically designed chip ejection cavity that accelerates the chip evacuation while maintaining outstanding flute body strength.
- The aggressive helix angle lifts the chip vertically adding increased ejection velocity to help reduce chip compaction in deep cavity situations.
- Tool life and durability are significantly improved with the use of very high quality micro grain carbide substrates and ultra-precision grinding methods.
- The premium series coatings combined with the geometric technologies provide for fantastic friction coefficients.
- The thermal dissipation characteristics allow for higher cutting edge velocities and thicker chip loads while requiring less horsepower at the spindle.
- Optimize this series with a high feed tool path to achieve an improved metal removal rate.
- Available nACo coated (other coatings available upon request)
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



STEEL CUTTING
High Performance

	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP nACo Coated	Description
Stub	1/8	1/8	0.250	1.500	113315	LSCS30125
	3/16	3/16	0.312	2.000	113316	LSCS30187
	1/4	1/4	0.375	2.500	113317	LSCS30250
	5/16	5/16	0.437	2.500	113318	LSCS30312
	3/8	3/8	0.500	2.500	113319	LSCS30375
	1/2	1/2	0.625	3.000	113320	LSCS30500
	5/8	5/8	0.750	3.500	113321	LSCS30625
	3/4	3/4	1.000	4.000	113322	LSCS30750
	1	1	1.250	4.000	113323	LSCS31000
Standard	1/8	1/8	0.500	1.500	113324	LSC30125
	3/16	3/16	0.625	2.000	113325	LSC30187
	1/4	1/4	0.750	2.500	114341	LSC30250
	5/16	5/16	0.813	3.000	113326	LSC30312
	3/8	3/8	1.000	3.000	114343	LSC30375
	1/2	1/2	1.250	3.000	114302	LSC30500
	5/8	5/8	1.625	3.500	113327	LSC30625
	3/4	3/4	1.625	4.000	113328	LSC30750
	1	1	2.000	4.000	113329	LSC31000

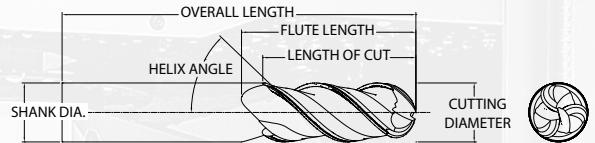
LSBN 3Series

45° Helix



The LSBN 3 SERIES provides many benefits to the user for aggressive cutting of mild Steel, more difficult stainless steels, and titanium materials.

- 3 Flute
- The series is also available in 5 and 6 flute as a special and is provided with a ball nose.
- The technology of the tool includes a specifically designed chip ejection cavity that accelerates the chip evacuation while maintaining outstanding flute body strength.
- The aggressive helix angle lifts the chip vertically adding increased ejection velocity to help reduce chip compaction in deep cavity situations.
- Tool life and durability are significantly improved with the use of very high quality micro grain carbide substrates and ultra-precision grinding methods.
- The premium series coatings combined with the geometric technologies provide for fantastic friction coefficients.
- The thermal dissipation characteristics allow for higher cutting edge velocities and thicker chip loads while requiring less horsepower at the spindle.
- Optimize this series with a high feed tool path to achieve an improved metal removal rate.
- Available nACo coated (other coatings available upon request)
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP nACo Coated	Description
Stub	1/8	1/8	0.250	1.500	113348	LSBNS30125
	3/16	3/16	0.312	2.000	113349	LSBNS30187
	1/4	1/4	0.375	2.500	113350	LSBNS30250
	5/16	5/16	0.437	2.500	113351	LSBNS30312
	3/8	3/8	0.500	2.500	113352	LSBNS30375
	1/2	1/2	0.625	3.000	113353	LSBNS30500
	5/8	5/8	0.750	3.500	113354	LSBNS30625
	3/4	3/4	1.000	4.000	113355	LSBNS30750
Long	1	1	1.250	4.000	113356	LSBNS31000
	1/8	1/8	0.500	1.500	113357	LSBN30125
	3/16	3/16	0.625	2.000	113358	LSBN30187
	1/4	1/4	0.750	2.500	101839	LSBN30250
	5/16	5/16	0.813	3.000	113360	LSBN30312
	3/8	3/8	1.000	3.000	113361	LSBN30375
	1/2	1/2	1.250	3.000	113362	LSBN30500
	5/8	5/8	1.625	3.500	113363	LSBN30625
	3/4	3/4	1.625	4.000	113364	LSBN30750
	1	1	2.000	4.000	113365	LSBN31000

STEEL CUTTING
High Performance

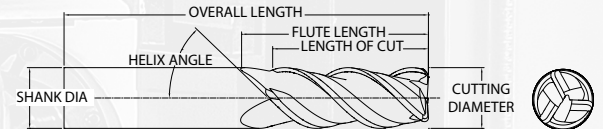


LSR 3 Series

45° Helix

The LSR 3 SERIES provides many benefits to the user for aggressive cutting of mild Steel, more difficult stainless steels, and titanium materials.

- 3 Flute
- The series is also available in 5 and 6 flute as a modified standard.
- The technology of the tool includes a specifically designed chip ejection cavity that accelerates the chip evacuation while maintaining outstanding flute body strength.
- The aggressive helix angle lifts the chip vertically adding additional benefit to the increased ejection velocity to help reduce chip compaction in deep cavity situations.
- Tool life and durability are significantly improved with the use of very high quality micro grain carbide substrates and ultra-precision grinding methods.
- The premium series coatings combined with the geometric technologies provide for fantastic friction coefficients.
- The thermal dissipation characteristics allow for higher cutting edge velocities and thicker chip loads while requiring less horsepower at the spindle.
- Optimize this series with a high feed tool path to achieve an improved metal removal rate.
- Available nACo coated (other coatings available upon request)
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Radius	Order #/EDP nACo Coated	Description
1/8	1/8	0.500	1.500	0.010	113266	LSR30125-01
1/8	1/8	0.500	1.500	0.020	113267	LSR30125-02
1/8	1/8	0.500	1.500	0.030	113268	LSR30125-03
3/16	3/16	0.625	2.000	0.010	113269	LSR30187-01
3/16	3/16	0.625	2.000	0.020	113270	LSR30187-02
3/16	3/16	0.625	2.000	0.030	113271	LSR30187-03
3/16	3/16	0.625	2.000	0.060	113272	LSR30187-06
1/4	1/4	0.750	2.500	0.010	113273	LSR30250-01
1/4	1/4	0.750	2.500	0.020	114340	LSR30250-02
1/4	1/4	0.750	2.500	0.030	113274	LSR30250-03
1/4	1/4	0.750	2.500	0.060	113275	LSR30250-06
1/4	1/4	0.750	2.500	0.090	113276	LSR30250-09
5/16	5/16	0.813	3.000	0.010	113277	LSR30312-01
5/16	5/16	0.813	3.000	0.020	113278	LSR30312-02
5/16	5/16	0.813	3.000	0.030	113279	LSR30312-03
5/16	5/16	0.813	3.000	0.060	113280	LSR30312-06
5/16	5/16	0.813	3.000	0.090	113281	LSR30312-09
5/16	5/16	0.813	3.000	0.125	113282	LSR30312-125
3/8	3/8	1.000	3.000	0.010	113283	LSR30375-01
3/8	3/8	1.000	3.000	0.020	114342	LSR30375-02
3/8	3/8	1.000	3.000	0.030	113284	LSR30375-03
3/8	3/8	1.000	3.000	0.060	113285	LSR30375-06
3/8	3/8	1.000	3.000	0.090	113286	LSR30375-09
3/8	3/8	1.000	3.000	0.125	113287	LSR30375-125
1/2	1/2	1.250	3.000	0.010	113288	LSR30500-01
1/2	1/2	1.250	3.000	0.020	114466	LSR30500-02
1/2	1/2	1.250	3.000	0.030	113289	LSR30500-03
1/2	1/2	1.250	3.000	0.060	113290	LSR30500-06
1/2	1/2	1.250	3.000	0.090	113291	LSR30500-09
1/2	1/2	1.250	3.000	0.125	113292	LSR30500-125
1/2	1/2	1.250	3.000	0.187	113293	LSR30500-187
5/8	5/8	1.625	3.500	0.010	113294	LSR30625-01
5/8	5/8	0.000	3.500	0.020	113295	LSR30625-02
5/8	5/8	1.625	3.500	0.030	113296	LSR30625-03
5/8	5/8	1.625	3.500	0.060	113297	LSR30625-06
5/8	5/8	1.625	3.500	0.090	113298	LSR30625-09
5/8	5/8	1.625	3.500	0.125	113299	LSR30625-125
5/8	5/8	1.625	3.500	0.187	113300	LSR30625-187

