SwiftCARB

A NEW TECH CUTTING TOOLS COMPANY

HIGH PERFORMANCE SOLID CARBIDE & INDEXABLE CUTTING TOOLS

2021

PROUDLY MADE IN THE USA

RAMPMILL

SWIFTCARB.COM

800-227-9876

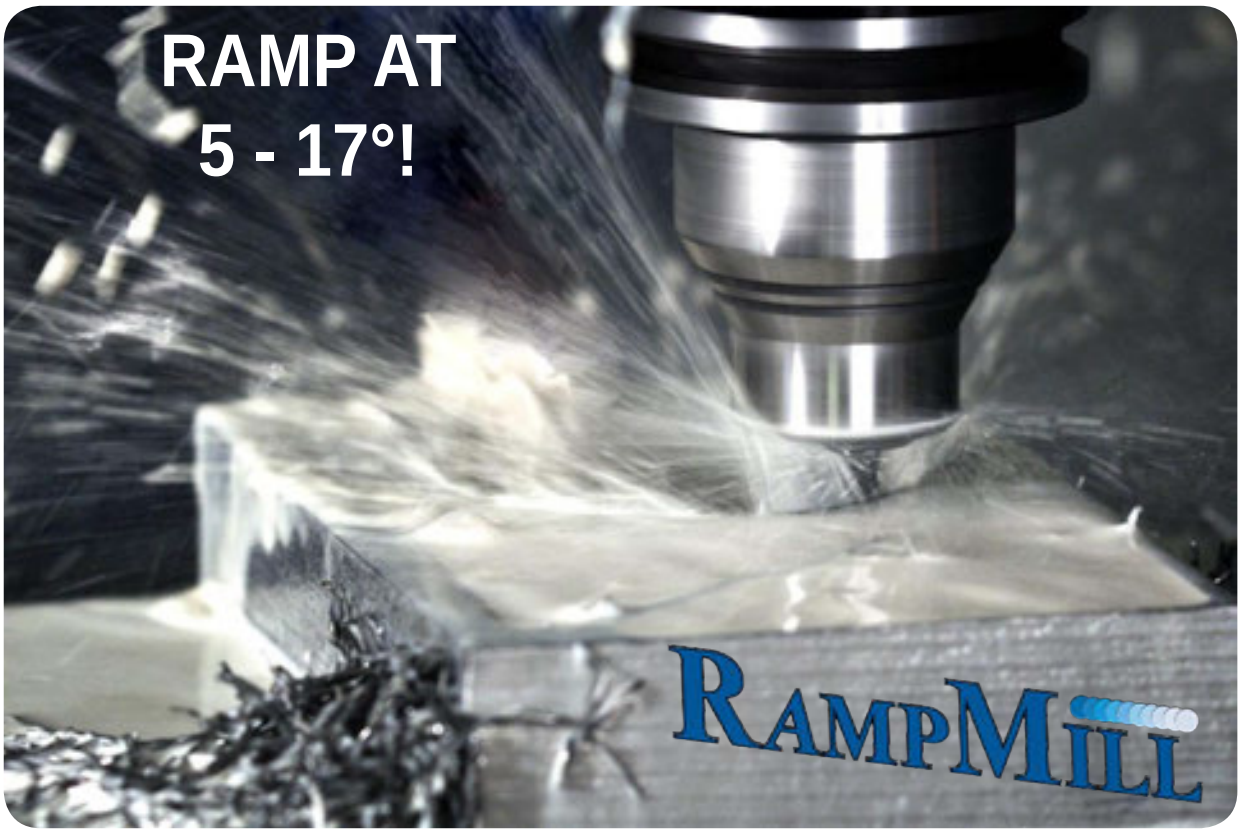
PRODUCTIVITY PROFITS YOUR FUTURE

THE NEW 2021 SWIFTCARB CATALOG

Having the right length tool is essential to getting the most productivity in your application. That's why **SwiftCARB** manufactures all of our high performance tools with a length option at approximately every 1/2 times diameter. That means for every geometry and diameter there are 10 - 15 lengths of cut available, stocked with standard radii & premium coatings.

US Patent: 9,227,253
10,335,870

Patent protected through-coolant hole blasts chips away from the tool increasing feeds & speeds, improving tool life and producing far better finishes than other cutting tools.



RAMPMILL - THE FASTEST WAY TO ROUGH!

The first & best tool engineered specifically for Controlled Engagement Tool Paths, our patended design gives upparalleled results.
RampMill achieves up to 10X greater ramp angles than an end mill.

SUPERBEE INDEXABLE FORM CUTTERS

OVER 100 different sizes of Convex, Concave, Angle and Form Inserts in stock.

MDC COATING

30% greater heat resistance than AlTiN while providing better wear resistance and lubricity. Speeds & feeds are increased up to 25%, tool life as much as 200%.

TRADE POLICIES

QUOTATIONS - All quotations are valid for THIRTY DAYS from the original date. We also reserve the right to correct any inaccuracy on quotations or invoices. Quoted lead times on specials are subject to change, depending on lead time between the initial quote and the actual order date.

RETURNED GOODS - Before returning any item, please contact our sales department **within 30 days of the initial invoice date** to make arrangements for an RME (Returned Merchandise Evaluation). RME paperwork must be completed entirely or the return will be subject to a 20% restock fee and may be rejected. **ALL SPECIAL ORDERS AND MACHINABLE CARBIDE PRODUCTS ARE MADE TO ORDER AND ARE NOT RETURNABLE. CUSTOMER - ALTERED TOOLING WILL NOT BE WARRANTIED AND IS ALSO NOT RETURNABLE.**

OPEN ACCOUNTS - Account terms are Net 30 days. Credit limits are reviewed on a regular basis and are subject to change.

PRODUCT LIABILITY 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 information is printed and released when deemed appropriate. We reserve the right to cancel, change or modify any product we supply.

SHIPPING POLICIES - Standard stock items are shipped the same day as ordered unless otherwise specified providing the order is received by 3:30 PST. All packages are shipped **UPS GROUND** and are insured for full invoice value unless otherwise requested. The freight program **Blue@Ground** is for orders over $150 and under 10lbs for domestic shipments and must be requested as "BLUE@GROUND". Ground rates are calculated as the current UPS ground price plus the current fuel surcharge and insurance charge.

DAMAGED SHIPMENT POLICY - Any item received as damaged due to improper handling or packaging must be inspected on the spot to preserve your right to receive replacement tools. ** **DO NOT REMOVE TOOLS FROM THE PACKAGE OR BOX FROM SHIPPING AREA. **** Contact **SwiftCARB** or **UPS** immediately.

GUARANTEED TRIAL ORDER (G.T.O.) - If you'd like to try **SwiftCARB** or ***SUPERBEE*** products for 30 days with no obligation, ask our sales department about a GTO. Once we have some 0 information about your application and determine whether or not it fits the capabilities of our products, we will guarantee the performance if used with the recommended method, speeds, feeds, and documentation.

All SwiftCARB products are proudly manufactured in the USA!

SwiftCARB

NEW! Add these to any end mill NEW!

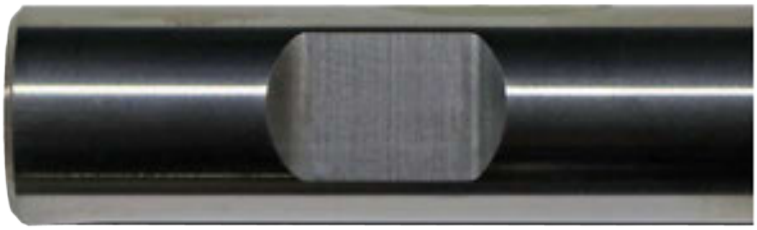
Chip Management Notch: add " -N " to the end of the part number.

SAFE-LOCK®

Safe Lock: add " -S " to the end of the part number.

Available on 5/8", 3/4", 7/8", 1" and 1.25" diameter.

Weldon Flat: add " -W " to the end of the part number.



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RAMPMILL®

+ -BEST ✓ -GOOD
-NOT RECOMMENDED

THE FASTEST WAY TO ROUGH

XD Differential Pitch & Helix HD Roughing RampMill

XT 5, 7, 9 Flute & Extreme RampMill 35° Helix for Exotics

XM 5, 7, 9, 11 Flute 38° Helix Extreme Peripheral Finishers

HIGH PERFORMANCE CARBIDE END MILLS

SD 4, 5, 6 & 7 Flute Differential Pitch & Helix Roughers

NEW!

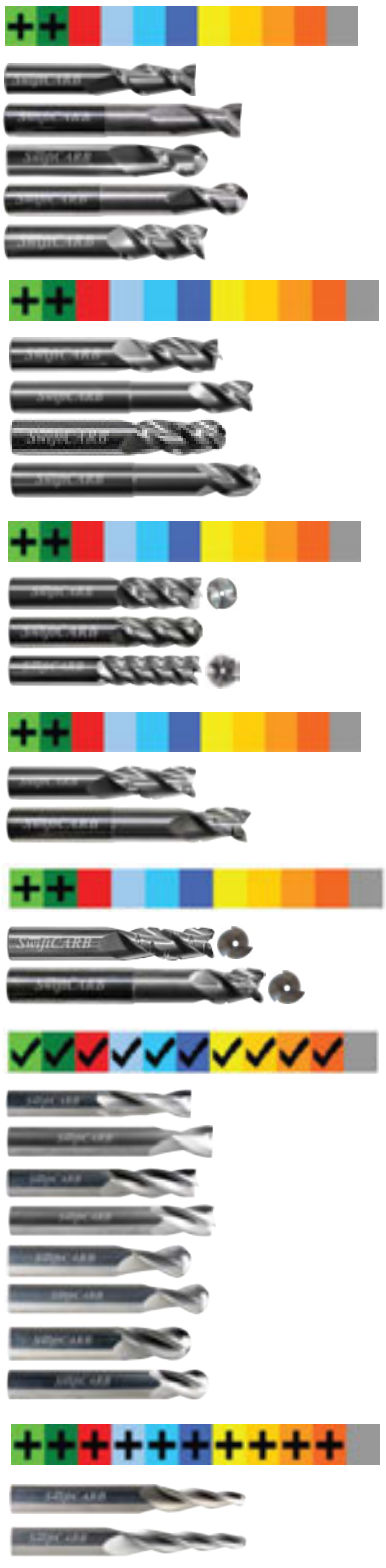
SH 4 Flute Differential Pitch & Helix V-Notch Roughers

SM 5 Flute 38° Helix Medium Peripheral Finisher

SS 3 Flute 35° Helix for Full Slotting

SwiftCARB

+ -BEST ✓ -GOOD
-NOT RECOMMENDED



SPEEDS AND FEEDS ARE LOCATED ON PAGES 135-157

SwiftCARB

SUPERBEE®

NEW COOLANT THROUGH MILLING CUTTERS

INDEXABLE CONVEX RADIUS CUTTERS .007-.500R

INS CX Convex Fillet Radius Inserts

BE CX Convex Fillet Radius Cutters

INDEXABLE CONCAVE RADIUS CUTTERS .010-.250R

INS CV Concave Corner Rounding Radius Inserts

BE CV Concave Corner Rounding Radius Cutters

SPEEDS AND FEEDS ARE LOCATED ON PAGES 135-157

SUPERBEE®

SPEEDS AND FEEDS ARE LOCATED ON PAGES 135-157

SwiftCARB

PVD Coating

MDC
Nano-Composite coating for tough materials
Maximum usage temp: 1,100°C

AlTiN
Universal High Performance coating
Maximum usage temp: 900°C

Super TiN
Special multi-layer TiN coating with Carbon to increase performance (**TiCN + TiN**)

48 hour turnaround on AlTiN coating

Our coating process is designed for a wide variety of tools including:

- END MILLS
- INSERTS
- DRILLS
- DIES
- TAPS
- VALVES
- SAW BLADES
- GEARS
- HOBS
- PUNCHES
- GUN COMPONENTS

RampMill

XD4 Differential Pitch & Helix
4FL Extreme Series Heavy Roughing RampMill

US Patent:
9,227,253
10,335,870

The **XD4 RampMill** has an improved **differential pitch / differential helix** design that reduces harmonic vibration and chatter. The **XD4** can be used in applications from full slotting to light roughing and allows for aggressive ramping and high material removal rates. Its patented end geometry and center through coolant option are ideal for pocketing applications in steel and exotic materials.

- The XD series end geometry allows ramp angles up to six degrees in steel and exotic metals.
- Truncated radius adds corner strength and avoids the wear points of a traditional radius.
- Center coolant hole delivers coolant or air blasting chips away eliminating re-cutting, dramatically increasing tool life.
- Designed to handle any roughing operation.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
XD0375	48I001	T6	0	M		XD037548I001T60M

First 6	Middle 6						End Geometry	Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	Coolant None	Coolant Center	Coating MDC
XD0375	48I001	0.375	4	0.500	0	2.000				
XD0375	4BU003	0.375	4	0.750	0	2.500				
XD0375	4CA003	0.375	4	0.875	0	2.500				
XD0375	4CS005	0.375	4	1.000	0	3.000	T6			
XD0375	4DG005	0.375	4	1.250	0	3.000		0	C	M
XD0375	4E6007	0.375	4	1.500	0	3.500	(.030)			
XD0375	4EW007	0.375	4	1.750	0	3.500				
XD0375	4FK009	0.375	4	2.000	0	4.000				
XD0375	4GS009	0.375	4	2.500	0	4.000				
XD0437	48I004	0.437	4	0.500	0	2.750				
XD0437	4A6004	0.437	4	0.625	0	2.750				
XD0437	4CA004	0.437	4	0.875	0	2.750				
XD0437	4CS004	0.437	4	1.000	0	2.750	TC			
XD0437	4DG004	0.437	4	1.250	0	2.750		0	C	M
XD0437	4E6007	0.437	4	1.500	0	3.500	(.060)			
XD0437	4EW009	0.437	4	1.750	0	4.000				
XD0437	4FK009	0.437	4	2.000	0	4.000				
XD0437	4HY00E	0.437	4	3.000	0	5.000				
XD0500	4A6003	0.500	4	0.625	0	2.500				
XD0500	4CS005	0.500	4	1.000	0	3.000				
XD0500	4DG005	0.500	4	1.250	0	3.000				
XD0500	4E6007	0.500	4	1.500	0	3.500	TC			
XD0500	4EW009	0.500	4	1.750	0	4.000		0	C	M
XD0500	4FK009	0.500	4	2.000	0	4.000	(.060)			
XD0500	4G6009	0.500	4	2.250	0	4.000				
XD0500	4GS00E	0.500	4	2.500	0	5.000				
XD0500	4HY00E	0.500	4	3.000	0	5.000				
XD0625	4BU005	0.625	4	0.750	0	3.000				
XD0625	4DG007	0.625	4	1.250	0	3.500				
XD0625	4EI007	0.625	4	1.625	0	3.500				
XD0625	4FK009	0.625	4	2.000	0	4.000	TC			
XD0625	4G600B	0.625	4	2.250	0	4.500		0	C	M
XD0625	4GS00B	0.625	4	2.500	0	4.500	(.060)			
XD0625	4HY00E	0.625	4	3.000	0	5.000				
XD0625	4II00G	0.625	4	3.250	0	5.500				

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

RAMPMILL

XD4 Differential Pitch & Helix Continued
4FL Extreme Series Heavy Roughing RampMill

US Patent:
9,227,253
10,335,870

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
XD0375	48I001	T6	0	M		XD03754 8I001T60M

First 6	Middle 6						End Geometry	Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	Coolant None	Coolant Center	Coating MDC
XD0750	4BU005	0.750	4	0.750	0	3.000	TC (.060)	0	C	M
XD0750	4CS007	0.750	4	1.000	0	3.500				
XD0750	4DG007	0.750	4	1.250	0	3.500				
XD0750	4E6007	0.750	4	1.500	0	3.500				
XD0750	4EW009	0.750	4	1.750	0	4.000				
XD0750	4G600B	0.750	4	2.250	0	4.500				
XD0750	4GS00E	0.750	4	2.500	0	5.000				
XD0750	4HC00E	0.750	4	2.750	0	5.000				
XD0750	4HY00E	0.750	4	3.000	0	5.000				
XD0750	4II00G	0.750	4	3.250	0	5.500				
XD0750	4J400I	0.750	4	3.500	0	6.000				
XD0750	4KA00I	0.750	4	4.000	0	6.000				
XD0750	4LG00L	0.750	4	4.500	0	7.000				
XD0875	4EI009	0.875	4	1.625	0	4.000	TC (.060)	0	C	M
XD0875	4H200E	0.875	4	2.625	0	5.000				
XD0875	4HY00E	0.875	4	3.000	0	5.000				
XD0875	4JQ00I	0.875	4	3.750	0	6.000				
XD1000	4E6009	1.000	4	1.500	0	4.000	TC (.060)	0	C	M
XD1000	4FK00B	1.000	4	2.000	0	4.500				
XD1000	4GG00E	1.000	4	2.375	0	5.000				
XD1000	4H200E	1.000	4	2.625	0	5.000				
XD1000	4HY00I	1.000	4	3.000	0	6.000				
XD1000	4IU00I	1.000	4	3.375	0	6.000				
XD1000	4JE00I	1.000	4	3.625	0	6.000				
XD1000	4KK00L	1.000	4	4.125	0	7.000				
XD1000	4LG00L	1.000	4	4.500	0	7.000				
XD1000	4MM00P	1.000	4	5.000	0	7.500				
XD1250	4E6009	1.250	4	1.500	0	4.000	TC (.060)	0	C	M
XD1250	4G600B	1.250	4	2.250	0	4.500				
XD1250	4HY00I	1.250	4	3.000	0	6.000				
XD1250	4MM00N	1.250	4	3.625	0	6.000				
XD1250	4L600N	1.250	4	4.375	0	7.500				
XD1250	4MY00N	1.250	4	5.125	0	7.500				
XD1250	4Q000R	1.250	4	6.000	0	9.000				
XD1250	4R300R	1.250	4	6.500	0	9.000				

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

RAMPMILL

XDEL4 Differential Pitch & Helix
4FL Heavy Roughing Extreme RampMill Necked XL

US Patent:
9,227,253
10,335,870

The **XD4 RampMill** has an improved **differential pitch / differential helix** design that reduces harmonic vibration and chatter. The **XD4** can be used in applications from full slotting to light roughing and allows for aggressive ramping and high material removal rates. Its patented end geometry and center through coolant option are ideal for pocketing applications in steel and exotic materials.

- The XD series end geometry allows ramp angles up to six degrees in steel and exotic metals.
- Truncated radius adds corner strength and avoids the wear points of a traditional radius.
- Center coolant hole delivers coolant or air blasting chips away eliminating re-cutting, dramatically increasing tool life.
- Designed to handle any roughing operation.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
XD0375	48I001	T6	0	M		XD037548I001T60M

First 6	Middle 6						End Geometry	Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	Coolant None	Coolant Center	Coating MDC
XD0375	48IBU3	0.375	4	0.500	0.750	2.500	T6 (.030)	0	C	M
XD0375	48ID45	0.375	4	0.500	1.125	3.000				
XD0375	48IE65	0.375	4	0.500	1.500	3.000				
XD0375	48IF87	0.375	4	0.500	1.875	3.500				
XD0375	48IFW9	0.375	4	0.500	2.125	4.000				
XD0375	48IGS9	0.375	4	0.500	2.500	4.000				
XD0375	48II8E	0.375	4	0.500	3.125	5.000				
XD0375	48IKKI	0.375	4	0.500	4.125	6.000				
XD0500	4A6E67	0.500	4	0.625	1.500	3.500	TC (.060)	0	C	M
XD0500	4A6FK9	0.500	4	0.625	2.000	4.000				
XD0500	4A6G69	0.500	4	0.625	2.250	4.000				
XD0500	4A6H2E	0.500	4	0.625	2.625	5.000				
XD0500	4A6HYE	0.500	4	0.625	3.000	5.000				
XD0500	4A6IUE	0.500	4	0.625	3.375	5.000				
XD0500	4A6JEI	0.500	4	0.625	3.625	6.000				
XD0500	4A6KKI	0.500	4	0.625	4.125	6.000				
XD0625	4BUEI9	0.625	4	0.750	1.625	4.000	TC (.060)	0	C	M
XD0625	4BUFK9	0.625	4	0.750	2.000	4.000				
XD0625	4BUGGC	0.625	4	0.750	2.375	4.625				
XD0625	4BUHYE	0.625	4	0.750	3.000	5.000				
XD0625	4BUIUG	0.625	4	0.750	3.375	5.500				
XD0625	4BUJQI	0.625	4	0.750	3.750	6.000				
XD0625	4BUKKI	0.625	4	0.750	4.125	6.000				
XD0625	4BUMML	0.625	4	0.750	5.000	7.000				
XD0750	4CSFK9	0.750	4	1.000	2.000	4.000	TC (.060)	0	C	M
XD0750	4CSG6E	0.750	4	1.000	2.250	5.000				
XD0750	4CSH2E	0.750	4	1.000	2.625	5.000				
XD0750	4CSHYE	0.750	4	1.000	3.000	5.000				
XD0750	4CSIUI	0.750	4	1.000	3.375	6.000				
XD0750	4CSJQI	0.750	4	1.000	3.750	6.000				
XD0750	4CSKKI	0.750	4	1.000	4.125	6.000				
XD0750	4CSMML	0.750	4	1.000	5.000	7.000				
XD0750	4CSQ0P	0.750	4	1.000	6.000	8.000				

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

RAMPMILL

XDEL4 Differential Pitch & Helix Continued
4FL Heavy Roughing Extreme RampMill Necked XL

US Patent:
9,227,253
10,335,870

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
XD1000	4DGG6B	TC	0	M		XD10004DD6BTC0M

First 6	Middle 6						End Geometry	Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	Coolant		Coating
								None	Center	MDC
XD1000	4DGG6B	1.000	4	1.250	2.250	4.500	TC (.060)	0	C	M
XD1000	4DGH2E	1.000	4	1.250	2.625	5.000				
XD1000	4DGHYG	1.000	4	1.250	3.000	5.500				
XD1000	4DGIUI	1.000	4	1.250	3.375	6.000				
XD1000	4DGJQI	1.000	4	1.250	3.750	6.000				
XD1000	4DGKWK	1.000	4	1.250	4.250	6.500				
XD1000	4DGM2L	1.000	4	1.250	4.750	7.000				
XD1000	4DGPEP	1.000	4	1.250	5.750	8.000				
XD1000	4DGRSR	1.000	4	1.250	6.750	9.000				

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

XT5 SERIES
5FL Extreme RampMill

US Patent:
9,227,253
10,335,870

The **XT5 RampMill** allows aggressive ramping and high material removal rates when used with Controlled Radial Engagement / High Efficiency Milling cutter paths. Its patented end geometry and center through coolant option are ideal for pocketing applications in steel and exotic materials.

- Patent protected features engineered for High Efficiency Milling cutter paths allow the RampMill to outperform all other tools using this technology.
- RampMill's end geometry allows ramp angles up to FIVE degrees in steel and exotic metals.
- RampMill's patented design handles the highest tool load.
- Truncated radius adds corner strength and avoids the wear points of a traditional radius.
- Center coolant hole delivers coolant or air blasting chips away eliminating re-cutting, dramatically increasing tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
XT0187	54E001	T3	0	M	=	XT018754E001T30M

First 6	Middle 6						End Geometry	Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	Coolant None	Coolant Center	Coating MDC
XT0187	54E001	0.187	5	0.187	0	2.000	T3	0	C	M
XT0187	55M001	0.187	5	0.281	0	2.000				
XT0187	56W001	0.187	5	0.375	0	2.000	(.015)			
XT0250	558001	0.250	5	0.250	0	2.000	T6	0	C	M
XT0250	56W001	0.250	5	0.375	0	2.000				
XT0250	58I001	0.250	5	0.500	0	2.000	(.030)			
XT0312	562001	0.312	5	0.312	0	2.000	T6	0	C	M
XT0312	584001	0.312	5	0.468	0	2.000				
XT0312	5A6001	0.312	5	0.625	0	2.000	(.030)			
XT0375	56W001	0.375	5	0.375	0	2.000	T6	0	C	M
XT0375	59C003	0.375	5	0.562	0	2.500				
XT0375	5BU003	0.375	5	0.750	0	2.500				
XT0375	5CI003	0.375	5	0.937	0	2.500	(.030)			
XT0375	5D4005	0.375	5	1.125	0	3.000				
XT0437	57Q004	0.437	5	0.437	0	2.750	TC	0	C	M
XT0437	5AK004	0.437	5	0.656	0	2.750				
XT0437	5CA005	0.437	5	0.875	0	3.000				
XT0437	5D2005	0.437	5	1.100	0	3.000	(.060)			
XT0437	5DM007	0.437	5	1.312	0	3.500				
XT0500	58I003	0.500	5	0.500	0	2.500	TC	0	C	M
XT0500	5BU005	0.500	5	0.750	0	3.000				
XT0500	5CS005	0.500	5	1.000	0	3.000				
XT0500	5DG005	0.500	5	1.250	0	3.000	(.060)			
XT0500	5E6007	0.500	5	1.500	0	3.500				
XT0625	5A6005	0.625	5	0.625	0	3.000	TC	0	C	M
XT0625	5CI005	0.625	5	0.937	0	3.000				
XT0625	5DG007	0.625	5	1.250	0	3.500				
XT0625	5EC007	0.625	5	1.563	0	3.500	(.060)			
XT0625	5F8009	0.625	5	1.875	0	4.000				
XT0750	5BU005	0.750	5	0.750	0	3.000	TC	0	C	M
XT0750	5D4005	0.750	5	1.125	0	3.000				
XT0750	5E6007	0.750	5	1.500	0	3.500				
XT0750	5F8009	0.750	5	1.875	0	4.000	(.060)			
XT0750	5G600B	0.750	5	2.250	0	4.500				
XT0875	5CA007	0.875	5	0.875	0	3.500	TC	0	C	M
XT0875	5DM007	0.875	5	1.312	0	3.500				
XT0875	5EW009	0.875	5	1.750	0	4.000	(.060)			
XT1000	5CS007	1.000	5	1.000	0	3.500	TC	0	C	M
XT1000	5E6009	1.000	5	1.500	0	4.000				
XT1000	5FK00B	1.000	5	2.000	0	4.500				
XT1000	5GS00E	1.000	5	2.500	0	5.000	(.060)			
XT1000	5HY00G	1.000	5	3.000	0	5.500				

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

XTEL5 SERIES
5FL Extreme RampMill Necked XL

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9,227,253
10,335,870

The **XTEL5 RampMill** offers a neck relief for longer reach applications. Designed for aggressive ramping and high material removal rates when used with Controlled Radial Engagement / High Efficiency Milling cutter paths. Its patented end geometry and center through coolant option are ideal for pocketing applications in steel and exotic materials.

- Patent protected features engineered for High Efficiency Milling cutter paths allow the RampMill to outperform all other tools using this technology.
- RampMill's end geometry allows ramp angles up to FIVE degrees in steel and exotic metals.
- RampMill's patented design handles the highest tool load.
- Truncated radius adds corner strength and avoids the wear points of a traditional radius.
- Center coolant hole delivers coolant or air blasting chips away eliminating re-cutting, dramatically increasing tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
XT0375	59CBU3	T6	0	M		XT037559CBU3T60M

First 6	Middle 6						End Geometry	Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	Coolant None	Coolant Center	Coating MDC
XT0375	59CBU3	0.375	5	0.562	0.750	2.500	T6 (.030)	0	C	M
XT0375	59CD45	0.375	5	0.562	1.125	3.000				
XT0375	59CE65	0.375	5	0.562	1.500	3.000				
XT0375	59CF87	0.375	5	0.562	1.875	3.500				
XT0375	59CFW9	0.375	5	0.562	2.125	4.000				
XT0375	56WGS9	0.375	5	0.375	2.500	4.000				
XT0375	56WI8E	0.375	5	0.375	3.125	5.000				
XT0375	56WKKI	0.375	5	0.375	4.125	6.000				
XT0500	5BUE67	0.500	5	0.750	1.500	3.500	TC (.060)	0	C	M
XT0500	5BUFK9	0.500	5	0.750	2.000	4.000				
XT0500	5BUG69	0.500	5	0.750	2.250	4.000				
XT0500	5BUH2E	0.500	5	0.750	2.625	5.000				
XT0500	58IHYE	0.500	5	0.500	3.000	5.000				
XT0500	58IIUE	0.500	5	0.500	3.375	5.000				
XT0500	58IJEI	0.500	5	0.500	3.625	6.000				
XT0500	58IKKI	0.500	5	0.500	4.125	6.000				
XT0625	5CIEI9	0.625	5	0.937	1.625	4.000	TC (.060)	0	C	M
XT0625	5CIFK9	0.625	5	0.937	2.000	4.000				
XT0625	5CIGGC	0.625	5	0.937	2.375	4.625				
XT0625	5CIHYE	0.625	5	0.937	3.000	5.000				
XT0625	5CIIUI	0.625	5	0.937	3.375	6.000				
XT0625	5A6JQI	0.625	5	0.625	3.750	6.000				
XT0625	5A6KKI	0.625	5	0.625	4.125	6.000				
XT0625	5A6MML	0.625	5	0.625	5.000	7.000				
XT0750	5D4FK9	0.750	5	1.125	2.000	4.000	TC (.060)	0	C	M
XT0750	5D4G6E	0.750	5	1.125	2.250	5.000				
XT0750	5D4H2E	0.750	5	1.125	2.625	5.000				
XT0750	5D4HYE	0.750	5	1.125	3.000	5.000				
XT0750	5D4IUI	0.750	5	1.125	3.375	6.000				
XT0750	5D4JQI	0.750	5	1.125	3.750	6.000				
XT0750	5BUKKI	0.750	5	0.750	4.125	6.000				
XT0750	5BUMML	0.750	5	0.750	5.000	7.000				
XT0750	5BUQ0P	0.750	5	0.750	6.000	8.000				
XT1000	5E6G6B	1.000	5	1.500	2.250	4.500	TC (.060)	0	C	M
XT1000	5E6H2E	1.000	5	1.500	2.625	5.000				
XT1000	5E6HYG	1.000	5	1.500	3.000	5.500				
XT1000	5E6IUI	1.000	5	1.500	3.375	6.000				
XT1000	5E6JQI	1.000	5	1.500	3.750	6.000				
XT1000	5E6KWK	1.000	5	1.500	4.250	6.500				
XT1000	5CSM2L	1.000	5	1.000	4.750	7.000				
XT1000	5CSPEP	1.000	5	1.000	5.750	8.000				
XT1000	5CSRSR	1.000	5	1.000	6.750	9.000				

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

XT7 SERIES
7FL Extreme RampMill

US Patent:
9,227,253
10,335,870

The **XT7 RampMill** allows aggressive ramping and high material removal rates when used with Controlled Radial Engagement / High Efficiency Milling cutter paths. Its patented end geometry and center through coolant option are ideal for pocketing applications in steel and exotic materials.

- Patent protected features engineered for High Efficiency Milling cutter paths allow the RampMill to outperform all other tools using this technology.
- RampMill's end geometry allows ramp angles up to FIVE degrees in steel and exotic metals.
- RampMill's patented design handles the highest tool load.
- Truncated radius adds corner strength and avoids the wear points of a traditional radius.
- Center coolant hole delivers coolant or air blasting chips away eliminating re-cutting, dramatically increasing tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
XT0187	74E001	T3	0	M		XT018774E001T30M

First 6	Middle 6						End Geometry	Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	Coolant		Coating
								None	Center	MDC
XT0187	74E001	0.187	7	0.187	0	2.000	T3	0	C	M
XT0187	75M001	0.187	7	0.281	0	2.000				
XT0187	76W001	0.187	7	0.375	0	2.000	(.015)			
XT0250	758001	0.250	7	0.250	0	2.000	T6	0	C	M
XT0250	76W001	0.250	7	0.375	0	2.000				
XT0250	78I001	0.250	7	0.500	0	2.000	(.030)			
XT0312	762001	0.312	7	0.312	0	2.000	T6	0	C	M
XT0312	784001	0.312	7	0.468	0	2.000				
XT0312	7A6001	0.312	7	0.625	0	2.000	(.030)			
XT0375	76W001	0.375	7	0.375	0	2.000	T6	0	C	M
XT0375	79C003	0.375	7	0.562	0	2.500				
XT0375	7BU003	0.375	7	0.750	0	2.500				
XT0375	7CI003	0.375	7	0.937	0	2.500	(.030)			
XT0437	77Q004	0.437	7	0.437	0	2.750	TC	0	C	M
XT0437	7AK004	0.437	7	0.656	0	2.750				
XT0437	7CA005	0.437	7	0.875	0	3.000				
XT0437	7D2005	0.437	7	1.100	0	3.000	(.060)			
XT0500	78I003	0.500	7	0.500	0	2.500	TC	0	C	M
XT0500	7BU005	0.500	7	0.750	0	3.000				
XT0500	7CS005	0.500	7	1.000	0	3.000				
XT0500	7DG005	0.500	7	1.250	0	3.000	(.060)			
XT0625	7A6005	0.625	7	0.625	0	3.000	TC	0	C	M
XT0625	7CI005	0.625	7	0.937	0	3.000				
XT0625	7DG007	0.625	7	1.250	0	3.500				
XT0625	7EC007	0.625	7	1.563	0	3.500	(.060)			
XT0750	7BU005	0.750	7	0.750	0	3.000	TC	0	C	M
XT0750	7D4005	0.750	7	1.125	0	3.000				
XT0750	7E6007	0.750	7	1.500	0	3.500				
XT0750	7F8009	0.750	7	1.875	0	4.000	(.060)			
XT0875	7CA007	0.875	7	0.875	0	3.500	TC	0	C	M
XT0875	7DM007	0.875	7	1.312	0	3.500				
XT0875	7EW009	0.875	7	1.750	0	4.000	(.060)			
XT1000	7CS007	1.000	7	1.000	0	3.500	TC	0	C	M
XT1000	7E6009	1.000	7	1.500	0	4.000				
XT1000	7FK00B	1.000	7	2.000	0	4.500				
XT1000	7GS00E	1.000	7	2.500	0	5.000	(.060)			

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

XTEL7 SERIES
7FL Extreme RampMill Necked XL

US Patent:
9,227,253
10,335,870

The **XTEL7 RampMill** offers a neck relief for longer reach applications. Designed for aggressive ramping and high material removal rates when used with Controlled Radial Engagement / High Efficiency Milling cutter paths. Its patented end geometry and center through coolant option are ideal for pocketing applications in steel and exotic materials.

- Patent protected features engineered for High Efficiency Milling cutter paths allow the RampMill to outperform all other tools using this technology.
- RampMill's end geometry allows ramp angles up to FIVE degrees in steel and exotic metals.
- RampMill's patented design handles the highest tool load.
- Truncated radius adds corner strength and avoids the wear points of a traditional radius.
- Center coolant hole delivers coolant or air blasting chips away eliminating re-cutting, dramatically increasing tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
XT0375	79CBU3	T6	0	M		XT037579CBU3760M

First 6	Middle 6						End Geometry	Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	Coolant None	Coolant Center	Coating MDC
XT0375	79CBU3	0.375	7	0.562	0.750	2.500	T6 (.030)	0	C	M
XT0375	79CD45	0.375	7	0.562	1.125	3.000				
XT0375	79CE65	0.375	7	0.562	1.500	3.000				
XT0375	79CF87	0.375	7	0.562	1.875	3.500				
XT0375	79CFW9	0.375	7	0.562	2.125	4.000				
XT0375	76WGS9	0.375	7	0.375	2.500	4.000				
XT0375	76WI8E	0.375	7	0.375	3.125	5.000				
XT0375	76WKKI	0.375	7	0.375	4.125	6.000				
XT0500	7BUE67	0.500	7	0.750	1.500	3.500	TC (.060)	0	C	M
XT0500	7BUFK9	0.500	7	0.750	2.000	4.000				
XT0500	7BUG69	0.500	7	0.750	2.250	4.000				
XT0500	7BUH2E	0.500	7	0.750	2.625	5.000				
XT0500	78IHYE	0.500	7	0.500	3.000	5.000				
XT0500	78IIUE	0.500	7	0.500	3.375	5.000				
XT0500	78IJEI	0.500	7	0.500	3.625	6.000				
XT0500	78IKKI	0.500	7	0.500	4.125	6.000				
XT0625	7CIEI9	0.625	7	0.937	1.625	4.000	TC (.060)	0	C	M
XT0625	7CIFK9	0.625	7	0.937	2.000	4.000				
XT0625	7CIGGC	0.625	7	0.937	2.375	4.625				
XT0625	7CIHYE	0.625	7	0.937	3.000	5.000				
XT0625	7CIIUI	0.625	7	0.937	3.375	6.000				
XT0625	7A6JQI	0.625	7	0.625	3.750	6.000				
XT0625	7A6KKI	0.625	7	0.625	4.125	6.000				
XT0625	7A6MML	0.625	7	0.625	5.000	7.000				
XT0750	7D4FK9	0.750	7	1.125	2.000	4.000	TC (.060)	0	C	M
XT0750	7D4G6E	0.750	7	1.125	2.250	5.000				
XT0750	7D4H2E	0.750	7	1.125	2.625	5.000				
XT0750	7D4HYE	0.750	7	1.125	3.000	5.000				
XT0750	7D4IUI	0.750	7	1.125	3.375	6.000				
XT0750	7D4JQI	0.750	7	1.125	3.750	6.000				
XT0750	7BUKKI	0.750	7	0.750	4.125	6.000				
XT0750	7BUMML	0.750	7	0.750	5.000	7.000				
XT0750	7BUQ0P	0.750	7	0.750	6.000	8.000				
XT1000	7E6G6B	1.000	7	1.500	2.250	4.500	TC (.060)	0	C	M
XT1000	7E6H2E	1.000	7	1.500	2.625	5.000				
XT1000	7E6HYG	1.000	7	1.500	3.000	5.500				
XT1000	7E6IUI	1.000	7	1.500	3.375	6.000				
XT1000	7E6JQI	1.000	7	1.500	3.750	6.000				
XT1000	7E6KWK	1.000	7	1.500	4.250	6.500				
XT1000	7CSM2L	1.000	7	1.000	4.750	7.000				
XT1000	7CSPEP	1.000	7	1.000	5.750	8.000				
XT1000	7CSRSR	1.000	7	1.000	6.750	9.000				

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

XT9 SERIES
9FL Extreme RampMill

US Patent:
9,227,253
10,335,870

The **XT9 RampMill** allows aggressive ramping and high material removal rates when used with Controlled Radial Engagement / High Efficiency Milling cutter paths. Its patented end geometry and center through coolant option are ideal for pocketing applications in steel and exotic materials.

- Patent protected features engineered for High Efficiency Milling cutter paths allow the RampMill to outperform all other tools using this technology.
- RampMill's end geometry allows ramp angles up to THREE degrees in steel and exotic metals.
- RampMill's patented design handles the highest tool load.
- Truncated radius adds corner strength and avoids the wear points of a traditional radius.
- Center coolant hole delivers coolant or air blasting chips away eliminating re-cutting, dramatically increasing tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
XT0375	96W001	T6	0	M		XT037596W001T60M

First 6	Middle 6						End Geometry	Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	Coolant None	Coolant Center	Coating MDC
XT0375	96W001	0.375	9	0.375	0	2.000	T6	0	C	M
XT0375	99C003	0.375	9	0.562	0	2.500				
XT0375	9BU003	0.375	9	0.750	0	2.500	(.030)			
XT0437	97Q004	0.437	9	0.437	0	2.750	TC	0	C	M
XT0437	9AK004	0.437	9	0.656	0	2.750				
XT0437	9CA005	0.437	9	0.875	0	3.000	(.060)			
XT0500	98I003	0.500	9	0.500	0	2.500	TC	0	C	M
XT0500	9BU005	0.500	9	0.750	0	3.000				
XT0500	9CS005	0.500	9	1.000	0	3.000	(.060)			
XT0625	9A6005	0.625	9	0.625	0	3.000	TC	0	C	M
XT0625	9CI005	0.625	9	0.937	0	3.000				
XT0625	9DG007	0.625	9	1.250	0	3.500	(.060)			
XT0750	9BU005	0.750	9	0.750	0	3.000	TC	0	C	M
XT0750	9D4007	0.750	9	1.125	0	3.500				
XT0750	9E6009	0.750	9	1.500	0	4.000	(.060)			
XT0875	9CA007	0.875	9	0.875	0	3.500	TC	0	C	M
XT0875	9DM007	0.875	9	1.312	0	3.500				
XT0875	9EW009	0.875	9	1.750	0	4.000	(.060)			
XT1000	9CS009	1.000	9	1.000	0	4.000	TC	0	C	M
XT1000	9E6009	1.000	9	1.500	0	4.000				
XT1000	9FK00B	1.000	9	2.000	0	4.500	(.060)			

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

XM5 SERIES
5FL Medium Peripheral Cutter - Square or Radius

US Patent:
9,227,253
10,335,870

The **XM5** is a combination of our best substrate and coating to produce a long lasting highly productive 5 flute designed for light roughing and finishing in steel and exotic materials.

- Stronger core increase tool life and rigidity especially in extended lengths.
- Eccentric relief for superior cutting edge strength.
- Manufacturing tolerances far above industry standards.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.
- Center coolant hole delivers coolant or air blasting chips away eliminating re-cutting, dramatically increasing tool life.

** For heavy roughing see our **SD 5** flute on page 35. **

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
XM0125	558000	R6	0	M		XM0125558000R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
XM0125	558000	0.125	5	0.250	0	1.500	S0	R3	R6				0		M
XM0125	58I000	0.125	5	0.500	0	1.500									
XM0125	5BU001	0.125	5	0.750	0	2.000									
XM0156	562001	0.156	5	0.312	0	2.000	S0	R3	R6				0		M
XM0156	57Q001	0.156	5	0.437	0	2.000									
XM0187	562001	0.187	5	0.312	0	2.000	S0	R3	R6	RC			0	C	M
XM0187	57Q001	0.187	5	0.437	0	2.000									
XM0187	59C003	0.187	5	0.562	0	2.500									
XM0187	5BU003	0.187	5	0.750	0	2.500									
XM0218	56W001	0.218	5	0.375	0	2.000	S0	R3	R6	RC			0	C	M
XM0218	58I001	0.218	5	0.500	0	2.000									
XM0218	5BU003	0.218	5	0.750	0	2.500									
XM0250	56W001	0.250	5	0.375	0	2.000	S0	R3	R6	RC	RH		0	C	M
XM0250	58I001	0.250	5	0.500	0	2.000									
XM0250	5A6001	0.250	5	0.625	0	2.000									
XM0250	5BU003	0.250	5	0.750	0	2.500									
XM0250	5CA003	0.250	5	0.875	0	2.500									
XM0250	5CS003	0.250	5	1.000	0	2.500									
XM0250	5D4005	0.250	5	1.125	0	3.000									
XM0250	5DG005	0.250	5	1.250	0	3.000									
XM0250	5DU005	0.250	5	1.375	0	3.000									
XM0250	5E6005	0.250	5	1.500	0	3.000									
XM0250	5EW009	0.250	5	1.750	0	4.000								N/A	
XM0281	57Q001	0.281	5	0.437	0	2.000	S0	R3	R6	RC	RH		0	C	M
XM0281	5C2003	0.281	5	0.812	0	2.500									
XM0312	57Q001	0.312	5	0.437	0	2.000	S0	R3	R6	RC	RH	RM	0	C	M
XM0312	58I001	0.312	5	0.500	0	2.000									
XM0312	5A6001	0.312	5	0.625	0	2.000									
XM0312	5C2003	0.312	5	0.812	0	2.500									
XM0312	5CS003	0.312	5	1.000	0	2.500									
XM0312	5DG005	0.312	5	1.250	0	3.000									
XM0312	5E6005	0.312	5	1.500	0	3.000									
XM0312	5EW007	0.312	5	1.750	0	3.500									
XM0312	5FK007	0.312	5	2.000	0	3.500									
XM0312	5FW009	0.312	5	2.125	0	4.000									
XM0343	58I001	0.343	5	0.500	0	2.000	S0	R3	R6	RC	RH	RM	0	C	M
XM0343	5BU003	0.343	5	0.750	0	2.500									
XM0343	5CS003	0.343	5	1.000	0	2.500									
XM0343	5DG005	0.343	5	1.250	0	3.000									
XM0343	5E6007	0.343	5	1.500	0	3.500									

Non-standard lengths, diameters and radius sizes are available upon request

XM5 SERIES Continued
5FL Medium Peripheral Cutter - Square or Radius

US Patent:
9,227,253
10,335,870

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
XM0375	58I001	R6	0	M		XM037558I001R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
XM0375	58I001	0.375	5	0.500	0	2.000	S0	R3	R6	RC	RH	RM	0	C	M
XM0375	5BU003	0.375	5	0.750	0	2.500									
XM0375	5CS003	0.375	5	1.000	0	2.500									
XM0375	5DG005	0.375	5	1.250	0	3.000									
XM0375	5E6007	0.375	5	1.500	0	3.500									
XM0375	5FK009	0.375	5	2.000	0	4.000									
XM0375	5G6009	0.375	5	2.250	0	4.000									
XM0375	5GS00B	0.375	5	2.500	0	4.500									
XM0375	5HC00E	0.375	5	2.750	0	5.000									
XM0375	5HY00E	0.375	5	3.000	0	5.000									
XM0406	59C003	0.406	5	0.562	0	2.500	S0	R3	R6	RC	RH	RM	0	C	M
XM0406	5BU004	0.406	5	0.750	0	2.750									
XM0406	5CS004	0.406	5	1.000	0	2.750									
XM0406	5DG005	0.406	5	1.250	0	3.000									
XM0406	5E6009	0.406	5	1.500	0	4.000									
XM0406	5EW009	0.406	5	1.750	0	4.000									
XM0406	5FK009	0.406	5	2.000	0	4.000									
XM0437	59C003	0.437	5	0.562	0	2.500	S0	R3	R6	RC	RH	RM	0	C	M
XM0437	5BU003	0.437	5	0.750	0	2.500									
XM0437	5CS004	0.437	5	1.000	0	2.750									
XM0437	5DG005	0.437	5	1.250	0	3.000									
XM0437	5E6009	0.437	5	1.500	0	4.000									
XM0437	5EW009	0.437	5	1.750	0	4.000									
XM0437	5FK009	0.437	5	2.000	0	4.000									
XM0437	5G6009	0.437	5	2.250	0	4.000									
XM0468	5A6003	0.468	5	0.625	0	2.500	S0	R3	R6	RC	RH	RM	0	C	M
XM0468	5CS005	0.468	5	1.000	0	3.000									
XM0468	5DG005	0.468	5	1.250	0	3.000									
XM0468	5E6007	0.468	5	1.500	0	3.500									
XM0468	5EW009	0.468	5	1.750	0	4.000									
XM0468	5FK009	0.468	5	2.000	0	4.000									
XM0468	5GS00E	0.468	5	2.500	0	5.000									
XM0500	5A6003	0.500	5	0.625	0	2.500	S0	R3	R6	RC	RH	RM	0	C	M
XM0500	5CS005	0.500	5	1.000	0	3.000									
XM0500	5DG005	0.500	5	1.250	0	3.000									
XM0500	5EI007	0.500	5	1.625	0	3.500									
XM0500	5EW009	0.500	5	1.750	0	4.000									
XM0500	5FK009	0.500	5	2.000	0	4.000									
XM0500	5G600B	0.500	5	2.250	0	4.500									
XM0500	5GS00B	0.500	5	2.500	0	4.500									
XM0500	5HC00E	0.500	5	2.750	0	5.000									
XM0500	5HY00E	0.500	5	3.000	0	5.000									
XM0500	5I800E	0.500	5	3.125	0	5.000									
XM0500	5II00G	0.500	5	3.250	0	5.500									
XM0500	5J400G	0.500	5	3.500	0	5.500									
XM0500	5JQ00I	0.500	5	3.750	0	6.000									
XM0500	5KA00I	0.500	5	4.000	0	6.000									
XM0562	5CS005	0.562	5	1.000	0	3.000	S0	R3	R6	RC	RH	RM	0	C	M
XM0562	5E6007	0.562	5	1.500	0	3.500									
XM0562	5FK009	0.562	5	2.000	0	4.000									
XM0562	5HY00E	0.562	5	3.000	0	5.000									

Non-standard lengths, diameters and radius sizes are available upon request.

XM5 SERIES Continued
5FL Medium Peripheral Cutter - Square or Radius

US Patent:
9,227,253
10,335,870

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
XM0625	5BU005	R6	0	M		XM06255BU005R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
XM0625	5BU005	0.625	5	0.750	0	3.000	S0	R3	R6	RC	RH	RM	0	C	M
XM0625	5DG007	0.625	5	1.250	0	3.500									
XM0625	5EI007	0.625	5	1.625	0	3.500									
XM0625	5FK009	0.625	5	2.000	0	4.000									
XM0625	5G6009	0.625	5	2.250	0	4.000									
XM0625	5GS00B	0.625	5	2.500	0	4.500									
XM0625	5HY00E	0.625	5	3.000	0	5.000									
XM0625	5IU00G	0.625	5	3.375	0	5.500									
XM0625	5JQ00I	0.625	5	3.750	0	6.000									
XM0625	5KA00I	0.625	5	4.000	0	6.000									
XM0625	5LS00L	0.625	5	4.625	0	7.000									
XM0750	5BU005	0.750	5	0.750	0	3.000	S0	R3	R6	RC	RH	RM	0	C	M
XM0750	5CS005	0.750	5	1.000	0	3.000									
XM0750	5DG007	0.750	5	1.250	0	3.500									
XM0750	5EI007	0.750	5	1.625	0	3.500									
XM0750	5F8009	0.750	5	1.875	0	4.000									
XM0750	5G600B	0.750	5	2.250	0	4.500									
XM0750	5GS00B	0.750	5	2.500	0	4.500									
XM0750	5HM00E	0.750	5	2.875	0	5.000									
XM0750	5II00E	0.750	5	3.250	0	5.000									
XM0750	5J400G	0.750	5	3.500	0	5.500									
XM0750	5KA00I	0.750	5	4.000	0	6.000									
XM0750	5L600K	0.750	5	4.375	0	6.500									
XM0750	5M200L	0.750	5	4.750	0	7.000									
XM0875	5FK009	0.875	5	2.000	0	4.000	S0	R3	R6	RC	RH	RM	0	C	M
XM0875	5HY00E	0.875	5	3.000	0	5.000									
XM0875	5JQ00I	0.875	5	3.750	0	6.000									
XM1000	5DG007	1.000	5	1.250	0	3.500	S0	R3	R6	RC	RH	RM	0	C	M
XM1000	5E6009	1.000	5	1.500	0	4.000									
XM1000	5FK00B	1.000	5	2.000	0	4.500									
XM1000	5GG00E	1.000	5	2.375	0	5.000									
XM1000	5HC00G	1.000	5	2.750	0	5.500									
XM1000	5II00G	1.000	5	3.250	0	5.500									
XM1000	5JE00I	1.000	5	3.625	0	6.000									
XM1000	5KK00K	1.000	5	4.125	0	6.500									
XM1000	5LS00L	1.000	5	4.625	0	7.000									
XM1000	5MY00N	1.000	5	5.125	0	7.500									
XM1000	5P400P	1.000	5	5.625	0	8.000									
XM1250	5FK00B	1.250	5	2.000	0	4.500	S0	R3	R6	RC	RH	RM	0	C	M
XM1250	5HC00I	1.250	5	2.750	0	6.000									
XM1250	5II00I	1.250	5	3.250	0	6.000									
XM1250	5KA00L	1.250	5	4.000	0	7.000									
XM1250	5LG00L	1.250	5	4.500	0	7.000									
XM1250	5MM00N	1.250	5	5.000	0	7.500									
XM1250	5Q000R	1.250	5	6.000	0	9.000									

Non-standard lengths, diameters and radius sizes are available upon request.

