

Swift-CARBTM

CATALOG #SC0307

A NEW TECH CUTTING TOOLS COMPANY

Visit our website at www.swiftcarb.com
or e-mail us at sales@swiftcarb.com

Swift-CARBTM

CARBIDE END MILLS FOR HYPER SPEED
MACHINING OF STEEL, STAINLESS STEEL,
ALLOYS, & ALUMINUM.

SUPERBEE[®]

INDEXABLE CARBIDE
FORM CUTTERS



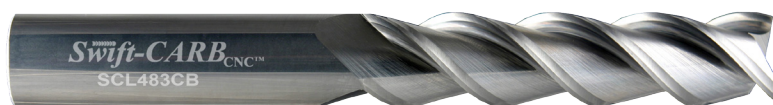
NEW-LUBE[®]
Modular
Micro-Spray
Applicators & Fluids
PATENT NUMBER 5,086,878 AND 5,333,640

CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.

800-227-9876

PRODUCTIVITY PROFITS YOUR FUTURE

SPECIAL CARBIDE END MILLS



Swift-CARB CNC TM

A division of NEW TECH CUTTING TOOLS

FAST DELIVERY

QUOTATION
Valid for 30 days

5 AXIS CNC PRECISION GROUND MICRO GRAIN CARBIDE END MILLS

Typically when a special end mill is ordered from a manufacturer, the wait can be weeks, sometimes even months. However, at **Swift-CARB** CNC TM we understand the importance of fast turnaround, high production rates, and little to no down time. Please provide us with all of the information requested below so that we can manufacture a superior carbide tool for your application.

PLEASE FAX YOUR QUOTE REQUEST TO 1.800.225.9876

Distributor: _____

Contact: _____ Phone: _____

Fax: _____

Type of material: _____ Hardness: _____ Horsepower of machine: _____

Maximum RPM's: _____ Depth of cut: _____ Width of cut: _____

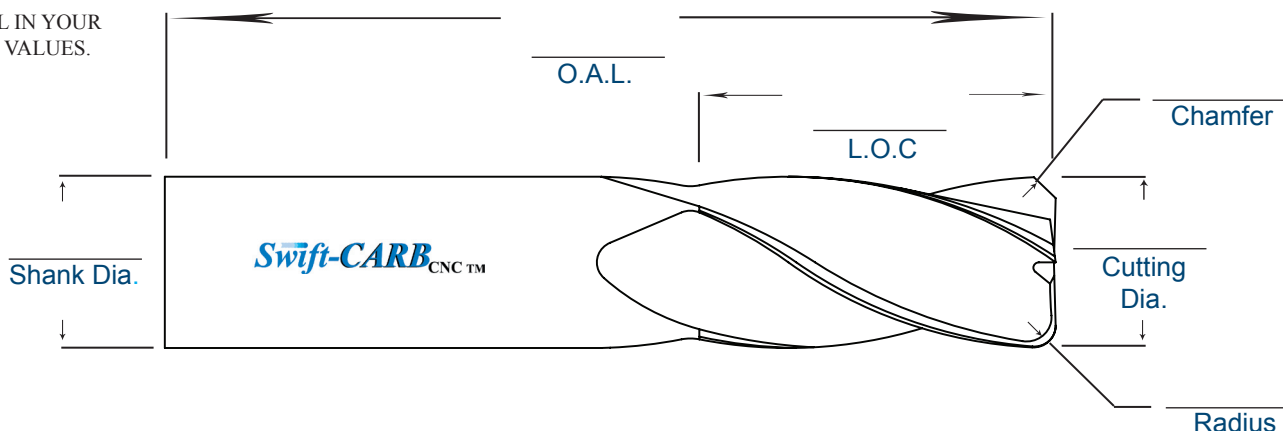
Quantity: _____ \$: _____	Quantity: _____ \$: _____	Quantity: _____ \$: _____
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STYLE OR GEOMETRY OF TOOL - CHECK ALL THAT APPLY

☐ "SC" ALUMINUM 2 or 3 FL ☐ "SS" STAINLESS 3FL ☐ "SM" ALLOYS 5FL ☐ "SF" FINISHING 6FL ☐ STANDARD 2,4, & 6 FL

NUMBER OF FLUTES: ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ OTHER _____

PLEASE FILL IN YOUR
REQUIRED VALUES.



CUTTER ROTATION: ☐ RH ☐ LH HELIX: ☐ RH ☐ LH HELIX ANGLE IN DEGREES: _____

TYPE: ☐ STRAIGHT ☐ TAPERED - PER SIDE ANGLE IN DEGREES: _____ ☐ BALL ☐ SQUARE END

☐ WELDON FLATS ☐ OTHER _____

Special tooling orders may be subject to standard over/under-shipment policies, not to exceed the greater of 10%, or 1 tool.

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NEW-LUBE®

Modular
Micro-Spray
Applicators & Fluids
PATENT NUMBER 5,086,878 AND 5,333,640

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SUPERBEE®

INDEXABLE CARBIDE
FORM CUTTERS

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GTO

Would you like to try *SWIFT-CARB CNC*, *SUPERBEE®*, or *NEW-LUBE®*, products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order).

Get Your End Mills With A Radius

Add these prices to the list price of the tool.



RADIUS	1 PRICE	2 - 5 PRICE	6 - 10 PRICE	11 - 20 PRICE	21 - 29 PRICE	30+ PRICE
.012 - .090	\$ 22.50	\$ 18.50	\$ 16.00	\$12.00	\$8.00	\$5.00
.091 - .125	24.00	21.00	18.00	14.00	10.00	7.00
.126 - .160	26.50	24.00	20.00	16.00	12.00	8.00
.161 - .190	28.50	26.50	23.50	19.50	14.00	9.00
.191 - .250	36.50	35.00	30.00	24.00	18.00	10.00

TRADE POLICIES

Quotations - All quotations are subject to change after 90 days. We also reserve the right to correct clerical errors on quotations or invoices.

Prices - All prices in this catalog are subject to change without notice. Due to our ever changing economy, manufacturer's costs change frequently.

Shipments - Standard stock items shipped same day unless otherwise specified.

Returned Goods - Call to make arrangements for a Returned Merchandise Authorization (RMA) number with our sales department **within 30 days of the invoice date** before returning. Goods will not be accepted without an accompanying RMA number. **ALL SPECIAL ORDERS AND MACHINABLE CARBIDE PRODUCTS ARE MADE TO ORDER AND ARE NOT RETURNABLE.**

Open Accounts - Our terms are Net 30 Days

Product Liability and Guarantee - Our liability is limited to the value of any defective goods. We cannot assume labor charges, damage costs, or any other assessment resulting from misuse, defective, or imperfect material.

Print Revisions - Revised Catalogs will be printed on an approximate 1 year basis. We reserve the right to cancel, change, or modify any product we supply.

THE MOST VERSATILE INDEXABLE CARBIDE CUTTERS IN THE WORLD!
30 DAY GUARANTEED FREE TRIAL ON
SWIFT-CARB CNC, SUPERBEE®, AND
NEW-LUBE® PRODUCTS!

***Versatile Indexable Cutters:

Our **SUPERBEE®** line cuts concave and convex radii, angles and chamfers, and plain milling. We have special cutters that take advantage of the unused edges and corners of your inserts called **INSERT SAVERS®**. **SUPERBEE®** was among the first of the indexable carbide form tools and is a leader in the applications of these tools.

*** 30-Day, NO obligation Trial:

Would you like to try **SWIFT-CARB CNC**, **SUPERBEE®**, or **NEW-LUBE®**, products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order). We'll ask you about your application and if it fits the design capabilities of our product, we will guarantee the performance of the tool if used with the recommended method of speeds, feeds, and documentation.

ALUMINUM FINISHER MICROGRAIN CARBIDE END MILLS

4 FL ALUMINUM FINISHER Series "AF" *Swift-CARB*^{CNC™} End Mills

NEW!



MADE IN **USA**

PATENT PENDING

- Longer Tool Life
- Less Tool Deflection
- Mirror Finishes at High Speeds
- Runs 150% to 500% faster in Aluminum
- Regular, Medium, Long, and X-Long



**CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.**

The *Swift-CARB*^{CNC™} manufactured end mill is a high performance, high helix tool, which has tighter control and tolerances on circle ground margins, double rake polished flutes, variable flute geometry, and micro finishes. Increased speeds are obtainable with *Swift-CARB*^{CNC™}, allowing you to remove material up to 10 times faster. This means increased productivity and higher profits off your shop floor. The *Swift-CARB*^{CNC™} End Mill is designed for finish profiling at hyper speeds and feeds which makes it perfect for the machining of nonferrous materials (Aluminum, Plastics, and Copper Alloys).

Series "AF" 4FL Aluminum Finisher's Feeds and Speeds

DIA.		Chip Load Per Tooth			FEED I.P.M.			R.P.M.			S.F.P.M.		
		FINISHING			LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
		HEAVY	MED	LIGHT									
1/4	0.2500	0.0026	0.0036	0.0045	71.5	107	413	6876	7564	22920	450	600	1500
3/8	0.3750	0.0038	0.0052	0.0066	69.7	175	672	4584	8404	25467	450	1000	2500
7/16	0.4375	0.0050	0.0070	0.0090	78.6	242	943	3929	8644	26194	450	1200	3000
1/2	0.5000	0.0060	0.0085	0.0110	82.5	300	1177	3438	8824	26740	450	1400	3500
5/8	0.6250	0.0064	0.0092	0.0120	70.4	334	1320	2750	9076	27504	450	1800	4500
3/4	0.7500	0.0070	0.0100	0.0130	64.2	336	1324	2292	8404	25467	450	2000	5000
1	1.0000	0.0080	0.0115	0.0150	55.0	348	1375	1719	7564	22920	450	2400	6000
1 1/4	1.2500	0.0080	0.0120	0.0160	44.0	290	1174	1375	6051	18336	450	2400	6000



The Speeds and Feeds recommended on the aluminum charts are for starting points. New Tech Cutting Tools, Inc. can offer technical support on high speed machining and horsepower.

For **Extreme** machining (high speed roughing, high speed finishing, 3D machining) contact New Tech Cutting Tools, Inc. technical staff for recommendations.

TERM	EQUATION	RESULT
Revolutions per minute	$RPM = 3.82 \times SFPM \div Dia.$	= Required RPM
Surface Feet per Minute	$SFPM = .262 \times Dia. \times RPM$	= Surface Feet per Minute
Inches per Minute	$IPM = RPM \times Inches \text{ per Tooth} \times No. \text{ of Teeth}$	= Inches per Minute in Travel
Feed per Tooth Inches per Tooth	$IPT = IPM \div RPM \div No. \text{ of Flutes}$	= Chip Load per Tooth Per Revolution

Swift-CARB^{CNC™}

MADE IN **USA**

ALUMINUM FINISHER MICROGRAIN CARBIDE END MILLS

NEW!

ALUMINUM

**Mirror Finishes
at Hyper Speeds**

Series "AF" *Swift-CARB* CNC™ End Mills



MADE IN **USA**

patent pending

GTO

Would you like to try *SWIFT-CARB CNC*, *SUPERBEE®*, or *NEW-LUBE®*, products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order).

REGULAR, MEDIUM, AND LONG LENGTHS PREMIUM MICROGRAIN - FOUR FLUTE

DIA.	SHANK	LOC	OAL	FOUR FLUTE	FINISHING LIST
1/4	1/4	3/8	2	AFS164CB	33.98
1/4	1/4	3/4	2 1/2	AFR164CB	38.98
1/4	1/4	1	3	AFM164CB	51.98
1/4	1/4	1 1/4	3	AFL164CB	59.98
5/16	5/16	1	2 1/2	AFR204CB	48.98
3/8	3/8	1/2	2	AFS244CB	39.98
3/8	3/8	1	2 1/2	AFR244CB	58.98
3/8	3/8	1 1/4	3	AFM244CB	69.98
3/8	3/8	1 1/2	3 1/2	AFL244CB	74.98
3/8	3/8	2 1/2	5	AFX244CB	88.98
7/16	7/16	1	2 3/4	AFR284CB	64.98
1/2	1/2	5/8	2 1/2	AFS324CB	59.98
1/2	1/2	1 1/4	3	AFR324CB	69.98
1/2	1/2	1 5/8	3 1/2	AFM324CB	87.98
1/2	1/2	2	4	AFL324CB	99.98
1/2	1/2	3 1/8	5	AFX324CB	149.98
5/8	5/8	3/4	3	AFS404CB	109.98
5/8	5/8	1 5/8	3 1/2	AFR404CB	119.98
5/8	5/8	2	4	AFM404CB	147.98
5/8	5/8	2 1/2	5	AFL404CB	184.98
5/8	5/8	3 3/4	6	AFX404CB	234.98
3/4	3/4	3/4	3	AFS484CB	139.98
3/4	3/4	1 5/8	4	AFR484CB	168.98
3/4	3/4	2 1/4	5	AFM484CB	209.98
3/4	3/4	3 1/4	6	AFL484CB	249.98
3/4	3/4	4	6 1/2	AFX484CB	319.98
7/8	7/8	1 5/8	4	AFR564CB	219.98
1	1	1	3	AFS644CB	248.98
1	1	2	4 1/2	AFR644CB	274.98
1	1	2 5/8	5	AFM644CB	296.98
1	1	3 1/4	6	AFL644CB	334.98
1	1	4 1/8	7	AFX644CB	469.98
1 1/4	1 1/4	2	4 1/2	AFR804CB	449.98
1 1/4	1 1/4	2 5/8	5 1/2	AFM804CB	499.98
1 1/4	1 1/4	3 1/4	6	AFL804CB	549.98
1 1/4	1 1/4	4 1/4	7 1/2	AFX804CB	749.98



Stub



Regular



Medium



Long



Extra Long

- Longer Tool Life
- Less Tool Deflection
- Better Chip Evacuation
- Leaves Superior Finishes
- Runs 150% to 500% faster in Aluminum
- Metric and specials available on request
- Regular, Medium, Long, and Extra-Long lengths

ALUMINUM ROUGHER MICROGRAIN CARBIDE END MILLS

ALUMINUM ROUGHER

Series "AR" *Swift-CARB*^{CNC™} End Mills

NEW!

MADE IN USA

"THE FASTEST WAY TO REMOVE ALUMINUM."

- High Speed Roughing with Less HP
- Runs 200% to 500% faster in Aluminum
- Longer Tool Life
- Greater Feed Rates
- Better Chip Evacuation
- Less Tool Deflection
- Stub, Regular, Medium, and Long lengths



MICROGRAIN CARBIDE

The *Swift-CARB*^{CNC™} manufactured end mill is a high performance, moderate helix tool, which has tighter control and tolerances on circle ground margins, double rake polished flutes, proprietary chipbreaker technology, and micro finishes. Increased speeds are obtainable with *Swift-CARB*^{CNC™} allowing you to remove material up to 10 times faster. This means increased productivity and higher profits off your shop floor. The *Swift-CARB*^{CNC™} end mill is designed for heavy material removal, and ramping at high speeds and feeds, which makes it perfect for the machining of nonferrous materials (Aluminum, Plastics, and Copper Alloys).

Series "AR" 3FL Aluminum Rougher's Feeds and Speeds

DIA.		Chip Load Per Tooth			FEED I.P.M.			R.P.M.			S.F.P.M.		
		FULL SLOTING	PERIPHERAL		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
			HEAVY	LIGHT									
1/4"	0.2500	0.0040	0.0050	0.0060	91.7	113	413	7640	7564	22920	500	600	1500
3/8"	0.3750	0.0050	0.0065	0.0080	76.4	164	611	5093	8404	25467	500	1000	2500
1/2"	0.5000	0.0070	0.0095	0.0120	104.3	216	825	4966	7564	22920	650	1200	3000
5/8"	0.6250	0.0080	0.0110	0.0140	117.4	266	1027	4890	8068	24448	800	1600	4000
3/4"	0.7500	0.0085	0.0123	0.0160	116.9	278	1100	4584	7564	22920	900	1800	4500
1"	1.0000	0.0100	0.0150	0.0200	51.6	284	1146	1719	6303	19100	450	2000	5000
1-1/4"	1.2500	0.0120	0.0170	0.0220	49.5	309	1210	1375	6051	18336	450	2400	6000



The Speeds and Feeds recommended on the aluminum charts are for starting points. New Tech Cutting Tools, Inc. can offer technical support on high speed machining and horsepower.

For Extreme machining (high speed roughing, 3D machining) contact New Tech Cutting Tools, Inc. technical staff for recommendations.

TERM	EQUATION	RESULT
Revolutions Per Minute	$RPM = 3.82 \times SFPM \div Dia.$	= Required RPM
Surface Feet per Minute	$SFPM = .262 \times Dia. \times RPM$	= Surface Feet per Minute
Inches per Minute	$IPM = RPM \times Inches \text{ per Tooth} \times No. \text{ of Teeth}$	= Inches per Minute in Travel
Feed per Tooth Inches per Tooth	$IPT = IPM \div RPM \div No. \text{ of Flutes}$	= Chip Load per Tooth Per Revolution

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Swift-CARB^{CNC™}

MADE IN USA

ALUMINUM ROUGHER MICROGRAIN CARBIDE END MILLS

NEW!

ALUMINUM Series "AR" *Swift-CARB*^{CNC™} End Mills

Radius
& Left Hand
available on
request

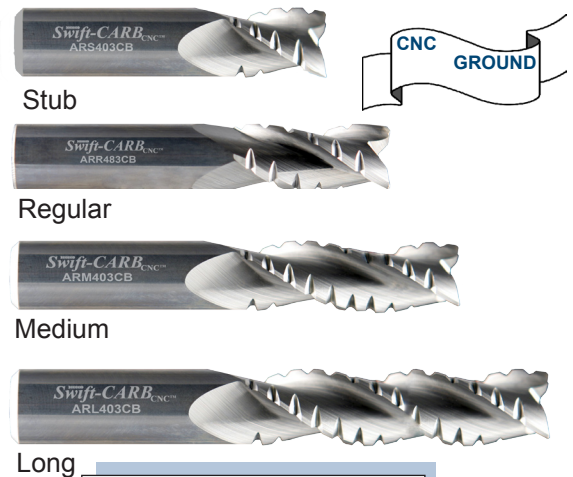


MADE IN USA

Carbide for
Roughing Aluminum
at High Speeds

STUB, REGULAR, MEDIUM, AND LONG LENGTHS
PREMIUM MICROGRAIN - THREE FLUTE

DIA.	SHANK	LOC	OAL	THREE FLUTE	ROUGHING LIST
1/4	1/4	3/8	2	ARS163CB	30.54
1/4	1/4	3/4	2 1/2	ARR163CB	34.76
1/4	1/4	1	3	ARM163CB	44.27
1/4	1/4	1 1/4	3	ARL163CB	48.07
3/8	3/8	1/2	2	ARS243CB	39.74
3/8	3/8	1	2 1/2	ARR243CB	43.10
3/8	3/8	1 1/4	3	ARM243CB	63.18
3/8	3/8	1 1/2	3 1/2	ARL243CB	69.70
1/2	1/2	5/8	2 1/2	ARS323CB	59.98
1/2	1/2	1 1/4	3	ARR323CB	66.19
1/2	1/2	1 5/8	3 1/2	ARM323CB	81.11
1/2	1/2	2	4	ARL323CB	89.90
5/8	5/8	3/4	3	ARS403CB	99.86
5/8	5/8	1 5/8	3 1/2	ARR403CB	111.33
5/8	5/8	2	4	ARM403CB	136.43
5/8	5/8	2 1/2	5	ARL403CB	158.42
3/4	3/4	3/4	3	ARS483CB	135.80
3/4	3/4	1 5/8	4	ARR483CB	151.00
3/4	3/4	2 1/4	5	ARM483CB	186.93
3/4	3/4	3 1/4	6	ARL483CB	223.18
1	1	1	3	ARS643CB	268.22
1	1	2	4 1/2	ARR643CB	293.23
1	1	2 5/8	5	ARM643CB	327.16
1	1	3 1/4	6	ARL643CB	379.98
1 1/4	1 1/4	1	4	ARS803CB	419.98
1 1/4	1 1/4	2	4 1/2	ARR803CB	489.98
1 1/4	1 1/4	2 5/8	5 1/2	ARM803CB	574.98
1 1/4	1 1/4	3 1/4	6	ARL803CB	749.98



CNC
GROUND

**CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.**

- Runs 200% To 500% faster in Aluminum
- Metric, and Specials available on request
- Stub, Regular, Medium, and Long lengths
- Longer Tool Life
- Faster Feed Rates
- Better Chip Evacuation
- Less Tool Deflection

ALUMINUM ROUGHER MICROGRAIN CARBIDE END MILLS

ALUMINUM EXTENDED LENGTH Series "AREL" *Swift-CARB*^{CNC™} End Mills

NEW!



Regular



Medium



Long

L.B.S.
Length Below Shank

MADE
IN **USA**

Carbide for
Roughing Aluminum
at High Speeds

- L.B.S. relief grind
- Runs 50% to 500% faster in Aluminum
- Left Hand, Metric, and Specials available on request
- Regular, Medium, and Long Lengths
- Longer Tool Life
- Faster Feed Rates
- Better Chip Evacuation
- Less Tool Deflection

DIA.	SHANK	LOC	LBS	OAL	THREE FLUTE	LIST
1/4	1/4	3/8	3/4	2	ARELS163CB	42.84
1/4	1/4	3/8	1 1/2	3	ARELR163CB	46.74
1/4	1/4	3/8	2	3 1/2	ARELM163CB	59.98
3/8	3/8	1/2	1	2 1/2	ARELS243CB	57.11
3/8	3/8	1/2	1 1/2	3	ARELR243CB	67.49
3/8	3/8	1/2	2	3 1/2	ARELM243CB	72.97
3/8	3/8	1/2	3	5	ARELL243CB	84.99
3/8	3/8	1/2	4	6	ARELX243CB	89.99
1/2	1/2	5/8	1	3	ARELS323CB	69.99
1/2	1/2	5/8	1 1/2	3 1/2	ARELR323CB	79.99
1/2	1/2	5/8	2	4	ARELM323CB	87.99
1/2	1/2	5/8	3	5	ARELL323CB	104.98
1/2	1/2	5/8	4	6	ARELX323CB	119.99
5/8	5/8	3/4	1	3	ARELS403CB	99.98
5/8	5/8	3/4	1 1/2	3 1/2	ARELR403CB	112.98
5/8	5/8	3/4	2	4	ARELM403CB	149.99
5/8	5/8	3/4	3	5	ARELL403CB	169.99
5/8	5/8	3/4	4	6	ARELX403CB	194.99
3/4	3/4	1	2	4	ARELR483CB	159.98
3/4	3/4	1	3	5	ARELM483CB	209.98
3/4	3/4	1	4	6	ARELL483CB	226.92
3/4	3/4	1	4 1/2	6 1/2	ARELR483CB	259.98
1	1	1	1 1/2	4	ARELR643CB	246.98
1	1	1 1/4	2 1/2	5	ARELM643CB	268.98
1	1	1 1/4	3 1/2	6	ARELL643CB	326.78
1	1	1 1/4	4 1/2	7	ARELX643CB	349.99

GTO

Would you like to try *SWIFT-CARB CNC*, *SUPERBEE®*, or *NEW-LUBE®*, products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order).



ALUMINUM ROUGHER/FINISHER MICROGRAIN CARBIDE END MILLS

HYPER SPEED ALUMINUM SERIES "HS"&"BHS" *Swift-CARB*^{CNC™} 3Fl End Mills

- Runs 75% to 400% faster in Aluminum
- Regular, Medium, Long, X-Long Lengths
- Longer Tool Life
- High Speed Machining
- Greater Feed Rates
- Better Chip Evacuation
- Less Tool Deflection
- Leaves Superior Finishes



Micrograin Carbide



MADE IN USA

The *Swift-CARB*^{CNC™} manufactured end mill is a high performance, moderate helix tool, which has tighter control and tolerances on circle ground margins, double rake polished flutes, and micro finishes. Increased speeds are obtainable with *Swift-CARB*^{CNC™}, allowing you to remove material up to 10 times faster. This means increased productivity and higher profits off your shop floor. The *Swift-CARB*^{CNC™} end mill is designed for slotting, profiling, and ramping at high speeds and feeds which makes it perfect for the machining of nonferrous materials (Aluminum, Plastics, and Copper Alloys).

Series “HS” & "BHS" 3FL Aluminum Rougher/Finisher's Feeds and Speeds													
DIA.		Chip Load Per Tooth			FEED I.P.M.			R.P.M.			S.F.P.M.		
		FULL SLOTING	PERIPHERAL		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
			HEAVY	LIGHT									
1/8	0.1250	0.0015	0.0020	0.0025	61.9	61	229	13752	10085	30560	450	400	1000
3/16	0.1875	0.0025	0.0028	0.0030	68.8	55	183	9168	6723	20373	450	400	1000
1/4	0.2500	0.0034	0.0042	0.0050	70.1	95	344	6876	7564	22920	450	600	1500
5/16	0.3125	0.0040	0.0053	0.0065	66.0	114	429	5501	7261	22003	450	720	1800
3/8	0.3750	0.0050	0.0065	0.0080	68.8	131	489	4584	6723	20373	450	800	2000
7/16	0.4375	0.0055	0.0078	0.0100	64.8	154	602	3929	6627	20082	450	920	2300
1/2	0.5000	0.0060	0.0090	0.0120	61.9	170	688	3438	6303	19100	450	1000	2500
5/8	0.6250	0.0075	0.0103	0.0130	61.9	155	596	2750	5042	15280	450	1000	2500
3/4	0.7500	0.0080	0.0115	0.0150	55.0	159	630	2292	4622	14007	450	1100	2750
1	1.0000	0.0090	0.0135	0.0180	46.4	153	619	1719	3782	11460	450	1200	3000
1 1/4	1.2500	0.0100	0.0150	0.0200	41.3	136	550	1375	3025	9168	450	1200	3000



The Speeds and Feeds recommended on the aluminum charts are for starting points. New Tech Cutting Tools, Inc. can offer technical support on high speed machining and horsepower.

For *Extreme* machining (high speed roughing, high speed finishing, 3D machining) contact New Tech Cutting Tools, Inc. technical staff for recommendations.

TERM	EQUATION	RESULT
Revolutions Per Minute	$RPM = 3.82 \times SFPM \div Dia.$	= Required RPM
Surface Feet per Minute	$SFPM = .262 \times Dia. \times RPM$	= Surface Feet per Minute
Inches per Minute	$IPM = RPM \times Inches \text{ per Tooth} \times No. \text{ of Teeth}$	= Inches per Minute in Travel
Feed per Tooth Inches per Tooth	$IPT = IPM \div RPM \div No. \text{ of Flutes}$	= Chip Load per Tooth Per Revolution

Swift-CARB^{CNC™}

MADE IN USA

ALUMINUM HYPER SPEED SUBMICROGRAIN CARBIDE ENDMILLS

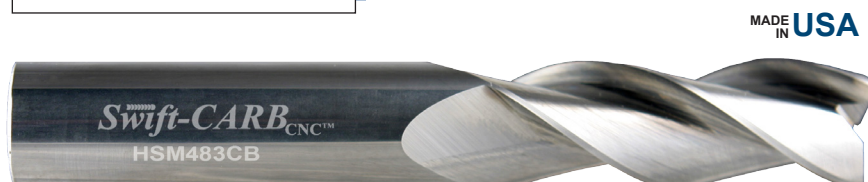
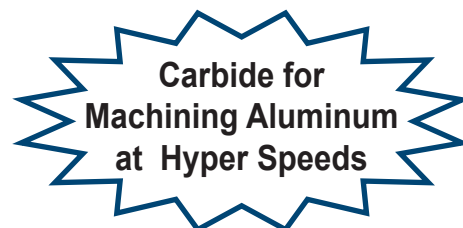
ALUMINUM

Series "HS" *Swift-CARB*^{CNC™} End Mills

Especially Designed for Hyper Speed Cutting in Aluminum
Medium to Heavy Cuts (450-3000 SFPM)

HS stands for Hyper Speed

**CALL 800-227-9876 TO
 FIND YOUR NEAREST
 DISTRIBUTOR.**



ALUMINUM STYLE - PREMIUM MICROGRAIN - 3 FLUTE

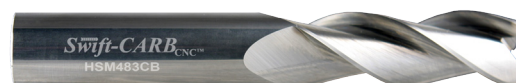
DIA.	SHANK	LOC	OAL	THREE FLUTE	LIST
1/8	1/8	1/4	1 1/2	HSS083CB	\$19.81
1/8	1/8	3/8	2	HSR083CB	20.98
3/16	3/16	5/16	2	HSS123CB	20.59
3/16	3/16	9/16	2	HSR123CB	21.76
1/4	1/4	3/8	2	HSS163CB	21.89
1/4	1/4	3/4	2 1/2	HSR163CB	24.33
1/4	1/4	1	3	HSM163CB	37.30
5/16	5/16	7/16	2	HSS203CB	23.67
5/16	5/16	3/4	2 1/2	HSR203CB	26.31
5/16	5/16	1	3	HSM203CB	42.06
3/8	3/8	1/2	2	HSS243CB	27.65
3/8	3/8	1	2 1/2	HSR243CB	30.54
3/8	3/8	1 1/4	3	HSM243CB	46.00
7/16	7/16	9/16	2 3/4	HSS283CB	43.78
7/16	7/16	1	2 3/4	HSR283CB	43.76
1/2	1/2	5/8	2 1/2	HSS323CB	44.53
1/2	1/2	1 1/4	3	HSR323CB	51.90
1/2	1/2	1 5/8	3 1/2	HSM323CB	63.46
5/8	5/8	3/4	3	HSS403CB	85.11
5/8	5/8	1 5/8	3 1/2	HSR403CB	94.19
5/8	5/8	2	4	HSM403CB	118.97
3/4	3/4	3/4	3	HSS483CB	118.54
3/4	3/4	1 5/8	4	HSR483CB	131.00
3/4	3/4	2 1/4	5	HSM483CB	172.20
1	1	1	3	HSS643CB	213.04
1	1	2	4 1/2	HSR643CB	236.08
1	1	2 5/8	5	HSM643CB	254.42
1 1/4	1 1/4	1	4	HSS803CB	379.37
1 1/4	1 1/4	2	4 1/2	HSR803CB	433.32
1 1/4	1 1/4	2 5/8	5 1/2	HSM803CB	498.93



Stub



Medium



Long

- Run 75% to 400% faster in Aluminum
- Run up to 30,000 rpm
- Longer Tool Life
- Faster Feed Rates
- Better Chip Evacuation
- Less Tool Deflection
- Leave Superior Finishes

MADE IN **USA**



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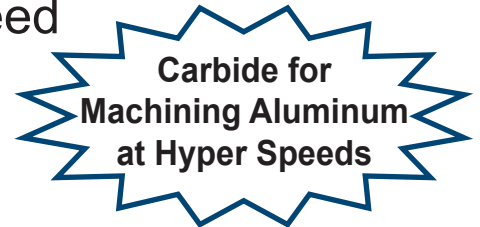


BALL END ALUMINUM Series "BHS" *Swift-CARB*^{CNC™} End Mills

Designed for profiling and Hyper Speed Cutting in Aluminum
Medium to Heavy Cuts (450-3000 SFPM)

HS stands for Hyper Speed

**Stub, Regular, & Medium
Lengths**



ALUMINUM STYLE - PREMIUM MICROGRAIN - 3 FLUTE



- Run 75% to 500% faster in Aluminum

- Metric, and Specials available on request

- Run up to 30,000 rpm

- Longer Tool Life

- Faster Feed Rates

- Better Chip Evacuation

- Less Tool Deflection

- Leave Superior Finishes

DIA.	SHANK	LOC	OAL	THREE FLUTE	LIST
1/8	1/8	1/4	1 1/2	BHSS083CB	\$21.79
1/8	1/8	3/8	2	BHSR083CB	23.07
3/16	3/16	5/16	2	BHSS123CB	22.65
3/16	3/16	9/16	2	BHSR123CB	23.93
1/4	1/4	3/8	2	BHSS163CB	24.08
1/4	1/4	3/4	2 1/2	BHSR163CB	26.76
1/4	1/4	1	3	BHSM163CB	41.03
5/16	5/16	7/16	2	BHSS203CB	26.03
5/16	5/16	3/4	2 1/2	BHSR203CB	28.95
5/16	5/16	1	3	BHSM203CB	46.27
3/8	3/8	1/2	2	BHSS243CB	30.41
3/8	3/8	1	2 1/2	BHSR243CB	33.59
3/8	3/8	1 1/4	3	BHSM243CB	50.60
7/16	7/16	9/16	2 3/4	BHSS283CB	48.16
7/16	7/16	1	2 3/4	BHSR283CB	48.13
1/2	1/2	5/8	2 1/2	BHSS323CB	48.99
1/2	1/2	1 1/4	3	BHSR323CB	57.09
1/2	1/2	1 5/8	3 1/2	BHSM323CB	69.81
5/8	5/8	3/4	3	BHSS403CB	93.62
5/8	5/8	1 5/8	3 1/2	BHSR403CB	103.61
5/8	5/8	2	4	BHSM403CB	130.87
3/4	3/4	3/4	3	BHSS483CB	130.39
3/4	3/4	1 5/8	4	BHSR483CB	144.10
3/4	3/4	2 1/4	5	BHSM483CB	189.42
1	1	1	3	BHSS643CB	234.34
1	1	2	4 1/2	BHSR643CB	259.69
1	1	2 5/8	5	BHSM643CB	279.86
1 1/4	1 1/4	1	4	BHSS803CB	417.30
1 1/4	1 1/4	2	4 1/2	BHSR803CB	476.66
1 1/4	1 1/4	2 5/8	5 1/2	BHSM803CB	548.82

GTO
Would you like to try *SWIFT-CARB CNC*, *SUPERBEE®*, or *NEW-LUBE®*, products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order).

MADE IN USA

HYPER SPEED ALUMINUM MICROGRAIN CARBIDE END MILLS

ALUMINUM EXTENDED SERIES "HSEL" & "BHSEL" *Swift-CARB*^{CNC™} End Mills

- Runs 150% to 300% faster in Aluminum
- 3 Flute End Mills
- Stub, Regular, Medium, Long, and X-Long
- Longer Tool Life
- High Speed Machining
- Greater Feed Rates
- Better Chip Evacuation
- Less Tool Deflection
- Leaves Superior Finishes



Micrograin Carbide



MADE IN USA

The *Swift-CARB*^{CNC™} manufactured end mill is a high performance, moderate helix tool, which has tighter control and tolerances on circle ground margins, double rake polished flutes, and micro finishes. Increased speeds are obtainable with *Swift-CARB*^{CNC™}, allowing you to remove material up to 10 times faster. This means increased productivity and higher profits off your shop floor. The *Swift-CARB*^{CNC™} End Mill is designed for slotting, profiling, and ramping at high speeds and feeds in long reach applications, which makes it perfect for the machining of nonferrous materials (Aluminum, Plastics, and Copper Alloys).

Series "HSEL" 3FL Aluminum Rougher/Finisher's Feeds and Speeds

DIA.		Chip Load Per Tooth			FEED I.P.M.			R.P.M.			S.F.P.M.		
		PERIPHERAL		FINISHING	LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
		HEAVY	LIGHT										
1/8	0.1250	0.0012	0.0016	0.0020	49.5	48	183	13752	10085	30560	450	400	1000
3/16	0.1875	0.0020	0.0022	0.0024	55.0	44	147	9168	6723	20373	450	400	1000
1/4	0.2500	0.0027	0.0034	0.0040	56.1	76	275	6876	7564	22920	450	600	1500
5/16	0.3125	0.0032	0.0042	0.0052	52.8	91	343	5501	7261	22003	450	720	1800
3/8	0.3750	0.0040	0.0052	0.0064	55.0	105	391	4584	6723	20373	450	800	2000
7/16	0.4375	0.0044	0.0062	0.0080	51.9	123	482	3929	6627	20082	450	920	2300
1/2	0.5000	0.0048	0.0072	0.0096	49.5	136	550	3438	6303	19100	450	1000	2500
5/8	0.6250	0.0060	0.0082	0.0104	49.5	124	477	2750	5042	15280	450	1000	2500
3/4	0.7500	0.0064	0.0092	0.0120	44.0	128	504	2292	4622	14007	450	1100	2750
1	1.0000	0.0072	0.0108	0.0144	37.1	123	495	1719	3782	11460	450	1200	3000



The Speeds and Feeds recommended on the aluminum charts are for starting points. New Tech Cutting Tools, Inc. can offer technical support on high speed machining and horsepower.