LSR 3Series

45° Helix

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Radius	Order #/EDP nACo Coated	Description
3/4	3/4	1.625	4.000	0.010	113301	LSR30750-01
3/4	3/4	1.625	4.000	0.020	113302	LSR30750-02
3/4	3/4	1.625	4.000	0.030	113303	LSR30750-03
3/4	3/4	1.625	4.000	0.060	113304	LSR30750-06
3/4	3/4	1.625	4.000	0.090	113305	LSR30750-09
3/4	3/4	1.625	4.000	0.125	113306	LSR30750-125
3/4	3/4	1.625	4.000	0.187	113307	LSR30750-187
1	1	2.000	4.000	0.010	113308	LSR31000-01
1	1	2.000	4.000	0.020	113309	LSR31000-02
1	1	2.000	4.000	0.030	113310	LSR31000-03
1	1	2.000	4.000	0.060	113311	LSR31000-06
1	1	2.000	4.000	0.090	113312	LSR31000-09
1	1	2.000	4.000	0.125	113313	LSR31000-125
1	1	2.000	4.000	0.187	113314	LSR31000-187
1/8	1/8	0.250	1.500	0.010	113214	LSRS30125-01
1/8	1/8	0.250	1.500	0.020	113215	LSRS30125-02
1/8	1/8	0.250	1.500	0.030	113216	LSRS30125-03
3/16	3/16	0.312	2.000	0.010	113217	LSRS30187-01
3/16	3/16	0.312	2.000	0.020	113218	LSRS30187-02
3/16	3/16	0.312	2.000	0.030	113219	LSRS30187-03
3/16	3/16	0.312	2.000	0.060	113220	LSRS30187-06
1/4	1/4	0.375	2.500	0.010	113221	LSRS30250-01
1/4	1/4	0.375	2.500	0.020	113222	LSRS30250-02
1/4	1/4	0.375	2.500	0.030	113223	LSRS30250-03
1/4	1/4	0.375	2.500	0.060	113224	LSRS30250-06
1/4	1/4	0.375	2.500	0.090	113225	LSRS30250-09
5/16	5/16	0.437	2.500	0.010	113226	LSRS30312-01
5/16	5/16	0.437	2.500	0.020	113227	LSRS30312-02
5/16	5/16	0.437	2.500	0.030	113228	LSRS30312-03
5/16	5/16	0.437	2.500	0.060	113229	LSRS30312-06
5/16	5/16	0.437	2.500	0.090	113230	LSRS30312-09
5/16	5/16	0.437	2.500	0.125	113231	LSRS30312-125
3/8	3/8	0.500	2.500	0.010	113232	LSRS30375-01
3/8	3/8	0.500	2.500	0.020	113233	LSRS30375-02
3/8	3/8	0.500	2.500	0.030	113234	LSRS30375-03
3/8	3/8	0.500	2.500	0.060	113235	LSRS30375-06
3/8	3/8	0.500	2.500	0.090	113236	LSRS30375-09
3/8	3/8	0.500	2.500	0.125	113237	LSRS30375-125
1/2	1/2	0.625	3.000	0.010	113238	LSRS30500-01
1/2	1/2	0.625	3.000	0.020	113239	LSRS30500-02
1/2	1/2	0.625	3.000	0.030	113240	LSRS30500-03
1/2	1/2	0.625	3.000	0.060	113241	LSRS30500-06
1/2	1/2	0.625	3.000	0.090	113242	LSRS30500-09
1/2	1/2	0.625	3.000	0.125	113243	LSRS30500-125
1/2	1/2	0.625	3.000	0.187	113244	LSRS30500-187
5/8	5/8	0.750	3.500	0.010	113245	LSRS30625-01
5/8	5/8	0.750	3.500	0.020	113246	LSRS30625-02
5/8	5/8	0.750	3.500	0.030	113247	LSRS30625-03
5/8	5/8	0.750	3.500	0.060	113248	LSRS30625-06
5/8	5/8	0.750	3.500	0.090	113249	LSRS30625-09
5/8	5/8	0.750	3.500	0.125	113250	LSRS30625-125
5/8	5/8	0.750	3.500	0.187	113251	LSRS30625-187
3/4	3/4	1.000	4.000	0.010	113252	LSRS30750-01
3/4	3/4	1.000	4.000	0.020	113253	LSRS30750-02
3/4	3/4	1.000	4.000	0.030	113254	LSRS30750-03
3/4	3/4	1.000	4.000	0.060	113255	LSRS30750-06
3/4	3/4	1.000	4.000	0.090	113256	LSRS30750-09
3/4	3/4	1.000	4.000	0.125	113257	LSRS30750-125
3/4	3/4	1.000	4.000	0.187	113258	LSRS30750-187
1	1	1.250	4.000	0.010	113259	LSRS31000-01
1	1	1.250	4.000	0.020	113260	LSRS31000-02
1	1	1.250	4.000	0.030	113261	LSRS31000-03
1	1	1.250	4.000	0.060	113262	LSRS31000-06
1	1	1.250	4.000	0.090	113263	LSRS31000-09
1	1	1.250	4.000	0.125	113264	LSRS31000-125
1	1	1.250	4.000	0.187	113265	LSRS31000-187

STEEL CUTTING
High Performance

G. W. Schultz Tool offers any LOC and OL with any series tool as a modified standard. All products are also available with special coatings to meet your specific requirements.

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Aluminum Cutting

High Performance

MATERIAL	ALUMIGATOR	GWA	SF	MSA	BNA	RFA
 Aluminum	BEST	BEST	BETTER	BETTER	BEST	BEST
 Brass	BEST	BEST	BETTER	BETTER	BEST	BEST
 Copper Alloys	BEST	BEST	BETTER	BETTER	BEST	BEST
 Iron, Hard Cast Iron, Soft Cast Iron, Malleable						
 Nickel Base Alloys						
 Steel, Hardened up to RC 35 Steel, Hardened up to RC 50 Steel, Hardened up to RC 60 Steel, Low Carbon Steel, Tool						
 Stainless Steel, Free Machining Stainless Steel, Work Hardening						
 Titanium Alloys						
 Inconel						
 Plastics		BEST	BETTER	BETTER	BEST	BEST

ALUMINUM CUTTING
High Performance



ALUMIGATOR

ALUMINUM ROUGHING END MILL



The AluMigator is a new series of the next generation high performance end mills that cuts through tough materials with ease.

- 3 Flute
- This end mill is designed to ramp into pockets at speeds and ramp angles surpassing the current industry capabilities
- Faster by 3 to 4 times than a traditional end mill
- Strong core and highly engineered cutting edges, produces an extremely strong cutter
- 45° ramp angle, so you can reach the bottom of the pocket
- Faster material removal rates exceed traditional aluminum roughers
- Available in sizes ranging from 3/16" - 3/4"
- Several radius size options come standard
- Combination of geometries, produce a short curled chip that is evacuated quickly to help prevent double cutting chips and keeps the flutes from packing
- There is an AluMigator end mill for every aluminum roughing application
- Regrind and recoating available upon request

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Minimum Corner Radius	Maximum Corner Radius	Description	Order #/EDP Uncoated EDP#
3/16"	3/16"	0.625	2.000	.010"	0.030	ART30187	118482
1/4"	1/4"	0.750	2.500	.010"	0.040	ART30250	118483
5/16"	5/16"	0.750	2.500	.010"	0.050	ART30312	118485
3/8"	3/8"	1.000	2.500	.015"	0.060	ART30375	118083
1/2"	1/2"	1.250	3.000	.015"	0.080	ART30500	118043
5/8"	5/8"	1.625	3.500	.020"	0.100	ART30625	118487
3/4"	3/4"	1.625	4.000	.030"	0.120	ART30750	118488

A corner radius is required for this series. Add -Radius size to the end of the description for radius option selection. Ex: ART30500-06 For a 1/2" AluMigator with a .060" Corner Radius

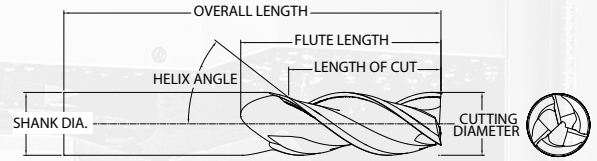
GWA 3Series

37° Helix



The GWA 3 SERIES end mill was developed for high speed machining of non-ferrous alloys.