XM7 SERIES
7FL Extreme Peripheral Cutter - Square or Radius

US Patent:
9,227,253
10,335,870

The **XM7** is a combination of our best substrate and coating to produce a long lasting highly productive 7 flute designed for light roughing and finishing in steel and exotic materials.

- Stronger core increase tool life and rigidity especially in extended lengths.
- Eccentric relief for superior cutting edge strength.
- Manufacturing tolerances far above industry standards.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.
- Center coolant hole delivers coolant or air blasting chips away eliminating re-cutting, dramatically increasing tool life.

** For heavy roughing see our **SD 7** flute on page 43. **

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
XM0250	76W001	R6	0	M		XM025076W001R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
XM0250	76W001	0.250	7	0.375	0	2.000	S0	R3	R6	RC			0	C	M
XM0250	78I001	0.250	7	0.500	0	2.000									
XM0250	7BU003	0.250	7	0.750	0	2.500									
XM0250	7CA003	0.250	7	0.875	0	2.500									
XM0250	7CS003	0.250	7	1.000	0	2.500									
XM0250	7D4005	0.250	7	1.125	0	3.000									
XM0250	7DG005	0.250	7	1.250	0	3.000									
XM0250	7E6005	0.250	7	1.500	0	3.000									
XM0250	7EW009	0.250	7	1.750	0	4.000								N/A	
XM0312	77Q001	0.312	7	0.437	0	2.000	S0	R3	R6	RC	RH		0	C	M
XM0312	7A6001	0.312	7	0.625	0	2.000									
XM0312	7C2003	0.312	7	0.812	0	2.500									
XM0312	7CS003	0.312	7	1.000	0	2.500									
XM0312	7DU005	0.312	7	1.375	0	3.000									
XM0312	7EW007	0.312	7	1.750	0	3.500									
XM0312	7FK007	0.312	7	2.000	0	3.500									
XM0375	78I001	0.375	7	0.500	0	2.000	S0	R3	R6	RC	RH		0	C	M
XM0375	7BU003	0.375	7	0.750	0	2.500									
XM0375	7CS003	0.375	7	1.000	0	2.500									
XM0375	7DG005	0.375	7	1.250	0	3.000									
XM0375	7E6007	0.375	7	1.500	0	3.500									
XM0375	7GS00B	0.375	7	2.000	0	4.000									
XM0375	7G6009	0.375	7	2.250	0	4.500									
XM0375	7GS00E	0.375	7	2.500	0	5.000									
XM0375	7HC00E	0.375	7	2.750	0	5.000									
XM0437	79C003	0.437	7	0.562	0	2.500	S0	R3	R6	RC	RH	RM	0	C	M
XM0437	7BU003	0.437	7	0.750	0	2.500									
XM0437	7CS004	0.437	7	1.000	0	2.750									
XM0437	7DG005	0.437	7	1.250	0	3.000									
XM0437	7E6009	0.437	7	1.500	0	4.000									
XM0437	7EW009	0.437	7	1.750	0	4.000									
XM0437	7FK009	0.437	7	2.000	0	4.000									
XM0437	7GG009	0.437	7	2.375	0	4.000									
XM0437	7HC009	0.437	7	2.750	0	4.000									

Non-standard lengths, diameters and radius sizes are available upon request.

XM7 SERIES Continued
7FL Extreme Peripheral Cutter - Square or Radius

US Patent:
9,227,253
10,335,870

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
XM0500	7BU005	R6	0	M		XM05007BU005R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
XM0500	7BU005	0.500	7	0.750	0	3.000	S0	R3	R6	RC	RH	RM	0	C	M
XM0500	7CS005	0.500	7	1.000	0	3.000									
XM0500	7DG005	0.500	7	1.250	0	3.000									
XM0500	7EI007	0.500	7	1.625	0	3.500									
XM0500	7FK009	0.500	7	2.000	0	4.000									
XM0500	7GG00E	0.500	7	2.375	0	5.000									
XM0500	7HC00E	0.500	7	2.750	0	5.000									
XM0500	7HY00E	0.500	7	3.000	0	5.000									
XM0500	7II00G	0.500	7	3.250	0	5.500									
XM0500	7J400G	0.500	7	3.500	0	5.500									
XM0562	7CS005	0.562	7	1.000	0	3.000	S0	R3	R6	RC	RH	RM	0	C	M
XM0562	7E6007	0.562	7	1.500	0	3.500									
XM0562	7FK009	0.562	7	2.000	0	4.000									
XM0562	7HY00E	0.562	7	3.000	0	5.000									
XM0625	7BU005	0.625	7	0.750	0	3.000	S0	R3	R6	RC	RH	RM	0	C	M
XM0625	7DG007	0.625	7	1.250	0	3.500									
XM0625	7EI007	0.625	7	1.625	0	3.500									
XM0625	7FK009	0.625	7	2.000	0	4.000									
XM0625	7H200E	0.625	7	2.625	0	5.000									
XM0625	7II00I	0.625	7	3.250	0	6.000									
XM0625	7JQ00I	0.625	7	3.750	0	6.000									
XM0750	7BU005	0.750	7	0.750	0	3.000	S0	R3	R6	RC	RH	RM	0	C	M
XM0750	7CS005	0.750	7	1.000	0	3.000									
XM0750	7DG007	0.750	7	1.250	0	3.500									
XM0750	7EI007	0.750	7	1.625	0	3.500									
XM0750	7G600B	0.750	7	2.250	0	4.500									
XM0750	7HC00E	0.750	7	2.750	0	5.000									
XM0750	7II00E	0.750	7	3.250	0	5.000									
XM0750	7JQ00I	0.750	7	3.750	0	6.000									
XM0750	7KK00I	0.750	7	4.125	0	6.000									
XM0875	7FK009	0.875	7	2.000	0	4.000	S0	R3	R6	RC	RH	RM	0	C	M
XM0875	7HY00E	0.875	7	3.000	0	5.000									
XM0875	7JQ00I	0.875	7	3.750	0	6.000									
XM1000	7DG007	1.000	7	1.250	0	3.500	S0	R3	R6	RC	RH	RM	0	C	M
XM1000	7EI009	1.000	7	1.625	0	4.000									
XM1000	7FK00B	1.000	7	2.000	0	4.500									
XM1000	7H200E	1.000	7	2.625	0	5.000									
XM1000	7II00G	1.000	7	3.250	0	5.500									
XM1000	7JE00I	1.000	7	3.625	0	6.000									
XM1000	7KK00K	1.000	7	4.125	0	6.500									
XM1000	7LS00L	1.000	7	4.625	0	7.000									
XM1000	7NU00P	1.000	7	5.500	0	8.000									
XM1250	7FK00B	1.250	7	2.000	0	4.500	S0	R3	R6	RC	RH	RM	0	C	M
XM1250	7HC00I	1.250	7	2.750	0	6.000									
XM1250	7II00I	1.250	7	3.250	0	6.000									
XM1250	7KA00K	1.250	7	4.000	0	6.500									
XM1250	7LG00L	1.250	7	4.500	0	7.000									
XM1250	7MM00N	1.250	7	5.000	0	7.500									
XM1250	7R600R	1.250	7	6.500	0	9.000									

Non-standard lengths, diameters and radius sizes are available upon request.

XM9 SERIES
9FL Extreme Peripheral Cutter - Square or Radius

US Patent:
9,227,253
10,335,870

The **XM9** is a combination of our best substrate and coating to produce a long lasting highly productive 9 flute designed for light roughing and finishing in steel and exotic materials.

- Stronger core increase tool life and rigidity especially in extended lengths.
- Eccentric relief for superior cutting edge strength.
- Manufacturing tolerances far above industry standards.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.
- Center coolant hole delivers coolant or air blasting chips away eliminating re-cutting, dramatically increasing tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
XM0375	98I001	R6	0	M		XM037598I001R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
XM0375	98I001	0.375	9	0.500	0	2.000	S0	R3	R6	RC			0	C	M
XM0375	9BU003	0.375	9	0.750	0	2.500									
XM0375	9CS003	0.375	9	1.000	0	2.500									
XM0375	9DG005	0.375	9	1.250	0	3.000									
XM0375	9E6007	0.375	9	1.500	0	3.500									
XM0437	99C003	0.437	9	0.562	0	2.500	S0	R3	R6	RC			0	C	M
XM0437	9BU003	0.437	9	0.750	0	2.500									
XM0437	9CS004	0.437	9	1.000	0	2.750									
XM0437	9DG005	0.437	9	1.250	0	3.000									
XM0437	9E6009	0.437	9	1.500	0	4.000									
XM0500	9BU005	0.500	9	0.750	0	3.000	S0	R3	R6	RC	RH		0	C	M
XM0500	9CS005	0.500	9	1.000	0	3.000									
XM0500	9DG005	0.500	9	1.250	0	3.000									
XM0500	9EI007	0.500	9	1.625	0	3.500									
XM0500	9FK009	0.500	9	2.000	0	4.000									
XM0625	9BU005	0.625	9	0.750	0	3.000	S0	R3	R6	RC	RH		0	C	M
XM0625	9DG007	0.625	9	1.250	0	3.500									
XM0625	9EI007	0.625	9	1.625	0	3.500									
XM0625	9FK009	0.625	9	2.000	0	4.000									
XM0750	9BU005	0.750	9	0.750	0	3.000	S0	R3	R6	RC	RH	RM	0	C	M
XM0750	9CS005	0.750	9	1.000	0	3.000									
XM0750	9DG007	0.750	9	1.250	0	3.500									
XM0750	9EI007	0.750	9	1.625	0	3.500									
XM0750	9G600B	0.750	9	2.250	0	4.500									
XM0750	9HC00E	0.750	9	2.750	0	5.000									
XM0875	9FK009	0.875	9	2.000	0	4.000	S0	R3	R6	RC	RH	RM	0	C	M
XM1000	9DG007	1.000	9	1.250	0	3.500	S0	R3	R6	RC	RH	RM	0	C	M
XM1000	9EI009	1.000	9	1.625	0	4.000									
XM1000	9FK00B	1.000	9	2.000	0	4.500									
XM1000	9H200E	1.000	9	2.625	0	5.000									
XM1000	9II00G	1.000	9	3.250	0	5.500									
XM1000	9JE00I	1.000	9	3.625	0	6.000									
XM1250	9FK00B	1.250	9	2.000	0	4.500	S0	R3	R6	RC	RH	RM	0	C	M
XM1250	9HC00I	1.250	9	2.750	0	6.000									
XM1250	9II00I	1.250	9	3.250	0	6.000									
XM1250	9KA00L	1.250	9	4.000	0	7.000									
XM1250	9LG00L	1.250	9	4.500	0	7.000									
XM1250	9MM00N	1.250	9	5.000	0	7.500									

Non-standard lengths, diameters and radius sizes are available upon request.

XM11 SERIES
11FL Extreme Peripheral Cutter - Square or Radius

US Patent:
9,227,253
10,335,870

The **XM11** is a combination of our best substrate and coating to produce a long lasting highly productive 11 flute designed for light roughing and finishing in steel and exotic materials.

- Stronger core increase tool life and rigidity especially in extended lengths.
- Eccentric relief for superior cutting edge strength.
- Manufacturing tolerances far above industry standards.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.
- Center coolant hole delivers coolant or air blasting chips away eliminating re-cutting, dramatically increasing tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
XM0500	BBU005	R6	0	M		XM0500BBU005R60M

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
XM0500	BBU005	0.500	11	0.750	0	3.000	S0	R3	R6	RC			0	C	M
XM0500	BCS005	0.500	11	1.000	0	3.000									
XM0500	BDG005	0.500	11	1.250	0	3.000									
XM0500	BEI007	0.500	11	1.625	0	3.500									
XM0625	BBU005	0.625	11	0.750	0	3.000	S0	R3	R6	RC			0	C	M
XM0625	BDG007	0.625	11	1.250	0	3.500									
XM0625	BEI007	0.625	11	1.625	0	3.500									
XM0625	BFK009	0.625	11	2.000	0	4.000									
XM0750	BBU005	0.750	11	0.750	0	3.000	S0	R3	R6	RC	RH		0	C	M
XM0750	BCS005	0.750	11	1.000	0	3.000									
XM0750	BDG007	0.750	11	1.250	0	3.500									
XM0750	BEI007	0.750	11	1.625	0	3.500									
XM0750	BG600B	0.750	11	2.250	0	4.500									
XM0875	BFK009	0.875	11	2.000	0	4.000	S0	R3	R6	RC	RH		0	C	M
XM1000	BDG007	1.000	11	1.250	0	3.500	S0	R3	R6	RC	RH	RM	0	C	M
XM1000	BEI009	1.000	11	1.625	0	4.000									
XM1000	BFK00B	1.000	11	2.000	0	4.500									
XM1000	BH200E	1.000	11	2.625	0	5.000									
XM1000	BII00I	1.000	11	3.250	0	6.000									
XM1250	BFK00B	1.250	11	2.000	0	4.500	S0	R3	R6	RC	RH	RM	0	C	M
XM1250	BHC00I	1.250	11	2.750	0	6.000									
XM1250	BII00I	1.250	11	3.250	0	6.000									
XM1250	BKA00K	1.250	11	4.000	0	6.500									

Non-standard lengths, diameters and radius sizes are available upon request.

SD4 Differential Pitch & Helix
4FL Heavy Rougher - Square or Radius

US Patent:
9,227,253
10,335,870

The **SD4** has a differential pitch / differential helix design that reduces the harmonics that cause vibration and chatter. As a result, it can be used in steel, stainless and exotic metals for everything from full slotting to heavy roughing and still achieve a great finish. The **SD4** is also a great choice for finishing in tight corners.

- Moderate helix allows for both aggressive cutting and excellent finishes.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- Manufacturing tolerances far above industry standards.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0187	462001	R6	0	M		SD0187462001R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
SD0187	462001	0.187	4	0.312	0	2.000	S0	R3	R6	RC			0	C	M
SD0187	48I001	0.187	4	0.500	0	2.000									
SD0187	4A6003	0.187	4	0.625	0	2.500									
SD0187	4BU003	0.187	4	0.750	0	2.500									
SD0187	4CS005	0.187	4	1.000	0	3.000								N/A	
SD0250	46W001	0.250	4	0.375	0	2.000	S0	R3	R6	RC	RH		0	C	M
SD0250	48I003	0.250	4	0.500	0	2.500									
SD0250	4BU003	0.250	4	0.750	0	2.500									
SD0250	4CS005	0.250	4	1.000	0	3.000									
SD0250	4DG005	0.250	4	1.250	0	3.000									
SD0312	47Q001	0.312	4	0.437	0	2.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0312	4BU003	0.312	4	0.750	0	2.500									
SD0312	4CS005	0.312	4	1.000	0	3.000									
SD0312	4DG005	0.312	4	1.250	0	3.000									
SD0312	4EW007	0.312	4	1.750	0	3.500									
SD0375	4BU003	0.375	4	0.750	0	2.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0375	4CA003	0.375	4	0.875	0	2.500									
SD0375	4CS005	0.375	4	1.000	0	3.000									
SD0375	4DG005	0.375	4	1.250	0	3.000									
SD0375	4E6007	0.375	4	1.500	0	3.500									
SD0375	4EW007	0.375	4	1.750	0	3.500									
SD0375	4FK009	0.375	4	2.000	0	4.000									
SD0375	4GS009	0.375	4	2.500	0	4.000									
SD0437	48I003	0.437	4	0.500	0	2.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0437	4A6003	0.437	4	0.625	0	2.500									
SD0437	4CA005	0.437	4	0.875	0	3.000									
SD0437	4CS005	0.437	4	1.000	0	3.000									
SD0437	4DG005	0.437	4	1.250	0	3.000									
SD0437	4E6007	0.437	4	1.500	0	3.500									
SD0437	4EW009	0.437	4	1.750	0	4.000									
SD0437	4FK009	0.437	4	2.000	0	4.000									
SD0437	4HY00E	0.437	4	3.000	0	5.000									

Non-standard lengths, diameters and radius sizes are available upon request.

SD4 Differential Pitch & Helix Continued
4FL Heavy Rougher - Square or Radius

US Patent:
9,227,253
10,335,870

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0500	4A6003	R6	0	M		SD05004A6003R60M

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
SD0500	4A6003	0.500	4	0.625	0	2.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0500	4CS005	0.500	4	1.000	0	3.000									
SD0500	4DG005	0.500	4	1.250	0	3.000									
SD0500	4E6007	0.500	4	1.500	0	3.500									
SD0500	4EW009	0.500	4	1.750	0	4.000									
SD0500	4FK009	0.500	4	2.000	0	4.000									
SD0500	4G6009	0.500	4	2.250	0	4.000									
SD0500	4GS00E	0.500	4	2.500	0	5.000									
SD0500	4HY00E	0.500	4	3.000	0	5.000									
SD0562	4E6007	0.562	4	1.500	0	3.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0562	4FK009	0.562	4	2.000	0	4.000									
SD0562	4HY00E	0.562	4	3.000	0	5.000									
SD0625	4BU005	0.625	4	0.750	0	3.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0625	4DG007	0.625	4	1.250	0	3.500									
SD0625	4EI007	0.625	4	1.625	0	3.500									
SD0625	4FK009	0.625	4	2.000	0	4.000									
SD0625	4G600E	0.625	4	2.250	0	5.000									
SD0625	4GS00E	0.625	4	2.500	0	5.000									
SD0625	4HY00E	0.625	4	3.000	0	5.000									
SD0625	4II00I	0.625	4	3.250	0	6.000									
SD0750	4BU005	0.750	4	0.750	0	3.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0750	4CS007	0.750	4	1.000	0	3.500									
SD0750	4DG007	0.750	4	1.250	0	3.500									
SD0750	4E6007	0.750	4	1.500	0	3.500									
SD0750	4EW009	0.750	4	1.750	0	4.000									
SD0750	4G600E	0.750	4	2.250	0	5.000									
SD0750	4GS00E	0.750	4	2.500	0	5.000									
SD0750	4HC00E	0.750	4	2.750	0	5.000									
SD0750	4HY00E	0.750	4	3.000	0	5.000									
SD0750	4II00I	0.750	4	3.250	0	6.000									
SD0750	4J400I	0.750	4	3.500	0	6.000									
SD0750	4KA00I	0.750	4	4.000	0	6.000									
SD0750	4LG00L	0.750	4	4.500	0	7.000									
SD0875	4EI009	0.875	4	1.625	0	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0875	4H200E	0.875	4	2.625	0	5.000									
SD0875	4HY00E	0.875	4	3.000	0	5.000									
SD0875	4JQ00I	0.875	4	3.750	0	6.000									
SD1000	4E6009	1.000	4	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD1000	4FK00B	1.000	4	2.000	0	4.500									
SD1000	4GG00E	1.000	4	2.375	0	5.000									
SD1000	4H200E	1.000	4	2.625	0	5.000									
SD1000	4HY00I	1.000	4	3.000	0	6.000									
SD1000	4IU00I	1.000	4	3.375	0	6.000									
SD1000	4JE00I	1.000	4	3.625	0	6.000									
SD1000	4KK00L	1.000	4	4.125	0	7.000									
SD1000	4LG00L	1.000	4	4.500	0	7.000									
SD1000	4MM00P	1.000	4	5.000	0	8.000									
SD1250	4E6009	1.250	4	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD1250	4G600B	1.250	4	2.250	0	4.500									
SD1250	4HY00I	1.250	4	3.000	0	6.000									
SD1250	4JE00I	1.250	4	3.625	0	6.000									
SD1250	4L600N	1.250	4	4.375	0	7.500									
SD1250	4MY00N	1.250	4	5.125	0	7.500									
SD1250	4Q000R	1.250	4	6.000	0	9.000									
SD1250	4R600R	1.250	4	6.500	0	9.000									

Non-standard lengths, diameters and radius sizes are available upon request.

SDEL4 Differential Pitch & Helix
4FL Extended Relief Rougher - Square or Radius

US Patent:
9,227,253
10,335,870

The **SDEL4** has a differential pitch / differential helix design that reduces the harmonics that cause vibration and chatter. As a result, it can be used in steel, stainless and exotic metals for everything from full slotting to heavy roughing and still achieve a great finish. The **SDEL4** is also a great choice for finishing in tight corners.

- Moderate helix allows for both aggressive cutting and excellent finishes.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- Blended neck relief reduces marks in step-down machining.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0375	**48IBU3**	**R6**	**0**	**M**		**SD037548IBU3R60M**

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	**FL, LOC & LBS**	**DIA**	**# FL**	**LOC**	**LBS**	**OAL**	**Square Corner**	**- - - - - - - Radius - - - - - - -**					**Coolant**		**Coating**
								.015	**.030**	**.060**	**.090**	**.125**	**None**	**Center**	**MDC**
SD0187	**458BU3**	0.187	4	0.250	0.750	2.500	S0	R3	R6	RC			0	C	M
SD0187	**458CS3**	0.187	4	0.250	1.000	2.500									
SD0187	**458DG5**	0.187	4	0.250	1.250	3.000									
SD0187	**458E65**	0.187	4	0.250	1.500	3.000									
SD0250	**46WCS3**	0.250	4	0.375	1.000	2.500	S0	R3	R6	RC	RH		0	C	M
SD0250	**46WDG5**	0.250	4	0.375	1.250	3.000									
SD0250	**46WE65**	0.250	4	0.375	1.500	3.000									
SD0250	**46WFK7**	0.250	4	0.375	2.000	3.500									
SD0250	**46WGS9**	0.250	4	0.375	2.500	4.000									
SD0312	**47QCS3**	0.312	4	0.437	1.000	2.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0312	**47QDG5**	0.312	4	0.437	1.250	3.000									
SD0312	**47QE65**	0.312	4	0.437	1.500	3.000									
SD0312	**47QFK7**	0.312	4	0.437	2.000	3.500									
SD0312	**47QGS9**	0.312	4	0.437	2.500	4.000									
SD0375	**48IBU3**	0.375	4	0.500	0.750	2.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0375	**48ID45**	0.375	4	0.500	1.125	3.000									
SD0375	**48IE65**	0.375	4	0.500	1.500	3.000									
SD0375	**48IF87**	0.375	4	0.500	1.875	3.500									
SD0375	**48IFW9**	0.375	4	0.500	2.125	4.000									
SD0375	**48IGS9**	0.375	4	0.500	2.500	4.000									
SD0375	**48II8E**	0.375	4	0.500	3.125	5.000									
SD0375	**48IKKI**	0.375	4	0.500	4.125	6.000									
SD0500	**4A6E67**	0.500	4	0.625	1.500	3.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0500	**4A6FK9**	0.500	4	0.625	2.000	4.000									
SD0500	**4A6G69**	0.500	4	0.625	2.250	4.000									
SD0500	**4A6H2E**	0.500	4	0.625	2.625	5.000									
SD0500	**4A6HYE**	0.500	4	0.625	3.000	5.000									
SD0500	**4A6IUE**	0.500	4	0.625	3.375	5.000									
SD0500	**4A6JEI**	0.500	4	0.625	3.625	6.000									
SD0500	**4A6KKI**	0.500	4	0.625	4.125	6.000									

Non-standard lengths, diameters and radius sizes are available upon request.

SDEL4 Differential Pitch & Helix Continued
4FL Extended Relief Rougher - Square or Radius

US Patent:
9,227,253
10,335,870

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0625	4BUEI9	R6	0	M		SD06254BUEI9R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
SD0625	4BUEI9	0.625	4	0.750	1.625	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0625	4BUFK9	0.625	4	0.750	2.000	4.000									
SD0625	4BUGGC	0.625	4	0.750	2.375	4.625									
SD0625	4BUHYE	0.625	4	0.750	3.000	5.000									
SD0625	4BUIUI	0.625	4	0.750	3.375	6.000									
SD0625	4BUJQI	0.625	4	0.750	3.750	6.000									
SD0625	4BUKKI	0.625	4	0.750	4.125	6.000									
SD0625	4BUMML	0.625	4	0.750	5.000	7.000									
SD0750	4CSFK9	0.750	4	1.000	2.000	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0750	4CSG6E	0.750	4	1.000	2.250	5.000									
SD0750	4CSH2E	0.750	4	1.000	2.625	5.000									
SD0750	4CSHYE	0.750	4	1.000	3.000	5.000									
SD0750	4CSIUI	0.750	4	1.000	3.375	6.000									
SD0750	4CSJQI	0.750	4	1.000	3.750	6.000									
SD0750	4CSKKI	0.750	4	1.000	4.125	6.000									
SD0750	4CSMML	0.750	4	1.000	5.000	7.000									
SD0750	4CSQ0P	0.750	4	1.000	6.000	8.000									
SD1000	4DGG6B	1.000	4	1.250	2.250	4.500	S0	R3	R6	RC	RH	RM	0	C	M
SD1000	4DGH2E	1.000	4	1.250	2.625	5.000									
SD1000	4DGHYG	1.000	4	1.250	3.000	5.500									
SD1000	4DGIUI	1.000	4	1.250	3.375	6.000									
SD1000	4DGJQI	1.000	4	1.250	3.750	6.000									
SD1000	4DGKWK	1.000	4	1.250	4.250	6.500									
SD1000	4DGM2L	1.000	4	1.250	4.750	7.000									
SD1000	4DGPEP	1.000	4	1.250	5.750	8.000									
SD1000	4DGRSR	1.000	4	1.250	6.750	9.000									

Non-standard lengths, diameters and radius sizes are available upon request.

SD4 Differential Pitch & Helix
4FL Heavy Rougher - Ball End

The **SD4** has a differential pitch / differential helix design that reduces the harmonics that cause vibration and chatter. As a result, it can be used in steel, stainless and exotic metals for everything from full slotting to heavy roughing and still achieve a great finish. The **SD4** is also a great choice for finishing in tight corners.

- Moderate helix allows for both aggressive cutting and excellent finishes.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- Manufacturing tolerances far above industry standards.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0187	**462001**	**B0**	**0**	**M**		**SD0187462001B00M**

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry	Pick 1	Pick 1
GEO & DIA	**FL, LOC & LBS**	**DIA**	**# FL**	**LOC**	**LBS**	**OAL**	**Ball Nose**	**Coolant None**	**Coating MDC**
SD0187	462001	0.187	4	0.312	0	2.000	B0	0	M
SD0187	48I001	0.187	4	0.500	0	2.000			
SD0187	4A6003	0.187	4	0.625	0	2.500			
SD0187	4BU003	0.187	4	0.750	0	2.500			
SD0187	4CS005	0.187	4	1.000	0	3.000			
SD0250	46W001	0.250	4	0.375	0	2.000	B0	0	M
SD0250	48I003	0.250	4	0.500	0	2.500			
SD0250	4BU003	0.250	4	0.750	0	2.500			
SD0250	4CS005	0.250	4	1.000	0	3.000			
SD0250	4DG005	0.250	4	1.250	0	3.000			
SD0312	47Q001	0.312	4	0.437	0	2.000	B0	0	M
SD0312	4BU003	0.312	4	0.750	0	2.500			
SD0312	4CS005	0.312	4	1.000	0	3.000			
SD0312	4DG005	0.312	4	1.250	0	3.000			
SD0312	4EW007	0.312	4	1.750	0	3.500			
SD0375	4BU003	0.375	4	0.750	0	2.500	B0	0	M
SD0375	4CA003	0.375	4	0.875	0	2.500			
SD0375	4CS005	0.375	4	1.000	0	3.000			
SD0375	4DG005	0.375	4	1.250	0	3.000			
SD0375	4E6007	0.375	4	1.500	0	3.500			
SD0375	4EW007	0.375	4	1.750	0	3.500			
SD0375	4FK009	0.375	4	2.000	0	4.000			
SD0375	4GS009	0.375	4	2.500	0	4.000			
SD0437	48I003	0.437	4	0.500	0	2.500	B0	0	M
SD0437	4A6003	0.437	4	0.625	0	2.500			
SD0437	4CA005	0.437	4	0.875	0	3.000			
SD0437	4CS005	0.437	4	1.000	0	3.000			
SD0437	4DG005	0.437	4	1.250	0	3.000			
SD0437	4E6007	0.437	4	1.500	0	3.500			
SD0437	4EW009	0.437	4	1.750	0	4.000			
SD0437	4FK009	0.437	4	2.000	0	4.000			
SD0437	4HY00E	0.437	4	3.000	0	5.000			

Non-standard lengths, diameters and radius sizes are available upon request.

SD4 Differential Pitch & Helix Continued
4FL Heavy Rougher - Ball End

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0500	4A6003	B0	0	M		SD05004A6003B00M

First 6	Middle 6						End Geometry	Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Ball Nose	Coolant	Coating
								None	MDC
SD0500	4A6003	0.500	4	0.625	0	2.500	B0	0	M
SD0500	4CS005	0.500	4	1.000	0	3.000			
SD0500	4DG005	0.500	4	1.250	0	3.000			
SD0500	4E6007	0.500	4	1.500	0	3.500			
SD0500	4EW009	0.500	4	1.750	0	4.000			
SD0500	4FK009	0.500	4	2.000	0	4.000			
SD0500	4G6009	0.500	4	2.250	0	4.000			
SD0500	4GS00E	0.500	4	2.500	0	5.000			
SD0500	4HY00E	0.500	4	3.000	0	5.000			
SD0562	4E6007	0.562	4	1.500	0	3.500	B0	0	M
SD0562	4FK009	0.562	4	2.000	0	4.000			
SD0562	4HY00E	0.562	4	3.000	0	5.000			
SD0625	4BU005	0.625	4	0.750	0	3.000	B0	0	M
SD0625	4DG007	0.625	4	1.250	0	3.500			
SD0625	4EI007	0.625	4	1.625	0	3.500			
SD0625	4FK009	0.625	4	2.000	0	4.000			
SD0625	4G600E	0.625	4	2.250	0	5.000			
SD0625	4GS00E	0.625	4	2.500	0	5.000			
SD0625	4HY00E	0.625	4	3.000	0	5.000			
SD0625	4II00I	0.625	4	3.250	0	6.000			
SD0750	4BU005	0.750	4	0.750	0	3.000	B0	0	M
SD0750	4CS007	0.750	4	1.000	0	3.500			
SD0750	4DG007	0.750	4	1.250	0	3.500			
SD0750	4E6007	0.750	4	1.500	0	3.500			
SD0750	4EW009	0.750	4	1.750	0	4.000			
SD0750	4G600E	0.750	4	2.250	0	5.000			
SD0750	4GS00E	0.750	4	2.500	0	5.000			
SD0750	4HC00E	0.750	4	2.750	0	5.000			
SD0750	4HY00E	0.750	4	3.000	0	5.000			
SD0750	4II00I	0.750	4	3.250	0	6.000			
SD0750	4J400I	0.750	4	3.500	0	6.000			
SD0750	4KA00I	0.750	4	4.000	0	6.000			
SD0750	4LG00L	0.750	4	4.500	0	7.000			
SD0875	4EI009	0.875	4	1.625	0	4.000	B0	0	M
SD0875	4H200E	0.875	4	2.625	0	5.000			
SD0875	4HY00E	0.875	4	3.000	0	5.000			
SD0875	4JQ00I	0.875	4	3.750	0	6.000			
SD1000	4E6009	1.000	4	1.500	0	4.000	B0	0	M
SD1000	4FK00B	1.000	4	2.000	0	4.500			
SD1000	4GG00E	1.000	4	2.375	0	5.000			
SD1000	4H200E	1.000	4	2.625	0	5.000			
SD1000	4HY00I	1.000	4	3.000	0	6.000			
SD1000	4IU00I	1.000	4	3.375	0	6.000			
SD1000	4JE00I	1.000	4	3.625	0	6.000			
SD1000	4KK00L	1.000	4	4.125	0	7.000			
SD1000	4LG00L	1.000	4	4.500	0	7.000			
SD1000	4MM00P	1.000	4	5.000	0	8.000			
SD1250	4E6009	1.250	4	1.500	0	4.000	B0	0	M
SD1250	4G600B	1.250	4	2.250	0	4.500			
SD1250	4HY00I	1.250	4	3.000	0	6.000			
SD1250	4JE00I	1.250	4	3.625	0	6.000			
SD1250	4L600N	1.250	4	4.375	0	7.500			
SD1250	4MY00N	1.250	4	5.125	0	7.500			
SD1250	4Q000R	1.250	4	6.000	0	9.000			
SD1250	4R600R	1.250	4	6.500	0	9.000			

Non-standard lengths, diameters and radius sizes are available upon request.

SDEL4 Differential Pitch & Helix
4FL Extended Relief Rougher - Ball End

The **SDEL4** has a differential pitch / differential helix design that reduces the harmonics that cause vibration and chatter. As a result, it can be used in steel, stainless and exotic metals for everything from full slotting to heavy roughing and still achieve a great finish. The **SDEL4** is also a great choice for finishing in tight corners.

- Moderate helix allows for both aggressive cutting and excellent finishes.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- Blended neck relief reduces marks in step-down machining.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0187	**458BU3**	**B0**	**0**	**M**		**SD0187458BU3B00M**

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry	Pick 1	Pick 1
GEO & DIA	**FL, LOC & LBS**	**DIA**	**# FL**	**LOC**	**LBS**	**OAL**	**Ball Nose**	**Coolant None**	**Coating MDC**
SD0187	**458BU3**	0.187	4	0.250	0.750	2.500	B0	0	M
SD0187	**458CS3**	0.187	4	0.250	1.000	2.500			
SD0187	**458DG5**	0.187	4	0.250	1.250	3.000			
SD0187	**458E65**	0.187	4	0.250	1.500	3.000			
SD0250	**46WCS3**	0.250	4	0.375	1.000	2.500	B0	0	M
SD0250	**46WDG5**	0.250	4	0.375	1.250	3.000			
SD0250	**46WE65**	0.250	4	0.375	1.500	3.000			
SD0250	**46WFK7**	0.250	4	0.375	2.000	3.500			
SD0250	**46WGS9**	0.250	4	0.375	2.500	4.000			
SD0312	**47QCS3**	0.312	4	0.437	1.000	2.500	B0	0	M
SD0312	**47QDG5**	0.312	4	0.437	1.250	3.000			
SD0312	**47QE65**	0.312	4	0.437	1.500	3.000			
SD0312	**47QFK7**	0.312	4	0.437	2.000	3.500			
SD0312	**47QGS9**	0.312	4	0.437	2.500	4.000			
SD0375	**48IBU3**	0.375	4	0.500	0.750	2.500	B0	0	M
SD0375	**48ID45**	0.375	4	0.500	1.125	3.000			
SD0375	**48IE65**	0.375	4	0.500	1.500	3.000			
SD0375	**48IF87**	0.375	4	0.500	1.875	3.500			
SD0375	**48IFW9**	0.375	4	0.500	2.125	4.000			
SD0375	**48IGS9**	0.375	4	0.500	2.500	4.000			
SD0375	**48II8E**	0.375	4	0.500	3.125	5.000			
SD0375	**48IKKI**	0.375	4	0.500	4.125	6.000			
SD0500	**4A6E67**	0.500	4	0.625	1.500	3.500	B0	0	M
SD0500	**4A6FK9**	0.500	4	0.625	2.000	4.000			
SD0500	**4A6G69**	0.500	4	0.625	2.250	4.000			
SD0500	**4A6H2E**	0.500	4	0.625	2.625	5.000			
SD0500	**4A6HYE**	0.500	4	0.625	3.000	5.000			
SD0500	**4A6IUE**	0.500	4	0.625	3.375	5.000			
SD0500	**4A6JEI**	0.500	4	0.625	3.625	6.000			
SD0500	**4A6KKI**	0.500	4	0.625	4.125	6.000			

Non-standard lengths, diameters and radius sizes are available upon request.

SDEL4 Differential Pitch & Helix Continued
4FL Extended Relief Rougher - Ball End

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0625	4BUEI9	B0	0	M		SD06254BUEI9B00M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry	Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Ball Nose	Coolant	Coating
								None	MDC
SD0625	4BUEI9	0.625	4	0.750	1.625	4.000	B0	0	M
SD0625	4BUFK9	0.625	4	0.750	2.000	4.000			
SD0625	4BUGGC	0.625	4	0.750	2.375	4.625			
SD0625	4BUHYE	0.625	4	0.750	3.000	5.000			
SD0625	4BUIUI	0.625	4	0.750	3.375	6.000			
SD0625	4BUJQI	0.625	4	0.750	3.750	6.000			
SD0625	4BUKKI	0.625	4	0.750	4.125	6.000			
SD0625	4BUMML	0.625	4	0.750	5.000	7.000			
SD0750	4CSFK9	0.750	4	1.000	2.000	4.000	B0	0	M
SD0750	4CSG6E	0.750	4	1.000	2.250	5.000			
SD0750	4CSH2E	0.750	4	1.000	2.625	5.000			
SD0750	4CSHYE	0.750	4	1.000	3.000	5.000			
SD0750	4CSIUI	0.750	4	1.000	3.375	6.000			
SD0750	4CSJQI	0.750	4	1.000	3.750	6.000			
SD0750	4CSKKI	0.750	4	1.000	4.125	6.000			
SD0750	4CSMML	0.750	4	1.000	5.000	7.000			
SD0750	4CSQ0P	0.750	4	1.000	6.000	8.000			
SD1000	4DGG6B	1.000	4	1.250	2.250	4.500	B0	0	M
SD1000	4DGH2E	1.000	4	1.250	2.625	5.000			
SD1000	4DGHYG	1.000	4	1.250	3.000	5.500			
SD1000	4DGIUI	1.000	4	1.250	3.375	6.000			
SD1000	4DGJQI	1.000	4	1.250	3.750	6.000			
SD1000	4DGKWK	1.000	4	1.250	4.250	6.500			
SD1000	4DGM2L	1.000	4	1.250	4.750	7.000			
SD1000	4DGPEP	1.000	4	1.250	5.750	8.000			
SD1000	4DGRSR	1.000	4	1.250	6.750	9.000			

Non-standard lengths, diameters and radius sizes are available upon request.

SD5 Differential Pitch & Helix
5FL Rougher - Square or Radius

US Patent:
9,227,253
10,335,870

The **SD5** has a differential pitch / differential helix design that reduces the harmonics that cause vibration and chatter. As a result, it can be used in steel, stainless and exotic metals for everything from roughing to finishing.

- Moderate helix allows for both aggressive cutting and excellent finishes.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- Manufacturing tolerances far above industry standards.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0375	58I001	R6	0	M		SD037558I001R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
SD0250	56W001	0.250	5	0.375	0	2.000	S0	R3	R6	RC	RH		0	C	M
SD0250	58I003	0.250	5	0.500	0	2.500									
SD0250	5BU003	0.250	5	0.750	0	2.500									
SD0250	5CS005	0.250	5	1.000	0	3.000									
SD0250	5DG005	0.250	5	1.250	0	3.000									
SD0312	57Q001	0.312	5	0.437	0	2.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0312	5BU003	0.312	5	0.750	0	2.500									
SD0312	5CS005	0.312	5	1.000	0	3.000									
SD0312	5DG005	0.312	5	1.250	0	3.000									
SD0312	5EW007	0.312	5	1.750	0	3.500									
SD0375	58I00I	0.375	5	0.500	0	2.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0375	5BU003	0.375	5	0.750	0	2.500									
SD0375	5CA003	0.375	5	0.875	0	2.500									
SD0375	5CS005	0.375	5	1.000	0	3.000									
SD0375	5DG005	0.375	5	1.250	0	3.000									
SD0375	5E6007	0.375	5	1.500	0	3.500									
SD0375	5W007	0.375	5	1.750	0	3.500									
SD0375	5FK009	0.375	5	2.000	0	4.000									
SD0375	5GS009	0.375	5	2.500	0	4.000									
SD0437	58I003	0.437	5	0.500	0	2.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0437	5A6003	0.437	5	0.625	0	2.500									
SD0437	5CA005	0.437	5	0.875	0	3.000									
SD0437	5CS005	0.437	5	1.000	0	3.000									
SD0437	5DG005	0.437	5	1.250	0	3.000									
SD0437	5E6007	0.437	5	1.500	0	3.500									
SD0437	5EW009	0.437	5	1.750	0	4.000									
SD0437	5FK009	0.437	5	2.000	0	4.000									
SD0437	5HY00E	0.437	5	3.000	0	5.000									
SD0500	5A6003	0.500	5	0.625	0	2.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0500	5CS005	0.500	5	1.000	0	3.000									
SD0500	5DG005	0.500	5	1.250	0	3.000									
SD0500	5E6007	0.500	5	1.500	0	3.500									
SD0500	5EW009	0.500	5	1.750	0	4.000									
SD0500	5FK009	0.500	5	2.000	0	4.000									
SD0500	5G6009	0.500	5	2.250	0	4.000									
SD0500	5GS00E	0.500	5	2.500	0	5.000									
SD0500	5HY00E	0.500	5	3.000	0	5.000									

Non-standard lengths, diameters and radius sizes are available upon request.

SD5 Differential Pitch & Helix Continued
5FL Rougher - Square or Radius

US Patent:
9,227,253
10,335,870

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0750	5BU005	R6	0	M		SD07505BU005R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
SD0562	5E6007	0.562	5	1.500	0	3.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0562	5FK009	0.562	5	2.000	0	4.000									
SD0562	5HY00E	0.562	5	3.000	0	5.000									
SD0625	5BU005	0.625	5	0.750	0	3.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0625	5DG007	0.625	5	1.250	0	3.500									
SD0625	5EI007	0.625	5	1.625	0	3.500									
SD0625	5FK009	0.625	5	2.000	0	4.000									
SD0625	5G600E	0.625	5	2.250	0	5.000									
SD0625	5GS00E	0.625	5	2.500	0	5.000									
SD0625	5HY00E	0.625	5	3.000	0	5.000									
SD0625	5II00I	0.625	5	3.250	0	6.000									
SD0750	5BU005	0.750	5	0.750	0	3.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0750	5CS007	0.750	5	1.000	0	3.500									
SD0750	5DG007	0.750	5	1.250	0	3.500									
SD0750	5E6007	0.750	5	1.500	0	3.500									
SD0750	5EW009	0.750	5	1.750	0	4.000									
SD0750	5G600E	0.750	5	2.250	0	5.000									
SD0750	5GS00E	0.750	5	2.500	0	5.000									
SD0750	5HC00E	0.750	5	2.750	0	5.000									
SD0750	5HY00E	0.750	5	3.000	0	5.000									
SD0750	5II00I	0.750	5	3.250	0	6.000									
SD0750	5J400I	0.750	5	3.500	0	6.000									
SD0750	5KA00I	0.750	5	4.000	0	6.000									
SD0750	5LG00L	0.750	5	4.500	0	7.000									
SD0875	5EI009	0.875	5	1.625	0	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0875	5H200E	0.875	5	2.625	0	5.000									
SD0875	5HY00E	0.875	5	3.000	0	5.000									
SD0875	5JQ00I	0.875	5	3.750	0	6.000									
SD1000	5E6009	1.000	5	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD1000	5FK00B	1.000	5	2.000	0	4.500									
SD1000	5GG00E	1.000	5	2.375	0	5.000									
SD1000	5H200E	1.000	5	2.625	0	5.000									
SD1000	5HY00I	1.000	5	3.000	0	6.000									
SD1000	5IU00I	1.000	5	3.375	0	6.000									
SD1000	5JE00I	1.000	5	3.625	0	6.000									
SD1000	5KK00L	1.000	5	4.125	0	7.000									
SD1000	5LG00L	1.000	5	4.500	0	7.000									
SD1000	5MM00P	1.000	5	5.000	0	8.000									
SD1250	5E6009	1.250	5	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD1250	5G600B	1.250	5	2.250	0	4.500									
SD1250	5HY00I	1.250	5	3.000	0	6.000									
SD1250	5JE00I	1.250	5	3.625	0	6.000									
SD1250	5L600N	1.250	5	4.375	0	7.500									
SD1250	5MY00N	1.250	5	5.125	0	7.500									
SD1250	5Q000R	1.250	5	6.000	0	9.000									
SD1250	5R600R	1.250	5	6.500	0	9.000									

Non-standard lengths, diameters and radius sizes are available upon request.

SDEL5 Differential Pitch & Helix
5FL Extended Relief Rougher
Square or Radius

US Patent:
9,227,253
10,335,870

The **SDEL5** has a differential pitch / differential helix design that reduces the harmonics that cause vibration and chatter. As a result, it can be used in steel, stainless and exotic metals for everything from roughing to finishing.

- Moderate helix allows for both aggressive cutting and excellent finishes.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- Manufacturing tolerances far above industry standards.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.
- Blended neck relief reduces marks in step-down machining.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0375	**58IBU3**	**R6**	**0**	**M**		**SD037558IBU3R60M**

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	**FL, LOC & LBS**	**DIA**	**# FL**	**LOC**	**LBS**	**OAL**	**Square Corner**	**- - - - - - - Radius - - - - - - -**					**Coolant**		**Coating**
								.015	**.030**	**.060**	**.090**	**.125**	**None**	**Center**	**MDC**
SD0250	**56WCS3**	0.250	5	0.375	1.000	2.500	S0	R3	R6	RC	RH		0	C	M
SD0250	**56WDG5**	0.250	5	0.375	1.250	3.000									
SD0250	**56WE65**	0.250	5	0.375	1.500	3.000									
SD0250	**56WFK7**	0.250	5	0.375	2.000	3.500									
SD0250	**56WGS9**	0.250	5	0.375	2.500	4.000									
SD0312	**57QCS3**	0.312	5	0.437	1.000	2.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0312	**57QDG5**	0.312	5	0.437	1.250	3.000									
SD0312	**57QE65**	0.312	5	0.437	1.500	3.000									
SD0312	**57QFK7**	0.312	5	0.437	2.000	3.500									
SD0312	**57QGS9**	0.312	5	0.437	2.500	4.000									
SD0375	**58ID45**	0.375	5	0.500	1.125	3.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0375	**58IE65**	0.375	5	0.500	1.500	3.000									
SD0375	**58IF87**	0.375	5	0.500	1.875	3.500									
SD0375	**58IFW9**	0.375	5	0.500	2.125	4.000									
SD0375	**58IGS9**	0.375	5	0.500	2.500	4.000									
SD0375	**58II8E**	0.375	5	0.500	3.125	5.000									
SD0375	**58IKKI**	0.375	5	0.500	4.125	6.000									
SD0500	**5A6E67**	0.500	5	0.625	1.500	3.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0500	**5A6FK9**	0.500	5	0.625	2.000	4.000									
SD0500	**5A6G69**	0.500	5	0.625	2.250	4.000									
SD0500	**5A6H2E**	0.500	5	0.625	2.625	5.000									
SD0500	**5A6HYE**	0.500	5	0.625	3.000	5.000									
SD0500	**5A6IUE**	0.500	5	0.625	3.375	5.000									
SD0500	**5A6JEI**	0.500	5	0.625	3.625	6.000									
SD0500	**5A6KKI**	0.500	5	0.625	4.125	6.000									

Non-standard lengths, diameters and radius sizes are available upon request.

SDEL5 Differential Pitch & Helix Continued
5FL Extended Relief Rougher
Square or Radius

US Patent:
9,227,253
10,335,870

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0375	58IBU3	R6	0	M		SD037558IBU3R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
SD0625	5BUEI9	0.625	5	0.750	1.625	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0625	5BUFK9	0.625	5	0.750	2.000	4.000									
SD0625	5BUGGC	0.625	5	0.750	2.375	4.625									
SD0625	5BUHYE	0.625	5	0.750	3.000	5.000									
SD0625	5BUIUI	0.625	5	0.750	3.375	6.000									
SD0625	5BUJQI	0.625	5	0.750	3.750	6.000									
SD0625	5BUKKI	0.625	5	0.750	4.125	6.000									
SD0625	5BUMML	0.625	5	0.750	5.000	7.000									
SD0750	5CSFK9	0.750	5	1.000	2.000	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0750	5CSG6E	0.750	5	1.000	2.250	5.000									
SD0750	5CSH2E	0.750	5	1.000	2.625	5.000									
SD0750	5CSHYE	0.750	5	1.000	3.000	5.000									
SD0750	5CSIUI	0.750	5	1.000	3.375	6.000									
SD0750	5CSJQI	0.750	5	1.000	3.750	6.000									
SD0750	5CSKKI	0.750	5	1.000	4.125	6.000									
SD0750	5CSMML	0.750	5	1.000	5.000	7.000									
SD0750	5CSQ0P	0.750	5	1.000	6.000	8.000									
SD1000	5DGG6B	1.000	5	1.250	2.250	4.500	S0	R3	R6	RC	RH	RM	0	C	M
SD1000	5DGH2E	1.000	5	1.250	2.625	5.000									
SD1000	5DGHYG	1.000	5	1.250	3.000	5.500									
SD1000	5DGIUI	1.000	5	1.250	3.375	6.000									
SD1000	5DGJQI	1.000	5	1.250	3.750	6.000									
SD1000	5DGKWK	1.000	5	1.250	4.250	6.500									
SD1000	5DGM2L	1.000	5	1.250	4.750	7.000									
SD1000	5DGPEP	1.000	5	1.250	5.750	8.000									
SD1000	5DGRSR	1.000	5	1.250	6.75	9.000									

Non-standard lengths, diameters and radius sizes are available upon request.

SD6 Differential Pitch & Helix
6FL Rougher - Square or Radius

US Patent:
9,227,253
10,335,870

The **SD6** has a differential pitch / differential helix design that reduces the harmonics that cause vibration and chatter. As a result, it can be used in steel, stainless and exotic metals for everything from roughing to finishing.

- Moderate helix allows for both aggressive cutting and excellent finishes.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- Manufacturing tolerances far above industry standards.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0375	68IBU3	R6	0	M		SD037568IBU3R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
SD0250	66W001	0.250	6	0.375	0	2.000	S0	R3	R6	RC	RH		0	C	M
SD0250	68I003	0.250	6	0.500	0	2.500									
SD0250	6BU003	0.250	6	0.750	0	2.500									
SD0250	6CS005	0.250	6	1.000	0	3.000									
SD0250	6DG005	0.250	6	1.250	0	3.000									
SD0312	67Q001	0.312	6	0.437	0	2.000	S0	R3	R6	RC	RH		0	C	M
SD0312	6BU003	0.312	6	0.750	0	2.500									
SD0312	6CS005	0.312	6	1.000	0	3.000									
SD0312	6DG005	0.312	6	1.250	0	3.000									
SD0312	6EW007	0.312	6	1.750	0	3.500									
SD0375	68I001	0.375	6	0.500	0	2.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0375	6BU003	0.375	6	0.750	0	2.500									
SD0375	6CA003	0.375	6	0.875	0	2.500									
SD0375	6CS005	0.375	6	1.000	0	3.000									
SD0375	6DG005	0.375	6	1.250	0	3.000									
SD0375	6E6007	0.375	6	1.500	0	3.500									
SD0375	6EW007	0.375	6	1.750	0	3.500									
SD0375	6FK009	0.375	6	2.000	0	4.000									
SD0375	6GS009	0.375	6	2.500	0	4.000									
SD0437	68I003	0.437	6	0.500	0	2.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0437	6A6003	0.437	6	0.625	0	2.500									
SD0437	6CA005	0.437	6	0.875	0	3.000									
SD0437	6CS005	0.437	6	1.000	0	3.000									
SD0437	6DG005	0.437	6	1.250	0	3.000									
SD0437	6E6007	0.437	6	1.500	0	3.500									
SD0437	6EW009	0.437	6	1.750	0	4.000									
SD0437	6FK009	0.437	6	2.000	0	4.000									
SD0437	6HY00E	0.437	6	3.000	0	5.000									
SD0500	6A6003	0.500	6	0.625	0	2.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0500	6CS005	0.500	6	1.000	0	3.000									
SD0500	6DG005	0.500	6	1.250	0	3.000									
SD0500	6E6007	0.500	6	1.500	0	3.500									
SD0500	6EW009	0.500	6	1.750	0	4.000									
SD0500	6FK009	0.500	6	2.000	0	4.000									
SD0500	6G6009	0.500	6	2.250	0	4.000									
SD0500	6GS00E	0.500	6	2.500	0	5.000									
SD0500	6HY00E	0.500	6	3.000	0	5.000									

Non-standard lengths, diameters and radius sizes are available upon request.