For Extreme machining (high speed roughing, high speed finishing, 3D machining) contact New Tech Cutting Tools, Inc. technical staff for recommendations.

TERM	EQUATION	RESULT
Revolutions Per Minute	$RPM = 3.82 \times SFPM \div Dia.$	= Required RPM
Surface Feet per Minute	$SFPM = .262 \times Dia. \times RPM$	= Surface Feet per Minute
Inches per Minute	$IPM = RPM \times \text{Inches per Tooth} \times \text{No. of Teeth}$	= Inches per Minute in Travel
Feed per Tooth Inches per Tooth	$IPT = IPM \div RPM \div \text{No. of Flutes}$	= Chip Load per Tooth Per Revolution

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Swift-CARB^{CNC™}

MADE IN USA

ALUMINUM HYPERSPEED SUBMICROGRAIN CARBIDE ENDMILLS

ALUMINUM EXTENDED LENGTH Series "HSEL" *Swift-CARB*^{CNC™} End Mills

"HS" is for HYPER SPEED Machining
With Solid Carbide



Designed for Deep Pocket, Step-Down
Machining and profiling

Runs 450 to 3,000 SFPM

ALUMINUM STYLE

PREMIUM MICROGRAIN - 3 FLUTE

DIA.	SHANK	LOC	LBS	OAL	THREE FLUTE	LIST
1/8	1/8	1/4	1/2	1 1/2	HSELS083CB	\$35.25
1/8	1/8	1/4	1	2	HSELR083CB	36.00
3/16	3/16	5/16	1/2	2	HSELS123CB	36.11
3/16	3/16	5/16	1 1/2	3	HSELR123CB	38.61
1/4	1/4	3/8	3/4	2	HSELS163CB	38.25
1/4	1/4	3/8	1 1/2	3	HSELR163CB	41.62
1/4	1/4	3/8	2	3 1/2	HSELM163CB	54.42
5/16	5/16	7/16	1	2 1/2	HSELS203CB	41.09
5/16	5/16	7/16	1 1/2	3	HSELR203CB	62.20
5/16	5/16	7/16	2	3 1/2	HSELM203CB	65.53
3/8	3/8	1/2	1	2 1/2	HSELS243CB	55.53
3/8	3/8	1/2	1 1/2	3	HSELR243CB	64.42
3/8	3/8	1/2	2	3 1/2	HSELM243CB	66.64
3/8	3/8	1/2	3	5	HSELL243CB	77.76
3/8	3/8	1/2	4	6	HSELX243CB	87.76
7/16	7/16	9/16	1	2 3/4	HSELS283CB	66.64
7/16	7/16	9/16	2	4	HSELM283CB	75.53
7/16	7/16	9/16	3	5	HSELX283CB	98.87
1/2	1/2	5/8	1	3	HSELS323CB	68.87
1/2	1/2	5/8	1 1/2	3 1/2	HSELR323CB	76.58
1/2	1/2	5/8	2	4	HSELM323CB	79.98
1/2	1/2	5/8	3	5	HSELL323CB	94.42
1/2	1/2	5/8	4	6	HSELX323CB	108.87
5/8	5/8	3/4	1	3	HSELS403CB	96.64
5/8	5/8	3/4	1 1/2	3 1/2	HSELR403CB	102.20
5/8	5/8	3/4	2	4	HSELM403CB	144.42
5/8	5/8	3/4	3	5	HSELL403CB	154.42
5/8	5/8	3/4	4	6	HSELX403CB	177.76
3/4	3/4	1	2	4	HSELR483CB	149.98
3/4	3/4	1	3	5	HSELM483CB	188.87
3/4	3/4	1	4	6	HSELL483CB	202.20
3/4	3/4	1	4 1/2	6 1/2	HSELX483CB	244.42
1	1	1	1 1/2	4	HSELR643CB	221.09
1	1	1 1/4	2 1/2	5	HSELM643CB	252.20
1	1	1 1/4	3 1/2	6	HSELL643CB	292.20
1	1	1 1/4	4 1/2	7	HSELX643CB	333.31

Carbide for
Machining Aluminum
at Hyper Speeds

- Increase Feed by up to 300%
- Left Hand, Metric, and Specials available on request
- Stub, Regular, Medium, Long, & Extra- Long Lengths
- Longer Tool Life
- Faster Feed Rates
- Better Chip Evacuation
- Less Tool Deflection
- Leaves Superior Finishes

**CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.**

MADE
IN **USA**



BALL END ALUMINUM EXTENDED LENGTH

Series "BHSEL" *Swift-CARB*^{CNC™} End Mills

NEW!



ALUMINUM STYLE

PREMIUM MICROGRAIN - 3 FLUTE

Runs 450-3000 SFPM



MADE IN **USA**

**Designed for Deep Pocket, Step-Down
Machining and profiling**

**Carbide for
Machining Aluminum
at Hyper Speeds**

**CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.**

DIA.	SHANK	LOC	LBS	OAL	THREE FLUTES	LIST
1/8	1/8	1/4	1/2	1 1/2	BHSELS083CB	\$38.77
1/8	1/8	1/4	1	2	BHSELR083CB	39.60
3/16	3/16	5/16	1/2	2	BHSELS123CB	39.72
3/16	3/16	5/16	1 1/2	3	BHSELR123CB	42.47
1/4	1/4	3/8	3/4	2	BHSELS163CB	42.08
1/4	1/4	3/8	1 1/2	3	BHSELR163CB	45.78
1/4	1/4	3/8	2	3 1/2	BHSELM163CB	59.86
5/16	5/16	7/16	1	2 1/2	BHSELS203CB	45.20
5/16	5/16	7/16	1 1/2	3	BHSELR203CB	68.42
5/16	5/16	7/16	2	3 1/2	BHSELM203CB	72.09
3/8	3/8	1/2	1	2 1/2	BHSELS243CB	61.09
3/8	3/8	1/2	1 1/2	3	BHSELR243CB	70.86
3/8	3/8	1/2	2	3 1/2	BHSELM243CB	73.31
3/8	3/8	1/2	3	5	BHSELL243CB	85.53
3/8	3/8	1/2	4	6	BHSELX243CB	96.53
7/16	7/16	9/16	1	2 3/4	BHSELS283CB	73.31
7/16	7/16	9/16	2	4	BHSELM283CB	83.09
7/16	7/16	9/16	3	5	BHSELX283CB	108.75
1/2	1/2	5/8	1	3	BHSELS323CB	75.75
1/2	1/2	5/8	1 1/2	3 1/2	BHSELR323CB	84.24
1/2	1/2	5/8	2	4	BHSELM323CB	87.98
1/2	1/2	5/8	3	5	BHSELL323CB	103.86
1/2	1/2	5/8	4	6	BHSELX323CB	119.75
5/8	5/8	3/4	1	3	BHSELS403CB	106.31
5/8	5/8	3/4	1 1/2	3 1/2	BHSELR403CB	112.42
5/8	5/8	3/4	2	4	BHSELM403CB	158.86
5/8	5/8	3/4	3	5	BHSELL403CB	169.86
5/8	5/8	3/4	4	6	BHSELX403CB	195.53
3/4	3/4	1	2	4	BHSELR483CB	164.98
3/4	3/4	1	3	5	BHSELM483CB	207.75
3/4	3/4	1	4	6	BHSELL483CB	222.42
3/4	3/4	1	4 1/2	6 1/2	BHSELX483CB	268.86
1	1	1	1 1/2	4	BHSELR643CB	243.20
1	1	1 1/4	2 1/2	5	BHSELM643CB	277.42
1	1	1 1/4	3 1/2	6	BHSELL643CB	321.42
1	1	1 1/4	4 1/2	7	BHSELX643CB	366.64

MADE IN **USA**



- Increase Feed by up to 300%
- Left Hand, Metric, and Specials available on request
- Stub, Regular, Medium, Long & Extra- Long Lengths
- Longer Tool Life
- Faster Feed Rates
- Better Chip Evacuation
- Less Tool Deflection
- Leaves Superior Finishes

ALUMINUM ROUGHER/FINISHER MICROGRAIN CARBIDE END MILLS

ALUMINUM SERIES

"SC" & "BSC" *Swift-CARB*^{CNC™} End Mills

- Runs 50% to 300% faster in Aluminum
- 2 & 3 Flute End Mills Available
- Stub, Regular, Medium, Long, X-Long
- Longer Tool Life
- High Speed Machining
- Greater Feed Rates
- Better Chip Evacuation
- Less Tool Deflection
- Leaves Superior Finishes



Micrograin Carbide

MADE IN USA

**CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.**

The *Swift-CARB*^{CNC™} manufactured end mill is a high performance, high helix tool, with tighter tolerances on circle ground margins, double rake polished flutes, and micro finishes. Increased speeds are obtainable with *Swift-CARB*^{CNC™} allowing you to remove material up to 10 times faster. This means increased productivity and higher profits off your shop floor. The *Swift-CARB*^{CNC™} end mill is designed for slotting, profiling, and ramping at high speeds and which makes it perfect for the machining of nonferrous materials (Aluminum, Plastics, and Copper Alloys).

Series "SC" 2FL Aluminum Rougher/Finisher's Feeds and Speeds

DIA.		FI.	Chip Load Per Tooth			FEED I.P.M.			R.P.M.			S.F.P.M.		
			FULL SLOTING	PERIPHERAL		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
				HEAVY	LIGHT									
1/8	0.1250	2	0.0015	0.0020	0.0025	41.3	61	229	13752	15127	45840	450	600	1500
3/16	0.1875	2	0.0025	0.0028	0.0030	45.8	55	183	9168	10085	30560	450	600	1500
1/4	0.2500	2	0.0034	0.0042	0.0050	46.8	64	229	6876	7564	22920	450	600	1500
5/16	0.3125	2	0.0040	0.0053	0.0065	44.0	76	286	5501	7261	22003	450	720	1800
3/8	0.3750	2	0.0050	0.0065	0.0080	45.8	87	326	4584	6723	20373	450	800	2000
7/16	0.4375	2	0.0055	0.0078	0.0100	43.2	89	349	3929	5763	17463	450	800	2000
1/2	0.5000	2	0.0060	0.0090	0.0120	41.3	113	458	3438	6303	19100	450	1000	2500
5/8	0.6250	2	0.0075	0.0103	0.0130	41.3	103	397	2750	5042	15280	450	1000	2500
3/4	0.7500	2	0.0080	0.0115	0.0150	36.7	106	420	2292	4622	14007	450	1100	2750
1	1.0000	2	0.0090	0.0135	0.0180	30.9	102	413	1719	3782	11460	450	1200	3000
1 1/4	1.2500	2	0.0100	0.0150	0.0200	27.5	91	367	1375	3025	9168	450	1200	3000

DIA.		FI.	Chip Load Per Tooth			FEED I.P.M.			R.P.M.			S.F.P.M.		
			PERIPHERAL		FINISHING	LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
			HEAVY	LIGHT										
1/8	0.1250	3	0.0012	0.0019	0.0025	49.5	84	344	13752	15127	45840	450	600	1500
3/16	0.1875	3	0.0025	0.0028	0.0030	68.8	83	275	9168	10085	30560	450	600	1500
1/4	0.2500	3	0.0026	0.0036	0.0045	53.6	81	309	6876	7564	22920	450	600	1500
5/16	0.3125	3	0.0030	0.0043	0.0055	49.5	93	363	5501	7261	22003	450	720	1800
3/8	0.3750	3	0.0038	0.0052	0.0065	52.3	104	397	4584	6723	20373	450	800	2000
7/16	0.4375	3	0.0045	0.0073	0.0100	53.0	125	524	3929	5763	17463	450	800	2000
1/2	0.5000	3	0.0050	0.0080	0.0110	51.6	151	630	3438	6303	19100	450	1000	2500
5/8	0.6250	3	0.0064	0.0092	0.0120	52.8	139	550	2750	5042	15280	450	1000	2500
3/4	0.7500	3	0.0070	0.0100	0.0130	48.1	139	546	2292	4622	14007	450	1100	2750
1	1.0000	3	0.0090	0.0125	0.0160	46.4	142	550	1719	3782	11460	450	1200	3000
1 1/4	1.2500	3	0.0100	0.0140	0.0180	41.3	127	495	1375	3025	9168	450	1200	3000

ALUMINUM ROUGHER/FINISHER MICROGRAIN CARBIDE END MILLS

ALUMINUM

Series "SC" *Swift-CARB* CNC™ End Mills

Radius
& Left Hand
available on
request



MADE
IN **USA**

GTO

Would you like to try *SWIFT-CARB CNC*, *SUPERBEE®*, or *NEW-LUBE®*, products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order).

**STUB, REGULAR, MEDIUM,
LONG, & EXTRA LONG LENGTHS**
PREMIUM MICROGRAIN - TWO & THREE FLUTE

DIA.	SHANK	LOC	OAL	TWO FLUTE	ROUGHING LIST	THREE FLUTE	FINISHING LIST
1/8	1/8	1/4	1 1/2	SCS082CB	\$17.83	SCS083CB	\$19.81
1/8	1/8	3/8	2	SCR082CB	18.88	SCR083CB	20.98
3/16	3/16	5/16	2	SCS122CB	18.53	SCS123CB	20.59
3/16	3/16	9/16	2	SCR122CB	19.58	SCR123CB	21.76
1/4	1/4	3/8	2	SCS162CB	19.70	SCS163CB	21.89
1/4	1/4	3/4	2 1/2	SCR162CB	21.89	SCR163CB	24.33
1/4	1/4	1	3	SCM162CB	33.57	SCM163CB	37.30
1/4	1/4	1 1/4	3	SCL162CB	34.11	SCL163CB	37.90
5/16	5/16	7/16	2	SCS202CB	21.30	SCS203CB	23.67
5/16	5/16	3/4	2 1/2	SCR202CB	23.68	SCR203CB	26.31
5/16	5/16	1	3	SCM202CB	37.86	SCM203CB	42.06
5/16	5/16	1 1/4	3	SCL202CB	45.11	SCL203CB	50.12
5/16	5/16	2 1/8	4	SCX202CB	51.88	SCX203CB	57.65
3/8	3/8	1/2	2	SCS242CB	24.88	SCS243CB	27.65
3/8	3/8	1	2 1/2	SCR242CB	27.49	SCR243CB	30.54
3/8	3/8	1 1/4	3	SCM242CB	41.40	SCM243CB	46.00
3/8	3/8	1 1/2	3 1/2	SCL242CB	52.40	SCL243CB	58.22
3/8	3/8	2 1/2	5	SCX242CB	64.35	SCX243CB	71.50
7/16	7/16	9/16	2 3/4	SCS282CB	39.40	SCS283CB	43.78
7/16	7/16	1	2 3/4	SCR282CB	39.38	SCR283CB	43.76
7/16	7/16	2	4	SCL282CB	59.97	SCL283CB	66.63
1/2	1/2	5/8	2 1/2	SCS322CB	40.08	SCS323CB	44.53
1/2	1/2	1 1/4	3	SCR322CB	46.71	SCR323CB	51.90
1/2	1/2	1 5/8	3 1/2	SCM322CB	57.11	SCM323CB	63.46
1/2	1/2	2	4	SCL322CB	70.11	SCL323CB	77.90
1/2	1/2	3 1/8	5	SCX322CB	116.44	SCX323CB	129.38
5/8	5/8	3/4	3	SCS402CB	76.60	SCS403CB	85.11
5/8	5/8	1 5/8	3 1/2	SCR402CB	84.77	SCR403CB	94.19
5/8	5/8	2	4	SCM402CB	107.07	SCM403CB	118.97
5/8	5/8	2 1/2	5	SCL402CB	127.18	SCL403CB	141.31
5/8	5/8	3 3/4	6	SCX402CB	182.43	SCX403CB	202.71
3/4	3/4	3/4	3	SCS482CB	106.68	SCS483CB	118.54
3/4	3/4	1 5/8	4	SCR482CB	117.90	SCR483CB	131.00
3/4	3/4	2 1/4	5	SCM482CB	154.98	SCM483CB	172.20
3/4	3/4	3 1/4	6	SCL482CB	181.13	SCL483CB	201.26
3/4	3/4	4	6 1/2	SCX482CB	269.91	SCX483CB	299.90
1	1	1	3	SCS642CB	191.73	SCS643CB	213.04
1	1	2	4 1/2	SCR642CB	212.47	SCR643CB	236.08
1	1	2 5/8	5	SCM642CB	228.98	SCM643CB	254.42
1	1	3 1/4	6	SCL642CB	253.99	SCL643CB	282.21
1	1	4 1/8	7	SCX642CB	374.65	SCX643CB	416.28
1 1/4	1 1/4	1	4	SCS802CB	341.43	SCS803CB	379.37
1 1/4	1 1/4	2	4 1/2	SCR802CB	389.99	SCR803CB	433.32
1 1/4	1 1/4	2 5/8	5 1/2	SCM802CB	453.60	SCM803CB	498.93
1 1/4	1 1/4	3 1/4	6	SCL802CB	488.25	SCL803CB	542.50
1 1/4	1 1/4	4 1/4	7 1/2	SCX802CB	568.57	SCX803CB	631.75

**Carbide for
Machining Aluminum
at High Speeds**



Stub



Regular



Medium



Long



Extra-Long

- Runs 50% to 300% faster in Aluminum
- Metric, and Specials available on request
- Longer Tool Life
- Faster Feed Rates
- Better Chip Evacuation
- Less Tool Deflection
- Leaves Superior Finishes

ALUMINUM BALL END MICROGRAIN CARBIDE END MILLS

NEW!

BALL END ALUMINUM Series "BSC" *Swift-CARB*^{CNC™} End Mills

MADE
IN **USA**

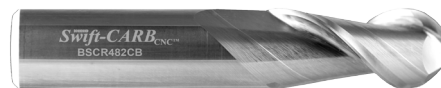


Carbide for
Machining Aluminum
at High Speeds

STUB, REGULAR, MEDIUM, LONG & EXTRA LONG LENGTHS
PREMIUM MICROGRAIN - TWO FLUTES

DIA.	SHANK	LOC	OAL	TWO FLUTE	LIST
1/8	1/8	1/4	1 1/2	BSCS082CB	\$19.61
1/8	1/8	3/8	2	BSCR082CB	20.77
3/16	3/16	5/16	2	BSCS122CB	20.39
3/16	3/16	9/16	2	BSCR122CB	21.54
1/4	1/4	3/8	2	BSCS162CB	21.67
1/4	1/4	3/4	2 1/2	BSCR162CB	24.08
1/4	1/4	1	3	BSCM162CB	36.93
1/4	1/4	1 1/4	3	BSCL162CB	37.52
5/16	5/16	7/16	2	BSCS202CB	23.43
5/16	5/16	3/4	2 1/2	BSCR202CB	26.05
5/16	5/16	1	3	BSCM202CB	41.64
5/16	5/16	1 1/4	3	BSCL202CB	49.62
5/16	5/16	2 1/8	4	BSCX202CB	57.07
3/8	3/8	1/2	2	BSCS242CB	27.37
3/8	3/8	1	2 1/2	BSCR242CB	30.24
3/8	3/8	1 1/4	3	BSCM242CB	45.54
3/8	3/8	1 1/2	3 1/2	BSCL242CB	57.64
3/8	3/8	2 1/2	5	BSCX242CB	70.79
7/16	7/16	9/16	2 3/4	BSCS282CB	43.34
7/16	7/16	1	2 3/4	BSCR282CB	43.32
7/16	7/16	2	4	BSCL282CB	65.97
1/2	1/2	5/8	2 1/2	BSCS322CB	44.09
1/2	1/2	1 1/4	3	BSCR322CB	51.38
1/2	1/2	1 5/8	3 1/2	BSCM322CB	62.83
1/2	1/2	2	4	BSCL322CB	77.12
1/2	1/2	3 1/8	5	BSCX322CB	128.09
5/8	5/8	3/4	3	BSCS402CB	84.25
5/8	5/8	1 5/8	3 1/2	BSCR402CB	93.25
5/8	5/8	2	4	BSCM402CB	117.78
5/8	5/8	2 1/2	5	BSCL402CB	139.89
5/8	5/8	3 3/4	6	BSCX402CB	200.68
3/4	3/4	3/4	3	BSCS482CB	117.35
3/4	3/4	1 5/8	4	BSCR482CB	129.69
3/4	3/4	2 1/4	5	BSCM482CB	170.48
3/4	3/4	3 1/4	6	BSCL482CB	199.24
3/4	3/4	4	6 1/2	BSCX482CB	296.90
1	1	1	3 1/2	BSCS642CB	210.91
1	1	2	4 1/2	BSCR642CB	233.72
1	1	2 5/8	5	BSCM642CB	251.88
1	1	3 1/4	6	BSCL642CB	279.39
1	1	4 1/8	7	BSCX642CB	412.12
1 1/4	1 1/4	1	4	BSCS802CB	375.57
1 1/4	1 1/4	2	4 1/2	BSCR802CB	428.99
1 1/4	1 1/4	2 5/8	5 1/2	BSCM802CB	498.96
1 1/4	1 1/4	3 1/4	6	BSCL802CB	537.08
1 1/4	1 1/4	4 1/4	7 1/2	BSCX802CB	625.43

Left Hand
available on
request



**CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.**

- Runs 50% to 300% faster in Aluminum
- Metric, and Specials available on request
- Stub, Regular, Medium, Long, & X-Long Lengths
- Longer Tool Life
- Faster Feed Rates
- Better Chip Evacuation
- Less Tool Deflection
- Leaves Superior Finishes

Swift-CARB^{CNC™}

MADE
IN **USA**

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ALUMINUM ROUGHER/FINISHER MICROGRAIN CARBIDE END MILLS

ALUMINUM EXTENDED SERIES

"SCEL" & "BSCEL" *Swift-CARB*^{CNC™} End Mills

- Runs 50% to 300% faster in Aluminum
- 2 Flute Square and Ball End Mills Available
- Regular, Medium, Long, X-Long Lengths
- Longer Tool Life
- High Speed Machining
- Greater Feed Rates
- Better Chip Evacuation
- Less Tool Deflection
- Leaves Superior Finishes



Micrograin Carbide



MADE IN USA

The *Swift-CARB*^{CNC™} manufactured end mill is a high performance, high helix tool, which has tighter control and tolerances on circle ground margins, double rake polished flutes, and micro finishes. Increased speeds are obtainable with *Swift-CARB*^{CNC™}, allowing you to remove material up to 10 times faster. This means increased productivity and higher profits off your shop floor. The *Swift-CARB*^{CNC™} End Mill is designed for slotting, profiling, and ramping at high speeds and feeds in long reach applications, which makes it perfect for the machining of nonferrous materials (Aluminum, Plastics, and Copper Alloys).

Series "SCEL" 2FL Aluminum Feeds and Speeds

DIA.		Chip Load Per Tooth			FEED I.P.M.			R.P.M.			S.F.P.M.		
		PERIPHERAL		FINISHING	LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
		HEAVY	LIGHT										
1/8	0.1250	0.0012	0.0016	0.0020	33.0	32	122	13752	10085	30560	450	400	1000
3/16	0.1875	0.0020	0.0022	0.0024	36.7	30	98	9168	6723	20373	450	400	1000
1/4	0.2500	0.0027	0.0034	0.0040	37.4	51	183	6876	7564	22920	450	600	1500
5/16	0.3125	0.0032	0.0042	0.0052	35.2	51	191	5501	6051	18336	450	600	1500
3/8	0.3750	0.0040	0.0052	0.0064	36.7	70	261	4584	6723	20373	450	800	2000
7/16	0.4375	0.0044	0.0062	0.0080	34.6	82	321	3929	6627	20082	450	920	2300
1/2	0.5000	0.0048	0.0072	0.0096	33.0	91	367	3438	6303	19100	450	1000	2500
5/8	0.6250	0.0060	0.0082	0.0104	33.0	83	318	2750	5042	15280	450	1000	2500
3/4	0.7500	0.0064	0.0092	0.0120	29.3	85	336	2292	4622	14007	450	1100	2750
1	1.0000	0.0072	0.0108	0.0144	24.8	82	330	1719	3782	11460	450	1200	3000



The Speeds and Feeds recommended on the aluminum charts are for starting points. New Tech Cutting Tools, Inc. can offer technical support on high speed machining and horsepower.

For Extreme machining (high speed roughing, high speed finishing, 3D machining) contact New Tech Cutting Tools, Inc. technical staff for recommendations.

TERM	EQUATION	RESULT
Revolutions Per Minute	$RPM = 3.82 \times SFPM \div Dia.$	= Required RPM
Surface Feet per Minute	$SFPM = .262 \times Dia. \times RPM$	= Surface Feet per Minute
Inches per Minute	$IPM = RPM \times Inches \text{ per Tooth} \times No. \text{ of Teeth}$	= Inches per Minute in Travel
Feed per Tooth Inches per Tooth	$IPM = IPM \div RPM \div No. \text{ of Flutes}$	= Chip Load per Tooth Per Revolution

Swift-CARB^{CNC™}

MADE IN USA

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ALUMINUM ROUGHER/FINISHER MICROGRAIN CARBIDE END MILLS

ALUMINUM EXTENDED LENGTH Series "SCEL" *Swift-CARB*^{CNC™} End Mills



Carbide for
Machining Aluminum
at High Speeds

CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.

DIA.	SHANK	LOC	LBS	OAL	TWO FLUTE	LIST
1/8	1/8	1/4	1/2	1 1/2	SCELS082CB	\$31.73
1/8	1/8	1/4	1	2	SCELR082CB	32.40
3/16	3/16	5/16	1/2	2	SCELS122CB	32.50
3/16	3/16	5/16	1 1/2	3	SCELR122CB	34.75
1/4	1/4	3/8	3/4	2	SCELS162CB	34.43
1/4	1/4	3/8	1 1/2	3	SCELR162CB	37.45
1/4	1/4	3/8	2	3 1/2	SCELM162CB	48.98
5/16	5/16	7/16	1	2 1/2	SCELS202CB	36.98
5/16	5/16	7/16	1 1/2	3	SCELR202CB	55.98
5/16	5/16	7/16	2	3 1/2	SCELM202CB	58.98
3/8	3/8	1/2	1	2 1/2	SCELS242CB	49.98
3/8	3/8	1/2	1 1/2	3	SCELR242CB	57.98
3/8	3/8	1/2	2	3 1/2	SCELM242CB	59.98
3/8	3/8	1/2	3	5	SCELL242CB	69.98
3/8	3/8	1/2	4	6	SCELX242CB	78.98
7/16	7/16	9/16	1	2 3/4	SCELS282CB	59.98
7/16	7/16	9/16	2	4	SCELM282CB	67.98
7/16	7/16	9/16	3	5	SCELX282CB	88.98
1/2	1/2	5/8	1	3	SCELS322CB	61.98
1/2	1/2	5/8	1 1/2	3 1/2	SCELR322CB	68.92
1/2	1/2	5/8	2	4	SCELM322CB	71.98
1/2	1/2	5/8	3	5	SCELL322CB	84.98
1/2	1/2	5/8	4	6	SCELX322CB	97.98
5/8	5/8	3/4	1	3	SCELS402CB	86.98
5/8	5/8	3/4	1 1/2	3 1/2	SCELR402CB	91.98
5/8	5/8	3/4	2	4	SCELM402CB	129.98
5/8	5/8	3/4	3	5	SCELL402CB	138.98
5/8	5/8	3/4	4	6	SCELX402CB	159.98
3/4	3/4	1	2	4	SCELR482CB	134.98
3/4	3/4	1	3	5	SCELM482CB	169.98
3/4	3/4	1	4	6	SCELL482CB	181.98
3/4	3/4	1	4 1/2	6 1/2	SCELX482CB	219.98
1	1	1	1 1/2	4	SCELR642CB	198.98
1	1	1 1/4	2 1/2	5	SCELM642CB	226.98
1	1	1 1/4	3 1/2	6	SCELL642CB	262.98
1	1	1 1/4	4 1/2	7	SCELX642CB	299.98

- L.B.S. relief grind
- Runs 50% to 300% faster in Aluminum
- Left Hand, Metric, and Specials available on request
- Stub, Regular, Medium, Long, & X-Long
- Longer Tool Life
- Faster Feed Rates
- Better Chip Evacuation
- Less Tool Deflection
- Leaves Superior Finishes



ALUMINUM BALL END MICROGRAIN CARBIDE END MILLS

BALL END ALUMINUM EXTENDED LENGTH Series "BSCEL" *Swift-CARB*^{CNC™} End Mills

NEW!



MADE IN **USA**

L.B.S.
Length Below Shank

GTO

Would you like to try *SWIFT-CARB CNC*, *SUPERBEE®*, or *NEW-LUBE®*, products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order).

Carbide for profiling and Machining Aluminum at Hyper Speeds

DIA.	SHANK	LOC	LBS	OAL	TWO FLUTE	LIST
1/8	1/8	1/4	1/2	1 1/2	BSCELS082CB	\$34.90
1/8	1/8	1/4	1	2	BSCELR082CB	35.64
3/16	3/16	5/16	1/2	2	BSCELS122CB	35.75
3/16	3/16	5/16	1 1/2	3	BSCELR122CB	38.23
1/4	1/4	3/8	3/4	2	BSCELS162CB	37.87
1/4	1/4	3/8	1 1/2	3	BSCELR162CB	41.20
1/4	1/4	3/8	2	3 1/2	BSCELM162CB	53.88
5/16	5/16	7/16	1	2 1/2	BSCELS202CB	40.68
5/16	5/16	7/16	1 1/2	3	BSCELR202CB	61.58
5/16	5/16	7/16	2	3 1/2	BSCELM202CB	64.88
3/8	3/8	1/2	1	2 1/2	BSCELS242CB	54.98
3/8	3/8	1/2	1 1/2	3	BSCELR242CB	63.78
3/8	3/8	1/2	2	3 1/2	BSCELM242CB	65.98
3/8	3/8	1/2	3	5	BSCELL242CB	76.98
3/8	3/8	1/2	4	6	BSCELX242CB	86.88
7/16	7/16	9/16	1	2 3/4	BSCELS282CB	65.98
7/16	7/16	9/16	2	4	BSCELM282CB	74.78
7/16	7/16	9/16	3	5	BSCELX282CB	97.88
1/2	1/2	5/8	1	3	BSCELS322CB	68.18
1/2	1/2	5/8	1 1/2	3 1/2	BSCELR322CB	75.82
1/2	1/2	5/8	2	4	BSCELM322CB	79.18
1/2	1/2	5/8	3	5	BSCELL322CB	93.48
1/2	1/2	5/8	4	6	BSCELX322CB	107.78
5/8	5/8	3/4	1	3	BSCELS402CB	95.68
5/8	5/8	3/4	1 1/2	3 1/2	BSCELR402CB	101.18
5/8	5/8	3/4	2	4	BSCELM402CB	142.98
5/8	5/8	3/4	3	5	BSCELL402CB	152.88
5/8	5/8	3/4	4	6	BSCELX402CB	175.98
3/4	3/4	1	2	4	BSCELR482CB	148.48
3/4	3/4	1	3	5	BSCELM482CB	186.98
3/4	3/4	1	4	6	BSCELL482CB	200.18
3/4	3/4	1	4 1/2	6 1/2	BSCELX482CB	241.98
1	1	1	1 1/2	4	BSCELR642CB	218.88
1	1	1 1/4	2 1/2	5	BSCELM642CB	249.68
1	1	1 1/4	3 1/2	6	BSCELL642CB	289.28
1	1	1 1/4	4 1/2	7	BSCELX642CB	329.98

- L.B.S. relief grind
- Runs 50% to 300% faster in Aluminum
- Left Hand, Metric, and Specials available on request
- Medium, Long & Extra Long Lengths
- Longer Tool Life
- Faster Feed Rates
- Better Chip Evacuation
- Less Tool Deflection
- Leaves Superior Finishes

Swift-CARB^{CNC™}

MADE IN **USA**

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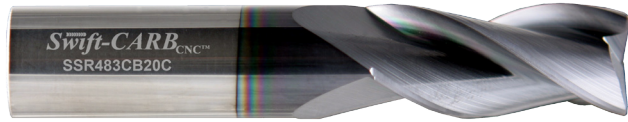


STAINLESS STEEL CNC MICROGRAIN CARBIDE END MILLS



STAINLESS STEEL Series "SS" *Swift-CARB*^{CNC™} End Mills

- Stub and Regular Lengths
- Stocked in:
(20C) ALTiN, &
(30C) TiCN
- Small corner radii add strength to the corner



MADE IN USA

- Aggressive machining of Stainless Steel
- Available in 3 Flute
- Excellent results machining Waspalloy and Inconel

The *Swift-CARB*^{CNC™} Stainless Steel Series end mills are moderate helix specifically designed for full slotting and aggressive machining of Stainless Steel, but have also given excellent results in Waspalloy, Inconel, and other alloys. They will run faster than a 4 flute while clearing away chips better than a 5 flute. The *Swift-CARB*^{CNC™} Stainless Steel Series end mills have a small corner radius to add strength to the corner. To reduce additional wear and prolong the life of the tool, the ALTiN (20C) coating is preferred.

Low Alloy Steel,
Ductile Steels,
Cast Irons, Copper

Series “SS” 3FL Feeds and Speeds													
DIA.		Chip Load Per Tooth			FEED I.P.M.			R.P.M.			S.F.P.M.		
		FULL SLOTTING	PERIPHERAL		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
			HEAVY	LIGHT									
1/8	0.1250	0.0007	0.0008	0.0009	12.8	15	50	6112	6051	18336	200	300	600
5/32	0.1563	0.0008	0.0009	0.0010	11.7	13	44	4891	4842	14673	200	300	600
3/16	0.1875	0.0010	0.0011	0.0012	12.2	13	44	4075	4034	12224	200	300	600
7/32	0.2188	0.0012	0.0014	0.0015	12.6	14	47	3493	3458	10478	200	300	600
1/4	0.2500	0.0014	0.0017	0.0019	12.8	15	52	3056	3025	9168	200	300	600
9/32	0.2813	0.0016	0.0019	0.0022	16.8	20	69	3501	3466	10502	200	300	600
5/16	0.3125	0.0018	0.0021	0.0024	13.2	15	53	2445	2420	7334	200	300	600
11/32	0.3438	0.0019	0.0022	0.0025	12.7	15	50	2223	2200	6668	200	300	600
3/8	0.3750	0.0021	0.0025	0.0029	12.8	15	53	2037	2017	6112	200	300	600
7/16	0.4375	0.0025	0.0030	0.0035	13.1	16	55	1746	1729	5239	200	300	600
1/2	0.5000	0.0030	0.0035	0.0040	13.8	16	55	1528	1513	4584	200	300	600
5/8	0.6250	0.0038	0.0044	0.0050	13.9	16	55	1222	1210	3667	200	300	600
3/4	0.7500	0.0045	0.0053	0.0060	13.8	16	55	1019	1008	3056	200	300	600
1	1.0000	0.0055	0.0068	0.0080	12.6	15	55	764	756	2292	200	300	600

The Speeds and Feeds recommended on the "SS" charts are for starting points. New Tech Cutting Tools, Inc. can offer technical support on high speed machining and horsepower. For Extreme machining (high speed roughing, high speed finishing, 3D machining) contact New Tech Cutting Tools, Inc. for recommendations.