- 3 Flute
- Plunge, ramp and profile milling can be achieved with excellent results.
- Available with ZRN (other coatings available upon request)
- Special corner radius size is available upon request.
- Available standard, with shank undercut.
- Special reach lengths available upon request.
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Neck Diameter	Reach Length	Order #/EDP ZRN Coated EDP#	Order #/EDP Uncoated EDP#	Description
Stub	1/8	1/8	0.250	1.500			101037	101035	GWAS30125
	3/16	3/16	0.313	2.000			101040	101039	GWAS30187
	1/4	1/4	0.375	2.500			101045	101044	GWAS30250
	5/16	5/16	0.438	2.500			101048	101046	GWAS30312
	3/8	3/8	0.500	2.500			101053	101049	GWAS30375
	1/2	1/2	0.625	3.000			101056	101054	GWAS30500
	5/8	5/8	0.750	3.500			101058	101057	GWAS30625
	3/4	3/4	1.000	4.000			101062	101061	GWAS30750
1	1	1.250	4.000			101065	101063	GWAS31000	
Standard	3/32	1/8	0.312	1.500			103123	102537	GWA30093
	1/8	1/8	0.500	1.500			105059	100942	GWA30125
	5/32	3/16	0.500	2.000			108028	106407	GWA30156
	3/16	3/16	0.625	2.000			100952	100947	GWA30187
	1/4	1/4	0.750	2.500			103126	100955	GWA30250
	5/16	5/16	0.750	2.500			100963	100960	GWA30312
	3/8	3/8	1.000	2.500			100971	100964	GWA30375
	1/2	1/2	1.250	3.000			104458	100972	GWA30500
	5/8	5/8	1.625	3.500			100987	100986	GWA30625
	3/4	3/4	1.625	4.000			105058	100988	GWA30750
1	1	2.000	4.000			100993	100992	GWAS31000	
Long	1/4	1/4	1.125	3.000			100996	100994	GWAL30250
	5/16	5/16	1.125	3.000			100998	100997	GWAL30312
	3/8	3/8	1.500	4.000			101002	100999	GWAL30375
	1/2	1/2	2.250	4.000			101011	101003	GWAL30500
	5/8	5/8	2.500	5.000			101013	101012	GWAL30625
	3/4	3/4	2.500	5.000			101018	101014	GWAL30750
1	1	2.500	6.000			101022	101020	GWAL31000	
Shank Undercut	1/8	1/8	0.250	1.500	0.115	0.750	109102	101066	GWASU30125
	3/16	3/16	0.313	2.000	0.170	1.000	109103	101067	GWASU30187
	1/4	1/4	0.375	2.500	0.235	1.125	109104	101068	GWASU30250
	5/16	5/16	0.437	2.500	0.295	1.125	108136	101069	GWASU30312
	3/8	3/8	0.500	2.500	0.355	1.125	109105	101070	GWASU30375
	1/2	1/2	0.625	3.000	0.460	1.375	109106	101071	GWASU30500
	5/8	5/8	0.750	3.500	0.590	1.625	109107	101073	GWASU30625
	3/4	3/4	1.000	4.000	0.715	1.625	109108	101074	GWASU30750
1	1	1.250	4.000	0.960	2.000	109109	101080	GWASU31000	
Long Shank Undercut	1/8	1/8	0.250	2.000	0.115	1.250	109101	101023	GWALSU30125
	3/16	3/16	0.312	3.000	0.170	1.500	103152	101024	GWALSU30187
	1/4	1/4	0.375	4.000	0.235	2.125	103153	101026	GWALSU30250
	5/16	5/16	0.437	4.000	0.295	2.125	103154	101028	GWALSU30312
	3/8	3/8	0.500	4.000	0.355	2.125	103155	101029	GWALSU30375
	1/2	1/2	0.625	4.000	0.460	2.125	103156	101030	GWALSU30500
	5/8	5/8	0.750	6.000	0.590	2.375	103157	101031	GWALSU30625
	3/4	3/4	1.000	6.000	0.715	2.500	103158	101032	GWALSU30750
1	1	1.250	6.000	0.960	3.375	103159	101034	GWALSU31000	
Extra Long Shank Undercut	1/4	1/4	0.375	4.000	0.235	2.875	109110	101091	GWAXLSU30250
	5/16	5/16	0.437	4.000	0.295	2.875	103161	101092	GWAXLSU30312
	3/8	3/8	0.500	6.000	0.355	3.375	109111	101093	GWAXLSU30375
	1/2	1/2	0.625	6.000	0.460	3.375	109112	101094	GWAXLSU30500
	5/8	5/8	0.750	6.000	0.590	3.375	109113	101095	GWAXLSU30625
	3/4	3/4	1.000	6.000	0.715	3.375	109114	101096	GWAXLSU30750
1	1	1.250	7.000	0.960	4.500	109115	101097	GWAXLSU31000	

ALUMINUM CUTTING
High Performance

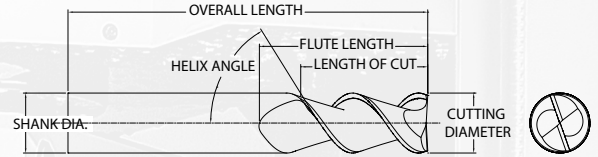
SF 2Series

55° Helix



The SF 2 SERIES is an excellent end mill for aluminum and hard plastic applications.

- 2 Flute
- High Helix for improved chip evacuation.
- Available with ZRN (other coatings available upon request)
- Excellent metal removal rate
- Profile milling, pocketing, ramping, and slotting.
- Circular land to improve surface finish.
- Undercut (only use the ones with Neck Diameter and Reach Length)
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP ZRN Coated	Order #/EDP Uncoated	Description
1/8	1/8	0.500	1.500	101972	101971	SF20125
3/16	3/16	0.625	2.000	101975	101974	SF20187
7/32	1/4	0.625	2.500	109414	101977	SF20218
1/4	1/4	0.750	2.500	107858	101978	SF20250
9/32	5/16	0.750	2.500	109415	101980	SF20281
5/16	5/16	0.812	2.500	101982	101981	SF20312
3/8	3/8	0.875	2.500	101985	101983	SF20375
1/2	1/2	1.000	3.000	101991	101988	SF20500
5/8	5/8	1.250	3.500	101996	101994	SF20625
3/4	3/4	1.500	4.000	101999	101997	SF20750
1	1	1.500	4.000	102002	102001	SF21000

ALUMINUM CUTTING
High Performance

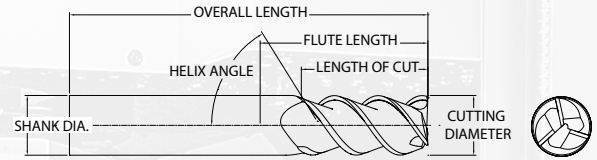
SF 3Series

55° Helix



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- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP ZRN Coated	Order #/EDP Uncoated	Description
1/8	1/8	0.500	1.500	102004	102003	SF30125
3/16	3/16	0.625	2.000	102009	102008	SF30187
7/32	1/4	0.625	2.500	102011	102010	SF30218
1/4	1/4	0.750	2.500	102013	102012	SF30250
9/32	5/16	0.750	2.500	102015	102014	SF30281
5/16	5/16	0.813	2.500	102017	102016	SF30312
3/8	3/8	0.875	2.500	102022	102018	SF30375
1/2	1/2	1.000	3.000	102029	102024	SF30500
5/8	5/8	1.250	3.500	102031	102030	SF30625
3/4	3/4	1.500	4.000	102033	102032	SF30750
1	1	1.500	4.000	109416	102034	SF31000

ALUMINUM CUTTING
High Performance

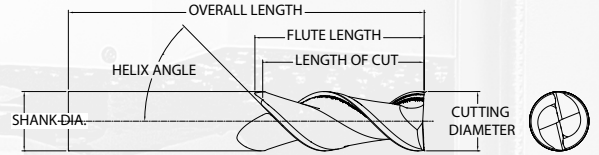
MSA 2Series

45° Helix



The MSA 2 SERIES end mills provide great performance for non-ferrous alloys.