SD6 Differential Pitch & Helix Continued
6FL Rougher - Square or Radius

US Patent:
9,227,253
10,335,870

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0750	6BU005	R6	0	M		SD07506BU005R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
SD0562	6E6007	0.562	6	1.500	0	3.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0562	6FK009	0.562	6	2.000	0	4.000									
SD0562	6HY00E	0.562	6	3.000	0	5.000									
SD0625	6BU005	0.625	6	0.750	0	3.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0625	6DG007	0.625	6	1.250	0	3.500									
SD0625	6EI007	0.625	6	1.625	0	3.500									
SD0625	6FK009	0.625	6	2.000	0	4.000									
SD0625	6G600E	0.625	6	2.250	0	5.000									
SD0625	6GS00E	0.625	6	2.500	0	5.000									
SD0625	6HY00E	0.625	6	3.000	0	5.000									
SD0625	6II00I	0.625	6	3.250	0	6.000									
SD0750	6BU005	0.750	6	0.750	0	3.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0750	6CS007	0.750	6	1.000	0	3.500									
SD0750	6DG007	0.750	6	1.250	0	3.500									
SD0750	6E6007	0.750	6	1.500	0	3.500									
SD0750	6EW009	0.750	6	1.750	0	4.000									
SD0750	6G600E	0.750	6	2.250	0	5.000									
SD0750	6GS00E	0.750	6	2.500	0	5.000									
SD0750	6HC00E	0.750	6	2.750	0	5.000									
SD0750	6HY00E	0.750	6	3.000	0	5.000									
SD0750	6II00I	0.750	6	3.250	0	6.000									
SD0750	6J400I	0.750	6	3.500	0	6.000									
SD0750	6KA00I	0.750	6	4.000	0	6.000									
SD0750	6LG00L	0.750	6	4.500	0	7.000									
SD0875	6EI009	0.875	6	1.625	0	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0875	6H200E	0.875	6	2.625	0	5.000									
SD0875	6HY00E	0.875	6	3.000	0	5.000									
SD0875	6JQ00I	0.875	6	3.750	0	6.000									
SD1000	6E6009	1.000	6	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD1000	6FK00B	1.000	6	2.000	0	4.500									
SD1000	6GG00E	1.000	6	2.375	0	5.000									
SD1000	6H200E	1.000	6	2.625	0	5.000									
SD1000	6HY00I	1.000	6	3.000	0	6.000									
SD1000	6IU00I	1.000	6	3.375	0	6.000									
SD1000	6JE00I	1.000	6	3.625	0	6.000									
SD1000	6KK00L	1.000	6	4.125	0	7.000									
SD1000	6LG00L	1.000	6	4.500	0	7.000									
SD1000	6MM00P	1.000	6	5.000	0	8.000									
SD1250	6E6009	1.250	6	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD1250	6G600B	1.250	6	2.250	0	4.500									
SD1250	6HY00I	1.250	6	3.000	0	6.000									
SD1250	6JE00I	1.250	6	3.625	0	6.000									
SD1250	6L600N	1.250	6	4.375	0	7.500									
SD1250	6MY00N	1.250	6	5.125	0	7.500									
SD1250	6Q000R	1.250	6	6.000	0	9.000									
SD1250	6R600R	1.250	6	6.500	0	9.000									

Non-standard lengths, diameters and radius sizes are available upon request.

SDEL6 Differential Pitch & Helix
6FL Extended Relief Rougher
Square or Radius

US Patent:
9,227,253
10,335,870

The **SDEL6** has a differential pitch / differential helix design that reduces the harmonics that cause vibration and chatter. As a result, it can be used in steel, stainless and exotic metals for everything from roughing to finishing.

- Moderate helix allows for both aggressive cutting and excellent finishes.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- Manufacturing tolerances far above industry standards.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.
- Blended neck relief reduces marks in step-down machining.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0375	**68IBU3**	**R6**	**0**	**M**		**SD037568IBU3R60M**

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	**FL, LOC & LBS**	**DIA**	**# FL**	**LOC**	**LBS**	**OAL**	**Square Corner**	**- - - - - - - Radius - - - - - - -**					**Coolant**		**Coating**
								.015	**.030**	**.060**	**.090**	**.125**	**None**	**Center**	**MDC**
SD0250	**66WCS3**	0.250	6	0.375	1.000	2.500	S0	R3	R6	RC			0	C	M
SD0250	**66WDG5**	0.250	6	0.375	1.250	3.000									
SD0250	**66WE65**	0.250	6	0.375	1.500	3.000									
SD0250	**66WFK7**	0.250	6	0.375	2.000	3.500									
SD0250	**66WGS9**	0.250	6	0.375	2.500	4.000									
SD0312	**67QCS3**	0.312	6	0.437	1.000	2.500	S0	R3	R6	RC	RH		0	C	M
SD0312	**67QDG5**	0.312	6	0.437	1.250	3.000									
SD0312	**67QE65**	0.312	6	0.437	1.500	3.000									
SD0312	**67QFK7**	0.312	6	0.437	2.000	3.500									
SD0312	**67QGS9**	0.312	6	0.437	2.500	4.000									
SD0375	**68IBU3**	0.375	6	0.500	0.750	2.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0375	**68ID45**	0.375	6	0.500	1.125	3.000									
SD0375	**68IE65**	0.375	6	0.500	1.500	3.000									
SD0375	**68IF87**	0.375	6	0.500	1.875	3.500									
SD0375	**68IFW9**	0.375	6	0.500	2.125	4.000									
SD0375	**68IGS9**	0.375	6	0.500	2.500	4.000									
SD0375	**68II8E**	0.375	6	0.500	3.125	5.000									
SD0375	**68IKKI**	0.375	6	0.500	4.125	6.000									
SD0500	**6A6E67**	0.500	6	0.625	1.500	3.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0500	**6A6FK9**	0.500	6	0.625	2.000	4.000									
SD0500	**6A6G69**	0.500	6	0.625	2.250	4.000									
SD0500	**6A6H2E**	0.500	6	0.625	2.625	5.000									
SD0500	**6A6HYE**	0.500	6	0.625	3.000	5.000									
SD0500	**6A6IUE**	0.500	6	0.625	3.375	5.000									
SD0500	**6A6JEI**	0.500	6	0.625	3.625	6.000									
SD0500	**6A6KKI**	0.500	6	0.625	4.125	6.000									

Non-standard lengths, diameters and radius sizes are available upon request.

SDEL6 Differential Pitch & Helix Continued
6FL Extended Relief Rougher
Square or Radius

US Patent:
9,227,253
10,335,870

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0375	68IBU3	R6	0	M		SD037568IBU3R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
SD0625	6BUEI9	0.625	6	0.750	1.625	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0625	6BUFK9	0.625	6	0.750	2.000	4.000									
SD0625	6BUGGC	0.625	6	0.750	2.375	4.625									
SD0625	6BUHYE	0.625	6	0.750	3.000	5.000									
SD0625	6BUIUI	0.625	6	0.750	3.375	6.000									
SD0625	6BUJQI	0.625	6	0.750	3.750	6.000									
SD0625	6BUKKI	0.625	6	0.750	4.125	6.000									
SD0625	6BUMML	0.625	6	0.750	5.000	7.000									
SD0750	6CSFK9	0.750	6	1.000	2.000	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0750	6CSG6E	0.750	6	1.000	2.250	5.000									
SD0750	6CSH2E	0.750	6	1.000	2.625	5.000									
SD0750	6CSHYE	0.750	6	1.000	3.000	5.000									
SD0750	6CSIUI	0.750	6	1.000	3.375	6.000									
SD0750	6CSJQI	0.750	6	1.000	3.750	6.000									
SD0750	6CSKKI	0.750	6	1.000	4.125	6.000									
SD0750	6CSMML	0.750	6	1.000	5.000	7.000									
SD0750	6CSQ0P	0.750	6	1.000	6.000	8.000									
SD1000	6DGG6B	1.000	6	1.250	2.250	4.500	S0	R3	R6	RC	RH	RM	0	C	M
SD1000	6DGH2E	1.000	6	1.250	2.625	5.000									
SD1000	6DGHYG	1.000	6	1.250	3.000	5.500									
SD1000	6DGIUI	1.000	6	1.250	3.375	6.000									
SD1000	6DGJQI	1.000	6	1.250	3.750	6.000									
SD1000	6DGKWK	1.000	6	1.250	4.250	6.500									
SD1000	6DGM2L	1.000	6	1.250	4.750	7.000									
SD1000	6DGPEP	1.000	6	1.250	5.750	8.000									
SD1000	6DGRSR	1.000	6	1.250	6.750	9.000									

Non-standard lengths, diameters and radius sizes are available upon request.

NEW!

SD7 Differential Pitch & Helix
7FL Rougher - Square or Radius

US Patent:
9,227,253
10,335,870

The **SD7** has a differential pitch / differential helix design that reduces the harmonics that cause vibration and chatter. As a result, it can be used in steel, stainless and exotic metals for everything from roughing to finishing.

- Moderate helix allows for both aggressive cutting and excellent finishes.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- Manufacturing tolerances far above industry standards.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0375	78IBU3	R6	0	M		SD037578IBU3R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
SD0250	76W001	0.250	7	0.375	0	2.000	S0	R3	R6	RC			0	C	M
SD0250	78I003	0.250	7	0.500	0	2.500									
SD0250	7BU003	0.250	7	0.750	0	2.500									
SD0250	7CS005	0.250	7	1.000	0	3.000									
SD0250	7DG005	0.250	7	1.250	0	3.000									
SD0312	77Q001	0.312	7	0.437	0	2.000	S0	R3	R6	RC	RH		0	C	M
SD0312	7BU003	0.312	7	0.750	0	2.500									
SD0312	7CS005	0.312	7	1.000	0	3.000									
SD0312	7DG005	0.312	7	1.250	0	3.000									
SD0312	7EW007	0.312	7	1.750	0	3.500									
SD0375	78I001	0.375	7	0.500	0	2.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0375	7BU003	0.375	7	0.750	0	2.500									
SD0375	7CA003	0.375	7	0.875	0	2.500									
SD0375	7CS005	0.375	7	1.000	0	3.000									
SD0375	7DG005	0.375	7	1.250	0	3.000									
SD0375	7E6007	0.375	7	1.500	0	3.500									
SD0375	7EW007	0.375	7	1.750	0	3.500									
SD0375	7FK009	0.375	7	2.000	0	4.000									
SD0375	7GS009	0.375	7	2.500	0	4.000									
SD0437	78I003	0.437	7	0.500	0	2.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0437	7A6003	0.437	7	0.625	0	2.500									
SD0437	7CA005	0.437	7	0.875	0	3.000									
SD0437	7CS005	0.437	7	1.000	0	3.000									
SD0437	7DG005	0.437	7	1.250	0	3.000									
SD0437	7E6007	0.437	7	1.500	0	3.500									
SD0437	7EW009	0.437	7	1.750	0	4.000									
SD0437	7FK009	0.437	7	2.000	0	4.000									
SD0437	7HY00E	0.437	7	3.000	0	5.000									
SD0500	7A6003	0.500	7	0.625	0	2.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0500	7CS005	0.500	7	1.000	0	3.000									
SD0500	7DG005	0.500	7	1.250	0	3.000									
SD0500	7E6007	0.500	7	1.500	0	3.500									
SD0500	7EW009	0.500	7	1.750	0	4.000									
SD0500	7FK009	0.500	7	2.000	0	4.000									
SD0500	7G6009	0.500	7	2.250	0	4.000									
SD0500	7GS00E	0.500	7	2.500	0	5.000									
SD0500	7HY00E	0.500	7	3.000	0	5.000									

Non-standard lengths, diameters and radius sizes are available upon request.

NEW!

SD7 Differential Pitch & Helix Continued
7FL Rougher - Square or Radius

US Patent:
9,227,253
10,335,870

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0750	7BU005	R6	0	M		SD07507BU005R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
SD0562	7E6007	0.562	7	1.500	0	3.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0562	7FK009	0.562	7	2.000	0	4.000									
SD0562	7HY00E	0.562	7	3.000	0	5.000									
SD0625	7BU005	0.625	7	0.750	0	3.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0625	7DG007	0.625	7	1.250	0	3.500									
SD0625	7EI007	0.625	7	1.625	0	3.500									
SD0625	7FK009	0.625	7	2.000	0	4.000									
SD0625	7G600E	0.625	7	2.250	0	5.000									
SD0625	7GS00E	0.625	7	2.500	0	5.000									
SD0625	7HY00E	0.625	7	3.000	0	5.000									
SD0625	7II00I	0.625	7	3.250	0	6.000									
SD0750	7BU005	0.750	7	0.750	0	3.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0750	7CS007	0.750	7	1.000	0	3.500									
SD0750	7DG007	0.750	7	1.250	0	3.500									
SD0750	7E6007	0.750	7	1.500	0	3.500									
SD0750	7EW009	0.750	7	1.750	0	4.000									
SD0750	7G600E	0.750	7	2.250	0	5.000									
SD0750	7GS00E	0.750	7	2.500	0	5.000									
SD0750	7HC00E	0.750	7	2.750	0	5.000									
SD0750	7HY00E	0.750	7	3.000	0	5.000									
SD0750	7II00I	0.750	7	3.250	0	6.000									
SD0750	7J400I	0.750	7	3.500	0	6.000									
SD0750	7KA00I	0.750	7	4.000	0	6.000									
SD0750	7LG00L	0.750	7	4.500	0	7.000									
SD0875	7EI009	0.875	7	1.625	0	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0875	7H200E	0.875	7	2.625	0	5.000									
SD0875	7HY00E	0.875	7	3.000	0	5.000									
SD0875	7JQ00I	0.875	7	3.750	0	6.000									
SD1000	7E6009	1.000	7	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD1000	7FK00B	1.000	7	2.000	0	4.500									
SD1000	7GG00E	1.000	7	2.375	0	5.000									
SD1000	7H200E	1.000	7	2.625	0	5.000									
SD1000	7HY00I	1.000	7	3.000	0	6.000									
SD1000	7IU00I	1.000	7	3.375	0	6.000									
SD1000	7JE00I	1.000	7	3.625	0	6.000									
SD1000	7KK00L	1.000	7	4.125	0	7.000									
SD1000	7LG00L	1.000	7	4.500	0	7.000									
SD1000	7MM00P	1.000	7	5.000	0	8.000									
SD1250	7E6009	1.250	7	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD1250	7G600B	1.250	7	2.250	0	4.500									
SD1250	7HY00I	1.250	7	3.000	0	6.000									
SD1250	7JE00I	1.250	7	3.625	0	6.000									
SD1250	7L600N	1.250	7	4.375	0	7.500									
SD1250	7MY00N	1.250	7	5.125	0	7.500									
SD1250	7Q000R	1.250	7	6.000	0	9.000									
SD1250	7R600R	1.250	7	6.500	0	9.000									

Non-standard lengths, diameters and radius sizes are available upon request.

NEW!

SDEL7 Differential Pitch & Helix
7FL Extended Relief Rougher
Square or Radius

US Patent:
9,227,253
10,335,870

The **SDEL7** has a differential pitch / differential helix design that reduces the harmonics that cause vibration and chatter. As a result, it can be used in steel, stainless and exotic metals for everything from roughing to finishing.

- Moderate helix allows for both aggressive cutting and excellent finishes.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- Manufacturing tolerances far above industry standards.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.
- Blended neck relief reduces marks in step-down machining.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0375	**78IBU3**	**R6**	**0**	**M**		**SD037578IBU3R60M**

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
SD0250	**76WCS3**	0.250	7	0.375	1.000	2.500	S0	R3	R6	RC			0	C	M
SD0250	**76WDG5**	0.250	7	0.375	1.250	3.000									
SD0250	**76WE65**	0.250	7	0.375	1.500	3.000									
SD0250	**76WFK7**	0.250	7	0.375	2.000	3.500									
SD0250	**76WGS9**	0.250	7	0.375	2.500	4.000									
SD0312	**77QCS3**	0.312	7	0.437	1.000	2.500	S0	R3	R6	RC	RH		0	C	M
SD0312	**77QDG5**	0.312	7	0.437	1.250	3.000									
SD0312	**77QE65**	0.312	7	0.437	1.500	3.000									
SD0312	**77QFK7**	0.312	7	0.437	2.000	3.500									
SD0312	**77QGS9**	0.312	7	0.437	2.500	4.000									
SD0375	**78IBU3**	0.375	7	0.500	0.750	2.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0375	**78ID45**	0.375	7	0.500	1.125	3.000									
SD0375	**78IE65**	0.375	7	0.500	1.500	3.000									
SD0375	**78IF87**	0.375	7	0.500	1.875	3.500									
SD0375	**78IFW9**	0.375	7	0.500	2.125	4.000									
SD0375	**78IGS9**	0.375	7	0.500	2.500	4.000									
SD0375	**78II8E**	0.375	7	0.500	3.125	5.000									
SD0375	**78IKKI**	0.375	7	0.500	4.125	6.000									
SD0500	**7A6E67**	0.500	7	0.625	1.500	3.500	S0	R3	R6	RC	RH	RM	0	C	M
SD0500	**7A6FK9**	0.500	7	0.625	2.000	4.000									
SD0500	**7A6G69**	0.500	7	0.625	2.250	4.000									
SD0500	**7A6H2E**	0.500	7	0.625	2.625	5.000									
SD0500	**7A6HYE**	0.500	7	0.625	3.000	5.000									
SD0500	**7A6IUE**	0.500	7	0.625	3.375	5.000									
SD0500	**7A6JEI**	0.500	7	0.625	3.625	6.000									
SD0500	**7A6KKI**	0.500	7	0.625	4.125	6.000									

Non-standard lengths, diameters and radius sizes are available upon request.

NEW!

SDEL7 Differential Pitch & Helix Continued
7FL Extended Relief Rougher
Square or Radius

US Patent:
9,227,253
10,335,870

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SD0375	78IBU3	R6	0	M		SD037578IBU3R60M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	MDC
SD0625	7BUEI9	0.625	7	0.750	1.625	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0625	7BUFK9	0.625	7	0.750	2.000	4.000									
SD0625	7BUGGC	0.625	7	0.750	2.375	4.625									
SD0625	7BUHYE	0.625	7	0.750	3.000	5.000									
SD0625	7BUIUI	0.625	7	0.750	3.375	6.000									
SD0625	7BUJQI	0.625	7	0.750	3.750	6.000									
SD0625	7BUKKI	0.625	7	0.750	4.125	6.000									
SD0625	7BUMML	0.625	7	0.750	5.000	7.000									
SD0750	7CSFK9	0.750	7	1.000	2.000	4.000	S0	R3	R6	RC	RH	RM	0	C	M
SD0750	7CSG6E	0.750	7	1.000	2.250	5.000									
SD0750	7CSH2E	0.750	7	1.000	2.625	5.000									
SD0750	7CSHYE	0.750	7	1.000	3.000	5.000									
SD0750	7CSIUI	0.750	7	1.000	3.375	6.000									
SD0750	7CSJQI	0.750	7	1.000	3.750	6.000									
SD0750	7CSKKI	0.750	7	1.000	4.125	6.000									
SD0750	7CSMML	0.750	7	1.000	5.000	7.000									
SD0750	7CSQ0P	0.750	7	1.000	6.000	8.000									
SD1000	7DGG6B	1.000	7	1.250	2.250	4.500	S0	R3	R6	RC	RH	RM	0	C	M
SD1000	7DGH2E	1.000	7	1.250	2.625	5.000									
SD1000	7DGHYG	1.000	7	1.250	3.000	5.500									
SD1000	7DGIUI	1.000	7	1.250	3.375	6.000									
SD1000	7DGJQI	1.000	7	1.250	3.750	6.000									
SD1000	7DGKWK	1.000	7	1.250	4.250	6.500									
SD1000	7DGM2L	1.000	7	1.250	4.750	7.000									
SD1000	7DGPEP	1.000	7	1.250	5.750	8.000									
SD1000	7DGRSR	1.000	7	1.250	6.750	9.000									

Non-standard lengths, diameters and radius sizes are available upon request.

SH4 SERIES
4FL VP/VH V-Notch Rougher

The **SH4** has a differential pitch / differential helix design that eliminates the harmonics that cause vibration and chatter and is engineered to remove the most material per HP available. The free cutting proprietary V-notch design breaks up sine waves and makes small, manageable chips. As a result, it can be used for everything from full slotting to heavy roughing in long reach applications.

- Differential pitch / helix design eliminates chatter.
- Proprietary V-notch produces short, manageable chips.
- Micro-polished edge-prep and staggered V-notch creates best possible finish from a rougher.
- Manufacturing tolerances far above industry standards.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SH0375	**48I001**	**T6**	**0**	**M**		**SM037548I001T60M**

First 6	Middle 6						End Geometry	Pick 1	Pick 1
GEO	FL,LOC,						Stk/Std Roughing	Coolant	Coating
& DIA#	& LBS#	DIA	FL#	LOC	LBS	OAL	*T.Rad	None	MDC
SH0375	48I001	0.375	4	0.500	0	2.000			
SH0375	4BU003	0.375	4	0.750	0	2.500			
SH0375	4CA003	0.375	4	0.875	0	2.500			
SH0375	4CS005	0.375	4	1.000	0	3.000	T6		
SH0375	4DG005	0.375	4	1.250	0	3.000		0	M
SH0375	4E6007	0.375	4	1.500	0	3.500	(.030)		
SH0375	4EW007	0.375	4	1.750	0	3.500			
SH0375	4FK009	0.375	4	2.000	0	4.000			
SH0375	4GS009	0.375	4	2.500	0	4.000			
SH0437	48I003	0.437	4	0.500	0	2.500			
SH0437	4A6003	0.437	4	0.625	0	2.500			
SH0437	4CA005	0.437	4	0.875	0	3.000			
SH0437	4CS005	0.437	4	1.000	0	3.000	TC		
SH0437	4DG005	0.437	4	1.250	0	3.000		0	M
SH0437	4E6007	0.437	4	1.500	0	3.500	(.060)		
SH0437	4EW009	0.437	4	1.750	0	4.000			
SH0437	4FK009	0.437	4	2.000	0	4.000			
SH0437	4HY00E	0.437	4	3.000	0	5.000			
SH0500	4A6003	0.500	4	0.625	0	2.500			
SH0500	4CS005	0.500	4	1.000	0	3.000			
SH0500	4DG005	0.500	4	1.250	0	3.000			
SH0500	4E6007	0.500	4	1.500	0	3.500	TC		
SH0500	4EW009	0.500	4	1.750	0	4.000		0	M
SH0500	4FK009	0.500	4	2.000	0	4.000	(.060)		
SH0500	4G6009	0.500	4	2.250	0	4.000			
SH0500	4GS00B	0.500	4	2.500	0	4.500			
SH0500	4HY00E	0.500	4	3.000	0	5.000			
SH0562	4E6007	0.562	4	1.500	0	3.500	N/A		
SH0562	4FK009	0.562	4	2.000	0	4.000		0	M
SH0562	4HY00E	0.562	4	3.000	0	5.000	N/A		
SH0625	4BU005	0.625	4	0.750	0	3.000			
SH0625	4DG007	0.625	4	1.250	0	3.500			
SH0625	4EI007	0.625	4	1.625	0	3.500	TC		
SH0625	4FK009	0.625	4	2.000	0	4.000		0	M
SH0625	4G600E	0.625	4	2.250	0	5.000	(.060)		
SH0625	4GS00E	0.625	4	2.500	0	5.000			
SH0625	4HY00E	0.625	4	3.000	0	5.000			
SH0625	4II00I	0.625	4	3.250	0	6.000			

SH4 SERIES

4FL VP/VH V-Notch Rougher Continued

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SH0750	**4BU005**	**TC**	**0**	**M**		**SM07504BU005TC0M**

GEO & DIA#	FL,LOC, & LBS#	DIA	FL#	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	Coolant None	Coating MDC
SH0750	4BU005	0.750	4	0.750	0	3.000	TC (.060)	0	M
SH0750	4CS007	0.750	4	1.000	0	3.500			
SH0750	4DG007	0.750	4	1.250	0	3.500			
SH0750	4E6007	0.750	4	1.500	0	3.500			
SH0750	4EW009	0.750	4	1.750	0	4.000			
SH0750	4G600E	0.750	4	2.250	0	5.000			
SH0750	4GS00E	0.750	4	2.500	0	5.000			
SH0750	4HC00E	0.750	4	2.750	0	5.000			
SH0750	4HY00E	0.750	4	3.000	0	5.000			
SH0750	4II00I	0.750	4	3.250	0	6.000			
SH0750	4J400I	0.750	4	3.500	0	6.000			
SH0750	4KA00I	0.750	4	4.000	0	6.000			
SH0750	4LG00L	0.750	4	4.500	0	7.000			
SH0875	4EI009	0.875	4	1.625	0	4.000	TC (.060)	0	M
SH0875	4H200E	0.875	4	2.625	0	5.000			
SH0875	4HY00E	0.875	4	3.000	0	5.000			
SH0875	4JQ00I	0.875	4	3.750	0	6.000			
SH1000	4E6009	1.000	4	1.500	0	4.000	TC (.060)	0	M
SH1000	4HY00G	1.000	4	2.000	0	4.500			
SH1000	4GG00E	1.000	4	2.375	0	5.000			
SH1000	4H200E	1.000	4	2.625	0	5.500			
SH1000	4HY00I	1.000	4	3.000	0	5.500			
SH1000	4IU00I	1.000	4	3.375	0	6.000			
SH1000	4MM00N	1.000	4	3.625	0	6.000			
SH1000	4KK00L	1.000	4	4.125	0	7.000			
SH1000	4LG00L	1.000	4	4.500	0	7.500			
SH1000	4MM00P	1.000	4	5.000	0	8.000			
SH1250	4E6009	1.250	4	1.500	0	4.000	TC (.060)	0	M
SH1250	4G600B	1.250	4	2.250	0	4.500			
SH1250	4HY00I	1.250	4	3.000	0	6.000			
SH1250	4JE00I	1.250	4	3.625	0	6.000			
SH1250	4L600N	1.250	4	4.375	0	7.500			
SH1250	4MY00N	1.250	4	5.125	0	7.500			
SH1250	4Q000R	1.250	4	6.000	0	9.000			
SH1250	4R600R	1.250	4	6.500	0	9.000			

SHEL4 SERIES
4FL Extended Relief VP/VH V-Notch Rougher

The **SHEL4** has a differential pitch / differential helix design that eliminates the harmonics that cause vibration and chatter and is engineered to remove the most material per HP available. The free cutting proprietary V-notch design breaks up sine waves and makes small, manageable chips. As a result, it can be used for everything from full slotting to heavy roughing in long reach applications.

- Blended neck relief reduces marks in step-down machining.
- Differential pitch / differentialhelix eliminates chatter & vibration.
- Manufacturing tolerances far above industry standards.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SH0375	**48IBU3**	**T6**	**0**	**M**		**SM037548IBU3T60M**

First 6	Middle 6						End Geometry	Pick 1	Pick 1
GEO	**FL,LOC,**						**Stk/Std Roughing**	**Coolant**	**Coating**
& DIA#	**& LBS#**	**DIA**	**FL#**	**LOC**	**LBS**	**OAL**	***T.Rad**	**None**	**MDC**
SH0375	48IBU3	0.375	4	0.500	0.750	2.500	T6 (.030)	0	M
SH0375	48ID45	0.375	4	0.500	1.125	3.000			
SH0375	48IE65	0.375	4	0.500	1.500	3.000			
SH0375	48IF87	0.375	4	0.500	1.875	3.500			
SH0375	48IFW9	0.375	4	0.500	2.125	4.000			
SH0375	48IGS9	0.375	4	0.500	2.500	4.000			
SH0375	48II8E	0.375	4	0.500	3.125	5.000			
SH0375	48IKKI	0.375	4	0.500	4.125	6.000			
SH0500	4A6E67	0.500	4	0.625	1.500	3.500	TC (.060)	0	M
SH0500	4A6FK9	0.500	4	0.625	2.000	4.000			
SH0500	4A6G69	0.500	4	0.625	2.250	4.000			
SH0500	4A6H2E	0.500	4	0.625	2.625	5.000			
SH0500	4A6HYE	0.500	4	0.625	3.000	5.000			
SH0500	4A6IUE	0.500	4	0.625	3.375	5.000			
SH0500	4A6JEI	0.500	4	0.625	3.625	6.000			
SH0500	4A6KKI	0.500	4	0.625	4.125	6.000			
SH0625	4BUEI9	0.625	4	0.750	1.625	4.000	TC (.060)	0	M
SH0625	4BUFK9	0.625	4	0.750	2.000	4.000			
SH0625	4BUGGC	0.625	4	0.750	2.375	4.625			
SH0625	4BUHYE	0.625	4	0.750	3.000	5.000			
SH0625	4BUIUI	0.625	4	0.750	3.375	6.000			
SH0625	4BUJQI	0.625	4	0.750	3.750	6.000			
SH0625	4BUKKI	0.625	4	0.750	4.125	6.000			
SH0625	4BUMML	0.625	4	0.750	5.000	7.000			
SH0750	4CSFK9	0.750	4	1.000	2.000	4.000	TC (.060)	0	M
SH0750	4CSG6E	0.750	4	1.000	2.250	5.000			
SH0750	4CSH2E	0.750	4	1.000	2.625	5.000			
SH0750	4CSHYE	0.750	4	1.000	3.000	5.000			
SH0750	4CSIUI	0.750	4	1.000	3.375	6.000			
SH0750	4CSJQI	0.750	4	1.000	3.750	6.000			
SH0750	4CSKKI	0.750	4	1.000	4.125	6.000			
SH0750	4CSMML	0.750	4	1.000	5.000	7.000			
SH0750	4CSQ0P	0.750	4	1.000	6.000	8.000			
SH1000	4DGG6B	1.000	4	1.250	2.250	4.500	TC (.060)	0	M
SH1000	4DGH2E	1.000	4	1.250	2.625	5.000			
SH1000	4DGHYG	1.000	4	1.250	3.000	5.500			
SH1000	4DGIUI	1.000	4	1.250	3.375	6.000			
SH1000	4DGJQI	1.000	4	1.250	3.750	6.000			
SH1000	4DGKWK	1.000	4	1.250	4.250	6.500			
SH1000	4DGM2L	1.000	4	1.250	4.750	7.000			
SH1000	4DGPEP	1.000	4	1.250	5.750	8.000			
SH1000	4DGRSR	1.000	4	1.250	6.750	9.000			

SM5 SERIES
5FL Medium Peripheral Finisher - Square or Radius

The **SM5** is is a highly productive 5 flute designed for light roughing and finishing in steel and exotic metals. Its rigid design and smooth cutting action create an excellent finish.

- Stronger core for increased rigidity and better tool life.
- Manufacturing tolerances far above industry standards.
- Stocked with MDC coating providing unmatched heat and wear resistance and dramatically increased tool life.

** For heavy roughing see our **SD 5** flute on page 35. **

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SM0125	558000	R3	0	M	=	SM0125558000R30M

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1	
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant	Coating	
								.015	.030	.060	.090	.125	None	MDC	AlTiN
SM0125	558000	0.125	5	0.250	0	1.500	S0	R3	R6				0	M	
SM0125	58I000	0.125	5	0.500	0	1.500									
SM0125	5BU001	0.125	5	0.750	0	2.000									
SM0156	562001	0.156	5	0.312	0	2.000	S0	R3	R6	RC			0	M	
SM0156	57Q001	0.156	5	0.437	0	2.000									
SM0187	562001	0.187	5	0.312	0	2.000	S0	R3	R6	RC			0	M	
SM0187	57Q001	0.187	5	0.437	0	2.000									
SM0187	59C003	0.187	5	0.562	0	2.500									
SM0187	5BU003	0.187	5	0.750	0	2.500									
SM0218	56W001	0.218	5	0.375	0	2.000	S0	R3	R6	RC			0	M	
SM0218	58I001	0.218	5	0.500	0	2.000									
SM0218	5BU003	0.218	5	0.750	0	2.500									
SM0250	56W001	0.250	5	0.375	0	2.000	S0	R3	R6	RC	RH		0	M	
SM0250	58I001	0.250	5	0.500	0	2.000									
SM0250	5A6001	0.250	5	0.625	0	2.000									
SM0250	5BU003	0.250	5	0.750	0	2.500									
SM0250	5CA003	0.250	5	0.875	0	2.500									
SM0250	5CS003	0.250	5	1.000	0	2.500									
SM0250	5D4005	0.250	5	1.125	0	3.000									
SM0250	5DG005	0.250	5	1.250	0	3.000									
SM0250	5DU005	0.250	5	1.375	0	3.000									
SM0250	5E6005	0.250	5	1.500	0	3.000									
SM0250	5EW009	0.250	5	1.750	0	4.000									
SM0281	57Q001	0.281	5	0.437	0	2.000	S0	R3	R6	RC	RH		0	M	2
SM0281	5C2003	0.281	5	0.812	0	2.500									
SM0312	57Q001	0.312	5	0.437	0	2.000	S0	R3	R6	RC	RH	RM	0	M	2
SM0312	58I001	0.312	5	0.500	0	2.000									
SM0312	5A6001	0.312	5	0.625	0	2.000									
SM0312	5C2003	0.312	5	0.812	0	2.500									
SM0312	5CS003	0.312	5	1.000	0	2.500									
SM0312	5DG005	0.312	5	1.250	0	3.000									
SM0312	5E6005	0.312	5	1.500	0	3.000									
SM0312	5EW007	0.312	5	1.750	0	3.500									
SM0312	5FK007	0.312	5	2.000	0	3.500									
SM0312	5FW009	0.312	5	2.125	0	4.000									

Non-standard lengths, diameters and radius sizes are available upon request.

SM5 SERIES Continued
5FL Medium Peripheral Finisher - Square or Radius

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SM0343	58I001	R6	0	2		SM034358I001R602

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1	
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	Radius .015	Radius .030	Radius .060	Radius .090	Radius .125	Coolant None	Coating MDC	Coating AlTiN
SM0343	58I001	0.343	5	0.500	0	2.000									
SM0343	5BU003	0.343	5	0.750	0	2.500									
SM0343	5CS003	0.343	5	1.000	0	2.500	S0	R3	R6	RC	RH	RM	0	M	2
SM0343	5DG005	0.343	5	1.250	0	3.000									
SM0343	5E6007	0.343	5	1.500	0	3.500									
SM0375	58I001	0.375	5	0.500	0	2.000									
SM0375	5BU003	0.375	5	0.750	0	2.500									
SM0375	5CS003	0.375	5	1.000	0	2.500									
SM0375	5DG005	0.375	5	1.250	0	3.000									
SM0375	5E6007	0.375	5	1.500	0	3.500	S0	R3	R6	RC	RH	RM	0	M	2
SM0375	5FK009	0.375	5	2.000	0	4.000									
SM0375	5G6009	0.375	5	2.250	0	4.500									
SM0375	5GS00B	0.375	5	2.500	0	5.000									
SM0375	5HC00E	0.375	5	2.750	0	5.000									
SM0375	5HY00E	0.375	5	3.000	0	5.000									
SM0406	59C003	0.406	5	0.562	0	2.500									
SM0406	5BU004	0.406	5	0.750	0	2.750									
SM0406	5CS004	0.406	5	1.000	0	2.750									
SM0406	5DG005	0.406	5	1.250	0	3.000	S0	R3	R6	RC	RH	RM	0	M	2
SM0406	5E6009	0.406	5	1.500	0	4.000									
SM0406	5EW009	0.406	5	1.750	0	4.000									
SM0406	5FK009	0.406	5	2.000	0	4.000									
SM0437	59C003	0.437	5	0.562	0	2.500									
SM0437	5BU004	0.437	5	0.750	0	2.750									
SM0437	5CS004	0.437	5	1.000	0	2.750									
SM0437	5DG005	0.437	5	1.250	0	3.000									
SM0437	5E6009	0.437	5	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	M	2
SM0437	5EW009	0.437	5	1.750	0	4.000									
SM0437	5FK009	0.437	5	2.000	0	4.000									
SM0437	5G6009	0.437	5	2.250	0	4.000									
SM0468	5A6003	0.468	5	0.625	0	2.500									
SM0468	5CS005	0.468	5	1.000	0	3.000									
SM0468	5DG005	0.468	5	1.250	0	3.000									
SM0468	5E6007	0.468	5	1.500	0	3.500	S0	R3	R6	RC	RH	RM	0	M	2
SM0468	5EW009	0.468	5	1.750	0	4.000									
SM0468	5FK009	0.468	5	2.000	0	4.000									
SM0468	5GS00E	0.468	5	2.500	0	5.000									
SM0500	5A6003	0.500	5	0.625	0	2.500									
SM0500	5CS005	0.500	5	1.000	0	3.000									
SM0500	5DG005	0.500	5	1.250	0	3.000									
SM0500	5EI007	0.500	5	1.625	0	3.500									
SM0500	5EW009	0.500	5	1.750	0	4.000									
SM0500	5FK009	0.500	5	2.000	0	4.000									
SM0500	5G600B	0.500	5	2.250	0	4.500									
SM0500	5GS00B	0.500	5	2.500	0	4.500	S0	R3	R6	RC	RH	RM	0	M	2
SM0500	5HC00E	0.500	5	2.750	0	5.000									
SM0500	5HY00E	0.500	5	3.000	0	5.000									
SM0500	5I800E	0.500	5	3.125	0	5.000									
SM0500	5I100G	0.500	5	3.250	0	5.500									
SM0500	5J400G	0.500	5	3.500	0	5.500									
SM0500	5JQ001	0.500	5	3.750	0	6.000									
SM0500	5KA001	0.500	5	4.000	0	6.000									

Non-standard lengths, diameters and radius sizes are available upon request.

SM5 SERIES Continued
5FL Medium Peripheral Finisher - Square or Radius

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SM0562	5CS005	R6	0	2		SM05625CS005R602

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1	
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	Radius .015	Radius .030	Radius .060	Radius .090	Radius .125	Coolant None	Coating MDC	Coating AlTiN
SM0562	5CS005	0.562	5	1.000	0	3.000	S0	R3	R6	RC	RH	RM	0	M	2
SM0562	5E6007	0.562	5	1.500	0	3.500									
SM0562	5FK009	0.562	5	2.000	0	4.000									
SM0562	5HY00E	0.562	5	3.000	0	5.000									
SM0625	5BU005	0.625	5	0.750	0	3.000	S0	R3	R6	RC	RH	RM	0	M	2
SM0625	5DG007	0.625	5	1.250	0	3.500									
SM0625	5EI007	0.625	5	1.625	0	3.500									
SM0625	5FK009	0.625	5	2.000	0	4.000									
SM0625	5G6009	0.625	5	2.250	0	4.000									
SM0625	5GS00B	0.625	5	2.500	0	4.500									
SM0625	5HY00E	0.625	5	3.000	0	5.000									
SM0625	5IU00G	0.625	5	3.375	0	5.500									
SM0625	5JQ00I	0.625	5	3.750	0	6.000									
SM0625	5KA00I	0.625	5	4.000	0	6.000									
SM0625	5LS00L	0.625	5	4.625	0	7.000									
SM0750	5BU005	0.750	5	0.750	0	3.000	S0	R3	R6	RC	RH	RM	0	M	2
SM0750	5CS005	0.750	5	1.000	0	3.000									
SM0750	5DG007	0.750	5	1.250	0	3.500									
SM0750	5EI007	0.750	5	1.625	0	3.500									
SM0750	5F8009	0.750	5	1.875	0	4.000									
SM0750	5G600B	0.750	5	2.250	0	4.500									
SM0750	5GS00B	0.750	5	2.500	0	4.500									
SM0750	5HM00E	0.750	5	2.875	0	5.000									
SM0750	5II00E	0.750	5	3.250	0	5.000									
SM0750	5J400G	0.750	5	3.500	0	5.500									
SM0750	5KA00I	0.750	5	4.000	0	6.000									
SM0750	5L600K	0.750	5	4.375	0	6.500									
SM0750	5M200L	0.750	5	4.750	0	7.000									
SM0875	5FK009	0.875	5	2.000	0	4.000	S0	R3	R6	RC	RH	RM	0	M	2
SM0875	5HY00E	0.875	5	3.000	0	5.000									
SM0875	5JQ00I	0.875	5	3.750	0	6.000									
SM1000	5DG007	1.000	5	1.250	0	3.500	S0	R3	R6	RC	RH	RM	0	M	2
SM1000	5E6009	1.000	5	1.500	0	4.000									
SM1000	5FK00B	1.000	5	2.000	0	4.500									
SM1000	5GG00E	1.000	5	2.375	0	5.000									
SM1000	5HC00G	1.000	5	2.750	0	5.500									
SM1000	5II00G	1.000	5	3.250	0	5.500									
SM1000	5JE00I	1.000	5	3.625	0	6.000									
SM1000	5KK00K	1.000	5	4.125	0	6.500									
SM1000	5LS00L	1.000	5	4.625	0	7.000									
SM1000	5MY00N	1.000	5	5.125	0	7.500									
SM1000	5P400P	1.000	5	5.625	0	8.000									
SM1250	5FK00B	1.250	5	2.000	0	4.500	S0	R3	R6	RC	RH	RM	0	M	2
SM1250	5HC00I	1.250	5	2.750	0	6.000									
SM1250	5II00I	1.250	5	3.250	0	6.000									
SM1250	5KA00L	1.250	5	4.000	0	7.000									
SM1250	5LG00L	1.250	5	4.500	0	7.000									
SM1250	5MM00N	1.250	5	5.000	0	7.500									
SM1250	5Q000R	1.250	5	6.000	0	9.000									

Non-standard lengths, diameters and radius sizes are available upon request.

SS3 SERIES
3FL Full Slot Cutter for Steel, Stainless Steel & Exotics

The **SS3** is designed specifically for keyways and milling slots in stainless steel. It's one of the most productive choices for full slotting and heavy roughing in steel and exotic metals.

- Moderate helix with 3 flutes for smooth cutting action when full slotting.
- Stocked with a radius for added strength.
- Manufacturing tolerances far above industry standards.
- Stocked with MDC coating providing unmatched heat & wear resistance and dramatically increased tool life.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
SS0125	358000	F0	0	2		SS0125358000F002

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

STOCKED RADIUS SIZE IS CIRCLED ◯

First 6	Middle 6						End Geometry						Pick 1	Pick 1	
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	- - - - - - - Radius - - - - - - -						Coolant	Coating	
							.008	.015	.030	.060	.090	.125	None	MDC	AlTiN
SS0125	358000	0.125	3	0.250	0	1.500	F0	R3	R6				0	M	
SS0125	38I000	0.125	3	0.500	0	1.500									
SS0156	362001	0.156	3	0.312	0	2.000	F0	R3	R6	RC			0	M	
SS0156	39C001	0.156	3	0.562	0	2.000									
SS0187	362001	0.187	3	0.312	0	2.000	FO	R3	R6	RC			0	M	
SS0187	39C001	0.187	3	0.562	0	2.000									
SS0218	36W001	0.218	3	0.375	0	2.000		R3	R6	RC			0	M	
SS0218	3BU003	0.218	3	0.750	0	2.500									
SS0250	36W001	0.250	3	0.375	0	2.000		R3	R6	RC	RH		0	M	
SS0250	3BU003	0.250	3	0.750	0	2.500									
SS0281	37Q001	0.281	3	0.437	0	2.000		R3	R6	RC	RH		0	M	2
SS0281	3C2003	0.281	3	0.812	0	2.500									
SS0312	37Q001	0.312	3	0.437	0	2.000		R3	R6	RC	RH	RM	0	M	2
SS0312	3C2003	0.312	3	0.812	0	2.500									
SS0343	38I001	0.343	3	0.500	0	2.000		R3	R6	RC	RH	RM	0	M	2
SS0343	3CS003	0.343	3	1.000	0	2.500									
SS0375	38I001	0.375	3	0.500	0	2.000		R3	R6	RC	RH	RM	0	M	2
SS0375	3CS003	0.375	3	1.000	0	2.500									
SS0437	39C003	0.437	3	0.562	0	2.500		R3	R6	RC	RH	RM	0	M	2
SS0437	3CS004	0.437	3	1.000	0	2.750									
SS0500	3A6003	0.500	3	0.625	0	2.500			R6	RC	RH	RM	0	M	2
SS0500	3DG005	0.500	3	1.250	0	3.000									
SS0625	3BU005	0.625	3	0.750	0	3.000			R6	RC	RH	RM	0	M	2
SS0625	3EI007	0.625	3	1.625	0	3.500									
SS0750	3CS005	0.750	3	1.000	0	3.000			R6	RC	RH	RM	0	M	2
SS0750	3EI009	0.750	3	1.625	0	4.000									
SS1000	3DG005	1.000	3	1.250	0	3.000			R6	RC	RH	RM	0	M	2
SS1000	3FK00B	1.000	3	2.000	0	4.500									

Non-standard lengths, diameters and radius sizes are available upon request.

AC2 SERIES
2FL / 45° Helix for Aluminum - Square or Radius

The standard in aluminum cutting end mills, the **AC2** is a great all around cutter that can be utilized from full slotting to finishing operations.

- 45° helix for better shear and chip evacuation.
- Micro-polished edges & double rake flutes with a wiper flat for incredible wall and floor finishes.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AC0125	258000	R6	0	0		AC0125258000R600

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square W/Wiper	- - - - - - - Radius - - - - - - - .015	.030	.060	.090	.125	Coolant None	Coating None
AC0125	258000	0.125	2	0.250	0	1.500	S1	R3	R6				0	0
AC0125	26W001	0.125	2	0.375	0	2.000								
AC0125	28I001	0.125	2	0.500	0	2.000								
AC0125	2BU003	0.125	2	0.750	0	2.500								
AC0187	262001	0.187	2	0.312	0	2.000	S1	R3	R6	RC			0	0
AC0187	29C001	0.187	2	0.562	0	2.000								
AC0187	2A6001	0.187	2	0.625	0	2.000								
AC0187	2BU003	0.187	2	0.750	0	2.500								
AC0250	26W001	0.250	2	0.375	0	2.000	S1	R3	R6	RC	RH		0	0
AC0250	28I001	0.250	2	0.500	0	2.000								
AC0250	2A6003	0.250	2	0.625	0	2.500								
AC0250	2BU003	0.250	2	0.750	0	2.500								
AC0250	2CS005	0.250	2	1.000	0	3.000								
AC0250	2DG005	0.250	2	1.250	0	3.000								
AC0250	2E6005	0.250	2	1.500	0	3.000								
AC0250	2EW005	0.250	2	1.750	0	3.000								
AC0312	27Q001	0.312	2	0.437	0	2.000	S1	R3	R6	RC	RH	RM	0	0
AC0312	28I001	0.312	2	0.500	0	2.000								
AC0312	2BU003	0.312	2	0.750	0	2.500								
AC0312	2C2003	0.312	2	0.812	0	2.500								
AC0312	2CS005	0.312	2	1.000	0	3.000								
AC0312	2DG005	0.312	2	1.250	0	3.000								
AC0312	2EW007	0.312	2	1.750	0	3.500								
AC0312	2FW009	0.312	2	2.125	0	4.000								
AC0375	28I001	0.375	2	0.500	0	2.000	S1	R3	R6	RC	RH	RM	0	0
AC0375	2BU003	0.375	2	0.750	0	2.500								
AC0375	2CS003	0.375	2	1.000	0	2.500								
AC0375	2DG007	0.375	2	1.250	0	3.500								
AC0375	2E6007	0.375	2	1.500	0	3.500								
AC0375	2EW007	0.375	2	1.750	0	3.500								
AC0375	2FK009	0.375	2	2.000	0	4.000								
AC0375	2G6009	0.375	2	2.250	0	4.000								
AC0375	2GS00E	0.375	2	2.500	0	5.000								
AC0437	29C004	0.437	2	0.563	0	2.750	S1	R3	R6	RC	RH	RM	0	0
AC0437	2BU004	0.437	2	0.750	0	2.750								
AC0437	2CS004	0.437	2	1.000	0	2.750								
AC0437	2DG007	0.437	2	1.250	0	3.500								
AC0437	2E6007	0.437	2	1.500	0	3.500								
AC0437	2EW009	0.437	2	1.750	0	4.000								
AC0437	2FK009	0.437	2	2.000	0	4.000								
AC0437	2H200E	0.437	2	2.625	0	5.000								

Non-standard lengths, diameters and radius sizes are available upon request.

AC2 SERIES Continued
2FL / 45° Helix for Aluminum - Square or Radius

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AC0500	2A6003	R6	0	0		AC05002A6003R600

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square W/Wiper	- - - - - - - Radius - - - - - - -					Coolant	Coating
								.015	.030	.060	.090	.125	None	None
AC0500	2A6003	0.500	2	0.625	0	2.500	S1	R3	R6	RC	RH	RM	0	0
AC0500	2CS005	0.500	2	1.000	0	3.000								
AC0500	2DG005	0.500	2	1.250	0	3.000								
AC0500	2E6007	0.500	2	1.500	0	3.500								
AC0500	2EI007	0.500	2	1.625	0	3.500								
AC0500	2EW009	0.500	2	1.750	0	4.000								
AC0500	2FK009	0.500	2	2.000	0	4.000								
AC0500	2G600E	0.500	2	2.250	0	5.000								
AC0500	2GS00E	0.500	2	2.500	0	5.000								
AC0500	2HC00E	0.500	2	2.750	0	5.000								
AC0500	2HY00E	0.500	2	3.000	0	5.000								
AC0500	2I800E	0.500	2	3.125	0	5.000								
AC0500	2II00I	0.500	2	3.250	0	6.000								
AC0500	2J400I	0.500	2	3.500	0	6.000								
AC0625	2BU005	0.625	2	0.750	0	3.000	S1	R3	R6	RC	RH	RM	0	0
AC0625	2DG007	0.625	2	1.250	0	3.500								
AC0625	2EI009	0.625	2	1.625	0	4.000								
AC0625	2F8009	0.625	2	1.875	0	4.000								
AC0625	2FK009	0.625	2	2.000	0	4.000								
AC0625	2G600E	0.625	2	2.250	0	5.000								
AC0625	2GS00E	0.625	2	2.500	0	5.000								
AC0625	2HC00E	0.625	2	2.750	0	5.000								
AC0625	2II00I	0.625	2	3.250	0	6.000								
AC0625	2JQ00I	0.625	2	3.750	0	6.000								
AC0625	2LS00L	0.625	2	4.625	0	7.000								
AC0750	2BU005	0.750	2	0.750	0	3.000	S1	R3	R6	RC	RH	RM	0	0
AC0750	2CS009	0.750	2	1.000	0	4.000								
AC0750	2DU009	0.750	2	1.375	0	4.000								
AC0750	2EI009	0.750	2	1.625	0	4.000								
AC0750	2G600E	0.750	2	2.250	0	5.000								
AC0750	2GS00E	0.750	2	2.500	0	5.000								
AC0750	2II00I	0.750	2	3.250	0	6.000								
AC0750	2J400I	0.750	2	3.500	0	6.000								
AC0750	2KA00K	0.750	2	4.000	0	6.500								
AC0750	2LG00L	0.750	2	4.500	0	7.000								
AC1000	2CS005	1.000	2	1.000	0	3.000	S1	R3	R6	RC	RH	RM	0	0
AC1000	2DG009	1.000	2	1.250	0	4.000								
AC1000	2E6009	1.000	2	1.500	0	4.000								
AC1000	2FK00B	1.000	2	2.000	0	4.500								
AC1000	2H200E	1.000	2	2.625	0	5.000								
AC1000	2HY00I	1.000	2	3.000	0	6.000								
AC1000	2II00I	1.000	2	3.250	0	6.000								
AC1000	2J400I	1.000	2	3.500	0	6.000								
AC1000	2KK00L	1.000	2	4.125	0	7.000								
AC1000	2LG00L	1.000	2	4.500	0	7.000								
AC1000	2N800P	1.000	2	5.250	0	8.000								
AC1250	2CS009	1.250	2	1.000	0	4.000	S1	R3	R6	RC	RH	RM	0	0
AC1250	2FK00B	1.250	2	2.000	0	4.500								
AC1250	2H200G	1.250	2	2.625	0	5.500								
AC1250	2II00I	1.250	2	3.250	0	6.000								
AC1250	2KW00N	1.250	2	4.125	0	7.500								
AC1250	2NU00R	1.250	2	5.500	0	9.000								

Non-standard lengths, diameters and radius sizes are available upon request.