Stainless Steel
(Precipitation)
15-5PH, 17-4PH,
Die & Mold Steels
P-20,
High Strength Alloys
40XX, 41XX, 42XX,
43XX, 44XX, 46XX,
& 86XX

Series “SS” 3FL Feeds and Speeds													
DIA.		Chip Load Per Tooth			FEED I.P.M.			R.P.M.			S.F.P.M.		
		FULL SLOTING	PERIPHERAL		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
			HEAVY	LIGHT									
1/8	0.1250	0.0006	0.0007	0.0008	8.3	10	33	4584	4538	13752	150	225	450
5/32	0.1562	0.0007	0.0008	0.0009	7.7	9	30	3668	3632	11005	150	225	450
3/16	0.1875	0.0008	0.0009	0.0010	7.3	8	28	3056	3025	9168	150	225	450
7/32	0.2188	0.0010	0.0012	0.0014	7.9	9	33	2619	2593	7858	150	225	450
1/4	0.2500	0.0012	0.0015	0.0017	8.3	10	35	2292	2269	6876	150	225	450
9/32	0.2183	0.0014	0.0016	0.0018	11.0	12	43	2625	2599	7876	150	225	450
5/16	0.3125	0.0015	0.0018	0.0021	8.3	10	35	1834	1815	5501	150	225	450
11/32	0.3438	0.0016	0.0020	0.0023	8.0	10	35	1667	1650	5001	150	225	450
3/8	0.3750	0.0018	0.0022	0.0025	8.3	10	34	1528	1513	4584	150	225	450
7/16	0.4375	0.0020	0.0025	0.0030	7.9	10	35	1310	1297	3929	150	225	450
1/2	0.5000	0.0025	0.0030	0.0035	8.6	10	36	1146	1135	3438	150	225	450
5/8	0.6250	0.0036	0.0041	0.0045	9.9	11	37	917	908	2750	150	225	450
3/4	0.7500	0.0038	0.0047	0.0055	8.7	11	38	764	756	2292	150	225	450
1	1.0000	0.0042	0.0056	0.0070	7.2	10	36	573	567	1719	150	225	450

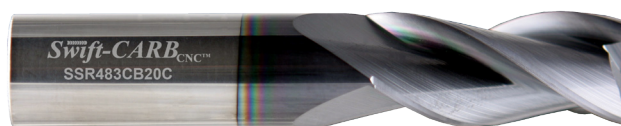
STAINLESS STEEL CNC MICROGRAIN CARBIDE END MILLS



STAINLESS STEEL

Series "SS" *Swift-CARB* CNC™ End Mills

- Stub and Regular Lengths
- Stocked in: (20C) ALTiN, & (30C) TiCN
- Small corner radii add strength to the corner



MADE IN USA

- Aggressive machining of Stainless Steel
- Available in 3 Flute
- Excellent results machining Waspalloy and Inconel

STAINLESS STEELS (AUSTENITIC) 303, 304, 304L, 316, 316L

Series “SS” 3FL Feeds and Speeds													
		Chip Load Per Tooth			FEED I.P.M.			R.P.M.			S.F.P.M.		
DIA.		FULL SLOTING	PERIPHERAL		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
			HEAVY	LIGHT									
1/8	0.1250	0.0006	0.0008	0.0009	5.0	6	23	2750	2773	8404	90	137.5	275
5/32	0.1562	0.0007	0.0009	0.0010	4.6	6	20	2201	2219	6725	90	137.5	275
3/16	0.1875	0.0008	0.0011	0.0014	4.4	6	24	1834	1849	5603	90	137.5	275
7/32	0.2188	0.0010	0.0014	0.0017	4.7	6	24	1572	1585	4802	90	137.5	275
1/4	0.2500	0.0013	0.0016	0.0018	5.4	6	23	1375	1387	4202	90	137.5	275
9/32	0.2183	0.0015	0.0018	0.0021	7.1	9	30	1575	1588	4813	90	137.5	275
5/16	0.3125	0.0017	0.0020	0.0023	5.6	7	23	1100	1109	3362	90	137.5	275
11/32	0.3438	0.0018	0.0022	0.0025	5.4	7	23	1000	1008	3056	90	137.5	275
3/8	0.3750	0.0020	0.0024	0.0027	5.5	7	23	917	924	2801	90	137.5	275
7/16	0.4375	0.0024	0.0030	0.0035	5.7	7	25	786	792	2401	90	137.5	275
1/2	0.5000	0.0026	0.0033	0.0040	5.4	7	25	688	693	2101	90	137.5	275
5/8	0.6250	0.0030	0.0038	0.0045	5.0	6	23	550	555	1681	90	137.5	275
3/4	0.7500	0.0040	0.0049	0.0057	5.5	7	24	458	462	1401	90	137.5	275
1	1.0000	0.0045	0.0060	0.0075	4.6	6	24	344	347	1051	90	137.5	275

The Speeds and Feeds recommended on the Stainless Steel charts are for starting points. New Tech Cutting Tools, Inc. can offer technical support on high speed machining and horsepower.

High Temp Alloys (Nickel and Cobalt Based) Titanium Alloys, Waspalloy, Inconel

Series “SS” 3FL Feeds and Speeds													
DIA.		Chip Load Per Tooth			FEED I.P.M.			R.P.M.			S.F.P.M.		
		FULL SLOTING	PERIPHERAL		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
			HEAVY	LIGHT									
1/8	0.1250	0.0005	0.0006	0.0007	2.3	3	10	1528	1513	4584	50	75	150
5/32	0.1562	0.0006	0.0008	0.0009	2.2	3	10	1223	1211	3668	50	75	150
3/16	0.1875	0.0008	0.0009	0.0010	2.4	3	9	1019	1008	3056	50	75	150
7/32	0.2188	0.0009	0.0011	0.0012	2.4	3	9	873	864	2619	50	75	150
1/4	0.2500	0.0010	0.0013	0.0015	2.3	3	10	764	756	2292	50	75	150
9/32	0.2813	0.0011	0.0014	0.0017	2.9	4	13	875	866	2625	50	75	150
5/16	0.3125	0.0012	0.0015	0.0018	2.2	3	10	611	605	1834	50	75	150
11/32	0.3438	0.0013	0.0017	0.0020	2.2	3	10	556	550	1667	50	75	150
3/8	0.3750	0.0014	0.0018	0.0021	2.1	3	10	509	504	1528	50	75	150
7/16	0.4375	0.0018	0.0022	0.0026	2.4	3	10	437	432	1310	50	75	150
1/2	0.5000	0.0020	0.0012	0.0030	2.3	3	10	382	378	1146	50	75	150
5/8	0.6250	0.0025	0.0029	0.0032	2.3	3	9	306	303	917	50	75	150
3/4	0.7500	0.0030	0.0038	0.0045	2.3	3	10	255	252	764	50	75	150
1	1.0000	0.0035	0.0045	0.0055	2.0	6	22	191	441	1337	50	175	350

TERM	EQUATION	RESULT
Revolutions Per Minute	$RPM = 3.82 \times SFPM \div Dia.$	= Required RPM
Surface Feet per Minute	$SFPM = .262 \times Dia. \times RPM$	= Surface Feet per Minute
Inches per Minute	$IPM = RPM \times Inches per Tooth \times No. of Teeth$	= Inches per Minute in Travel
Feed per Tooth Inches per Tooth	$IPT = IPM \div RPM \div No. of Flutes$	= Chip Load per Tooth Per Revolution

Corner Radii for the Series "SS" End Mills

1/8" = .008 - .010	11/32" = .015 - .020
5/32" = .008 - .010	3/8" = .015 - .020
3/16" = .008 - .010	7/16" = .015 - .020
7/32" = .015 - .020	1/2" = .030 - .035
1/4" = .015 - .020	5/8" = .030 - .035
9/32" = .015 - .020	3/4" = .030 - .035
5/16" = .015 - .020	1" = .030 - .035

STAINLESS STEEL CNC MICROGRAIN CARBIDE END MILLS

STAINLESS STEEL

Series "SS" **Swift-CARB**^{CNC™} End Mills

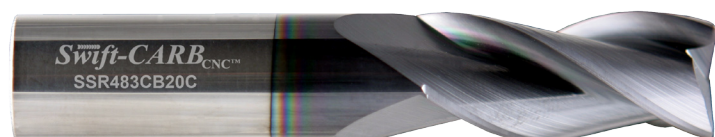
Especially Designed For Machining Slots and Pockets in Tough Alloys

Radius
& Left Hand
available on
request

**Moderate Helix
Endmills For
Stainless Steel**



STUB LENGTH - PREMIUM MICROGRAIN - 3 FLUTE



REGULAR LENGTH - PREMIUM MICROGRAIN - 3 FLUTE

MADE
IN **USA**

**CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.**

DIA.	SHANK	LOC	OAL	RADIUS	THREE FLUTE	20C/30C LIST
1/8	1/8	1/4	1 1/2	.008-.010	SSS083CB	\$14.93
1/8	1/8	1/2	1 1/2	.008-.010	SSR083CB	16.55
5/32	3/16	5/16	2	.008-.010	SSS103CB	18.69
5/32	3/16	9/16	2	.008-.010	SSR103CB	20.50
3/16	3/16	5/16	2	.008-.010	SSS123CB	16.78
3/16	3/16	9/16	2	.008-.010	SSR123CB	18.74
7/32	1/4	3/8	2	.015-.020	SSS143CB	21.33
7/32	1/4	3/4	2 1/2	.015-.020	SSR143CB	26.07
1/4	1/4	3/8	2	.015-.020	SSS163CB	19.28
1/4	1/4	3/4	2 1/2	.015-.020	SSR163CB	21.14
9/32	5/16	7/16	2	.015-.020	SSS183CB	27.11
9/32	5/16	13/16	2 1/2	.015-.020	SSR183CB	29.80
5/16	5/16	7/16	2	.015-.020	SSS203CB	24.53
5/16	5/16	13/16	2 1/2	.015-.020	SSR203CB	27.42
11/32	3/8	1/2	2	.015-.020	SSS223CB	32.70
11/32	3/8	1	2 1/2	.015-.020	SSR223CB	36.43
3/8	3/8	1/2	2	.015-.020	SSS243CB	29.62
3/8	3/8	1	2 1/2	.015-.020	SSR243CB	32.88
7/16	7/16	9/16	2 1/2	.015-.020	SSS283CB	37.13
7/16	7/16	1	2 3/4	.015-.020	SSR283CB	40.83
1/2	1/2	5/8	2 1/2	.030-.035	SSS323CB	45.95
1/2	1/2	1 1/4	3	.030-.035	SSR323CB	50.42
5/8	5/8	3/4	3	.030-.035	SSS403CB	90.34
5/8	5/8	1 5/8	3 1/2	.030-.035	SSR403CB	99.02
3/4	3/4	1	3	.030-.035	SSS483CB	122.86
3/4	3/4	1 5/8	4	.030-.035	SSR483CB	134.95
1	1	1 1/4	3	.030-.035	SSS643CB	199.03
1	1	2	4 1/2	.030-.035	SSR643CB	220.08

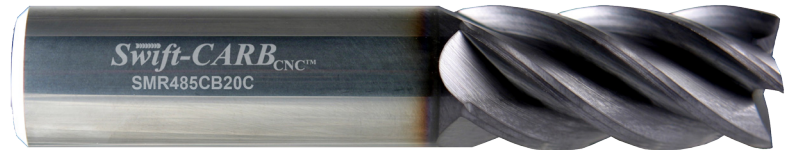
- Stocked in:
(20C) AlTiN, or
(30C) TiCN
- Small corner
radius adds
strength to
the corner
- Aggressive
machining of
Stainless Steel
- Excellent
results
machining
Waspalloy
and Inconel



HIGH TEMPERATURE ALLOY AND STAINLESS STEEL CNC MICROGRAIN CARBIDE END MILLS

EXOTIC ALLOYS/STAINLESS STEEL Series "SM" *Swift-CARB*^{CNC™} End Mills

- Available in 5 Flute
- Stronger core for heavier cuts
- Stocked in AlTiN (20C), & TiCN (30C)
- Excellent for heat resistant and Hi-Nickel alloys
- Stub, Regular, Medium, Long, X-Long Lengths



MADE IN USA

Medium Helix End Mills
For Stainless Steel

These end mills are medium helix which have been balanced for the ultimate in smooth cutting performance. They have a stronger core for heavier cutting. The *Swift-CARB*^{CNC™} SM Series end mills are excellent for heat resistant and Hi-Nickel alloys (15-5, 17-4, Titanium, Inconel, just to name a few). The AlTiN (20C) coating is preferred for the additional wear and heat resistant alloys.

Low Alloy Steel,
Ductile Steels,
Cast Irons, Copper

Series “SM” 5FL Feeds and Speeds													
DIA.		Chip Load Per Tooth			FEED I.P.M.			R.P.M.			S.F.P.M.		
		PERIPHERAL		FINISHING	LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
		HEAVY	LIGHT										
1/8	0.1250	0.0006	0.0010	0.0013	18.3	29	119	6112	6051	18336	200	300	600
5/32	0.1562	0.0008	0.0013	0.0018	19.6	31	132	4891	4842	14673	200	300	600
3/16	0.1875	0.0010	0.0015	0.0020	20.4	30	122	4075	4034	12224	200	300	600
7/32	0.2188	0.0015	0.0020	0.0024	26.2	34	126	3493	3458	10478	200	300	600
1/4	0.2500	0.0017	0.0023	0.0028	26.0	34	128	3056	3025	9168	200	300	600
9/32	0.2183	0.0019	0.0025	0.0030	33.3	42	158	3501	3466	10502	200	300	600
5/16	0.3125	0.0021	0.0028	0.0034	25.7	33	125	2445	2420	7334	200	300	600
11/32	0.3438	0.0022	0.0030	0.0037	24.4	32	123	2223	2200	6668	200	300	600
3/8	0.3750	0.0025	0.0033	0.0041	25.5	33	125	2037	2017	6112	200	300	600
7/16	0.4375	0.0027	0.0038	0.0048	23.6	32	126	1746	1729	5239	200	300	600
1/2	0.5000	0.0030	0.0043	0.0055	22.9	32	126	1528	1513	4584	200	300	600
5/8	0.6250	0.0040	0.0053	0.0065	24.4	32	119	1222	1210	3667	200	300	600
3/4	0.7500	0.0045	0.0062	0.0078	22.9	31	119	1019	1008	3056	200	300	600
1	1.0000	0.0060	0.0085	0.0110	22.9	32	126	764	756	2292	200	300	600
1 1/4	1.2500	0.0070	0.0095	0.0120	21.4	29	110	611	605	1834	200	300	600

The Speeds and Feeds recommended on the "SM" charts are for starting points. New Tech Cutting Tools, Inc. can offer technical support on high speed machining and horsepower.

Stainless Steel
(Precipitation)
15-5PH, 17-4PH,
Die & Mold Steels
P-20,
High Strength Alloys
40XX, 41XX, 42XX,
43XX, 44XX, 46XX,
& 86XX

Series “SM” 5FL Feeds and Speeds													
DIA.		Chip Load Per Tooth			FEED I.P.M.			R.P.M.			S.F.P.M.		
		PERIPHERAL		FINISHING	LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
		HEAVY	LIGHT										
1/8	0.1250	0.0006	0.0010	0.0013	7.8	16	65	2598	3278	9932	85	162.5	325
5/32	0.1562	0.0008	0.0012	0.0015	8.3	15	60	2079	2623	7948	85	162.5	325
3/16	0.1875	0.0009	0.0014	0.0018	7.8	15	60	1732	2185	6621	85	162.5	325
7/32	0.2188	0.0010	0.0017	0.0024	7.4	16	68	1484	1873	5675	85	162.5	325
1/4	0.2500	0.0014	0.0021	0.0028	9.1	17	70	1299	1639	4966	85	162.5	325
9/32	0.2183	0.0015	0.0023	0.0030	11.2	21	85	1488	1877	5688	85	162.5	325
5/16	0.3125	0.0018	0.0025	0.0031	9.4	16	62	1039	1311	3973	85	162.5	325
11/32	0.3438	0.0014	0.0025	0.0035	9.7	16	63	945	1192	3612	85	162.5	325
3/8	0.3750	0.0021	0.0030	0.0038	9.1	16	63	866	1093	3311	85	162.5	325
7/16	0.4375	0.0025	0.0035	0.0045	9.3	16	64	742	936	2838	85	162.5	325
1/2	0.5000	0.0030	0.0040	0.0050	9.7	16	62	649	819	2483	85	162.5	325
5/8	0.6250	0.0035	0.0048	0.0060	9.1	16	60	520	656	1986	85	162.5	325
3/4	0.7500	0.0040	0.0056	0.0071	8.7	15	59	433	546	1655	85	162.5	325
1	1.0000	0.0060	0.0080	0.0100	9.7	16	62	325	410	1242	85	162.5	325
1 1/4	1.2500	0.0065	0.0093	0.0120	7.4	15	60	229	328	993	75	162.5	325

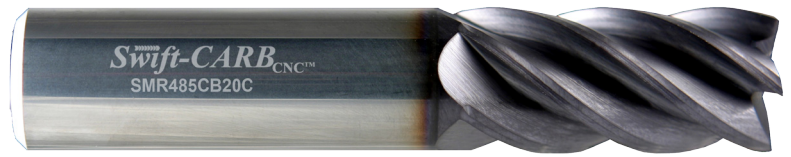
Swift-CARB^{CNC™}

MADE IN USA

HIGH TEMPERATURE ALLOY AND STAINLESS STEEL CNC MICROGRAIN CARBIDE END MILLS

Series "SM" *Swift-CARB* CNC™ End Mills

- Available in 5 Flute
- Stronger core for heavier cuts
- Stocked in AlTiN (20C), & TiCN (30C)
- Excellent for heat resistant and Hi-Nickel alloys
- Stub, Regular, Medium, Long, X-Long Lengths



STAINLESS
STEELS
(AUSTENITIC)
303, 304, 304L,
316, 316L

Series “SM” 5FL Feeds and Speeds													
DIA.		Chip Load Per Tooth			FEED I.P.M.			R.P.M.			S.F.P.M.		
		PERIPHERAL		FINISHING	LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
		HEAVY	LIGHT										
1/8	0.1250	0.0006	0.0010	0.0013	7.8	18	74	2598	3782	11460	85	187.5	375
5/32	0.1562	0.0008	0.0012	0.0015	8.3	17	69	2079	3026	9171	85	187.5	375
3/16	0.1875	0.0009	0.0014	0.0018	7.8	17	69	1732	2521	7640	85	187.5	375
7/32	0.2188	0.0010	0.0017	0.0024	7.4	18	79	1484	2161	6549	85	187.5	375
1/4	0.2500	0.0014	0.0021	0.0028	9.1	20	80	1299	1891	5730	85	187.5	375
9/32	0.2183	0.0015	0.0023	0.0030	11.2	24	98	1488	2166	6564	85	187.5	375
5/16	0.3125	0.0018	0.0025	0.0031	9.4	19	71	1039	1513	4584	85	187.5	375
11/32	0.3438	0.0014	0.0025	0.0035	6.6	17	73	945	1375	4167	85	187.5	375
3/8	0.3750	0.0021	0.0030	0.0038	9.1	19	73	866	1261	3820	85	187.5	375
7/16	0.4375	0.0025	0.0035	0.0045	9.3	19	74	742	1081	3274	85	187.5	375
1/2	0.5000	0.0030	0.0040	0.0050	9.7	19	72	649	945	2865	85	187.5	375
5/8	0.6250	0.0035	0.0048	0.0060	9.1	18	69	520	756	2292	85	187.5	375
3/4	0.7500	0.0040	0.0056	0.0071	8.7	17	68	433	630	1910	85	187.5	375
1	1.0000	0.0060	0.0080	0.0100	9.7	19	72	325	473	1433	85	187.5	375
1 1/4	1.2500	0.0065	0.0093	0.0120	8.4	17	69	260	378	1146	85	187.5	375

The Speeds and Feeds recommended on the "SM" charts are for starting points. New Tech Cutting Tools, Inc. can offer technical support on high speed machining and horsepower.

High Temp Alloys
(Nickel and Cobalt
Based) Titanium
Alloys, Waspalloy,
Inconel

Series “SM” 5FL Feeds and Speeds													
DIA.		Chip Load Per Tooth			FEED I.P.M.			R.P.M.			S.F.P.M.		
		PERIPHERAL		FINISHING	LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
		HEAVY	LIGHT										
1/8	0.1250	0.0005	0.0009	0.0013	3.1	10	45	1222	2269	6876	40	112.5	225
5/32	0.1562	0.0006	0.0011	0.0015	2.9	10	41	978	1816	5503	40	112.5	225
3/16	0.1875	0.0007	0.0013	0.0018	2.9	9	41	815	1513	4584	40	112.5	225
7/32	0.2188	0.0008	0.0014	0.0019	2.8	9	37	699	1297	3929	40	112.5	225
1/4	0.2500	0.0010	0.0015	0.0020	3.1	9	34	611	1135	3438	40	112.5	225
9/32	0.2183	0.0011	0.0017	0.0023	3.9	11	45	700	1300	3938	40	112.5	225
5/16	0.3125	0.0012	0.0019	0.0025	2.9	8	34	489	908	2750	40	112.5	225
11/32	0.3438	0.0013	0.0021	0.0028	2.9	8	35	445	825	2500	40	112.5	225
3/8	0.3750	0.0014	0.0022	0.0030	2.9	8	34	407	756	2292	40	112.5	225
7/16	0.4375	0.0017	0.0026	0.0035	3.0	8	34	349	648	1965	40	112.5	225
1/2	0.5000	0.0020	0.0030	0.0040	3.1	9	34	306	567	1719	40	112.5	225
5/8	0.6250	0.0024	0.0036	0.0048	2.9	8	33	244	454	1375	40	112.5	225
3/4	0.7500	0.0030	0.0045	0.0060	3.1	9	34	204	378	1146	40	112.5	225
1	1.0000	0.0035	0.0058	0.0080	2.7	8	34	153	284	860	40	112.5	225
1 1/4	1.2500	0.0040	0.0065	0.0090	2.4	7	31	122	227	688	40	112.5	225

GTO

Would you like to try *SWIFT-CARB CNC*, *SUPERBEE®*, or *NEW-LUBE®*, products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order).

TERM	EQUATION	RESULT
Revolutions Per Minute	$RPM = 3.82 \times SFPM \div Dia.$	= Required RPM
Surface Feet per Minute	$SFPM = .262 \times Dia. \times RPM$	= Surface Feet per Minute
Inches per Minute	$IPM = RPM \times Inches \text{ per Tooth} \times No. \text{ of Teeth}$	= Inches per Minute in Travel
Feed per Tooth Inches per Tooth	$IPT = IPM \div RPM \div No. \text{ of Flutes}$	= Chip Load per Tooth Per Revolution

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DISTRIBUTOR.**

Swift-CARB CNC™

MADE
IN USA

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HIGH TEMPERATURE ALLOY AND STAINLESS STEEL CNC MICROGRAIN CARBIDE END MILLS

EXOTIC ALLOYS/STAINLESS STEEL

STUB, REGULAR, MEDIUM, LONG & EX. LONG LENGTHS PREMIUM MICROGRAIN - 5 FLUTE

DIA.	SHANK	LOC	OAL	FIVE FLUTE	20C/30C LIST
1/8	1/8	1/4	1 1/2	SMS085CB	\$15.24
1/8	1/8	1/2	1 1/2	SMR085CB	16.76
5/32	3/16	5/16	2	SMS105CB	18.51
5/32	3/16	9/16	2	SMR105CB	20.25
3/16	3/16	5/16	2	SMS125CB	16.62
3/16	3/16	9/16	2	SMR125CB	18.51
7/32	1/4	3/8	2	SMS145CB	21.12
7/32	1/4	3/4	2 1/2	SMR145CB	26.52
1/4	1/4	3/8	2	SMS165CB	19.22
1/4	1/4	3/4	2 1/2	SMR165CB	21.38
1/4	1/4	1	2 1/2	SMM165CB	32.86
1/4	1/4	1 1/4	3	SML165CB	35.26
9/32	5/16	7/16	2	SMS185CB	27.71
9/32	5/16	13/16	2 1/2	SMR185CB	30.80
5/16	5/16	7/16	2	SMS205CB	25.19
5/16	5/16	3/4	2 1/2	SMR205CB	27.97
5/16	5/16	1	2 1/2	SMM205CB	42.86
5/16	5/16	1 1/4	3	SML205CB	44.58
5/16	5/16	2 1/8	4	SMX205CB	62.54
11/32	3/8	1/2	2	SMS225CB	32.59
11/32	3/8	1	2 1/2	SMR225CB	36.24
3/8	3/8	1/2	2	SMS245CB	29.63
3/8	3/8	1	2 1/2	SMR245CB	32.96
3/8	3/8	1 1/4	3	SMM245CB	39.92
3/8	3/8	1 1/2	3 1/2	SML245CB	49.81
3/8	3/8	2 1/2	5	SMX245CB	82.41
13/32	7/16	9/16	2 1/2	SMS265CB	40.88
13/32	7/16	1	2 3/4	SMR265CB	45.40
7/16	7/16	9/16	2 1/2	SMS285CB	37.18
7/16	7/16	1	2 3/4	SMR285CB	41.62
7/16	7/16	1 1/2	4	SMM285CB	60.00
7/16	7/16	2	4	SML285CB	65.15
15/32	1/2	5/8	2 1/2	SMS305CB	49.06
15/32	1/2	1 1/4	3	SMR305CB	54.50
1/2	1/2	5/8	2 1/2	SMS325CB	44.62
1/2	1/2	1 1/4	3	SMR325CB	49.56
1/2	1/2	1 5/8	4	SMM325CB	56.88
1/2	1/2	2	4	SML325CB	70.81
1/2	1/2	3 1/8	5	SMX325CB	139.78
9/16	5/8	1 1/2	3 1/2	SMR365CB	73.92
5/8	5/8	3/4	3	SMS405CB	89.60
5/8	5/8	1 5/8	3 1/2	SMR405CB	100.09
5/8	5/8	2	4	SMM405CB	106.68
5/8	5/8	2 1/2	5	SML405CB	131.75
5/8	5/8	4	6	SMX405CB	210.05
3/4	3/4	1	3	SMS485CB	119.06
3/4	3/4	1 5/8	4	SMR485CB	128.65
3/4	3/4	2 1/4	5	SMM485CB	170.12
3/4	3/4	3 1/4	6	SML485CB	190.83
3/4	3/4	4	6	SMX485CB	261.82
7/8	7/8	2	4	SMR565CB	166.12
1	1	1 1/4	3 1/2	SMS645CB	182.18
1	1	2	4 1/2	SMR645CB	203.61
1	1	2 3/4	6	SMM645CB	248.26
1	1	3 1/4	6	SML645CB	273.04
1	1	4 1/8	7	SMX645CB	398.57
1 1/4	1 1/4	2	4 1/2	SMR805CB	399.99
1 1/4	1 1/4	2 3/4	6	SMM805CB	478.57
1 1/4	1 1/4	3 1/4	6	SML805CB	479.97
1 1/4	1 1/4	5	7 1/2	SMX805CB	599.97

Series "SM" Swift-CARB CNC™ End Mills



Stub



Regular



Medium



Long



Extra-Long

- Stub, Regular, Medium, Long, X-Long Lengths

- Left Hand, Metric, and Specials available on request

- Stocked in: (20C) AlTiN & (30C) TiCN

- Stronger core for heavier cuts

- Excellent for heat resistant and Hi-Nickel alloys

Choose either (20C) AlTiN or (30C) TiCN coating and pay the same low price! (See page 40 for application info.)

Medium Helix Endmills For Stainless Steel

GTO

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Swift-CARB CNC™

MADE IN USA

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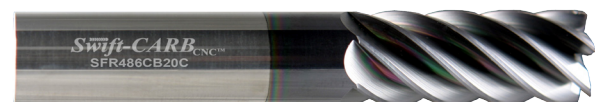
HIGH TEMPERATURE ALLOY AND STAINLESS STEEL CNC MICROGRAIN CARBIDE END MILLS

SIX-FLUTE FINISHING END MILLS FOR STAINLESS/ALLOY STEELS AND EXOTIC ALLOYS

SERIES "SF" **Swift-CARB**^{CNC TM} END MILLS



MADE IN USA



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STUB, REGULAR & MEDIUM LENGTHS PREMIUM MICROGRAIN - 45° HELIX - 6 FLUTE

DIA.	SHANK	LOC	OAL	SIX FLUTE	20C/30C LIST
1/4	1/4	3/8	2	SFS166CB	\$19.22
1/4	1/4	3/4	2 1/2	SFR166CB	21.38
1/4	1/4	1	2 1/2	SFM166CB	32.86
5/16	5/16	7/16	2	SFS206CB	25.19
5/16	5/16	13/16	2 1/2	SFR206CB	27.97
5/16	5/16	1	2 1/2	SFM206CB	42.86
3/8	3/8	1/2	2	SFS246CB	29.63
3/8	3/8	1	2 1/2	SFR246CB	32.90
3/8	3/8	1 1/4	3 1/2	SFM246CB	39.91
7/16	7/16	9/16	2 1/2	SFS286CB	37.19
7/16	7/16	1	2 3/4	SFR286CB	41.61
7/16	7/16	1 1/2	3 1/2	SFM286CB	60.00
1/2	1/2	5/8	2 1/2	SFS326CB	44.62
1/2	1/2	1 1/4	3	SFR326CB	49.56
1/2	1/2	1 5/8	4	SFM326CB	56.87
5/8	5/8	3/4	3	SFS406CB	89.60
5/8	5/8	1 5/8	3 1/2	SFR406CB	100.09
5/8	5/8	2	4	SFM406CB	106.69
3/4	3/4	1	3	SFS486CB	119.06
3/4	3/4	1 5/8	4	SFR486CB	128.65
3/4	3/4	2 1/4	5	SFM486CB	166.12
1	1	1 1/4	3 1/2	SFS646CB	182.18
1	1	2	4 1/2	SFR646CB	203.61
1	1	2 3/4	6	SFM646CB	248.26
1 1/4	1 1/4	2	4 1/2	SFR806CB	399.99
1 1/4	1 1/4	2 3/4	6	SFM806CB	478.57

- Stocked in:
(20C) AlTiN,
(30C) TiCN

- Best For Good Finish

- Left Hand, Metric,
and Specials
available

- Stub, Regular, & Medium
Lengths

- High Accuracy with
close tolerances

GTO

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MADE IN USA

MICROGRAIN CARBIDE CHAMFER MILLS

NEW

TAPERED END MILLS

SERIES "TM" and "TB" **Swift-CARB^{CNC}™**

30° Constant Helix • Hold Draft Angles in Die & Mold Applications • R.H. Cutting



SQUARE END

3 FLUTE TAPERED END MILLS

THREE FLUTE	TAPER PER SIDE	TIP DIA.	SHANK	LOC	OAL	LIST
TM1D08163CB	1°	1/8	1/4	1 1/2	3	\$44.12
TM1D12243CB	1°	3/16	3/8	1 3/4	3 1/2	59.00
TM1D16323CB	1°	1/4	1/2	2	4	87.22
TM1.5D08163CB	1-1/2°	1/8	1/4	1 1/2	3	44.12
TM1.5D12243CB	1-1/2°	3/16	3/8	1 3/4	3 1/2	59.00
TM1.5D16323CB	1-1/2°	1/4	1/2	2	4	87.22
TM2D08163CB	2°	1/8	1/4	1 1/4	3	44.12
TM2D12243CB	2°	3/16	3/8	1 3/4	3 1/2	59.00
TM2D16323CB	2°	1/4	1/2	2	4	87.22
TM3D08163CB	3°	1/8	1/4	1	3	44.12
TM3D10243CB	3°	5/32	3/8	1 3/4	3 1/2	59.00
TM3D16323CB	3°	1/4	1/2	2	4	87.22
TM5D08163CB	5°	1/8	1/4	3/4	3	44.12
TM5D08243CB	5°	1/8	3/8	1 1/2	3 1/2	59.00
TM5D16323CB	5°	1/4	1/2	1 1/4	4	87.22
TM7D08163CB	7°	1/8	1/4	1/2	3	44.12
TM7D08243CB	7°	1/8	3/8	1	3 1/2	59.00
TM7D12323CB	7°	3/16	1/2	1 1/4	4	87.22
TM10D06163CB	10°	3/32	1/4	1/2	3	44.12
TM10D08243CB	10°	1/8	3/8	3/4	3 1/2	59.00
TM10D08323CB	10°	1/8	1/2	1	4	87.22

**CALL 800-227-9876 TO
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DISTRIBUTOR.**

- Square or ball nose available
- 3 Flute
- Left Hand, Metric, and Specials available on request
- High Accuracy with close tolerances
- Easy Chip Removal

BALL END

3 FLUTE TAPERED END MILLS



GTO

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THREE FLUTE	TAPER PER SIDE	TIP DIA.	SHANK	LOC	OAL	LIST
TB1D08163CB	1°	1/8	1/4	1 1/2	3	\$47.89
TB1D12243CB	1°	3/16	3/8	1 3/4	3 1/2	59.62
TB1D16323CB	1°	1/4	1/2	2	4	88.12
TB1.5D08163CB	1-1/2°	1/8	1/4	1 1/2	3	47.89
TB1.5D12243CB	1-1/2°	3/16	3/8	1 3/4	3 1/2	59.62
TB1.5D16323CB	1-1/2°	1/4	1/2	2	4	88.12
TB2D08163CB	2°	1/8	1/4	1 1/4	3	47.89
TB2D12243CB	2°	3/16	3/8	1 3/4	3 1/2	59.62
TB2D16323CB	2°	1/4	1/2	2	4	88.12
TB3D08163CB	3°	1/8	1/4	1	3	47.89
TB3D10243CB	3°	5/32	3/8	1 3/4	3 1/2	59.62
TB3D16323CB	3°	1/4	1/2	2	4	88.12
TB5D08163CB	5°	1/8	1/4	3/4	3	47.89
TB5D08243CB	5°	1/8	3/8	1 1/2	3 1/2	59.62
TB5D16323CB	5°	1/4	1/2	1 1/4	4	88.12
TB7D08163CB	7°	1/8	1/4	1/2	3	47.89
TB7D08243CB	7°	1/8	3/8	1	3 1/2	59.62
TB7D12323CB	7°	3/16	1/2	1 1/4	4	88.12
TB10D06163CB	10°	3/32	1/4	1/2	3	47.89
TB10D08243CB	10°	1/8	3/8	3/4	3 1/2	59.62
TB10D08323CB	10°	1/8	1/2	1	4	88.12

STANDARD MICROGRAIN CARBIDE END MILLS

STANDARD END MILLS

SERIES "CM", "CS" & "BM" *Swift-CARB*^{CNC™} END MILLS MICROGRAIN CARBIDE

- Available in 2 & 4 Flute
- Stub, Regular, Medium, Long, X-Long Lengths
- High Accuracy with close tolerances
- AlTiN (20C) and TiCN (30C) available
- Easy Chip Removal



Excellent value from New Tech. Our lines of PREMIUM quality carbide end mills are the perfect beginning to your manufacturing process. High accuracy with close tolerances, they deliver the precision you demand. One of the best advantages with these end mills is that they can be preground to the radii that fits your needs - **AT COMPETITIVE PRICES!**

Series "CM", "BM", "CME", & "BME" 2&4 FL Feeds and Speeds

Low Alloy Steel, Ductile Steels, Cast Irons, Copper

		Chip Load Per Tooth				2FL FEED I.P.M.				4FL FEED I.P.M.			R.P.M.			S.F.P.M.		
DIA.		FULL SLOTING	MEDIUM PERIPHERAL	FINISHING	FL	LOW	MID	HIGH	FL	LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
1/8	0.1250	0.0006	0.0009	0.0012	2	7.3	8	32	4	14.7	16	64	6112	4538	13752	200	225	450
5/32	0.1562	0.0008	0.0012	0.0016	2	7.8	9	36	4	15.7	18	71	4891	3632	11005	200	225	450
3/16	0.1875	0.0010	0.0014	0.0018	2	8.1	8	33	4	16.3	17	66	4075	3025	9168	200	225	450
7/32	0.2188	0.0015	0.0018	0.0022	2	10.5	9	34	4	21.0	19	68	3493	2593	7858	200	225	450
1/4	0.2500	0.0017	0.0021	0.0025	2	10.4	10	35	4	20.8	19	69	3056	2269	6876	200	225	450
9/32	0.2183	0.0019	0.0023	0.0027	2	13.3	12	43	4	26.6	24	85	3501	2599	7876	200	225	450
5/16	0.3125	0.0021	0.0026	0.0031	2	10.3	9	34	4	20.5	19	67	2445	1815	5501	200	225	450
11/32	0.3438	0.0022	0.0028	0.0033	2	9.8	9	33	4	19.6	18	67	2223	1650	5001	200	225	450
3/8	0.3750	0.0025	0.0031	0.0037	2	10.2	9	34	4	20.4	19	68	2037	1513	4584	200	225	450
7/16	0.4375	0.0027	0.0035	0.0043	2	9.4	9	34	4	18.9	18	68	1746	1297	3929	200	225	450
1/2	0.5000	0.0030	0.0040	0.0050	2	9.2	9	34	4	18.3	18	68	1528	1135	3438	200	225	450
5/8	0.6250	0.0040	0.0049	0.0059	2	9.8	9	32	4	19.6	18	64	1222	908	2750	200	225	450
3/4	0.7500	0.0045	0.0058	0.0070	2	9.2	9	32	4	18.3	17	64	1019	756	2292	200	225	450
1	1.0000	0.0060	0.0080	0.0099	2	9.2	9	34	4	18.3	18	68	764	567	1719	200	225	450
1 1/4	1.2500	0.0070	0.0089	0.0108	2	8.6	8	30	4	17.1	16	59	611	454	1375	200	225	450