- 2 Flute
- This tool was developed for high speed machining of non-ferrous alloys.
- Available with ZRN (other coatings available upon request)
- Plunge, ramp and profile milling can be achieved with excellent results.
- Special corner radius size is available upon request.
- Circular land to improve surface finish.
- Available standard, with shank undercut.
- Special reach lengths available upon request.
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Neck Diameter	Reach Length	Order #/EDP ZRN Coated	Order #/EDP Uncoated	Description
Stub	1/8	1/8	0.250	1.500			109293	101793	MSAS20125
	3/16	3/16	0.313	2.000			101795	101794	MSAS20187
	1/4	1/4	0.375	2.500			109294	101796	MSAS20250
	5/16	5/16	0.437	2.500			109295	101797	MSAS20312
	3/8	3/8	0.500	2.500			109296	101798	MSAS20375
	1/2	1/2	0.625	3.000			109297	101799	MSAS20500
	5/8	5/8	0.750	3.500			109298	101801	MSAS20625
	3/4	3/4	1.000	4.000			109299	101802	MSAS20750
1	1	1.250	4.000			109300	101803	MSAS21000	
Standard	1/8	1/8	0.500	1.500			103177	101717	MSA20125
	3/16	3/16	0.625	2.000			101720	101719	MSA20187
	1/4	1/4	0.750	2.500			101722	101721	MSA20250
	5/16	5/16	0.750	2.500			103181	101724	MSA20312
	3/8	3/8	1.000	2.500			101726	101725	MSA20375
	1/2	1/2	1.250	3.000			103183	101727	MSA20500
	5/8	5/8	1.625	3.500			103184	101730	MSA20625
	3/4	3/4	1.625	4.000			103186	101731	MSA20750
1	1	2.000	4.000			109259	101732	MSA21000	
Long	1/4	1/4	1.125	3.000			109269	101740	MSAL20250
	5/16	5/16	1.125	3.000			103189	101741	MSAL20312
	3/8	3/8	1.500	4.000			108055	101743	MSAL20375
	1/2	1/2	2.250	4.000			109271	101744	MSAL20500
	5/8	5/8	2.500	5.000			109272	101746	MSAL20625
	3/4	3/4	2.500	5.000			109273	101747	MSAL20750
1	1	2.500	6.000			109274	101748	MSAL21000	
Undercut	1/8	1/8	0.250	1.500	10/87	3/4	109313	101805	MSASU20125
	3/16	3/16	0.313	2.000	8/47	1	109314	101806	MSASU20187
	1/4	1/4	0.375	2.500	4/17	1 1/8	109315	101807	MSASU20250
	5/16	5/16	0.437	2.500	18/61	1 1/8	109316	101808	MSASU20312
	3/8	3/8	0.500	2.500	11/31	1 1/8	109317	101809	MSASU20375
	1/2	1/2	0.625	3.000	23/50	1 3/8	109318	101810	MSASU20500
	5/8	5/8	0.750	3.500	23/39	1 5/8	109319	101811	MSASU20625
	3/4	3/4	1.000	4.000	5/7	1 5/8	109320	101812	MSASU20750
1	1	1.250	4.000	24/25	2	109321	101813	MSASU21000	
Long Undercut	1/8	1/8	0.250	2.000	10/87	1 1/4	109285	101766	MSALSU20125
	3/16	3/16	0.313	3.000	8/47	1 1/2	109286	101767	MSALSU20187
	1/4	1/4	0.375	4.000	4/17	2 1/8	109287	101769	MSALSU20250
	5/16	5/16	0.437	4.000	18/61	2 1/8	109288	101772	MSALSU20312
	3/8	3/8	0.500	4.000	11/31	2 1/8	108017	101773	MSALSU20375
	1/2	1/2	0.625	4.000	23/50	2 1/8	109289	101776	MSALSU20500
	5/8	5/8	0.750	6.000	23/39	2 3/8	109290	101784	MSALSU20625
	3/4	3/4	1.000	6.000	5/7	2 1/2	109291	101785	MSALSU20750
1	1	1.250	6.000	24/25	3 3/8	109292	101790	MSALSU21000	
Extra Long Undercut	1/4	1/4	0.375	4.000	4/17	2 7/8	109322	101828	MSAXLSU20250
	5/16	5/16	0.437	4.000	18/61	2 7/8	109323	101829	MSAXLSU20312
	3/8	3/8	0.500	6.000	11/31	3 3/8	109324	101830	MSAXLSU20375
	1/2	1/2	0.625	6.000	23/50	3 3/8	109325	101831	MSAXLSU20500
	5/8	5/8	0.750	6.000	23/39	3 3/8	109326	101832	MSAXLSU20625
	3/4	3/4	1.000	6.000	5/7	3 3/8	109327	101833	MSAXLSU20750
1	1	1.250	7.000	24/25	4 1/2	113523	101834	MSAXLSU21000	

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High Performance

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G. W. Schultz Tool offers any LOC and OL with any series tool as a modified standard. All products are also available with special coatings to meet your specific requirements.

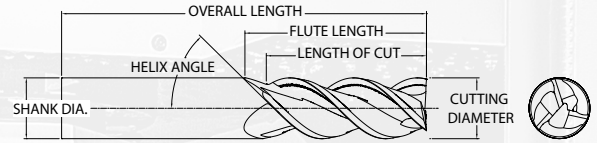
MSA 3Series

45° Helix



The MSA 3 SERIES end mills provides exceptional performance for non-ferrous alloys.

- 3 Flute
- This tool was developed for high speed machining of non-ferrous alloys.
- Plunge, ramp and profile milling can be achieved with excellent results.
- Special corner radius size is available upon request.
- Available with ZRN (other coatings available upon request)
- Circular land to improve surface finish.
- Available standard, with shank undercut.
- Special reach lengths available upon request.
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Neck Diameter	Reach Length	Order #/EDP ZRN Coated	Order #/EDP Uncoated	Description
Stub	1/8	1/8	0.250	1.500			109301	104938	MSAS30125
	3/16	3/16	0.313	2.000			109302	108273	MSAS30187
	1/4	1/4	0.375	2.500			109303	106525	MSAS30250
	5/16	5/16	0.437	2.500			109305	109304	MSAS30312
	3/8	3/8	0.500	2.500			109306	104756	MSAS30375
	1/2	1/2	0.625	3.000			109307	106526	MSAS30500
	5/8	5/8	0.750	3.500			109308	106527	MSAS30625
	3/4	3/4	1.000	4.000			109310	109309	MSAS30750
1	1	1.250	4.000			109312	109311	MSAS31000	
Standard	1/8	1/8	0.500	1.500			109260	106448	MSA30125
	3/16	3/16	0.625	2.000			109261	107267	MSA30187
	1/4	1/4	0.750	2.500			109262	101733	MSA30250
	5/16	5/16	0.750	2.500			109263	102384	MSA30312
	3/8	3/8	1.000	2.500			109264	103700	MSA30375
	1/2	1/2	1.250	3.000			109265	101736	MSA30500
	5/8	5/8	1.625	3.500			109266	106747	MSA30625
	3/4	3/4	1.625	4.000			109267	105615	MSA30750
1	1	2.000	4.000			109268	102401	MSA31000	
Long	1/4	1/4	1.125	3.000			109275	101749	MSAL30250
	5/16	5/16	1.125	3.000			109276	107268	MSAL30312
	3/8	3/8	1.500	4.000			109278	109277	MSAL30375
	1/2	1/2	2.250	4.000			113522	104790	MSAL30500
	5/8	5/8	2.500	5.000			109280	109279	MSAL30625
	3/4	3/4	2.500	5.000			109282	109281	MSAL30750
	1	1	2.500	6.000			109284	109283	MSAL31000
Undercut	1/8	1/8	0.250	1.500	10/87	3/4	113525	113524	MSASU30125
	3/16	3/16	0.313	2.000	8/47	1	113527	113526	MSASU30187
	1/4	1/4	0.375	2.500	4/17	1 1/8	113528	105047	MSASU30250
	5/16	5/16	0.437	2.500	18/61	1 1/8	113530	113529	MSASU30312
	3/8	3/8	0.500	2.500	11/31	1 1/8	113532	113531	MSASU30375
	1/2	1/2	0.625	3.000	23/50	1 3/8	113534	113533	MSASU30500
	5/8	5/8	0.750	3.500	23/39	1 5/8	113536	113535	MSASU30625
	3/4	3/4	1.000	4.000	5/7	1 5/8	113538	113537	MSASU30750
1	1	1.250	4.000	24/25	2	113540	113539	MSASU31000	
Long Undercut	1/8	1/8	0.250	2.000	10/87	1 1/4	113545	113544	MSALSU30125
	3/16	3/16	0.313	3.000	8/47	1 1/2	113547	113546	MSALSU30187
	1/4	1/4	0.375	4.000	4/17	2 1/8	114860	105046	MSALSU30250
	5/16	5/16	0.437	4.000	18/61	2 1/8	114861	101792	MSALSU30312
	3/8	3/8	0.500	4.000	11/31	2 1/8	114863	114862	MSALSU30375
	1/2	1/2	0.625	4.000	23/50	2 1/8	114864	105796	MSALSU30500
	5/8	5/8	0.750	6.000	23/39	2 3/8	114865	105171	MSALSU30625
	3/4	3/4	1.000	6.000	5/7	2 1/2	114867	114866	MSALSU30750
1	1	1.250	6.000	24/25	3 3/8	114869	114868	MSALSU31000	
Extra Long Undercut	1/4	1/4	0.375	4.000	4/17	2 7/8	114871	114870	MSAXLSU30250
	5/16	5/16	0.437	4.000	18/61	2 7/8	114873	114872	MSAXLSU30312
	3/8	3/8	0.500	6.000	11/31	3 3/8	114874	112253	MSAXLSU30375
	1/2	1/2	0.625	6.000	23/50	3 3/8	114875	105841	MSAXLSU30500
	5/8	5/8	0.750	6.000	23/39	3 3/8	114877	114876	MSAXLSU30625
	3/4	3/4	1.000	6.000	5/7	3 3/8	114878	101835	MSAXLSU30750
1	1	1.250	7.000	24/25	4 1/2	114879	105748	MSAXLSU31000	

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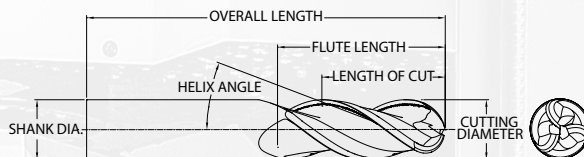
BNA 3Series

37° Helix



The BNA 3 SERIES is a high helix ball nose end mill.