ACEL2 SERIES
2FL / 45° Helix for Aluminum Necked XL - Square or Radius

The standard in aluminum cutting end mills, the **ACEL2** is a great all around cutter that can be utilized from full slotting to finishing operations. The 2 flute high helix provides less tool pressure & great chip evacuation, perfect for long reach applications.

- Blended neck relief reduces marks in step-down machining.
- 45° helix for better shear and chip evacuation.
- Micro-polished edges & double rake flutes with a wiper flat for incredible wall and floor finishes.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AC0125	2588I0	R6	0	0		AC0125258 8I0R600

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square W/Wiper	- - - - - - - Radius - - - - - - -					Coolant	Coating
								.015	.030	.060	.090	.125	None	None
AC0125	2588I0	0.125	2	0.250	0.500	1.500								
AC0125	258BU1	0.125	2	0.250	0.750	2.000								
AC0125	258CS1	0.125	2	0.250	1.000	2.000	S1	R3	R6				0	0
AC0125	258DG3	0.125	2	0.250	1.250	2.500								
AC0187	2628I1	0.187	2	0.312	0.500	2.000								
AC0187	262CS5	0.187	2	0.312	1.000	3.000								
AC0187	262DG5	0.187	2	0.312	1.250	3.000	S1	R3	R6	RC			0	0
AC0187	262E65	0.187	2	0.312	1.500	3.000								
AC0187	262EW5	0.187	2	0.312	1.750	3.000								
AC0187	262FK5	0.187	2	0.312	2.000	3.000								
AC0250	26WBU1	0.250	2	0.375	0.750	2.000								
AC0250	26WCS3	0.250	2	0.375	1.000	2.500								
AC0250	26WDG3	0.250	2	0.375	1.250	2.500								
AC0250	26WE65	0.250	2	0.375	1.500	3.000	S1	R3	R6	RC	RH		0	0
AC0250	26WEW5	0.250	2	0.375	1.750	3.000								
AC0250	26WFK7	0.250	2	0.375	2.000	3.500								
AC0250	26WG67	0.250	2	0.375	2.250	3.500								
AC0250	26WGS9	0.250	2	0.375	2.500	4.000								
AC0312	27QBU1	0.312	2	0.437	0.750	2.000								
AC0312	27QCS3	0.312	2	0.437	1.000	2.500								
AC0312	27QDG3	0.312	2	0.437	1.250	2.500								
AC0312	27QE65	0.312	2	0.437	1.500	3.000								
AC0312	27QEW5	0.312	2	0.437	1.750	3.000	S1	R3	R6	RC	RH	RM	0	0
AC0312	27QFK7	0.312	2	0.437	2.000	3.500								
AC0312	27QG67	0.312	2	0.437	2.250	3.500								
AC0312	27QGS9	0.312	2	0.437	2.500	4.000								
AC0312	27QI8I	0.312	2	0.437	3.125	6.000								
AC0312	27QKAI	0.312	2	0.437	4.000	6.000								
AC0375	28ICS3	0.375	2	0.500	1.000	2.500								
AC0375	28IDG5	0.375	2	0.500	1.250	3.000								
AC0375	28IE65	0.375	2	0.500	1.500	3.000								
AC0375	28IFK7	0.375	2	0.500	2.000	3.500								
AC0375	28IG69	0.375	2	0.500	2.250	4.000	S1	R3	R6	RC	RH		0	0
AC0375	28IGSB	0.375	2	0.500	2.500	4.500								
AC0375	28IHYE	0.375	2	0.500	3.000	5.000								
AC0375	28IJ4G	0.375	2	0.500	3.500	5.500								
AC0375	28IJQI	0.375	2	0.500	3.750	6.000								
AC0375	28IKAI	0.375	2	0.500	4.000	6.000								

Non-standard lengths, diameters and radius sizes are available upon request.

ACEL2 SERIES Continued
2FL / 45° Helix for Aluminum Necked XL - Square or Radius

How To Build Your 16 Digit Part Number

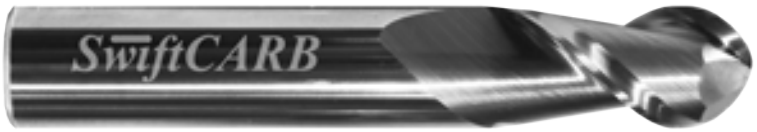
First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AC0437	29CCS4	R6	0	0		AC043729CCS4R600

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square W/Wiper	- - - - - - - Radius - - - - - - -					Coolant	Coating
								.015	.030	.060	.090	.125	None	None
AC0437	29CCS4	0.437	2	0.562	1.000	2.750	S1	R3	R6	RC	RH	RM	0	0
AC0437	29CDG4	0.437	2	0.562	1.250	2.750								
AC0437	29CE67	0.437	2	0.562	1.500	3.500								
AC0437	29CFK9	0.437	2	0.562	2.000	4.000								
AC0437	29CGSB	0.437	2	0.562	2.500	4.500								
AC0437	29CHYE	0.437	2	0.562	3.000	5.000								
AC0437	29CJ4G	0.437	2	0.562	3.500	5.500								
AC0437	29CKAI	0.437	2	0.562	4.000	6.000								
AC0500	2A6CS5	0.500	2	0.625	1.000	3.000	S1	R3	R6	RC	RH	RM	0	0
AC0500	2A6DU7	0.500	2	0.625	1.375	3.500								
AC0500	2A6E67	0.500	2	0.625	1.500	3.500								
AC0500	2A6FK9	0.500	2	0.625	2.000	4.000								
AC0500	2A6G69	0.500	2	0.625	2.250	4.000								
AC0500	2A6GSB	0.500	2	0.625	2.500	4.500								
AC0500	2A6HYE	0.500	2	0.625	3.000	5.000								
AC0500	2A6J4G	0.500	2	0.625	3.500	5.500								
AC0500	2A6KAI	0.500	2	0.625	4.000	6.000								
AC0500	2A6LGK	0.500	2	0.625	4.500	6.500								
AC0500	2A6MML	0.500	2	0.625	5.000	7.000								
AC0625	2BUCS5	0.625	2	0.750	1.000	3.000	S1	R3	R6	RC	RH	RM	0	0
AC0625	2BUE67	0.625	2	0.750	1.500	3.500								
AC0625	2BUEW9	0.625	2	0.750	1.750	4.000								
AC0625	2BUFK9	0.625	2	0.750	2.000	4.000								
AC0625	2BUGGC	0.625	2	0.750	2.375	4.625								
AC0625	2BUHYE	0.625	2	0.750	3.000	5.000								
AC0625	2BUJ4G	0.625	2	0.750	3.500	5.500								
AC0625	2BUKAI	0.625	2	0.750	4.000	6.000								
AC0625	2BULGK	0.625	2	0.750	4.500	6.500								
AC0625	2BUMML	0.625	2	0.750	5.000	7.000								
AC0625	2BUNUN	0.625	2	0.750	5.500	7.500								
AC0625	2BUQ0P	0.625	2	0.750	6.000	8.000								
AC0750	2CSFK9	0.750	2	1.000	2.000	4.000	S1	R3	R6	RC	RH	RM	0	0
AC0750	2CSGSB	0.750	2	1.000	2.500	4.500								
AC0750	2CSHYE	0.750	2	1.000	3.000	5.000								
AC0750	2CSJ4G	0.750	2	1.000	3.500	5.500								
AC0750	2CSKAI	0.750	2	1.000	4.000	6.000								
AC0750	2CSLGK	0.750	2	1.000	4.500	6.500								
AC0750	2CSMML	0.750	2	1.000	5.000	7.000								
AC0750	2CSNUN	0.750	2	1.000	5.500	7.500								
AC0750	2CSQ0P	0.750	2	1.000	6.000	8.000								
AC1000	2CSE69	1.000	2	1.000	1.500	4.000	S1	R3	R6	RC	RH	RM	0	0
AC1000	2DGFKB	1.000	2	1.250	2.000	4.500								
AC1000	2DGGSE	1.000	2	1.250	2.500	5.000								
AC1000	2DGHCG	1.000	2	1.250	2.750	5.500								
AC1000	2DGJ4I	1.000	2	1.250	3.500	6.000								
AC1000	2DGKAK	1.000	2	1.250	4.000	6.500								
AC1000	2DGLGL	1.000	2	1.250	4.500	7.000								
AC1000	2DGMMN	1.000	2	1.250	5.000	7.500								
AC1000	2DGNUP	1.000	2	1.250	5.500	8.000								
AC1000	2DGQ0Q	1.000	2	1.250	6.000	8.500								
AC1000	2DGR6R	1.000	2	1.250	6.500	9.000								
AC1000	2DGSCS	1.000	2	1.250	7.000	9.500								
AC1000	2DGTIT	1.000	2	1.250	7.500	10.000								

Non-standard lengths, diameters and radius sizes are available upon request.

BC2 SERIES
2FL / 45° Helix Ball End for Aluminum



The standard in aluminum cutting end mills, the **BC2** is a great ball end cutter that produces excellent finishes. The 2 flute high helix provides less tool pressure and great chip evacuation, perfect for long reach applications.

- 45° helix for better shear and chip evacuation.
- Micro-polished edges and double rake flutes for incredible finishes.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.

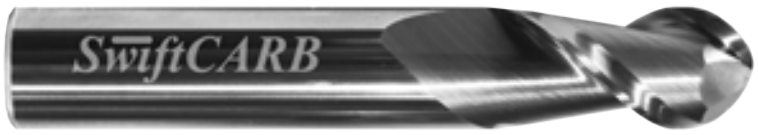
How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AC0125	**25800**	**B0**	**0**	**0**		**AC0125258000B000**

First 6	Middle 6						End Geometry	Pick 1	Pick 1
GEO & DIA	**FL, LOC & LBS**	**DIA**	**# FL**	**LOC**	**LBS**	**OAL**	**Ball Nose**	**Coolant None**	**Coating None**
AC0125	258000	0.125	2	0.250	0	1.500	B0	0	0
AC0125	26W001	0.125	2	0.375	0	2.000			
AC0125	28I001	0.125	2	0.500	0	2.000			
AC0187	262001	0.187	2	0.312	0	2.000	B0	0	0
AC0187	29C001	0.187	2	0.562	0	2.000			
AC0187	2A6001	0.187	2	0.625	0	2.000			
AC0250	26W001	0.250	2	0.375	0	2.000	B0	0	0
AC0250	28I001	0.250	2	0.500	0	2.000			
AC0250	2A6003	0.250	2	0.625	0	2.500			
AC0250	2BU003	0.250	2	0.750	0	2.500			
AC0250	2CS005	0.250	2	1.000	0	3.000			
AC0250	2DG005	0.250	2	1.250	0	3.000			
AC0250	2E6005	0.250	2	1.500	0	3.000			
AC0312	27Q001	0.312	2	0.437	0	2.000	B0	0	0
AC0312	28I001	0.312	2	0.500	0	2.000			
AC0312	2BU003	0.312	2	0.750	0	2.500			
AC0312	2C2003	0.312	2	0.812	0	2.500			
AC0312	2CS005	0.312	2	1.000	0	3.000			
AC0312	2DG005	0.312	2	1.250	0	3.000			
AC0312	2EW007	0.312	2	1.750	0	3.500			
AC0312	2FW009	0.312	2	2.125	0	4.000			
AC0375	28I001	0.375	2	0.500	0	2.000	B0	0	0
AC0375	2BU003	0.375	2	0.750	0	2.500			
AC0375	2CS003	0.375	2	1.000	0	2.500			
AC0375	2DG005	0.375	2	1.250	0	3.000			
AC0375	2E6007	0.375	2	1.500	0	3.500			
AC0375	2EW007	0.375	2	1.750	0	3.500			
AC0375	2FK009	0.375	2	2.000	0	4.000			
AC0375	2G6009	0.375	2	2.250	0	4.000			
AC0375	2GS00E	0.375	2	2.500	0	5.000			
AC0437	29C004	0.437	2	0.562	0	2.750	B0	0	0
AC0437	2BU004	0.437	2	0.750	0	2.750			
AC0437	2CS004	0.437	2	1.000	0	2.750			
AC0437	2DG007	0.437	2	1.250	0	3.500			
AC0437	2E6007	0.437	2	1.500	0	3.500			
AC0437	2EW009	0.437	2	1.750	0	4.000			
AC0437	2FK009	0.437	2	2.000	0	4.000			
AC0437	2H200E	0.437	2	2.625	0	5.000			

Non-standard lengths and diameters are available upon request.

BC2 SERIES Continued
2FL / 45° Helix Ball End for Aluminum



How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AC0500	2A6003	B0	0	0		AC05002A6003B000

First 6	Middle 6						End Geo.	Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Ball Nose	Coolant None	Coating None
AC0500	2A6003	0.500	2	0.625	0	2.500	B0	0	0
AC0500	2CS005	0.500	2	1.000	0	3.000			
AC0500	2DG005	0.500	2	1.250	0	3.000			
AC0500	2E6007	0.500	2	1.500	0	3.500			
AC0500	2EI007	0.500	2	1.625	0	3.500			
AC0500	2EW009	0.500	2	1.750	0	4.000			
AC0500	2FK009	0.500	2	2.000	0	4.000			
AC0500	2G600E	0.500	2	2.250	0	5.000			
AC0500	2GS00E	0.500	2	2.500	0	5.000			
AC0500	2HC00E	0.500	2	2.750	0	5.000			
AC0500	2HY00E	0.500	2	3.000	0	5.000			
AC0500	2I800E	0.500	2	3.125	0	5.000			
AC0500	2II00I	0.500	2	3.250	0	6.000			
AC0500	2J400I	0.500	2	3.500	0	6.000			
AC0625	2BU005	0.625	2	0.750	0	3.000	B0	0	0
AC0625	2DG007	0.625	2	1.250	0	3.500			
AC0625	2EI007	0.625	2	1.625	0	3.500			
AC0625	2F8009	0.625	2	1.875	0	4.000			
AC0625	2FK009	0.625	2	2.000	0	4.000			
AC0625	2G600E	0.625	2	2.250	0	5.000			
AC0625	2GS00E	0.625	2	2.500	0	5.000			
AC0625	2HC00E	0.625	2	2.750	0	5.000			
AC0625	2J400I	0.625	2	3.500	0	6.000			
AC0625	2JQ00I	0.625	2	3.750	0	6.000			
AC0625	2LS00L	0.625	2	4.625	0	7.000			
AC0750	2BU005	0.750	2	0.750	0	3.000	B0	0	0
AC0750	2CS009	0.750	2	1.000	0	4.000			
AC0750	2DU009	0.750	2	1.375	0	4.000			
AC0750	2EI009	0.750	2	1.625	0	4.000			
AC0750	2G600E	0.750	2	2.250	0	5.000			
AC0750	2GS00E	0.750	2	2.500	0	5.000			
AC0750	2II00I	0.750	2	3.250	0	6.000			
AC0750	2J400I	0.750	2	3.500	0	6.000			
AC0750	2KA00K	0.750	2	4.000	0	6.500			
AC0750	2LG00L	0.750	2	4.500	0	7.000			
AC1000	2CS007	1.000	2	1.000	0	3.500	B0	0	0
AC1000	2DG009	1.000	2	1.250	0	4.000			
AC1000	2E6009	1.000	2	1.500	0	4.000			
AC1000	2FK00B	1.000	2	2.000	0	4.500			
AC1000	2GS00E	1.000	2	2.500	0	5.000			
AC1000	2H200E	1.000	2	2.625	0	5.000			
AC1000	2HY00I	1.000	2	3.000	0	6.000			
AC1000	2II00I	1.000	2	3.250	0	6.000			
AC1000	2J400I	1.000	2	3.500	0	6.000			
AC1000	2KK00L	1.000	2	4.125	0	7.000			
AC1000	2LG00L	1.000	2	4.500	0	7.000			
AC1000	2N800P	1.000	2	5.250	0	8.000			
AC1250	2CS009	1.250	2	1.000	0	4.000	B0	0	0
AC1250	2FK00B	1.250	2	2.000	0	4.500			
AC1250	2H200G	1.250	2	2.625	0	5.500			
AC1250	2II00I	1.250	2	3.250	0	6.000			
AC1250	2KW00N	1.250	2	4.250	0	7.500			
AC1250	2MM00N	1.250	2	5.000	0	7.500			

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BCEL2 SERIES
2FL / 45° Helix Ball End for Aluminum Necked XL

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How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AC0125	**2588I0**	**B0**	**0**	**0**		**AC01252588I0B000**

First 6	Middle 6						End Geometry	Pick 1	Pick 1
GEO & DIA	**FL, LOC & LBS**	**DIA**	**# FL**	**LOC**	**LBS**	**OAL**	**Ball Nose**	**Coolant None**	**Coating None**
AC0125	2588I0	0.125	2	0.250	0.500	1.500	B0	0	0
AC0125	258BU1	0.125	2	0.250	0.750	2.000			
AC0125	258CS1	0.125	2	0.250	1.000	2.000			
AC0125	258DG3	0.125	2	0.250	1.250	2.500			
AC0187	2628I1	0.187	2	0.312	0.500	2.000	B0	0	0
AC0187	262BU5	0.187	2	0.312	0.750	3.000			
AC0187	262CS5	0.187	2	0.312	1.000	3.000			
AC0187	262DG5	0.187	2	0.312	1.250	3.000			
AC0187	262E65	0.187	2	0.312	1.500	3.000			
AC0187	262EW5	0.187	2	0.312	1.750	3.000			
AC0250	26WBU1	0.250	2	0.375	0.750	2.000	B0	0	0
AC0250	26WCS3	0.250	2	0.375	1.000	2.500			
AC0250	26WDG3	0.250	2	0.375	1.250	2.500			
AC0250	26WE65	0.250	2	0.375	1.500	3.000			
AC0250	26WEW5	0.250	2	0.375	1.750	3.000			
AC0250	26WFK7	0.250	2	0.375	2.000	3.500			
AC0250	26WG67	0.250	2	0.375	2.250	3.500			
AC0250	26WGS9	0.250	2	0.375	2.500	4.000			
AC0312	27QBU1	0.312	2	0.437	0.750	2.000	B0	0	0
AC0312	27QCS3	0.312	2	0.437	1.000	2.500			
AC0312	27QDG3	0.312	2	0.437	1.250	2.500			
AC0312	27QE65	0.312	2	0.437	1.500	3.000			
AC0312	27QEW5	0.312	2	0.437	1.750	3.000			
AC0312	27QFK7	0.312	2	0.437	2.000	3.500			
AC0312	27QG67	0.312	2	0.437	2.250	3.500			
AC0312	27QGS9	0.312	2	0.437	2.500	4.000			
AC0312	27QI8I	0.312	2	0.437	3.125	6.000			
AC0312	27QKAI	0.312	2	0.437	4.000	6.000			
AC0375	28ICS3	0.375	2	0.500	1.000	2.500	B0	0	0
AC0375	28IDG5	0.375	2	0.500	1.250	3.000			
AC0375	28IE65	0.375	2	0.500	1.500	3.000			
AC0375	28IFK7	0.375	2	0.500	2.000	3.500			
AC0375	28IG69	0.375	2	0.500	2.250	4.000			
AC0375	28IGSB	0.375	2	0.500	2.500	4.500			
AC0375	28IHYE	0.375	2	0.500	3.000	5.000			
AC0375	28IJ4G	0.375	2	0.500	3.500	5.500			
AC0375	28IJQI	0.375	2	0.500	3.750	6.000			
AC0375	28IKAI	0.375	2	0.500	4.000	6.000			

Non-standard lengths and diameters are available upon request.

BCEL2 SERIES Continued
2FL / 45° Helix Ball End for Aluminum Necked XL

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AC0437	29CCS4	B0	0	0		AC043729CCS4B000

First 6	Middle 6						End Geo.	Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Ball Nose	Coolant	Coating
								None	None
AC0437	29CCS4	0.437	2	0.562	1.000	2.750			
AC0437	29CDG4	0.437	2	0.562	1.250	2.750			
AC0437	29CE67	0.437	2	0.562	1.500	3.500			
AC0437	29CFK9	0.437	2	0.562	2.000	4.000	B0	0	0
AC0437	29CGSB	0.437	2	0.562	2.500	4.500			
AC0437	29CHYE	0.437	2	0.562	3.000	5.000			
AC0437	29CJ4G	0.437	2	0.562	3.500	5.500			
AC0437	29CKAI	0.437	2	0.562	4.000	6.000			
AC0500	2A6CS5	0.500	2	0.625	1.000	3.000			
AC0500	2A6DU7	0.500	2	0.625	1.375	3.500			
AC0500	2A6E67	0.500	2	0.625	1.500	3.500			
AC0500	2A6FK9	0.500	2	0.625	2.000	4.000			
AC0500	2A6G69	0.500	2	0.625	2.250	4.000			
AC0500	2A6GSB	0.500	2	0.625	2.500	4.500	B0	0	0
AC0500	2A6HYE	0.500	2	0.625	3.000	5.000			
AC0500	2A6J4G	0.500	2	0.625	3.500	5.500			
AC0500	2A6KAI	0.500	2	0.625	4.000	6.000			
AC0500	2A6LGK	0.500	2	0.625	4.500	6.500			
AC0500	2A6MML	0.500	2	0.625	5.000	7.000			
AC0625	2BUCS5	0.625	2	0.750	1.000	3.000			
AC0625	2BUE67	0.625	2	0.750	1.500	3.500			
AC0625	2BUEW9	0.625	2	0.750	1.750	4.000			
AC0625	2BUFK9	0.625	2	0.750	2.000	4.000			
AC0625	2BUGGC	0.625	2	0.750	2.375	4.625			
AC0625	2BUHYE	0.625	2	0.750	3.000	5.000			
AC0625	2BUJ4G	0.625	2	0.750	3.500	5.500	B0	0	0
AC0625	2BUKAI	0.625	2	0.750	4.000	6.000			
AC0625	2BUL6I	0.625	2	0.750	4.375	6.000			
AC0625	2BULGK	0.625	2	0.750	4.500	6.500			
AC0625	2BUNUN	0.625	2	0.750	5.500	7.500			
AC0625	2BUQ0P	0.625	2	0.750	6.000	8.000			
AC0750	2CSFK9	0.750	2	1.000	2.000	4.000			
AC0750	2CSGSB	0.750	2	1.000	2.500	4.500			
AC0750	2CSHYE	0.750	2	1.000	3.000	5.000			
AC0750	2CSJ4G	0.750	2	1.000	3.500	5.500			
AC0750	2CSKAI	0.750	2	1.000	4.000	6.000	B0	0	0
AC0750	2CSLGK	0.750	2	1.000	4.500	6.500			
AC0750	2CSMML	0.750	2	1.000	5.000	7.000			
AC0750	2CSNUN	0.750	2	1.000	5.500	7.500			
AC0750	2CSQ0P	0.750	2	1.000	6.000	8.000			
AC1000	2CSE69	1.000	2	1.000	1.500	4.000			
AC1000	2DGFKB	1.000	2	1.250	2.000	4.500			
AC1000	2DGGSE	1.000	2	1.250	2.500	5.000			
AC1000	2DGHCG	1.000	2	1.250	2.750	5.500			
AC1000	2DGJ4I	1.000	2	1.250	3.500	6.000			
AC1000	2DGKAK	1.000	2	1.250	4.000	6.500			
AC1000	2DGLGL	1.000	2	1.250	4.500	7.000	B0	0	0
AC1000	2DGMMN	1.000	2	1.250	5.000	7.500			
AC1000	2DGNUP	1.000	2	1.250	5.500	8.000			
AC1000	2DGQ0Q	1.000	2	1.250	6.000	8.500			
AC1000	2DGR6R	1.000	2	1.250	6.500	9.000			
AC1000	2DGSCS	1.000	2	1.250	7.000	9.500			
AC1000	2DGTIT	1.000	2	1.250	7.500	10.000			

Non-standard lengths and diameters are available upon request.

AC3 SERIES
3FL / 45° Helix for Aluminum - Square or Radius

The **AC3** is a great choice for light roughing to finishing in Aluminum and non-ferrous materials.
The 3 flute high helix, double rake design creates a smooth cut leaving an excellent surface finish.

- 45° helix for better shear and chip evacuation.
- Micro-polished edges & double rake flutes with a wiper flat for incredible wall and floor finishes.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AC0125	358000	R6	0	0	=	AC0125358000R600

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square W/Wiper	- - - - - - - Radius - - - - - - -					Coolant	Coating
								.015	.030	.060	.090	.125	None	None
AC0125	358000	0.125	3	0.250	0	1.500	S1	R3	R6				0	0
AC0125	36W001	0.125	3	0.375	0	2.000								
AC0125	38I001	0.125	3	0.500	0	2.000								
AC0125	3BU003	0.125	3	0.750	0	2.500								
AC0187	362001	0.187	3	0.312	0	2.000	S1	R3	R6	RC			0	0
AC0187	39C001	0.187	3	0.562	0	2.000								
AC0187	3A6001	0.187	3	0.625	0	2.000								
AC0187	3BU003	0.187	3	0.750	0	2.500								
AC0250	36W001	0.250	3	0.375	0	2.000	S1	R3	R6	RC	RH		0	0
AC0250	38I001	0.250	3	0.500	0	2.000								
AC0250	3A6003	0.250	3	0.625	0	2.500								
AC0250	3BU003	0.250	3	0.750	0	2.500								
AC0250	3CS005	0.250	3	1.000	0	3.000								
AC0250	3DG005	0.250	3	1.250	0	3.000								
AC0250	3E6005	0.250	3	1.500	0	3.000								
AC0250	3EW005	0.250	3	1.750	0	3.000								
AC0312	37Q001	0.312	3	0.437	0	2.000	S1	R3	R6	RC	RH	RM	0	0
AC0312	38I001	0.312	3	0.500	0	2.000								
AC0312	3BU003	0.312	3	0.750	0	2.500								
AC0312	3C2003	0.312	3	0.812	0	2.500								
AC0312	3CS005	0.312	3	1.000	0	3.000								
AC0312	3DG005	0.312	3	1.250	0	3.000								
AC0312	3EW007	0.312	3	1.750	0	3.500								
AC0312	3FW009	0.312	3	2.125	0	4.000								
AC0375	38I001	0.375	3	0.500	0	2.000	S1	R3	R6	RC	RH	RM	0	0
AC0375	3BU003	0.375	3	0.750	0	2.500								
AC0375	3CS003	0.375	3	1.000	0	2.500								
AC0375	3DG007	0.375	3	1.250	0	3.500								
AC0375	3E6007	0.375	3	1.500	0	3.500								
AC0375	3EW007	0.375	3	1.750	0	3.500								
AC0375	3FK009	0.375	3	2.000	0	4.000								
AC0375	3G6009	0.375	3	2.250	0	4.000								
AC0375	3GS00E	0.375	3	2.500	0	5.000								
AC0437	39C004	0.437	3	0.562	0	2.750	S1	R3	R6	RC	RH	RM	0	0
AC0437	3BU004	0.437	3	0.750	0	2.750								
AC0437	3CS004	0.437	3	1.000	0	2.750								
AC0437	3DG007	0.437	3	1.250	0	3.500								
AC0437	3E6007	0.437	3	1.500	0	3.500								
AC0437	3EW009	0.437	3	1.750	0	4.000								
AC0437	3FK009	0.437	3	2.000	0	4.000								
AC0437	3H200E	0.437	3	2.625	0	5.000								

Non-standard lengths, diameters and radius sizes are available upon request.

AC3 SERIES Continued
3FL / 45° Helix for Aluminum - Square or Radius

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AC0500	3A6003	FH	0	0		AC05003A6003FH00

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square W/Wiper	- - - - - - - Radius - - - - - - -					Coolant	Coating
								.015	.030	.060	.090	.125	None	None
AC0500	3A6003	0.500	3	0.625	0	2.500	S1	R3	R6	RC	RH	RM	0	0
AC0500	3CS005	0.500	3	1.000	0	3.000								
AC0500	3DG005	0.500	3	1.250	0	3.000								
AC0500	3E6007	0.500	3	1.500	0	3.500								
AC0500	3EI007	0.500	3	1.625	0	3.500								
AC0500	3EW009	0.500	3	1.750	0	4.000								
AC0500	3FK009	0.500	3	2.000	0	4.000								
AC0500	3G600E	0.500	3	2.250	0	5.000								
AC0500	3GS00E	0.500	3	2.500	0	5.000								
AC0500	3HC00E	0.500	3	2.750	0	5.000								
AC0500	3HY00E	0.500	3	3.000	0	5.000								
AC0500	3I800E	0.500	3	3.125	0	5.000								
AC0500	3II00I	0.500	3	3.250	0	6.000								
AC0500	3J400I	0.500	3	3.500	0	6.000								
AC0625	3BU005	0.625	3	0.750	0	3.000	S1	R3	R6	RC	RH	RM	0	0
AC0625	3DG007	0.625	3	1.250	0	3.500								
AC0625	3EI007	0.625	3	1.625	0	3.500								
AC0625	3F8009	0.625	3	1.875	0	4.000								
AC0625	3FK009	0.625	3	2.000	0	4.000								
AC0625	3G600E	0.625	3	2.250	0	5.000								
AC0625	3GS00E	0.625	3	2.500	0	5.000								
AC0625	3HC00E	0.625	3	2.750	0	5.000								
AC0625	3II00I	0.625	3	3.250	0	6.000								
AC0625	3JQ00I	0.625	3	3.750	0	6.000								
AC0625	3LS00L	0.625	3	4.625	0	7.000								
AC0750	3BU005	0.750	3	0.750	0	3.000	S1	R3	R6	RC	RH	RM	0	0
AC0750	3CS009	0.750	3	1.000	0	4.000								
AC0750	3DU009	0.750	3	1.375	0	4.000								
AC0750	3EI009	0.750	3	1.625	0	4.000								
AC0750	3G600E	0.750	3	2.250	0	5.000								
AC0750	3GS00E	0.750	3	2.500	0	5.000								
AC0750	3II00I	0.750	3	3.250	0	6.000								
AC0750	3J400I	0.750	3	3.500	0	6.000								
AC0750	3KA00K	0.750	3	4.000	0	6.500								
AC0750	3LG00L	0.750	3	4.500	0	7.000								
AC1000	3CS005	1.000	3	1.000	0	3.000	S1	R3	R6	RC	RH	RM	0	0
AC1000	3DG009	1.000	3	1.250	0	4.000								
AC1000	3FK00B	1.000	3	2.000	0	4.500								
AC1000	3H200E	1.000	3	2.625	0	5.000								
AC1000	3HY00I	1.000	3	3.000	0	6.000								
AC1000	3II00I	1.000	3	3.250	0	6.000								
AC1000	3J400I	1.000	3	3.500	0	6.000								
AC1000	3KK00L	1.000	3	4.125	0	7.000								
AC1000	3LG00L	1.000	3	4.500	0	7.000								
AC1000	3N800P	1.000	3	5.250	0	8.000								
AC1250	3CS009	1.250	3	1.000	0	4.000	S1	R3	R6	RC	RH	RM	0	0
AC1250	3FK00B	1.250	3	2.000	0	4.500								
AC1250	3H200G	1.250	3	2.625	0	5.500								
AC1250	3II00I	1.250	3	3.250	0	6.000								
AC1250	3KW00N	1.250	3	4.250	0	7.500								
AC1250	3NU00R	1.250	3	5.500	0	9.000								

Non-standard lengths, diameters and radius sizes are available upon request.

AS3 SERIES
3FL Aluminum Hyper Speed Mill - Square or Radius

The **AS3** is the all purpose tool for aluminum and other non-ferrous materials. Creating great finishes at high RPM's, this multi-application tool can be used for everything from heavy roughing to finishing.

- Moderate helix for aggressive high RPM roughing.
- Micro polished edges and flutes, plus a wiper flat for incredible finishes.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AS0125	**358000**	**R6**	**0**	**0**		**AS0125358000R600**

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1
GEO & DIA	**FL, LOC & LBS**	**DIA**	**# FL**	**LOC**	**LBS**	**OAL**	**Square W/Wiper**	**- - - - - - - Radius - - - - - - -**					**Coolant**	**Coating**
								.015	**.030**	**.060**	**.090**	**.125**	**None**	**None**
AS0125	**358000**	0.125	3	0.250	0	1.500	**S1**	**R3**	**R6**				**0**	**0**
AS0125	**36W001**	0.125	3	0.375	0	2.000								
AS0125	**38I001**	0.125	3	0.500	0	2.000								
AS0187	**362001**	0.187	3	0.312	0	2.000	**S1**	**R3**	**R6**	**RC**			**0**	**0**
AS0187	**39C001**	0.187	3	0.562	0	2.000								
AS0250	**36W001**	0.250	3	0.375	0	2.000	**S1**	**R3**	**R6**	**RC**	**RH**		**0**	**0**
AS0250	**38I001**	0.250	3	0.500	0	2.000								
AS0250	**3BU003**	0.250	3	0.750	0	2.500								
AS0250	**3CS005**	0.250	3	1.000	0	3.000								
AS0250	**3DG005**	0.250	3	1.250	0	3.000								
AS0250	**3E6005**	0.250	3	1.500	0	3.000								
AS0312	**37Q004**	0.312	3	0.437	0	2.750	**S1**	**R3**	**R6**	**RC**	**RH**	**RM**	**0**	**0**
AS0312	**3BU003**	0.312	3	0.750	0	2.500								
AS0312	**3CS005**	0.312	3	1.000	0	3.000								
AS0312	**3DG005**	0.312	3	1.250	0	3.000								
AS0312	**3E6005**	0.312	3	1.500	0	3.000								
AS0312	**3FW009**	0.312	3	2.125	0	4.000								
AS0375	**38I001**	0.375	3	0.500	0	2.000	**S1**	**R3**	**R6**	**RC**	**RH**	**RM**	**0**	**0**
AS0375	**3BU003**	0.375	3	0.750	0	2.500								
AS0375	**3CS003**	0.375	3	1.000	0	2.500								
AS0375	**3DG005**	0.375	3	1.250	0	3.000								
AS0375	**3E6007**	0.375	3	1.500	0	3.500								
AS0375	**3EW007**	0.375	3	1.750	0	3.500								
AS0375	**3FK009**	0.375	3	2.000	0	4.000								
AS0375	**3G6009**	0.375	3	2.250	0	4.000								
AS0375	**3GS00E**	0.375	3	2.500	0	5.000								
AS0437	**39C004**	0.437	3	0.562	0	2.750	**S1**	**R3**	**R6**	**RC**	**RH**	**RM**	**0**	**0**
AS0437	**3BU004**	0.437	3	0.750	0	2.750								
AS0437	**3CS004**	0.437	3	1.000	0	2.750								
AS0437	**3DG005**	0.437	3	1.250	0	3.000								
AS0437	**3E6009**	0.437	3	1.500	0	4.000								
AS0437	**3EW009**	0.437	3	1.750	0	4.000								
AS0437	**3FK009**	0.437	3	2.000	0	4.000								

Non-standard lengths, diameters and radius sizes are available upon request.

AS3 SERIES Continued
3FL Aluminum Hyper Speed Mill - Square or Radius

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AS0500	3A6003	R6	0	0		AS05003A6003F300

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square W/Wiper	- - - - - - - Radius - - - - - - -					Coolant	Coating
								.015	.030	.060	.090	.125	None	None
AS0500	3A6003	0.500	3	0.625	0	2.500	S1	R3	R6	RC	RH	RM	0	0
AS0500	3CS005	0.500	3	1.000	0	3.000								
AS0500	3DG005	0.500	3	1.250	0	3.000								
AS0500	3E6007	0.500	3	1.500	0	3.500								
AS0500	3EI007	0.500	3	1.625	0	3.500								
AS0500	3EW009	0.500	3	1.750	0	4.000								
AS0500	3FK009	0.500	3	2.000	0	4.000								
AS0500	3GS00E	0.500	3	2.500	0	5.000								
AS0500	3HC00E	0.500	3	2.750	0	5.000								
AS0500	3HY00E	0.500	3	3.000	0	5.000								
AS0500	3I800E	0.500	3	3.125	0	5.000								
AS0625	3BU005	0.625	3	0.750	0	3.000	S1	R3	R6	RC	RH	RM	0	0
AS0625	3DG007	0.625	3	1.250	0	3.500								
AS0625	3EI007	0.625	3	1.625	0	3.500								
AS0625	3FK009	0.625	3	2.000	0	4.000								
AS0625	3FW009	0.625	3	2.125	0	4.000								
AS0625	3GS00C	0.625	3	2.500	0	4.625								
AS0625	3HM00E	0.625	3	2.875	0	5.000								
AS0625	3II00I	0.625	3	3.250	0	6.000								
AS0625	3J400I	0.625	3	3.500	0	6.000								
AS0625	3JQ00I	0.625	3	3.750	0	6.000								
AS0750	3BU005	0.750	3	0.750	0	3.000	S1	R3	R6	RC	RH	RM	0	0
AS0750	3CS009	0.750	3	1.000	0	4.000								
AS0750	3DG007	0.750	3	1.250	0	3.500								
AS0750	3EI009	0.750	3	1.625	0	4.000								
AS0750	3G600E	0.750	3	2.250	0	5.000								
AS0750	3H200E	0.750	3	2.625	0	5.000								
AS0750	3II00I	0.750	3	3.250	0	6.000								
AS0750	3J400I	0.750	3	3.500	0	6.000								
AS0750	3KA00K	0.750	3	4.000	0	6.500								
AS0750	3LG00L	0.750	3	4.500	0	7.000								
AS1000	3CS005	1.000	3	1.000	0	3.000	S1	R3	R6	RC	RH	RM	0	0
AS1000	3DG009	1.000	3	1.250	0	4.000								
AS1000	3E6009	1.000	3	1.500	0	4.000								
AS1000	3FK00B	1.000	3	2.000	0	4.500								
AS1000	3H200E	1.000	3	2.625	0	5.000								
AS1000	3I800I	1.000	3	3.125	0	6.000								
AS1000	3II00I	1.000	3	3.250	0	6.000								
AS1000	3J400I	1.000	3	3.500	0	6.000								
AS1000	3KW00L	1.000	3	4.250	0	7.000								
AS1000	3LS00L	1.000	3	4.625	0	7.000								
AS1250	3CS009	1.250	3	1.000	0	4.000	S1	R3	R6	RC	RH	RM	0	0
AS1250	3FK00B	1.250	3	2.000	0	4.500								
AS1250	3H200G	1.250	3	2.625	0	5.500								
AS1250	3J400I	1.250	3	3.500	0	6.000								
AS1250	3MM00N	1.250	3	5.000	0	7.500								

Non-standard lengths, diameters and radius sizes are available upon request.

ASEL3 SERIES
3FL Aluminum Hyper Speed Mill Necked XL
Square or Radius

The **ASEL3** is the all purpose tool for aluminum and other non-ferrous materials. Creating great finishes at high RPM's, this multi-application tool can be used for everything from heavy roughing to finishing.

- Blended neck relief reduces marks in step-down machining.
- Moderate helix for aggressive high RPM roughing.
- Micro polished edges and flutes, plus a wiper flat for incredible finishes.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- Excellent tool for high speed, long reach machining.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AS0125	3588I0	R6	0	0		AS0125358810R600

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square W/Wiper	Radius .015	Radius .030	Radius .060	Radius .090	Radius .125	Coolant None	Coating None
AS0125	3588I0	0.125	3	0.250	0.500	1.500	S1	R3	R6				0	0
AS0125	358BU1	0.125	3	0.250	0.750	2.000								
AS0125	358CS1	0.125	3	0.250	1.000	2.000								
AS0125	358DG3	0.125	3	0.250	1.250	2.500								
AS0187	3628I1	0.187	3	0.312	0.500	2.000	S1	R3	R6	RC			0	0
AS0187	362BU5	0.187	3	0.312	0.750	3.000								
AS0187	362CS5	0.187	3	0.312	1.000	3.000								
AS0187	362DG5	0.187	3	0.312	1.250	3.000								
AS0187	362E65	0.187	3	0.312	1.500	3.000								
AS0187	362EW5	0.187	3	0.312	1.750	3.000								
AS0250	36WBU1	0.250	3	0.375	0.750	2.000	S1	R3	R6	RC	RH		0	0
AS0250	36WCS3	0.250	3	0.375	1.000	2.500								
AS0250	36WDG3	0.250	3	0.375	1.250	2.500								
AS0250	36WE65	0.250	3	0.375	1.500	3.000								
AS0250	36WEW5	0.250	3	0.375	1.750	3.000								
AS0250	36WFK7	0.250	3	0.375	2.000	3.500								
AS0250	36WG67	0.250	3	0.375	2.250	3.500								
AS0250	36WGS9	0.250	3	0.375	2.500	4.000								
AS0312	37QBU1	0.312	3	0.437	0.750	2.000	S1	R3	R6	RC	RH	RM	0	0
AS0312	37QCS3	0.312	3	0.437	1.000	2.500								
AS0312	37QDG3	0.312	3	0.437	1.250	2.500								
AS0312	37QE65	0.312	3	0.437	1.500	3.000								
AS0312	37QEW5	0.312	3	0.437	1.750	3.000								
AS0312	37QFK7	0.312	3	0.437	2.000	3.500								
AS0312	37QG67	0.312	3	0.437	2.250	3.500								
AS0312	37QGS9	0.312	3	0.437	2.500	4.000								
AS0312	37QI8I	0.312	3	0.437	3.125	6.000								
AS0312	37QKAI	0.312	3	0.437	4.000	6.000								
AS0375	38ICS3	0.375	3	0.500	1.000	2.500	S1	R3	R6	RC	RH	RM	0	0
AS0375	38IDG5	0.375	3	0.500	1.250	3.000								
AS0375	38IE65	0.375	3	0.500	1.500	3.000								
AS0375	38IFK7	0.375	3	0.500	2.000	3.500								
AS0375	38IG69	0.375	3	0.500	2.250	4.000								
AS0375	38IGSB	0.375	3	0.500	2.500	4.500								
AS0375	38IHYE	0.375	3	0.500	3.000	5.000								
AS0375	38IJ4G	0.375	3	0.500	3.500	5.500								
AS0375	38IJQI	0.375	3	0.500	3.750	6.000								
AS0375	38IKAI	0.375	3	0.500	4.000	6.000								

Non-standard lengths, diameters and radius sizes are available upon request.

ASEL3 SERIES Continued
3FL Aluminum Hyper Speed Mill Necked XL
Square or Radius

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AS0437	39CCS4	R6	0	0		AS043739CCS4R600

First 6	Middle 6						End Geometry						Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square W/Wiper	- - - - - - - Radius - - - - - - -					Coolant	Coating
								.015	.030	.060	.090	.125	None	None
AS0437	39CCS4	0.437	3	0.562	1.000	2.750	S1	R3	R6	RC	RH	RM	0	0
AS0437	39CDG4	0.437	3	0.562	1.250	2.750								
AS0437	39CE67	0.437	3	0.562	1.500	3.500								
AS0437	39CFK9	0.437	3	0.562	2.000	4.000								
AS0437	39CGSB	0.437	3	0.562	2.500	4.500								
AS0437	39CHYE	0.437	3	0.562	3.000	5.000								
AS0437	39CJ4G	0.437	3	0.562	3.500	5.500								
AS0437	39CKAI	0.437	3	0.562	4.000	6.000								
AS0500	3A6CS5	0.500	3	0.625	1.000	3.000	S1	R3	R6	RC	RH	RM	0	0
AS0500	3A6DU7	0.500	3	0.625	1.375	3.500								
AS0500	3A6E67	0.500	3	0.625	1.500	3.500								
AS0500	3A6FK9	0.500	3	0.625	2.000	4.000								
AS0500	3A6G69	0.500	3	0.625	2.250	4.000								
AS0500	3A6GSB	0.500	3	0.625	2.500	4.500								
AS0500	3A6HYE	0.500	3	0.625	3.000	5.000								
AS0500	3A6J4G	0.500	3	0.625	3.500	5.500								
AS0500	3A6KAI	0.500	3	0.625	4.000	6.000								
AS0500	3A6LGK	0.500	3	0.625	4.500	6.500								
AS0500	3A6MML	0.500	3	0.625	5.000	7.000								
AS0625	3BUCS5	0.625	3	0.750	1.000	3.000	S1	R3	R6	RC	RH	RM	0	0
AS0625	3BUE67	0.625	3	0.750	1.500	3.500								
AS0625	3BUEW9	0.625	3	0.750	1.750	4.000								
AS0625	3BUFK9	0.625	3	0.750	2.000	4.000								
AS0625	3BUGGC	0.625	3	0.750	2.375	4.625								
AS0625	3BUHYE	0.625	3	0.750	3.000	5.000								
AS0625	3BUJ4G	0.625	3	0.750	3.500	5.500								
AS0625	3BUKAI	0.625	3	0.750	4.000	6.000								
AS0625	3BULGK	0.625	3	0.750	4.500	6.500								
AS0625	3BUMML	0.625	3	0.750	5.000	7.000								
AS0625	3BUNUN	0.625	3	0.750	5.500	7.500								
AS0625	3BUQ0P	0.625	3	0.750	6.000	8.000								
AS0750	3CSFK9	0.750	3	1.000	2.000	4.000	S1	R3	R6	RC	RH	RM	0	0
AS0750	3CSGSB	0.750	3	1.000	2.500	4.500								
AS0750	3CSHYE	0.750	3	1.000	3.000	5.000								
AS0750	3CSJ4G	0.750	3	1.000	3.500	5.500								
AS0750	3CSKAI	0.750	3	1.000	4.000	6.000								
AS0750	3CSLGK	0.750	3	1.000	4.500	6.500								
AS0750	3CSMML	0.750	3	1.000	5.000	7.000								
AS0750	3CSNUN	0.750	3	1.000	5.500	7.500								
AS0750	3CSQ0P	0.750	3	1.000	6.000	8.000								
AS1000	3CSE69	1.000	3	1.000	1.500	4.000	S1	R3	R6	RC	RH	RM	0	0
AS1000	3DGFKB	1.000	3	1.250	2.000	4.500								
AS1000	3DGGSE	1.000	3	1.250	2.500	5.000								
AS1000	3DGHCG	1.000	3	1.250	2.750	5.500								
AS1000	3DGJ4I	1.000	3	1.250	3.500	6.000								
AS1000	3DGKAK	1.000	3	1.250	4.000	6.500								
AS1000	3DGLGL	1.000	3	1.250	4.500	7.000								
AS1000	3DGMMN	1.000	3	1.250	5.000	7.500								
AS1000	3DGNUP	1.000	3	1.250	5.500	8.000								
AS1000	3DGQ0Q	1.000	3	1.250	6.000	8.500								
AS1000	3DGR6R	1.000	3	1.250	6.500	9.000								
AS1000	3DGSCS	1.000	3	1.250	7.000	9.500								
AS1000	3DGTIT	1.000	3	1.250	7.500	10.000								

Non-standard lengths, diameters and radius sizes are available upon request.

BS3 SERIES
3FL Aluminum Ball End Hyper Speed Mill

The **BS3** is the all purpose tool for aluminum and other non-ferrous materials. The elliptical gash on the ball end creates great finishes at high RPM's. This multi-application tool can be used for everything from full slotting to heavy roughing.

- Moderate helix for aggressive high RPM roughing.
- Micro polished edges and flutes for incredible finishes.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AS0125	**358000**	**B0**	**0**	**0**		**AS0125358000B000**

First 6	Middle 6						End Geometry	Pick 1	Pick 1
GEO & DIA	**FL, LOC & LBS**	**DIA**	**# FL**	**LOC**	**LBS**	**OAL**	**Ball Nose**	**Coolant** None	**Coating** None
AS0125	358000	0.125	3	0.250	0	1.500	B0	0	0
AS0125	36W001	0.125	3	0.375	0	2.000			
AS0125	38I001	0.125	3	0.500	0	2.000			
AS0187	362001	0.187	3	0.312	0	2.000	B0	0	0
AS0187	39C001	0.187	3	0.562	0	2.000			
AS0250	36W001	0.250	3	0.375	0	2.000	B0	0	0
AS0250	38I001	0.250	3	0.500	0	2.000			
AS0250	3BU003	0.250	3	0.750	0	2.500			
AS0250	3CS005	0.250	3	1.000	0	3.000			
AS0250	3DG005	0.250	3	1.250	0	3.000			
AS0250	3E6005	0.250	3	1.500	0	3.000			
AS0312	37Q001	0.312	3	0.437	0	2.000	B0	0	0
AS0312	3BU003	0.312	3	0.750	0	2.500			
AS0312	3CS005	0.312	3	1.000	0	3.000			
AS0312	3DG005	0.312	3	1.250	0	3.000			
AS0312	3E6005	0.312	3	1.500	0	3.000			
AS0375	38I001	0.375	3	0.500	0	2.000	B0	0	0
AS0375	3BU003	0.375	3	0.750	0	2.500			
AS0375	3CS003	0.375	3	1.000	0	2.500			
AS0375	3DG005	0.375	3	1.250	0	3.000			
AS0375	3E6007	0.375	3	1.500	0	3.500			
AS0375	3EW007	0.375	3	1.750	0	3.500			
AS0375	3FK009	0.375	3	2.000	0	4.000			
AS0375	3G6009	0.375	3	2.250	0	4.000			
AS0437	39C004	0.437	3	0.562	0	2.750	B0	0	0
AS0437	3BU004	0.437	3	0.750	0	2.750			
AS0437	3CS004	0.437	3	1.000	0	2.750			
AS0437	3DG005	0.437	3	1.250	0	3.000			
AS0437	3E6007	0.437	3	1.500	0	3.500			
AS0437	3EW009	0.437	3	1.750	0	4.000			
AS0437	3FK009	0.437	3	2.000	0	4.000			
AS0500	3A6003	0.500	3	0.625	0	2.500	B0	0	0
AS0500	3CS005	0.500	3	1.000	0	3.000			
AS0500	3DG005	0.500	3	1.250	0	3.000			
AS0500	3E6007	0.500	3	1.500	0	3.500			
AS0500	3EI007	0.500	3	1.625	0	3.500			
AS0500	3EW009	0.500	3	1.750	0	4.000			
AS0500	3FK009	0.500	3	2.000	0	4.000			
AS0500	3GS00E	0.500	3	2.500	0	5.000			
AS0500	3HC00E	0.500	3	2.750	0	5.000			
AS0500	3HY00E	0.500	3	3.000	0	5.000			

Non-standard lengths and diameters are available upon request.