Series "CM", "BM", "CME", & "BME" 2&4 FL Feeds and Speeds

Stainless Steel (Precipitation) 15-5PH, 17-4PH, Die and Mold Steels P-20, High Strength Alloys 40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX

DIA.		Chip Load Per Tooth			FL	2 FL FEED I.P.M.			FL	4 FL FEED I.P.M.			R.P.M.			S.F.P.M.		
		FULL SLOTING	MEDIUM PERIPHERAL	FINISHING		LOW	MID	HIGH		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
1/8	0.1250	0.0006	0.0009	0.0012	2	3.1	5	20	4	6.2	10	39	2598	2773	8404	85	137.5	275
5/32	0.1562	0.0008	0.0011	0.0014	2	3.3	5	18	4	6.7	10	36	2079	2219	6725	85	137.5	275
3/16	0.1875	0.0009	0.0013	0.0016	2	3.1	5	18	4	6.2	9	36	1732	1849	5603	85	137.5	275
7/32	0.2188	0.0010	0.0016	0.0022	2	3.0	5	21	4	5.9	10	41	1484	1585	4802	85	137.5	275
1/4	0.2500	0.0014	0.0020	0.0025	2	3.6	5	21	4	7.3	11	42	1299	1387	4202	85	137.5	275
9/32	0.2183	0.0015	0.0021	0.0027	2	4.5	7	26	4	8.9	13	52	1488	1588	4813	85	137.5	275
5/16	0.3125	0.0018	0.0023	0.0028	2	3.7	5	19	4	7.5	10	38	1039	1109	3362	85	137.5	275
11/32	0.3438	0.0019	0.0025	0.0032	2	3.6	5	19	4	7.2	10	39	945	1008	3056	85	137.5	275
3/8	0.3750	0.0021	0.0028	0.0034	2	3.6	5	19	4	7.3	10	38	866	924	2801	85	137.5	275
7/16	0.4375	0.0025	0.0033	0.0041	2	3.7	5	19	4	7.4	10	39	742	792	2401	85	137.5	275
1/2	0.5000	0.0030	0.0038	0.0045	2	3.9	5	19	4	7.8	10	38	649	693	2101	85	137.5	275
5/8	0.6250	0.0035	0.0045	0.0054	2	3.6	5	18	4	7.3	10	36	520	555	1681	85	137.5	275
3/4	0.7500	0.0040	0.0052	0.0064	2	3.5	5	18	4	6.9	10	36	433	462	1401	85	137.5	275
1	1.0000	0.0060	0.0075	0.0090	2	3.9	5	19	4	7.8	10	38	325	347	1051	85	137.5	275
1 1/4	1.2500	0.0065	0.0087	0.0108	2	3.0	6	21	4	6.0	11	43	229	328	993	75	137.5	325

STANDARD MICROGRAIN CARBIDE END MILLS

STANDARD END MILLS

SERIES "CM", "CS" & "BM" **Swift-CARB**^{CNC™} END MILLS
MICROGRAIN CARBIDE



- Available in 2 & 4 Flute
- Stub, Regular, Medium, Long, X-Long Lengths
- High Accuracy with close tolerances
- AlTiN (20C) and TiCN (30C) available
- Easy Chip Removal



MADE IN USA

**CALL 800-227-9876 TO
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Series "CM", "BM", "CME", & "BME" 2&4 FL Feeds and Speeds

Stainless Steels (Austenitic) 303, 304, 304L, 312, 316, 316L

DIA.		Chip Load Per Tooth			FL	2 FL FEED I.P.M.			FL	4 FL FEED I.P.M.			R.P.M.			S.F.P.M.		
		FULL SLOTTING	MEDIUM PERIPHERAL	FINISHING		LOW	MID	HIGH		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
1/8	0.1250	0.0006	0.0009	0.0012	2	3.1	5	21	4	6.2	11	43	2598	3025	9168	85	150	300
5/32	0.1562	0.0008	0.0011	0.0014	2	3.3	5	20	4	6.7	10	40	2079	2421	7337	85	150	300
3/16	0.1875	0.0009	0.0013	0.0016	2	3.1	5	20	4	6.2	10	40	1732	2017	6112	85	150	300
7/32	0.2188	0.0010	0.0016	0.0022	2	3.0	5	23	4	5.9	11	45	1484	1729	5239	85	150	300
1/4	0.2500	0.0014	0.0020	0.0025	2	3.6	6	23	4	7.3	12	46	1299	1513	4584	85	150	300
9/32	0.2183	0.0015	0.0021	0.0027	2	4.5	7	28	4	8.9	15	57	1488	1733	5251	85	150	300
5/16	0.3125	0.0018	0.0023	0.0028	2	3.7	6	20	4	7.5	11	41	1039	1210	3667	85	150	300
11/32	0.3438	0.0019	0.0025	0.0032	2	2.6	5	21	4	5.3	10	42	945	1100	3334	85	150	300
3/8	0.3750	0.0021	0.0028	0.0034	2	3.6	6	21	4	7.3	11	42	866	1008	3056	85	150	300
7/16	0.4375	0.0025	0.0033	0.0041	2	3.7	6	21	4	7.4	11	42	742	864	2619	85	150	300
1/2	0.5000	0.0030	0.0038	0.0045	2	3.9	6	21	4	7.8	11	41	649	756	2292	85	150	300
5/8	0.6250	0.0035	0.0045	0.0054	2	3.6	5	20	4	7.3	11	40	520	605	1834	85	150	300
3/4	0.7500	0.0040	0.0052	0.0064	2	3.5	5	20	4	6.9	10	39	433	504	1528	85	150	300
1	1.0000	0.0060	0.0075	0.0090	2	3.9	6	21	4	7.8	11	41	325	378	1146	85	150	300
1 1/4	1.2500	0.0065	0.0087	0.0108	2	3.4	5	20	4	6.8	10	40	260	303	917	85	150	300

Series "CM", "BM", "CME", & "BME" 2&4 FL Feeds and Speeds

High Temp Alloys (Nickel and Cobalt Based) Titanium Alloys, Waspalloy, Inconel

DIA.		Chip Load Per Tooth			FL	2 FL FEED I.P.M.			FL	4 FL FEED I.P.M.			R.P.M.			S.F.P.M.		
		FULL SLOTTING	MEDIUM PERIPHERAL	FINISHING		LOW	MID	HIGH		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
1/8	0.1250	0.0005	0.0008	0.0012	2	1.2	3	13	4	2.4	6	25	1222	1765	5348	40	87.5	175
5/32	0.1562	0.0006	0.0010	0.0014	2	1.2	3	12	4	2.3	6	23	978	1412	4280	40	87.5	175
3/16	0.1875	0.0007	0.0012	0.0016	2	1.1	3	12	4	2.3	5	23	815	1177	3565	40	87.5	175
7/32	0.2188	0.0008	0.0013	0.0017	2	1.1	3	10	4	2.2	5	21	699	1008	3056	40	87.5	175
1/4	0.2500	0.0010	0.0014	0.0018	2	1.2	2	10	4	2.4	5	19	611	882	2674	40	87.5	175
9/32	0.2183	0.0011	0.0016	0.0021	2	1.5	3	13	4	3.1	6	25	700	1011	3063	40	87.5	175
5/16	0.3125	0.0012	0.0017	0.0023	2	1.2	2	10	4	2.3	5	19	489	706	2139	40	87.5	175
11/32	0.3438	0.0013	0.0019	0.0025	2	1.2	2	10	4	2.3	5	20	445	642	1945	40	87.5	175
3/8	0.3750	0.0014	0.0021	0.0027	2	1.1	2	10	4	2.3	5	19	407	588	1783	40	87.5	175
7/16	0.4375	0.0017	0.0024	0.0032	2	1.2	2	10	4	2.4	5	19	349	504	1528	40	87.5	175
1/2	0.5000	0.0020	0.0028	0.0036	2	1.2	2	10	4	2.4	5	19	306	441	1337	40	87.5	175
5/8	0.6250	0.0024	0.0034	0.0043	2	1.2	2	9	4	2.3	5	18	244	353	1070	40	87.5	175
3/4	0.7500	0.0030	0.0042	0.0054	2	1.2	2	10	4	2.4	5	19	204	294	891	40	87.5	175
1	1.0000	0.0035	0.0054	0.0072	2	1.1	2	10	4	2.1	5	19	153	221	669	40	87.5	175

STANDARD MICROGRAIN CARBIDE END MILLS

STANDARD END MILLS

SERIES "CM", "CS" & "BM" **Swift-CARB**^{CNC™} END MILLS
MICROGRAIN CARBIDE



CM

STANDARD, REGULAR LENGTH END MILLS
PREMIUM MICROGRAIN
2 & 4 FLUTE



DIA.	SHANK	LOC	OAL	TWO FLUTE	FOUR FLUTE	LIST	NEW! 20C/30C
1/32	1/8	5/64	1 1/2	CMR022CB	N/A	\$14.98	\$16.46
3/64	1/8	7/64	1 1/2	CMR032CB	N/A	15.08	16.56
1/16	1/8	3/16	1 1/2	CMR042CB	CMR044CB	12.82	14.30
5/64	1/8	3/16	1 1/2	CMR052CB	CMR054CB	14.53	16.21
3/32	1/8	3/8	1 1/2	CMR062CB	CMR064CB	12.50	14.18
7/64	1/8	3/8	1 1/2	CMR072CB	CMR074CB	14.17	15.85
1/8	1/8	1/2	1 1/2	CMR082CB	CMR084CB	11.29	12.97
9/64	3/16	9/16	2	CMR092CB	CMR094CB	17.03	19.18
5/32	3/16	9/16	2	CMR102CB	CMR104CB	16.77	18.92
11/64	3/16	5/8	2	CMR112CB	CMR114CB	17.03	19.18
3/16	3/16	5/8	2	CMR122CB	CMR124CB	14.47	16.61
13/64	1/4	5/8	2 1/2	CMR132CB	CMR134CB	17.33	20.65
7/32	1/4	5/8	2 1/2	CMR142CB	CMR144CB	17.75	21.07
15/64	1/4	3/4	2 1/2	CMR152CB	CMR154CB	17.33	20.65
1/4	1/4	3/4	2 1/2	CMR162CB	CMR164CB	12.92	16.24
17/64	5/16	3/4	2 1/2	CMR172CB	CMR174CB	20.69	24.01
9/32	5/16	3/4	2 1/2	CMR182CB	CMR184CB	20.69	24.01
19/64	5/16	13/16	2 1/2	CMR192CB	CMR194CB	21.53	24.85
5/16	5/16	13/16	2 1/2	CMR202CB	CMR204CB	20.18	23.50
21/64	3/8	7/8	2 1/2	CMR212CB	CMR214CB	27.26	32.02
11/32	3/8	1	2 1/2	CMR222CB	CMR224CB	26.42	30.81
23/64	3/8	7/8	2 1/2	CMR232CB	CMR234CB	27.26	31.65
3/8	3/8	1	2 1/2	CMR242CB	CMR244CB	25.25	29.64
25/64	7/16	7/8	2 1/2	CMR252CB	CMR254CB	39.14	44.99
13/32	7/16	1	2 3/4	CMR262CB	CMR264CB	37.40	43.25
27/64	7/16	7/8	2 1/2	CMR272CB	CMR274CB	39.14	44.99
7/16	7/16	1	2 3/4	CMR282CB	CMR284CB	27.91	33.76
29/64	1/2	1	3	CMR292CB	CMR294CB	46.55	54.65
15/32	1/2	1 1/4	3	CMR302CB	CMR304CB	44.98	53.08
31/64	1/2	1	3	CMR312CB	CMR314CB	46.55	54.65
1/2	1/2	1	3	CMR322CB	CMR324CB	33.07	41.17
9/16	9/16	1 1/4	3	CMR362CB	CMR364CB	66.65	76.06
5/8	5/8	1 1/4	3 1/2	CMR402CB	CMR404CB	63.48	72.89
3/4	3/4	1 1/2	4	CMR482CB	CMR484CB	90.45	104.32
7/8	7/8	1 1/2	4	CMR562CB	CMR564CB	137.95	155.12
1	1	1 1/2	4	CMR642CB	CMR644CB	141.53	161.98
1 1/4	1 1/4	1 1/2	4	CMR802CB	CMR804CB	447.79	473.20

- Coated in:
(20C) AITiN ,
(30C) TiCN
- Available in 2 & 4 Flute
- Left Hand, Metric, and Specials available on request
- Regular, Medium, Long, & X-Long
- High Accuracy with close tolerances
- Easy Chip Removal

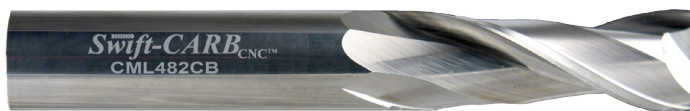
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STANDARD MICROGRAIN CARBIDE END MILLS

STANDARD END MILLS

SERIES "CM", *Swift-CARB*^{CNC™} END MILLS
MICROGRAIN CARBIDE

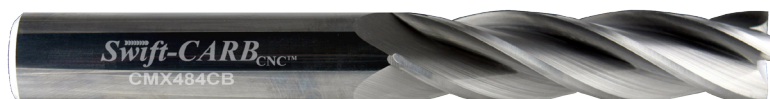
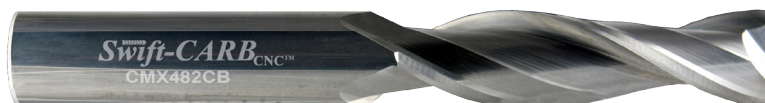


LONG LENGTH PREMIUM MICROGRAIN 2 & 4 FLUTE

TWO FLUTE	FOUR FLUTE	DIA.	SHANK	LOC	OAL	LIST	NEW! 20C/30C
CML082CB	CML084CB	1/8	1/8	3/4	2 1/4	\$15.51	\$20.18
CML122CB	CML124CB	3/16	3/16	3/4	2 1/2	14.27	20.23
CML162CB	CML164CB	1/4	1/4	1 1/8	3	17.68	29.89
CML202CB	CML204CB	5/16	5/16	1 1/8	3	21.92	34.12
CML242CB	CML244CB	3/8	3/8	1 1/8	3	27.71	45.93
CML282CB	CML284CB	7/16	7/16	2	4	41.87	71.12
CML322CB	CML324CB	1/2	1/2	2	4	44.56	73.81
CML402CB	CML404CB	5/8	5/8	2 1/4	4 5/8	93.56	126.19
CML482CB	CML484CB	3/4	3/4	2 1/4	5	120.96	168.21
CML562CB	CML564CB	7/8	7/8	2 1/4	5	228.00	284.25
CML642CB	CML644CB	1	1	2 1/4	5	234.48	299.73



- Coated in:
(20C) AlTiN ,
(30C) TiCN
- Available in 2 & 4
Flute



- Left Hand, Metric,
and Specials
available on
request

EXTRA-LONG LENGTH PREMIUM MICROGRAIN 2 & 4 FLUTE

TWO FLUTE	FOUR FLUTE	DIA.	SHANK	LOC	OAL	LIST	NEW! 20C/30C
CMX082CB	CMX084CB	1/8	1/8	1	2 1/2	\$23.85	\$25.53
CMX122CB	CMX124CB	3/16	3/16	1 1/8	2 1/2	25.43	27.58
CMX162CB	CMX164CB	1/4	1/4	1 1/2	3 1/4	27.24	31.63
CMX202CB	CMX204CB	5/16	5/16	1 5/8	3 1/2	29.94	36.50
CMX242CB	CMX244CB	3/8	3/8	1 3/4	3 1/2	31.98	38.54
CMX282CB	CMX284CB	7/16	7/16	3	4	56.69	67.22
CMX322CB	CMX324CB	1/2	1/2	3	5	64.31	76.82
CMX402CB	CMX404CB	5/8	5/8	3	5	95.20	109.89
CMX482CB	CMX484CB	3/4	3/4	3	6	151.54	171.68
CMX562CB	CMX564CB	7/8	7/8	3	6	197.27	220.46
CMX642CB	CMX644CB	1	1	3	6	252.20	278.42

- Regular, Medium,
Long, & X-Long
- High Accuracy with
close tolerances
- Easy Chip Removal

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STANDARD MICROGRAIN CARBIDE END MILLS

STANDARD END MILLS

SERIES "CSD" & "CMD" **Swift-CARB** CNC™ END MILLS
MICROGRAIN CARBIDE

MADE IN **USA**



MADE IN **USA**



"CSD"
STUB LENGTH
DOUBLE END
2 & 4 FLUTE



TWO FLUTE	FOUR FLUTE	DIA.	SHANK	LOC	OAL	LIST
CSD042CB	CSD044CB	1/16	1/8	1/8	1 1/2	\$16.76
CSD062CB	CSD064CB	3/32	1/8	3/16	1 1/2	17.87
CSD082CB	CSD084CB	1/8	1/8	1/4	1 1/2	16.76
CSD102CB	CSD104CB	5/32	3/16	5/16	1 1/2	21.03
CSD122CB	CSD124CB	3/16	3/16	3/8	1 1/2	19.56
CSD142CB	CSD144CB	7/32	1/4	1/2	2 1/2	22.08
CSD162CB	CSD164CB	1/4	1/4	1/2	3	20.79
CSD202CB	CSD204CB	5/16	5/16	1/2	3	25.88
CSD242CB	CSD244CB	3/8	3/8	9/16	3	27.57
CSD282CB	CSD284CB	7/16	7/16	9/16	3	39.37
CSD322CB	CSD324CB	1/2	1/2	5/8	3	46.81

- Available in 2 & 4 Flute

- Left Hand, Metric, and Specials available on request

- Stub, Regular Lengths

- High Accuracy with close tolerances

- Coated in:
(20C) AlTiN ,
(30C) TiCN

- Easy Chip Removal



"CMD"
MEDIUM LENGTH
DOUBLE END
2 & 4 FLUTE



TWO FLUTE	FOUR FLUTE	DIA.	SHANK	LOC	SH. LEN	OAL	LIST
CMD082CB	CMD084CB	1/8	3/8	3/8	2 1/4	3	33.99
CMD102CB	CMD104CB	5/32	3/8	7/16	2 5/8	3 1/2	35.29
CMD122CB	CMD124CB	3/16	3/8	1/2	2 1/2	3 1/2	36.59
CMD142CB	CMD144CB	7/32	3/8	5/8	2 1/4	3 1/2	38.99
CMD162CB	CMD164CB	1/4	3/8	5/8	2 1/4	3 1/2	39.99
CMD202CB	CMD204CB	5/16	3/8	3/4	2	3 1/2	45.98
CMD242CB	CMD244CB	3/8	3/8	3/4	2	3 1/2	46.98
CMD282CB	CMD284CB	7/16	1/2	7/8	2 1/4	4	64.99
CMD322CB	CMD324CB	1/2	1/2	1	2	4	69.99

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Swift-CARB CNC™

MADE IN **USA**

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BALL END CARBIDE END MILLS

MADE IN **USA**

BALL END MILLS

2 & 4 FLUTE

Series "BMR" *Swift-CARB* CNC™ End Mills



MADE IN **USA**

**CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.**

TWO FLUTE	FOUR FLUTE	DIA.	SHANK	LOC	OAL	LIST	20C/30C
BMR042CB	BMR044CB	1/16	1/8	3/16	1 1/2	\$14.11	\$15.58
BMR052CB	BMR054CB	5/64	1/8	3/16	1 1/2	15.99	17.67
BMR062CB	BMR064CB	3/32	1/8	3/8	1 1/2	13.75	15.43
BMR072CB	BMR074CB	7/64	1/8	3/8	1 1/2	15.59	17.27
BMR082CB	BMR084CB	1/8	1/8	1/2	1 1/2	12.42	14.10
BMR092CB	BMR094CB	9/64	3/16	9/16	2	18.73	20.88
BMR102CB	BMR104CB	5/32	3/16	9/16	2	18.45	20.60
BMR112CB	BMR114CB	11/64	3/16	5/8	2	18.73	20.88
BMR122CB	BMR124CB	3/16	3/16	5/8	2	15.91	18.06
BMR132CB	BMR134CB	13/64	1/4	5/8	2 1/2	19.07	22.39
BMR142CB	BMR144CB	7/32	1/4	5/8	2 1/2	19.53	22.85
BMR152CB	BMR154CB	15/64	1/4	3/4	2 1/2	19.07	22.39
BMR162CB	BMR164CB	1/4	1/4	3/4	2 1/2	14.22	17.54
BMR172CB	BMR174CB	17/64	5/16	3/4	2 1/2	22.76	26.08
BMR182CB	BMR184CB	9/32	5/16	3/4	2 1/2	22.76	26.08
BMR192CB	BMR194CB	19/64	5/16	13/16	2 1/2	23.68	27.00
BMR202CB	BMR204CB	5/16	5/16	13/16	2 1/2	22.19	25.52
BMR212CB	BMR214CB	21/64	3/8	7/8	2 1/2	29.98	34.74
BMR222CB	BMR224CB	11/32	3/8	7/8	2 1/2	29.06	33.45
BMR232CB	BMR234CB	23/64	3/8	7/8	2 1/2	29.98	34.38
BMR242CB	BMR244CB	3/8	3/8	1	2 1/2	27.77	32.17
BMR252CB	BMR254CB	25/64	7/16	7/8	2 1/2	43.05	48.90
BMR262CB	BMR264CB	13/32	7/16	7/8	2 3/4	41.14	46.99
BMR272CB	BMR274CB	27/64	7/16	7/8	2 1/2	43.05	48.90
BMR282CB	BMR284CB	7/16	7/16	1	2 3/4	30.70	36.55
BMR292CB	BMR294CB	29/64	1/2	1	3	51.20	59.30
BMR302CB	BMR304CB	15/32	1/2	1 1/4	3	49.47	57.57
BMR312CB	BMR314CB	31/64	1/2	1	3	51.20	59.30
BMR322CB	BMR324CB	1/2	1/2	1	3	36.38	44.48
BMR362CB	BMR364CB	9/16	9/16	1 1/4	3	73.31	82.73
BMR402CB	BMR404CB	5/8	5/8	1 1/4	3 1/2	69.82	79.24
BMR482CB	BMR484CB	3/4	3/4	1 1/2	4	99.49	113.36
BMR562CB	BMR564CB	7/8	7/8	1 1/2	4	151.74	168.91
BMR642CB	BMR644CB	1	1	1 1/2	4	155.68	176.13

- Great for profiling
- Available in 2 & 4 Flute
- Left Hand, Metric, and Specials available on request
- Regular Lengths
- High Accuracy with close tolerances
- Coated in:
(20C) AITiN ,
(30C) TiCN
- Easy Chip Removal

GTO

Would you like to try *SWIFT-CARB CNC*, *SUPERBEE®*, or *NEW-LUBE®*, products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order).



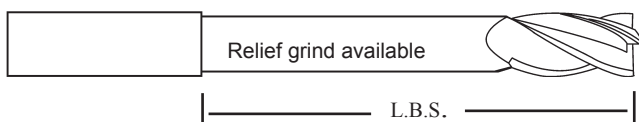
EXTENDED REACH CARBIDE END MILLS

EXTENDED REACH END MILLS

Series "CME" *Swift-CARB* CNC™ End Mills



MADE IN USA



RELIEF GRIND BELOW SHANK AVAILABLE ON REQUEST

TWO FLUTE	FOUR FLUTE	DIA.	SHANK	LOC	OAL	LIST
CMER162CB	CMER164CB	1/4	1/4	1/2	3	\$20.08
CMEM162CB	CMEM164CB	1/4	1/4	1/2	3 1/2	22.61
CMEL162CB	CMEL164CB	1/4	1/4	3/4	4	22.95
CMEX162CB	CMEX164CB	1/4	1/4	1	6	28.67
CMER202CB	CMER204CB	5/16	5/16	1/2	3	24.78
CMEM202CB	CMEM204CB	5/16	5/16	1/2	3 1/2	26.43
CMEL202CB	CMEL204CB	5/16	5/16	3/4	4	27.67
CMEX202CB	CMEX204CB	5/16	5/16	1	6	41.02
CMES242CB	CMES244CB	3/8	3/8	1/2	3	27.88
CMER242CB	CMER244CB	3/8	3/8	1/2	3 1/2	30.61
CMEM242CB	CMEM244CB	3/8	3/8	3/4	4	34.06
CMEL242CB	CMEL244CB	3/8	3/8	1	5	37.93
CMEX242CB	CMEX244CB	3/8	3/8	1 1/2	6	44.61
CMER282CB	CMER284CB	7/16	7/16	1/2	2 3/4	39.41
CMEM282CB	CMEM284CB	7/16	7/16	3/4	4	42.12
CMEX282CB	CMEX284CB	7/16	7/16	1	6	56.01
CMER322CB	CMER324CB	1/2	1/2	1/2	3	40.25
CMEM322CB	CMEM324CB	1/2	1/2	3/4	4	44.82
CMEL322CB	CMEL324CB	1/2	1/2	1	5	59.55
CMEX322CB	CMEX324CB	1/2	1/2	1 1/2	6	64.80
CMEM362CB	CMEM364CB	9/16	9/16	3/4	4	67.82
CMEX362CB	CMEX364CB	9/16	9/16	1 1/2	6	85.07
CMEM402CB	CMEM404CB	5/8	5/8	3/4	4	78.42
CMEL402CB	CMEL404CB	5/8	5/8	1	5	86.83
CMEX402CB	CMEX404CB	5/8	5/8	1 1/2	6	92.37
CMEM482CB	CMEM484CB	3/4	3/4	1	4	113.83
CMEL482CB	CMEL484CB	3/4	3/4	1 1/4	5	137.51
CMEX482CB	CMEX484CB	3/4	3/4	1 1/2	6	147.13
CMEM562CB	CMEM564CB	7/8	7/8	1	4	182.82
CMEX562CB	CMEX564CB	7/8	7/8	1 1/2	6	205.83
CMEM642CB	CMEM644CB	1	1	1 1/4	5	194.30
CMEL642CB	CMEL644CB	1	1	1 1/2	6	216.64
CMEX642CB	CMEX644CB	1	1	2	7	227.70
CMEM802CB	CMEM804CB	1 1/4	1 1/4	1 1/4	5 1/2	469.20
CMEL802CB	CMEL804CB	1 1/4	1 1/4	1 1/2	6	482.98
CMEX802CB	CMEX804CB	1 1/4	1 1/4	2	7 1/2	500.45

• Available in 2 & 4 Flute

• Left Hand, Metric, and Specials available on request

• Regular, Medium, Long, X-Long Lengths

• High Accuracy with close tolerances

• Coated in:
(20C) AlTiN ,
(30C) TiCN

• Easy Chip Removal

**CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.**



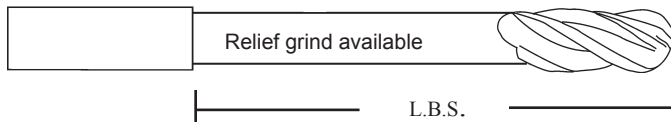
EXTENDED REACH MICROGRAIN CARBIDE END MILLS

BALL END EXTENDED REACH END MILLS

Series "BME" *Swift-CARB*^{CNC™} End Mills



MADE IN USA



RELIEF GRIND BELOW SHANK AVAILABLE ON REQUEST

TWO FLUTE	FOUR FLUTE	DIA.	SHANK	LOC	OAL	LIST
BMER162CB	BMER164CB	1/4	1/4	1/2	3	\$26.98
BMEM162CB	BMEM164CB	1/4	1/4	1/2	3 1/2	29.51
BMEL162CB	BMEL164CB	1/4	1/4	3/4	4	29.85
BMEX162CB	BMEX164CB	1/4	1/4	1	6	35.57
BMER202CB	BMER204CB	5/16	5/16	1/2	3	31.68
BMEM202CB	BMEM204CB	5/16	5/16	1/2	3 1/2	33.33
BMEL202CB	BMEL204CB	5/16	5/16	3/4	4	34.57
BMEX202CB	BMEX204CB	5/16	5/16	1	6	47.92
BMES242CB	BMES244CB	3/8	3/8	1/2	3	35.93
BMER242CB	BMER244CB	3/8	3/8	1/2	3 1/2	38.66
BMEM242CB	BMEM244CB	3/8	3/8	3/4	4	42.11
BMEL242CB	BMEL244CB	3/8	3/8	1	5	45.98
BMEX242CB	BMEX244CB	3/8	3/8	1 1/2	6	52.66
BMER282CB	BMER284CB	7/16	7/16	1/2	2 3/4	48.61
BMEM282CB	BMEM284CB	7/16	7/16	3/4	4	51.32
BMEX282CB	BMEX284CB	7/16	7/16	1	6	65.20
BMER322CB	BMER324CB	1/2	1/2	1/2	3	49.45
BMEM322CB	BMEM324CB	1/2	1/2	3/4	4	54.02
BMEL322CB	BMEL324CB	1/2	1/2	1	5	68.75
BMEX322CB	BMEX324CB	1/2	1/2	1 1/2	6	74.00
BMEM362CB	BMEM364CB	9/16	9/16	3/4	4	81.62
BMEX362CB	BMEX364CB	9/16	9/16	1 1/2	6	98.87
BMEM402CB	BMEM404CB	5/8	5/8	3/4	4	95.67
BMEL402CB	BMEL404CB	5/8	5/8	1	5	104.08
BMEX402CB	BMEX404CB	5/8	5/8	1 1/2	6	109.62
BMEM482CB	BMEM484CB	3/4	3/4	1	4	142.58
BMEL482CB	BMEL484CB	3/4	3/4	1 1/4	5	166.26
BMEX482CB	BMEX484CB	3/4	3/4	1 1/2	6	175.88
BMEM562CB	BMEM564CB	7/8	7/8	1	4	223.07
BMEX562CB	BMEX564CB	7/8	7/8	1 1/2	6	246.08
BMEM642CB	BMEM644CB	1	1	1 1/4	5	240.30
BMEL642CB	BMEL644CB	1	1	1 1/2	6	262.64
BMEX642CB	BMEX644CB	1	1	2	7	273.70
BMEM802CB	BMEM804CB	1 1/4	1 1/4	1 1/4	5 1/2	547.40
BMEL802CB	BMEL804CB	1 1/4	1 1/4	1 1/2	6	561.18
BMEX802CB	BMEX804CB	1 1/4	1 1/4	2	7 1/2	578.65

• Great for profiling

• Available in 2 & 4 Flute

• Left Hand, Metric, and Specials available on request

• Regular, Medium, Long, X-Long Lengths

• High Accuracy with close tolerances

• Coated in:
(20C) AlTiN ,
(30C) TiCN

• Easy Chip Removal



MICROGRAIN CARBIDE CHAMFER MILLS

CHAMFER MILLS

SERIES "CHM" *Swift-CARB*^{CNC™} CHAMFER MILLS MICROGRAIN CARBIDE

MADE IN **USA**

60°, 90°, 100°, & 120° - 2 FLUTE

TWO FLUTE	INCLUDED ANGLE	DIA.	SHANK	OAL	LIST	20C
CHMR08260CB	60°	1/8	1/8	1 1/2	\$19.80	\$24.20
CHMR12260CB	60°	3/16	3/16	2	\$21.45	\$25.85
CHMR16260CB	60°	1/4	1/4	2 1/2	\$22.00	\$26.95
CHMR24260CB	60°	3/8	3/8	2 1/2	\$30.80	\$38.23
CHMR32260CB	60°	1/2	1/2	3	\$37.40	\$46.48
CHMR48260CB	60°	3/4	3/4	3	\$104.50	\$117.92
CHMR64260CB	60°	1	1	3	\$141.68	\$160.38
CHMR08290CB	90°	1/8	1/8	1 1/2	\$19.80	\$24.20
CHMR12290CB	90°	3/16	3/16	2	\$21.45	\$25.85
CHMR16290CB	90°	1/4	1/4	2 1/2	\$22.00	\$26.95
CHMR24290CB	90°	3/8	3/8	2 1/2	\$30.80	\$38.23
CHMR32290CB	90°	1/2	1/2	3	\$37.40	\$46.48
CHMR48290CB	90°	3/4	3/4	3	\$104.50	\$117.92
CHMR64290CB	90°	1	1	3	\$141.68	\$160.38
CHMR082100CB	100°	1/8	1/8	1 1/2	\$19.80	\$24.20
CHMR122100CB	100°	3/16	3/16	2	\$21.45	\$25.85
CHMR162100CB	100°	1/4	1/4	2 1/2	\$22.00	\$26.95
CHMR242100CB	100°	3/8	3/8	2 1/2	\$30.80	\$38.23
CHMR322100CB	100°	1/2	1/2	3	\$37.40	\$46.48
CHMR482100CB	100°	3/4	3/4	3	\$104.50	\$117.92
CHMR642100CB	100°	1	1	3	\$141.68	\$160.38
CHMR082120CB	120°	1/8	1/8	1 1/2	\$19.80	\$24.20
CHMR122120CB	120°	3/16	3/16	2	\$21.45	\$25.85
CHMR162120CB	120°	1/4	1/4	2 1/2	\$22.00	\$26.95
CHMR242120CB	120°	3/8	3/8	2 1/2	\$30.80	\$38.23
CHMR322120CB	120°	1/2	1/2	3	\$37.40	\$46.48
CHMR482120CB	120°	3/4	3/4	3	\$104.50	\$117.92
CHMR642120CB	120°	1	1	3	\$141.68	\$160.38

60°, 90°, 100°, & 120° - 4 FLUTE

FOUR FLUTE	ANGLE	DIA.	SHANK	OAL	LIST	20C
CHMR16460CB	60°	1/4	1/4	2 1/2	\$22.00	\$26.95
CHMR24460CB	60°	3/8	3/8	2 1/2	\$30.80	\$38.23
CHMR32460CB	60°	1/2	1/2	3	\$37.40	\$46.48
CHMR48460CB	60°	3/4	3/4	3	\$104.50	\$117.92
CHMR64460CB	60°	1	1	3	\$141.68	\$160.38
CHMR16490CB	90°	1/4	1/4	2 1/2	\$22.00	\$26.95
CHMR24490CB	90°	3/8	3/8	2 1/2	\$30.80	\$38.23
CHMR32490CB	90°	1/2	1/2	3	\$37.40	\$46.48
CHMR48490CB	90°	3/4	3/4	3	\$104.50	\$117.92
CHMR64490CB	90°	1	1	3	\$141.68	\$160.38
CHMR164100CB	100°	1/4	1/4	2 1/2	\$22.00	\$26.95
CHMR244100CB	100°	3/8	3/8	2 1/2	\$30.80	\$38.23
CHMR324100CB	100°	1/2	1/2	3	\$37.40	\$46.48
CHMR484100CB	100°	3/4	3/4	3	\$104.50	\$117.92
CHMR644100CB	100°	1	1	3	\$141.68	\$160.38
CHMR164120CB	120°	1/4	1/4	2 1/2	\$22.00	\$26.95
CHMR244120CB	120°	3/8	3/8	2 1/2	\$30.80	\$38.23
CHMR324120CB	120°	1/2	1/2	3	\$37.40	\$46.48
CHMR484120CB	120°	3/4	3/4	3	\$104.50	\$117.92
CHMR644120CB	120°	1	1	3	\$141.68	\$160.38



- Available in 2 & 4 Flute
- Left Hand, Metric, and Specials available on request
- 60°, 90°, 100° and 120° Included Angles Available

**CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.**



- High Accuracy with close tolerances
- Available in:
(20C) AITiN ,
(30C) TiCN
- Easy Chip Removal



STANDARD MICROGRAIN CARBIDE SPOTTING DRILLS

NC SPOTTING AND CENTERING DRILLS 82°, 90°, 100°, 120°, and 140°

Swift-CARB^{CNC}™ MICROGRAIN CARBIDE 2 FLUTE



REGULAR LENGTH - 2 FLUTE MADE IN USA

TWO FLUTE	DIA.	OAL	LOC	SHANK	DRILL POINT	LIST	20C/30C
DNC.1250CB90	1/8	1 1/2	1/4	1/8	90°	14.18	15.86
DNC.1875CB82	3/16	2	3/8	3/16	82°	14.58	16.73
DNC.1875CB90	3/16	2	3/8	3/16	90°	14.58	16.73
DNC.1875CB100	3/16	2	3/8	3/16	100°	14.58	16.73
DNC.1875CB120	3/16	2	3/8	3/16	120°	14.58	16.73
DNC.1875CB140	3/16	2	3/8	3/16	140°	14.58	16.73
DNC.2500CB82	1/4	2 1/2	1/2	1/4	82°	15.73	19.05
DNC.2500CB90	1/4	2 1/2	1/2	1/4	90°	15.73	19.05
DNC.2500CB100	1/4	2 1/2	1/2	1/4	100°	15.73	19.05
DNC.2500CB120	1/4	2 1/2	1/2	1/4	120°	15.73	19.05
DNC.2500CB140	1/4	2 1/2	1/2	1/4	140°	15.73	19.05
DNC.3750CB82	3/8	2 1/2	5/8	3/8	82°	23.10	27.86
DNC.3750CB90	3/8	2 1/2	5/8	3/8	90°	23.10	27.86
DNC.3750CB100	3/8	2 1/2	5/8	3/8	100°	23.10	27.86
DNC.3750CB120	3/8	2 1/2	5/8	3/8	120°	23.10	27.86
DNC.3750CB140	3/8	2 1/2	5/8	3/8	140°	23.10	27.86
DNC.5000CB82	1/2	3	3/4	1/2	82°	36.13	44.24
DNC.5000CB90	1/2	3	3/4	1/2	90°	36.13	44.24
DNC.5000CB100	1/2	3	3/4	1/2	100°	36.13	44.24
DNC.5000CB120	1/2	3	3/4	1/2	120°	36.13	44.24
DNC.5000CB140	1/2	3	3/4	1/2	140°	36.13	44.24
DNC.6250CB82	5/8	3	7/8	5/8	82°	66.50	74.92
DNC.6250CB90	5/8	3	7/8	5/8	90°	66.50	74.92
DNC.6250CB100	5/8	3	7/8	5/8	100°	66.50	74.92
DNC.6250CB120	5/8	3	7/8	5/8	120°	66.50	74.92
DNC.6250CB140	5/8	3	7/8	5/8	140°	66.50	74.92
DNC.7500CB82	3/4	3	1	3/4	82°	100.98	111.22
DNC.7500CB90	3/4	3	1	3/4	90°	100.98	111.22
DNC.7500CB100	3/4	3	1	3/4	100°	100.98	111.22
DNC.7500CB120	3/4	3	1	3/4	120°	100.98	111.22
DNC.7500CB140	3/4	3	1	3/4	140°	100.98	111.22
DNC1.000CB82	1	3	1 1/4	1	82°	153.18	169.38
DNC1.000CB90	1	3	1 1/4	1	90°	153.18	169.38
DNC1.000CB100	1	3	1 1/4	1	100°	153.18	169.38
DNC1.000CB120	1	3	1 1/4	1	120°	153.18	169.38
DNC1.000CB140	1	3	1 1/4	1	140°	153.18	169.38



• 82°, 90°, 120°, and 140° Available

• High Accuracy with close tolerances:
Shank Diameter: -.001" TO-.003"
Drill Diameter: +.000" to -.0005"

• Coated in:
(20C) AlTiN ,
(30C) TiCN

GTO

Would you like to try **SWIFT-CARB CNC**, **SUPERBEE®**, or **NEW-LUBE®**, products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order).