- 3 Flute
- Plunge, ramp and profile milling can be achieved with excellent results.
- Available with ZRN (other coatings available upon request)
- Special corner radius size is available upon request.
- Available standard, with shank undercut.
- Special reach lengths available upon request.
- Circular land to improve surface finish.
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP ZRN Coated	Order #/EDP Uncoated	Description
Stub	1/8	1/8	0.250	1.500	108708	105116	BNAS30125
	3/16	3/16	0.313	2.000	108709	106332	BNAS30187
	1/4	1/4	0.375	2.500	108710	104778	BNAS30250
	5/16	5/16	0.437	2.500	108711	106331	BNAS30312
	3/8	3/8	0.500	2.500	107737	103918	BNAS30375
	1/2	1/2	0.625	3.000	106554	104594	BNAS30500
	5/8	5/8	0.750	3.500	108712	105935	BNAS30625
	3/4	3/4	1.000	4.000	108713	100332	BNAS30750
1	1	1.250	4.000	108714	104740	BNAS31000	
Standard	1/8	1/8	0.500	1.500	107510	104730	BNA30125
	3/16	3/16	0.625	2.000	108734	106293	BNA30187
	1/4	1/4	0.750	2.500	108735	104777	BNA30250
	5/16	5/16	0.750	2.500	108736	104714	BNA30312
	3/8	3/8	1.000	2.500	107853	106905	BNA30375
	1/2	1/2	1.250	3.000	107488	104847	BNA30500
	5/8	5/8	1.625	3.500	108737	106868	BNA30625
	3/4	3/4	1.625	4.000	112468	104737	BNA30750
1	1	2.000	4.000	108739	104739	BNA31000	
Long	1/4	1/4	1.125	3.000	108715	104779	BNAL30250
	5/16	5/16	1.125	3.000	108716	106602	BNAL30312
	3/8	3/8	1.500	4.000	108717	104775	BNAL30375
	1/2	1/2	2.250	4.000	106558	104776	BNAL30500
	5/8	5/8	2.500	5.000	108719	108718	BNAL30625
	3/4	3/4	2.500	5.000	108721	108720	BNAL30750
	1	1	2.500	6.000	108722	104738	BNAL31000
Shank Undercut	1/8	1/8	0.250	1.500	108740	105617	BNASU30125
	3/16	3/16	0.313	2.000	108742	108741	BNASU30187
	1/4	1/4	0.375	2.500	108067	104680	BNASU30250
	5/16	5/16	0.437	2.500	108744	108743	BNASU30312
	3/8	3/8	0.500	2.500	108745	107411	BNASU30375
	1/2	1/2	0.625	3.000	106556	107457	BNASU30500
	5/8	5/8	0.750	3.500	108747	108746	BNASU30625
	3/4	3/4	1.000	4.000	108749	108748	BNASU30750
1.00	1.00	1.250	4.000	108750	107363	BNASU31000	
Long Shank Undercut	1/8	1/8	0.250	2.000	108723	107231	BNALSU30125
	3/16	3/16	0.312	3.000	108724	105419	BNALSU30187
	1/4	1/4	0.375	4.000	108725	104681	BNALSU30250
	5/16	5/16	0.437	4.000	108727	108726	BNALSU30312
	3/8	3/8	0.500	4.000	108728	106535	BNALSU30375
	1/2	1/2	0.625	4.000	106557	104889	BNALSU30500
	5/8	5/8	0.750	6.000	108730	108729	BNALSU30625
	3/4	3/4	1.000	6.000	108732	108731	BNALSU30750
	1.00	1.00	1.250	6.000	108733	105169	BNALSU31000
	1/4	1/4	0.375	4.000	108751	105329	BNAXLSU30250
Extra Long Shank Undercut	5/16	5/16	0.437	4.000	108752	105803	BNAXLSU30312
	3/8	3/8	0.500	6.000	108753	105731	BNAXLSU30375
	1/2	1/2	0.625	6.000	108754	103847	BNAXLSU30500
	5/8	5/8	0.750	6.000	108755	107412	BNAXLSU30625
	3/4	3/4	1.000	6.000	108757	108756	BNAXLSU30750
1	1	1.250	7.000	108759	108758	BNAXLSU31000	

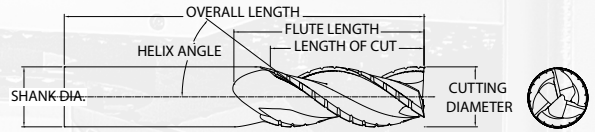
RFA 3Series

37° Helix



The RFA 3SERIES end mill is a roughing tool primarily used for machining non-ferrous alloys.

- 3 Flutes
- Rougher finisher with staggered chip breakers
- Plunge, ramp and profile milling can be achieved with excellent results.
- Available with ZRN (other coatings available upon request)
- Special corner radius size is available upon request.
- Available standard, with shank undercut.
- Special reach lengths available upon request.
- Circular land to improve surface finish.
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut



	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Neck Diameter	Reach Length	Order #/EDP ZRN Coated	Order #/EDP Uncoated	Description
Stub	1/8	1/8	0.250	1.500			109391	101919	RFAS30125
	3/16	3/16	0.313	2.000			105445	101921	RFAS30187
	1/4	1/4	0.375	2.500			101889	101922	RFAS30250
	5/16	5/16	0.437	2.500			109393	101923	RFAS30312
	3/8	3/8	0.500	2.500			105446	101924	RFAS30375
	1/2	1/2	0.625	3.000			101897	101925	RFAS30500
	5/8	5/8	0.750	3.500			109395	101926	RFAS30625
	3/4	3/4	1.000	4.000			106911	101927	RFAS30750
1	1	1.250	4.000			109396	101929	RFAS31000	
Standard	1/8	1/8	0.500	1.500			101884	101883	RFA30125
	3/16	3/16	0.625	2.000			101886	101885	RFA30187
	1/4	1/4	0.750	2.500			101888	101887	RFA30250
	5/16	5/16	0.750	2.500			101891	101890	RFA30312
	3/8	3/8	1.000	2.500			106016	101892	RFA30375
	1/2	1/2	1.250	3.000			101896	101893	RFA30500
	5/8	5/8	1.625	3.500			103235	101898	RFA30625
	3/4	3/4	1.625	4.000			101900	101899	RFA30750
1	1	2.000	4.000			103234	101901	RFA31000	
Long	1/4	1/4	1.125	3.000			103238	101902	RFAL30250
	5/16	5/16	1.125	3.000			103239	101903	RFAL30312
	3/8	3/8	1.500	4.000			101905	101904	RFAL30375
	1/2	1/2	2.250	4.000			103241	101906	RFAL30500
	5/8	5/8	2.500	5.000			103242	101907	RFAL30625
	3/4	3/4	2.500	5.000			109380	101908	RFAL30750
	1	1	2.500	6.000			109381	101909	RFAL31000
Shank Undercut	1/8	1/8	0.250	1.500	10/87	3/4	109397	101930	RFASU30125
	3/16	3/16	0.313	2.000	8/47	1	109398	101931	RFASU30187
	1/4	1/4	0.375	2.500	4/17	1 1/8	109399	101932	RFASU30250
	5/16	5/16	0.437	2.500	18/61	1 1/8	109400	101933	RFASU30312
	3/8	3/8	0.500	2.500	11/31	1 1/8	109401	101934	RFASU30375
	1/2	1/2	0.625	3.000	23/50	1 3/8	109402	101935	RFASU30500
	5/8	5/8	0.750	3.500	23/39	1 5/8	109403	101936	RFASU30625
	3/4	3/4	1.000	4.000	5/7	1 5/8	113541	101937	RFASU30750
1	1	1.250	4.000	24/25	2	109405	101938	RFASU31000	
Long Shank Undercut	1/8	1/8	0.250	2.000	10/87	1 1/4	109382	101910	RFALSU30125
	3/16	3/16	0.313	3.000	8/47	1 1/2	109383	101911	RFALSU30187
	1/4	1/4	0.375	4.000	4/17	2 1/8	109384	101912	RFALSU30250
	5/16	5/16	0.437	4.000	18/61	2 1/8	109385	101913	RFALSU30312
	3/8	3/8	0.500	4.000	11/31	2 1/8	109386	101914	RFALSU30375
	1/2	1/2	0.625	4.000	23/50	2 1/8	109387	101915	RFALSU30500
	5/8	5/8	0.750	6.000	23/39	2 3/8	109388	101916	RFALSU30625
	3/4	3/4	1.000	6.000	5/7	2 1/2	109389	101917	RFALSU30750
1	1	1.250	6.000	24/25	3 3/8	109390	101918	RFALSU31000	
Extra Long Shank Undercut	1/4	1/4	0.375	4.000	4/17	2 7/8	109406	101948	RFAXLSU30250
	5/16	5/16	0.437	4.000	18/61	2 7/8	109407	101949	RFAXLSU30312
	3/8	3/8	0.500	6.000	11/31	3 3/8	109408	101950	RFAXLSU30375
	1/2	1/2	0.625	6.000	23/50	3 3/8	109409	101951	RFAXLSU30500
	5/8	5/8	0.750	6.000	23/39	3 3/8	109410	101953	RFAXLSU30625
	3/4	3/4	1.000	6.000	5/7	3 3/8	109411	101954	RFAXLSU30750
1	1	1.250	7.000	24/25	4 1/2	109412	101955	RFAXLSU31000	