BS3 SERIES Continued
3FL Aluminum Ball End Hyper Speed Mill

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AS0625	2BUEW9	B0	0	0		AS06253BUEW9B000

First 6	Middle 6						End Geometry	Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Ball Nose	Coolant None	Coating None
AS0625	3BU005	0.625	3	0.750	0	3.000	B0	0	0
AS0625	3DG007	0.625	3	1.250	0	3.500			
AS0625	3EI007	0.625	3	1.625	0	3.500			
AS0625	3FK009	0.625	3	2.000	0	4.000			
AS0625	3GS00C	0.625	3	2.500	0	4.625			
AS0625	3HM00E	0.625	3	2.875	0	5.000			
AS0625	3J400I	0.625	3	3.500	0	6.000			
AS0625	3JQ00I	0.625	3	3.750	0	6.000			
AS0750	3BU005	0.750	3	0.750	0	3.000	B0	0	0
AS0750	3DG007	0.750	3	1.250	0	3.500			
AS0750	3EI009	0.750	3	1.625	0	4.000			
AS0750	3G600E	0.750	3	2.250	0	5.000			
AS0750	3H200E	0.750	3	2.625	0	5.000			
AS0750	3J400I	0.750	3	3.500	0	6.000			
AS0750	3LG00L	0.750	3	4.500	0	7.000			
AS1000	3CS005	1.000	3	1.000	0	3.000	B0	0	0
AS1000	3E6009	1.000	3	1.500	0	4.000			
AS1000	3FK00B	1.000	3	2.000	0	4.500			
AS1000	3H200E	1.000	3	2.625	0	5.000			
AS1000	3I800I	1.000	3	3.125	0	6.000			
AS1000	3J400I	1.000	3	3.500	0	6.000			
AS1000	3KW00L	1.000	3	4.250	0	7.000			
AS1250	3CS009	1.250	3	1.000	0	4.000	B0	0	0
AS1250	3FK00B	1.250	3	2.000	0	4.500			
AS1250	3H200G	1.250	3	2.625	0	5.500			
AS1250	3J400I	1.250	3	3.500	0	6.000			
AS1250	3MM00N	1.250	3	5.000	0	7.500			

Non-standard lengths and diameters are available upon request.

BSEL3 SERIES
3FL Aluminum Ball End Hyper Speed Mill Necked XL

The **BSEL3** is the all purpose tool for aluminum and other non-ferrous materials. The elliptical gash on the ball end creates great finishes at high RPM's. This multi-application tool can be used for everything from full slotting to heavy roughing.

- Blended neck relief reduces marks in step-down machining.
- Moderate helix for aggressive high RPM roughing.
- Micro polished edges and flutes for incredible finishes.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AS0125	**3588I0**	**B0**	**0**	**0**		**AS0125358810B000**

First 6	Middle 6						End Geometry	Pick 1	Pick 1
GEO & DIA	**FL, LOC & LBS**	**DIA**	**# FL**	**LOC**	**LBS**	**OAL**	**Ball Nose**	**Coolant None**	**Coating None**
AS0125	3588I0	0.125	3	0.250	0.500	1.500	B0	0	0
AS0125	358BU1	0.125	3	0.250	0.750	2.000			
AS0125	358CS1	0.125	3	0.250	1.000	2.000			
AS0125	358DG3	0.125	3	0.250	1.250	2.500			
AS0187	3628I1	0.187	3	0.312	0.500	2.000	B0	0	0
AS0187	362CS5	0.187	3	0.312	1.000	3.000			
AS0187	362DG5	0.187	3	0.312	1.250	3.000			
AS0187	362E65	0.187	3	0.312	1.500	3.000			
AS0187	362EW5	0.187	3	0.312	1.750	3.000			
AS0250	36WBU1	0.250	3	0.375	0.750	2.000	B0	0	0
AS0250	36WCS3	0.250	3	0.375	1.000	2.500			
AS0250	36WDG3	0.250	3	0.375	1.250	2.500			
AS0250	36WE65	0.250	3	0.375	1.500	3.000			
AS0250	36WEW5	0.250	3	0.375	1.750	3.000			
AS0250	36WFK7	0.250	3	0.375	2.000	3.500			
AS0250	36WG67	0.250	3	0.375	2.250	3.500			
AS0250	36WGS9	0.250	3	0.375	2.500	4.000			
AS0312	37QBU1	0.312	3	0.437	0.750	2.000	B0	0	0
AS0312	37QCS3	0.312	3	0.437	1.000	2.500			
AS0312	37QDG3	0.312	3	0.437	1.250	2.500			
AS0312	37QE65	0.312	3	0.437	1.500	3.000			
AS0312	37QEW5	0.312	3	0.437	1.750	3.000			
AS0312	37QFK7	0.312	3	0.437	2.000	3.500			
AS0312	37QG67	0.312	3	0.437	2.250	3.500			
AS0312	37QGS9	0.312	3	0.437	2.500	4.000			
AS0375	38ICS3	0.375	3	0.500	1.000	2.500	B0	0	0
AS0375	38IE65	0.375	3	0.500	1.500	3.000			
AS0375	38IFK7	0.375	3	0.500	2.000	3.500			
AS0375	38IG69	0.375	3	0.500	2.250	4.000			
AS0375	38IGSB	0.375	3	0.500	2.500	4.500			
AS0375	38IHYE	0.375	3	0.500	3.000	5.000			
AS0375	38IJ4G	0.375	3	0.500	3.500	5.500			
AS0375	38IJQI	0.375	3	0.500	3.750	6.000			
AS0375	38IKAI	0.375	3	0.500	4.000	6.000			

Non-standard lengths and diameters are available upon request.

BSEL3 SERIES Continued
3FL Aluminum Ball End Hyper Speed Mill Necked XL

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AS0437	39CCS4	B0	0	0		AS043739CCS4B000

First 6	Middle 6						End Geometry	Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Ball Nose	Coolant	Coating
								None	None
AS0437	39CCS4	0.437	3	0.562	1.000	2.750			
AS0437	39CDG4	0.437	3	0.562	1.250	2.750			
AS0437	39CE67	0.437	3	0.562	1.500	3.500			
AS0437	39CFK9	0.437	3	0.562	2.000	4.000			
AS0437	39CGSB	0.437	3	0.562	2.500	4.500	B0	0	0
AS0437	39CHYE	0.437	3	0.562	3.000	5.000			
AS0437	39CJ4G	0.437	3	0.562	3.500	5.500			
AS0437	39CKAI	0.437	3	0.562	4.000	6.000			
AS0500	3A6CS5	0.500	3	0.625	1.000	3.000			
AS0500	3A6DU7	0.500	3	0.625	1.375	3.500			
AS0500	3A6E67	0.500	3	0.625	1.500	3.500			
AS0500	3A6FK9	0.500	3	0.625	2.000	4.000			
AS0500	3A6G69	0.500	3	0.625	2.250	4.000			
AS0500	3A6GSB	0.500	3	0.625	2.500	4.500	B0	0	0
AS0500	3A6HYE	0.500	3	0.625	3.000	5.000			
AS0500	3A6J4G	0.500	3	0.625	3.500	5.500			
AS0500	3A6KAI	0.500	3	0.625	4.000	6.000			
AS0500	3A6LGK	0.500	3	0.625	4.500	6.500			
AS0500	3A6MML	0.500	3	0.625	5.000	7.000			
AS0625	3BUCS5	0.625	3	0.750	1.000	3.000			
AS0625	3BUE67	0.625	3	0.750	1.500	3.500			
AS0625	3BUFK9	0.625	3	0.750	2.000	4.000			
AS0625	3BUGGC	0.625	3	0.750	2.375	4.625			
AS0625	3BUHYE	0.625	3	0.750	3.000	5.000			
AS0625	3BUJ4G	0.625	3	0.750	3.500	5.500	B0	0	0
AS0625	3BUKAI	0.625	3	0.750	4.000	6.000			
AS0625	3BULGK	0.625	3	0.750	4.500	6.500			
AS0625	3BUMML	0.625	3	0.750	5.000	7.000			
AS0625	3BUNUN	0.625	3	0.750	5.500	7.500			
AS0625	3BUQ0P	0.625	3	0.750	6.000	8.000			
AS0750	3CSFK9	0.750	3	1.000	2.000	4.000			
AS0750	3CSGSB	0.750	3	1.000	2.500	4.500			
AS0750	3CSHYE	0.750	3	1.000	3.000	5.000			
AS0750	3CSJ4G	0.750	3	1.000	3.500	5.500			
AS0750	3CSKAI	0.750	3	1.000	4.000	6.000	B0	0	0
AS0750	3CSLGK	0.750	3	1.000	4.500	6.500			
AS0750	3CSMML	0.750	3	1.000	5.000	7.000			
AS0750	3CSNUN	0.750	3	1.000	5.500	7.500			
AS0750	3CSQ0P	0.750	3	1.000	6.000	8.000			
AS1000	3CSE69	1.000	3	1.000	1.500	4.000			
AS1000	3DGFKB	1.000	3	1.250	2.000	4.500			
AS1000	3DGGSE	1.000	3	1.250	2.500	5.000			
AS1000	3DGHCG	1.000	3	1.250	2.750	5.500			
AS1000	3DGJ4I	1.000	3	1.250	3.500	6.000			
AS1000	3DGKAK	1.000	3	1.250	4.000	6.500			
AS1000	3DGLGL	1.000	3	1.250	4.500	7.000	B0	0	0
AS1000	3DGMMN	1.000	3	1.250	5.000	7.500			
AS1000	3DGNUP	1.000	3	1.250	5.500	8.000			
AS1000	3DGQ0Q	1.000	3	1.250	6.000	8.500			
AS1000	3DGQ0R	1.000	3	1.250	6.000	9.000			
AS1000	3DGSCS	1.000	3	1.250	7.000	9.500			
AS1000	3DGTIT	1.000	3	1.250	7.500	10.000			

Non-standard lengths and diameters are available upon request.

AF4 Differential Pitch & Helix
4FL Aluminum Finisher - Square or Radius

US Patent:
9,227,253
10,335,870

The **AF4** finishes faster than a 3 flute and has a differential pitch / differential helix design that reduces the harmonics that cause vibration and chatter. The **AF4** is an excellent choice for light to medium engagement producing mirror finishes in tight corners even at low RPM's.

- Patent protected through-coolant hole gives flawless chip evacuation for unmatched finishes and tool life.
- Micro-polished edges and double rake flutes with a wiper flat for mirror wall and floor finishes.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AF0250	46W001	R6	0	0		AF025046W001R600

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square W/Wiper	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	None
AF0187	462001	0.187	4	0.312	0	2.000	S1	R3	R6	RC	N/A	N/A	0	C	0
AF0187	48I001	0.187	4	0.500	0	2.000									
AF0187	4A6003	0.187	4	0.625	0	2.500									
AF0187	4BU003	0.187	4	0.750	0	2.500									
AF0187	4CS005	0.187	4	1.000	0	3.000							0	N/A	
AF0187	4DG005	0.187	4	1.250	0	3.000									
AF0250	46W001	0.250	4	0.375	0	2.000	S1	R3	R6	RC	N/A	N/A	0	C	0
AF0250	48I001	0.250	4	0.500	0	2.000									
AF0250	4BU003	0.250	4	0.750	0	2.500									
AF0250	4CS005	0.250	4	1.000	0	3.000									
AF0250	4DG005	0.250	4	1.250	0	3.000									
AF0250	4E6005	0.250	4	1.500	0	3.000									
AF0250	4EW007	0.250	4	1.750	0	3.500							0	N/A	
AF0250	4FK007	0.250	4	2.000	0	3.500									
AF0312	48I001	0.312	4	0.500	0	2.000	S1	R3	R6	RC	N/A	N/A	0	C	0
AF0312	4BU003	0.312	4	0.750	0	2.500									
AF0312	4CS003	0.312	4	1.000	0	2.500									
AF0312	4DG005	0.312	4	1.250	0	3.000									
AF0312	4E6005	0.312	4	1.500	0	3.000									
AF0312	4EW007	0.312	4	1.750	0	3.500									
AF0312	4FK007	0.312	4	2.000	0	3.500									
AF0375	48I001	0.375	4	0.500	0	2.000	S1	R3	R6	RC	N/A	N/A	0	C	0
AF0375	4BU003	0.375	4	0.750	0	2.500									
AF0375	4CS003	0.375	4	1.000	0	2.500									
AF0375	4DG005	0.375	4	1.250	0	3.000									
AF0375	4E6007	0.375	4	1.500	0	3.500									
AF0375	4EW007	0.375	4	1.750	0	3.500									
AF0375	4FK009	0.375	4	2.000	0	4.000									
AF0375	4G6009	0.375	4	2.250	0	4.000									
AF0375	4GS00E	0.375	4	2.500	0	5.000									
AF0375	4HY00E	0.375	4	3.000	0	5.000									
AF0437	4BU004	0.437	4	0.750	0	2.750	S1	R3	R6	RC	N/A	N/A	0	C	0
AF0437	4CS004	0.437	4	1.000	0	2.750									
AF0437	4DG005	0.437	4	1.250	0	3.000									
AF0437	4EW009	0.437	4	1.750	0	4.000									
AF0437	4FK009	0.437	4	2.000	0	4.000									
AF0437	4GS00E	0.437	4	2.500	0	5.000									
AF0437	4HY00E	0.437	4	3.000	0	5.000									
AF0500	4A6003	0.500	4	0.625	0	2.500	S1	R3	R6	RC	N/A	N/A	0	C	0
AF0500	4CS005	0.500	4	1.000	0	3.000									
AF0500	4DG005	0.500	4	1.250	0	3.000									
AF0500	4E6007	0.500	4	1.500	0	3.500									
AF0500	4EI007	0.500	4	1.625	0	3.500									

Non-standard lengths, diameters and radius sizes are available upon request.

AF4 Differential Pitch & Helix Continued
4FL Aluminum Finisher - Square or Radius

US Patent:
9,227,253
10,335,870

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AF0500	4II00I	RC	0	0		AF05004II00IRC00

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square W/Wiper	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	None
AF0500	4EW009	0.500	4	1.750	0	4.000	S1	R3	R6	RC	RH	RM	0	C	0
AF0500	4FK009	0.500	4	2.000	0	4.000									
AF0500	4G600E	0.500	4	2.250	0	5.000									
AF0500	4GS00E	0.500	4	2.500	0	5.000									
AF0500	4HC00E	0.500	4	2.750	0	5.000									
AF0500	4HY00E	0.500	4	3.000	0	5.000									
AF0500	4I800E	0.500	4	3.125	0	5.000									
AF0500	4II00I	0.500	4	3.250	0	6.000									
AF0500	4J400I	0.500	4	3.500	0	6.000									
AF0500	4KA00I	0.500	4	4.000	0	6.000									
AF0562	4E6007	0.562	4	1.500	0	3.500	S1	R3	R6	RC	RH	RM	0	C	0
AF0562	4FK009	0.562	4	2.000	0	4.000									
AF0562	4HY00E	0.562	4	3.000	0	5.000									
AF0625	4BU005	0.625	4	0.750	0	3.000	S1	R3	R6	RC	RH	RM	0	C	0
AF0625	4DG007	0.625	4	1.250	0	3.500									
AF0625	4EI007	0.625	4	1.625	0	3.500									
AF0625	4F8009	0.625	4	1.875	0	4.000									
AF0625	4FK009	0.625	4	2.000	0	4.000									
AF0625	4G600E	0.625	4	2.250	0	5.000									
AF0625	4GS00E	0.625	4	2.500	0	5.000									
AF0625	4HC00E	0.625	4	2.750	0	5.000									
AF0625	4II00I	0.625	4	3.250	0	6.000									
AF0625	4JQ00I	0.625	4	3.750	0	6.000									
AF0625	4LG00L	0.625	4	4.500	0	7.000									
AF0750	4BU005	0.750	4	0.750	0	3.000	S1	R3	R6	RC	RH	RM	0	C	0
AF0750	4CS005	0.750	4	1.000	0	3.000									
AF0750	4EI009	0.750	4	1.625	0	4.000									
AF0750	4G600E	0.750	4	2.250	0	5.000									
AF0750	4GS00E	0.750	4	2.500	0	5.000									
AF0750	4II00I	0.750	4	3.250	0	6.000									
AF0750	4J400I	0.750	4	3.500	0	6.000									
AF0750	4KA00K	0.750	4	4.000	0	6.500									
AF0750	4LS00L	0.750	4	4.625	0	7.000									
AF0875	4EI009	0.875	4	1.625	0	4.000	S1	R3	R6	RC	RH	RM	0	C	0
AF0875	4HC00E	0.875	4	2.750	0	5.000									
AF0875	4JQ00I	0.875	4	3.750	0	6.000									
AF0875	4MM00P	0.875	4	5.000	0	8.000									
AF1000	4CS005	1.000	4	1.000	0	3.000	S1	R3	R6	RC	RH	RM	0	C	0
AF1000	4DG009	1.000	4	1.250	0	4.000									
AF1000	4E6009	1.000	4	1.500	0	4.000									
AF1000	4FK00B	1.000	4	2.000	0	4.500									
AF1000	4H200E	1.000	4	2.625	0	5.000									
AF1000	4HY00I	1.000	4	3.000	0	6.000									
AF1000	4II00I	1.000	4	3.250	0	6.000									
AF1000	4J400I	1.000	4	3.500	0	6.000									
AF1000	4KK00L	1.000	4	4.125	0	7.000									
AF1000	4LG00L	1.000	4	4.500	0	7.000									
AF1000	4N800P	1.000	4	5.250	0	8.000									
AF1250	4FK00B	1.250	4	2.000	0	4.500	S1	R3	R6	RC	RH	RM	0	C	0
AF1250	4H200G	1.250	4	2.625	0	5.500									
AF1250	4II00I	1.250	4	3.250	0	6.000									
AF1250	4KW00N	1.250	4	4.250	0	7.500									
AF1250	4MM00N	1.250	4	5.000	0	7.500									
AF1250	4NU00R	1.250	4	5.500	0	9.000									

Non-standard lengths, diameters and radius sizes are available upon request.

AF4 Differential Pitch & Helix
4FL Aluminum Finisher - Ball End

The **AF4** series **differential pitch** / **differential helix** 4 flute ball end is our newest offering in ultra high performance aluminum finishing. The **AF4** flute ball allows for higher feed rates while producing excellent finishes. This is our best choice for finishing and profiling applications in Aluminum and other non-ferrous materials requiring a ball end.

- Manufactured using premium carbide blanks holding tolerances well above industry standard.
- Premium carbide blanks and eccentric relief with Micro-Polished edge for superior strength and wear resistance.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AF0250	**46W001**	**R6**	**0**	**0**		**AF025046W001R600**

First 6	Middle 6						End Geometry	Pick 1	Pick 1
GEO & DIA	**FL, LOC & LBS**	**DIA**	**# FL**	**LOC**	**LBS**	**OAL**	**Ball Nose**	**Coolant None**	**Coating None**
AF0187	**462001**	0.187	4	0.312	0	2.000			
AF0187	**48I001**	0.187	4	0.500	0	2.000			
AF0187	**4A6003**	0.187	4	0.625	0	2.500	**B0**	**0**	**0**
AF0187	**4BU003**	0.187	4	0.750	0	2.500			
AF0187	**4CS005**	0.187	4	1.000	0	3.000			
AF0187	**4DG005**	0.187	4	1.250	0	3.000			
AF0250	**46W001**	0.250	4	0.375	0	2.000			
AF0250	**48I001**	0.250	4	0.500	0	2.000			
AF0250	**4BU003**	0.250	4	0.750	0	2.500			
AF0250	**4CS005**	0.250	4	1.000	0	3.000	**B0**	**0**	**0**
AF0250	**4DG005**	0.250	4	1.250	0	3.000			
AF0250	**4E6005**	0.250	4	1.500	0	3.000			
AF0250	**4EW007**	0.250	4	1.750	0	3.500			
AF0250	**4FK007**	0.250	4	2.000	0	3.500			
AF0312	**48I001**	0.312	4	0.500	0	2.000			
AF0312	**4BU003**	0.312	4	0.750	0	2.500			
AF0312	**4CS003**	0.312	4	1.000	0	2.500			
AF0312	**4DG005**	0.312	4	1.250	0	3.000	**B0**	**0**	**0**
AF0312	**4E6005**	0.312	4	1.500	0	3.000			
AF0312	**4EW007**	0.312	4	1.750	0	3.500			
AF0312	**4FK007**	0.312	4	2.000	0	3.500			
AF0375	**48I001**	0.375	4	0.500	0	2.000			
AF0375	**4BU003**	0.375	4	0.750	0	2.500			
AF0375	**4CS003**	0.375	4	1.000	0	2.500			
AF0375	**4DG005**	0.375	4	1.250	0	3.000			
AF0375	**4E6007**	0.375	4	1.500	0	3.500	**B0**	**0**	**0**
AF0375	**4EW007**	0.375	4	1.750	0	3.500			
AF0375	**4FK009**	0.375	4	2.000	0	4.000			
AF0375	**4G6009**	0.375	4	2.250	0	4.000			
AF0375	**4GS00E**	0.375	4	2.500	0	5.000			
AF0375	**4HY00E**	0.375	4	3.000	0	5.000			
AF0437	**4BU004**	0.437	4	0.750	0	2.750			
AF0437	**4CS004**	0.437	4	1.000	0	2.750			
AF0437	**4DG005**	0.437	4	1.250	0	3.000			
AF0437	**4EW009**	0.437	4	1.750	0	4.000	**B0**	**0**	**0**
AF0437	**4FK009**	0.437	4	2.000	0	4.000			
AF0437	**4GS00E**	0.437	4	2.500	0	5.000			
AF0437	**4HY00E**	0.437	4	3.000	0	5.000			
AF0500	**4A6003**	0.500	4	0.625	0	2.500			
AF0500	**4CS005**	0.500	4	1.000	0	3.000			
AF0500	**4DG005**	0.500	4	1.250	0	3.000	**B0**	**0**	**0**
AF0500	**4E6007**	0.500	4	1.500	0	3.500			
AF0500	**4EI007**	0.500	4	1.625	0	3.500			

Non-standard lengths, diameters and radius sizes are available upon request.

AF4 Differential Pitch & Helix Continued
4FL Aluminum Finisher - Ball End

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AF0250	46W001	R6	0	0		AF025046W001R600

First 6	Middle 6						End Geometry	Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Ball Nose	Coolant None	Coating None
AF0500	4EW009	0.500	4	1.750	0	4.000			
AF0500	4FK009	0.500	4	2.000	0	4.000			
AF0500	4G600E	0.500	4	2.250	0	5.000			
AF0500	4GS00E	0.500	4	2.500	0	5.000			
AF0500	4HC00E	0.500	4	2.750	0	5.000	B0	0	0
AF0500	4HY00E	0.500	4	3.000	0	5.000			
AF0500	4I800E	0.500	4	3.125	0	5.000			
AF0500	4II00I	0.500	4	3.250	0	6.000			
AF0500	4J400I	0.500	4	3.500	0	6.000			
AF0500	4KA00I	0.500	4	4.000	0	6.000			
AF0562	4E6007	0.562	4	1.500	0	3.500			
AF0562	4FK009	0.562	4	2.000	0	4.000	B0	0	0
AF0562	4HY00E	0.562	4	3.000	0	5.000			
AF0625	4BU005	0.625	4	0.750	0	3.000			
AF0625	4DG007	0.625	4	1.250	0	3.500			
AF0625	4EI007	0.625	4	1.625	0	3.500			
AF0625	4F8009	0.625	4	1.875	0	4.000			
AF0625	4FK009	0.625	4	2.000	0	4.000			
AF0625	4G600E	0.625	4	2.250	0	5.000	B0	0	0
AF0625	4GS00E	0.625	4	2.500	0	5.000			
AF0625	4HC00E	0.625	4	2.750	0	5.000			
AF0625	4II00I	0.625	4	3.250	0	6.000			
AF0625	4JQ00I	0.625	4	3.750	0	6.000			
AF0625	4LG00L	0.625	4	4.500	0	7.000			
AF0750	4BU005	0.750	4	0.750	0	3.000			
AF0750	4CS005	0.750	4	1.000	0	3.000			
AF0750	4EI009	0.750	4	1.625	0	4.000			
AF0750	4G600E	0.750	4	2.250	0	5.000			
AF0750	4GS00E	0.750	4	2.500	0	5.000	B0	0	0
AF0750	4II00I	0.750	4	3.250	0	6.000			
AF0750	4J400I	0.750	4	3.500	0	6.000			
AF0750	4KA00K	0.750	4	4.000	0	6.500			
AF0750	4LS00L	0.750	4	4.625	0	7.000			
AF0875	4EI009	0.875	4	1.625	0	4.000			
AF0875	4HC00E	0.875	4	2.750	0	5.000	B0	0	0
AF0875	4JQ00I	0.875	4	3.750	0	6.000			
AF0875	4MM00P	0.875	4	5.000	0	8.000			
AF1000	4CS005	1.000	4	1.000	0	3.000			
AF1000	4DG009	1.000	4	1.250	0	4.000			
AF1000	4E6009	1.000	4	1.500	0	4.000			
AF1000	4FK00B	1.000	4	2.000	0	4.500			
AF1000	4H200E	1.000	4	2.625	0	5.000			
AF1000	4HY00I	1.000	4	3.000	0	6.000	B0	0	0
AF1000	4II00I	1.000	4	3.250	0	6.000			
AF1000	4J400I	1.000	4	3.500	0	6.000			
AF1000	4KK00L	1.000	4	4.125	0	7.000			
AF1000	4LG00L	1.000	4	4.500	0	7.000			
AF1000	4N800P	1.000	4	5.250	0	8.000			
AF1250	4FK00B	1.250	4	2.000	0	4.500			
AF1250	4H200G	1.250	4	2.625	0	5.500			
AF1250	4II00I	1.250	4	3.250	0	6.000	B0	0	0
AF1250	4KW00N	1.250	4	4.250	0	7.500			
AF1250	4MM00N	1.250	4	5.000	0	7.500			
AF1250	4NU00R	1.250	4	5.500	0	9.000			

Non-standard lengths, diameters and radius sizes are available upon request.

AF5 SERIES
5FL Aluminum Finisher - Square or Radius

US Patent:
9,227,253
10,335,870

The **AF5** is the ultimate tool for fast, clean finishes in aluminum.

- Patent protected through-coolant hole gives flawless chip evacuation for unmatched finishes and tool life.
- Micro-polished edges and double rake flutes with a wiper flat for mirror wall and floor finishes.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AF0250	56W001	R6	0	0		AF025056W001R600

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square W/Wiper	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	None
AF0250	56W001	0.250	5	0.375	0	2.000									
AF0250	58I001	0.250	5	0.500	0	2.000									
AF0250	5BU003	0.250	5	0.750	0	2.500									
AF0250	5CS005	0.250	5	1.000	0	3.000	S1	R3	R6	RC	RH	N/A	0	C	0
AF0250	5DG005	0.250	5	1.250	0	3.000									
AF0250	5E6005	0.250	5	1.500	0	3.000									
AF0250	5EW007	0.250	5	1.750	0	3.500								N/A	
AF0250	5FK007	0.250	5	2.000	0	3.500									
AF0312	58I001	0.312	5	0.500	0	2.000									
AF0312	5BU003	0.312	5	0.750	0	2.500									
AF0312	5CS003	0.312	5	1.000	0	2.500									
AF0312	5DG005	0.312	5	1.250	0	3.000	S1	R3	R6	RC	RH	RM	0	C	0
AF0312	5E6005	0.312	5	1.500	0	3.000									
AF0312	5EW007	0.312	5	1.750	0	3.500									
AF0312	5FK007	0.312	5	2.000	0	3.500									
AF0375	58I001	0.375	5	0.500	0	2.000									
AF0375	5BU003	0.375	5	0.750	0	2.500									
AF0375	5CS003	0.375	5	1.000	0	2.500									
AF0375	5DG005	0.375	5	1.250	0	3.000									
AF0375	5E6007	0.375	5	1.500	0	3.500									
AF0375	5EW007	0.375	5	1.750	0	3.500	S1	R3	R6	RC	RH	RM	0	C	0
AF0375	5FK009	0.375	5	2.000	0	4.000									
AF0375	5G6009	0.375	5	2.250	0	4.000									
AF0375	5GS00E	0.375	5	2.500	0	5.000									
AF0375	5HY00E	0.375	5	3.000	0	5.000									
AF0437	5BU004	0.437	5	0.750	0	2.750									
AF0437	5CS004	0.437	5	1.000	0	2.750									
AF0437	5DG005	0.437	5	1.250	0	3.000									
AF0437	5EW009	0.437	5	1.750	0	4.000	S1	R3	R6	RC	RH	RM	0	C	0
AF0437	5FK009	0.437	5	2.000	0	4.000									
AF0437	5GS00E	0.437	5	2.500	0	5.000									
AF0437	5HY00E	0.437	5	3.000	0	5.000									
AF0500	5A6003	0.500	5	0.625	0	2.500									
AF0500	5CS005	0.500	5	1.000	0	3.000									
AF0500	5DG005	0.500	5	1.250	0	3.000									
AF0500	5E6007	0.500	5	1.500	0	3.500									
AF0500	5EI007	0.500	5	1.625	0	3.500									
AF0500	5EW009	0.500	5	1.750	0	4.000									
AF0500	5FK009	0.500	5	2.000	0	4.000	S1	R3	R6	RC	RH	RM	0	C	0
AF0500	5G600E	0.500	5	2.250	0	5.000									
AF0500	5GS00E	0.500	5	2.500	0	5.000									
AF0500	5HC00E	0.500	5	2.750	0	5.000									
AF0500	5HY00E	0.500	5	3.000	0	5.000									
AF0500	5I800E	0.500	5	3.125	0	5.000									
AF0500	5II00I	0.500	5	3.250	0	6.000									

Non-standard lengths, diameters and radius sizes are available upon request.

AF5 SERIES Continued
5FL Aluminum Finisher - Square or Radius

US Patent:
9,227,253
10,335,870

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AF0500	5II00I	R6	C	0		AF05005II00IR6C0

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square W/Wiper	- - - - - - - Radius - - - - - - -					Coolant		Coating
								.015	.030	.060	.090	.125	None	Center	None
AF0500	5II00I	0.500	5	3.250	0	6.000	S1	R3	R6	RC	RH	RM	0	C	0
AF0500	5J400I	0.500	5	3.500	0	6.000									
AF0500	5KA00I	0.500	5	4.000	0	6.000									
AF0562	5E6007	0.562	5	1.500	0	3.500	S1	R3	R6	RC	RH	RM	0	C	0
AF0562	5FK009	0.562	5	2.000	0	4.000									
AF0562	5HY00E	0.562	5	3.000	0	5.000									
AF0625	5BU005	0.625	5	0.750	0	3.000	S1	R3	R6	RC	RH	RM	0	C	0
AF0625	5DG007	0.625	5	1.250	0	3.500									
AF0625	5EI007	0.625	5	1.625	0	3.500									
AF0625	5F8009	0.625	5	1.875	0	4.000									
AF0625	5FK009	0.625	5	2.000	0	4.000									
AF0625	5G600E	0.625	5	2.250	0	5.000									
AF0625	5GS00E	0.625	5	2.500	0	5.000									
AF0625	5HC00E	0.625	5	2.750	0	5.000									
AF0625	5II00I	0.625	5	3.250	0	6.000									
AF0625	5JQ00I	0.625	5	3.750	0	6.000									
AF0625	5LG00L	0.625	5	4.500	0	7.000									
AF0750	5BU005	0.750	5	0.750	0	3.000	S1	R3	R6	RC	RH	RM	0	C	0
AF0750	5CS005	0.750	5	1.000	0	3.000									
AF0750	5EI009	0.750	5	1.625	0	4.000									
AF0750	5G600E	0.750	5	2.250	0	5.000									
AF0750	5GS00E	0.750	5	2.500	0	5.000									
AF0750	5II00I	0.750	5	3.250	0	6.000									
AF0750	5J400I	0.750	5	3.500	0	6.000									
AF0750	5KA00K	0.750	5	4.000	0	6.500									
AF0750	5LS00L	0.750	5	4.625	0	7.000									
AF0875	5EI009	0.875	5	1.625	0	4.000	S1	R3	R6	RC	RH	RM	0	C	0
AF0875	5HC00E	0.875	5	2.750	0	5.000									
AF0875	5JQ00I	0.875	5	3.750	0	6.000									
AF0875	5MM00P	0.875	5	5.000	0	8.000									
AF1000	5CS005	1.000	5	1.000	0	3.000	S1	R3	R6	RC	RH	RM	0	C	0
AF1000	5DG009	1.000	5	1.250	0	4.000									
AF1000	5E6009	1.000	5	1.500	0	4.000									
AF1000	5FK00B	1.000	5	2.000	0	4.500									
AF1000	5H200E	1.000	5	2.625	0	5.000									
AF1000	5HY00I	1.000	5	3.000	0	6.000									
AF1000	5II00I	1.000	5	3.250	0	6.000									
AF1000	5J400I	1.000	5	3.500	0	6.000									
AF1000	5KK00L	1.000	5	4.125	0	7.000									
AF1000	5LG00L	1.000	5	4.500	0	7.000									
AF1000	5N800P	1.000	5	5.250	0	8.000									
AF1250	5FK00B	1.250	5	2.000	0	4.500	S1	R3	R6	RC	RH	RM	0	C	0
AF1250	5H200G	1.250	5	2.625	0	5.500									
AF1250	5II00I	1.250	5	3.250	0	6.000									
AF1250	5KW00N	1.250	5	4.250	0	7.500									
AF1250	5MM00N	1.250	5	5.000	0	7.500									
AF1250	5NU00R	1.250	5	5.500	0	9.000									

Non-standard lengths, diameters and radius sizes are available upon request.

AR3 SERIES
3FL Aluminum V-Notch Heavy Rougher

The **AR3** is designed to remove the maximum material per HP available. The free cutting proprietary V-notch design breaks up sine waves and makes small, manageable chips. Center cutting geometry for plunging, the **AR3** is also available with large corner radii.

- Large chip gullets and eccentric relief allows for maximum chip loads.
- Proprietary V-notch prevents chatter and produces short manageable chips.
- Excellent tool for long axial engagement cuts.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- Micro polished edges and staggered V-notch design creates a great finish with a true rougher.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AR0250	**36W001**	**R6**	**0**	**0**		**AR025036W001R600**

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	- - - - - - - Radius - - - - - - -					Coolant	Coating
								.015	.030	.060	.090	.125	None	None
AR0250	36W001	0.250	3	0.375	0	2.000	T6 (.030)	R3	R6	RC	RH	N/A	0	0
AR0250	38I001	0.250	3	0.500	0	2.000								
AR0250	3BU003	0.250	3	0.750	0	2.500								
AR0250	3CS005	0.250	3	1.000	0	3.000								
AR0250	3DG005	0.250	3	1.250	0	3.000								
AR0250	3E6005	0.250	3	1.500	0	3.000								
AR0250	3EW005	0.250	3	1.750	0	3.000								
AR0375	38I001	0.375	3	0.500	0	2.000	T6 (.030)	R3	R6	RC	RH	RM	0	0
AR0375	3BU003	0.375	3	0.750	0	2.500								
AR0375	3CS003	0.375	3	1.000	0	2.500								
AR0375	3DG005	0.375	3	1.250	0	3.000								
AR0375	3E6007	0.375	3	1.500	0	3.500								
AR0375	3EW007	0.375	3	1.750	0	3.500								
AR0375	3FK009	0.375	3	2.000	0	4.000								
AR0375	3GS009	0.375	3	2.500	0	4.000								
AR0500	3A6003	0.500	3	0.625	0	2.500	TC (.060)	R3	R6	RC	RH	RM	0	0
AR0500	3CS005	0.500	3	1.000	0	3.000								
AR0500	3DG005	0.500	3	1.250	0	3.000								
AR0500	3EI007	0.500	3	1.625	0	3.500								
AR0500	3FK009	0.500	3	2.000	0	4.000								
AR0500	3GS00E	0.500	3	2.500	0	5.000								
AR0500	3HY00E	0.500	3	3.000	0	5.000								
AR0500	3J400I	0.500	3	3.500	0	6.000								
AR0625	3BU005	0.625	3	0.750	0	3.000	TC (.060)	R3	R6	RC	RH	RM	0	0
AR0625	3DG005	0.625	3	1.250	0	3.000								
AR0625	3EI007	0.625	3	1.625	0	3.500								
AR0625	3FK009	0.625	3	2.000	0	4.000								
AR0625	3G6009	0.625	3	2.250	0	4.000								
AR0625	3GS00E	0.625	3	2.500	0	5.000								
AR0625	3II00E	0.625	3	3.250	0	5.000								
AR0625	3J400I	0.625	3	3.500	0	6.000								
AR0625	3JQ00I	0.625	3	3.750	0	6.000								
AR0625	3KA00I	0.625	3	4.000	0	6.000								

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

AR3 SERIES Continued
3FL Aluminum V-Notch Heavy Rougher

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AR0750	3BU005	R6	0	0	=	AR07503BU005R600

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	- - - - - - - Radius - - - - - - -					Coolant	Coating
								.015	.030	.060	.090	.125	None	None
AR0750	3BU005	0.750	3	0.750	0	3.000	TC (.060)	R3	R6	RC	RH	RM	0	0
AR0750	3D4007	0.750	3	1.125	0	3.500								
AR0750	3EI009	0.750	3	1.625	0	4.000								
AR0750	3G600E	0.750	3	2.250	0	5.000								
AR0750	3H200E	0.750	3	2.625	0	5.000								
AR0750	3II00I	0.750	3	3.250	0	6.000								
AR0750	3JE00I	0.750	3	3.625	0	6.000								
AR0750	3KA00K	0.750	3	4.000	0	6.500								
AR0750	3LG00L	0.750	3	4.500	0	7.000								
AR1000	3CS005	1.000	3	1.000	0	3.000	TC (.060)	R3	R6	RC	RH	RM	0	0
AR1000	3E6009	1.000	3	1.500	0	4.000								
AR1000	3FK00B	1.000	3	2.000	0	4.500								
AR1000	3H200E	1.000	3	2.625	0	5.000								
AR1000	3II00I	1.000	3	3.250	0	6.000								
AR1000	3KW00L	1.000	3	4.250	0	7.000								
AR1000	3NI00P	1.000	3	5.375	0	8.000								
AR1250	3CS009	1.250	3	1.000	0	4.000	TC (.060)	R3	R6	RC	RH	RM	0	0
AR1250	3FK00B	1.250	3	2.000	0	4.500								
AR1250	3H200G	1.250	3	2.625	0	5.500								
AR1250	3II00I	1.250	3	3.250	0	6.000								
AR1250	3KW00N	1.250	3	4.250	0	7.500								
AR1250	3MM00N	1.250	3	5.000	0	7.500								
AR1250	3QK00R	1.250	3	6.250	0	9.000								

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

AREL3 SERIES
3FL Aluminum V-Notch Heavy Rougher Necked XL

The **AREL3** is designed to remove the maximum material in long reach roughing applications. The free cutting proprietary V-notch design breaks up sine waves and makes small, manageable chips. Center cutting geometry allows plunging, the **AREL3** is an excellent tool for long axial engagement cuts and is available with large corner radii.

- Large chip gullets and eccentric relief allows for maximum chip loads, blended neck relief reduces marks in step-down machining.
- Proprietary V-notch prevents chatter and produces short manageable chips.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- Micro polished edges and staggered V-notch design creates a great finish with a true rougher.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AR0250	36WBU1	R6	0	0		AR025036WBU1R600

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	- - - - - - - Radius - - - - - - -					Coolant	Coating
								.015	.030	.060	.090	.125	None	None
AR0250	36WBU1	0.250	3	0.375	0.750	2.000	T6 (.030)	R3	R6	RC	RH	N/A	0	0
AR0250	36WCS5	0.250	3	0.375	1.000	3.000								
AR0250	36WDG5	0.250	3	0.375	1.250	3.000								
AR0250	36WE65	0.250	3	0.375	1.500	3.000								
AR0250	36WEW7	0.250	3	0.375	1.750	3.500								
AR0250	36WFK7	0.250	3	0.375	2.000	3.500								
AR0250	36WG67	0.250	3	0.375	2.250	3.500								
AR0250	36WGS9	0.250	3	0.375	2.500	4.000								
AR0375	38ICS3	0.375	3	0.500	1.000	2.500	T6 (.030)	R3	R6	RC	RH	RM	0	0
AR0375	38IDG5	0.375	3	0.500	1.250	3.000								
AR0375	38IE65	0.375	3	0.500	1.500	3.000								
AR0375	38IFK7	0.375	3	0.500	2.000	3.500								
AR0375	38IG69	0.375	3	0.500	2.250	4.000								
AR0375	38IGS9	0.375	3	0.500	2.500	4.000								
AR0375	38IHYE	0.375	3	0.500	3.000	5.000								
AR0375	38IJ4E	0.375	3	0.500	3.500	5.000								
AR0375	38IJQE	0.375	3	0.500	3.750	5.000								
AR0375	38IKAI	0.375	3	0.500	4.000	6.000								
AR0500	3A6CS5	0.500	3	0.625	1.000	3.000	TC (.060)	R3	R6	RC	RH	RM	0	0
AR0500	3A6DU5	0.500	3	0.625	1.375	3.000								
AR0500	3A6E67	0.500	3	0.625	1.500	3.500								
AR0500	3A6FK9	0.500	3	0.625	2.000	4.000								
AR0500	3A6G69	0.500	3	0.625	2.250	4.000								
AR0500	3A6GSB	0.500	3	0.625	2.500	4.500								
AR0500	3A6HYE	0.500	3	0.625	3.000	5.000								
AR0500	3A6J4G	0.500	3	0.625	3.500	5.500								
AR0500	3A6KAI	0.500	3	0.625	4.000	6.000								
AR0500	3A6LGK	0.500	3	0.625	4.500	6.500								
AR0500	3A6MML	0.500	3	0.625	5.000	7.000								
AR0625	3BUCS5	0.625	3	0.750	1.000	3.000	TC (.060)	R3	R6	RC	RH	RM	0	0
AR0625	3BUE67	0.625	3	0.750	1.500	3.500								
AR0625	3BUEW9	0.625	3	0.750	1.750	4.000								
AR0625	3BUFK9	0.625	3	0.750	2.000	4.000								
AR0625	3BUGGC	0.625	3	0.750	2.375	4.625								
AR0625	3BUHYE	0.625	3	0.750	3.000	5.000								
AR0625	3BUJ4G	0.625	3	0.750	3.500	5.500								
AR0625	3BUKAI	0.625	3	0.750	4.000	6.000								
AR0625	3BULGK	0.625	3	0.750	4.500	6.500								
AR0625	3BUMML	0.625	3	0.750	5.000	7.000								
AR0625	3BUNUN	0.625	3	0.750	5.500	7.500								

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

AREL3 SERIES Continued
3FL Aluminum V-Notch Heavy Rougher Necked XL

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AR0750	3CSFK9	R6	0	0		AR07503CSFK9R600

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	- - - - - - - Radius - - - - - - -					Coolant	Coating
								.015	.030	.060	.090	.125	None	None
AR0750	3CSFK9	0.750	3	1.000	2.000	4.000	TC (.060)	R3	R6	RC	RH	RM	0	0
AR0750	3CSGSB	0.750	3	1.000	2.500	4.500								
AR0750	3CSHYE	0.750	3	1.000	3.000	5.000								
AR0750	3CSJ4G	0.750	3	1.000	3.500	5.500								
AR0750	3CSKAI	0.750	3	1.000	4.000	6.000								
AR0750	3CSLGK	0.750	3	1.000	4.500	6.500								
AR0750	3CSMML	0.750	3	1.000	5.000	7.000								
AR0750	3CSNUN	0.750	3	1.000	5.500	7.500								
AR0750	3CSQ0P	0.750	3	1.000	6.000	8.000								
AR1000	3CSE69	1.000	3	1.000	1.500	4.000	TC (.060)	R3	R6	RC	RH	RM	0	0
AR1000	3DGFKB	1.000	3	1.250	2.000	4.500								
AR1000	3DGGSE	1.000	3	1.250	2.500	5.000								
AR1000	3DGHCG	1.000	3	1.250	2.750	5.500								
AR1000	3DGJ4I	1.000	3	1.250	3.500	6.000								
AR1000	3DGKAK	1.000	3	1.250	4.000	6.500								
AR1000	3DGLGL	1.000	3	1.250	4.500	7.000								
AR1000	3DGMMN	1.000	3	1.250	5.000	7.500								
AR1000	3DGNUP	1.000	3	1.250	5.500	8.000								
AR1000	3DGQ0Q	1.000	3	1.250	6.000	8.500								
AR1000	3DGR6R	1.000	3	1.250	6.500	9.000								
AR1000	3DGSCS	1.000	3	1.250	7.000	9.500								
AR1000	3DGTIT	1.000	3	1.250	7.500	10.000								

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

RAMPMILL

AV3 SERIES
3FL Aluminum V-Notch RampMill

US Patent:
9,227,253
10,335,870

The **AV3 RampMill** is designed for use with Controlled Radial Engagement / High Efficiency Milling cutter paths. The **AV3** achieves much higher material removal rates than standard carbide end mills. Available with center through coolant for superior chip evacuation and excellent tool life. The non-center cutting end design allows ramping at 5 to 9 times greater ramp angles than a standard end mill. The **RampMill** can enter material by helically ramping holes nearly as fast as they can be drilled.

For Center Cutting 3 flute aluminum rougher see **AR** series on page 78.

- Outperforms all other tools using High Efficiency Milling cutter paths.
- RampMill's end geometry allows for ramping at 12 - 17° in aluminum.
- Core designed for optimum strength to handle the highest tool loads, truncated radius adds corner strength.
- Center coolant hole delivers coolant or air blasting chips away eliminating re-cutting, dramatically increasing tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AV0187	34E001	T3	0	0		AV018734E001T300

First 6	Middle 6						End Geometry	Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	Coolant		Coating
								None	Center	None
AV0125	358000	0.125	3	0.250	0	1.500	T3 (.015)	0	N/A	0
AV0125	36W001	0.125	3	0.375	0	2.000				
AV0125	38I001	0.125	3	0.500	0	2.000				
AV0187	34E001	0.187	3	0.187	0	2.000	T3 (.015)	0	C	0
AV0187	35M001	0.187	3	0.281	0	2.000				
AV0187	36W001	0.187	3	0.375	0	2.000				
AV0187	384001	0.187	3	0.468	0	2.000				
AV0187	39C001	0.187	3	0.562	0	2.000				
AV0187	3AK001	0.187	3	0.656	0	2.000				
AV0187	3BU003	0.187	3	0.750	0	2.500				
AV0250	358001	0.250	3	0.250	0	2.000	T6 (.030)	0	C	0
AV0250	36W001	0.250	3	0.375	0	2.000				
AV0250	38I001	0.250	3	0.500	0	2.000				
AV0250	3A6001	0.250	3	0.625	0	2.000				
AV0250	3BU003	0.250	3	0.750	0	2.500				
AV0250	3CA003	0.250	3	0.875	0	2.500				
AV0250	3CS005	0.250	3	1.000	0	3.000				
AV0312	362001	0.312	3	0.312	0	2.000	T6 (.030)	0	C	0
AV0312	384001	0.312	3	0.468	0	2.000				
AV0312	3A6003	0.312	3	0.625	0	2.500				
AV0312	3BY003	0.312	3	0.781	0	2.500				
AV0312	3CI003	0.312	3	0.937	0	2.500				
AV0312	3D2005	0.312	3	1.100	0	3.000				
AV0312	3DG005	0.312	3	1.250	0	3.000				
AV0375	36W001	0.375	3	0.375	0	2.000	T6 (.030)	0	C	0
AV0375	39C003	0.375	3	0.562	0	2.500				
AV0375	3BU003	0.375	3	0.750	0	2.500				
AV0375	3CI003	0.375	3	0.937	0	2.500				
AV0375	3D4005	0.375	3	1.125	0	3.000				
AV0375	3DM005	0.375	3	1.312	0	3.000				
AV0375	3E6005	0.375	3	1.500	0	3.000				

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

AV3 SERIES Continued
3FL Aluminum V-Notch RampMill

US Patent:
9,227,253
10,335,870

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AV0500	38I003	TC	0	0		AV0500381003TC00

First 6	Middle 6						End Geometry	Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	Coolant		Coating
								None	Center	None
AV0437	37Q004	0.437	3	0.437	0	2.750	TC (.060)	0	C	0
AV0437	3AK004	0.437	3	0.656	0	2.750				
AV0437	3CA005	0.437	3	0.875	0	3.000				
AV0437	3D2005	0.437	3	1.100	0	3.000				
AV0437	3DM007	0.437	3	1.312	0	3.500				
AV0437	3EA007	0.437	3	1.550	0	3.500				
AV0437	3EW009	0.437	3	1.750	0	4.000				
AV0500	38I003	0.500	3	0.500	0	2.500	TC (.060)	0	C	0
AV0500	3BU005	0.500	3	0.750	0	3.000				
AV0500	3CS005	0.500	3	1.000	0	3.000				
AV0500	3DG005	0.500	3	1.250	0	3.000				
AV0500	3E6007	0.500	3	1.500	0	3.500				
AV0500	3EW007	0.500	3	1.750	0	3.500				
AV0500	3FK009	0.500	3	2.000	0	4.000				
AV0625	3A6005	0.625	3	0.625	0	3.000	TC (.060)	0	C	0
AV0625	3CI005	0.625	3	0.937	0	3.000				
AV0625	3DG007	0.625	3	1.250	0	3.500				
AV0625	3EC007	0.625	3	1.563	0	3.500				
AV0625	3F8009	0.625	3	1.875	0	4.000				
AV0625	3G2009	0.625	3	2.200	0	4.000				
AV0625	3GS00E	0.625	3	2.500	0	5.000				
AV0750	3BU005	0.750	3	0.750	0	3.000	TC (.060)	0	C	0
AV0750	3D4007	0.750	3	1.125	0	3.000				
AV0750	3E6009	0.750	3	1.500	0	4.000				
AV0750	3F800E	0.750	3	1.875	0	5.000				
AV0750	3G600E	0.750	3	2.250	0	5.000				
AV0750	3H200E	0.750	3	2.625	0	5.000				
AV0750	3HY00I	0.750	3	3.000	0	6.000				
AV0875	3CA009	0.875	3	0.875	0	4.000	TC (.060)	0	C	0
AV0875	3DM009	0.875	3	1.312	0	4.000				
AV0875	3EW009	0.875	3	1.750	0	4.000				
AV1000	3CS009	1.000	3	1.000	0	4.000	TC (.060)	0	C	0
AV1000	3E6009	1.000	3	1.500	0	4.000				
AV1000	3FK00B	1.000	3	2.000	0	4.500				
AV1000	3GS00E	1.000	3	2.500	0	5.000				
AV1000	3HY00I	1.000	3	3.000	0	6.000				
AV1000	3J400I	1.000	3	3.500	0	6.000				
AV1000	3KA00L	1.000	3	4.000	0	7.000				

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

AVEL3 SERIES
3FL Aluminum V-Notch RampMill Necked XL

US Patent:
9,227,253
10,335,870

The **AVEL3 RampMill** is designed for long reach applications using Controlled Radial Engagement / High Efficiency Milling cutter paths. The **AVEL3** achieves much higher material removal rates than standard carbide end mills. Available with center through coolant for superior chip evacuation and excellent tool life. The non-center cutting end design allows ramping at 5 to 9 times greater ramp angles than a standard end mill. The **RampMill** can enter material by helically ramping holes nearly as fast as they can be drilled.