Productivity Profits Your Future!

GRADE APPLICATION CHART

USA	ISO	UN COATED	COATED	CERMET	USA	ISO	UN COATED	COATED	CERMET
C8	P01				C4	K01			
C7	P10		T 5 2 0	N C 5 7	C3	K10	N T 3 3	T 5 2 0	N C 5 7
C6	P20	N T 5 6	T 5 3 0		C2	K20	N T 1 3	T 5 3 0	
C5	P30				C1	K30			
	P40								

T520 AlTiN coating on NT56. AlTiN is a high performance coating which excels at machining of abrasive and difficult-to-machine materials, such as cast iron, aluminum alloys, tool steels, and nickel alloys. Its superior oxidation resistance provides unparalleled performance in high temperature machining. This coating should be targeted at applications that generate the highest heat level at the tools cutting edge.

NT13 Uncoated carbide grade suitable for machining of nickel base alloys.

NT33 Uncoated grade for general purpose milling of aluminum, brass, cast iron, and all non-ferrous materials. Excellent strength and wear resistance.

NT56 Uncoated carbide with extreme edge strength. Designed for general purpose milling of steels and cast irons. Ideal for stainless steels, and difficult machining conditions such as interrupted cutting.

BEST ALL-AROUND COATING

10C (TiN) COATING

TiN = Titanium Nitride **Ti(N)** This gold colored coating offers excellent wear resistance with a wide range of materials, and allows the use of higher feeds and speeds. Forming operations can expect a decrease in galling and welding of workpiece material with a corresponding improvement in surface finish of the formed part. A conservative estimate of tool life increase is 200% to 300%, although some applications see as high as 500% improvement.

Hardness: 2800 HV
Coating Thickness: 2-4 microns
Thermal Stability: 550°C (1000°F)

20C (AlTiN) COATING

AlTiN = Titanium Aluminum Nitride **(Al,Ti)N**

Purple/Black in color with a surface hardness in the upper 80 Rc range with a coefficient of friction less than TiN. AlTiN is a high performance coating which excels at machining of abrasive and difficult-to-machine materials, such as cast iron, aluminum alloys, tool steels, and nickel alloys. AlTiN's improved ductility makes it an excellent choice for interrupted cutting operations, while its superior oxidation resistance provides unparalleled performance in high temperature machining. AlTiN does not exhibit edge brittleness and can be used for interrupted cuts without chipping. This coating should be targeted at applications that generate the highest heat level at the tools cutting edge.

Hardness: 2800 HV
Coating Thickness: 2-4 microns
Thermal Stability: 800°C (1470°F)

T530 TiCN coating on NT56. Designed for added wear resistance when milling steels, stainless steels, and cast iron.

NC57 Cermet, a Titanium Nitride, Carbide, Tantalum composite for milling steels. Good balance of wear resistance and toughness.

RECOMMENDED CUTTING CONDITIONS

Material	RC Hardness	Grade	Cutting Speed (feet/min)	Feed In/Tooth
Mild Steel	-	T520/T530 NT56	500-1100	.003-.008
Carbon Steel	-	T520/T530 NT56	500-1000	.003-.008
Alloy Steel	36 & Under 37 - 45	T520 T530	450-850 350-650	.003-.006
Stainless Steel	35 & Under	T520/T530 NT56	325-850	.003-.005
300 Series		T520/T530 NT56	325-550	.003-.005
PH Stainless	33 & Under	T520/T530 NT56	450-700	.002-.004
15-5 17-4	34-40	T520/T530 NT56	325-650	.002-.004
Die & Mold Stl. P20 H13	33 & Under 34-42	T520/T530 NT56	450-750 350-550	.003-.006
Cast Iron		NT56/NT33 T530/T520	275-750	.004-.008
Aluminum		NT33/T520	900-3200	.004-.008

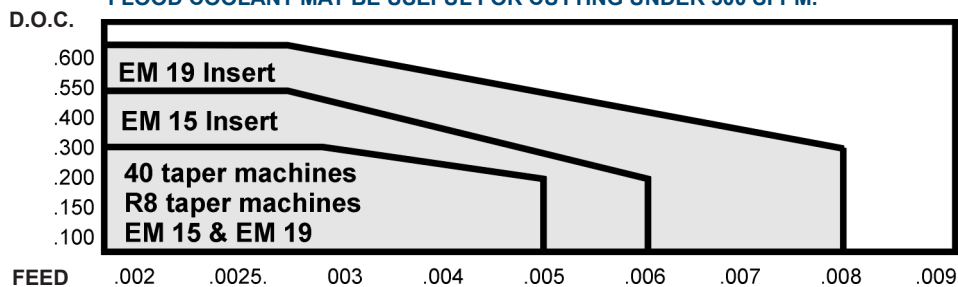
30C (TiCN) COATING

TiCN = Titanium Carbonitride **Ti(C,N)**

Bronze colored with a hardness reaching 90 Rc and a .3 coefficient of friction. TiCN offers improved wear resistance with abrasive, adhesive, or difficult-to-machine materials such as cast iron, aluminum alloys, tool steels, copper and its alloys, Inconel, and Titanium alloys. As with TiN, feeds and speeds can be increased and tool life can improve by as much as 500%. Offers extended wear over TiN when cutting abrasive material.

Hardness: 3000V
Coating Thickness: 2-4 microns
Thermal Stability: 400°C (750°F)

ALWAYS CLIMB CUT. USE NEW-LUBE® LUBRICANT, AIR BLAST OR DRY. FLOOD COOLANT MAY BE USEFUL FOR CUTTING UNDER 300 SFPM.



SUPERBEE® INDEXABLE CARBIDE FORM CUTTER NOMENCLATURE

SUPERBEE® INDEXABLE FORM CUTTERS		CALL 800-227-9876 TO FIND YOUR NEAREST DISTRIBUTOR.
BE = 90° SHOULDER MILLING CUTTER		
BB = BALL	DIAMETER IN 64ths OF AN INCH	# OF CUTTING TEETH/FLUTES
BC = LARGE CONCAVE RADIUS CUTTER		
BD = BACKDRAFT CUTTER		
BBD = BACKDRAFT BALL END CUTTER		
CB = COUNTERBORE		
CM = CHAMFER/ANGLE SHELL MILL		
CMS = CHAMFER/ANGLE MILL		
	40 = 5/8"	128 = 2"
	48 = 3/4"	144 = 2-1/4"
	56 = 7/8"	160 = 2-1/2"
	64 = 1"	192 = 3"
	80 = 1-1/4"	224 = 3-1/2"
	96 = 1-1/2"	320 = 5"
		5/8" - 1FL
		1-1/4"- 2FL to 3FL
		3/4" - 1FL
		1-1/2"- 2FL to 3FL
		1" - 1FL to 2FL
		SHELL MILLS - 3FL TO 6 FL

1 2 3
BE 64 2 15 64 R1[©]

4 5 6

INSERT TYPE	SHANK TYPE DIA. OR ARBOR HOLE IN 64ths OF AN INCH	ANGLE, RADIUS, OR BALL SERIES
14 = EM14	40 = 5/8"	A10 through A60 = ANGLE
15 = EM15	48 = 3/4" SHK/ARBOR HOLE	C1 through C6 = CONCAVE RADIUS
18 = EM18	64 = 1"	T&BC# = Top & Bottom Concave
19 = EM19	80 = 1-1/4"	R1 to R8 = CONVEX RADIUS***
21 = SD21.5	R8 = R8 TAPER SHANK	
22 = SD22		
32 = SP32		
42 = SP42		

Please Note:

Each **SUPERBEE®** cutter with a **Concave Radius C SERIES** allows for a range of radii. For example, Catalog Item Number **BE6411964C6** can support an insert with radii ranging from .236 to .250. Ranges listed below.

C # = CONCAVE RADIUS RANGE	
C 1 ACCOMMODATES CONCAVE RADII FROM .010" TO .060"	C 4 ACCOMMODATES CONCAVE RADII FROM .170" TO .190"
C 2 ACCOMMODATES CONCAVE RADII FROM .070" TO .125"	C 5 ACCOMMODATES CONCAVE RADII FROM .197" TO .220"
C 3 ACCOMMODATES CONCAVE RADII FROM .130" TO .160"	C 6 ACCOMMODATES CONCAVE RADII FROM .236" TO .250"

SUPERBEE® Angle Cutters. Each **SUPERBEE®** Angle Cutter will accommodate only **one style angle insert**. For example, if you need a 1" single flute cutter with a 1" shank and a 45° per side angle, the part number would be **BE6411964A45**

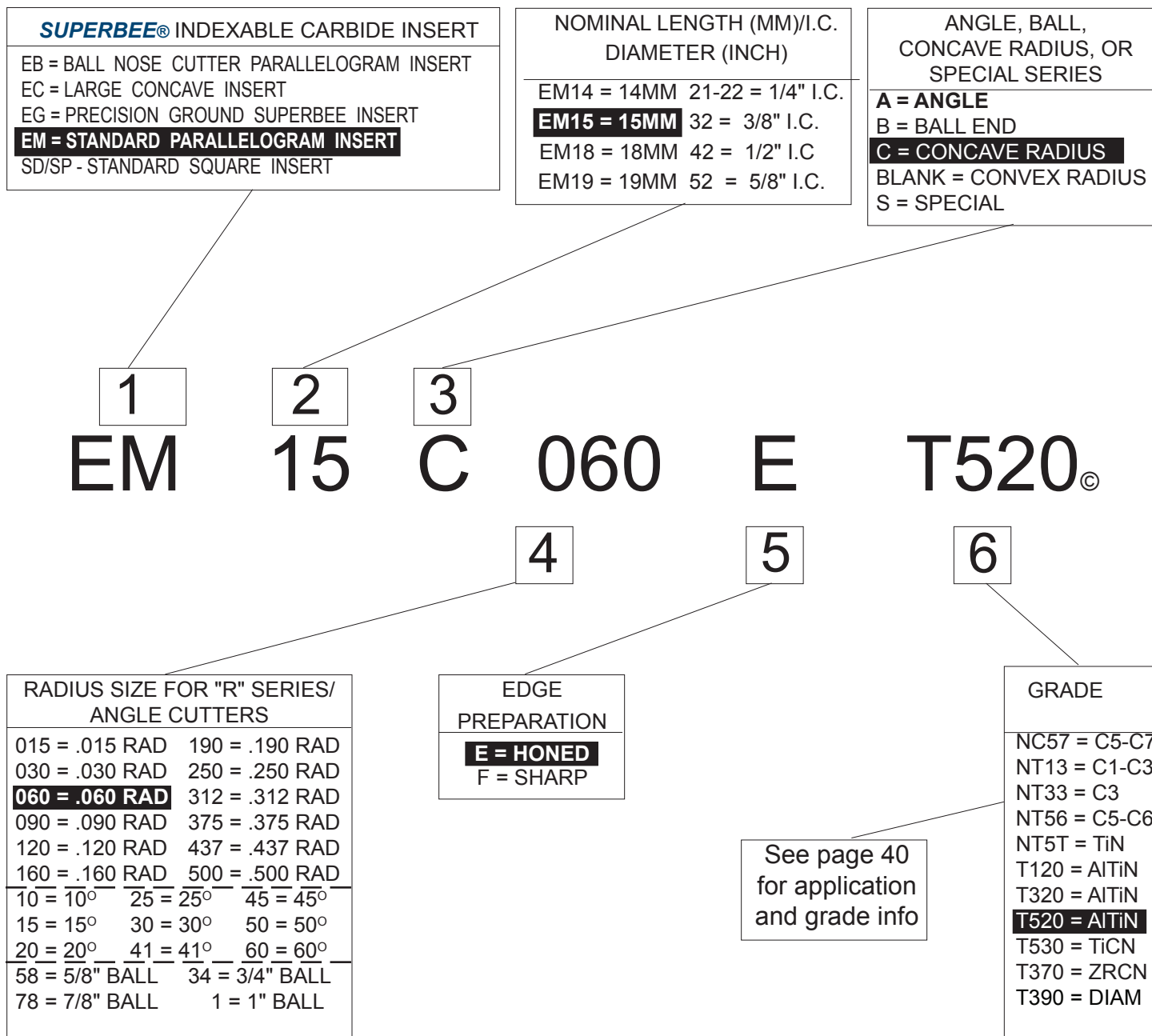
SUPERBEE® Convex Radius R SERIES. R1, R2, R3, and R4 cutters will cut a range of radii. For example, BE6421564R1 will accommodate cutting of .007" to .060" radii. BE8031580R4 will accommodate cutting of .200" to .250" radii. However, R5, R6, R7, and R8 cutters will only cut a specific radius. That is, BE5611948R6 accommodates a .375" radius only. The chart below is for R Series Cutter Radii:

R # = CONVEX RADIUS RANGE	
R 1 ACCOMMODATES CONVEX RADII FROM .007" TO .060"	R 5 ACCOMMODATES A .312" CONVEX RADIUS ONLY
R 2 ACCOMMODATES CONVEX RADII FROM .070" TO .130"	R 6 ACCOMMODATES A .375" CONVEX RADIUS ONLY
R 3 ACCOMMODATES CONVEX RADII FROM .140" TO .190"	R 7 ACCOMMODATES A .437" CONVEX RADIUS ONLY
R 4 ACCOMMODATES CONVEX RADII FROM .200" TO .250"	R 8 ACCOMMODATES A .500" CONVEX RADIUS ONLY

NOTE: Special Radii Available Upon Request

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SUPERBEE® INDEXABLE CARBIDE INSERT NOMENCLATURE

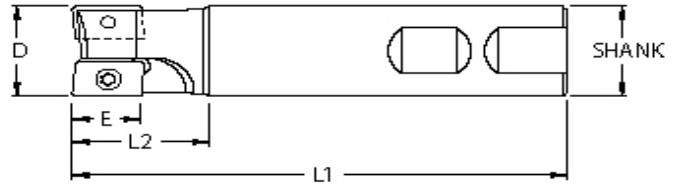
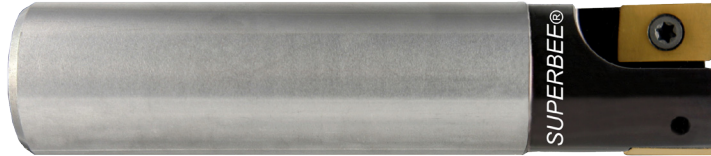


Please Note:

SUPERBEE® Inserts are not interchangeable unless you are using an R1 through R4 SERIES cutter. This means that if you have purchased an R5 through R8 cutter then you must use that specified radius **ONLY**. If you have purchased an angle cutter that cuts a 30° angle you will need an insert that cuts a 30° angle. If you have purchased a concave radius cutter that cuts a .250" radius you will need an insert that cuts a .250" concave radius.

Additionally, cutters are not made to cut convex, angle, and concave radii all from one insert. Each insert is specific to the geometry it will cut. If you purchase a convex cutter then you need a convex insert that matches the radius you need to cut. The same goes for angle cutters and concave cutters. You will need to purchase the specific insert for that cutter.

SERIES R1 CONVEX RADIUS .007-.060 WELDON SHANK



MADE
IN **USA**

SUPERBEE® MADE IN AMERICA

R1 ACCOMMODATES RADII FROM .007" TO .060"

LARGER RADII FOUND ON NEXT PAGE.

SEE NEXT PAGE FOR RADII .070 THROUGH .500

WELDON SHANK SERIES R1

PART NUMBER	D	SHANK	L1	L2	FLUTES	E	INSERT	LIST
BE4011540R1	0.625	0.625	3.375	1.000	1	0.625	EM15	\$86.35
BE4011540R12M	0.625	0.625	4.250	2.000	1	0.625	EM15	\$426.40
BE4011540R13M	0.625	0.625	4.750	3.000	1	0.625	EM15	\$457.60
BE4411548R1	0.687	0.750	4.000	1.250	1	0.625	EM15	\$113.85
BE4811548R1	0.750	0.750	4.000	1.250	1	0.625	EM15	\$101.92
BE4811548R1225M	0.750	0.750	4.750	2.250	1	0.625	EM15	\$442.74
BE4811548R13M	0.750	0.750	5.500	3.000	1	0.625	EM15	\$457.60
BE4811548R135M	0.750	0.750	6.000	3.500	1	0.625	EM15	\$482.33
BE5611948R1	0.875	0.750	4.500	1.250	1	0.750	EM19	\$125.95
BE5611964R1	0.875	1.000	4.500	1.250	1	0.750	EM19	\$113.85
BE6411948R1	1.000	0.750	4.500	1.250	1	0.750	EM19	\$125.95
BE6411964R1	1.000	1.000	4.500	1.250	1	0.750	EM19	\$107.80
BE6411964R12M	1.000	1.000	4.500	2.000	1	0.750	EM19	\$488.80
BE6411964R13M	1.000	1.000	5.500	3.000	1	0.750	EM19	\$547.43
BE6411964R14M	1.000	1.000	6.500	4.000	1	0.750	EM19	\$581.66
BE6411964R15M	1.000	1.000	7.500	5.000	1	0.750	EM19	\$632.90
BE6421548R1	1.000	0.750	4.500	1.250	2	0.625	EM15	\$155.87
BE6421564R1	1.000	1.000	4.500	1.250	2	0.625	EM15	\$137.50
BE6421564R12M	1.000	1.000	4.500	2.000	2	0.625	EM15	\$518.51
BE6421564R13M	1.000	1.000	5.500	3.000	2	0.625	EM15	\$569.02
BE6421564R14M	1.000	1.000	6.500	4.000	2	0.625	EM15	\$626.22
BE6421564R15M	1.000	1.000	7.500	5.000	2	0.625	EM15	\$655.20
BE8021980R1	1.250	1.250	5.000	1.750	2	0.750	EM19	\$167.20
BE8021980R13M	1.250	1.250	5.500	3.000	2	0.750	EM19	\$647.76
BE8021980R14M	1.250	1.250	6.500	4.000	2	0.750	EM19	\$722.05
BE8021980R15M	1.250	1.250	7.500	5.000	2	0.750	EM19	\$892.16
BE8021980R16M	1.250	1.250	8.500	6.000	2	0.750	EM19	\$932.28
BE8031580R1	1.250	1.250	5.000	1.750	3	0.625	EM15	\$209.83
BE9621980R1	1.500	1.250	5.000	1.750	2	0.750	EM19	\$184.53
BE9621980R13M	1.500	1.250	5.000	3.000	2	0.750	EM19	\$708.68
BE9621980R14M	1.500	1.250	5.500	4.000	2	0.750	EM19	\$783.71
BE9621980R15M	1.500	1.250	6.500	5.000	2	0.750	EM19	\$866.16
BE9621980R16M	1.500	1.250	7.500	6.000	2	0.750	EM19	\$1,294.05
BE9621980R17M	1.500	1.250	8.500	7.000	2	0.750	EM19	\$1,440.40
BE9631580R1	1.500	1.250	5.000	1.750	3	0.625	EM15	\$213.40

INSERTS FOR THESE CUTTERS ARE ON PAGE 47

SPARE PARTS:

ALL EM15 INSERTS
SCREW: **BS15**
WRENCH: **BW15**

ALL EM19 INSERTS
SCREW: **BS19**
WRENCH: **BW19**

Order Example:
Need a 3/4 inch
tool to cut a .030
radius? Your order
number would be
BE4811548R1

GTO

Would you like to try **SWIFT-CARB CNC**, **SUPERBEE®**, or **NEW-LUBE®**, products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order).



Left hand, metric sizes, and specials available on request.

M = DENOTES MACHINABLE CARBIDE SHANK
MACHINABLE CARBIDE CUTTERS ARE MADE TO ORDER AND ARE NOT RETURNABLE.

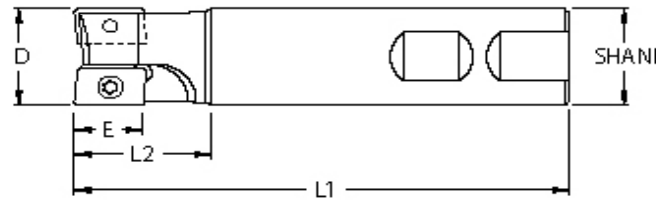
E = APPROXIMATE LENGTH

MADE
IN **USA**

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SERIES R2 TO R8 CONVEX RADIUS .070-.500 WELDON SHANK



MADE
IN **USA**

SUPERBEE® MADE IN AMERICA

= RADIUS RANGE

R 2 ACCOMMODATES RADII FROM .070" TO .130"

R 3 ACCOMMODATES RADII FROM .140" TO .190"

R 4 ACCOMMODATES RADII FROM .200" TO .250"

R 5 ACCOMMODATES A .312" RADIUS ONLY

R 6 ACCOMMODATES A .375" RADIUS ONLY

R 7 ACCOMMODATES A .437" RADIUS ONLY

R 8 ACCOMMODATES A .500" RADIUS ONLY

SEE ABOVE FOR CORRECT RADIUS DESIGNATION

WELDON SHANK SERIES R2 - R8

PART NUMBER	D	SHANK	L1	L2	FLUTES	E	INSERT	LIST
BE4011540R#	0.625	0.625	3.375	1.000	1	0.625	EM15	\$96.80
BE4011540R#2M	0.625	0.625	4.250	2.000	1	0.625	EM15	440.51
BE4011540R#3M	0.625	0.625	4.750	3.000	1	0.625	EM15	471.71
BE4411548R#	0.687	0.750	4.000	1.250	1	0.625	EM15	124.30
BE4811548R#	0.750	0.750	4.000	1.250	1	0.625	EM15	112.20
BE4811548R#225M	0.750	0.750	4.750	2.250	1	0.625	EM15	386.57
BE4811548R#3M	0.750	0.750	5.500	3.000	1	0.625	EM15	471.72
BE4811548R#35M	0.750	0.750	6.000	3.500	1	0.625	EM15	496.22
BE5611948R#	0.875	0.750	4.500	1.250	1	0.750	EM19	139.34
BE5611964R#	0.875	1.000	4.500	1.250	1	0.750	EM19	124.30
BE6411948R#	1.000	0.750	4.500	1.250	1	0.750	EM19	136.40
BE6411964R#	1.000	1.000	4.500	1.250	1	0.750	EM19	118.25
BE6411964R#2M	1.000	1.000	4.500	2.000	1	0.750	EM19	502.91
BE6411964R#3M	1.000	1.000	5.500	3.000	1	0.750	EM19	561.60
BE6411964R#4M	1.000	1.000	6.500	4.000	1	0.750	EM19	595.02
BE6411964R#5M	1.000	1.000	7.500	5.000	1	0.750	EM19	647.02
BE6421548R#	1.000	0.750	4.500	1.250	2	0.625	EM15	166.10
BE6421564R#	1.000	1.000	4.500	1.250	2	0.625	EM15	147.95
BE6421564R#2M	1.000	1.000	4.500	2.000	2	0.625	EM15	532.62
BE6421564R#3M	1.000	1.000	5.500	3.000	2	0.625	EM15	583.14
BE6421564R#4M	1.000	1.000	6.500	4.000	2	0.625	EM15	559.65
BE6421564R#5M	1.000	1.000	7.500	5.000	2	0.625	EM15	585.00
BE8021980R#	1.250	1.250	5.000	1.750	2	0.750	EM19	177.10
BE8021980R#3M	1.250	1.250	5.500	3.000	2	0.750	EM19	484.07
BE8021980R#4M	1.250	1.250	6.500	4.000	2	0.750	EM19	644.15
BE8021980R#5M	1.250	1.250	7.500	5.000	2	0.750	EM19	792.35
BE8021980R#6M	1.250	1.250	8.500	6.000	2	0.750	EM19	945.28
BE8031580R#	1.250	1.250	5.000	1.750	3	0.625	EM15	220.00
BE9621980R#	1.500	1.250	5.000	1.750	2	0.750	EM19	194.70
BE9621980R#3M	1.500	1.250	5.000	1.750	2	0.750	EM19	632.45
BE9621980R#4M	1.500	1.250	5.500	3.000	2	0.750	EM19	797.82
BE9621980R#5M	1.500	1.250	6.500	4.000	2	0.750	EM19	879.54
BE9621980R#6M	1.500	1.250	7.500	5.000	2	0.750	EM19	1307.42
BE9621980R#7M	1.500	1.250	8.500	6.000	2	0.750	EM19	1454.52
BE9631580R#	1.500	1.250	5.000	1.750	3	0.625	EM15	223.30

INSERTS FOR THESE CUTTERS ARE ON PAGE 47

SPARE PARTS:

ALL EM15 INSERTS

SCREW: **BS15**

WRENCH: **BW15**

ALL EM19 INSERTS

SCREW: **BS19**

WRENCH: **BW19**

Order Example:

Need a 3/4 inch tool to cut a .140 radius? Your order number would be **BE4811548R3**



Left hand, metric sizes, and specials available on request.

= RADIUS RANGE

M = DENOTES MACHINABLE CARBIDE SHANK

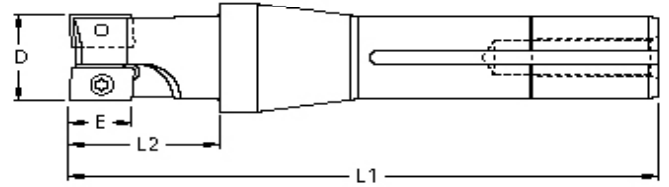
MACHINABLE CARBIDE CUTTERS ARE MADE TO ORDER AND ARE NOT RETURNABLE.

E = APPROXIMATE LENGTH

MADE
IN **USA**

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SERIES R1 - R8 CONVEX RADIUS .007-.500 R8 SHANK



MADE
IN **USA**

R8 SHANK SERIES R1

PART NUMBER	D	SHANK	L1	L2	FLUTES	E	INSERT	LIST
BE64215R8R1	1.000	R8	5.880	1.500	2	0.625	EM15	\$179.30
BE80219R8R1	1.250	R8	6.130	1.750	2	0.750	EM19	\$191.40
BE96315R8R1	1.500	R8	6.130	1.750	3	0.625	EM15	\$237.60

INSERTS FOR THESE CUTTERS ARE ON PAGE 47

SPARE PARTS:

ALL EM15 INSERTS
SCREW: **BS15**
WRENCH: **BW15**

ALL EM19 INSERTS
SCREW: **BS19**
WRENCH: **BW19**

R8 SHANK SERIES R2 TO R8 SEE PAGE 43 FOR CORRECT RADIUS DESIGNATION

PART NUMBER	D	SHANK	L1	L2	FLUTES	E	INSERT	LIST
BE64215R8R#	1.000	R8	5.880	1.500	2	0.625	EM15	\$199.10
BE80219R8R#	1.250	R8	6.130	1.750	2	0.750	EM19	\$211.20
BE96315R8R#	1.500	R8	6.130	1.750	3	0.625	EM15	\$257.40

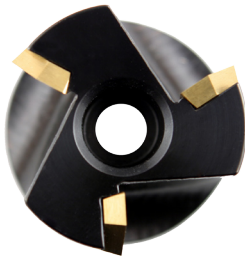
INSERTS FOR THESE CUTTERS ARE ON PAGE 47



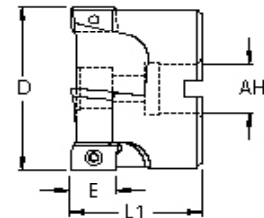
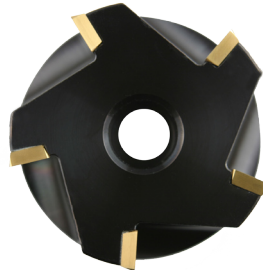
Left hand, metric
sizes, and specials
available on
request.

SUPERBEE® MADE IN AMERICA

SERIES R1 - R8 CONVEX RADIUS .007-.500 SHELL MILLS



MADE
IN **USA**



SHELL MILLS SERIES R1

PART NUMBER	D	AH	L1	FLUTES	E	INSERT	LIST
BE12831948R1	2.000	0.750	1.825	3	0.750	EM19	\$215.60
BE12851548R1	2.000	0.750	1.825	5	0.625	EM15	\$293.70
BE14451548R1	2.250	0.750	1.825	5	0.625	EM15	\$305.80
BE16031948R1	2.500	0.750	1.825	3	0.750	EM19	\$264.00
BE16051548R1	2.500	0.750	1.825	5	0.625	EM15	\$317.90
BE19261564R1	3.000	1.000	1.825	6	0.625	EM15	\$335.50
BE22461580R1	3.500	1.250	1.825	6	0.625	EM15	\$357.50

INSERTS FOR THESE CUTTERS ARE ON PAGE 47

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IN **USA**

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DISTRIBUTOR.**

SHELL MILLS SERIES R2 TO R8 SEE PAGE 43 FOR CORRECT RADIUS DESIGNATION

PART NUMBER	D	AH	L1	FLUTES	E	INSERT	LIST
BE12831948R#	2.000	0.750	1.825	3	0.750	EM19	\$226.05
BE12851548R#	2.000	0.750	1.825	5	0.625	EM15	\$310.20
BE14451548R#	2.250	0.750	1.825	5	0.625	EM15	\$322.30
BE16031948R#	2.500	0.750	1.825	3	0.750	EM19	\$280.50
BE16051548R#	2.500	0.750	1.825	5	0.625	EM15	\$334.40
BE19261564R#	3.000	1.000	1.825	6	0.625	EM15	\$352.55
BE22461580R#	3.500	1.250	1.825	6	0.625	EM15	\$374.00

INSERTS FOR THESE CUTTERS ARE ON PAGE 47

SPARE PARTS:

ALL EM15 INSERTS
SCREW: **BS15**
WRENCH: **BW15**

ALL EM19 INSERTS
SCREW: **BS19**
WRENCH: **BW19**

= RADIUS RANGE
E = APPROXIMATE LENGTH

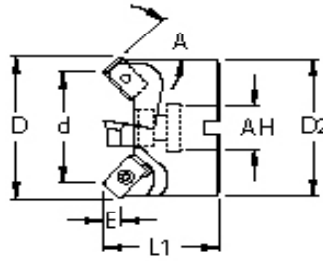
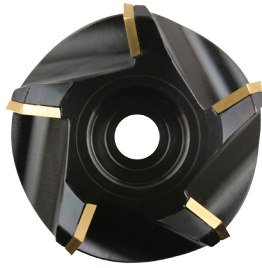
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SERIES IS - INSERT SAVERS

SUPERBEE® MADE IN AMERICA



INSERT SAVER®



GTO

Would you like to try *SWIFT-CARB CNC*, *SUPERBEE®*, or *NEW-LUBE®* products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order).

MADE IN **USA**

INSERT SAVER®

These shell mills utilize the insert edges that other cutters can't. Get more mileage for your carbide dollar!