ALUMINUM CUTTING
High Performance



ALUMIGATOR

THE ULTIMATE IN
ALUMINUM CUTTING
PERFORMANCE

SPEEDS & FEEDS

ALUMIGATOR ROUGHER

DIAMETER	DEPTH OF CUT	RADIAL ENGAGEMENT	FEEDRATE	RPM
0.1250	0.2500	0.0500	95	12000
0.1870	0.3740	0.0750	141	12000
0.2500	0.7500	0.1000	189	12000
0.3120	0.9360	0.1250	236	12000
0.3750	0.7500	0.1500	284	12000
0.4370	0.8740	0.1750	330	12000
0.5000	1.0000	0.2000	378	12000
0.5620	1.1240	0.2250	425	12000
0.6250	1.2500	0.2500	473	12000
0.7500	1.5000	0.3000	567	12000
0.8750	1.7500	0.3500	662	12000
1.0000	2.0000	0.4000	756	12000

Performance is contingent upon an adequate tool holder, rigid work holding, tool path and your machine's capabilities.



ALUMIGATOR

ALUMINUM ROUGHING END MILL



595 County Road 448
Tavares, FL 32778
866.866.5497 | 352.343.8778
www.gwschultz.com

Innovative High Performance Cutting Tools

The Alumigator is a new series of the next generation high performance end mills that cuts through tough materials with ease.

- 3 Flute
- This end mill is designed to ramp into pockets at speeds and ramp angles surpassing the current industry capabilities
- Faster by 3 to 4 times than a traditional end mill
- Strong core and highly engineered cutting edges, produces an extremely strong cutter
- 45° ramp angle, so you can reach the bottom of the pocket
- Faster material removal rates exceed traditional aluminum roughers
- Available in sizes ranging from 3/16"-3/4"
- Several radius size options come standard
- Combination of geometries, produce a short curled chip that is evacuated quickly to help prevent double cutting chips and keeps the flutes from packing
- There is an Alumigator end mill for every aluminum roughing application
- Special corner radius size is available upon request



Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Description	Small Corner Radius	Small Radius EDP#	Large Corner Radius	Large Radius EDP#
3/16"	3/16"	.625	2.00	ART30187	.010"	118482	.030"	118300
1/4"	1/4"	.750	2.50	ART30250	.010"	118483	.040"	118484
5/16"	5/16"	.750	2.50	ART30312	.010"	118485	.050"	118486
3/8"	3/8"	1.00	2.50	ART30375	.015"	118083	.060"	118084
1/2"	1/2"	1.25	3.00	ART30500	.015"	118043	.080"	118695
5/8"	5/8"	1.625	3.50	ART30625	.020"	118487	.100"	119594
3/4"	3/4"	1.625	4.00	ART30750	.030"	118488	.120"	119621

A corner radius is required for this series. Add -Radius size to the end of the description for radius option selection. Ex: ART30500-06 For a 1/2" Alumigator with a .060" Corner Radius

ALUMINUM CUTTING
High Performance

66 Order Toll Free: 1-866-866-5497
gwschultz.com

G. W. Schultz Tool offers any LOC and OL with any series tool as a modified standard. All products are also available with special coatings to meet your specific requirements.



ALUMIGATOR

SLOTING & ROUGHING TOOL



595 County Road 448
Tavares, FL 32778
866.866.5497 | 352.343.8778
www.gwschultz.com

Innovative High Performance Cutting Tools

The Alumigator Slotting & Roughing Tool is a new series of the next generation, high performance end mills that cuts through tough applications with ease.

- 3 Flute
- 3 to 4 times faster than a traditional end mill
- Strong core and highly engineered cutting edges, produces an extremely strong cutter
- Available in sizes ranging from 3/16"-3/4"
- Several radius size options come standard
- Combination of geometries, produce a short curled chip that is evacuated quickly to help prevent double cutting chips and keeps the flutes from packing
- Exceptional performance in slotting, pocketing, and profile milling
- Staggered chip breakers to rough/finish and break up harmonics
- Remarkable in thin wall and bottomed parts
- Reinforced corner increases tool life and also reduces potential part lift
- Rigid enough for long reach application
- Performs well in conventional and high speed tool paths
- There is an Alumigator end mill for every aluminum roughing application
- Special corner radius size is available upon request
- Center Cutting



ALUMINUM CUTTING
High Performance

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Description	Square Corner EDP#	Small Corner Radius	Small Radius EDP#	Large Corner Radius	Large Radius EDP#
3/16"	3/16"	.625	2.00	AST30187	120650	.010"	120651	.030"	120652
1/4"	1/4"	.750	2.50	AST30250	120653	.010"	120654	.040"	120655
5/16"	5/16"	.750	2.50	AST30312	120656	.010"	120657	.050"	120658
3/8"	3/8"	1.00	2.50	AST30375	120659	.015"	120660	.060"	120661
1/2"	1/2"	1.25	3.00	AST30500	120662	.015"	120663	.080"	120664
5/8"	5/8"	1.625	3.50	AST30625	120665	.020"	120666	.100"	120667
3/4"	3/4"	1.625	4.00	AST30750	120668	.030"	120669	.120"	120670

Add-Radius size to the end of the description for radius option selection.
Ex: AST30500-015 For a 1/2" Alumigator with a .015" Corner Radius

SPEEDS & FEEDS

ALUMIGATOR FINISHER

DIAMETER	DEPTH OF CUT	RADIAL ENGAGEMENT	FEEDRATE	RPM
0.1250	0.2500	0.0060	70	12000
0.1870	0.3740	0.0090	101	12000
0.2500	0.7500	0.0130	135	12000
0.3120	0.9360	0.0160	168	12000
0.3750	0.7500	0.0190	203	12000
0.4370	0.8740	0.0220	236	12000
0.5000	1.0000	0.0250	270	12000
0.5620	1.1240	0.0280	303	12000
0.6250	1.2500	0.0310	338	12000
0.7500	1.5000	0.0380	405	12000
0.8750	1.7500	0.0440	473	12000
1.0000	2.0000	0.0500	540	12000

Performance is contingent upon an adequate tool holder, rigid work holding, tool path and your machine's capabilities.



ALUMIGATOR

FINISHER TOOL



595 County Road 448
Tavares, FL 32778
866.866.5497 | 352.343.8778
www.gwschultz.com

Innovative High Performance Cutting Tools

The Alumigator Finisher Tool is a new series of the next generation, high performance end mills that cuts through tough applications with ease.

- 3 Flute
- Strong core and highly engineered cutting edges, produces an extremely strong cutter
- Material removal rates exceed traditional aluminum finishers
- Available in sizes ranging from 3/16"-3/4"
- Several radius size options come standard
- Aggressive finishing on profile and bottom while maintaining a superior surface finish
- Remarkable in thin wall and bottomed parts
- Reinforced corner increases tool life and reduces potential part lift
- Rigid enough for long reach applications
- Performs well in conventional and high speed tool paths
- There is an Alumigator end mill for every aluminum application
- Special corner radius size is available upon request
- Center Cutting



ALUMINUM CUTTING
High Performance

Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Description	Square Corner EDP#	Small Corner Radius	Small Radius EDP#	Large Corner Radius	Large Radius EDP#
3/16"	3/16"	.625	2.00	AFT30187	120671	.010"	120672	.030"	120673
1/4"	1/4"	.750	2.50	AFT30250	120674	.010"	120675	.040"	120676
5/16"	5/16"	.750	2.50	AFT30312	120677	.010"	120678	.050"	120679
3/8"	3/8"	1.00	2.50	AFT30375	120680	.015"	120681	.060"	120682
1/2"	1/2"	1.25	3.00	AFT30500	120683	.015"	120684	.080"	120685
5/8"	5/8"	1.625	3.50	AFT30625	120686	.020"	120687	.100"	120688
3/4"	3/4"	1.625	4.00	AFT30750	120689	.030"	120690	.120"	120691

Add Radius size to the end of the description for radius option selection.
Ex: AFT30500-015 For a 1/2" Alumigator with a .015" Corner Radius





Thread Mills



THREAD MILLS

G. W. Schultz Tool offers any LOC and OL with any series tool as a modified standard. All products are also available with special coatings to meet your specific requirements.