For Center Cutting 3 flute aluminum rougher see **AR** series on page 128.

- Outperforms all other tools using High Efficiency Milling cutter paths.
- RampMill's end geometry allows for ramping at 12 - 17° in aluminum.
- Core designed for optimum strength to handle the highest tool loads, truncated radius adds corner strength.
- Center coolant hole delivers coolant or air blasting chips away eliminating re-cutting, dramatically increasing tool life.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AV0375	39CBU3	T6	0	0	=	AV037539CBU3T600

First 6	Middle 6						End Geometry	Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	Coolant		Coating
								None	Center	None
AV0375	39CBU3	0.375	3	0.562	0.750	2.500	T6 (.030)	0	C	0
AV0375	39CCS3	0.375	3	0.562	1.000	2.500				
AV0375	39CE65	0.375	3	0.562	1.500	3.000				
AV0375	39CFK7	0.375	3	0.562	2.000	3.500				
AV0375	36WGS9	0.375	3	0.375	2.500	4.000				
AV0375	36WHYB	0.375	3	0.375	3.000	4.500				
AV0375	36WJ4E	0.375	3	0.375	3.500	5.000				
AV0375	36WKAG	0.375	3	0.375	4.000	5.500				
AV0500	3BUE67	0.500	3	0.750	1.500	3.500	TC (.060)	0	C	0
AV0500	3BUFK9	0.500	3	0.750	2.000	4.000				
AV0500	3BUGSB	0.500	3	0.750	2.500	4.500				
AV0500	38IHYE	0.500	3	0.500	3.000	5.000				
AV0500	38IJ4G	0.500	3	0.500	3.500	5.500				
AV0500	38IKAI	0.500	3	0.500	4.000	6.000				
AV0500	38ILGK	0.500	3	0.500	4.500	6.500				
AV0500	38IMML	0.500	3	0.500	5.000	7.000				
AV0625	3CIE67	0.625	3	0.937	1.500	3.500	TC (.060)	0	C	0
AV0625	3CIFK9	0.625	3	0.937	2.000	4.000				
AV0625	3CIGSB	0.625	3	0.937	2.500	4.500				
AV0625	3CIHYE	0.625	3	0.937	3.000	5.000				
AV0625	3CIJ4G	0.625	3	0.937	3.500	5.500				
AV0625	3A6KAI	0.625	3	0.625	4.000	6.000				
AV0625	3A6LGK	0.625	3	0.625	4.500	6.500				
AV0625	3A6MML	0.625	3	0.625	5.000	7.000				
AV0625	3A6NUN	0.625	3	0.625	5.500	7.500				
AV0625	3A6Q0P	0.625	3	0.625	6.000	8.000				
AV0750	3D4FK9	0.750	3	1.125	2.000	4.000	TC (.060)	0	C	0
AV0750	3D4GSB	0.750	3	1.125	2.500	4.500				
AV0750	3D4HYE	0.750	3	1.125	3.000	5.000				
AV0750	3D4J4G	0.750	3	1.125	3.500	5.500				
AV0750	3D4KAI	0.750	3	1.125	4.000	6.000				
AV0750	3BULGK	0.750	3	0.750	4.500	6.500				
AV0750	3BUMML	0.750	3	0.750	5.000	7.000				
AV0750	3BUNUN	0.750	3	0.750	5.500	7.500				
AV0750	3BUQ0P	0.750	3	0.750	6.000	8.000				
AV0750	3BUR6Q	0.750	3	0.750	6.500	8.500				
AV0750	3BUSCR	0.750	3	0.750	7.000	9.000				
AV0750	3BUTIT	0.750	3	0.750	7.500	10.000				

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

AVEL3 SERIES Continued
3FL Aluminum V-Notch RampMill Necked XL

US Patent:
9,227,253
10,335,870

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
AV1000	3E6GSE	TC	0	0		AV10003E6GSETC00

First 6	Middle 6						End Geometry	Pick 1		Pick 1
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Stk/Std Roughing *T.Rad	Coolant None	Coolant Center	Coating None
AV1000	3E6GSE	1.000	3	1.500	2.500	5.000	TC (.060)	0	C	0
AV1000	3E6HYG	1.000	3	1.500	3.000	5.500				
AV1000	3E6J4I	1.000	3	1.500	3.500	6.000				
AV1000	3E6KAK	1.000	3	1.500	4.000	6.500				
AV1000	3E6LGL	1.000	3	1.500	4.500	7.000				
AV1000	3E6MMN	1.000	3	1.500	5.000	7.500				
AV1000	3E6NUP	1.000	3	1.500	5.500	8.000				
AV1000	3E6Q0Q	1.000	3	1.500	6.000	8.500				
AV1000	3E6R6R	1.000	3	1.500	6.500	9.000				
AV1000	3E6SCS	1.000	3	1.500	7.000	9.500				
AV1000	3E6TIT	1.000	3	1.500	7.500	10.000				

These tools are stocked with a patent protected truncated roughing radius which is not suitable for finished radius tolerances.

GM2 SERIES
2FL General Purpose End Mill - Square or Radius

The **GM2** general purpose series has standard geometry making it capable of cutting a wide range of materials. Its rigidity and design make it an excellent choice for general cutting from aluminum to steel, even some alloys.

- 30° helix allows for solid cutting in most materials.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
GM0031	22I000	S0	0	0		GM0031 22I000 S0 00 0

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1		
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant	Coating		
								.015	.030	.060	.090	.125	None	None	MDC	AlTiN
GM0031	22I000	0.031	2	0.078	0	1.500	S0						0	0	M	
GM0046	23S000	0.046	2	0.140	0	1.500	S0	R3					0	0	M	
GM0063	24E000	0.063	2	0.187	0	1.500	S0	R3					0	0	M	
GM0078	252000	0.078	2	0.235	0	1.500	S0	R3					0	0	M	
GM0093	24E000	0.093	2	0.187	0	1.500										
GM0093	258000	0.093	2	0.250	0	1.500	S0	R3	R6				0	0	M	
GM0093	26W000	0.093	2	0.375	0	1.500										
GM0109	26W000	0.109	2	0.375	0	1.500	S0	R3	R6				0	0	M	
GM0125	28I000	0.125	2	0.500	0	1.500										
GM0125	2BU002	0.125	2	0.750	0	2.250	S0	R3	R6				0	0	M	
GM0125	2CS005	0.125	2	1.000	0	3.000										
GM0140	29C001	0.140	2	0.562	0	2.000	S0	R3	R6				0	0	M	
GM0156	29C001	0.156	2	0.562	0	2.000	S0	R3	R6				0	0	M	
GM0172	2A6001	0.172	2	0.625	0	2.000										
GM0187	2A6001	0.187	2	0.625	0	2.000	S0	R3	R6	RC			0	0	M	
GM0187	2BU003	0.187	2	0.750	0	2.500	S0	R3	R6	RC			0	0	M	
GM0187	2D4003	0.187	2	1.125	0	2.500	S0	R3	R6	RC			0	0	M	
GM0203	2A6003	0.203	2	0.625	0	2.500	S0	R3	R6	RC			0	0	M	
GM0218	2A6003	0.218	2	0.625	0	2.500	S0	R3	R6	RC			0	0	M	
GM0234	2BU003	0.234	2	0.750	0	2.500	S0	R3	R6	RC			0	0	M	
GM0250	2BU003	0.250	2	0.750	0	2.500										
GM0250	2D4005	0.250	2	1.125	0	3.000	S0	R3	R6	RC	RH		0	0	M	
GM0250	2E6003	0.250	2	1.500	0	2.500										
GM0265	2BU003	0.265	2	0.750	0	2.500	S0	R3	R6	RC	RH		0	0	M	2
GM0297	2C2003	0.297	2	0.812	0	2.500	S0	R3	R6	RC	RH		0	0	M	2
GM0297	2C2003	0.312	2	0.812	0	2.500										
GM0312	2D4005	0.312	2	1.125	0	3.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0312	2EI007	0.312	2	1.625	0	3.500										
GM0328	2CA003	0.328	2	0.875	0	2.500	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0343	2CS003	0.343	2	1.000	0	2.500	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0359	2CA003	0.359	2	0.875	0	2.500	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0375	2CS003	0.375	2	1.000	0	2.500										
GM0375	2D4005	0.375	2	1.125	0	3.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0375	2EW007	0.375	2	1.750	0	3.500										
GM0391	2CA003	0.391	2	0.875	0	2.500	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0406	2CS004	0.406	2	1.000	0	2.750	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0422	2CA003	0.422	2	0.875	0	2.500	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0437	2CS004	0.437	2	1.000	0	2.750										
GM0437	2FK009	0.437	2	2.000	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M	2

Non-standard lengths, diameters and radius sizes are available upon request.

GM2 SERIES Continued
2FL General Purpose End Mill - Square or Radius

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
GM0453	2CS005	R6	0	0		GM04532CS005R600

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1		
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant	Coating		
								.015	.030	.060	.090	.125	None	None	MDC	AlTiN
GM0453	2CS005	0.453	2	1.000	0	3.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0468	2DG005	0.468	2	1.250	0	3.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0484	2CS005	0.484	2	1.000	0	3.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0500	2CS005	0.500	2	1.000	0	3.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0500	2FK009	0.500	2	2.000	0	4.000										
GM0500	2HY00E	0.500	2	3.000	0	5.000										
GM0562	2DG005	0.562	2	1.250	0	3.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0625	2DG007	0.625	2	1.250	0	3.500	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0625	2G600C	0.625	2	2.250	0	4.625										
GM0625	2HY00E	0.625	2	3.000	0	5.000										
GM0750	2E6009	0.750	2	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0750	2G600E	0.750	2	2.250	0	5.000										
GM0750	2HY00I	0.750	2	3.000	0	6.000										
GM0812	2E6009	0.812	2	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0875	2E6009	0.875	2	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0875	2G600E	0.875	2	2.250	0	5.000										
GM0875	2HY00I	0.875	2	3.000	0	6.000										
GM1000	2E6009	1.000	2	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM1000	2G600E	1.000	2	2.250	0	5.000										
GM1000	2HY00I	1.000	2	3.000	0	6.000										
GM1250	2E6009	1.250	2	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M	2

Non-standard lengths, diameters and radius sizes are available upon request.

GME2 SERIES
2FL General Purpose Extended Length End Mill
Square or Radius

The **GME2** has a longer reach and a neck relief can be added for step-down machining. Part of the general purpose series, the **GME2** has standard geometry making it capable of cutting a wide range of materials. Its rigidity and design make it an excellent choice for general cutting from aluminum to steel, even some alloys.

- 30° helix allows for solid cutting in most materials.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
GM0250	28I005	R6	0	0		GM025028I005R600

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1	
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant	Coating	
								.015	.030	.060	.090	.125	None	None	MDC
GM0250	28I005	0.250	2	0.500	0	3.000	S0	R3	R6	RC	RH	N/A	0	0	M
GM0250	28I007	0.250	2	0.500	0	3.500									
GM0250	2BU009	0.250	2	0.750	0	4.000									
GM0250	2CS00I	0.250	2	1.000	0	6.000									
GM0312	28I005	0.312	2	0.500	0	3.000	S0	R3	R6	RC	RH	RM	0	0	M
GM0312	28I007	0.312	2	0.500	0	3.500									
GM0312	2BU009	0.312	2	0.750	0	4.000									
GM0312	2CS00I	0.312	2	1.000	0	6.000									
GM0375	28I005	0.375	2	0.500	0	3.000	S0	R3	R6	RC	RH	RM	0	0	M
GM0375	2BU009	0.375	2	0.750	0	4.000									
GM0375	2CS00E	0.375	2	1.000	0	5.000									
GM0375	2E600I	0.375	2	1.500	0	6.000									
GM0437	28I004	0.437	2	0.500	0	2.750	S0	R3	R6	RC	RH	RM	0	0	M
GM0437	2BU009	0.437	2	0.750	0	4.000									
GM0437	2CS00I	0.437	2	1.000	0	6.000									
GM0500	28I005	0.500	2	0.500	0	3.000	S0	R3	R6	RC	RH	RM	0	0	M
GM0500	2BU009	0.500	2	0.750	0	4.000									
GM0500	2CS00E	0.500	2	1.000	0	5.000									
GM0500	2E600I	0.500	2	1.500	0	6.000									
GM0562	2BU009	0.562	2	0.750	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M
GM0562	2E600I	0.562	2	1.500	0	6.000									
GM0625	2BU009	0.625	2	0.750	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M
GM0625	2CS00E	0.625	2	1.000	0	5.000									
GM0625	2E600I	0.625	2	1.500	0	6.000									
GM0750	2CS009	0.750	2	1.000	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M
GM0750	2DG00E	0.750	2	1.250	0	5.000									
GM0750	2E600I	0.750	2	1.500	0	6.000									
GM0875	2CS009	0.875	2	1.000	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M
GM0875	2E600I	0.875	2	1.500	0	6.000									
GM1000	2DG00E	1.000	2	1.250	0	5.000	S0	R3	R6	RC	RH	RM	0	0	M
GM1000	2E600I	1.000	2	1.500	0	6.000									
GM1000	2FK00L	1.000	2	2.000	0	7.000									
GM1250	2DG00G	1.250	2	1.250	0	5.500	S0	R3	R6	RC	RH	RM	0	0	M
GM1250	2E600I	1.250	2	1.500	0	6.000									
GM1250	2FK00N	1.250	2	2.000	0	7.500									

Non-standard lengths, diameters and radius sizes are available upon request.

GM4 SERIES
4FL General Purpose End Mill - Square or Radius

The **GM4** general purpose series has standard geometry making it capable of cutting a wide range of materials. Its rigidity and design make it an excellent choice for general cutting from aluminum to steel, even some alloys.

- 30° helix allows for solid cutting in most materials.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
GM0031	42I000	S0	0	0	=	GM003142I000S000

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1		
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	Radius .015	Radius .030	Radius .060	Radius .090	Radius .125	Coolant None	Coating None	Coating MDC	Coating AlTiN
GM0031	42I000	0.031	4	0.078	0	1.500	S0						0	0	M	
GM0031	42Y000	0.031	4	0.093	0	1.500										
GM0046	43S000	0.046	4	0.140	0	1.500	S0	R3					0	0	M	
GM0063	44E000	0.063	4	0.187	0	1.500	S0	R3					0	0	M	
GM0078	452000	0.078	4	0.235	0	1.500	S0	R3					0	0	M	
GM0093	44E000	0.093	4	0.187	0	1.500	S0	R3	R6				0	0	M	
GM0093	46W000	0.093	4	0.375	0	1.500										
GM0125	48I000	0.125	4	0.500	0	1.500	S0	R3	R6				0	0	M	
GM0125	4BU002	0.125	4	0.750	0	2.250										
GM0125	4CS005	0.125	4	1.000	0	3.000										
GM0140	49C001	0.140	4	0.562	0	2.000	S0	R3	R6				0	0	M	
GM0172	4A6001	0.172	4	0.625	0	2.000	S0	R3	R6				0	0	M	
GM0187	4BU003	0.187	4	0.750	0	2.500	S0	R3	R6	RC			0	0	M	
GM0187	4D4003	0.187	4	1.125	0	2.500										
GM0203	4A6003	0.203	4	0.625	0	2.500	S0	R3	R6	RC			0	0	M	
GM0234	4BU003	0.234	4	0.750	0	2.500	S0	R3	R6	RC			0	0	M	
GM0250	4BU009	0.250	4	0.750	0	4.000	S0	R3	R6	RC			0	0	M	
GM0250	4D4005	0.250	4	1.125	0	3.000										
GM0250	4E6006	0.250	4	1.500	0	3.250										
GM0265	4BU003	0.265	4	0.750	0	2.500	S0	R3	R6	RC			0	0	M	2
GM0297	4C2003	0.297	4	0.812	0	2.500	S0	R3	R6	RC	RH		0	0	M	2
GM0312	4D4005	0.312	4	1.125	0	3.000	S0	R3	R6	RC	RH		0	0	M	2
GM0312	4EI007	0.312	4	1.625	0	3.500										
GM0328	4CA003	0.328	4	0.875	0	2.500	S0	R3	R6	RC	RH		0	0	M	2
GM0343	4CS003	0.343	4	1.000	0	2.500	S0	R3	R6	RC	RH		0	0	M	2
GM0359	4CA003	0.359	4	0.875	0	2.500	S0	R3	R6	RC	RH		0	0	M	2
GM0375	4CS003	0.375	4	1.000	0	2.500	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0375	4D4005	0.375	4	1.125	0	3.000										
GM0375	4EW007	0.375	4	1.750	0	3.500										
GM0391	4CA003	0.391	4	0.875	0	2.500	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0406	4CS004	0.406	4	1.000	0	2.750	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0422	4CA003	0.422	4	0.875	0	2.500	S0	R3	R6	RC	RH	RM	0	0	M	2

Non-standard lengths, diameters and radius sizes are available upon request.

GM4 SERIES Continued
4FL General Purpose End Mill - Square or Radius

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
GM0437	4CS004	R6	0	0		GM04374CS004R600

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1		
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant	Coating		
								.015	.030	.060	.090	.125	None	None	MDC	AlTiN
GM0437	4CS004	0.437	4	1.000	0	2.750	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0437	4FK009	0.437	4	2.000	0	4.000										
GM0437	4HY00I	0.437	4	3.000	0	6.000										
GM0453	4CS005	0.453	4	1.000	0	3.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0468	4DG005	0.468	4	1.250	0	3.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0484	4CS005	0.484	4	1.000	0	3.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0500	4FK009	0.500	4	2.000	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0500	4HY00E	0.500	4	3.000	0	5.000										
GM0562	4DG005	0.562	4	1.250	0	3.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0562	4E600I	0.562	4	1.500	0	6.000										
GM0625	4DG007	0.625	4	1.250	0	3.500	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0625	4G600C	0.625	4	2.250	0	4.625										
GM0625	4HY00E	0.625	4	3.000	0	5.000										
GM0750	4E6009	0.750	4	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0750	4G600E	0.750	4	2.250	0	5.000										
GM0750	4HY00I	0.750	4	3.000	0	6.000										
GM0875	4E6009	0.875	4	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM0875	4G600E	0.875	4	2.250	0	5.000										
GM0875	4HY00I	0.875	4	3.000	0	6.000										
GM1000	4E6009	1.000	4	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M	2
GM1000	4G600E	1.000	4	2.250	0	5.000										
GM1000	4HY00I	1.000	4	3.000	0	6.000										
GM1250	4E6009	1.250	4	1.500	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M	2

Non-standard lengths, diameters and radius sizes are available upon request.

GME4 SERIES
4FL General Purpose Extended Length End Mill
Square or Radius

The **GME4** has a longer reach and a neck relief can be added for step-down machining. Part of the general purpose series, the **GME4** has standard geometry making it capable of cutting a wide range of materials. Its rigidity and design make it an excellent choice for general cutting from aluminum to steel, even some alloys.

- 30° helix allows for solid cutting in most materials.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
GM0250	48I005	R6	0	0	=	GM025048I005R600

MORE RADII
.120R = RL
.156R = RN
.187R = RQ
.250R = RV

First 6	Middle 6						End Geometry						Pick 1	Pick 1	
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Square Corner	- - - - - - - Radius - - - - - - -					Coolant	Coating	
								.015	.030	.060	.090	.125	None	None	MDC
GM0250	48I005	0.250	4	0.500	0	3.000	S0	R3	R6	RC			0	0	M
GM0250	48I007	0.250	4	0.500	0	3.500									
GM0250	4BU009	0.250	4	0.750	0	4.000									
GM0250	4CS00I	0.250	4	1.000	0	6.000									
GM0312	48I005	0.312	4	0.500	0	3.000	S0	R3	R6	RC	RH		0	0	M
GM0312	48I007	0.312	4	0.500	0	3.500									
GM0312	4BU009	0.312	4	0.750	0	4.000									
GM0312	4CS00I	0.312	4	1.000	0	6.000									
GM0375	48I005	0.375	4	0.500	0	3.000	S0	R3	R6	RC	RH		0	0	M
GM0375	4BU009	0.375	4	0.750	0	4.000									
GM0375	4CS00E	0.375	4	1.000	0	5.000									
GM0375	4E600I	0.375	4	1.500	0	6.000									
GM0437	48I004	0.437	4	0.500	0	2.750	S0	R3	R6	RC	RH	RM	0	0	M
GM0437	4BU009	0.437	4	0.750	0	4.000									
GM0437	4CS00I	0.437	4	1.000	0	6.000									
GM0500	48I005	0.500	4	0.500	0	3.000	S0	R3	R6	RC	RH	RM	0	0	M
GM0500	4BU009	0.500	4	0.750	0	4.000									
GM0500	4CS00E	0.500	4	1.000	0	5.000									
GM0500	4E600I	0.500	4	1.500	0	6.000									
GM0562	4BU009	0.562	4	0.750	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M
GM0562	4E600I	0.562	4	1.500	0	6.000									
GM0625	4BU009	0.625	4	0.750	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M
GM0625	4CS00E	0.625	4	1.000	0	5.000									
GM0625	4E600I	0.625	4	1.500	0	6.000									
GM0750	4CS009	0.750	4	1.000	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M
GM0750	4DG00E	0.750	4	1.250	0	5.000									
GM0750	4E600I	0.750	4	1.500	0	6.000									
GM0875	4CS009	0.875	4	1.000	0	4.000	S0	R3	R6	RC	RH	RM	0	0	M
GM0875	4E600I	0.875	4	1.500	0	6.000									
GM1000	4DG00E	1.000	4	1.250	0	5.000	S0	R3	R6	RC	RH	RM	0	0	M
GM1000	4E600I	1.000	4	1.500	0	6.000									
GM1000	4FK00L	1.000	4	2.000	0	7.000									
GM1250	4DG00G	1.250	4	1.250	0	5.500	S0	R3	R6	RC	RH	RM	0	0	M
GM1250	4E600I	1.250	4	1.500	0	6.000									
GM1250	4FK00N	1.250	4	2.000	0	7.500									

Non-standard lengths, diameters and radius sizes are available upon request.

BM2 SERIES
2FL General Purpose Ball End Mill

The **BM2** has an elliptical gash on the ball end and 2 flutes to create an exceptional finish.
When used with our MDC coating, it's the most effective 2 flute ball end tool for steel and exotic alloys.

- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- Manufacturing tolerances far above industry standards.
- 30° helix allows for solid cutting in most materials.
- Eccentric relief for superior strength and wear resistance.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
GM0063	24E000	B0	0	0		GM006324E000B000

First 6	Middle 6						End Geo.	Pick 1	Pick 1		
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Ball Nose	Coolant	Coating		
								None	None	MDC	AlTiN
GM0031	22Y000	0.031	2	0.093	0	1.500	B0	0	0	M	
GM0046	23S000	0.046	2	0.140	0	1.500	B0	0	0	M	
GM0063	24E000	0.063	2	0.187	0	1.500	B0	0	0	M	
GM0078	258000	0.078	2	0.250	0	1.500	B0	0	0	M	
GM0093	26W000	0.093	2	0.375	0	1.500	B0	0	0	M	
GM0109	26W000	0.109	2	0.375	0	1.500	B0	0	0	M	
GM0125	28I000	0.125	2	0.500	0	1.500	B0	0	0	M	
GM0141	29C001	0.141	2	0.562	0	2.000	B0	0	0	M	
GM0156	29C001	0.156	2	0.562	0	2.000	B0	0	0	M	
GM0172	2A6001	0.172	2	0.625	0	2.000	B0	0	0	M	
GM0187	2A6001	0.187	2	0.625	0	2.000	B0	0	0	M	
GM0203	2A6003	0.203	2	0.625	0	2.500	B0	0	0	M	
GM0218	2A6003	0.218	2	0.625	0	2.500	B0	0	0	M	
GM0234	2BU003	0.234	2	0.750	0	2.500	B0	0	0	M	
GM0250	2BU003	0.250	2	0.750	0	2.500	B0	0	0	M	
GM0265	2BU003	0.265	2	0.750	0	2.500	B0	0	0	M	2
GM0281	2BU003	0.281	2	0.750	0	2.500	B0	0	0	M	2
GM0296	2C2003	0.296	2	0.812	0	2.500	B0	0	0	M	2
GM0312	2C2003	0.312	2	0.812	0	2.500	B0	0	0	M	2
GM0328	2CA003	0.328	2	0.875	0	2.500	B0	0	0	M	2
GM0343	2CA003	0.343	2	0.875	0	2.500	B0	0	0	M	2
GM0359	2CA003	0.359	2	0.875	0	2.500	B0	0	0	M	2
GM0375	2CS003	0.375	2	1.000	0	2.500	B0	0	0	M	2
GM0391	2CA003	0.391	2	0.875	0	2.500	B0	0	0	M	2
GM0406	2CA004	0.406	2	0.875	0	2.750	B0	0	0	M	2
GM0421	2CA003	0.421	2	0.875	0	2.500	B0	0	0	M	2
GM0437	2CS004	0.437	2	1.000	0	2.750	B0	0	0	M	2
GM0453	2CS005	0.453	2	1.000	0	3.000	B0	0	0	M	2
GM0468	2DG005	0.468	2	1.250	0	3.000	B0	0	0	M	2
GM0484	2CS005	0.484	2	1.000	0	3.000	B0	0	0	M	2
GM0500	2CS005	0.500	2	1.000	0	3.000	B0	0	0	M	2
GM0562	2DG005	0.562	2	1.250	0	3.000	B0	0	0	M	2
GM0625	2DG007	0.625	2	1.250	0	3.000	B0	0	0	M	2
GM0750	2E6009	0.750	2	1.500	0	4.000	B0	0	0	M	2
GM0875	2E6009	0.875	2	1.500	0	4.000	B0	0	0	M	2
GM1000	2E6009	1.000	2	1.500	0	4.000	B0	0	0	M	2

Non-standard lengths, diameters and radius sizes are available upon request.

BME2 SERIES
2FL General Purpose Extended Length Ball End Mill

The **BME2** has a longer reach and a neck relief can be added for step-down machining. The **BME2** has an elliptical gash on the ball end and 2 flutes making it one of the best contouring cutters. When used with our MDC coating, it's the most effective 2 flute ball end tool for steel exotic alloys.

- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- 30° helix allows for solid cutting in most materials.
- Manufacturing tolerances far above industry standards.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
GM0250	28I005	B0	0	0		GM025028I005B000

First 6	Middle 6						End Geometry	Pick 1	Pick 1		
GEO & DIA	FL, LOC & LBS	DIA	# FL	LOC	LBS	OAL	Ball Nose	Coolant	Coating		
								None	None	MDC	AlTiN
GM0250	28I005	0.250	2	0.500	0	3.000	B0	0	0	M	2
GM0250	28I007	0.250	2	0.500	0	3.500					
GM0250	2BU009	0.250	2	0.750	0	4.000					
GM0250	2CS00I	0.250	2	1.000	0	6.000					
GM0312	28I005	0.312	2	0.500	0	3.000	B0	0	0	M	2
GM0312	28I007	0.312	2	0.500	0	3.500					
GM0312	2BU009	0.312	2	0.750	0	4.000					
GM0312	2CS00I	0.312	2	1.000	0	6.000					
GM0375	28I005	0.375	2	0.500	0	3.000	B0	0	0	M	2
GM0375	28I007	0.375	2	0.500	0	3.500					
GM0375	2BU009	0.375	2	0.750	0	4.000					
GM0375	2CS00E	0.375	2	1.000	0	5.000					
GM0375	2E600I	0.375	2	1.500	0	6.000					
GM0437	28I004	0.437	2	0.500	0	2.750	B0	0	0	M	2
GM0437	2BU009	0.437	2	0.750	0	4.000					
GM0437	2BU00I	0.437	2	0.750	0	6.000					
GM0500	28I005	0.500	2	0.500	0	3.000	B0	0	0	M	2
GM0500	2BU009	0.500	2	0.750	0	4.000					
GM0500	2CS00E	0.500	2	1.000	0	5.000					
GM0500	2E600I	0.500	2	1.500	0	6.000					
GM0562	2BU009	0.562	2	0.750	0	4.000	B0	0	0	M	2
GM0562	2E600I	0.562	2	1.500	0	6.000					
GM0625	2BU009	0.625	2	0.750	0	4.000	B0	0	0	M	2
GM0625	2CS00E	0.625	2	1.000	0	5.000					
GM0625	2E600I	0.625	2	1.500	0	6.000					
GM0750	2CS009	0.750	2	1.000	0	4.000	B0	0	0	M	2
GM0750	2DG00E	0.750	2	1.250	0	5.000					
GM0750	2E600I	0.750	2	1.500	0	6.000					
GM0875	2CS009	0.875	2	1.000	0	4.000	B0	0	0	M	2
GM0875	2E600I	0.875	2	1.500	0	6.000					
GM1000	2DG00E	1.000	2	1.250	0	5.000	B0	0	0	M	2
GM1000	2E600I	1.000	2	1.500	0	6.000					
GM1000	2FK00L	1.000	2	2.000	0	7.000					
GM1250	2DG00G	1.250	2	1.250	0	5.500	B0	0	0	M	2
GM1250	2E600I	1.250	2	1.500	0	6.000					
GM1250	2FK00N	1.250	2	2.000	0	7.500					

Non-standard lengths and diameters are available upon request.

BM4 SERIES
4FL General Purpose Ball End Mill

The **BM4** has an elliptical gash on the ball end and 4 flutes to create an exceptional finish.

- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- Manufacturing tolerances far above industry standards.
- 30° helix allows for solid cutting in most materials.
- Eccentric relief for superior strength and wear resistance.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
GM0031	**44Y000**	**B0**	**0**	**M**		**GM003144Y000B00M**

First 6	Middle 6						End Geo.	Pick 1	Pick 1		
GEO & DIA	**FL, LOC & LBS**	**DIA**	**# FL**	**LOC**	**LBS**	**OAL**	**Ball Nose**	**Coolant**	**Coating**		
								None	**None**	**MDC**	**AlTiN**
GM0031	**42Y000**	0.031	4	0.093	0	1.500	**B0**	0	0	M	
GM0046	**43S000**	0.046	4	0.140	0	1.500	**B0**	0	0	M	
GM0063	**44E000**	0.063	4	0.187	0	1.500	**B0**	0	0	M	
GM0078	**458000**	0.078	4	0.250	0	1.500	**B0**	0	0	M	
GM0125	**48I000**	0.125	4	0.500	0	1.500	**B0**	0	0	M	
GM0141	**49C001**	0.141	4	0.562	0	2.000	**B0**	0	0	M	
GM0156	**49C001**	0.156	4	0.562	0	2.000	**B0**	0	0	M	
GM0161	**458001**	0.161	4	0.250	0	2.000	**B0**	0	0	M	
GM0172	**4A6001**	0.172	4	0.625	0	2.000	**B0**	0	0	M	
GM0187	**4A6001**	0.187	4	0.625	0	2.000	**B0**	0	0	M	
GM0203	**4A6003**	0.203	4	0.625	0	2.500	**B0**	0	0	M	
GM0218	**4A6003**	0.218	4	0.625	0	2.500	**B0**	0	0	M	
GM0234	**4BU003**	0.234	4	0.750	0	2.500	**B0**	0	0	M	
GM0250	**4BU003**	0.250	4	0.750	0	2.500	**B0**	0	0	M	
GM0265	**4BU003**	0.265	4	0.750	0	2.500	**B0**	0	0	M	2
GM0281	**4BU003**	0.281	4	0.750	0	2.500	**B0**	0	0	M	2
GM0296	**4C2003**	0.296	4	0.812	0	2.500	**B0**	0	0	M	2
GM0312	**4C2003**	0.312	4	0.812	0	2.500	**B0**	0	0	M	2
GM0328	**4CA003**	0.328	4	0.875	0	2.500	**B0**	0	0	M	2
GM0343	**4CA003**	0.343	4	0.875	0	2.500	**B0**	0	0	M	2
GM0359	**4CA003**	0.359	4	0.875	0	2.500	**B0**	0	0	M	2
GM0375	**4CS003**	0.375	4	1.000	0	2.500	**B0**	0	0	M	2
GM0391	**4CA003**	0.391	4	0.875	0	2.500	**B0**	0	0	M	2
GM0406	**4CA004**	0.406	4	0.875	0	2.750	**B0**	0	0	M	2
GM0421	**4CA003**	0.421	4	0.875	0	2.500	**B0**	0	0	M	2
GM0437	**4CS004**	0.437	4	1.000	0	2.750	**B0**	0	0	M	2
GM0453	**4CS005**	0.453	4	1.000	0	3.000	**B0**	0	0	M	2
GM0468	**4DG005**	0.468	4	1.250	0	3.000	**B0**	0	0	M	2
GM0484	**4CS005**	0.484	4	1.000	0	3.000	**B0**	0	0	M	2
GM0500	**4CS005**	0.500	4	1.000	0	3.000	**B0**	0	0	M	2
GM0562	**4DG005**	0.562	4	1.250	0	3.000	**B0**	0	0	M	2
GM0625	**4DG007**	0.625	4	1.250	0	3.000	**B0**	0	0	M	2
GM0750	**4E6009**	0.750	4	1.500	0	4.000	**B0**	0	0	M	2
GM0875	**4E6009**	0.875	4	1.500	0	4.000	**B0**	0	0	M	2
GM1000	**4E6009**	1.000	4	1.500	0	4.000	**B0**	0	0	M	2

Non-standard lengths, diameters and radius sizes are available upon request.

BME4 SERIES
4FL General Purpose Extended Length Ball End Mill

The **BME4** has a longer reach and a neck relief can be added for step-down machining. The **BME4** has an elliptical gash on the ball end and 4 flutes making it one of the best contouring cutters.

- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.
- 30° helix allows for solid cutting in most materials.
- Manufacturing tolerances far above industry standards.

How To Build Your 16 Digit Part Number

First 6	Middle 6	End Geo	Coolant Hole	Coating	=	Part # To Order
GM0250	**48I005**	**B0**	**0**	**0**		**GM025048I005B000**

First 6	Middle 6						End Geometry	Pick 1	Pick 1		
GEO & DIA	**FL, LOC & LBS**	**DIA**	**# FL**	**LOC**	**LBS**	**OAL**	**Ball Nose**	**Coolant**	**Coating**		
								None	**None**	**MDC**	**AlTiN**
GM0250	48I005	0.250	4	0.500	0	3.000	B0	0	0	M	2
GM0250	48I007	0.250	4	0.500	0	3.500					
GM0250	4BU009	0.250	4	0.750	0	4.000					
GM0250	4CS00I	0.250	4	1.000	0	6.000					
GM0312	48I005	0.312	4	0.500	0	3.000	B0	0	0	M	2
GM0312	48I007	0.312	4	0.500	0	3.500					
GM0312	4BU009	0.312	4	0.750	0	4.000					
GM0312	4CS00I	0.312	4	1.000	0	6.000					
GM0375	48I005	0.375	4	0.500	0	3.000	B0	0	0	M	2
GM0375	48I007	0.375	4	0.500	0	3.500					
GM0375	4BU009	0.375	4	0.750	0	4.000					
GM0375	4CS00E	0.375	4	1.000	0	5.000					
GM0375	4E600I	0.375	4	1.500	0	6.000					
GM0437	48I004	0.437	4	0.500	0	2.750	B0	0	0	M	2
GM0437	4BU009	0.437	4	0.750	0	4.000					
GM0437	4BU00I	0.437	4	0.750	0	6.000					
GM0500	48I005	0.500	4	0.500	0	3.000	B0	0	0	M	2
GM0500	4BU009	0.500	4	0.750	0	4.000					
GM0500	4CS00E	0.500	4	1.000	0	5.000					
GM0500	4E600I	0.500	4	1.500	0	6.000					
GM0562	4BU009	0.562	4	0.750	0	4.000	B0	0	0	M	2
GM0562	4E600I	0.562	4	1.500	0	6.000					
GM0625	4BU009	0.625	4	0.750	0	4.000	B0	0	0	M	2
GM0625	4CS00E	0.625	4	1.000	0	5.000					
GM0625	4E600I	0.625	4	1.500	0	6.000					
GM0750	4CS009	0.750	4	1.000	0	4.000	B0	0	0	M	2
GM0750	4DG00E	0.750	4	1.250	0	5.000					
GM0750	4E600I	0.750	4	1.500	0	6.000					
GM0875	4CS009	0.875	4	1.000	0	4.000	B0	0	0	M	2
GM0875	4E600I	0.875	4	1.500	0	6.000					
GM1000	4DG00E	1.000	4	1.250	0	5.000	B0	0	0	M	2
GM1000	4E600I	1.000	4	1.500	0	6.000					
GM1000	4FK00L	1.000	4	2.000	0	7.000					
GM1250	4DG00G	1.250	4	1.250	0	5.500	B0	0	0	M	2
GM1250	4E600I	1.250	4	1.500	0	6.000					
GM1250	4FK00N	1.250	4	2.000	0	7.500					

Non-standard lengths and diameters are available upon request.

TM SERIES
3FL Square End Tapermill

The **TM3** has the most common draft angles available.
Constant helix provides solid cutting action and creates smooth wall finishes.

- Moderate helix produces smooth wall finishes and works very well for general cuts in most materials.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.

Uncoated Number	MDC Coated Number	Per Side	Tip Diameter	Flutes	LOC	OAL	Shank
TM1D08163CB	TM1D08163CBMDC	1°	0.125	3	1.500	3.000	0.250
TM1D12243CB	TM1D12243CBMDC	1°	0.187	3	1.750	3.500	0.375
TM1D16323CB	TM1D16323CBMDC	1°	0.250	3	2.000	4.000	0.500
TM1.5D08163CB	TM1.5D08163CBMDC	1.5°	0.125	3	1.500	3.000	0.250
TM1.5D12243CB	TM1.5D12243CBMDC	1.5°	0.187	3	1.750	3.000	0.375
TM1.5D16323CB	TM1.5D16323CBMDC	1.5°	0.250	3	2.000	4.000	0.500
TM2D08163CB	TM2D08163CBMDC	2°	0.125	3	1.250	3.000	0.250
TM2D12243CB	TM2D12243CBMDC	2°	0.187	3	1.750	3.500	0.375
TM2D16323CB	TM2D16323CBMDC	2°	0.250	3	2.000	4.000	0.500
TM3D08163CB	TM3D08163CBMDC	3°	0.125	3	1.000	3.000	0.250
TM3D10243CB	TM3D10243CBMDC	3°	0.156	3	1.750	3.500	0.375
TM3D16323CB	TM3D16323CBMDC	3°	0.250	3	2.000	4.000	0.500
TM5D08163CB	TM5D08163CBMDC	5°	0.125	3	0.750	3.000	0.250
TM5D08243CB	TM5D08243CBMDC	5°	0.125	3	1.500	3.500	0.375
TM5D16323CB	TM5D16323CBMDC	5°	0.250	3	1.375	4.000	0.500
TM7D08163CB	TM7D08163CBMDC	7°	0.125	3	0.500	3.000	0.250
TM7D08243CB	TM7D08243CBMDC	7°	0.125	3	1.000	3.500	0.375
TM7D12323CB	TM7D12323CBMDC	7°	0.187	3	1.250	4.000	0.500
TM10D06163CB	TM10D06163CBMDC	10°	0.093	3	0.500	3.000	0.250
TM10D08243CB	TM10D08243CBMDC	10°	0.125	3	0.750	3.500	0.375
TM10D08323CB	TM10D08323CBMDC	10°	0.125	3	1.000	4.000	0.500

Non-standard lengths and diameters are available upon request.

TB SERIES
3FL Ball End Tapermill

The **TB3** has the most common draft angles available. Constant helix provides solid cutting action and creates smooth wall finishes, ball end for 3D profiling.

- Moderate helix produces smooth wall finishes and works very well for general cuts in most materials.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks and eccentric relief provide superior strength and increased wear resistance.

Uncoated Number	MDC Coated Number	Per Side	Tip Diameter	Flutes	LOC	OAL	Shank
TB1D08163CB	TB1D08163CBMDC	1°	0.125	3	1.500	3.000	0.250
TB1D12243CB	TB1D12243CBMDC	1°	0.187	3	1.750	3.500	0.375
TB1D16323CB	TB1D16323CBMDC	1°	0.250	3	2.000	4.000	0.500
TB1.5D08163CB	TB1.5D08163CBMDC	1.5°	0.125	3	1.500	3.000	0.250
TB1.5D12243CB	TB1.5D12243CBMDC	1.5°	0.187	3	1.750	3.000	0.375
TB1.5D16323CB	TB1.5D16323CBMDC	1.5°	0.250	3	2.000	4.000	0.500
TB2D08163CB	TB2D08163CBMDC	2°	0.125	3	1.250	3.000	0.250
TB2D12243CB	TB2D12243CBMDC	2°	0.187	3	1.750	3.500	0.375
TB2D16323CB	TB2D16323CBMDC	2°	0.250	3	2.000	4.000	0.500
TB3D08163CB	TB3D08163CBMDC	3°	0.125	3	1.000	3.000	0.250
TB3D10243CB	TB3D10243CBMDC	3°	0.156	3	1.750	3.500	0.375
TB3D16323CB	TB3D16323CBMDC	3°	0.250	3	2.000	4.000	0.500
TB5D08163CB	TB5D08163CBMDC	5°	0.125	3	0.750	3.000	0.250
TB5D08243CB	TB5D08243CBMDC	5°	0.125	3	1.500	3.500	0.375
TB5D16323CB	TB5D16323CBMDC	5°	0.250	3	1.375	4.000	0.500
TB7D08163CB	TB7D08163CBMDC	7°	0.125	3	0.500	3.000	0.250
TB7D08243CB	TB7D08243CBMDC	7°	0.125	3	1.000	3.500	0.375
TB7D12323CB	TB7D12323CBMDC	7°	0.187	3	1.250	4.000	0.500
TB10D06163CB	TB10D06163CBMDC	10°	0.093	3	0.500	3.000	0.250
TB10D08243CB	TB10D08243CBMDC	10°	0.125	3	0.750	3.500	0.375
TB10D08323CB	TB10D08323CBMDC	10°	0.125	3	1.000	4.000	0.500

Non-standard lengths and diameters are available upon request.

3D CONTOURING CUTTER
2FL - 30° Helix Hemstitching / Surface Profiling

One of the best designed cutting tools for machining three dimensional contour shapes, the **HMS** series features oversized radii to allow for a larger step over that will produce a smaller scallop height compared to a standard ball end mill. The HMS series has an elliptical gash starting past center that follows the helix of the tool for the length of the radii. This allows the HMS to cut all the way to center and gives the radius shear for smooth cutting and excellent finishes.

- Premium Micrograin carbide for superior wear resistance.
- Elliptical Gash on radii creates smooth cutting and excellent finishes.
- Available with MDC coating for unmatched performance and tool life.

Uncoated Number	MDC Coated Number	DIA	# FL	RAD	LOC	OAL	DOC
HMS162PR187X	HMS162PR187XMDC	0.250	2	0.187	0.500	2.000	0.047
HMS162PR250X	HMS162PR250XMDC	0.250	2	0.250	0.500	2.000	0.033
HMS162PR375X	HMS162PR375XMDC	0.250	2	0.375	0.500	2.000	0.021
HMS162PR500X	HMS162PR500XMDC	0.250	2	0.500	0.500	2.000	0.015
HMS242PR250X	HMS242PR250XMDC	0.375	2	0.250	0.500	2.000	0.084
HMS242PR375X	HMS242PR375XMDC	0.375	2	0.375	0.500	2.000	0.050
HMS242PR500X	HMS242PR500XMDC	0.375	2	0.500	0.500	2.000	0.036
HMS242PR750X	HMS242PR750XMDC	0.375	2	0.750	0.500	2.000	0.023
HMS282PR312X	HMS282PR312XMDC	0.438	2	0.312	0.625	2.750	0.089
HMS282PR437X	HMS282PR437XMDC	0.438	2	0.437	0.625	2.750	0.058
HMS282PR625X	HMS282PR625XMDC	0.438	2	0.625	0.625	2.750	0.039
HMS282PR875X	HMS282PR875XMDC	0.438	2	0.872	0.625	2.750	0.027
HMS322PR375X	HMS322PR375XMDC	0.500	2	0.375	0.750	3.000	0.095
HMS322PR500X	HMS322PR500XMDC	0.500	2	0.500	0.750	3.000	0.066
HMS322PR750X	HMS322PR750XMDC	0.500	2	0.750	0.750	3.000	0.042
HMS322PR1.00X	HMS322PR1.00XMDC	0.500	2	1.000	0.750	3.000	0.031
HMS402PR500X	HMS402PR500XMDC	0.625	2	0.500	0.750	3.000	0.109
HMS402PR625X	HMS402PR625XMDC	0.625	2	0.625	0.750	3.000	0.083
HMS402PR875X	HMS402PR875XMDC	0.625	2	0.875	0.750	3.000	0.057
HMS402PR1.25X	HMS402PR1.25XMDC	0.625	2	1.250	0.750	3.000	0.039
HMS482PR625X	HMS482PR625XMDC	0.750	2	0.625	0.750	3.000	0.125
HMS482PR750X	HMS482PR750XMDC	0.750	2	0.750	0.750	3.000	0.100
HMS482PR1.00X	HMS482PR1.00XMDC	0.750	2	1.000	0.750	3.000	0.073
HMS482PR1.50X	HMS482PR1.50XMDC	0.750	2	1.500	0.750	3.000	0.047

3D CONTOURING CUTTER
4FL - 30° Helix Hemstitching / Surface Profiling

One of the best designed cutting tools for machining three dimensional contour shapes, the **HMS** series features oversized radii to allow for a larger step over that will produce a smaller scallop height compared to a standard ball end mill. The HMS series has an elliptical gash starting past center that follows the helix of the tool for the length of the radii. This allows the HMS to cut all the way to center and gives the radius shear for smooth cutting and excellent finishes.

- Premium Micrograin carbide for superior wear resistance.
- Elliptical Gash on radii creates smooth cutting and excellent finishes.
- Available with MDC coating for unmatched performance and tool life.

Uncoated Number	MDC Coated Number	DIA	# FL	RAD	LOC	OAL	DOC
HMS164PR187X	HMS164PR187XMDC	0.250	4	0.187	0.500	2.000	0.047
HMS164PR250X	HMS164PR250XMDC	0.250	4	0.250	0.500	2.000	0.033
HMS164PR375X	HMS164PR375XMDC	0.250	4	0.375	0.500	2.000	0.021
HMS164PR500X	HMS164PR500XMDC	0.250	4	0.500	0.500	2.000	0.015
HMS244PR250X	HMS244PR250XMDC	0.375	4	0.250	0.500	2.000	0.084
HMS244PR375X	HMS244PR375XMDC	0.375	4	0.375	0.500	2.000	0.050
HMS244PR500X	HMS244PR500XMDC	0.375	4	0.500	0.500	2.000	0.036
HMS244PR750X	HMS244PR750XMDC	0.375	4	0.750	0.500	2.000	0.023
HMS284PR312X	HMS284PR312XMDC	0.438	4	0.312	0.625	2.750	0.089
HMS284PR437X	HMS284PR437XMDC	0.438	4	0.437	0.625	2.750	0.058
HMS284PR625X	HMS284PR625XMDC	0.438	4	0.625	0.625	2.750	0.039
HMS284PR875X	HMS284PR875XMDC	0.438	4	0.875	0.625	2.750	0.027
HMS324PR375X	HMS324PR375XMDC	0.500	4	0.375	0.750	3.000	0.095
HMS324PR500X	HMS324PR500XMDC	0.500	4	0.500	0.750	3.000	0.066
HMS324PR750X	HMS324PR750XMDC	0.500	4	0.750	0.750	3.000	0.042
HMS324PR1.00X	HMS324PR1.00XMDC	0.500	4	1.000	0.750	3.000	0.031
HMS404PR500X	HMS404PR500XMDC	0.625	4	0.500	0.750	3.000	0.109
HMS404PR625X	HMS404PR625XMDC	0.625	4	0.625	0.750	3.000	0.083
HMS404PR875X	HMS404PR875XMDC	0.625	4	0.875	0.750	3.000	0.057
HMS404PR1.25X	HMS404PR1.25XMDC	0.625	4	1.250	0.750	3.000	0.039
HMS484PR625X	HMS484PR625XMDC	0.750	4	0.625	0.750	3.000	0.125
HMS484PR750X	HMS484PR750XMDC	0.750	4	0.750	0.750	3.000	0.100
HMS484PR1.00X	HMS484PR1.00XMDC	0.750	4	1.000	0.750	3.000	0.073
HMS484PR1.50X	HMS484PR1.50XMDC	0.750	4	1.500	0.750	3.000	0.047

DNCR SERIES
NC Spot Drill - Standard Length

- Proprietary S-point and heavy edge prep give smooth results.
- Premium carbide blanks provide superior strength and increased wear resistance.
- Manufacturing tolerances far above industry standards.
- Available with MDC coating for unmatched performance and tool life.

Uncoated Number	MDC Coated Number	Drill Point	DIA	# FL	LOC	OAL	Shank
DNC.1875CB82	DNC.1875CB82MDC	82°	0.187	2	0.187	2.000	0.187
DNC.2500CB82	DNC.2500CB82MDC	82°	0.250	2	0.250	2.500	0.250
DNC.3750CB82	DNC.3750CB82MDC	82°	0.375	2	0.375	2.500	0.375
DNC.4375CB82	DNC.4375CB82MDC	82°	0.437	2	0.437	2.750	0.437
DNC.5000CB82	DNC.5000CB82MDC	82°	0.500	2	0.500	3.000	0.500
DNC.6250CB82	DNC.6250CB82MDC	82°	0.625	2	0.625	3.000	0.625
DNC.7500CB82	DNC.7500CB82MDC	82°	0.750	2	0.750	3.000	0.750
DNC.1250CB90	DNC.1250CB90MDC	90°	0.125	2	0.125	1.500	0.125
DNC.1875CB90	DNC.1875CB90MDC	90°	0.187	2	0.187	2.000	0.187
DNC.2500CB90	DNC.2500CB90MDC	90°	0.250	2	0.250	2.500	0.250
DNC.3750CB90	DNC.3750CB90MDC	90°	0.375	2	0.375	2.500	0.375
DNC.4375CB90	DNC.4375CB90MDC	90°	0.437	2	0.437	2.750	0.437
DNC.5000CB90	DNC.5000CB90MDC	90°	0.500	2	0.500	3.000	0.500
DNC.6250CB90	DNC.6250CB90MDC	90°	0.625	2	0.625	3.000	0.625
DNC.7500CB90	DNC.7500CB90MDC	90°	0.750	2	0.750	3.000	0.750
DNC.1250CB100	DNC.1250CB100MDC	100°	0.125	2	0.125	1.500	0.125
DNC.1875CB100	DNC.1875CB100MDC	100°	0.187	2	0.187	2.000	0.187
DNC.2500CB100	DNC.2500CB100MDC	100°	0.250	2	0.250	2.500	0.250
DNC.3750CB100	DNC.3750CB100MDC	100°	0.375	2	0.375	2.500	0.375
DNC.4375CB100	DNC.4375CB100MDC	100°	0.437	2	0.437	2.750	0.437
DNC.5000CB100	DNC.5000CB100MDC	100°	0.500	2	0.500	3.000	0.500
DNC.6250CB100	DNC.6250CB100MDC	100°	0.625	2	0.625	3.000	0.625
DNC.7500CB100	DNC.7500CB100MDC	100°	0.750	2	0.750	3.000	0.750
DNC.1875CB120	DNC.1875CB120MDC	120°	0.187	2	0.187	2.000	0.187
DNC.2500CB120	DNC.2500CB120MDC	120°	0.250	2	0.250	2.500	0.250
DNC.3750CB120	DNC.3750CB120MDC	120°	0.375	2	0.375	2.500	0.375
DNC.4375CB120	DNC.4375CB120MDC	120°	0.437	2	0.437	2.750	0.437
DNC.5000CB120	DNC.5000CB120MDC	120°	0.500	2	0.500	3.000	0.500
DNC.6250CB120	DNC.6250CB120MDC	120°	0.625	2	0.625	3.000	0.625
DNC.7500CB120	DNC.7500CB120MDC	120°	0.750	2	0.750	3.000	0.750
DNC.1875CB140	DNC.1875CB140MDC	140°	0.187	2	0.187	2.000	0.187
DNC.2500CB140	DNC.2500CB140MDC	140°	0.250	2	0.250	2.500	0.250
DNC.3750CB140	DNC.3750CB140MDC	140°	0.375	2	0.375	2.500	0.375
DNC.4375CB140	DNC.4375CB140MDC	140°	0.437	2	0.437	2.750	0.437
DNC.5000CB140	DNC.5000CB140MDC	140°	0.500	2	0.500	3.000	0.500
DNC.6250CB140	DNC.6250CB140MDC	140°	0.625	2	0.625	3.000	0.625
DNC.7500CB140	DNC.7500CB140MDC	140°	0.750	2	0.750	3.000	0.750
DNC.1875CB152	DNC.1875CB152MDC	152°	0.187	2	0.187	2.000	0.187
DNC.2500CB152	DNC.2500CB152MDC	152°	0.250	2	0.250	2.500	0.250
DNC.3750CB152	DNC.3750CB152MDC	152°	0.375	2	0.375	2.500	0.375
DNC.4375CB152	DNC.4375CB152MDC	152°	0.437	2	0.437	2.750	0.437
DNC.5000CB152	DNC.5000CB152MDC	152°	0.500	2	0.500	3.000	0.500
DNC.6250CB152	DNC.6250CB152MDC	152°	0.625	2	0.625	3.000	0.625
DNC.7500CB152	DNC.7500CB152MDC	152°	0.750	2	0.750	3.000	0.750

Non-standard lengths and diameters are available upon request.