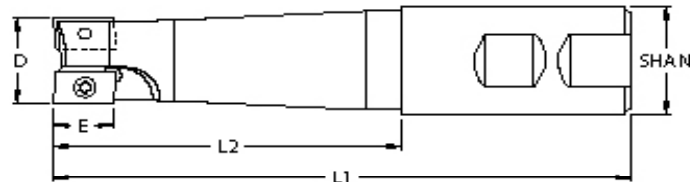
PART NUMBER	D	d	D2	AH	L1	LEAD	FLUTES	E	INSERT	LIST
BE12831548A45IS	2.505	2.000	2.403	0.750	1.750	45°	3	0.265	EM15	\$251.90
BE12831948A45IS	2.678	2.000	2.537	0.750	1.750	45°	3	0.350	EM19	\$251.90
BE16031548A15IS	2.675	2.500	2.660	0.750	1.750	15°	3	0.360	EM15	\$281.60
BE16031564A15IS	2.675	2.500	2.660	1.000	1.750	15°	3	0.360	EM15	\$281.60
BE16031548A45IS	3.005	2.500	2.903	0.750	1.750	45°	3	0.265	EM15	\$281.60
BE16031564A45IS	3.005	2.500	2.903	1.000	1.750	45°	3	0.265	EM15	\$281.60
BE16031948A15IS	2.750	2.500	2.715	0.750	1.750	15°	3	0.480	EM19	\$281.60
BE16031964A15IS	2.750	2.500	2.715	1.000	1.750	15°	3	0.480	EM19	\$281.60
BE16031948A45IS	3.178	2.500	3.037	0.750	1.750	45°	3	0.350	EM19	\$281.60
BE16031964A45IS	3.178	2.500	3.037	1.000	1.750	45°	3	0.350	EM19	\$281.60
BE19251564A45IS	3.678	3.000	3.537	1.000	1.750	45°	5	0.265	EM15	\$345.40
BE32051980A45IS	5.678	5.000	5.537	1.250	2.000	45°	5	0.350	EM19	\$610.50

INSERTS FOR THESE CUTTERS ARE ON PAGE 47

3° SERIES BD - BACKDRAFT CUTTERS



MADE IN **USA**



ALL OF THESE *SUPERBEE®* BACKDRAFT CUTTERS ACCOMMODATE ANY *SUPERBEE®* INSERT! CONVEX (page 47), ANGLE (page 49), and CONCAVE (page 53)

WELDON SHANK SERIES BD

PART NUMBER	D	SHANK	L1	L2	FLUTES	E	INSERT	LIST
BD4011564R#,C#,A#,3M	0.625	1.000	5.500	3.000	1	0.625	EM15	\$566.80
BD4011564R#,C#,A#,4M	0.625	1.000	6.500	4.000	1	0.625	EM15	\$597.25
BD4811580R#,C#,A#,4M	0.750	1.250	6.500	4.000	1	0.625	EM15	\$720.56
BD4811580R#,C#,A#,5M	0.750	1.250	7.500	5.000	1	0.625	EM15	\$771.08
BD6411980R#,C#,A#,4M	1.000	1.250	6.500	4.000	1	0.750	EM19	\$630.50
BD6411980R#,C#,A#,5M	1.000	1.250	7.500	5.000	1	0.750	EM19	\$637.00
BD6411980R#,C#,A#,6M	1.000	1.250	8.500	6.000	1	0.750	EM19	\$833.30
BD6411996R#,C#,A#,8M	1.000	1.500	10.500	8.000	1	0.750	EM19	\$951.60
BD6421580R#,C#,A#,4M	1.000	1.250	6.500	4.000	2	0.625	EM15	\$644.80
BD6421580R#,C#,A#,5M	1.000	1.250	7.500	5.000	2	0.625	EM15	\$749.54
BD6421580R#,C#,A#,6M	1.000	1.250	8.500	6.000	2	0.625	EM15	\$977.60
BD6421596R#,C#,A#,8M	1.000	1.500	10.500	8.000	2	0.625	EM15	\$1,100.92
BD8021996R#,C#,A#,5M	1.250	1.500	7.500	5.000	2	0.750	EM19	\$1,027.00
BD8021996R#,C#,A#,6M	1.250	1.500	8.500	6.000	2	0.750	EM19	\$1,287.36
BD8021996R#,C#,A#,7M	1.250	1.500	9.500	7.000	2	0.750	EM19	\$1,379.48
BD8021996R#,C#,A#,8M	1.250	1.500	10.500	8.000	2	0.750	EM19	\$1,418.85
BD8021996R#,C#,A#,9M	1.250	1.500	11.500	9.000	2	0.750	EM19	\$1,430.00



Left hand, metric sizes, and specials available on request.

SPARE PARTS:

ALL EM15 INSERTS
SCREW: BS15
WRENCH: BW15

ALL EM19 INSERTS
SCREW: BS19
WRENCH: BW19

Please Specify the size convex radius, concave radius, or angle you need at the end of the order number. See the following example →

= RADIUS OR ## ANGLE RANGE

M = DENOTES MACHINABLE CARBIDE SHANK AND MACHINABLE CARBIDE CUTTERS ARE MADE TO ORDER AND ARE NOT RETURNABLE.

E = APPROXIMATE LENGTH

Order Example:

Need a 1" inch tool to cut either a:

- A. Convex Radius #
- B. Angle ##
- C. Concave Radius ###

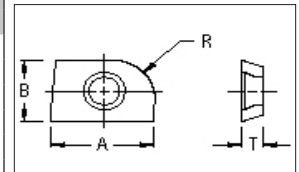
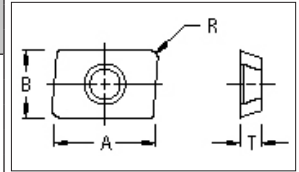
Your order number would be either:

- A: BD6421564R3 (cuts .140 to a .190 convex radius)
- B: BD6421564A45 (cuts a 45° angle)
- C: BD6421564C6 (cuts .250 concave radius)

CARBIDE INSERTS FOR CONVEX RADIUS **SUPERBEE®**

EM15 SERIES R1-R6 CONVEX RADII **NEW!**

RANGE	INSERTS	RADIUS	A	B	T	T520	T530	NT56	NT33	NT13	NC57
						HONE=E LIST	HONE=E LIST	HONE=E LIST	HONE= E or F LIST	HONE=E LIST	HONE=E LIST
R1	EM15007	0.007	0.625	0.375	0.125	\$12.35	\$12.35	\$10.29	\$10.29	\$10.29	\$14.30
	EM15015	0.015	0.625	0.375	0.125	\$8.70	\$8.70	\$6.66	\$7.01	\$7.01	\$9.22
	EM15020	0.020	0.625	0.375	0.125	\$8.70	\$8.70	\$6.66	\$7.01	\$7.01	\$9.22
	EM15030	0.030	0.625	0.375	0.125	\$8.70	\$8.70	\$6.66	\$7.01	\$7.01	\$9.22
	EM15040	0.040	0.625	0.375	0.125	\$15.62	\$15.62	\$10.29	\$10.29	\$10.29	\$14.30
	EM15050	0.050	0.625	0.375	0.125	\$15.62	\$15.62	\$10.29	\$10.29	\$10.29	\$14.30
R2	EM15060	0.060	0.625	0.375	0.125	\$12.35	\$12.35	\$10.29	\$10.29	\$10.29	\$14.30
	EM15070	0.070	0.625	0.375	0.125	\$12.35	\$12.35	\$10.29	\$10.29	\$10.29	\$14.30
	EM15080	0.080	0.625	0.375	0.125	\$12.35	\$12.35	\$10.29	\$10.29	\$10.29	\$14.30
	EM15090	0.090	0.625	0.375	0.125	\$12.35	\$12.35	\$10.29	\$10.29	\$10.29	\$14.30
	EM15100	0.100	0.625	0.375	0.125	\$13.23	\$13.23	\$11.17	\$11.17	\$11.17	\$15.47
	EM15110	0.110	0.625	0.375	0.125	\$13.23	\$13.23	\$11.17	\$11.17	\$11.17	\$15.47
R3	EM15120	0.120	0.625	0.375	0.125	\$13.23	\$13.23	\$11.17	\$11.17	\$11.17	\$15.47
	EM15125	0.125	0.625	0.375	0.125	\$13.23	\$13.23	\$11.17	\$11.17	\$11.17	\$15.47
	EM15130	0.130	0.625	0.375	0.125	\$13.83	\$13.83	\$11.77	\$11.77	\$11.77	\$16.23
	EM15140	0.140	0.625	0.375	0.125	\$13.83	\$13.83	\$11.77	\$11.77	\$11.77	\$16.23
	EM15150	0.150	0.625	0.375	0.125	\$13.83	\$13.83	\$11.77	\$11.77	\$11.77	\$16.23
	EM15156	0.156	0.625	0.375	0.125	\$13.83	\$13.83	\$11.77	\$11.77	\$11.77	\$16.23
R4	EM15160	0.160	0.625	0.375	0.125	\$13.83	\$13.83	\$11.77	\$11.77	\$11.77	\$16.23
	EM15170	0.170	0.625	0.375	0.125	\$14.71	\$14.71	\$12.65	\$12.65	\$12.65	\$17.32
	EM15187	0.187	0.625	0.375	0.125	\$14.71	\$14.71	\$12.65	\$12.65	\$12.65	\$17.32
	EM15190	0.190	0.625	0.375	0.125	\$14.71	\$14.71	\$12.65	\$12.65	\$12.65	\$17.32
	EM15200	0.200	0.625	0.375	0.125	\$15.32	\$15.32	\$13.26	\$13.26	\$13.26	\$18.08
	EM15210	0.210	0.625	0.375	0.125	\$15.32	\$15.32	\$13.26	\$13.26	\$13.26	\$18.08
R5	EM15220	0.220	0.625	0.375	0.125	\$15.32	\$15.32	\$13.26	\$13.26	\$13.26	\$18.08
R6	EM15250	0.250	0.625	0.375	0.125	\$15.32	\$15.32	\$13.26	\$13.26	\$13.26	\$18.08
R5	EM15312-SE	0.312	0.625	0.375	0.125	\$13.83	\$13.83	\$11.77	\$11.77	\$11.77	\$16.23
R6	EM15375-SE	0.375	0.625	0.375	0.125	\$13.83	\$13.83	\$11.77	\$11.77	\$11.77	\$16.23



*SE=SINGLE END INSERT

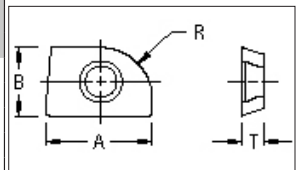
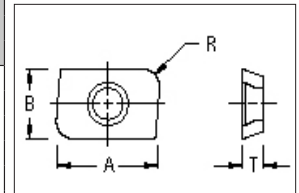
MADE IN **USA**

Please Specify Hone: **E** = Honed Edge
F = Sharp Edge

CARBIDE INSERTS FOR CONVEX RADIUS **SUPERBEE®**

EM19 SERIES R1-R8 CONVEX RADII **NEW!**

RANGE	INSERTS	RADIUS	A	B	T	T520	T530	NT56	NT33	NT13	NC57
						HONE=E LIST	HONE=E LIST	HONE=E LIST	HONE= E or F LIST	HONE=E LIST	HONE=E LIST
R1	EM19007	0.007	0.750	0.500	0.156	\$14.05	\$14.05	\$11.99	\$11.99	\$11.99	\$16.50
	EM19015	0.015	0.750	0.500	0.156	\$10.48	\$10.48	\$8.86	\$8.86	\$8.86	\$11.97
	EM19020	0.020	0.750	0.500	0.156	\$10.48	\$10.48	\$8.86	\$8.86	\$8.86	\$11.97
	EM19030	0.030	0.750	0.500	0.156	\$10.48	\$10.48	\$8.86	\$8.86	\$8.86	\$11.97
	EM19040	0.040	0.750	0.500	0.156	\$14.05	\$14.05	\$11.99	\$11.99	\$11.99	\$16.50
	EM19050	0.050	0.750	0.500	0.156	\$14.05	\$14.05	\$11.99	\$11.99	\$11.99	\$16.50
R2	EM19060	0.060	0.750	0.500	0.156	\$14.05	\$14.05	\$11.99	\$11.99	\$11.99	\$16.50
	EM19070	0.070	0.750	0.500	0.156	\$14.05	\$14.05	\$11.99	\$11.99	\$11.99	\$16.50
	EM19080	0.080	0.750	0.500	0.156	\$14.05	\$14.05	\$11.99	\$11.99	\$11.99	\$16.50
	EM19090	0.090	0.750	0.500	0.156	\$14.05	\$14.05	\$11.99	\$11.99	\$11.99	\$16.50
	EM19100	0.100	0.750	0.500	0.156	\$14.99	\$14.99	\$12.93	\$12.93	\$12.93	\$17.67
	EM19110	0.110	0.750	0.500	0.156	\$14.99	\$14.99	\$12.93	\$12.93	\$12.93	\$17.67
R3	EM19120	0.120	0.750	0.500	0.156	\$14.99	\$14.99	\$12.93	\$12.93	\$12.93	\$17.67
	EM19125	0.125	0.750	0.500	0.156	\$14.99	\$14.99	\$12.93	\$12.93	\$12.93	\$17.67
	EM19130	0.130	0.750	0.500	0.156	\$15.52	\$15.52	\$13.48	\$13.48	\$13.48	\$18.43
	EM19140	0.140	0.750	0.500	0.156	\$15.52	\$15.52	\$13.48	\$13.48	\$13.48	\$18.43
	EM19150	0.150	0.750	0.500	0.156	\$15.52	\$15.52	\$13.48	\$13.48	\$13.48	\$18.43
	EM19156	0.156	0.750	0.500	0.156	\$15.52	\$15.52	\$13.48	\$13.48	\$13.48	\$18.43
R4	EM19160	0.160	0.750	0.500	0.156	\$15.52	\$15.52	\$13.48	\$13.48	\$13.48	\$18.43
	EM19170	0.170	0.750	0.500	0.156	\$16.47	\$16.47	\$14.41	\$14.41	\$14.41	\$21.70
	EM19187	0.187	0.750	0.500	0.156	\$16.47	\$16.47	\$14.41	\$14.41	\$14.41	\$21.70
	EM19190	0.190	0.750	0.500	0.156	\$16.47	\$16.47	\$14.41	\$14.41	\$14.41	\$21.70
	EM19200	0.200	0.750	0.500	0.156	\$17.08	\$17.08	\$15.02	\$15.02	\$15.02	\$20.28
	EM19210	0.210	0.750	0.500	0.156	\$17.08	\$17.08	\$15.02	\$15.02	\$15.02	\$20.28
R5	EM19220	0.220	0.750	0.500	0.156	\$17.08	\$17.08	\$15.02	\$15.02	\$15.02	\$20.28
R6	EM19250	0.250	0.750	0.500	0.156	\$17.08	\$17.08	\$15.02	\$15.02	\$15.02	\$20.28
R5	EM19312	0.312	0.750	0.500	0.156	\$18.29	\$18.29	\$16.23	\$16.23	\$16.23	\$21.79
R6	EM19375	0.375	0.750	0.500	0.156	\$18.29	\$18.29	\$16.23	\$16.23	\$16.23	\$21.79
R7	EM19437-SE	0.437	0.750	0.500	0.156	\$19.50	\$19.50	\$17.43	\$17.43	\$17.43	\$23.24
R8	EM19500-SE	0.500	0.750	0.500	0.156	\$19.50	\$19.50	\$17.43	\$17.43	\$17.43	\$23.24



*SE=SINGLE END INSERT

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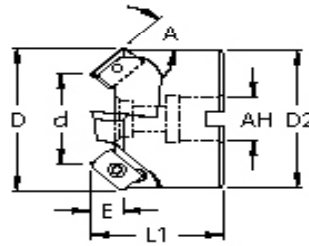
SERIES CM - CHAMFER & ANGLE CUTTERS - SHELL MILL



Left hand, metric sizes, and specials available on request.



MADE IN USA



CALL 800-227-9876 TO FIND YOUR NEAREST DISTRIBUTOR.

SHELL MILL SERIES CM

PART NUMBER	D	d	D2	AH	L1	ANGLE	FLUTES	E	INSERT	LIST
CM963154845	2.352	1.500	2.268	0.750	1.825	45°	3	0.400	EM15	\$293.70
CM963194845	2.530	1.500	2.395	0.750	1.825	45°	3	0.490	EM19	\$293.70

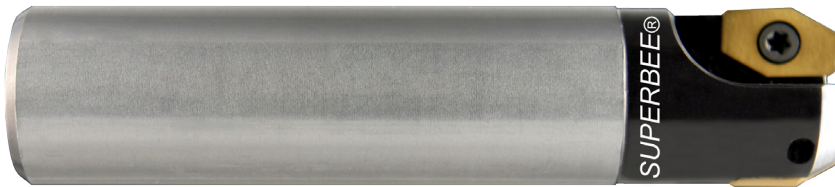
USE ANY **SUPERBEE®** INSERT! CONVEX RADIUS • CONCAVE RADIUS • ANGLE • SPECIAL FORM • JUST CALL!

SPARE PARTS:

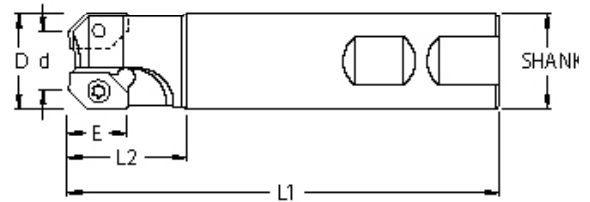
ALL EM15 INSERTS
SCREW: BS15
WRENCH: BW15

ALL EM19 INSERTS
SCREW: BS19
WRENCH: BW19

SERIES A CHAMFER & ANGLE CUTTERS - A10 TO A60 WELDON SHANK



MADE IN USA



WELDON SHANK

SERIES A The formula for calculating the 'd' dimension is on the next page.

PART NUMBER	D	d	SHANK	L1	L2	FLUTES	E	INSERT	LIST
BE4011540A#	0.625	PAGE 49	0.625	3.375	1.000	1	0.625	EM15	\$106.15
BE4411548A#	0.687	PAGE 49	0.750	4.000	1.250	1	0.625	EM15	\$133.65
BE4811548A#	0.750	PAGE 49	0.750	4.000	1.250	1	0.625	EM15	\$121.55
BE5611948A#	0.875	PAGE 49	0.750	4.500	1.250	1	0.750	EM19	\$141.90
BE5611964A#	0.875	PAGE 49	1.000	4.500	1.250	1	0.750	EM19	\$133.65
BE6411948A#	1.000	PAGE 49	0.750	4.500	1.250	1	0.750	EM19	\$141.90
BE6411964A#	1.000	PAGE 49	1.000	4.500	1.250	1	0.750	EM19	\$127.60
BE6421548A#	1.000	PAGE 49	7.500	4.500	1.250	2	0.625	EM15	\$176.00
BE6421564A#	1.000	PAGE 49	1.000	4.500	1.250	2	0.625	EM15	\$157.30
BE8021980A#	1.250	PAGE 49	1.250	5.000	1.750	2	0.750	EM19	\$187.00
BE8031580A#	1.250	PAGE 49	1.250	5.000	1.750	3	0.625	EM15	\$229.90
BE9621980A#	1.500	PAGE 49	1.250	5.000	1.750	2	0.750	EM19	\$204.60
BE9631580A#	1.500	PAGE 49	1.250	5.000	1.750	3	0.625	EM15	\$233.20

Please specify the chamfer angle you need at the end of the order number. See order example.

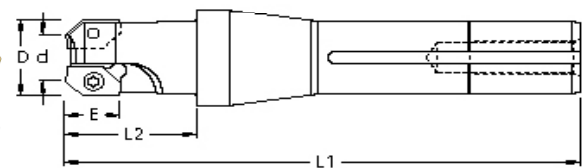
Order Example:
Need a 7/8 inch tool to cut a 20° chamfer/angle? Your order number would be BE5611948 **A20**.

ALL OF THESE **SUPERBEE®** CUTTERS ACCOMMODATE ONLY ONE SIZE CHAMFER & ANGLE

SERIES A CHAMFER & ANGLE CUTTERS - A10 TO A60 R8 SHANK



MADE IN USA



The formula for calculating the 'd' dimension is on the next page.

PART NUMBER	D	d	SHANK	L1	L2	FLUTES	E	INSERT	LIST
BE64215R8A#	1.000	PAGE 49	R8	5.880	1.500	2	0.625	EM15	\$199.10
BE80219R8A#	1.250	PAGE 49	R8	6.130	1.750	2	0.750	EM19	\$211.20
BE96315R8A#	1.500	PAGE 49	R8	6.130	1.750	3	0.625	EM15	\$257.40

R8 SHANK SERIES A

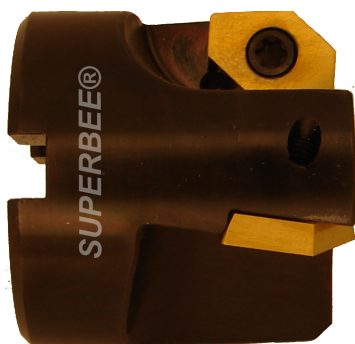
ALL OF THESE **SUPERBEE®** CUTTERS ACCOMMODATE ONLY ONE SIZE CHAMFER & ANGLE

= SELECT ANGLE
E = APPROXIMATE LENGTH

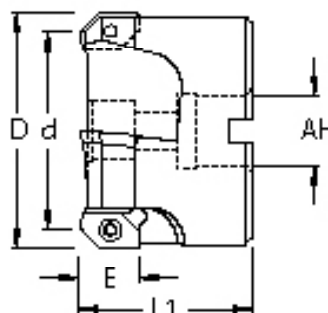
SUPERBEE® MADE IN AMERICA

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SERIES A CHAMFER & ANGLE CUTTERS - A10 TO A60 SHELL MILLS



MADE IN USA



GTO

Would you like to try *SWIFT-CARB CNC*, *SUPERBEE®*, or *NEW-LUBE®*, products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order).

SHELL MILLS SERIES A

The formula for calculating the 'd' dimension is posted below.

PART NUMBER	D	d	AH	L1	FLUTES	E	INSERT	WRENCH	SCREW	LIST
BE12831948A#	2.000	BELOW	0.750	1.825	3	0.750	EM19	BW19	BS19	\$235.40
BE12851548A#	2.000	BELOW	0.750	1.825	5	0.625	EM15	BW15	BS15	\$313.50
BE14451548A#	2.250	BELOW	0.750	1.825	5	0.625	EM15	BW15	BS15	\$325.60
BE16031948A#	2.500	BELOW	0.750	1.825	3	0.750	EM19	BW19	BS19	\$283.80
BE16051548A#	2.500	BELOW	0.750	1.825	5	0.625	EM15	BW15	BS15	\$337.70
BE19261564A#	3.000	BELOW	1.000	1.825	6	0.625	EM15	BW15	BS15	\$355.30
BE22461580A#	3.500	BELOW	1.250	1.825	6	0.625	EM15	BW15	BS15	\$377.30

INSERTS FOR THESE CUTTERS ARE BELOW

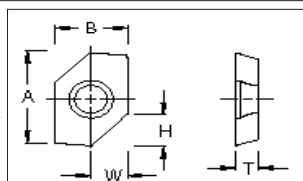
THE FORMULA FOR CALCULATING THE 'd' CUTTER DIMENSION IS:

$D \varnothing - (2 \times W) = d$, WHERE D = CUTTER DIAMETER AND W IS THE DIMENSION ON THE ANGLE INSERT YOU WISH TO USE (SEE "W" IN THE CHART BELOW). FOR EXAMPLE:

THE CUTTER DIAMETER IS 1", IT IS A 2 FLUTE CUTTER, AND THE ANGLE IS 25° ON AN EM1525250 INSERT. YOU WOULD TAKE 1.000" (DØ) - .234 (2 X W) = .766 (d).

ANOTHER EXAMPLE WOULD BE A CUTTER DIAMETER OF 1", IT IS 1 FLUTE, THE ANGLE IS 30°, AND THE INSERT IS AN EM1930250. YOU WOULD TAKE 1.000" (DØ) - .288 (2 X W) = .712 (d).

CARBIDE INSERTS FOR CHAMFER AND ANGLE SERIES A10-A60



MADE IN USA

Please Specify
Hone:

E = Honed Edge
F = Sharp Edge

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NEW!

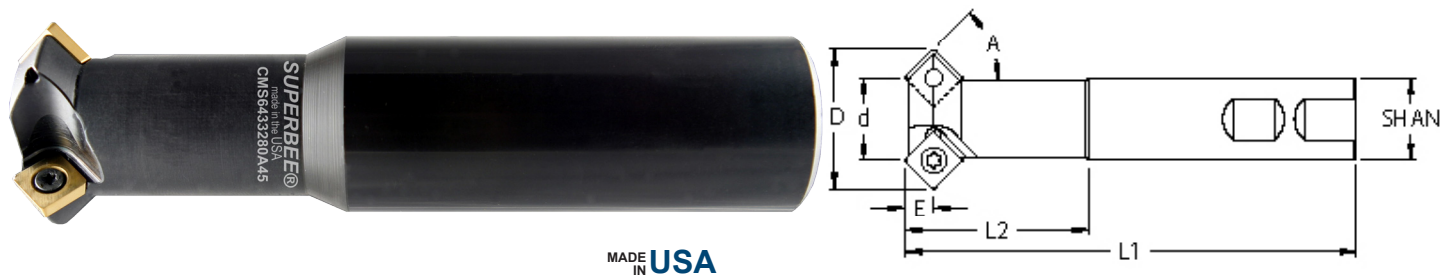
INSERT	SIDE ANGLE	INCL. ANGLE	H	W	A	T520 HONE=E	T530 HONE=E	NT56 HONE=E	NT33 HONE=E or F	NT13 HONE=E	NC57 HONE=E
						LIST	LIST	LIST	LIST	LIST	LIST
EM1510250	10°	20°	0.250	0.044	0.625	\$17.37	\$17.37	\$15.50	\$15.50	\$15.50	\$16.60
EM1515250	15°	30°	0.250	0.067	0.625	\$17.37	\$17.37	\$15.50	\$15.50	\$15.50	\$16.60
EM1520250	20°	40°	0.250	0.091	0.625	\$17.37	\$17.37	\$15.50	\$15.50	\$15.50	\$16.60
EM1525250	25°	50°	0.250	0.117	0.625	\$17.37	\$17.37	\$15.50	\$15.50	\$15.50	\$16.60
EM1530200	30°	60°	0.200	0.115	0.625	\$17.37	\$17.37	\$15.50	\$15.50	\$15.50	\$16.60
EM1541200	41°	82°	0.200	0.174	0.625	\$17.37	\$17.37	\$15.50	\$15.50	\$15.50	\$16.60
EM1545200	45°	90°	0.200	0.200	0.625	\$17.37	\$17.37	\$15.50	\$15.50	\$15.50	\$16.60
EM1550200	50°	100°	0.115	0.200	0.625	\$17.37	\$17.37	\$15.50	\$15.50	\$15.50	\$16.60
EM1560200	60°	120°	0.168	0.200	0.625	\$17.37	\$17.37	\$15.50	\$15.50	\$15.50	\$16.60
EM1910300	10°	20°	0.300	0.052	0.750	\$18.97	\$18.97	\$17.10	\$17.10	\$17.10	\$18.20
EM1915300	15°	30°	0.300	0.080	0.750	\$18.97	\$18.97	\$17.10	\$17.10	\$17.10	\$18.20
EM1920300	20°	40°	0.300	0.109	0.750	\$18.97	\$18.97	\$17.10	\$17.10	\$17.10	\$18.20
EM1925300	25°	50°	0.300	0.140	0.750	\$18.97	\$18.97	\$17.10	\$17.10	\$17.10	\$18.20
EM1930250	30°	60°	0.250	0.144	0.750	\$18.97	\$18.97	\$17.10	\$17.10	\$17.10	\$18.20
EM1941250	41°	82°	0.250	0.217	0.750	\$18.97	\$18.97	\$17.10	\$17.10	\$17.10	\$18.20
EM1945250	45°	90°	0.250	0.250	0.750	\$18.97	\$18.97	\$17.10	\$17.10	\$17.10	\$18.20
EM1950250	50°	100°	0.144	0.250	0.750	\$18.97	\$18.97	\$17.10	\$17.10	\$17.10	\$18.20
EM1960250	60°	120°	0.210	0.250	0.750	\$18.97	\$18.97	\$17.10	\$17.10	\$17.10	\$18.20

E = APPROXIMATE LENGTH

= SELECT ANGLE

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SERIES CMS - CHAMFER & ANGLE CUTTERS - WELDON SHANK



MADE IN **USA**

ALL OF THESE **SUPERBEE®** CUTTERS ACCOMMODATE 45° ANGLE USING A SQUARE INSERT.

WELDON SHANK SERIES CMS

PART NUMBER	D	d	SHANK	L1	L2	ANGLE	FLUTES	E	INSERT	WRENCH	SCREW	LIST
CMS4014264A45	0.989	0.312	1.000	5.000	1.750	45°	1	0.343	SP42	NT15	CS6	\$107.80
CMS4814264A45	1.304	0.625	1.000	5.250	2.000	45°	1	0.343	SP42	NT15	CS6	\$132.00
CMS6424280A45	1.680	1.000	1.250	5.500	2.250	45°	2	0.343	SP42	NT15	CS6	\$167.77
CMS6433280A45	1.504	1.000	1.250	5.500	2.250	45°	3	0.255	SP32	NT9	CS5	\$161.70
CMS8034280A45	1.931	1.250	1.250	5.500	2.250	45°	3	0.343	SP42	NT15	CS6	\$174.90
CMS9634280A45	2.056	1.375	1.250	5.500	2.250	45°	3	0.343	SP42	NT15	CS6	\$210.10

INSERTS FOR THESE CUTTERS ARE BELOW

SUPERBEE® MADE IN AMERICA

SPARE PARTS:

ALL SP32 INSERTS

SCREW: **CS5**

WRENCH: **NT9**

ALL EM19 INSERTS

SCREW: **CS6**

WRENCH: **NT15**

CARBIDE INSERTS FOR CHAMFER & ANGLE SERIES CMS

NEW!

INSERT	R	IC	T	T520 HONE=E	T530 HONE=E	NT56 HONE=E	NT33 HONE=E or F	NT13 HONE=E
				LIST	LIST	LIST	LIST	LIST
SP32010	0.010	0.375	0.125	\$14.48	\$14.48	\$12.43	\$12.43	\$12.43
SP32015	0.015	0.375	0.125	\$12.06	\$12.06	\$10.01	\$10.01	\$10.01
SP32030	0.030	0.375	0.125	\$12.06	\$12.06	\$10.01	\$10.01	\$10.01
SP32060	0.060	0.375	0.125	\$14.48	\$14.48	\$12.43	\$12.43	\$12.43
SP32090	0.090	0.375	0.125	\$16.29	\$16.29	\$14.25	\$14.25	\$14.25
SP42010	0.010	0.500	0.125	\$14.72	\$14.72	\$12.54	\$12.54	\$12.54
SP42015	0.015	0.500	0.125	\$13.29	\$13.29	\$11.11	\$11.11	\$11.11
SP42030	0.030	0.500	0.125	\$13.29	\$13.29	\$11.11	\$11.11	\$11.11
SP42060	0.060	0.500	0.125	\$14.72	\$14.72	\$12.54	\$12.54	\$12.54
SP42090	0.090	0.500	0.125	\$16.53	\$16.53	\$14.36	\$14.36	\$14.36

GTO

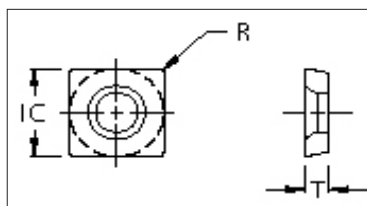
Would you like to try **SWIFT-CARB CNC**, **SUPERBEE®**, or **NEW-LUBE®**, products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order).

Please Specify Hone:

E = Honed Edge

F = Sharp Edge

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DISTRIBUTOR.**



CORNER-ROUNDING MICRO GRAIN CARBIDE ENDMILLS



MADE
IN USA

SERIES CRE

PART NUMBER	RADIUS	PILOT	SHANK	OAL	LIST
CRE.010083CB	0.010	0.085	1/8	1-1/2	\$26.95
CRE.015083CB	0.015	0.075	1/8	1-1/2	\$26.95
CRE.020083CB	0.020	0.056	1/8	1-1/2	\$26.95
CRE.025123CB	0.025	0.107	3/16	2	\$26.95
CRE.030123CB	0.030	0.097	3/16	2	\$26.95
CRE.035123CB	0.035	0.087	3/16	2	\$26.95
CRE.040123CB	0.040	0.077	3/16	2	\$26.95
CRE.045163CB	0.045	0.130	1/4	2	\$34.65
CRE.050163CB	0.050	0.120	1/4	2	\$34.65
CRE.055163CB	0.055	0.110	1/4	2	\$34.65
CRE.060163CB	0.060	0.100	1/4	2	\$35.75
CRE.065163CB	0.065	0.090	1/4	2	\$35.75
CRE.070163CB	0.070	0.080	1/4	2	\$35.75
CRE.075163CB	0.075	0.070	1/4	2	\$40.15
CRE.080203CB	0.080	0.122	5/16	2-1/2	\$40.15
CRE.085203CB	0.085	0.112	5/16	2-1/2	\$40.15
CRE.090203CB	0.090	0.102	5/16	2-1/2	\$40.15
CRE.095203CB	0.095	0.092	5/16	2-1/2	\$40.15
CRE.100203CB	0.100	0.082	5/16	2-1/2	\$40.15
CRE.105243CB	0.105	0.135	3/8	2-1/2	\$61.60
CRE.110243CB	0.110	0.125	3/8	2-1/2	\$61.60
CRE.115243CB	0.115	0.115	3/8	2-1/2	\$61.60
CRE.120243CB	0.120	0.105	3/8	2-1/2	\$61.60
CRE.125243CB	0.125	0.095	3/8	2-1/2	\$61.60
CRE.130243CB	0.130	0.085	3/8	2-1/2	\$61.60
CRE.140283CB	0.140	0.127	7/16	2-1/2	\$72.60
CRE.150283CB	0.150	0.107	7/16	2-1/2	\$72.60
CRE.156323CB	0.156	0.158	1/2	2-1/2	\$90.20
CRE.160323CB	0.160	0.150	1/2	2-1/2	\$90.20
CRE.170323CB	0.170	0.130	1/2	2-1/2	\$90.20
CRE.180323CB	0.180	0.110	1/2	2-1/2	\$90.20
CRE.187323CB	0.187	0.096	1/2	2-1/2	\$90.20
CRE.190323CB	0.190	0.090	1/2	2-1/2	\$90.20
CRE.200363CB	0.200	0.132	9/16	3	\$107.80
CRE.210363CB	0.210	0.112	9/16	3	\$107.80
CRE.220403CB	0.220	0.155	5/8	3	\$118.80
CRE.236403CB	0.236	0.123	5/8	3	\$118.80
CRE.250483CB	0.250	0.210	3/4	3	\$151.80



**CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.**

- 3 Flute, Double End
- CNC Ground
- Regular & Long Lengths
- Radius tolerance:
+/- .002
- Available in:
(20C) AITiN,
(30C) TiCN
- Easy Chip Removal

LONG CORNER-ROUNDING MICRO GRAIN CARBIDE ENDMILLS

MADE
IN USA



SERIES CREL

PART NUMBER	RADIUS	PILOT	SHANK	OAL	LIST
CREL.010163CB	0.010	0.198	1/4	4	\$55.77
CREL.015163CB	0.015	0.188	1/4	4	\$55.77
CREL.020163CB	0.020	0.178	1/4	4	\$55.77
CREL.025163CB	0.025	0.168	1/4	4	\$55.77
CREL.030163CB	0.030	0.158	1/4	4	\$55.77
CREL.035163CB	0.035	0.148	1/4	4	\$55.77
CREL.040163CB	0.040	0.138	1/4	4	\$59.80
CREL.050163CB	0.050	0.118	1/4	4	\$59.80
CREL.060163CB	0.060	0.098	1/4	4	\$66.70
CREL.070243CB	0.070	0.203	3/8	4	\$74.75
CREL.080243CB	0.080	0.183	3/8	4	\$74.75
CREL.090243CB	0.090	0.163	3/8	4	\$82.80
CREL.100243CB	0.100	0.143	3/8	4	\$86.25
CREL.110243CB	0.110	0.123	3/8	4	\$89.70
CREL.120243CB	0.120	0.103	3/8	4	\$89.70
CREL.125243CB	0.125	0.093	3/8	4	\$95.45

- 3 Flute, Double End
- CNC Ground
- Radius tolerance:
+/- .002
- Coatings Available:
(20C) AITiN,
(30C) TiCN
- Easy Chip Removal

SERIES C1 TO C6 CONCAVE RADIUS .010 - .250 WELDON SHANK

CORNER ROUNDING CARBIDE

SUPERBEE® MADE IN AMERICA

= RADIUS RANGE

C 1 ACCOMMODATES RADII FROM .010" TO .060"

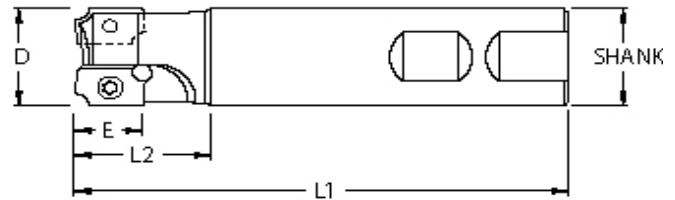
C 2 ACCOMMODATES RADII FROM .070" TO .125"

C 3 ACCOMMODATES RADII FROM .130" TO .160"

C 4 ACCOMMODATES RADII FROM .170" TO .190"

C 5 ACCOMMODATES RADII FROM .197" TO .220"

C 6 ACCOMMODATES RADII FROM .236" TO .250"



WELDON SHANK SERIES C

MADE IN USA

PART NUMBER		D	SHANK	L1	L2	FLUTES	E	INSERT	LIST
BE4011540C#	C1 - C2	0.625	0.625	3.375	1.000	1	0.625	EM15	\$106.15
BE4411548C#	C1 - C2	0.687	0.750	4.000	1.250	1	0.625	EM15	\$133.65
BE4811548C#	C1 - C2	0.750	0.750	4.000	1.250	1	0.625	EM15	\$121.55
BE5611948C#	C1 - C4	0.875	0.750	4.500	1.250	1	0.750	EM19	\$141.90
BE5611964C#	C1 - C4	0.875	1.000	4.500	1.250	1	0.750	EM19	\$133.65
BE6411948C#	C1 - C6	1.000	0.750	4.500	1.250	1	0.750	EM19	\$141.90
BE6411964C#	C1 - C6	1.000	1.000	4.500	1.250	1	0.750	EM19	\$127.60
BE6421548C#	C1 - C2	1.000	7.500	4.500	1.250	2	0.625	EM15	\$176.00
BE6421564C#	C1 - C2	1.000	1.000	4.500	1.250	2	0.625	EM15	\$157.30
BE8021980C#	C1 - C6	1.250	1.250	5.000	1.750	2	0.750	EM19	\$187.00
BE8031580C#	C1 - C2	1.250	1.250	5.000	1.750	3	0.625	EM15	\$229.90
BE9621980C#	C1 - C6	1.500	1.250	5.000	1.750	2	0.750	EM19	\$204.60
BE9631580C#	C1 - C2	1.500	1.250	5.000	1.750	3	0.625	EM15	\$233.20

INSERTS FOR THESE CUTTERS ARE ON NEXT PAGE

SPARE PARTS:

ALL EM15 INSERTS

SCREW: BS15

WRENCH: BW15

ALL EM19 INSERTS

SCREW: BS19

WRENCH: BW19

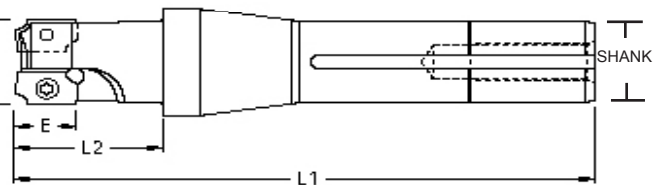
Please specify the size concave radius you need at the end of the order number. (Replace the # with a radius value.) See example.