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TM Series



The TM SERIES is a single point thread mill capable of milling any pitch (metric size included) and either right or left-hand threads.

- Available AlTiN coated (other coatings available upon request)
- Circular land to improve surface finish
- Undercut (only use the ones with Neck Diameter and Reach Length)
- 10% micro grain carbide
- Center Cut

No. Of Flutes	Cutting Diameter	Shank Diameter	Thread Pitch	Neck Diameter	Max Thread Depth	Overall Length	Order #/EDP Uncoated	Order #/EDP Coated	Description
2	0.080	3/16	40-60	0.04	1/8	2.000	109779	109778	TM-4
3	0.098	3/16	32-64	0.05	1/4	2.000	109783	109782	TM-6
3	0.120	1/4	32-56	0.07	5/16	2.500	109785	109784	TM-8
3	0.135	1/4	24-56	0.07	5/16	2.500	109775	109774	TM-10
4	0.180	1/4	18-56	0.115	1/2	2.500	109773	109772	TM-1/4
4	0.240	1/4	16-48	0.145	1/2	2.500	109781	109780	TM-5/16
4	0.300	3/8	14-40	0.218	3/4	2.500	109777	109776	TM-3/8
4	0.388	1/2	12-32	0.25	3/4	2.500	109771	109770	TM-1/2



TMM Series

The TMM SERIES is a multiple point thread mill for use on internal and external threads.

- Available AlTiN coated (other coatings available upon request)
- Circular land to improve surface finish
- Undercut (only use the ones with Neck Diameter and Reach Length)
- 10% micro grain carbide
- Center Cut

Thread Milling Cutters

Thread Size	Cutter Diameter	Neck Diameter	Max Thread Depth	Shank Diameter	Overall Length	Order #/EDP Uncoated	Order #/EDP Coated	Description
1/2	0.388	0.250	3/4	1/2	2.500	109771	109770	TM-1/2

Multiple Thread Milling Cutters

For Internal and External Thread Cutting

Thread Size	Cutter Diameter	Shank Diameter	Length Of Cut	No. Of Flutes	Overall Length	Order #/EDP Coated	Order #/EDP Uncoated	Description
2-56	0.065	0.125	0.125	3	2.000	109803	109802	TMM 2-56
4-40	0.085	0.125	0.175	3	2.000	109815	109814	TMM 4-40
6-32	0.100	0.125	0.218	3	2.000	109823	109822	TMM 6-32
8-32	0.115	0.125	0.250	3	2.000	109829	109828	TMM 8-32
10-24	0.120	0.125	0.312	3	2.000	109799	109798	TMM 10-24
10-32	0.120	0.125	0.312	3	2.000	109801	109800	TMM 10-32
1/4-20	0.180	0.187	0.500	3	2.500	109795	109794	TMM 1/4-20
1/4-28	0.180	0.187	0.500	3	2.500	109797	109796	TMM 1/4-28
5/16-18	0.235	0.250	0.625	3	2.500	109817	109816	TMM 5/16-18
5/16-24	0.235	0.250	0.625	3	2.500	109819	109818	TMM 5/16-24
3/8-16	0.285	0.312	0.750	4	3.000	109811	109810	TMM 3/8-16
3/8-24	0.285	0.312	0.750	4	3.000	111957	109812	TMM 3/8-24
7/16-14	0.305	0.312	0.750	4	3.000	109825	109824	TMM 7/16-14
7/16-20	0.335	0.375	0.875	4	3.500	111958	109826	TMM 7/16-20
1/2-13	0.350	0.375	0.875	4	3.500	109791	109790	TMM 1/2-13
5/8-11	0.470	0.500	1.250	4	3.000	109821	109820	TMM 5/8-11
3/4-10	0.495	0.500	1.250	4	3.000	109805	109804	TMM 3/4-10
3/4-12	0.495	0.500	1.250	4	3.000	109807	109806	TMM 3/4-12
3/4-16	0.490	0.500	1.250	4	3.000	109809	109808	TMM 3/4-16
N.P.T.								
1/16, 1/8-27	.245*	0.250	0.437	3	2.500	109786	109787	TMM 27NPT
1/4, 3/8-18	.305*	0.312	0.625	4	3.000	109792	109793	TMM 18NPT
1/2, 3/4-14	.495*	0.500	0.875	4	3.000	109788	109789	TMM 14NPT

*MAJOR CUTTING DIAMETER

THREAD MILLS





Chamfer Mills



STEEL CUTTING
High Performance

G. W. Schultz Tool offers any LOC and OL with any series tool as a modified standard. All products are also available with special coatings to meet your specific requirements.

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CM 2Series

90° Included Angle



The CM 2 SERIES end mill is a chamfer cutter and mill all in one.

- 2 Flute
- Available AITin coated (other coatings available upon request)
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut

	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AITIN Coated	Order #/EDP Uncoated	Description
Stub	3/32	1/8	0.187	1.500	108914	108913	CMS20093
	1/8	1/8	0.250	1.500	108916	108915	CMS20125
	3/16	3/16	0.375	2.000	108918	108917	CMS20187
	1/4	1/4	0.500	2.000	108920	108919	CMS20250
	5/16	5/16	0.500	2.000	108922	108921	CMS20312
	3/8	3/8	0.625	2.000	108924	108923	CMS20375
	1/2	1/2	0.625	2.500	108926	108925	CMS20500
	5/8	5/8	0.750	3.000	108928	108927	CMS20625
	3/4	3/4	0.875	3.000	108930	108929	CMS20750
	1	1	1.000	3.000	108932	108931	CMS21000
	1-1/4	1-1/4	1.000	3.000	108934	108933	CMS21250
Standard	3/32	1/8	0.312	1.500	108874	108873	CM20093
	1/8	1/8	0.500	1.500	108876	108875	CM20125
	3/16	3/16	0.625	2.000	108878	108877	CM20187
	1/4	1/4	0.750	2.500	108880	108879	CM20250
	5/16	5/16	0.813	2.500	108882	108881	CM20312
	3/8	3/8	0.875	2.500	108884	108883	CM20375
	1/2	1/2	1.000	3.000	108886	108885	CM20500
	5/8	5/8	1.250	3.500	108888	108887	CM20625
	3/4	3/4	1.500	4.000	108890	108889	CM20750
	1	1	1.500	4.000	108892	108891	CM21000
	1-1/4	1-1/4	1.500	4.000	108894	108893	CM21250

CM 4Series

90° Included Angle



The CM 4 SERIES end mill is a chamfer cutter and mill all in one.

- 4 Flute
- Available AlTiN coated (other coatings available upon request)
- 10% micro grain carbide
- Regrind and recoating available upon request
- Center Cut

	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description
Stub	1/8	1/8	0.250	1.500	108938	108937	CMS40125
	3/16	3/16	0.375	2.000	108940	108939	CMS40187
	1/4	1/4	0.500	2.000	108942	108941	CMS40250
	5/16	5/16	0.500	2.000	108944	108943	CMS40312
	3/8	3/8	0.625	2.000	108946	108945	CMS40375
	1/2	1/2	0.625	3.000	108948	108947	CMS40500
	5/8	5/8	0.750	3.000	108950	108949	CMS40625
	3/4	3/4	0.875	3.000	108952	108951	CMS40750
	1	1	1.000	3.000	108954	108953	CMS41000
	1-1/4	1-1/4	1.000	3.000	108956	108955	CMS41250
Standard	3/32	1/8	0.312	1.500	108896	108895	CM40093
	1/8	1/8	0.500	1.500	108898	108897	CM40125
	3/16	3/16	0.625	2.000	108899	107761	CM40187
	1/4	1/4	0.750	2.500	108900	108106	CM40250
	5/16	5/16	0.813	2.500	108902	108901	CM40312
	3/8	3/8	0.875	2.500	108903	108107	CM40375
	1/2	1/2	1.000	3.000	108904	108108	CM40500
	5/8	5/8	1.250	3.500	108906	108905	CM40625
	3/4	3/4	1.500	4.000	108908	108907	CM40750
	1	1	1.500	4.000	108910	108909	CM41000
	1-1/4	1-1/4	1.500	4.000	108912	108911	CM41250