DNCX SERIES
NC Spot Drill XL

- Long length for spotting deeper holes.
- Manufacturing tolerances far above industry standards.
- Proprietary S-point and heavy edge prep give smooth results.
- Premium carbide blanks provide superior strength and increased wear resistance.
- Available with MDC coating for unmatched performance and tool life.

Uncoated Number	MDC Coated Number	Drill Point	DIA	# FL	LOC	OAL	Shank
DNCX.1875CB82	DNCX.1875CB82MDC	82°	0.187	2	0.187	4.000	0.187
DNCX.2500CB82	DNCX.2500CB82MDC	82°	0.250	2	0.250	4.000	0.250
DNCX.3750CB82	DNCX.3750CB82MDC	82°	0.375	2	0.375	4.000	0.375
DNCX.5000CB82	DNCX.5000CB82MDC	82°	0.500	2	0.500	6.000	0.500
DNCX.6250CB82	DNCX.6250CB82MDC	82°	0.625	2	0.625	6.000	0.625
DNCX.7500CB82	DNCX.7500CB82MDC	82°	0.750	2	0.750	6.000	0.750
DNCX.1250CB90	DNCX.1250CB90MDC	90°	0.125	2	0.125	4.000	0.125
DNCX.1875CB90	DNCX.1875CB90MDC	90°	0.187	2	0.187	4.000	0.187
DNCX.2500CB90	DNCX.2500CB90MDC	90°	0.250	2	0.250	4.000	0.250
DNCX.3750CB90	DNCX.3750CB90MDC	90°	0.375	2	0.375	4.000	0.375
DNCX.5000CB90	DNCX.5000CB90MDC	90°	0.500	2	0.500	6.000	0.500
DNCX.6250CB90	DNCX.6250CB90MDC	90°	0.625	2	0.625	6.000	0.625
DNCX.7500CB90	DNCX.7500CB90MDC	90°	0.750	2	0.750	6.000	0.750
DNCX.1250CB100	DNCX.1250CB100MDC	100°	0.125	2	0.125	4.000	0.125
DNCX.1875CB100	DNCX.1875CB100MDC	100°	0.187	2	0.187	4.000	0.187
DNCX.2500CB100	DNCX.2500CB100MDC	100°	0.250	2	0.250	4.000	0.250
DNCX.3750CB100	DNCX.3750CB100MDC	100°	0.375	2	0.375	4.000	0.375
DNCX.5000CB100	DNCX.5000CB100MDC	100°	0.500	2	0.500	6.000	0.500
DNCX.6250CB100	DNCX.6250CB100MDC	100°	0.625	2	0.625	6.000	0.625
DNCX.7500CB100	DNCX.7500CB100MDC	100°	0.750	2	0.750	6.000	0.750
DNCX.1875CB120	DNCX.1875CB120MDC	120°	0.187	2	0.187	4.000	0.187
DNCX.2500CB120	DNCX.2500CB120MDC	120°	0.250	2	0.250	4.000	0.250
DNCX.3750CB120	DNCX.3750CB120MDC	120°	0.375	2	0.375	4.000	0.375
DNCX.5000CB120	DNCX.5000CB120MDC	120°	0.500	2	0.500	6.000	0.500
DNCX.6250CB120	DNCX.6250CB120MDC	120°	0.625	2	0.625	6.000	0.625
DNCX.7500CB120	DNCX.7500CB120MDC	120°	0.750	2	0.750	6.000	0.750
DNCX.1875CB140	DNCX.1875CB140MDC	140°	0.187	2	0.187	4.000	0.187
DNCX.2500CB140	DNCX.2500CB140MDC	140°	0.250	2	0.250	4.000	0.250
DNCX.3750CB140	DNCX.3750CB140MDC	140°	0.375	2	0.375	4.000	0.375
DNCX.5000CB140	DNCX.5000CB140MDC	140°	0.500	2	0.500	6.000	0.500
DNCX.6250CB140	DNCX.6250CB140MDC	140°	0.625	2	0.625	6.000	0.625
DNCX.7500CB140	DNCX.7500CB140MDC	140°	0.750	2	0.750	6.000	0.750

Non-standard lengths and diameters are available upon request.

CHMR2 & CHMR4 SERIES
2FL & 4FL High Performance Chamfer Mills

- 2FL for larger chip loads in aluminum and non-ferrous materials, 4FL for faster speeds.
- Positive flute geometry allows for more aggressive feed rates and good, clean finishes.
- Manufacturing tolerances far above industry standards.
- Premium carbide blanks provide superior strength and increased wear resistance.
- Available with MDC coating for unmatched performance and tool life.

Uncoated 2 FL Number	MDC Coated 2 FL Number	Uncoated 4 FL Number	MDC Coated 4 FL Number	DIA	OAL	Inc. Angle	Shank
CHMR08260CB	CHMR08260CBMDC	NA	NA	0.125	1.500	60°	0.125
CHMR12260CB	CHMR12260CBMDC	NA	NA	0.187	2.000	60°	0.187
CHMR16260CB	CHMR16260CBMDC	CHMR16460CB	CHMR16460CBMDC	0.250	2.500	60°	0.250
CHMR24260CB	CHMR24260CBMDC	CHMR24460CB	CHMR24460CBMDC	0.375	2.500	60°	0.375
CHMR32260CB	CHMR32260CBMDC	CHMR32460CB	CHMR32460CBMDC	0.500	3.000	60°	0.500
CHMR48260CB	CHMR48260CBMDC	CHMR48460CB	CHMR48460CBMDC	0.750	3.000	60°	0.750
CHMR64260CB	CHMR64260CBMDC	CHMR64460CB	CHMR64460CBMDC	1.000	3.000	60°	1.000
CHMR12282CB	CHMR12282CBMDC	NA	NA	0.187	2.000	82°	0.187
CHMR16282CB	CHMR16282CBMDC	CHMR16482CB	CHMR16482CBMDC	0.250	2.500	82°	0.250
CHMR24282CB	CHMR24282CBMDC	CHMR24482CB	CHMR24482CBMDC	0.375	2.500	82°	0.375
CHMR32282CB	CHMR32282CBMDC	CHMR32482CB	CHMR32482CBMDC	0.500	3.000	82°	0.500
CHMR48282CB	CHMR48282CBMDC	CHMR48482CB	CHMR48482CBMDC	0.750	3.000	82°	0.750
CHMR64282CB	CHMR64282CBMDC	CHMR64482CB	CHMR64482CBMDC	1.000	3.000	82°	1.000
CHMR08290CB	CHMR08290CBMDC	NA	NA	0.125	1.500	90°	0.125
CHMR12290CB	CHMR12290CBMDC	NA	NA	0.187	2.000	90°	0.187
CHMR16290CB	CHMR16290CBMDC	CHMR16490CB	CHMR16490CBMDC	0.250	2.500	90°	0.250
CHMR24290CB	CHMR24290CBMDC	CHMR24490CB	CHMR24490CBMDC	0.375	2.500	90°	0.375
CHMR32290CB	CHMR32290CBMDC	CHMR32490CB	CHMR32490CBMDC	0.500	3.000	90°	0.500
CHMR48290CB	CHMR48290CBMDC	CHMR48490CB	CHMR48490CBMDC	0.750	3.000	90°	0.750
CHMR64290CB	CHMR64290CBMDC	CHMR64490CB	CHMR64490CBMDC	1.000	3.000	90°	1.000
CHMR082100CB	CHMR082100CBMDC	NA	NA	0.125	1.500	100°	0.125
CHMR122100CB	CHMR122100CBMDC	NA	NA	0.187	2.000	100°	0.187
CHMR162100CB	CHMR162100CBMDC	CHMR164100CB	CHMR164100CBMDC	0.250	2.500	100°	0.250
CHMR242100CB	CHMR242100CBMDC	CHMR244100CB	CHMR244100CBMDC	0.375	2.500	100°	0.375
CHMR322100CB	CHMR322100CBMDC	CHMR324100CB	CHMR324100CBMDC	0.500	3.000	100°	0.500
CHMR482100CB	CHMR482100CBMDC	CHMR484100CB	CHMR484100CBMDC	0.750	3.000	100°	0.750
CHMR642100CB	CHMR642100CBMDC	CHMR644100CB	CHMR644100CBMDC	1.000	3.000	100°	1.000
CHMR082120CB	CHMR082120CBMDC	NA	NA	0.125	1.500	120°	0.125
CHMR122120CB	CHMR122120CBMDC	NA	NA	0.187	2.000	120°	0.187
CHMR162120CB	CHMR162120CBMDC	CHMR164120CB	CHMR164120CBMDC	0.250	2.500	120°	0.250
CHMR242120CB	CHMR242120CBMDC	CHMR244120CB	CHMR244120CBMDC	0.375	2.500	120°	0.375
CHMR322120CB	CHMR322120CBMDC	CHMR324120CB	CHMR324120CBMDC	0.500	3.000	120°	0.500
CHMR482120CB	CHMR482120CBMDC	CHMR484120CB	CHMR484120CBMDC	0.750	3.000	120°	0.750
CHMR642120CB	CHMR642120CBMDC	CHMR644120CB	CHMR644120CBMDC	1.000	3.000	120°	1.000

Non-standard lengths and diameters are available upon request.

CHMR HP SERIES 3FL
VARIABLE HELIX - UNCOATED

NEW!

- 3 flute design for high performance Chamfering of Aluminum and Non-Ferrous materials.
- Helical flutes with positive high shear design for reduced cutting forces producing better finishes and increased tool life.
- Premium carbide blanks provide superior strength and increased wear resistance.
- Flute design for excellent chip evacuation in soft materials.

PART #	DIA	INC ANG	# FL	LOC	TIP DIA +- .002	OAL	COATING
CHMRHP16360CB	0.250	60°	3	0.163	0.060	2.50	UNC
CHMRHP24360CB	0.375	60°	3	0.262	0.070	2.50	UNC
CHMRHP32360CB	0.500	60°	3	0.362	0.080	3.00	UNC
CHMRHP40360CB	0.625	60°	3	0.461	0.090	3.00	UNC
CHMRHP48360CB	0.750	60°	3	0.561	0.100	3.00	UNC
CHMRHP16390CB	0.250	90°	3	0.093	0.060	2.50	UNC
CHMRHP24390CB	0.500	90°	3	0.151	0.070	2.50	UNC
CHMRHP32390CB	0.500	90°	3	0.208	0.080	3.00	UNC
CHMRHP40390CB	0.625	90°	3	0.266	0.090	3.00	UNC
CHMRHP48390CB	0.750	90°	3	0.323	0.100	3.00	UNC
CHMRHP163120CB	0.250	120°	3	0.053	0.060	2.50	UNC
CHMRHP243120CB	0.375	120°	3	0.086	0.070	2.50	UNC
CHMRHP323120CB	0.500	120°	3	0.119	0.080	3.00	UNC
CHMRHP403120CB	0.625	120°	3	0.152	0.090	3.00	UNC
CHMRHP483120CB	0.750	120°	3	0.186	0.100	3.00	UNC

NEW!

CHMR HP SERIES 5FL
VARIABLE HELIX - MDC COATED

- 5 flute geometry for high performance Chamfering of Stainless Steel, Titanium, and Exotic Materials.
- Helical flutes with positive high shear design for reduced cutting forces producing better finishes and increased tool life.
- Premium carbide blanks provide superior strength and increased wear resistance.
- Coated with our proprietary MDC coating for unmatched cutting performance and tool life.

PART #	DIA	INC ANG	# FL	LOC	TIP DIA +- .002	OAL	COATING
CHMRHP16560CBMDC	0.250	60°	5	0.163	0.060	2.50	MDC
CHMRHP24560CBMDC	0.375	60°	5	0.262	0.070	2.50	MDC
CHMRHP32560CBMDC	0.050	60°	5	0.362	0.080	3.00	MDC
CHMRHP40560CBMDC	0.625	60°	5	0.461	0.090	3.00	MDC
CHMRHP48560CBMDC	0.750	60°	5	0.561	0.100	3.00	MDC
CHMRHP16590CBMDC	0.250	90°	5	0.093	0.060	2.50	MDC
CHMRHP24590CBMDC	0.375	90°	5	0.151	0.070	2.50	MDC
CHMRHP32590CBMDC	0.050	90°	5	0.208	0.080	3.00	MDC
CHMRHP40590CBMDC	0.625	90°	5	0.266	0.090	3.00	MDC
CHMRHP48590CBMDC	0.750	90°	5	0.323	0.100	3.00	MDC
CHMRHP165120CBMDC	0.250	120°	5	0.053	0.060	2.50	MDC
CHMRHP245120CBMDC	0.375	120°	5	0.086	0.070	2.50	MDC
CHMRHP325120CBMDC	0.050	120°	5	0.119	0.080	3.00	MDC
CHMRHP405120CBMDC	0.625	120°	5	0.152	0.090	3.00	MDC
CHMRHP485120CBMDC	0.750	120°	5	0.186	0.100	3.00	MDC

CRER SERIES
3FL Double End Corner Rounding End Mill

- Top and bottom washout eliminates mismatch and leaves a much better finish.
- Premium carbide blanks provide superior strength and increased wear resistance.
- Available with MDC coating for unmatched performance and tool life.
- Manufacturing tolerances far above industry standards.

Uncoated Number	MDC Coated Number	Radius	Minor Diameter	# FL	OAL	Shank
CRE.010083CB	CRE.010083CBMDC	0.010	0.085	3	1.500	0.125
CRE.015083CB	CRE.015083CBMDC	0.015	0.075	3	1.500	0.125
CRE.020083CB	CRE.020083CBMDC	0.020	0.056	3	1.500	0.125
CRE.025123CB	CRE.025123CBMDC	0.025	0.107	3	2.000	0.187
CRE.030123CB	CRE.030123CBMDC	0.030	0.097	3	2.000	0.187
CRE.035123CB	CRE.035123CBMDC	0.035	0.087	3	2.000	0.187
CRE.040123CB	CRE.040123CBMDC	0.040	0.077	3	2.000	0.187
CRE.045163CB	CRE.045163CBMDC	0.045	0.130	3	2.000	0.250
CRE.050163CB	CRE.050163CBMDC	0.050	0.120	3	2.000	0.250
CRE.055163CB	CRE.055163CBMDC	0.055	0.110	3	2.000	0.250
CRE.060163CB	CRE.060163CB30C	0.060	0.100	3	2.000	0.250
CRE.065163CB	CRE.065163CBMDC	0.065	0.090	3	2.000	0.250
CRE.070163CB	CRE.070163CBMDC	0.070	0.080	3	2.000	0.250
CRE.075163CB	CRE.075163CBMDC	0.075	0.070	3	2.000	0.250
CRE.080203CB	CRE.080203CBMDC	0.080	0.122	3	2.500	0.312
CRE.085203CB	CRE.085203CBMDC	0.085	0.112	3	2.500	0.312
CRE.090203CB	CRE.090203CBMDC	0.090	0.102	3	2.500	0.312
CRE.095203CB	CRE.095203CBMDC	0.095	0.092	3	2.500	0.312
CRE.100203CB	CRE.100203CBMDC	0.100	0.082	3	2.500	0.312
CRE.105243CB	CRE.105243CBMDC	0.105	0.135	3	2.500	0.375
CRE.110243CB	CRE.110243CBMDC	0.110	0.125	3	2.500	0.375
CRE.115243CB	CRE.115243CBMDC	0.115	0.115	3	2.500	0.375
CRE.120243CB	CRE.120243CBMDC	0.120	0.105	3	2.500	0.375
CRE.125243CB	CRE.125243CBMDC	0.125	0.095	3	2.500	0.375
CRE.130243CB	CRE.130243CBMDC	0.130	0.085	3	2.500	0.375
CRE.140283CB	CRE.140283CBMDC	0.140	0.127	3	2.500	0.437
CRE.150283CB	CRE.150283CBMDC	0.150	0.107	3	2.500	0.437
CRE.156323CB	CRE.156323CBMDC	0.156	0.158	3	2.500	0.500
CRE.160323CB	CRE.160323CBMDC	0.160	0.150	3	2.500	0.500
CRE.170323CB	CRE.170323CBMDC	0.170	0.130	3	2.500	0.500
CRE.180323CB	CRE.180323CBMDC	0.180	0.110	3	2.500	0.500
CRE.187323CB	CRE.187323CBMDC	0.187	0.096	3	2.500	0.500
CRE.190323CB	CRE.190323CBMDC	0.190	0.090	3	2.500	0.500
CRE.200363CB	CRE.200363CBMDC	0.200	0.132	3	2.500	0.562
CRE.210363CB	CRE.210363CBMDC	0.210	0.112	3	3.000	0.562
CRE.220403CB	CRE.220403CBMDC	0.220	0.155	3	3.000	0.625
CRE.236403CB	CRE.236403CBMDC	0.236	0.123	3	3.000	0.625
CRE.250483CB	CRE.250483CBMDC	0.250	0.210	3	3.000	0.750

Non-standard lengths and diameters are available upon request.

CREL SERIES
3FL Double End Corner Rounding Long Length End Mill

- Top and bottom washout eliminates mismatch and leaves a much better finish.
- Premium carbide blanks provide superior strength and increased wear resistance.
- Available with MDC coating for unmatched performance and tool life.
- Manufacturing tolerances far above industry standards.

Uncoated Number	MDC Coated Number	Radius	Minor Diameter	# FL	OAL	Shank
CREL.010163CB	CREL.010163CBMDC	0.010	0.198	3	4.000	0.250
CREL.015163CB	CREL.015163CBMDC	0.015	0.188	3	4.000	0.250
CREL.020163CB	CREL.020163CBMDC	0.020	0.178	3	4.000	0.250
CREL.025163CB	CREL.025163CBMDC	0.025	0.168	3	4.000	0.250
CREL.030163CB	CREL.030163CBMDC	0.030	0.158	3	4.000	0.250
CREL.035163CB	CREL.035163CBMDC	0.035	0.148	3	4.000	0.250
CREL.040163CB	CREL.040163CBMDC	0.040	0.138	3	4.000	0.250
CREL.050163CB	CREL.050163CBMDC	0.050	0.118	3	4.000	0.250
CREL.060163CB	CREL.060163CBMDC	0.060	0.098	3	4.000	0.250
CREL.070243CB	CREL.070243CBMDC	0.070	0.203	3	4.000	0.375
CREL.080243CB	CREL.080243CBMDC	0.080	0.183	3	4.000	0.375
CREL.090243CB	CREL.090243CBMDC	0.090	0.163	3	4.000	0.375
CREL.100243CB	CREL.100243CBMDC	0.100	0.143	3	4.000	0.375
CREL.110243CB	CREL.110243CBMDC	0.110	0.123	3	4.000	0.375
CREL.120243CB	CREL.120243CBMDC	0.120	0.103	3	4.000	0.375
CREL.125243CB	CREL.125243CBMDC	0.125	0.093	3	4.000	0.375

Non-standard lengths, diameters and radius sizes are available upon request.

SUPERBEE®

Proudly made in the USA!

Materials (Grade Selection)

Aluminum Wrought & Cast Alloy-Low Silicon, 6061-T6, 7075, Plastic
Aluminum- High Silicon And Copper Alloys Brass, Bronze
Cast Iron Nodular, Grey Cast Iron, Malleable Cast Iron
Non-Alloy Steel, Cast Steel Free Cutting Steel 1018, A36 ,8620
Low Alloy Steel ,Cast Steel 4130, 4140, 8620, 4330, 4340
Die & Mold Steels P20, A-2, D-2, M2, M42, T15
Stainless Steel (Precipitation)15-5Ph, 17-4Ph
Stainless Steels (Austentic)303, 304, 304L, 312, 316, 316L
High Temp Alloys (Alpha+Beta Alloys) Titanium Alloys Ti-6Al4V
High Temp Alloys(Ni & Co Based),Monel 400, Hastolloy, Inconel
Hardened Steels (55-60Rc)

App Key							
Substrate	C-5	C-5	C-5	C-5	C-2	C-2	C1-C3
Coating	MDC	ALTIN	TiCN-TiN	None	None	None	None
Edge Prep	Honed	Honed	Honed	Honed	Honed	Sharp	Honed

USA	ISO	UN COATED	COATED	CERMET	USA	ISO	UN COATED	COATED	CERMET
C8	P01		T5700		C4	K01	NT33	T520	NC57
C7	P10		T520	NC57	C3	K10			
C6	P20	NT56			C2	K20			
C5	P30 P40				C1	K30			

T5700 proprietary MDC coating on NT56, the ultimate in heat & wear resistance and lubricity. T5700 out performs all other coatings in steel, stainless steel and exotics. Upgrade to T5700 from AlTiN and increase SFPM by at least 15%. Feeds & speeds increased up to 30%, tool life increased up to 200% is normal with T5700.

T520 AlTiN coating on NT56. ATiN is a high performance coating which excels machining abrasive and hard to machine materials such as cast iron, aluminum alloys, tool steels and nickel alloys. Its superior oxidation resistance provides unparalleled performance in high temp machining. This coating is best for applications that generate the high heat at the tools cutting edge.

NT5T TiCN-TiN coating on NT56. Designed for added wear resistance when milling steel, stainless steel and cast iron.

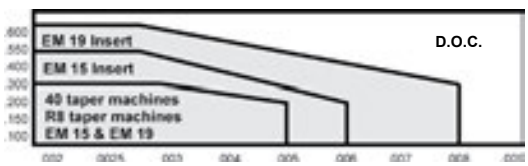
NT33 Uncoated grade for general purpose milling of aluminum, brass, cast iron and all non-ferrous materials. Excellent strength and wear resistance.

NT56 Uncoated carbide with extreme edge strength. Designed for general purpose milling of steel and cast iron. It is ideal for stainless steel and difficult machining conditions such as interrupted cutting.

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

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

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



RECOMMENDED CUTTING CONDITIONS

Material	RC Hardness	Grade	Cutting Speed Feet/Min	Feed In/Tooth
Mild Steel	—	T5700 / T520 NT56	500 - 1100	.003 - .008
Carbon Steel	—	T5700 / T520 NT56	500 - 1000	.003 - .008
Alloy Steel	36 & under 37 - 45	T5700 T520	450 - 850 350 - 650	.003 - .006
Stainless Steel	35 & under	T5700 / T520 NT56	325 - 850	.003 - .005
300 Series	—	T5700 / T520 NT56	325 - 550	.003 - .005
PH Stainless	33 & under	T5700 / T520 NT56	450 - 700	.002 - .004
15-5 / 17-4	34 - 40	T5700 / T520 NT56	325 - 650	.002 - .004
Die & Mold Steel / P20 H13	33 & under 34 - 42	T5700 / T520 NT56	450 - 750 350 - 550	.003 - .006
Cast Iron	—	NT56 / NT33 T5700 / T520	275 - 750	.004 - .008
Aluminum	—	NT33	900 - 3200	.004 - .008

SUPERBEE®

CUTTER BODY NOMENCLATURE

SUPERBEE INDEXABLE FORM CUTTERS

BE = 90° SHOULDER MILLING CUTTER
BB = BALL
BC = LARGE CONCAVE RADIUS CUTTER
BD = BACKDRAFT CUTTER
BBD = BACKDRAFT BALL END CUTTER
CB = COUNTERBORE
CM = CHAMFER/ANGLE SHELL MILL
CMS = CHAMFER/ANGLE MILL

DIAMETER IN 64ths OF AN INCH

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"

 # OF CUTTING TEETH / FLUTES

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

BE **64** **2**

BE6421564R1

15 **64** **R1**

INSERT TYPE

14 = EM14	21 = SD21.5
15 = EM15	22 = SD22
18 = EM18	32 = SP32
19 = EM19	42 = SP42

SHANK TYPE DIA. OR ARBOR HOLE

40 = 5/8"
48 = 3/4" SHK/ARBOR HOLE
64 = 1"
80 = 1-1/4" R8 = R8 TAPER SHANK

ANGLE, RADIUS OR BALL SERIES

A10 through A60 = ANGLE
C1 through C6 = CONCAVE RADIUS
T&BC# = Top & Bottom Concave
R1 to R8 = CONVEX RADIUS

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 **BE6411964*A45***.

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**

SUPERBEE®

INSERT NOMENCLATURE

SUPERBEE INDEXABLE CARBIDE INSERTS
EB = BALL NOSE CUTTER PARALLELOGRAM INSERT
EC = LARGE CONCAVE INSERT
EG = PRECISION GROUND SUPERBEE INSERT
EM = STANDARD PARALLELOGRAM INSERT
SD/SP - STANDARD SQUARE INSERT

EM

NOMINAL LENGTH (MM) / I.C. DIAMETER (INCH)	
EM14 = 14MM	21-22 = 1/4" I.C.
EM15 = 15MM	32 = 3/8" I.C.
EM18 = 18MM	42 = 1/2" I.C
EM19 = 19MM	52 = 5/8" I.C.

15

ANGLE, BALL, CONCAVE RADIUS OR SPECIALS
A = ANGLE
B = BALL END
C = CONCAVE RADIUS
BLANK = CONVEX RADIUS
S = SPECIAL

C

EM15C060ET520

060

RADIUS SIZE FOR "R" SERIES ANGLE CUTTERS	
015 = .015 RAD	190 = .190 RAD
030 = .030 RAD	250 = .250 RAD
060 = .060 RAD	312 = .312 RAD
090 = .090 RAD	375 = .375 RAD
120 = .120 RAD	437 = .437 RAD
160 = .160 RAD	500 = .500 RAD
58 = 5/8" BALL	34 = 3/4" BALL
78 = 7/8" BALL	1 = 1" BALL

E

EDGE PREPARATION
E - HONED
F = SHARP

T520

GRADE
NC57 = C5-C7
NT13 = C1-C3
NT33 = C3
NT56 = C5-C6
NT5T = TiN
T520 = AlTiN
T5700 = MDC

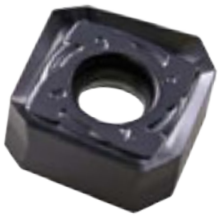
Please Note:
SUPERBEE **inserts are only interchangeable if you're using an R1 through R4 series cutter. That means an R5 through R8 cutter requires the specified insert matching the radius you intend to cut. An angle cutter that cuts a 30° angle requires an insert for a 30° angle, a concave radius cutter that cuts a .250" radius requires a .250" concave radius insert.**

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. A convex cutter requires a convex insert matching the radius you intend to cut. The same holds true for angle and concave cutters as well.

NEW!

45° COOLANT THROUGH FACE MILL

Part #	DIA	# Fl	Arbor Hole	Insert	Description	Screw #
FM9641532	1.50	4	0.50	FMI15	45 DEG FACE MILL 1.5 DIA 4 FLUTE 15MM FMI INSERT .500	FM15MMSMSCREW
FM12841548	2.00	4	0.75	FMI15	45 DEG FACE MILL 2.0 DIA 4 FLUTE 15MM FMI INSERT .750	" "
FM16051548	2.50	5	0.75	FMI15	45 DEG FACE MILL 2.5 DIA 5 FLUTE 15MM FMI INSERT .750	" "
FM19261564	3.00	6	1.00	FMI15	45 DEG FACE MILL 3.0 DIA 6 FLUTE 15MM FMI INSERT 1.0	" "
FM25671596	4.00	7	1.50	FMI15	45 DEG FACE MILL 4.0 DIA 7 FLUTE 15MM FMI INSERT 1.50	" "
FM32081596	5.00	8	1.50	FMI15	45 DEG FACE MILL 5.0 DIA 8 FLUTE 15MM FMI INSERT 1.50	" "



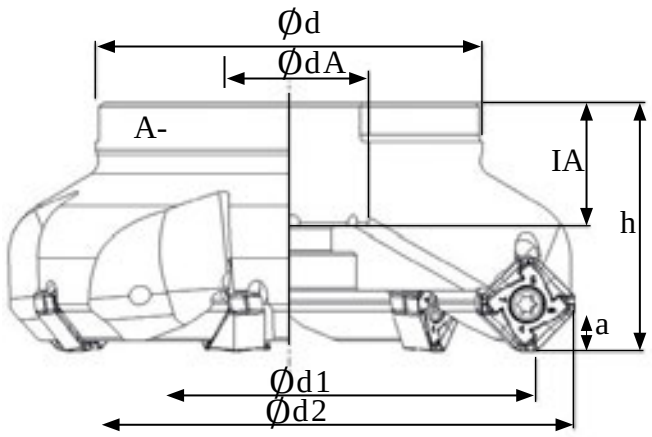
Steel
Part #: FMI15ET520
Grade: ET520 AlTiN

- **Double sided inserts with 8 indexes**
- **Designed with positive rake for smooth cutting action**

High Temp Alloys & Stainless Steels
Part #: FMI15ET5700
Grade: ET5700 MDC

MILLING TECH DATA
SPEEDS & FEEDS

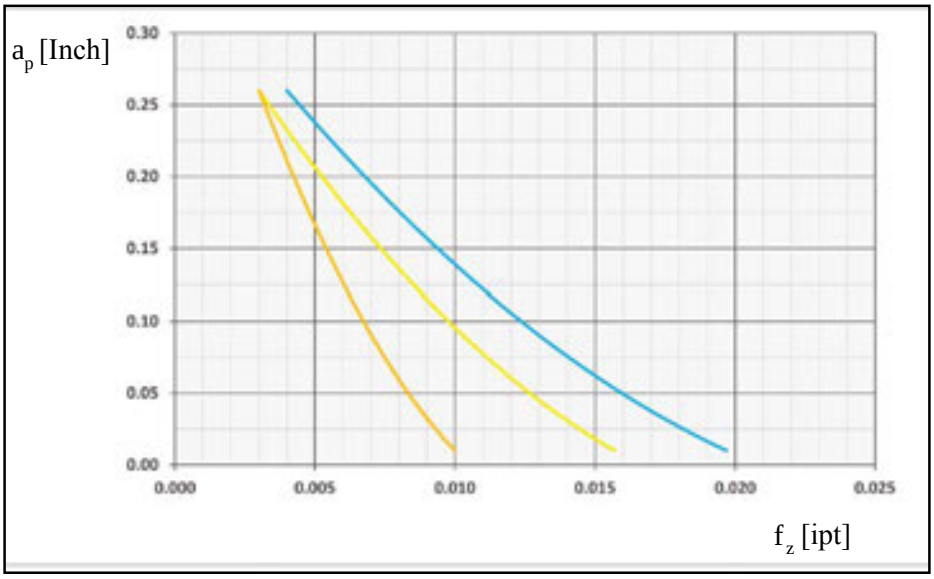
- Face Milling
- Slot Milling
- Chamfering



Part #	d1	d2	h	d	dA	a	n_{max} [min^{-1}]	Flutes (z)
FM9641532	1.50	2.091	1.772	1.811	0.50	0.256	15900	4
FM12841548	2.00	2.591	1.772	1.772	0.75	0.256	12700	4
FM16051548	2.50	3.091	1.772	1.968	0.75	0.256	10100	5
FM19261564	3.00	3.591	1.968	2.362	1.00	0.256	7900	6
FM25671596	4.00	4.591	2.480	3.779	1.50	0.256	6300	7
FM32081596	5.00	5.591	2.480	3.779	1.50	0.256	5000	8

FM15

Materials	Coating	Cutting Speed		Feed		Depth Of Cut	
		V_c Max	V_c Min	F_z Min [ipt]	F_z Max [ipt]	A_pMax [inch]	A_pMin [inch]
Steel	ET520	720	200	0.004	0.020	0.26	0.01
Stainless Steel	ET5700	660	200	0.003	0.016	0.26	0.01
High Temp Alloys	ET5700	250	80	0.003	0.010	0.26	0.01



NEW!

HIGH FEED COOLANT THROUGH SHELL MILL WITH 10MM INSERTS

Part #	DIA	# Fl	Arbor Hole	Insert	Description	Screw #
HF9641032	1.50	4	0.50	HFI10MM	HIGH FEED SHELL MILL 1.5 DIA 4 FLUTE 10MM HFI INSERT .500AH	HF10MMSMSCREW
HF12851048	2.00	5	0.75	HFI10MM	HIGH FEED SHELL MILL 2.0 DIA 5 FLUTE 10MM HFI INSERT .750AH	" "
HF16061048	2.50	6	0.75	HFI10MM	HIGH FEED SHELL MILL 2.5 DIA 6 FLUTE 10MM HFI INSERT .750AH	" "

HIGH FEED COOLANT THROUGH STICKMILL WITH 10MM INSERTS

Part #	DIA	# Fl	Arbor Hole	Insert	Description	Screw #
HF6431064	1.00	3	1.00	HFI10MM	HIGH FEED INTEGRAL SHANK 1.0 DIA 3 FLUTE 10MM INSERT 9.0 OAL or cut to specified OAL	HF10MMISSCREW

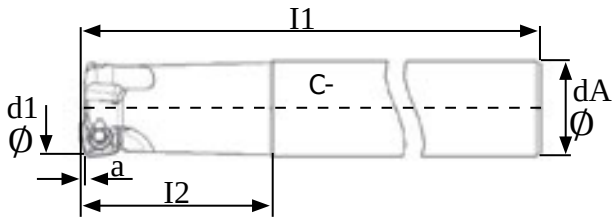
Steel
Part #: HFI10MMET520
Grade: ET520 AlTiN

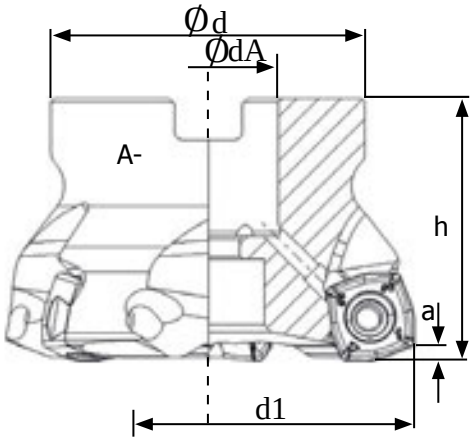
- **4 cutting edges for economical operation**
- **Insert designed for maximum feed rates**

High Temp Alloys
Part #: HFI10MMET5700
Grade: ET5700 MDC

HIGH FEED COOLANT THROUGH SHELL MILL 10MM TECH DATA

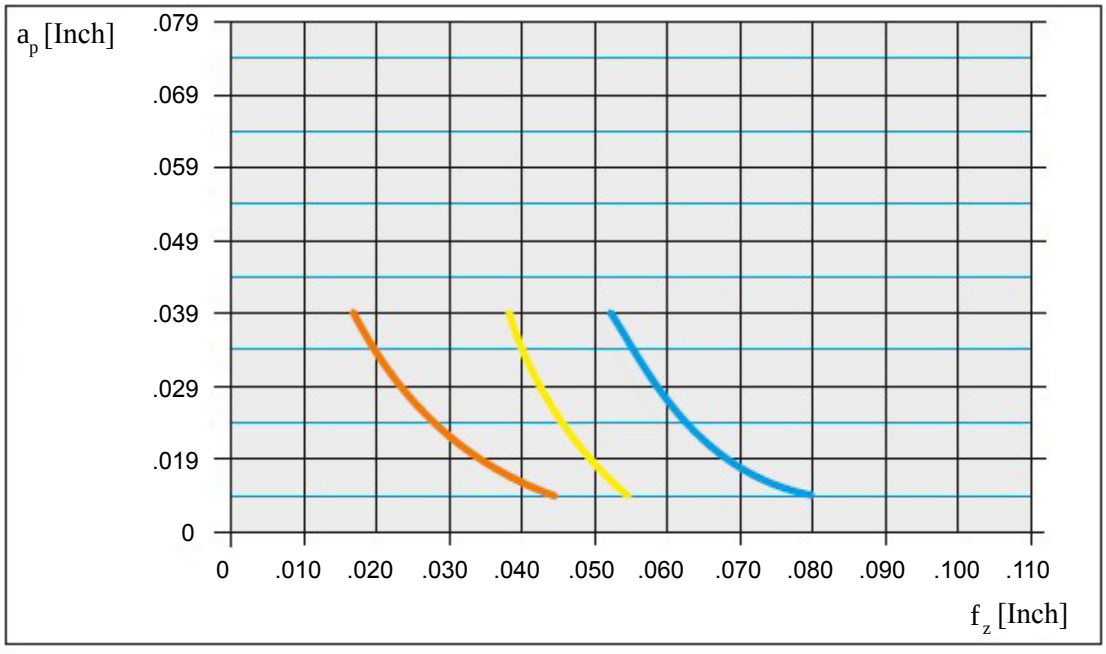
- Face Milling
- Helical Plunging
- Profile Milling
- Slot Milling
- Angle Milling
- Plunge Milling
- Pocket Milling





Part #	d1	I1	I2	h	d	dA	a	Flutes (z)
HF6431064	1.00	8.858	1.968	–	–	1.00	0.039	3
HF9641032	1.50	–	–	1.575	1.457	0.50	0.039	4
HF12851048	2.00	–	–	1.575	1.770	0.75	0.039	5
HF16061048	2.50	–	–	1.575	1.920	0.75	0.039	6

Materials	Coating	Cutting Speed		Feed		Depth Of Cut	
		V_c Max	V_c Min	F_z Min [ipt]	F_z Max [ipt]	A_pMax [inch]	A_pMin [inch]
Steel	ET520	720	200	0.051	0.079	0.039	0.010
Stainless Steel	ET5700	660	200	0.035	0.053	0.039	0.010
High Temp Alloys	ET5700	250	80	0.018	0.042	0.039	0.010



NEW!

HIGH FEED COOLANT THROUGH SHELL MILL WITH 13MM INSERTS

Part #	DIA	# Fl	Arbor Hole	Insert	Description	Screw #
HF12841348	2.00	4	0.75	HFI13MM	HIGH FEED SHELL MILL 2.0 DIA 4 FLUTE 13MM HFI INSERT .750AH	HF13MMSCREW
HF16051348	2.50	5	0.75	HFI13MM	HIGH FEED SHELL MILL 2.5 DIA 5 FLUTE 13MM HFI INSERT .750AH	" "
HF19271364	3.00	7	1.00	HFI13MM	HIGH FEED SHELL MILL 3.0 DIA 7 FLUTE 13MM HFI INSERT 1.0AH	" "

HIGH FEED COOLANT THROUGH STICKMILL WITH 13MM INSERTS

Part #	DIA	# Fl	Arbor Hole	Insert	Description	Screw #
HF9631396	1.50	3	1.50	HFI13MM	HIGH FEED INTEGRAL SHANK 1.5 DIA 3 FLUTE 13MM INSERT 1.5D 10 OAL or cut to specified OAL	HF13MMSCREW

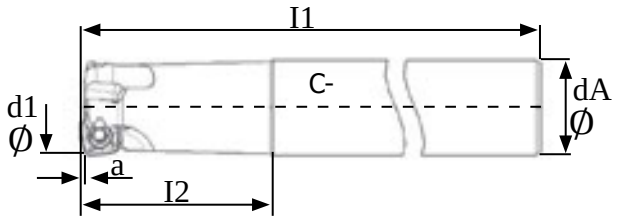
Steel
Part #: HFI13MMET520
Grade: ET520 AlTiN

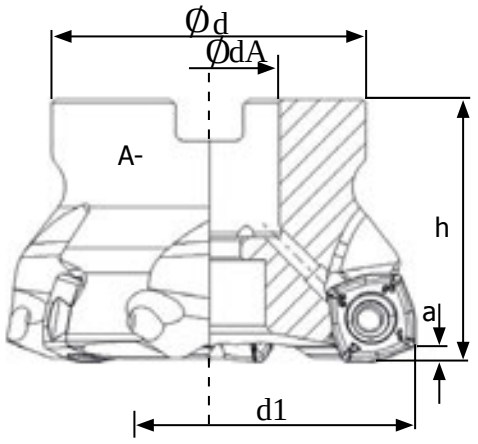
- **4 cutting edges for economical operation**
- **Insert designed for maximum feed rates**

High Temp Alloys
Part #: HFI13MMET5700
Grade: ET5700 MDC

HIGH FEED COOLANT THROUGH SHELL MILL 13MM TECH DATA

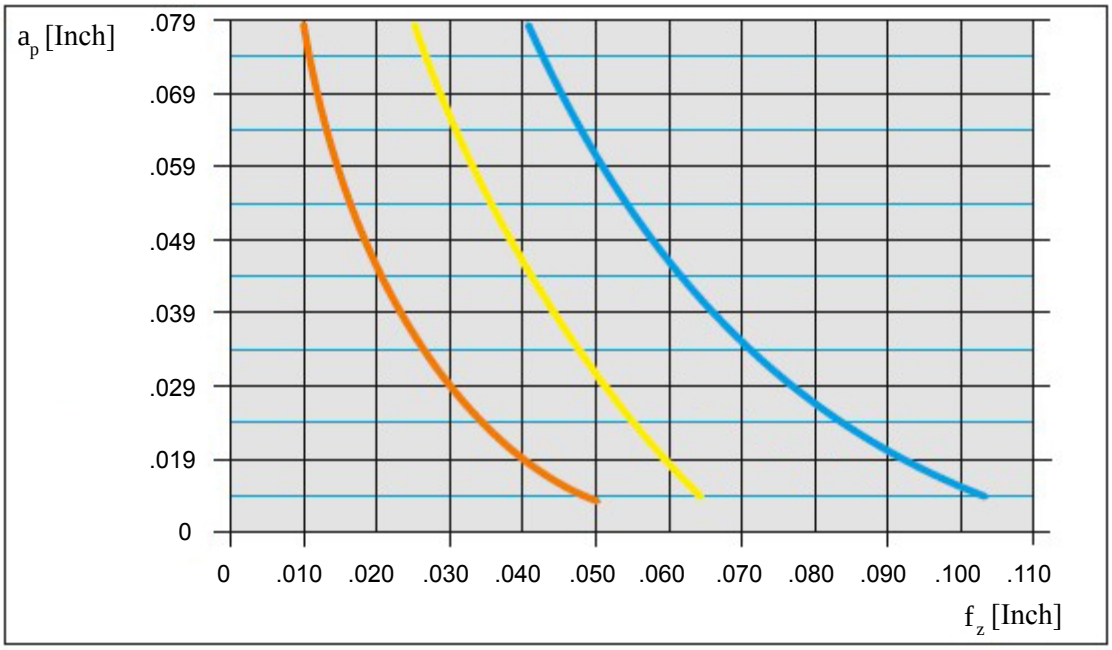
- Face Milling
- Helical Plunging
- Profile Milling
- Slot Milling
- Angle Milling
- Plunge Milling
- Pocket Milling





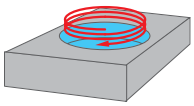
Part #	d1	I1	I2	h	d	dA	a	Flutes (z)
HF9631396	1.50	9.843	2.480	–	–	1.50	0.079	3
HF12841348	2.00	–	–	1.575	1.773	0.75	0.079	4
HF16051348	2.50	–	–	1.575	1.968	0.75	0.079	5
HF19271364	3.00	–	–	1.968	2.283	1.00	0.079	7

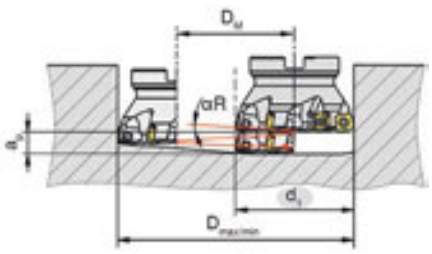
Materials	Coating	Cutting Speed		Feed		Depth Of Cut	
		V_c Max	V_c Min	F_z Min [ipt]	F_z Max [ipt]	A_pMax [inch]	A_pMin [inch]
Steel	**ET520**	720	200	0.052	0.112	0.079	0.010
Stainless Steel	**ET5700**	660	200	0.036	0.074	0.079	0.010
High Temp Alloys	**ET5700**	250	80	0.020	0.060	0.079	0.010

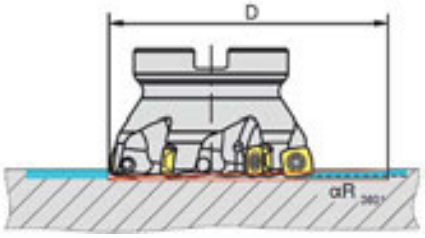


HIGH FEED 10MM TECH DATA CONTINUED

Application data (helical plunge milling HFI10MM)







D_{max} [inch] = maximum diameter for flat bottom ground

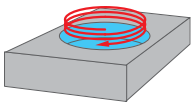
D_{min} [inch] = minimum hole diameter

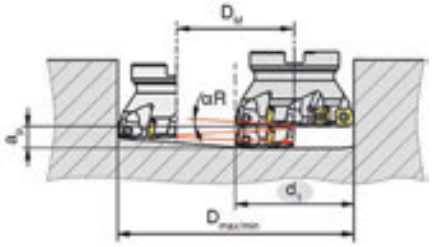
$D_M = D_{max} - d_1$ or $D_{min} - d_1$

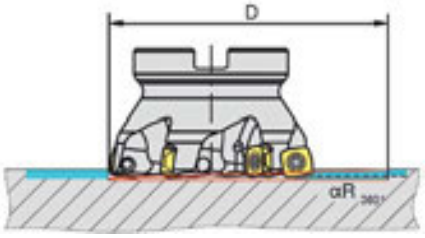
Part #	d1 [inch]	D_{max} [inch]	D_{min} [inch]	α_R [°]
HF6431064	1.00	1.9213	1.4094	3.1
HF9641032	1.50	2.9213	2.4094	1.0
HF12851048	2.00	3.9213	3.4094	0.8
HF16061048	2.50	4.9213	4.4094	0.7

HIGH FEED 13MM TECH DATA CONTINUED

Application data (helical plunge milling HFI13MM)







D_{max} [inch] = maximum diameter for flat bottom ground

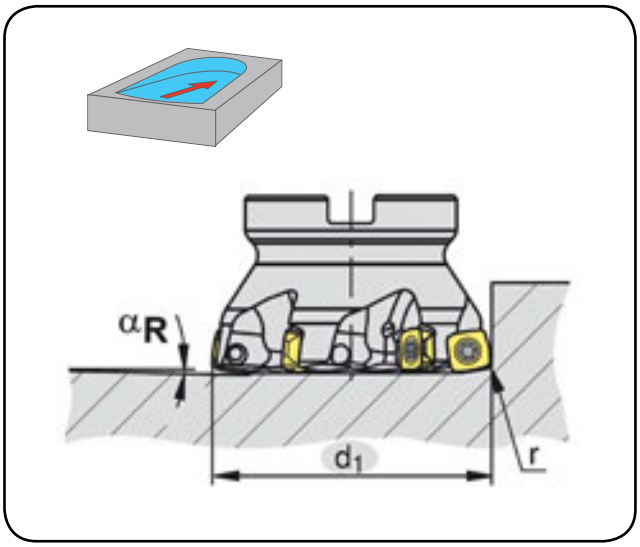
D_{min} [inch] = minimum hole diameter

$D_M = D_{max} - d_1$ or $D_{min} - d_1$

Part #	d1 [inch]	D_{max} [inch]	D_{min} [inch]	α_R [°]
HF9631396	1.50	2.9213	2.2126	3.7
HF12841348	2.00	3.9213	3.2126	1.3
HF16051348	2.50	4.9213	4.2126	0.9
HF19271364	3.00	5.9213	5.2126	1.1

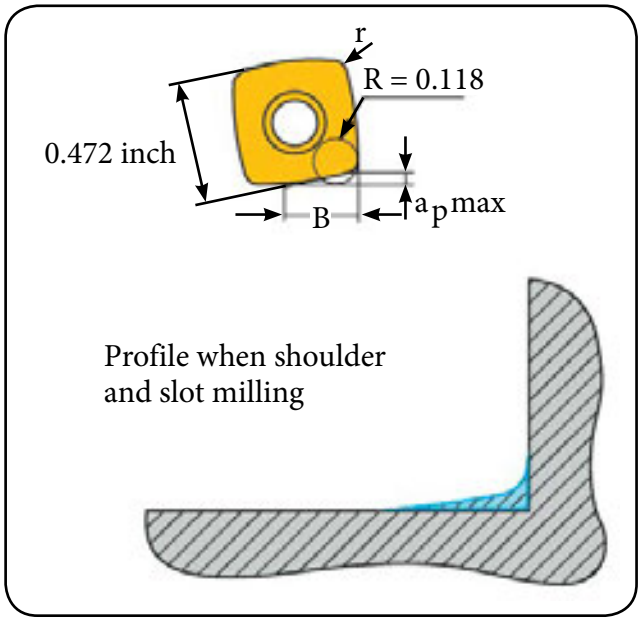
HIGH FEED 10MM & HFI 13MM TECH DATA CONTINUED

Application data (angled ramping)



Part #	d1	α_R [°]
HF6431064	1.000	3.5
HF9641032	1.500	1.2
HF12851048	2.000	0.9
HF16061048	2.500	0.8
HF9631396	1.500	4.4
HF12841348	2.000	1.4
HF16051348	2.500	1.1
HF19271364	3.000	1.0

Depth of cut and remaining material



R = Programmed Radius

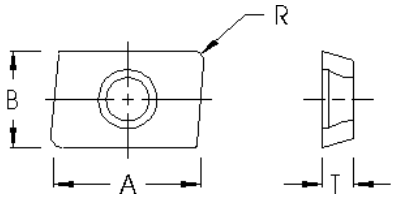
Recommended $f_z \geq 0.020$ inch/ tooth

Insert	I [inch]	R [inch]	B [inch]	r [inch]	$\alpha a_{p\ max}$ [inch]
HFI10MM	0.3937	0.0787	0.2323	0.0315	0.0394
HFI13MM	0.5118	0.1181	0.3346	0.0394	0.0787

EM15 INS CX SERIES
Convex Fillet Radius Inserts

30 different convex fillet radii stocked in .010 increments including fractional and metric sizes, 3 different types of cutter bodies to choose from. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.