Order Example:
Need a 3/4 inch tool to cut a .090 concave radius? Your order number would be BE4811548C2.

Inserts for concave Radii .170 and above are single ended

Left hand, metric sizes, and specials available on request.

SERIES C1 TO C6 CONCAVE RADIUS .010 - .250 R8 SHANK



MADE IN USA

SEE ABOVE FOR CORRECT RADIUS DESIGNATION

PART NUMBER	D	SHANK	L1	L2	FLUTES	E	INSERT	LIST
BE64215R8C#	1.000	R8	5.880	1.500	2	0.625	EM15	\$199.10
BE80219R8C#	1.250	R8	6.130	1.750	2	0.750	EM19	\$211.20
BE96315R8C#	1.500	R8	6.130	1.750	3	0.625	EM15	\$257.40

INSERTS FOR THESE CUTTERS ARE ON NEXT PAGE

R8 SHANK SERIES C

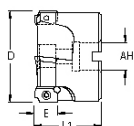
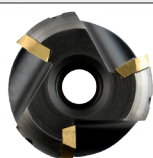
Inserts for concave Radii .170 and above are single ended only.

SUPERBEE® AND NEW LUBE® PRODUCTS MADE IN AMERICA

= RADIUS RANGE

E = APPROXIMATE LENGTH

SERIES C1 TO C6 CONCAVE RADIUS .010 - .250 SHELL MILLS



MADE IN **USA**



Left hand, metric sizes, and specials available on request.

SHELL MILL SERIES C SEE PREVIOUS PAGE FOR CORRECT RADIUS DESIGNATION

PART NUMBER		INSERT	D	AH	L1	FLUTES	E	LIST
BE12831948	C1 - C6	EM19	2.000	0.750	1.825	3	0.650	\$235.40
BE12851548	C1 - C2	EM15	2.000	0.750	1.825	5	0.550	\$313.50
BE14451548	C1 - C2	EM15	2.250	0.750	1.825	5	0.550	\$325.60
BE16031948	C1 - C6	EM19	2.500	0.750	1.825	3	0.650	\$283.80
BE16051548	C1 - C2	EM15	2.500	0.750	1.825	5	0.550	\$337.70
BE19261564	C1 - C2	EM15	3.000	1.000	1.825	6	0.550	\$355.30
BE22461580	C1 - C2	EM15	3.500	1.250	1.825	6	0.550	\$377.30

INSERTS FOR THESE CUTTERS ARE BELOW

Please specify the size concave radius you need at the end of the order number.

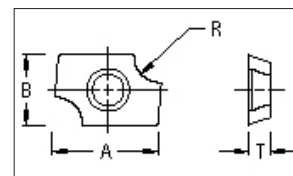
Order Example:
Need a 3/4 inch tool to cut a .090 concave radius? Your order number would be BE4811548C2.

CARBIDE INSERTS FOR CONCAVE RADIUS SERIES C1 TO C6

RANGE	INSERT	DEC/MET	A	B	T	T520	T530	NT56	NT33	NT13
						HONE=E LIST	HONE=E LIST	HONE=E LIST	HONE=E OR F LIST	HONE=E LIST
C1	EM15C010	0.010	0.625	0.375	0.125	\$21.99	\$21.99	\$19.92	\$19.92	\$19.92
	EM15C015	0.015	0.625	0.375	0.125	\$21.99	\$21.99	\$19.92	\$19.92	\$19.92
	EM15C020	0.020	0.625	0.375	0.125	\$21.99	\$21.99	\$19.92	\$19.92	\$19.92
	EM15C030	0.030	0.625	0.375	0.125	\$21.99	\$21.99	\$19.92	\$19.92	\$19.92
	EM15C0393	1MM/.0393	0.625	0.375	0.125	\$21.99	\$21.99	\$19.92	\$19.92	\$19.92
	EM15C040	0.040	0.625	0.375	0.125	\$21.99	\$21.99	\$19.92	\$19.92	\$19.92
C2	EM15C050	0.050	0.625	0.375	0.125	\$21.99	\$21.99	\$19.92	\$19.92	\$19.92
	EM15C060	0.060	0.625	0.375	0.125	\$21.99	\$21.99	\$19.92	\$19.92	\$19.92
	EM15C070	0.070	0.625	0.375	0.125	\$23.09	\$23.09	\$19.92	\$19.92	\$19.92
	EM15C0787	2MM/.0787	0.625	0.375	0.125	\$23.09	\$23.09	\$19.92	\$19.92	\$19.92
	EM15C080	0.080	0.625	0.375	0.125	\$23.09	\$23.09	\$19.92	\$19.92	\$19.92
	EM15C090	0.090	0.625	0.375	0.125	\$23.09	\$23.09	\$19.92	\$19.92	\$19.92
C3	EM15C100	0.100	0.625	0.375	0.125	\$26.14	\$26.14	\$24.07	\$24.07	\$24.07
	EM15C110	0.110	0.625	0.375	0.125	\$26.14	\$26.14	\$24.07	\$24.07	\$24.07
	EM15C118	3MM/.118	0.625	0.375	0.125	\$26.14	\$26.14	\$24.07	\$24.07	\$24.07
	EM15C120	0.120	0.625	0.375	0.125	\$26.14	\$26.14	\$24.07	\$24.07	\$24.07
	EM15C125	0.125	0.625	0.375	0.125	\$26.14	\$26.14	\$24.07	\$24.07	\$24.07
C4	EM19C010	0.010	0.750	0.500	0.156	\$23.99	\$23.99	\$21.93	\$21.93	\$21.93
	EM19C020	0.020	0.750	0.500	0.156	\$23.99	\$23.99	\$21.93	\$21.93	\$21.93
	EM19C030	0.030	0.750	0.500	0.156	\$23.99	\$23.99	\$21.93	\$21.93	\$21.93
	EM19C0393	1MM/.0393	0.750	0.500	0.156	\$23.99	\$23.99	\$21.93	\$21.93	\$21.93
	EM19C040	0.040	0.750	0.500	0.156	\$23.99	\$23.99	\$21.93	\$21.93	\$21.93
	EM19C050	0.050	0.750	0.500	0.156	\$23.99	\$23.99	\$21.93	\$21.93	\$21.93
C5	EM19C060	0.060	0.750	0.500	0.156	\$23.99	\$23.99	\$21.93	\$21.93	\$21.93
	EM19C070	0.070	0.750	0.500	0.156	\$25.09	\$25.09	\$23.03	\$23.03	\$23.03
	EM19C0787	2MM/.0787	0.750	0.500	0.156	\$25.09	\$25.09	\$23.03	\$23.03	\$23.03
	EM19C080	0.080	0.750	0.500	0.156	\$25.09	\$25.09	\$23.03	\$23.03	\$23.03
	EM19C090	0.090	0.750	0.500	0.156	\$25.09	\$25.09	\$23.03	\$23.03	\$23.03
	EM19C100	0.100	0.750	0.500	0.156	\$28.15	\$28.15	\$26.08	\$26.08	\$26.08
C6	EM19C110	0.110	0.750	0.500	0.156	\$28.15	\$28.15	\$26.08	\$26.08	\$26.08
	EM19C118	3MM/.118	0.750	0.500	0.156	\$28.15	\$28.15	\$26.08	\$26.08	\$26.08
	EM19C120	0.120	0.750	0.500	0.156	\$28.15	\$28.15	\$26.08	\$26.08	\$26.08
	EM19C125	0.125	0.750	0.500	0.156	\$28.15	\$28.15	\$26.08	\$26.08	\$26.08
	EM19C130	0.130	0.750	0.500	0.156	\$28.37	\$28.37	\$26.30	\$26.30	\$26.30
	EM19C140	0.140	0.750	0.500	0.156	\$28.37	\$28.37	\$26.30	\$26.30	\$26.30
C7	EM19C150	0.150	0.750	0.500	0.156	\$28.72	\$28.72	\$26.86	\$26.86	\$26.86
	EM19C156	0.156	0.750	0.500	0.156	\$29.96	\$29.96	\$27.00	\$27.00	\$27.00
	EM19C157	4MM/.157	0.750	0.500	0.156	\$29.96	\$29.96	\$28.11	\$28.11	\$28.11
	EM19C160	0.160	0.750	0.500	0.156	\$29.96	\$29.96	\$28.11	\$28.11	\$28.11
	EM19C170	0.170	0.750	0.500	0.156	\$25.65	\$25.65	\$23.80	\$23.80	\$23.80
	EM19C180	0.180	0.750	0.500	0.156	\$25.65	\$25.65	\$23.80	\$23.80	\$23.80
C8	EM19C187	0.187	0.750	0.500	0.156	\$26.91	\$26.91	\$25.05	\$25.05	\$25.05
	EM19C190	0.190	0.750	0.500	0.156	\$26.91	\$26.91	\$25.05	\$25.05	\$25.05
	EM19C197	5MM/.197	0.750	0.500	0.156	\$26.91	\$26.91	\$25.05	\$25.05	\$25.05
	EM19C200	0.200	0.750	0.500	0.156	\$28.01	\$28.01	\$26.15	\$26.15	\$26.15
	EM19C210	0.210	0.750	0.500	0.156	\$29.22	\$29.22	\$27.16	\$27.16	\$27.16
	EM19C220	0.220	0.750	0.500	0.156	\$29.22	\$29.22	\$27.16	\$27.16	\$27.16
C9	EM19C236	6MM/.236	0.750	0.500	0.156	\$30.25	\$30.25	\$28.19	\$28.19	\$28.19
	EM19C250	0.250	0.750	0.500	0.156	\$31.77	\$31.77	\$29.71	\$29.71	\$29.71

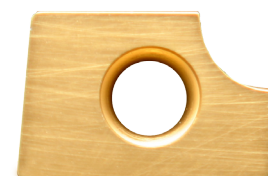
Inserts for concave Radii .170 and above are single ended only.

MADE IN **USA**



Match the insert to the radius you are cutting:

Order example:
If you purchase **SUPERBEE®** cutter #BE6411964C250 you will want to purchase insert #EM19C250 (specify grade).



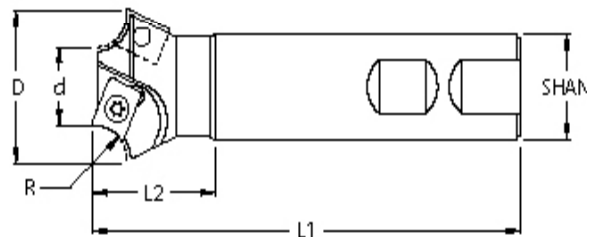
Specify Hone:
E = Honed Edge
F = Sharp Edge

E=APPROXIMATE LENGTH *SE=SINGLE END INSERT

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SERIES C251 THROUGH C1000 LARGE CONCAVE RADIUS .250 - 1.000

MADE IN **USA**



MADE IN **USA** PATENT NUMBER 6,053,673



GTO

Would you like to try **SWIFT-CARB CNC**, **SUPERBEE®**, or **NEW-LUBE®**, products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order).

Patented geometry breaks 90 degree arc into smaller segments for smoother, faster cutting.

WELDON SHANK SERIES BC-LARGE

PART NUMBER	R	D	d	SHANK	L1	L2	FLUTES	INSERT RANGE	LIST
BC4821564C250	.250-.280	1.250	0.750	1.000	4.500	1.250	2	EC15C250-EC15C280	\$172.70
BC4821564C281	.281-.311	1.312	0.750	1.000	4.500	1.250	2	EC15C281-EC15C311	\$173.80
BC4821564C312	.312-.342	1.375	0.750	1.000	4.500	1.250	2	EC15C312-EC15C342	\$174.90
BC4821564C343	.343-.374	1.437	0.750	1.000	4.500	1.250	2	EC15C343-EC15C374	\$183.70
BC4821564C375	.375-.405	1.500	0.750	1.000	4.500	1.250	2	EC15C375-EC15C405	\$185.90
BC5621980C406	.406-.436	1.687	0.875	1.250	5.000	1.750	2	EC19C406-EC19C436	\$204.60
BC5621980C437	.437-.467	1.750	0.875	1.250	5.000	1.750	2	EC19C437-EC19C467	\$205.70
BC5621980C468	.468-.499	1.812	0.875	1.250	5.000	1.750	2	EC19C468-EC19C499	\$206.80
BC5621980C500	.500-.530	1.875	0.875	1.250	5.000	1.750	2	EC19C500-EC19C530	\$207.90
BC8031580C531	.531-.561	2.312	1.250	1.250	5.000	1.750	3	EC15C531-EC15C561	\$212.30
BC8031580C562	.562-.592	2.375	1.250	1.250	5.000	1.750	3	EC15C562-EC15C592	\$213.40
BC8031580C625	.625-.655	2.500	1.250	1.250	5.000	1.750	3	EC15C625-EC15C655	\$214.50
BC9631980C656	.656-.686	2.812	1.500	1.250	5.000	1.750	3	EC19C656-EC19C686	\$215.60
BC9631980C687	.687-.717	2.875	1.500	1.250	5.000	1.750	3	EC19C687-EC19C717	\$216.70
BC9631980C718	.718-.749	2.937	1.500	1.250	5.000	1.750	3	EC19C718-EC19C749	\$217.80
BC9631980C750	.750-.780	3.000	1.500	1.250	5.000	1.750	3	EC19C750-EC19C780	\$218.90
BC9631980C781	.781-.811	3.062	1.500	1.250	5.000	1.750	3	EC19C781-EC19C811	\$231.00
BC9631980C812	.812-.842	3.125	1.500	1.250	5.000	1.750	3	EC19C812-EC19C842	\$231.00
BC11241980C843	.843-.874	3.437	1.750	1.250	5.250	2.000	4	EC19C843-EC19C874	\$258.50
BC11241980C875	.875-.905	3.500	1.750	1.250	5.250	2.000	4	EC19C875-EC19C905	\$258.50
BC11241980C906	.906-.936	3.562	1.750	1.250	5.250	2.000	4	EC19C906-EC19C936	\$258.50
BC11241980C937	.937-.967	3.625	1.750	1.250	5.250	2.000	4	EC19C937-EC19C967	\$258.50
BC11241980C968	.968-.999	3.687	1.750	1.250	5.250	2.000	4	EC19C968-EC19C999	\$258.50
BC11241980C1000	1.000-1.031	3.750	1.750	1.250	5.250	2.000	4	EC19C1000-EC19C1031	\$258.50

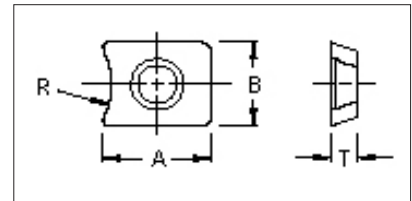
INSERTS FOR THESE CUTTERS ARE ON NEXT PAGE

CARBIDE INSERTS FOR CONCAVE RADIUS SERIES C250 thru C1000 Metric Included

MADE
IN **USA**

NEW!
METRIC SIZES
AVAILABLE!

**CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.**



NEW! Lower Prices due to increase in manufacturing efficiency!

INSERT	RADIUS	EQUIV.	A	B	T520 HONE=E	T530 HONE=E	NT56 HONE=E	NT33 HONE=E or F	NT13 HONE=E
					LIST	LIST	LIST	LIST	LIST
EC15C250	1/4	0.250	0.500	0.375	\$27.64	\$27.64	\$25.59	\$25.59	\$25.59
EC15C275	7MM	0.276	0.500	0.375	\$27.64	\$27.64	\$25.59	\$25.59	\$25.59
EC15C281	9/32	0.281	0.500	0.375	\$27.64	\$27.64	\$25.59	\$25.59	\$25.59
EC15C312	5/16	0.313	0.500	0.375	\$27.64	\$27.64	\$25.59	\$25.59	\$25.59
EC15C315	8MM	0.315	0.500	0.375	\$27.64	\$27.64	\$25.59	\$25.59	\$25.59
EC15C343	11/32	0.344	0.500	0.375	\$28.48	\$28.48	\$26.42	\$26.42	\$26.42
EC15C354	9MM	0.354	0.500	0.375	\$28.48	\$28.48	\$26.42	\$26.42	\$26.42
EC15C375	3/8	0.375	0.500	0.375	\$29.29	\$29.29	\$27.24	\$27.24	\$27.24
EC15C393	10MM	0.394	0.500	0.375	\$29.29	\$29.29	\$27.24	\$27.24	\$27.24
EC19C406	13/32	0.406	0.625	0.500	\$29.84	\$29.84	\$27.79	\$27.79	\$27.79
EC19C433	11MM	0.433	0.625	0.500	\$29.84	\$29.84	\$27.79	\$27.79	\$27.79
EC19C437	7/16	0.438	0.625	0.500	\$29.84	\$29.84	\$27.79	\$27.79	\$27.79
EC19C468	15/32	0.469	0.625	0.500	\$30.78	\$30.78	\$27.79	\$27.79	\$27.79
EC19C472	12MM	0.472	0.625	0.500	\$30.78	\$30.78	\$28.72	\$28.72	\$28.72
EC19C500	1/2	0.500	0.625	0.500	\$30.78	\$30.78	\$28.72	\$28.72	\$28.72
EC19C512	13MM	0.512	0.625	0.500	\$30.78	\$30.78	\$28.72	\$28.72	\$28.72
EC15C531	17/32	0.531	0.500	0.375	\$31.26	\$31.26	\$29.21	\$29.21	\$29.21
EC15C551	14MM	0.551	0.500	0.375	\$31.26	\$31.26	\$29.21	\$29.21	\$29.21
EC15C525	9/16	0.525	0.500	0.375	\$31.26	\$31.26	\$29.21	\$29.21	\$29.21
EC15C590	15MM	0.591	0.500	0.375	\$31.26	\$31.26	\$29.21	\$29.21	\$29.21
EC15C625	5/8	0.625	0.500	0.375	\$31.26	\$31.26	\$29.21	\$29.21	\$29.21
EC15C629	16MM	0.630	0.500	0.375	\$31.26	\$31.26	\$29.21	\$29.21	\$29.21
EC19C656	21/32	0.656	0.625	0.500	\$31.70	\$31.70	\$29.65	\$29.65	\$29.65
EC19C669	17MM	0.669	0.625	0.500	\$31.70	\$31.70	\$29.65	\$29.65	\$29.65
EC19C687	11/16	0.688	0.625	0.500	\$32.37	\$32.37	\$29.65	\$29.65	\$29.65
EC19C708	18MM	0.709	0.625	0.500	\$32.37	\$32.37	\$29.65	\$29.65	\$29.65
EC19C718	23/32	0.719	0.625	0.500	\$32.37	\$32.37	\$29.65	\$29.65	\$29.65
EC19C748	19MM	0.748	0.625	0.500	\$32.37	\$32.37	\$29.65	\$29.65	\$29.65
EC19C750	3/4	0.750	0.625	0.500	\$32.81	\$32.81	\$30.76	\$30.76	\$30.76
EC19C781	25/32	0.781	0.625	0.500	\$32.81	\$32.81	\$30.76	\$30.76	\$30.76
EC19C787	20MM	0.787	0.625	0.500	\$32.81	\$32.81	\$30.76	\$30.76	\$30.76
EC19C812	13/16	0.813	0.625	0.500	\$32.81	\$32.81	\$30.76	\$30.76	\$30.76
EC19C826	21MM	0.826	0.625	0.500	\$32.84	\$32.84	\$30.76	\$30.76	\$30.76
EC19C843	27/64	0.843	0.625	0.500	\$32.84	\$32.84	\$30.76	\$30.76	\$30.76
EC19C866	22MM	0.866	0.625	0.500	\$32.84	\$32.84	\$30.76	\$30.76	\$30.76
EC19C875	7/8	0.875	0.625	0.500	\$32.84	\$32.84	\$30.76	\$30.76	\$30.76
EC19C906	23MM	0.906	0.625	0.500	\$32.84	\$32.84	\$30.76	\$30.76	\$30.76
EC19C937	15/16	0.937	0.625	0.500	\$32.84	\$32.84	\$30.76	\$30.76	\$30.76
EC19C944	24MM	0.944	0.625	0.500	\$32.84	\$32.84	\$30.76	\$30.76	\$30.76
EC19C984	25MM	0.948	0.625	0.500	\$32.84	\$32.84	\$30.76	\$30.76	\$30.76
EC19C1000	1	1.000	0.625	0.500	\$32.84	\$32.84	\$30.76	\$30.76	\$30.76



Match the insert to the radius you are cutting:

Order example:
If you purchase
SUPERBEE® cutter
#BC5621980C500 you
will want to purchase
insert #EC19C500
(specify grade).

SEE APPLICATION
CHART ON PAGE 40
FOR INFORMATION
ON SELECTING THE
PROPER GRADE. OR
CALL 800-227-9876
FOR TECHNICAL
ASSISTANCE.

**ALL INSERTS LISTED
HERE ARE SINGLE END.**

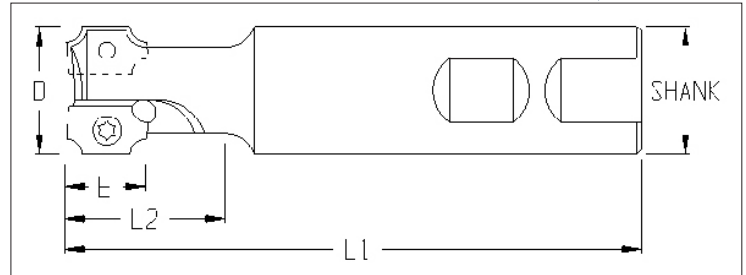
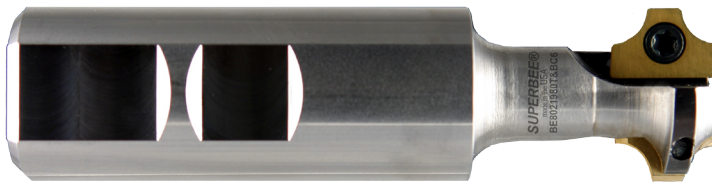
MADE
IN **USA**

CONCAVE RADIUS TOP & BOTTOM CUTTERS SERIES C1 - C6 Metric Included

NEW!

SERIES "T&B" CORNER ROUNDDING CARBIDE

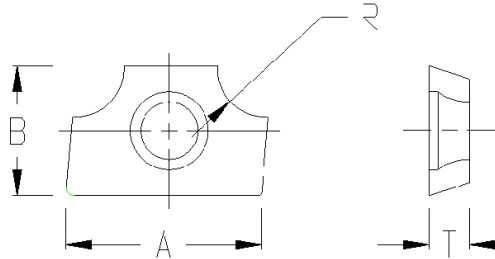
The fastest way
to Machine a
180° radius



WELDON SHANK T&B SERIES CONCAVE CUTTERS

Top & Bottom Cutter Bodies		D	SHANK	L1	L2	FLUTES	E	INSERT	LIST
PART NUMBER									
BE6421548T&BC#	C1 - C2	1.000	0.750	4.500	1.250	2	0.625	EM15	\$318.00
BE6421564T&BC#	C1 - C2	1.000	1.000	4.500	1.250	2	0.625	EM15	\$298.00
BE8021980T&BC#	C1 - C6	1.250	1.250	5.000	1.750	2	0.750	EM19	\$327.00
BE8031580T&BC#	C1 - C2	1.250	1.250	5.000	1.750	3	0.625	EM15	\$357.00

INSERTS FOR THESE CUTTERS ARE SHOWN BELOW



GTO

Would you like to try *SWIFT-CARB CNC*, *SUPERBEE®*, or *NEW-LUBE®*, products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order).

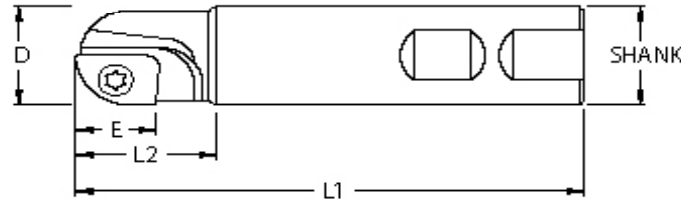
T&B SERIES CONCAVE INSERTS

Top & Bottom Inserts					T520, HONE=E	T530, HONE=E	NT56, HONE=E	NT33, HONE=E or F	NT13, HONE=E
RANGE	PART NUMBER	DEC/MET	A	B	T	LIST	LIST	LIST	LIST
C1	EM15C030T&B	0.030	0.625	0.375	0.125	\$29.99	\$29.99	\$27.19	\$27.19
EM15	EM15C0393T&B	1MM/.0393	0.625	0.375	0.125	\$29.99	\$29.99	\$27.19	\$27.19
	EM15C060T&B	0.060	0.625	0.375	0.125	\$29.99	\$29.99	\$27.19	\$27.19
	EM15C0787T&B	2MM/.0787	0.625	0.375	0.125	\$32.70	\$32.70	\$29.90	\$29.90
	EM15C090T&B	0.090	0.625	0.375	0.125	\$32.70	\$32.70	\$29.90	\$29.90
C2	EM15C118T&B	3MM/.118	0.625	0.375	0.125	\$35.60	\$35.60	\$32.80	\$32.80
EM15	EM15C120T&B	0.120	0.625	0.375	0.125	\$35.60	\$35.60	\$32.80	\$32.80
	EM15C125T&B	0.125	0.625	0.375	0.125	\$35.60	\$35.60	\$32.80	\$32.80
C3	EM19C156T&B	0.156	0.750	0.500	0.156	\$41.18	\$41.18	\$38.28	\$38.28
EM19	EM19C157T&B	4MM/.157	0.750	0.500	0.156	\$42.18	\$42.18	\$39.28	\$39.28
C4	EM19C187T&B	0.187	0.750	0.500	0.156	\$44.18	\$44.18	\$41.28	\$41.28
C5	EM19C197T&B	5MM/.197	0.750	0.500	0.156	\$45.18	\$45.18	\$42.28	\$42.28
C6	EM19C236T&B	6MM/.236	0.750	0.500	0.156	\$50.99	\$50.99	\$48.09	\$48.09
EM19	EM19C250T&B	0.250	0.750	0.500	0.156	\$53.99	\$53.99	\$51.09	\$51.09

MADE
IN **USA**

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SERIES BB - BALL END CUTTERS



MADE IN **USA**

ALL OF THESE **SUPERBEE®** CUTTERS COME IN 5/8", 3/4", 7/8", AND 1" BALL ENDS.

**WELDON SHANK
SERIES BB**

PART NUMBER	D	SHANK	L1	L2	FLUTES	E	INSERT	LIST
BB4011440	0.625	0.625	3.375	1.000	1	0.625	EB14	\$108.90
BB40114402M	0.625	0.625	4.250	2.000	1	0.625	EB14	\$358.28
BB40114403S	0.625	0.625	4.750	3.000	1	0.625	EB14	\$414.85
BB4811548	0.750	0.750	4.000	1.250	1	0.625	EB15	\$124.30
BB4811548225M	0.750	0.750	4.750	2.250	1	0.625	EB15	\$414.85
BB48115483M	0.750	0.750	5.500	3.000	1	0.625	EB15	\$414.85
BB481154835M	0.750	0.750	6.000	3.500	1	0.625	EB15	\$434.34
BB5611948	0.875	0.750	4.500	1.250	1	0.750	EB19	\$154.55
BB5611964	0.875	1.000	4.500	1.250	1	0.750	EB19	\$142.45
BB6411948	1.000	0.750	4.500	1.250	1	0.750	EB19	\$142.45
BB6411964	1.000	1.000	4.500	1.250	1	0.750	EB19	\$130.35
BB64119642M	1.000	1.000	4.500	2.000	1	0.750	EB19	\$458.85
BB64119643M	1.000	1.000	5.500	3.000	1	0.750	EB19	\$501.60
BB64119644M	1.000	1.000	6.500	4.000	1	0.750	EB19	\$530.51
BB64119645M	1.000	1.000	7.500	5.000	1	0.750	EB19	\$574.51

INSERTS FOR THESE CUTTERS ARE BELOW

SPARE PARTS:

ALL EB15 INSERTS

SCREW: **BS15**
WRENCH: **BW15**

ALL EB19 INSERTS

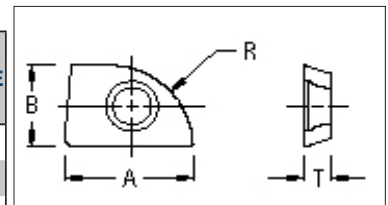
SCREW: **BS19**
WRENCH: **BW19**

SUPERBEE® MADE IN AMERICA

**CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.**

CARBIDE INSERTS FOR BALL END SERIES BB

PART #	BALL	A	B	T	T520	T530	NT56	NT33	NT13	NC57
					HONE=E LIST	HONE=E LIST	HONE=E LIST	HONE=E or F LIST	HONE=E LIST	HONE=E LIST
EB1458	0.625	0.625	0.375	0.125	\$15.72	\$15.72	\$13.57	\$13.57	\$13.57	\$14.84
EB1534	0.750	0.625	0.375	0.125	\$15.72	\$15.72	\$13.57	\$13.57	\$13.57	\$14.84
EB1978	0.875	0.750	0.500	0.156	\$18.78	\$18.78	\$16.62	\$16.62	\$16.62	\$17.88
EB191	1.000	0.750	0.500	0.156	\$18.78	\$18.78	\$16.62	\$16.62	\$16.62	\$17.88



MADE IN **USA**

Please Specify Hone:
E = Honed Edge
F = Sharp Edge

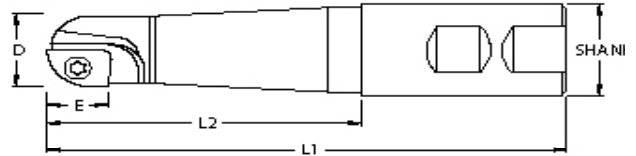


M = DENOTES MACHINABLE CARBIDE SHANK **MACHINABLE CARBIDE CUTTERS ARE MADE TO ORDER AND ARE NOT RETURNABLE.**
E = APPROXIMATE LENGTH

3° SERIES BBD - BACKDRAFT BALL END CUTTERS



MADE
IN USA



ALL OF THESE **SUPERBEE®** BACKDRAFT CUTTERS ARE MADE WITH A MACHINABLE CARBIDE SHANK

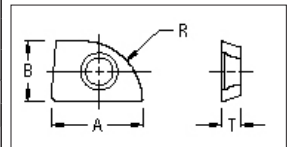
WELDON SHANK SERIES BBD

PART NUMBER	D	SHANK	L1	L2	FLUTES	E	INSERT	LIST
BBD40114643M	0.625	1.000	5.500	3.000	1	0.625	EB14	\$605.80
BBD40114644M	0.625	1.000	6.500	4.000	1	0.625	EB14	\$639.60
BBD48115804M	0.750	1.250	6.500	4.000	1	0.625	EB15	\$635.70
BBD48115805M	0.750	1.250	7.500	5.000	1	0.625	EB15	\$804.70
BBD64119804M	1.000	1.250	6.500	4.000	1	0.750	EB19	\$669.50
BBD64119805M	1.000	1.250	7.500	5.000	1	0.750	EB19	\$817.70
BBD64119806M	1.000	1.250	8.500	6.000	1	0.750	EB19	\$867.10
BBD64119968M	1.000	1.500	10.500	8.000	1	0.750	EB19	\$1,297.40

ALL OF THESE **SUPERBEE®** BACKDRAFT CUTTERS ACCOMMODATE ANY **SUPERBEE®** BALL END INSERT WHICH CAN BE FOUND BELOW!!

CARBIDE INSERTS FOR BACKDRAFT BALL END SERIES BBD

PART NUMBER	BALL	A	B	T	T520	T530	NT56	NT33	NT13	NC57
					HONE=E	HONE=E	HONE=E	HONE=E or F	HONE=E	HONE=E
LIST	LIST	LIST	LIST	LIST	LIST	LIST	LIST	LIST	LIST	LIST
EB1458	0.625	0.625	0.375	0.125	\$15.72	\$15.72	\$13.57	\$13.57	\$13.57	\$14.84
EB1534	0.750	0.625	0.375	0.125	\$15.72	\$15.72	\$13.57	\$13.57	\$13.57	\$14.84
EB1978	0.875	0.750	0.500	0.156	\$18.78	\$18.78	\$16.62	\$16.62	\$16.62	\$17.88
EB191	1.000	0.750	0.500	0.156	\$18.78	\$18.78	\$16.62	\$16.62	\$16.62	\$17.88



Hone: E = Honed Edge F = Sharp Edge

M = DENOTES MACHINABLE CARBIDE SHANK. **MACHINABLE CARBIDE** CUTTERS ARE MADE TO ORDER AND ARE **NOT** RETURNABLE.

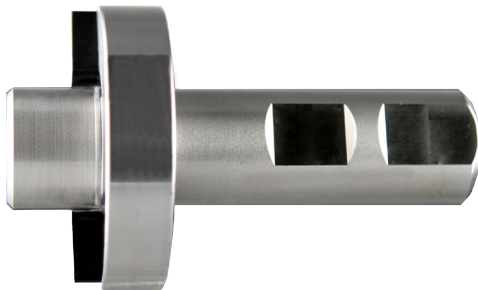
E = APPROXIMATE LENGTH



SHELL MILL HOLDERS

STUB MILL ARBORS

MADE OF HARDENED STEEL AND PRECISION GROUND, THESE ARBORS ARE DESIGNED TO FIT DIRECTLY INTO STANDARD END MILL ADAPTERS.