STEEL CUTTING
High Performance

CC Series

30°-150° Included Angle



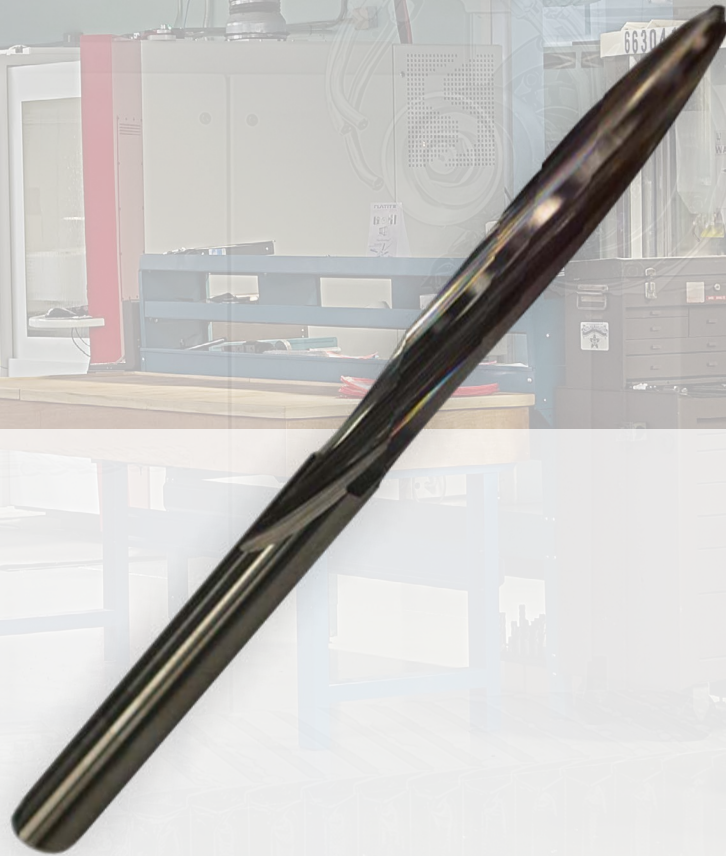
The CC SERIES chamfer cutters is an excellent choice for adding a chamfer feature or deburring applications.

- 2, 3, or 4 Flutes.
- Available in 30, 40, 60, 82, 90, 120 and 150 degree included angles.
- Available AlTiN coated (other coatings available upon request)
- 10% micro grain carbide
- Regrind and recoating available upon request

Included Angle	No. of Flutes	Cutting Diameter	Shank Diameter	Length of Cut	Overall Length	Order #/EDP AlTiN Coated	Order #/EDP Uncoated	Description
60	2	1/8	1/8	0.095	1.500	113542	108829	CC20125-30-60
90	2	1/8	1/8	0.055	1.500	108832	108831	CC20125-45-90
120	2	1/8	1/8	0.031	1.500	113543	108833	CC20125-60-120
30	3	1/4	1/4	0.447	2.500	108836	108835	CC30250-15-30
40	3	1/4	1/4	0.329	2.500	108838	108837	CC30250-20-40
60	3	1/4	1/4	0.207	2.500	108840	108839	CC30250-30-60
82	3	1/4	1/4	0.138	2.500	108842	108841	CC30250-41-82
90	3	1/4	1/4	0.120	2.500	108844	108843	CC30250-45-90
120	3	1/4	1/4	0.069	2.500	108846	108845	CC30250-60-120
150	3	1/4	1/4	0.032	2.500	108848	108847	CC30250-75-150
30	4	3/8	3/8	0.662	2.500	108850	108849	CC40375-15-30
40	4	3/8	3/8	0.487	2.500	108852	108851	CC40375-20-40
60	4	3/8	3/8	0.307	2.500	108854	108853	CC40375-30-60
90	4	3/8	3/8	0.177	2.500	108856	108855	CC40375-45-90
120	4	3/8	3/8	0.102	2.500	108858	108857	CC40375-60-120
30	4	1/2	1/2	0.858	3.000	108860	108859	CC40500-15-30
40	4	1/2	1/2	0.631	3.000	108862	108861	CC40500-20-40
60	4	1/2	1/2	0.398	3.000	108864	108863	CC40500-30-60
82	4	1/2	1/2	0.264	3.000	108866	108865	CC40500-41-82
90	4	1/2	1/2	0.230	3.000	108868	108867	CC40500-45-90
120	4	1/2	1/2	0.132	3.000	108870	108869	CC40500-60-120
150	4	1/2	1/2	0.061	3.000	108872	108871	CC40500-75-150



Composites



G. W. Schultz Tool offers any LOC and OL with any series tool as a modified standard. All products are also available with special coatings to meet your specific requirements.

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PREDATOR SERIES

ADVANCED COMPOSITES MACHING

The Predator Series is a high performance Helical Dagger Drill used in hole making for single and multi-layered composites, adept in very high speed applications.

- 4 Flute
- This drill produces exceptional finishes, while also eliminating delamination, pulled fibers and mis-cut fibers.
- All drills can be ordered with a diamond like carbon (DLC) thin film coating which offers extreme hardness
- Capable of withstanding very high operating temperatures
- Perfectly suited for highly abrasive materials.
- 10% Micro grain Carbide
- Regrind and recoating available upon request
- Center Cut

Cutting Diameter	Shank Diameter	Flute Length	Overall Length	Description	Order #/EDP Uncoated
1/8"	1/8"	1.125	2.250	CDD40125	117864
9/64"	3/16"	1.250	2.500	CDD40141	117866
5/32"	3/16"	1.250	2.500	CDD40156	117868
3/16"	3/16"	1.375	2.750	CDD40188	117870
1/4"	1/4"	1.625	3.250	CDD40250	117872
9/32"	5/16"	1.750	3.500	CDD40281	117874
5/16"	5/16"	1.875	3.750	CDD40313	117876
3/8"	3/8"	2.125	4.250	CDD40375	117878
7/16"	1/2"	2.250	4.500	CDD40438	117880
1/2"	1/2"	2.375	4.750	CDD40500	117882
9/16"	5/8"	2.500	5.000	CDD40563	117882
5/8"	5/8"	2.625	5.250	CDD40625	117886
11/16"	3/4"	2.750	5.500	CDD40688	117888
3/4"	3/4"	3.000	6.000	CDD40750	117890

Metric

Cutting Diameter	Shank Diameter	Flute Length	Overall Length	Description	Order #/EDP Uncoated
3mm	3mm	29mm	57mm	CDD4M03	117892
4mm	4mm	32mm	63mm	CDD4M04	117894
5mm	5mm	38mm	76mm	CDD4M05	117896
6mm	6mm	41mm	82mm	CDD4M06	117898
7mm	8mm	45mm	89mm	CDD4M07	117900
8mm	8mm	48mm	95mm	CDD4M08	117902
9mm	10mm	54mm	108mm	CDD4M09	117904
10mm	10mm	57mm	114mm	CDD4M10	117906
11mm	12mm	60mm	120mm	CDD4M11	117908
12mm	12mm	63mm	126mm	CDD4M12	117910
13mm	14mm	66mm	132mm	CDD4M13	117912
14mm	14mm	70mm	139mm	CDD4M14	117914
16mm	16mm	73mm	146mm	CDD4M16	117916
18mm	18mm	77mm	153mm	CDD4M18	117918
20mm	20mm	81mm	161mm	CDD4M20	117920



WARRANTY

GW Schultz Tool warrants to original equipment manufacturers, distributors and industrial and commercial users of its products that each new product which it manufactures or supplies is free from defects in material and workmanship. Its sole obligation under this warranty is limited to furnishing, without additional charge, a replacement for, or, at its option, repairing or issuing credit for any such product which shall, within one year from the date of sales by G.W. Schultz Tool be returned freight prepaid to G.W. Schultz Tool and which upon inspection, is determined by G.W. Schultz Tool to be defective in materials or workmanship. The provisions of this warranty shall not apply to any product which has been subjected to misuse, improper operating conditions, or which has been repaired or altered, if such would adversely affect performance of the product. Complete written information with respect to all such matters must be furnished to G.W. Schultz Tool as a prerequisite to its consideration of any claim or complaint under this warranty.

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All G. W. SCHULTZ TOOLS referenced in this brochure are manufactured from premium grade carbide. Each geometry is computer designed for exact consistency. Most importantly - these cutters are completely manufactured in a single chucking for the very highest quality the industry has to offer!

TOLERANCES:
Cutter Diameter; +.0000 / -.002
Shank Diameter; +.0000 / -.0005

PLEASE NOTE: Not all standard tools listed are "in stock" items. Please call for availability and delivery time.

TERMS: Net 30 Days with approved credit. Special items cannot be canceled or returned for exchange or credit.

We accept VISA, MASTER CARD and AMERICAN EXPRESS.
Specifications subject to change without notice.



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