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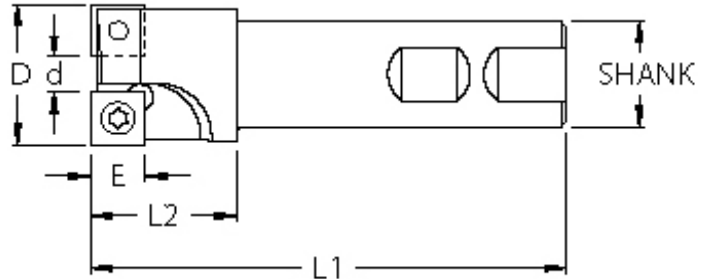


MADE
IN USA

PART NO.	SIZE SHANK X MILL ARBOR	ARBOR THREAD	KEY SIZE	FACE DIA.	O.A.L.	LIST
HSM3434	.750 X .750	3/8" - 24	5/16"	2.000	3.200	\$102.84
HSM341	.750 X 1.000	1/2" - 20	3/8"	2.375	3.200	\$112.57
HSM134	1.000 X .750	3/8" - 24	5/16"	2.000	3.700	\$112.64
HSM11	1.000 X 1.000	1/2" - 20	3/8"	2.375	3.700	\$115.50
HSM11434	1.250 X .750	3/8" - 24	5/16"	2.000	3.700	\$124.60
HSM1141	1.250 X 1.000	1/2" - 20	3/8"	2.375	3.700	\$127.33

PART NO.	SIZE SHANK X MILL ARBOR	O.A.L.	LIST
SMA341	.750 X 1.000	5.000	\$104.08
SMA34114	.750 X 1.250	5.000	\$134.60
SMA11	1.000 X 1.000	5.500	\$114.12
SMA1114	1.000 X 1.250	5.500	\$135.86
SMA114114	1.250 X 1.250	5.500	\$132.40
SMA114112	1.250 X 1.500	5.500	\$144.89

SERIES CB - COUNTERBORE CUTTERS



SUPERBEE® MADE IN AMERICA

ALL OF THESE **SUPERBEE®** COUNTERBORE CUTTERS ACCOMMODATE SD/SP STYLE INSERTS.

**WELDON SHANK
SERIES CB**

MADE
IN **USA**

PART NO.	CAP SCREW	D= DIA.	d= MIN. HOLE SIZE W / .015 RADIUS INSERT	SHANK	L1	L2	FLUTES	E	INSERT	LIST
CB3212140	5/16"	0.500	0.125	0.625	3.250	1.000	1	0.245	SD21.5	\$105.60
CB3813240	3/8"	0.594	0.125	0.625	3.250	1.000	1	0.370	SP32	\$105.60
CB4013240	3/8"	0.625	0.125	0.625	3.250	1.000	1	0.370	SP32	\$106.70
CB4413248	7/16"	0.687	0.125	0.750	3.250	1.000	1	0.370	SP32	\$113.85
CB4822248	7/16"	0.750	0.290	0.750	3.250	1.000	2	0.245	SD22	\$142.45
CB5013248	1/2"	0.781	0.125	0.750	3.250	1.000	1	0.370	SP32	\$149.60
CB5022248	1/2"	0.781	0.321	0.750	3.250	1.000	2	0.245	SD22	\$149.60
CB5622248	9/16"	0.875	0.415	0.750	3.250	1.000	2	0.370	SD22	\$149.60
CB6423248	5/8"	1.000	0.290	0.750	3.250	1.000	2	0.370	SP32	\$161.70
CB6823248	5/8"	1.062	0.352	0.750	3.250	1.000	2	0.370	SP32	\$166.10
CB7633264	3/4"	1.187	0.477	1.000	4.250	1.000	3	0.370	SP32	\$182.05
CB8033264	3/4"	1.250	0.540	1.000	4.250	1.000	3	0.370	SP32	\$198.00
CB8834264	7/8"	1.375	0.415	1.000	4.250	1.000	3	0.495	SP42	\$224.40
CB9634264	1"	1.500	0.540	1.000	4.250	1.000	3	0.495	SP42	\$237.60

INSERTS FOR THESE CUTTERS ARE BELOW

SPARE PARTS:

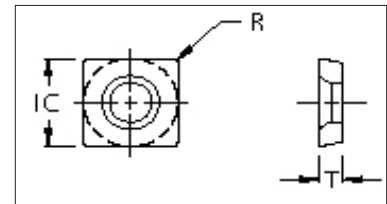
ALL SD2 INSERTS
SCREW: TS25(S)
WRENCH: NT8

ALL SP3 INSERTS
SCREW: CS5
WRENCH: NT9

ALL SP4 INSERTS
SCREW: CS6
WRENCH: NT15

CARBIDE INSERTS FOR COUNTERBORE SERIES CB

PART NO.	R	IC	T	T520 HONE=E	T530 HONE=E	NT56 HONE=E	NT33 HONE=E or F	NT13 HONE=E
				LIST	LIST	LIST	LIST	LIST
SD21.5015	0.015	0.250	0.094	\$12.77	\$12.77	\$10.73	\$10.73	\$10.73
SD21.5030	0.030	0.250	0.094	\$12.77	\$12.77	\$10.73	\$10.73	\$10.73
SD21.5060	0.060	0.250	0.094	\$12.77	\$12.77	\$10.73	\$10.73	\$10.73
SD22010	0.010	0.250	0.125	\$15.19	\$15.19	\$13.15	\$13.15	\$13.15
SD22015	0.015	0.250	0.125	\$12.77	\$12.77	\$10.73	\$10.73	\$10.73
SD22030	0.030	0.250	0.125	\$12.77	\$12.77	\$10.73	\$10.73	\$10.73
SD22060	0.060	0.250	0.125	\$15.19	\$15.19	\$13.15	\$13.15	\$13.15
SP32010	0.010	0.375	0.125	\$14.48	\$14.48	\$12.43	\$12.43	\$12.43
SP32015	0.015	0.375	0.125	\$12.06	\$12.06	\$10.01	\$10.01	\$10.01
SP32030	0.030	0.375	0.125	\$12.06	\$12.06	\$10.01	\$10.01	\$10.01
SP32060	0.060	0.375	0.125	\$14.48	\$14.48	\$12.43	\$12.43	\$12.43
SP32090	0.090	0.375	0.125	\$16.29	\$16.29	\$14.25	\$14.25	\$14.25
SP42010	0.010	0.500	0.125	\$14.72	\$14.72	\$12.54	\$12.54	\$12.54
SP42015	0.015	0.500	0.125	\$13.29	\$13.29	\$11.11	\$11.11	\$11.11
SP42030	0.030	0.500	0.125	\$13.29	\$13.29	\$11.11	\$11.11	\$11.11
SP42060	0.060	0.500	0.125	\$14.72	\$14.72	\$12.54	\$12.54	\$12.54
SP42090	0.090	0.500	0.125	\$16.53	\$16.53	\$14.36	\$14.36	\$14.36



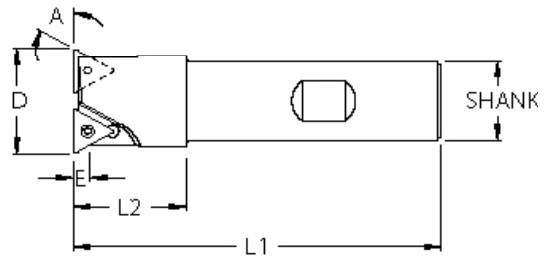
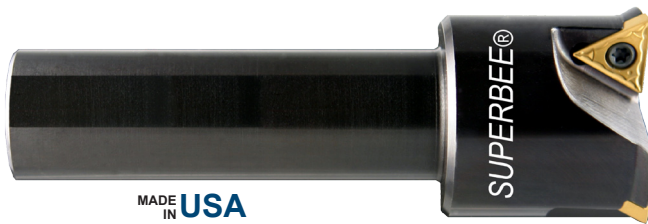
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Please Specify Hone: E = Honed Edge F = Sharp Edge

E = APPROXIMATE LENGTH

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SERIES DT - DOVETAIL CUTTERS



PART NUMBER	D	SHANK	L1	L2	ANGLE	FLUTES	E	INSERT	WRENCH	SCREW	LIST
DT4813240A60	0.750	0.625	3.375	1.000	60°	1	0.211	TCMT32.5	NT15	TS4	\$86.35
DT6422148A60	1.000	0.750	4.250	1.000	60°	2	0.149	TCMT21.5	NT8	TS25	\$130.90
DT11233264A60	1.750	1.000	4.750	1.500	60°	3	0.211	TCMT32.5	NT15	TS4	\$184.80

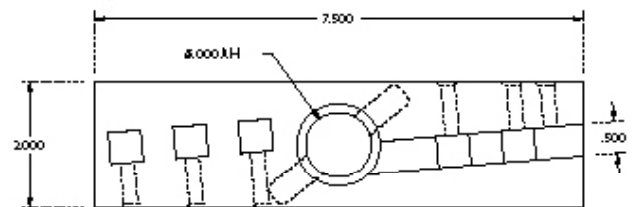
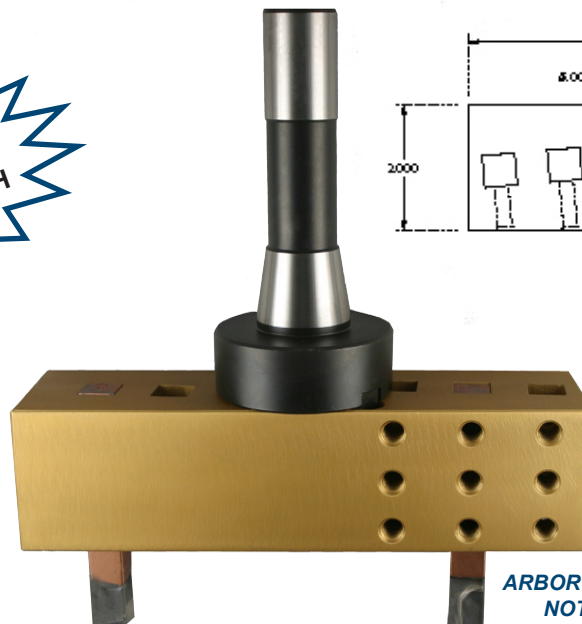
Dovetail cutters use standard TCMT inserts

**CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.**

SUPERFLY-2 - FLY CUTTERS



***uses standard
shell mill holder
w/ 1" arbor**



GTO

Would you like to try **SWIFT-CARB CNC**, **SUPERBEE®**, or **NEW-LUBE®**, products for 30 days at no obligation? Tell our sales department you'd like a GTO (Guaranteed Trial Order).

**ARBOR AND TOOLBITS
NOT INCLUDED**

PART NO.	CUTTING DIAMETER	FLUTES	AH	OUTSIDE DIMENSIONS	INSERT	LIST
SUPERFLY-2	3.00 - 10.00	1	1.000	2.000H x 2.000W x 7.500L	.500 SQ. TOOLBIT	\$163.87

MADE IN **USA**

Copyright © 2007 New Tech Cutting Tools, Inc.

INDUSTRY STANDARD BORING BARS - 80° DIAMOND POSITIVE RAKE

STEEL INTEGRATED SHANKS (S)

OR

MACHINABLE CARBIDE INTEGRATED SHANKS (M)

Use your own industry standard inserts.



USES INDUSTRY STANDARD CCMT OR TCMT INSERTS

PART NUMBER	MIN. BORE DIAMETER	SHANK	H	F	K	L1	L2	INSERT	SCREW	WRENCH	LIST
SSCLCR-062S	0.500	0.375	0.340	0.250	12°	5.000	0.625	CCMT21.5	TS25	NT8	\$73.64
SSCLCR-062M	0.500	0.375	0.340	0.250	12°	6.000	0.625	CCMT21.5	TS25	NT8	\$154.70
SSCLCR-082S	0.625	0.500	0.460	0.313	10°	5.000	0.750	CCMT21.5	TS25	NT8	\$79.14
SSCLCR-082M	0.625	0.500	0.460	0.313	10°	6.000	0.750	CCMT21.5	TS25	NT8	\$245.70
SSCLCR-103S	0.812	0.625	0.560	0.406	10°	7.000	1.250	CCMT32.5	TS4	NT15	\$98.95
SSCLCR-103M	0.812	0.625	0.560	0.406	10°	7.000	1.250	CCMT32.5	TS4	NT15	\$305.50
SSCLCR-123S	1.000	0.750	0.700	0.500	8°	8.000	1.875	CCMT32.5	TS4	NT15	\$108.85
SSCLCR-123M	1.000	0.750	0.700	0.500	8°	8.000	1.875	CCMT32.5	TS4	NT15	\$453.70
SSCLCR-163S	1.281	1.000	0.910	0.641	7°	12.000	2.500	CCMT32.5	TS4	NT15	\$175.94
SSCLCR-163M	1.281	1.000	0.910	0.641	7°	12.000	2.500	CCMT32.5	TS4	NT15	\$635.70

"S" AT THE END OF THE ORDER NUMBER IS FOR STEEL OR "M" FOR MACHINABLE CARBIDE INTEGRATED SHANK.
USES SECO/CARBOLOY, SANDVIK, TOSHIBA, VALENITE, RTW, MITSUBISHI OR ANY STANDARD CCMT OR TCMT INSERTS

INDUSTRY STANDARD BORING BARS - TRIANGLE POSITIVE RAKE

STEEL INTEGRATED SHANKS (S)

OR

MACHINABLE CARBIDE INTEGRATED SHANKS (M)

Use your own industry standard inserts.



USES INDUSTRY STANDARD CCMT OR TCMT INSERTS

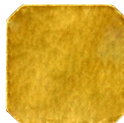
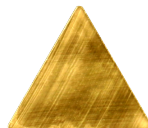
PART NUMBER	MIN. BORE DIAMETER	SHANK	H	F	K	L1	L2	INSERT	SCREW	WRENCH	LIST
SSTUCR-062S	0.500	0.375	0.340	0.250	12°	5.000	0.625	TCMT21.5	TS25	NT8	\$73.64
SSTUCR-062M	0.500	0.375	0.340	0.250	12°	6.000	0.625	TCMT21.5	TS25	NT8	\$154.70
SSTUCR-082S	0.625	0.500	0.460	0.313	10°	5.000	0.750	TCMT21.5	TS25	NT8	\$79.14
SSTUCR-082M	0.625	0.500	0.460	0.313	10°	6.000	0.750	TCMT21.5	TS25	NT8	\$245.70
SSTUCR-103S	0.812	0.625	0.560	0.406	10°	7.000	1.250	TCMT32.5	TS4	NT15	\$98.95
SSTUCR-103M	0.812	0.625	0.560	0.406	10°	7.000	1.250	TCMT32.5	TS4	NT15	\$305.50
SSTUCR-123S	1.000	0.750	0.700	0.500	8°	8.000	1.875	TCMT32.5	TS4	NT15	\$108.85
SSTUCR-123M	1.000	0.750	0.700	0.500	8°	8.000	1.875	TCMT32.5	TS4	NT15	\$453.70
SSTUCR-163S	1.281	1.000	0.910	0.641	7°	12.000	2.500	TCMT32.5	TS4	NT15	\$175.94
SSTUCR-163M	1.281	1.000	0.910	0.641	7°	12.000	2.500	TCMT32.5	TS4	NT15	\$635.70

"S" AT THE END OF THE ORDER NUMBER IS FOR STEEL OR "M" FOR MACHINABLE CARBIDE INTEGRATED SHANK.
USES SECO/CARBOLOY, SANDVIK, TOSHIBA, VALENITE, RTW, MITSUBISHI OR ANY STANDARD CCMT OR TCMT INSERTS

MADE IN USA

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MADE IN
U.S.A.**STANDARD MILLING INSERTS**MADE IN
U.S.A.MADE
IN **USA**

STANDARD MILLING INSERTS					PICTURE
PART NUMBER	T520 LIST	NT5T LIST	NT33 LIST	NT56 LIST	
FITS SANDVIK, MITSUBISHI, AND SECO					
SECN42AFE	\$7.68	\$6.95	\$5.56	\$5.56	
SECN42AFF	\$7.68	\$6.95	\$5.56	\$5.56	
SEEN42AFE	\$7.68	\$6.95	\$5.56	\$5.56	
SEEN42AFF	\$7.68	\$6.95	\$5.56	\$5.56	
SECN42EFE	\$7.68	\$6.95	\$5.56	\$5.56	
SECN42EFF	\$7.68	\$6.95	\$5.56	\$5.56	
SEEN42EFE	\$7.68	\$6.95	\$5.56	\$5.56	
SEEN42EFF	\$7.68	\$6.95	\$5.56	\$5.56	
FITS KENNAMETAL® AND VALENTINE®					
SEEW43AFE	\$14.72	\$13.32	\$12.41	\$12.41	
FITS SANDVIK					
SEM43AFE	\$10.35	\$10.45	\$8.04	\$8.04	
SPG 421	\$8.16	\$7.70	\$5.98	\$5.98	
SPG 422	\$8.16	\$7.70	\$5.98	\$5.98	
SPG 423	\$8.16	\$7.70	\$5.98	\$5.98	
SPG 631	\$13.16	\$13.55	\$10.45	\$10.45	
SPG 632	\$13.09	\$13.55	\$10.45	\$10.45	
SPG 633	\$13.16	\$13.55	\$10.45	\$10.45	
ALSO FITS SPG TYPE FACE MILLS					
SPKN42EER	\$6.69	\$5.94	\$4.51	\$4.51	
SPKN42EFR	\$6.69	\$5.94	\$4.51	\$4.51	
TPG321	\$6.94	\$6.38	\$4.90	\$4.90	
TPG322	\$6.94	\$6.38	\$4.90	\$4.90	
TPG323	\$6.94	\$6.38	\$4.90	\$4.90	
TPG431	\$9.02	\$9.13	\$6.71	\$6.71	
TPG432	\$9.02	\$9.13	\$6.71	\$6.71	
TPG433	\$9.02	\$9.13	\$6.71	\$6.71	
ALSO FITS TPG TYPE FACE MILLS					
TPKN32PER	\$5.83	\$5.69	\$3.78	\$3.78	
TPKN32PFR	\$5.83	\$5.69	\$3.78	\$3.78	
TPKN43PER	\$8.04	\$8.60	\$5.73	\$5.73	
TPKN43PFR	\$8.04	\$8.60	\$5.73	\$5.73	

ELIMINATING STOCK**CALL FOR SPECIAL
PRICING
WHILE SUPPLIES LAST****CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.****SUPERBEE® ACCESSORIES**MADE
IN **USA**

PART NO.	LIST
WRENCHES	
BW15 (T-15)	\$8.53
BW19 (T-20)	\$8.53

PART NO.	LIST
FLAG WRENCHES	
NT8 (T-8)	\$4.85
NT9 (T-9)	\$5.18
NT15 (T-15)	\$6.82
NT19 (T-19)	\$6.82

PART NO.	LIST
SCREWS	
BS15	\$1.56
BS19	\$1.56

PART NO.	LIST
SCREWS	
TS25	\$1.87
CS3	\$1.56
CS5	\$1.56
CS6	\$1.87
TS4	\$1.87

MADE IN
U.S.A.

NEW-LUBE® • NEW-LUBE® • NEW-LUBE®

MADE IN
U.S.A.

NEW-LUBE® MODULAR SPRAY APPLICATOR SYSTEMS

Patent Number 5,086,878

MADE
IN **USA**

Efficient, reliable, sturdy, the **NEW-LUBE®** Micro-Spray delivery system was the first of its kind (and still the best) anywhere in the world today. Removes guesswork, reduces clean up, and when used in conjunction with our lubricants, is environmentally friendly.

Filter/Regulator/Gage. Non-rising adjustment knob. Excellent water removal. Five micron filter. Sealed piston for extended life.

**Guaranteed
30 day Trial
Order!**



Don't work around your lubricant system. Strong magnet lets you mount the hose in a convenient place. Durable plastic hose facilitates your aim. Tips are replaceable and come with either 1/8" or 1/16" diameter holes.



Patent Number 5,086,878

Break-resistant reservoir holds hours of NEW-LUBE fluid.



This optional solenoid or air pilot valve lets your CNC machinery control the flow. Program lubricant delivery on and off with CNC M-code. Available in 110VAC or 24VDC.

**CALL 800-227-9876 TO
FIND YOUR NEAREST
DISTRIBUTOR.**

Our patented flow splitter provides equal distribution of air and fluid to as many as 18 lines.

OUR MODULAR FLOW SPLITTER.

You told us that as much as you liked our NEW-LUBE micro-spray applicator, you would like it more if you could add hoses. The problem? Until now there wasn't a way to keep the flow equal among a number of outlets. We've removed that restriction. If you already own a NEW-LUBE applicator you can get a splitter as a modular component and add up to six hoses.



Patent Number 5,333,640

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NEW-LUBE®**MODULAR SPRAY APPLICATOR SYSTEMS****SIMPLY A BETTER APPLICATOR**

Patent Numbers 5,086,878 & 5,333,640

This simple comparison will show you that the **NEW-LUBE®** applicator is easier to use, more versatile and less expensive than other similar applicator units!

NEW-LUBE®**COMPETITION****MODULAR COMPONENTS - CHANGE ANYTIME**

1/3 to 1/4 the cost of the competition.

Consistent delivery of fluid.

Accurate and truly measurable applicator can be conveniently turned off/on at the nozzle.

Set the fluid flow without help or guesswork (4 drops per minute).

Automatic variable fluid to air ratio.
Fluid increases or decreases proportionately with adjustments to air flow.

NO MOVING PARTS!

Less than 1/2 the air consumption (20 psi min.) 1/2 CFM. Our air regulator means NO PROBLEM with fluctuations in shop air!

YOU'RE STUCK

\$600.00 to \$900.00

One pulse every three seconds.

Put hand in front of nozzle and guess.

Must be turned on/off at box.

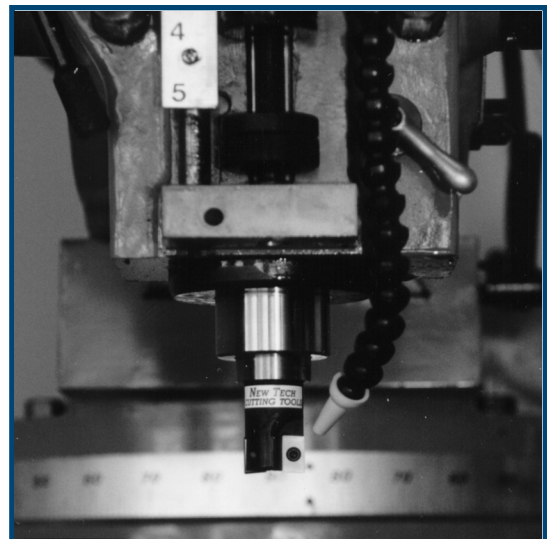
Sales Representative must train customer on setup and adjustment.

Adjust
Adjust again... Adjust again...

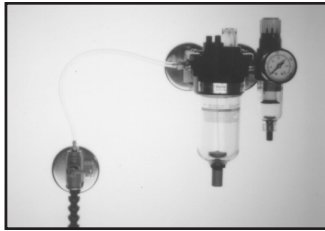
Actuator valves, Pumps, Timers.

More than twice the air consumption (60 psi min.) 2X CFM. And because of the high air requirement fluctuations in shop air can be a problem.

Apply **NEW-LUBE®** lubricant to the face of the cutting edge of the tool before the tool enters the cut. The closer the nozzle is to the tool the better. Ideally the distance should be 1" to 4".



INVEST IN ANY OF THESE **NEW-LUBE®** STANDARD MODULAR MICRO-SPRAY APPLICATORS...



Shown: NL1M

NL1M
(applicator, one
hose, magnetic
mount, completely
assembled)

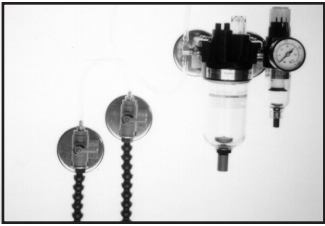
Sale Price: \$255.00

**NL1MS110AC or
NL1MS24DC**
(adds 110V or 24V
solenoid for electric
activation)

Sale Price:
NL1MS110AC = \$305.00
NL1MS24DC = \$305.00

NL1MAP
(adds air pilot valve
for air activation)

Sale Price: \$305.00



Shown: NL2M

NL2M
(applicator, two
hoses, magnetic
mounts, completely
assembled)

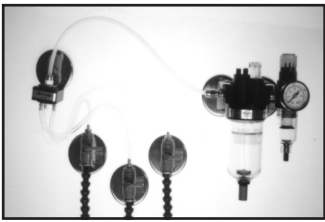
Sale Price: \$295.00

**NL2MS110AC or
NL2MS24DC**
(adds 110V or 24V
solenoid for electric
activation)

Sale Price:
NL2MS110AC = \$345.00
NL2MS24DC = \$345.00

NL2MAP
(adds air pilot valve
for air activation)

Sale Price: \$345.00



Shown: NL3M

NL3M
(applicator, three
hoses - our unique
splitter guarantees
equal streams -
magnetic mounts)

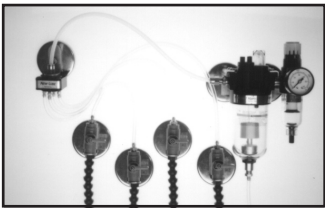
Sale Price: \$398.00

**NL3MS110AC or
NL3MS24DC**
(adds 110V or 24V
solenoid for electric
activation)

Sale Price:
NL3MS110AC = \$445.00
NL3MS24DC = \$445.00

NL3MAP
(adds air pilot valve
for air activation)

Sale Price: \$445.00



Shown: NL4M

NL4M
(applicator, four
hoses - our unique
splitter guarantees
equal streams -
magnetic mounts)

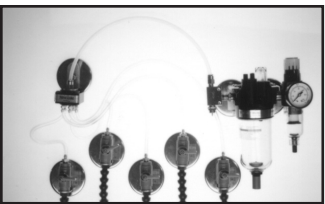
Sale Price: \$468.50

**NL4MS110AC or
NL4MS24DC**
(adds 110V or 24V
solenoid for electric
activation)

Sale Price:
NL4MS110AC = \$518.50
NL4MS24DC = \$518.50

NL4MAP
(adds air pilot valve
for air activation)

Sale Price: \$518.50



Shown: NL5MAP

NL5M
(applicator, five hos-
es - our unique split-
ter guarantees equal
streams - magnetic
mounts)

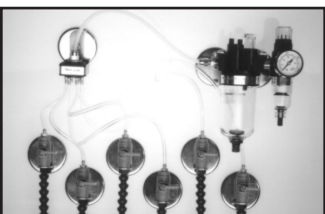
Sale Price: \$520.50

**NL5MS110AC or
NL5MS24DC**
(adds 110V or 24V
solenoid for electric
activation)

Sale Price:
NL5MS110AC = \$570.50
NL5MS24DC = \$570.50

NL5MAP
(adds air pilot valve
for air activation)

Sale Price: \$570.50



Shown: NL6M

NL6M
(applicator, six hoses
- our unique splitter
guarantees equal
streams - magnetic
mounts)

Sale Price: \$548.50

**NL6MS110AC or
NL6MS24DC**
(adds 110V or 24V
solenoid for electric
activation)

Sale Price:
NL6MS110AC = \$598.50
NL6MS24DC = \$598.50

NL6MAP
(adds air pilot valve
for air activation)

Sale Price: \$598.50

MADE IN
U.S.A.

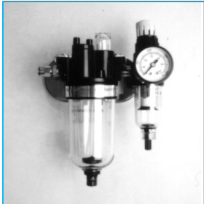
NEW-LUBE® • NEW-LUBE® • NEW-LUBE®

MADE IN
U.S.A.

...OR BUILD A CUSTOM UNIT USING THE **NEW-LUBE®** MODULAR COMPONENTS.

MODULAR COMPONENTS make our applicator easier to operate, more versatile and more cost effective than any other unit! Use with nearly any tool or cutting operation including: milling, turning, drilling, tapping, reaming, grinding, sawing, punch and die, and stamping. The **NEW-LUBE®** MODULAR COMPONENT APPLICATOR is the all-around best cutting tool and metal working lubrication system.

BASE UNIT NLBM



Sale Price: \$198.00

Our unique patented design is the best in the industry. The deatomization chamber nearly eliminates airborne particles. Supplied with bracket and magnets.

Order No.: **NLBM**

SOLENOID NLSM110/NLSM24V



Sale Price: \$55.95

Let your CNC control the lubricant flow with our durable solenoids. Specify modular or in-line.

Order No.:

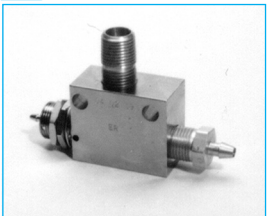
NLSM110V for 110V AC

NLSM24V for 24V DC

In-line: **NLSI110V** or

NLSI24V

AIR PILOT VALVE NLMAP



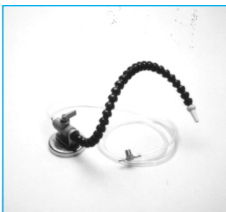
Sale Price: \$55.95

If air controls your production apparatus, use these handy valves to coordinate your coolant flow. Specify modular or in-line.

Order No.: **NLMAP**

Modular

SECOND HOSE KIT NL2HK



Sale Price NL2HK: \$59.95

Sale Price NLHAC: \$50.00 (does not include "T" coupling)

Need to add or replace a second hose to your original unit? Replacement tips also available. Order No.:

NL2HK 2nd Hose Kit (complete)

NLHAC 2nd Hose Kit

HOSE ASSEMBLY NLHA



Sale Price: \$12.00

Need to replace a hose to your original unit?

Order No.:

NLHA (hose only)

HOSE TIPS NLT1/16 AND NLT1/8



Sale Price: \$3.96/pk of 2

Replacement tips also available. Order No.:

NLT1/16 or NLT1/8 (tips only)

TWO HOSE SPLITTER NLFS2



Sale Price: \$79.00

Sure, you could add hoses to a micro-spray applicator, but without our modular flow splitters you'll have one hose blasting out 70% and the rest nearly dry. We've solved that problem with these carefully engineered and tested modular component flow splitters. No other company offers this advantage and you can rest assured that the longevity of these devices is what you've come to expect from **NEW-LUBE®** products.

THREE HOSE SPLITTER NLFS3



Sale Price: \$89.00

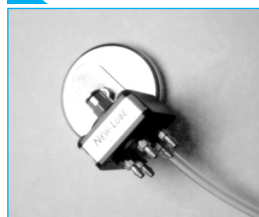
FOUR-HOSE SPLITTER NLFS4



Sale Price: \$125.00

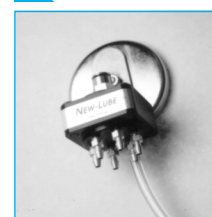
Each splitter comes complete with fittings, bracket, and magnetic mount.

FIVE-HOSE SPLITTER NLFS5



Sale Price: \$150.00

SIX-HOSE SPLITTER NLFS6



Sale Price: \$155.00

Patent Number 5,086,878 & 5,333,640

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MADE IN
U.S.A.

NEW-LUBE® • NEW-LUBE® • NEW-LUBE®

MADE IN
U.S.A.

NOW INDUSTRY CAN AFFORD TO PROTECT THE ENVIRONMENT **NEW-LUBE®**

Protect the environment and improve productivity.

MAXIMIZES PRODUCTIVITY AND PROFITABILITY

Cut down on machine time. Less friction and heat means higher feed rates. **NEW-LUBE®** reduces friction better than flood coolants.

SIMPLIFIES CLEAN UP

NEW-LUBE® is used in small quantities leaving little residual fluid on the machine or parts.

SAFER WORKING ENVIRONMENT FOR YOUR EMPLOYEES

No cutting fluid on the floor. No hazardous materials.

INCREASES TOOL LIFE

High lubricity and viscosity means less heat and friction on the cutting edge.

MADE
IN **USA**



AVOIDS MIST IN THE AIR

NEW-LUBE® applicators spray, they do not atomize the lubricant so there are very few air-borne particles. Environmentally safe.

PROVIDES BETTER SURFACE FINISHES

Helps eliminate tears and smears.

ELIMINATES THE NEED FOR FLOOD COOLANTS IN MOST OPERATIONS.

Less maintenance on machines. No reporting problems with the government. Allows a clear view of the workpiece.

REDUCES COOLANT DISPOSAL PROBLEMS

NEW-LUBE® is consumed in the cut, so there is nothing to dispose of. It's biodegradable and ecologically safe.

"**NEW-LUBE®** LUBRICANTS FOR ALL YOUR CUTTING TOOL NEEDS"

NLF1000HD - "THE CADILLAC OF LUBRICANTS" Heavy duty with EPA (Extreme Pressure Additive). Available in 1, 5, and 55 gallon containers. Ask for part numbers NLF1001HD for 1 gallon (\$79.98), NLF1005HD for 5 gallons (\$379.98), or NLF1055HD for 55 gallons (\$3798.98).

NLF1000 - Heavy duty. Available in 1, 5, and 55 gallon containers. Ask for part numbers NLF1001 for 1 gallon (\$79.98), NLF1005 for 5 gallons (\$379.98), or NLF1055 for 55 gallons (\$3798.98).

NLFE1000 - Same as the above with an emulsifier. Heavy duty. Available in 1, 5, and 55 gallon containers. Ask for part numbers NLFE1001 for 1 gallon (\$79.98), NLFE1005 for 5 gallons (\$379.98), or NLFE1055 for 55 gallons (\$3749.98).

NLFC1000 - Our "PURE" lubricant. No emulsifier. No color. Available in 1, 5, and 55 gallon containers. Ask for part numbers NLFC1001 for 1 gallon (\$79.98), NLFC1005 for 5 gallons (\$379.98), or NLFC1055 for 55 gallons (\$3749.98).

NLF2000 - Medium to heavy duty lubricant. Available in 1, 5, and 55 gallon containers. Ask for part numbers NLF2001 (\$69.98), NLF2005 (\$329.98), NLF2055 (\$3298.98).

NLF6000 - Medium duty for aluminum extrusion. Available in 1, 5, and 55 gallon containers. Ask for part numbers NLF6001 (\$59.98), NLF6005 (\$279.98), NLF6055 (\$2798.98).

NLP1000 - Our paste product. Available in 16 oz. containers. Ask for part number NLP1016 (\$15.79).

NLB1000 - The block form of **NEW-LUBE®**. Available in 4.4 oz. bars packaged 6 per pack-4 packs per case. Ask for part number NLB1000 (\$19.98 per 6 pack. \$79.92 per case - 24 in case).

NEW-TAP® TAPPING FLUIDS

NEW-TAP® Heavy Duty - . For tough jobs. Highest in lubricity. Same as **NEW-TAP®**. Safe EP additive. Environmentally safe. Available in 1 gallon (\$59.98), 5 gallons (\$294.98), 55 gallons (\$2949.98)

NEW-TAP® - Tapping, reaming, and threading fluid that has superior lubricity and is completely environmentally safe. Available in 1 gallon (\$49.98), 5 gallons (\$244.98), 55 gallons (\$2449.98)

ENVIRONMENTALLY SAFE • NO OZONE DEPLETING CHEMICALS

NEW-TAP FLUID™ - A Cutting Fluid That Obeys THE LAW OF NATURE



It's the law. To be in compliance with Title VI of the Clean Air Act Amendments of 1990, since May 15, 1993, any product made using a chemical known to damage the ozone layer must be so labeled.

Not the kind of tag most of us want on the parts we labored hard to bring to market. But, cutting fluids containing ODC's (ozone depleting chemicals) are not the only ones that are effective to do the job. You now have a better option: **NEW-TAP FLUID™**.

NEW-TAP FLUID™ does not contain Petroleum Distillates; does not contain 1,1,1-Trichloroethane; does not contain Chlorine or Sulphur Additives; and does not contain ODC's of any kind. It's biodegradable and environmentally sound, yet has superior lubricity for maximum tool life. Use it for tapping, drilling, reaming, broaching, or threading.

For **NEW-TAP FLUID™** or any of our earth-friendly products, including **NEW-LUBE®** fluid, paste, blocks, or modular micro-spray applicators call **Swift Carb TODAY!**



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