- Superbee inserts are precision ground on all surfaces ensuring the tightest tolerances possible. This provides a stronger edge with better wear characteristics than a pressed insert.
- T5700 grade provides superior lubricity & heat resistance, up to 30% higher SFM and up to 70% better tool life in steel, stainless and exotic materials.



Materials (Grade Selection)

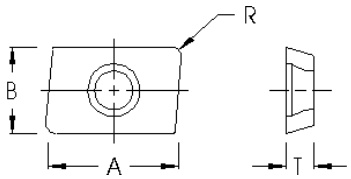
Range	Part Number	Radius	Frac/ Metric	A	B	T	App Key						
							Substrate	C5	C5	C5	C5	C2	C2
							Coating	MDC	AlTiN	TiCN-TiN	None	None	None
							Edge Prep	Honed	Honed	Honed	Honed	Honed	Sharp
R1	EM15007	0.007		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15015	0.015	1/64	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15020	0.020		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15030	0.030	1/32	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15040	0.040	1MM	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15050	0.050		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15060	0.060	1/16	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
R2	EM15070	0.070		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15080	0.080		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15090	0.090		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15100	0.100		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15110	0.110	7/64	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15120	0.120	3MM	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15125	0.125	1/8	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15130	0.130		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
R3	EM15140	0.140	9/64	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15150	0.150		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15156	0.156	5/32, 4MM	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15160	0.160		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15170	0.170		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15187	0.187	3/16	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15190	0.190		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
R4	EM15200	0.200		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15210	0.210		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15220	0.220		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15250	0.250	1/4	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
R5	EM15312	0.312	5/16	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
R6	EM15375	0.375	3/8	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33

Special shapes, forms and sizes are available upon request.

EM19 INS CX SERIES
Convex Fillet Radius Inserts

30 different convex fillet radii stocked in .010 increments including fractional and metric sizes, 3 different types of cutter bodies to choose from. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.

- Superbee inserts are precision ground on all surfaces ensuring the tightest tolerances possible. This provides a stronger edge with better wear characteristics than a pressed insert.
- T5700 grade provides superior lubricity & heat resistance, up to 30% higher SFM and up to 70% better tool life in steel, stainless and exotic materials.



Materials (Grade Selection)

Range	Part Number	Radius	Frac/ Metric	A	B	T	App Key						
							Substrate	C5	C5	C5	C5	C2	C2
							Coating	MDC	AlTiN	TiCN-TiN	None	None	None
							Edge Prep	Honed	Honed	Honed	Honed	Honed	Sharp
R1	EM19007	0.007		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19015	0.015	1/64	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19020	0.020		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19030	0.030	1/32	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19040	0.040	1MM	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19050	0.050		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19060	0.060	1/16	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
R2	EM19070	0.070		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19080	0.080		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19090	0.090		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19100	0.100		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19110	0.110	7/64	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19120	0.120	3MM	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19125	0.125	1/8	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19130	0.130		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
R3	EM19140	0.140	9/64	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19150	0.150		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19156	0.156	5/32, 4MM	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19160	0.160		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19170	0.170		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19187	0.187	3/16	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19190	0.190		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
R4	EM19200	0.200		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19210	0.210		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19220	0.220		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM19250	0.250		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
R5	EM19312	0.312	5/16	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
R6	EM19375	0.375	3/8	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
R7	EM19437	0.437	7/16	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
R8	EM19500	0.500	1/2	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33

Special shapes, forms and sizes are available upon request.

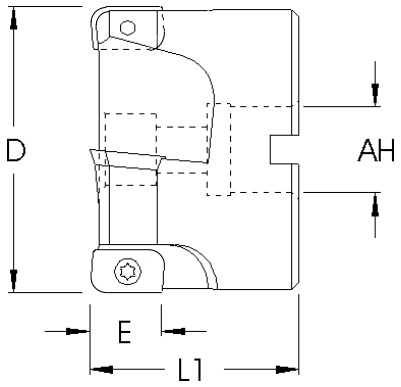
BE CX WS SERIES
Weldon Shank Indexable Convex Fillet Radius Cutter

End mill style indexable cutter body with 30 different convex radii stocked in .010 increments including fractional and metric sizes. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.

Part Number	D	Shank	L1	L2	FL	E	Insert	Convex Radius Range							
								.007-.060R	.070-.130R	.140-.190R	.200-.250R	.312R	.375R	.437R	.050R
BE4011540	0.625	0.625	3.375	1.000	1	0.625	EM15	R1	R2	R3	R4	R5	R6		
BE4411548	0.687	0.75	4.000	1.250	1	0.625	EM15	R1	R2	R3	R4	R5	R6		
BE4811548	0.750	0.75	4.000	1.250	1	0.625	EM15	R1	R2	R3	R4	R5	R6		
BE5611948	0.875	0.75	4.500	1.250	1	0.750	EM19	R1	R2	R3	R4	R5	R6	R7	R8
BE5611964	0.875	1.0	4.500	1.250	1	0.750	EM19	R1	R2	R3	R4	R5	R6	R7	R8
BE6411948	1.000	0.75	4.500	1.250	1	0.750	EM19	R1	R2	R3	R4	R5	R6	R7	R8
BE6411964	1.000	1.0	4.500	1.250	1	0.750	EM19	R1	R2	R3	R4	R5	R6	R7	R8
BE6421548	1.000	0.75	4.500	1.250	2	0.625	EM15	R1	R2	R3	R4	R5	R6		
BE6421564	1.000	1.0	4.500	1.250	2	0.625	EM15	R1	R2	R3	R4	R5	R6		
BE8021980	1.250	1.25	5.000	1.750	2	0.750	EM19	R1	R2	R3	R4	R5	R6	R7	R8
BE8031580	1.250	1.25	5.000	1.750	3	0.625	EM15	R1	R2	R3	R4	R5	R6		
BE9621980	1.500	1.25	5.000	1.750	2	0.750	EM19	R1	R2	R3	R4	R5	R6	R7	R8
BE9631580	1.500	1.25	5.000	1.750	3	0.625	EM15	R1	R2	R3	R4	R5	R6		

BE CX SM SERIES
Shell Mill Indexable Convex Fillet Radius Cutter

Shell mill style cutter body with more flutes cutting to achieve faster feed rates. 30 different convex radii stocked in .010 increments including fractional and metric sizes. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.

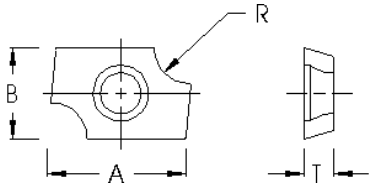


Part Number	D	AH	L1	FL	E	Insert	Last 2 Digits of Part Number for Radius							
							.007-.060R	.070-.130R	.140-.190R	.200-.250R	.312R	.375R	.437R	.050R
BE12831948	2.000	0.750	1.825	3	0.625	EM19	R1	R2	R3	R4	R5	R6	R7	R8
BE12851548	2.000	0.750	1.825	5	0.625	EM15	R1	R2	R3	R4	R5	R6		
BE14451548	2.250	0.750	1.825	5	0.625	EM15	R1	R2	R3	R4	R5	R6		
BE16031948	2.500	0.750	1.825	3	0.750	EM19	R1	R2	R3	R4	R5	R6	R7	R8
BE16051548	2.500	0.750	1.825	5	0.625	EM15	R1	R2	R3	R4	R5	R6		
BE19261564	3.000	1.000	1.825	6	0.625	EM15	R1	R2	R3	R4	R5	R6		
BE22461580	3.500	1.250	1.825	6	0.625	EM15	R1	R2	R3	R4	R5	R6		

EM15 INS CV SERIES
Concave Corner Rounding Radius Inserts

Pick from 32 different corner rounding radii stocked in .010 increments including fractional and metric sizes, three different types of cutter bodies to choose from. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.

- Superbee inserts are precision ground on all surfaces ensuring the tightest tolerances possible. This provides a stronger edge with better wear characteristics than a pressed insert.
- T5700 grade provides superior lubricity & heat resistance, up to 30% higher SFM and up to 70% better tool life in steel, stainless and exotic materials.



Materials (Grade Selection)

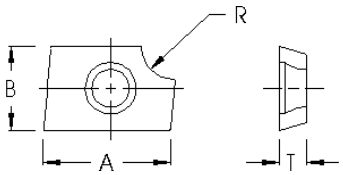
Range	Part Number	Radius	Frac/ Metric	A	B	T	App Key						
							Substrate	C5	C5	C5	C5	C2	C2
							Coating	MDC	AlTiN	TiCN-TiN	None	None	None
							Edge Prep	Honed	Honed	Honed	Honed	Honed	Sharp
C1	EM15C010	0.010		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15C015	0.015	1/64	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15C020	0.020		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15C030	0.030	1/32	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15C0393	0.039	1MM	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15C040	0.040	1MM	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15C050	0.050		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15C060	0.060	1/16	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
C2	EM15C070	0.070		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15C0787	0.079	5/64, 2MM	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15C080	0.080		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15C090	0.090		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15C100	0.100		0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15C110	0.110	7/64	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15C118	0.118	3MM	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15C120	0.120	3MM	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	EM15C125	0.125	1/8	0.625	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33

Special shapes, forms and sizes are available upon request.

EM19 INS CV SERIES
Concave Corner Rounding Radius Inserts

Pick from 32 different corner rounding radii stocked in .010 increments including fractional and metric sizes, three different types of cutter bodies to choose from. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.

- Superbee inserts are precision ground on all surfaces ensuring the tightest tolerances possible. This provides a stronger edge with better wear characteristics than a pressed insert.
- T5700 grade provides superior lubricity & heat resistance, up to 30% higher SFM and up to 70% better tool life in steel, stainless and exotic materials.



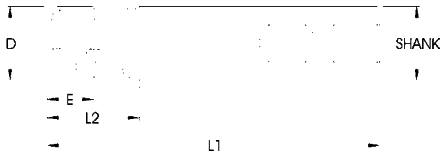
Materials (Grade Selection)

	Range	Part Number	Radius	Frac/ Metric	A	B	T	App Key						
								Substrate	C5	C5	C5	C5	C2	C2
								Coating	MDC	AlTiN	TiCN-TiN	None	None	None
								Edge Prep	Honed	Honed	Honed	Honed	Honed	Sharp
Double End	C1	EM19C010	0.010		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C015	0.015	1/64	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C020	0.020		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C030	0.030	1/32	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C0393	0.039	1MM	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C040	0.040	1MM	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C050	0.050		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C060	0.060	1/16	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	C2	EM19C070	0.070		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C0787	0.079	5/64, 2MM	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C080	0.080		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C090	0.090		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C100	0.100		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C110	0.110	7/64	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C118	0.118	3MM	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C120	0.120	3MM	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C125	0.125	1/8	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	C3	EM19C130	0.130		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C140	0.140	9/64	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C150	0.150		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C156	0.156	5/32, 4MM	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C157	0.157	5/32, 4MM	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C160	0.160		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
Single End	C4	EM19C170	0.170		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C180	0.180		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C187	0.187	3/16	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C190	0.190		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	C5	EM19C197	0.197	5MM	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C200	0.200		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C210	0.210		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C220	0.220		0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
	C6	EM19C236	0.236	15/64, 6MM	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
		EM19C250	0.250	1/4	0.750	0.500	0.156		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33

Special shapes, forms and sizes are available upon request.

BE CV WS SERIES
Weldon Shank Indexable Concave Corner Rounding Cutter

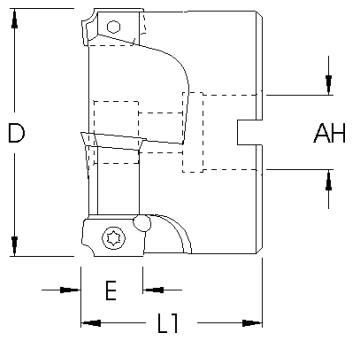
End mill style indexable cutter body with 32 different corner rounding radii stocked in .010 increments including fractional and metric sizes. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.



Part Number	D	Shank	L1	L2	Flutes	E	Insert	Concave Radius Range .010-.060	.070-.125	.130-.160	.170-.190	.197-.220	.236-.250
BE4011540	0.625	0.625	3.375	1.000	1	0.625	**EM15**	**C1**	**C2**				
BE4411548	0.687	0.750	4.000	1.250	1	0.625	**EM15**	**C1**	**C2**				
BE4811548	0.750	0.750	4.000	1.250	1	0.625	**EM15**	**C1**	**C2**				
BE5611948	0.875	0.750	4.500	1.250	1	0.750	**EM19**	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**
BE5611964	0.875	1.000	4.500	1.250	1	0.750	**EM19**	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**
BE6411948	1.000	0.750	4.500	1.250	1	0.750	**EM19**	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**
BE6411964	1.000	1.000	4.500	1.250	1	0.750	**EM19**	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**
BE6421548	1.000	0.750	4.500	1.250	2	0.625	**EM15**	**C1**	**C2**				
BE6421564	1.000	1.000	4.500	1.250	2	0.625	**EM15**	**C1**	**C2**				
BE8021980	1.250	1.250	5.000	1.750	2	0.750	**EM19**	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**
BE8031580	1.250	1.250	5.000	1.750	3	0.625	**EM15**	**C1**	**C2**				
BE9621980	1.500	1.250	5.000	1.750	2	0.750	**EM19**	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**
BE9631580	1.500	1.250	5.000	1.750	3	0.625	**EM15**	**C1**	**C2**				

BE CV SM SERIES
Shell Mill Indexable Concave Corner Rounding Cutter

Shell mill style indexable cutter with 32 different corner rounding radii stocked in .010 increments including fractional and metric sizes. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.

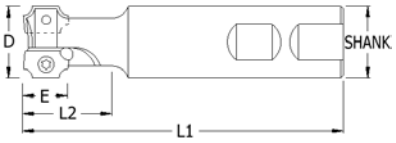


Part Number	D	AH	L1	Flutes	E	Insert	Last 2 Digits of Part Number for Radius .010-.060	.070-.125	.130-.160	.170-.190	.197-.220	.236-.250
BE12831948	2.000	0.750	1.825	3	0.650	**EM19**	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**
BE12851548	2.000	0.750	1.825	5	0.550	**EM15**	**C1**	**C2**				
BE14451548	2.250	0.750	1.825	5	0.550	**EM15**	**C1**	**C2**				
BE16031948	2.500	0.750	1.825	3	0.650	**EM19**	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**
BE16051548	2.500	0.750	1.825	5	0.550	**EM15**	**C1**	**C2**				
BE19261564	3.000	1.000	1.825	5	0.550	**EM15**	**C1**	**C2**				
BE22461580	3.500	1.250	1.825	6	0.550	**EM15**	**C1**	**C2**				

BE TNB SERIES

Top & Bottom 180° Corner Rounding Cutter

End mill style indexable cutter body for 180° corner rounding, cuts a radius on the top or bottom. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.



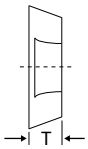
Part Number	D	Shank	L1	L2	Flutes	E	Insert
BE6421548TBC1	1.000	0.750	4.500	1.250	2	0.625	EM15
BE6421548TBC2	1.000	0.750	4.500	1.250	2	0.625	EM15
BE6421564TBC1	1.000	1.000	4.500	1.250	2	0.625	EM15
BE6421564TBC2	1.000	1.000	4.500	1.250	2	0.625	EM15
BE8021980TBC3	1.250	1.250	5.000	1.750	2	0.750	EM19
BE8021980TBC4	1.250	1.250	5.000	1.750	2	0.750	EM19
BE8021980TBC5	1.250	1.250	5.000	1.750	2	0.750	EM19
BE8021980TBC6	1.250	1.250	5.000	1.750	2	0.750	EM19
BE8031580TBC1	1.250	1.250	5.000	1.750	3	0.625	EM15
BE8031580TBC2	1.250	1.250	5.000	1.750	3	0.625	EM15

EMS INS TB SERIES

Top & Bottom 180° Corner Rounding Inserts

These inserts cut a full 180° radius on the top, bottom or both. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.

- Superbee inserts are precision ground on all surfaces ensuring the tightest tolerances possible. This provides a stronger edge with better wear characteristics than a pressed insert.
- T5700 grade provides superior lubricity & heat resistance, up to 30% higher SFM and up to 70% better tool life in steel, stainless and exotic materials.



Materials (Grade Selection)

Part Number	Radius	Frac/ Metric	A	B	T
App Key					
Substrate					
Coating					
Edge Prep					
EM15C030TB	0.030	1/32	0.625	0.375	0.125
EM15C0393TB	0.039	1MM	0.625	0.375	0.125
EM15C060TB	0.060	1/16	0.625	0.375	0.125
EM15C0787TB	0.079	5/64, 2MM	0.625	0.375	0.125
EM15C090TB	0.090		0.625	0.375	0.125
EM15C118TB	0.118	3MM	0.625	0.375	0.125
EM15C120TB	0.120	3MM	0.625	0.375	0.125
EM15C125TB	0.125	1/8	0.625	0.375	0.125
EM19C156TB	0.156	5/32, 4MM	0.750	0.500	0.156
EM19C157TB	0.157	5/32, 4MM	0.750	0.500	0.156
EM19C187TB	0.187	3/16	0.750	0.500	0.156
EM19C197TB	0.197	5MM	0.750	0.500	0.156
EM19C236TB	0.236	15/64, 6MM	0.750	0.500	0.156
EM19C250TB	0.250	1/4	0.750	0.500	0.156

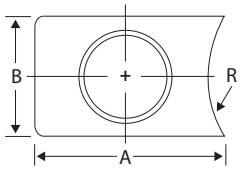
App Key					
Substrate	C5	C5	C5	C2	C2
Coating	MDC	ALTIN	None	None	None
Edge Prep	Honed	Honed	Honed	Honed	Sharp
	ET5700	ET520	ENT56	ENT33	FNT33

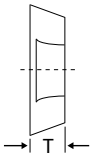
EC15 INS SERIES
Large Corner Rounding Concave Inserts

The fastest way to cut a large radius, patent protected design breaks up a large radius into segments reducing tool pressure and creating up to 10 times faster feeds. Over 40 different radii available including fractional and metric sizes.

- Superbee inserts are precision ground on all surfaces ensuring the tightest tolerances possible. This provides a stronger edge with better wear characteristics than a pressed insert.
- T5700 grade provides superior lubricity & heat resistance, up to 30% higher SFM and up to 70% better tool life in steel, stainless and exotic materials.

PATENT # 6,053,673



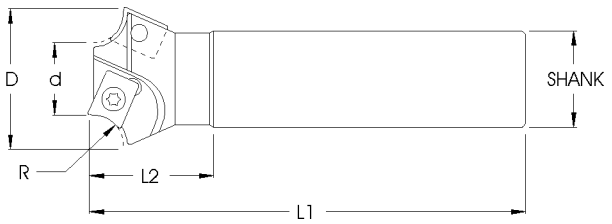


Materials (Grade Selection)

Part Number	Radius	Frac/ Metric	A	B	T	App Key						
						Substrate	C5	C5	C5	C5	C2	C2
						Coating	MDC	AlTiN	TiCN-TiN	None	None	None
						Edge Prep	Honed	Honed	Honed	Honed	Honed	Sharp
EC15C250	0.250	1/4	0.500	0.375	0.125		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC15C275	0.275	7MM	0.500	0.375	0.125		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC15C281	0.281	9/32	0.500	0.375	0.125		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC15C312	0.312	5/16	0.500	0.375	0.125		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC15C315	0.315	8MM	0.500	0.375	0.125		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC15C343	0.343	11/32	0.500	0.375	0.125		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC15C354	0.354	9MM	0.500	0.375	0.125		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC15C375	0.375	3/8	0.500	0.375	0.125		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC15C393	0.393	10MM	0.500	0.375	0.125		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C406	0.406	13/32	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C433	0.433	11MM	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C437	0.437	7/16	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C468	0.468	15/32	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C472	0.472	12MM	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C500	0.500	1/2	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C512	0.512	13MM	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC15C531	0.531	17/32	0.500	0.375	0.125		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC15C551	0.551	14MM	0.500	0.375	0.125		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC15C562	0.562	9/16	0.500	0.375	0.125		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC15C590	0.590	15MM	0.500	0.375	0.125		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC15C625	0.625	5/8	0.500	0.375	0.125		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC15C629	0.629	16MM	0.500	0.375	0.125		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C656	0.656	21/32	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C669	0.669	17MM	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C687	0.687	11/16	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C708	0.708	18MM	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C718	0.718	23/32	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C748	0.748	19MM	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C750	0.750	3/4	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C781	0.781	25/32	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C787	0.787	20MM	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C812	0.812	13/16	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C875	0.875	7/8	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C906	0.906	29/32, 23MM	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C968	0.968	31/32	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C984	0.984	63/64, 25MM	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EC19C100	1.000	1	0.625	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**

BE BC SERIES
Large Concave Corner Rounding Radius Cutter

Patent protected indexable design breaks up a large radius into segments reducing tool pressure and creating up to 10 times faster feeds. Over 40 different radii available including fractional and metric sizes.

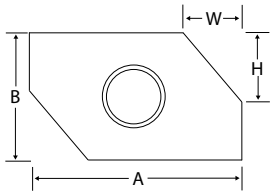


Part Number	R	D	d	Shank	L1	L2	FLutes	Insert Range
BC4821564C250	.250 - .280	1.250	0.750	1.00	4.500	1.250	2	EC15 (.250 - .280)
BC4821564C281	.281 - .311	1.312	0.750	1.00	4.500	1.250	2	EC15 (.281 - .311)
BC4821564C312	.312 - .342	1.375	0.750	1.00	4.500	1.250	2	EC15 (.312 - .342)
BC4821564C343	.343 - .374	1.437	0.750	1.00	4.500	1.250	2	EC15 (.343 - .374)
BC4821564C375	.375 - .405	1.500	0.750	1.00	4.500	1.250	2	EC15 (.375 - .405)
BC5621980C406	.406 - .436	1.687	0.875	1.25	5.000	1.750	2	EC19 (.460 - .436)
BC5621980C437	.437 - .467	1.750	0.875	1.25	5.000	1.750	2	EC19 (.437 - .468)
BC5621980C468	.468 - .499	1.812	0.875	1.25	5.000	1.750	2	EC19 (.468 - .499)
BC5621980C500	.500 - .530	1.875	0.875	1.25	5.000	1.750	2	EC19 (.500 - .530)
BC8031580C531	.531 - .561	2.312	1.250	1.25	5.000	1.750	3	EC15 (.531 - .561)
BC8031580C562	.562 - .592	2.375	1.250	1.25	5.000	1.750	3	EC15 (.562 - .592)
BC8031580C625	.625 - .655	2.500	1.250	1.25	5.000	1.750	3	EC15 (.625 - .655)
BC9631980C656	.656 - .686	2.812	1.500	1.25	5.000	1.750	3	EC19 (.656 - .686)
BC9631980C687	.687 - .717	2.875	1.500	1.25	5.000	1.750	3	EC19 (.687 - .717)
BC9631980C718	.718 - .749	2.937	1.500	1.25	5.000	1.750	3	EC19 (.718 - .749)
BC9631980C750	.750 - .780	3.000	1.500	1.25	5.000	1.750	3	EC19 (.750 - .780)
BC9631980C781	.781 - .811	3.062	1.500	1.25	5.000	1.750	3	EC19 (.781 - .811)
BC9631980C812	.812 - .842	3.120	1.500	1.25	5.000	1.750	3	EC19 (.812 - .842)
BC11241980C875	.875 - .905	3.500	1.750	1.25	5.250	2.000	4	EC19 (.875 - .905)
BC11241980C906	.906 - .936	3.562	1.750	1.25	5.250	2.000	4	EC19 (.906 - .936)
BC11241980C968	.968 - .999	3.687	1.750	1.25	5.250	2.000	4	EC19 (.968 - .999)
BC11241980C1.000	1.000	3.750	1.750	1.25	5.250	2.000	4	EC19 (1.000)

EM15 INS CH SERIES
Chamfer Angle Inserts

Choose from 8 different chamfer angles and 3 different types of cutter body. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.

- Superbee inserts are precision ground on all surfaces ensuring the tightest tolerances possible. This provides a stronger edge with better wear characteristics than a pressed insert.
- T5700 grade provides superior lubricity & heat resistance, up to 30% higher SFM and up to 70% better tool life in steel, stainless and exotic materials.



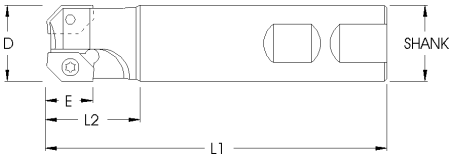
Materials (Grade Selection)

Part Number	Side Angle	H	W	A	App Key						
					Substrate	C5	C5	C5	C5	C2	C2
					Coating	MDC	AlTiN	TiCN-TiN	None	None	None
					Edge Prep	Honed	Honed	Honed	Honed	Honed	Sharp
EM1510250	10°	0.044	0.250	0.625		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1515250	15°	0.067	0.250	0.625		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1520250	20°	0.091	0.250	0.625		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1525250	25°	0.117	0.250	0.625		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1530200	30°	0.115	0.200	0.625		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1541200	41°	0.174	0.200	0.625		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1545200	45°	0.200	0.200	0.625		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1550200	50°	0.200	0.168	0.625		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1560200	60°	0.200	0.115	0.625		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1910300	10°	0.052	0.300	0.750		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1915300	15°	0.080	0.300	0.750		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1920300	20°	0.109	0.300	0.750		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1925300	25°	0.140	0.300	0.750		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1930250	30°	0.144	0.250	0.750		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1941250	41°	0.217	0.250	0.750		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1945250	45°	0.250	0.250	0.750		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1950250	50°	0.250	0.210	0.750		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EM1960250	60°	0.250	0.144	0.750		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**

Special shapes, forms and sizes are available upon request

BE CH WS SERIES
Weldon Shank Indexable Chamfer Angle Cutter

End mill style indexable cutter body with 8 different angles available. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.



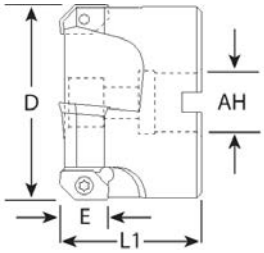
								Add to end of Part # for Insert Type								
Part Number	D	Shank	L1	L2	FLutes	E	Insert	10°	15°	20°	25°	30°	41°	45°	50°	60°
BE4011540	0.625	0.625	3.375	1.000	1	0.625	EM15	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE4411548	0.687	0.750	4.000	1.250	1	0.625	EM15	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE4811548	0.750	0.750	4.000	1.250	1	0.625	EM15	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE5611948	0.875	0.750	4.500	1.250	1	0.750	EM19	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE5611964	0.875	1.000	4.500	1.250	1	0.750	EM19	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE6411948	1.000	0.750	4.500	1.250	1	0.750	EM19	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE6411964	1.000	1.000	4.500	1.250	1	0.750	EM19	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE6421548	1.000	0.750	4.500	1.250	2	0.625	EM15	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE6421564	1.000	1.000	4.500	1.250	2	0.625	EM15	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE8021980	1.250	1.250	5.000	1.750	2	0.750	EM19	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE8031580	1.250	1.250	5.000	1.750	3	0.625	EM15	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE9621980	1.500	1.250	5.000	1.750	2	0.750	EM19	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE9631580	1.500	1.250	5.000	1.750	3	0.625	EM15	A10	A15	A20	A25	A30	A41	A45	A50	A60

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

D - (2 X 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" (D) - .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" (D) - .288 (2 X W) = .712 (d).

BE CH SM SERIES
Shell Mill Indexable Chamfer Angle Cutter

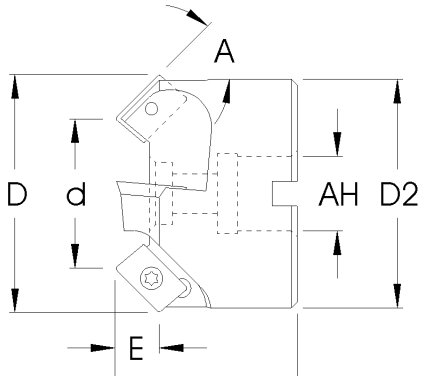
Shell mill style cutter body with more flutes cutting to achieve faster feed rates, 8 different chamfer angles. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.



							Add to end of Part # for Insert Type								
Part Number	D	AH	L1	FLutes	E	Insert	10°	15°	20°	25°	30°	41°	45°	50°	60°
BE12831948	2.000	0.750	1.825	3	0.750	EM19	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE12851548	2.000	0.750	1.825	5	0.625	EM15	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE14451548	2.250	0.750	1.825	5	0.625	EM15	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE16031948	2.500	0.750	1.825	3	0.750	EM19	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE16051548	2.500	0.750	1.825	5	0.625	EM15	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE19261564	3.000	1.000	1.825	6	0.625	EM15	A10	A15	A20	A25	A30	A41	A45	A50	A60
BE22461580	3.500	1.250	1.825	6	0.625	EM15	A10	A15	A20	A25	A30	A41	A45	A50	A60

BE CM SERIES
45° Indexable Chamfer Shell Mill

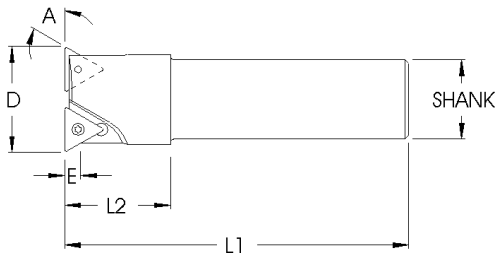
Holds a standard EM15 or EM10 insert at a 45° angle creating a longer length of cut than the BE CH series. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.



Part Number	Angle	D	d	L1	AH	Flutes	E	Insert
CM963154845	45°	2.352	1.5	1.825	0.750	3	0.400	EM15
CM963194845	45°	2.530	1.5	1.825	0.750	3	0.400	EM19

BE DTS SERIES
End Mill Style Indexable Dovetail Cutter

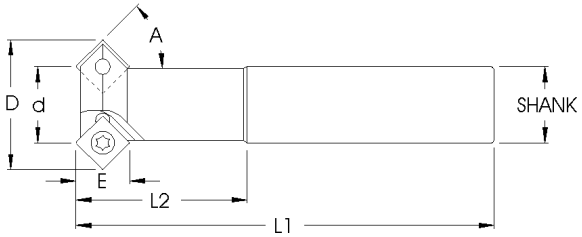
End mill style indexable cutter body with 60° dovetail utilizing industry standard TCMT insert. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.



Part Number	Shank	L1	L2	Flutes	E	Insert
DT4813240A60	0.625	3.375	1.000	1	0.211	TCMT32.5
DT6422148A60	0.750	4.250	1.000	2	0.149	TCMT21.5
DT11233264A60	1.000	4.750	1.500	3	0.211	TCMT32.5

BE CMS SERIES
End Mill Style 45° Top & Bottom Chamfer Cutter

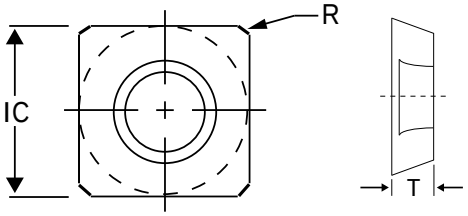
Cut a 45° on the top or bottom of a part, utilizes a square 4 cornered insert stocked with 5 different radii. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.



Part Number	D	d	Shank	L1	L2	Flutes	E	Insert
CMS4014264A45	0.989	0.312	1.000	5.000	1.750	1	0.500	SP42
CMS4814264A45	1.304	0.625	1.000	5.250	2.000	1	0.500	SP42
CMS6433280A45	1.504	1.000	1.250	5.500	2.250	3	0.375	SP32
CMS6424280A45	1.680	1.000	1.250	5.500	2.250	2	0.500	SP42
CMS8034280A45	1.931	1.250	1.250	5.500	2.250	3	0.500	SP42
CMS9634280A45	2.056	1.375	1.250	5.500	2.250	3	0.500	SP42

INS SP SERIES
Industry Standard Square Inserts

- Superbee inserts are precision ground on all surfaces ensuring the tightest tolerances possible. This provides a stronger edge with better wear characteristics than a pressed insert.
- T5700 grade provides superior lubricity & heat resistance, up to 30% higher SFM and up to 70% better tool life in steel, stainless and exotic materials.

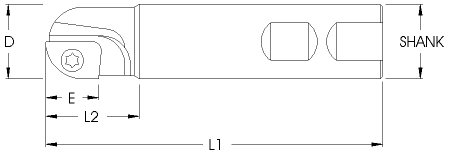


Materials (Grade Selection)

Part Number	Radius	A	B	T	App Key						
					Substrate	C5	C5	C5	C5	C2	C2
					Coating	MDC	AlTiN	TiCN-TiN	None	None	None
					Edge Prep	Honed	Honed	Honed	Honed	Honed	Sharp
SP32010	0.010	0.375	0.375	0.125		ET5700	ET520	ENTST	ENT56	ENT33	FNT33
SP32015	0.015	0.375	0.375	0.125		ET5700	ET520	ENTST	ENT56	ENT33	FNT33
SP32030	0.030	0.375	0.375	0.125		ET5700	ET520	ENTST	ENT56	ENT33	FNT33
SP32060	0.060	0.375	0.375	0.125		ET5700	ET520	ENTST	ENT56	ENT33	FNT33
SP32090	0.090	0.375	0.375	0.125		ET5700	ET520	ENTST	ENT56	ENT33	FNT33
SP42010	0.010	0.500	0.500	0.125		ET5700	ET520	ENTST	ENT56	ENT33	FNT33
SP42015	0.015	0.500	0.500	0.125		ET5700	ET520	ENTST	ENT56	ENT33	FNT33
SP42030	0.030	0.500	0.500	0.125		ET5700	ET520	ENTST	ENT56	ENT33	FNT33
SP42060	0.060	0.500	0.500	0.125		ET5700	ET520	ENTST	ENT56	ENT33	FNT33
SP42090	0.090	0.500	0.500	0.125		ET5700	ET520	ENTST	ENT56	ENT33	FNT33

BE BB SERIES
Ball End Indexable Cutter Body

Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.

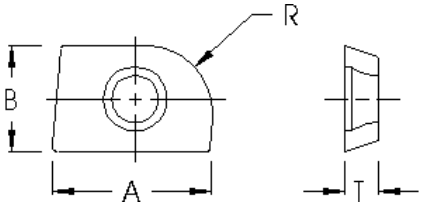


Part Number	Ball Size	D	Shank	L1	L2	Flutes	E	Insert
BB4011440	5/8	0.625	0.625	3.375	1.000	1	0.625	EB14
BB40114402M	5/8	0.625	0.625	4.250	2.000	1	0.625	EB14
BB40114403M	5/8	0.625	0.625	4.750	3.000	1	0.625	EB14
BB4811548	3/4	0.750	0.750	4.000	1.250	1	0.625	EB15
BB4811548225M	3/4	0.750	0.750	4.750	2.250	1	0.625	EB15
BB481154835M	3/4	0.750	0.750	6.000	3.500	1	0.625	EB15
BB48115483M	3/4	0.750	0.750	5.500	3.000	1	0.625	EB15
BB48115485M	3/4	0.750	0.750	6.000	5.000	1	0.625	EB15
BB481156445M	3/4	0.750	0.750	4.500	4.500	1	0.625	EB15
BB5611948	7/8	0.875	0.750	4.500	1.250	1	0.750	EB19
BB5611964	7/8	0.875	1.000	4.500	1.250	1	0.750	EB19
BB6411948	1	1.000	0.750	4.500	1.250	1	0.750	EB19
BB6411964	1	1.000	1.000	4.500	1.250	1	0.750	EB19
BB64119642M	1	1.000	1.000	4.500	2.000	1	0.750	EB19
BB64119643M	1	1.000	1.000	5.500	3.000	1	0.750	EB19
BB64119644M	1	1.000	1.000	6.500	4.000	1	0.750	EB19
BB64119645M	1	1.000	1.000	7.500	5.000	1	0.750	EB19

EM15 INS EB SERIES
Ball End Indexable Inserts

Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.

- Superbee inserts are precision ground on all surfaces ensuring the tightest tolerances possible. This provides a stronger edge with better wear characteristics than a pressed insert.
- T5700 grade provides superior lubricity & heat resistance, up to 30% higher SFM and up to 70% better tool life in steel, stainless and exotic materials.



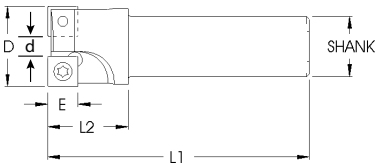
Materials (Grade Selection)

Part Number	Ball	Frac/ Metric	A	B	T	App Key						
						Substrate	C5	C5	C5	C5	C2	C2
						Coating	MDC	AlTiN	TiCN-TiN	None	None	None
						Edge Prep	Honed	Honed	Honed	Honed	Honed	Sharp
EB1458	0.625	5/8	0.625	0.375	0.125		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EB191	1.000	1	0.750	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**
EB1978	0.875	7/8	0.750	0.500	0.156		**ET5700**	**ET520**	**ENT5T**	**ENT56**	**ENT33**	**FNT33**

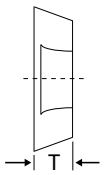
Special shapes, forms and sizes are available upon request

BE CB SERIES
Indexable Counterbore Cutter

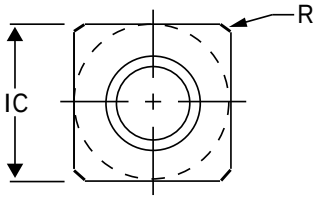
Cuts a flat bottom for effective counterboring, utilizes a square 4 cornered insert stocked with five different radii. Positive geometry for more aggressive cutting action, proprietary pocket design provides unmatched repeatability reducing runout and producing far better finishes.



Part Number	D	d	Shank	L1	L2	Flutes	E	Insert
CB3813240	0.594	0.125	0.625	3.250	1.000	1	0.370	SP32
CB4013240	0.625	0.125	0.625	3.250	1.000	1	0.370	SP32
CB4413248	0.687	0.125	0.750	3.250	1.000	1	0.370	SP32
CB4822248	0.750	0.290	0.750	3.250	1.000	2	0.245	SD22
CB5013248	0.781	0.125	0.750	3.250	1.000	1	0.370	SP32
CB5022248	0.781	0.321	0.750	3.250	1.000	2	0.245	SD22
CB5622248	0.875	0.415	0.750	3.250	1.000	2	0.370	SD22
CB6423248	1.000	0.290	0.750	3.250	1.000	2	0.370	SP32
CB6823248	1.062	0.352	0.750	3.250	1.000	2	0.370	SP32
CB7633264	1.187	0.477	1.000	4.250	1.000	3	0.370	SP32
CB8033264	1.250	0.540	1.000	4.250	1.000	3	0.370	SP32
CB8834264	1.375	0.415	1.000	4.250	1.000	3	0.495	SP42
CB9634264	1.500	0.540	1.000	4.250	1.000	3	0.495	SP42



INS SD & SP SERIES
Industry Standard Square Inserts

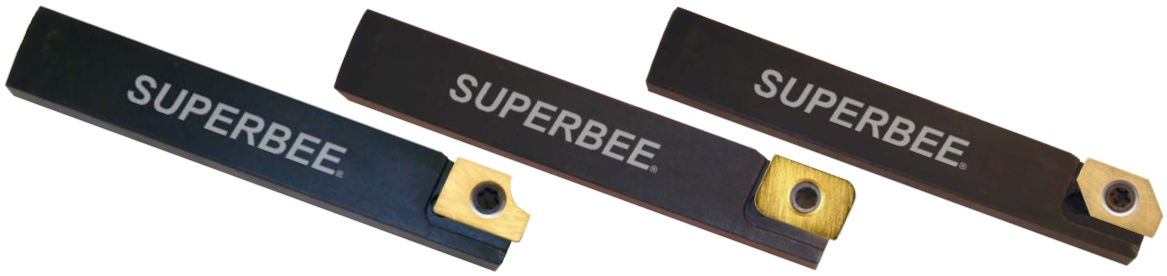


Part Number	Radius	A	B	T	App Key						
					Substrate	C5	C5	C5	C5	C2	C2
					Coating	MDC	AlTiN	TiCN-TiN	None	None	None
					Edge Prep	Honed	Honed	Honed	Honed	Honed	Sharp
SD21.5015	0.015	0.250	0.250	0.094		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
SD21.5030	0.030	0.250	0.250	0.094		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
SD21.5060	0.060	0.250	0.250	0.094		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
SD22010	0.010	0.250	0.250	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
SD22015	0.015	0.250	0.250	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
SD22030	0.030	0.250	0.250	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
SD22060	0.060	0.250	0.250	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
SP32010	0.010	0.375	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
SP32015	0.015	0.375	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
SP32030	0.030	0.375	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
SP32060	0.060	0.375	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
SP32090	0.090	0.375	0.375	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
SP42010	0.010	0.500	0.500	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
SP42015	0.015	0.500	0.500	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
SP42030	0.030	0.500	0.500	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
SP42060	0.060	0.500	0.500	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33
SP42090	0.090	0.500	0.500	0.125		ET5700	ET520	ENT5T	ENT56	ENT33	FNT33

Special shapes, forms and sizes are available upon request

BE TRN SERIES
Indexable Turning Holder For Fillet, Corner Round & Angle

Indexable .750 X .750 square tool bit holder for EM 19 inserts.
Can be used with chamfers, convex and concave radii.



Part #	R Range	Shank
DEMCLNR1219A10	A10	0.750
DEMCLNR1219A15	A15	0.750
DEMCLNR1219A20	A20	0.750
DEMCLNR1219A25	A25	0.750
DEMCLNR1219A30	A30	0.750
DEMCLNR1219A41	A41	0.750
DEMCLNR1219A45	A45	0.750
DEMCLNR1219A50	A50	0.750
DEMCLNR1219A60	A60	0.750
DEMCLNR1219C1	C1	0.750
DEMCLNR1219C2	C2	0.750
DEMCLNR1219C3	C3	0.750
DEMCLNR1219C4	C4	0.750
DEMCLNR1219C5	C5	0.750
DEMCLNR1219C6	C6	0.750
DEMCLNR1219R1	R1	0.750
DEMCLNR1219R2	R2	0.750
DEMCLNR1219R3	R3	0.750
DEMCLNR1219R4	R4	0.750
DEMCLNR1219R5	R5	0.750
DEMCLNR1219R6	R6	0.750
DEMCLNR1219R7	R7	0.750
DEMCLNR1219R8	R8	0.750

WRENCHES & SCREWS

Wrench For Cutter Body Screws
Part #
BW15(T-15)
BW19(T-20)
NT15(T-15)
BW19(T-19)
NT8(T-8)
BW9(T-9)

Screws For Superbee Indexable Cutters
Part #
BS15
BS19
CS3
CS5
CS4
TS25
TS4

SwiftCARB

High Performance Solid Carbide End Mills

Longer tool life
AND
faster run times!

Proudly made
in the USA

US Patent 9,227,253
10,335,870

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in the USA

TECHNICAL SECTION
SPEEDS AND FEEDS

THE FOLLOWING SECTION CONTAINS SPEEDS AND FEEDS FOR OUR HIGH PERFORMANCE END MILLS FOLLOWED BY BY ***RAMPMILLS*** IN THE NEXT SECTION. WHILE THESE SPEEDS AND FEEDS ARE VERY RELIABLE STARTING POINTS, LOG ONTO SWIFTCARB.COM AND TRY OUR FREE CALCULATOR TO MAKE ADJUSTMENTS AND HELP DIAL IN THE RIGHT INFORMATION FOR YOUR APPLICATION.

IF YOU NEED FURTHER ASSISTANCE,
PLEASE CONTACT SWIFTCARB'S
TECHNICAL DEPARTMENT: 800-227-9876

SwiftCARB High Performance Speeds & Feeds for Aluminum Cutters - Uncoated

"AR"

Series "AR" 3-Flute Aluminum Rougher Feeds and Speeds

Aluminum Wrought Alloy & Aluminum Cast Alloy < 12% Si 6061-T6, 7075, Plastic

Axial Depth		1 X DIA	1.5 X DIA	2 X DIA	2 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/4"	0.250	0.0024	0.0033	0.0042	0.0051	0.0060	640	880	1120	1360	1600
5/16"	0.312	0.0028	0.0039	0.0049	0.0060	0.0070	720	990	1260	1530	1800
3/8"	0.375	0.0032	0.0044	0.0056	0.0068	0.0080	740	1018	1295	1573	1850
7/16"	0.437	0.0036	0.0050	0.0063	0.0077	0.0090	760	1045	1330	1615	1900
1/2"	0.500	0.0048	0.0066	0.0084	0.0102	0.0120	800	1100	1400	1700	2000
5/8"	0.625	0.0056	0.0077	0.0098	0.0119	0.0140	800	1100	1400	1700	2000
3/4"	0.750	0.0064	0.0088	0.0112	0.0136	0.0160	800	1100	1400	1700	2000
7/8"	0.875	0.0072	0.0099	0.0126	0.0153	0.0180	800	1100	1400	1700	2000
1"	1.000	0.0080	0.0110	0.0140	0.0170	0.0200	800	1100	1400	1700	2000
1 1/4"	1.250	0.0088	0.0121	0.0154	0.0187	0.0220	800	1100	1400	1700	2000

"AF"

Series "AF" 4-Flute Aluminum Feeds and Speeds

Aluminum Wrought Alloy & Aluminum Cast Alloy < 12% Si 6061-T6, 7075, Plastic

Axial Depth		1 X DIA	1.5 X DIA	2 X DIA	2 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/4"	0.250	Not Advised	0.0022	0.0028	0.0034	0.0040	672	924	1176	1428	1680
5/16"	0.312	Not Advised	0.0028	0.0035	0.0043	0.0050	720	990	1260	1530	1800
3/8"	0.375	Not Advised	0.0033	0.0042	0.0051	0.0060	768	1056	1344	1632	1920
7/16"	0.437	Not Advised	0.0044	0.0056	0.0068	0.0080	864	1188	1512	1836	2160
1/2"	0.500	Not Advised	0.0055	0.0070	0.0085	0.0100	960	1320	1680	2040	2400
5/8"	0.625	Not Advised	0.0061	0.0077	0.0094	0.0110	960	1320	1680	2040	2400
3/4"	0.750	Not Advised	0.0066	0.0084	0.0102	0.0120	960	1320	1680	2040	2400
7/8"	0.875	Not Advised	0.0072	0.0091	0.0111	0.0130	960	1320	1680	2040	2400
1"	1.000	Not Advised	0.0077	0.0098	0.0119	0.0140	960	1320	1680	2040	2400
1 1/4"	1.250	Not Advised	0.0088	0.0112	0.0136	0.0160	960	1320	1680	2040	2400

"AF"

Series "AF" 5-Flute Aluminum Feeds and Speeds

Aluminum Wrought Alloy & Aluminum Cast Alloy < 12% Si 6061-T6, 7075, Plastic

Axial Depth		1 X DIA	1.5 X DIA	2 X DIA	2 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/4"	0.250	Not Advised	Not Advised	0.0028	0.0034	0.0040	672	924	1176	1428	1680
5/16"	0.312	Not Advised	Not Advised	0.0035	0.0043	0.0050	720	990	1260	1530	1800
3/8"	0.375	Not Advised	Not Advised	0.0042	0.0051	0.0060	768	1056	1344	1632	1920
7/16"	0.437	Not Advised	Not Advised	0.0056	0.0068	0.0080	864	1188	1512	1836	2160
1/2"	0.500	Not Advised	Not Advised	0.0070	0.0085	0.0100	960	1320	1680	2040	2400
5/8"	0.625	Not Advised	Not Advised	0.0077	0.0094	0.0110	960	1320	1680	2040	2400
3/4"	0.750	Not Advised	Not Advised	0.0084	0.0102	0.0120	960	1320	1680	2040	2400
7/8"	0.875	Not Advised	Not Advised	0.0091	0.0111	0.0130	960	1320	1680	2040	2400
1"	1.000	Not Advised	Not Advised	0.0098	0.0119	0.0140	960	1320	1680	2040	2400
1 1/4"	1.250	Not Advised	Not Advised	0.0112	0.0136	0.0160	960	1320	1680	2040	2400

"AS"

Series "AS" 3-Flute Aluminum Feeds and Speeds

Aluminum Wrought Alloy & Aluminum Cast Alloy < 12% Si 6061-T6, 7075, Plastic

Axial Depth		1 X DIA	1.5 X DIA	2 X DIA	2 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0010	0.0014	0.0018	0.0021	0.0025	480	660	840	1020	1200
3/16"	0.187	0.0012	0.0017	0.0021	0.0026	0.0030	576	792	1008	1224	1440
1/4"	0.250	0.0020	0.0028	0.0035	0.0043	0.0050	640	880	1120	1360	1600
5/16"	0.312	0.0026	0.0036	0.0046	0.0055	0.0065	720	990	1260	1530	1800
3/8"	0.375	0.0030	0.0041	0.0053	0.0064	0.0075	760	1045	1330	1615	1900
7/16"	0.437	0.0040	0.0055	0.0070	0.0085	0.0100	800	1100	1400	1700	2000
1/2"	0.500	0.0048	0.0066	0.0084	0.0102	0.0120	880	1210	1540	1870	2200
5/8"	0.625	0.0052	0.0072	0.0091	0.0111	0.0130	880	1210	1540	1870	2200
3/4"	0.750	0.0056	0.0077	0.0098	0.0119	0.0140	880	1210	1540	1870	2200
7/8"	0.875	0.0060	0.0083	0.0105	0.0128	0.0150	880	1210	1540	1870	2200
1"	1.000	0.0064	0.0088	0.0112	0.0136	0.0160	880	1210	1540	1870	2200
1 1/4"	1.250	0.0072	0.0099	0.0126	0.0153	0.0180	880	1210	1540	1870	2200

SwiftCARB High Performance Speeds & Feeds for Aluminum Cutters - Uncoated

"AC"

Series "AC" Aluminum Rougher/Finisher Feeds and Speeds
Aluminum Wrought Alloy & Aluminum Cast Alloy < 12% Si 6061-T6, 7075, Plastic

Axial Depth		1 X DIA	1.5 X DIA	2 X DIA	2 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0010	0.0014	0.0018	0.0021	0.0025	480	660	840	1020	1200
3/16"	0.187	0.0012	0.0017	0.0021	0.0026	0.0030	576	792	1008	1224	1440
1/4"	0.250	0.0018	0.0025	0.0032	0.0038	0.0045	640	880	1120	1360	1600
5/16"	0.312	0.0220	0.0303	0.0385	0.0468	0.0550	720	990	1260	1530	1800
3/8"	0.375	0.0028	0.0039	0.0049	0.0060	0.0070	760	1045	1330	1615	1900
7/16"	0.437	0.0036	0.0050	0.0063	0.0077	0.0090	800	1100	1400	1700	2000
1/2"	0.500	0.0040	0.0055	0.0070	0.0085	0.0100	880	1210	1540	1870	2200
5/8"	0.625	0.0048	0.0066	0.0084	0.0102	0.0120	880	1210	1540	1870	2200
3/4"	0.750	0.0052	0.0072	0.0091	0.0111	0.0130	880	1210	1540	1870	2200
7/8"	0.875	0.0056	0.0077	0.0098	0.0119	0.0140	880	1210	1540	1870	2200
1"	1.000	0.0060	0.0083	0.0105	0.0128	0.0150	880	1210	1540	1870	2200
1 1/4"	1.250	0.0064	0.0088	0.0112	0.0136	0.0160	880	1210	1540	1870	2200

"AR"

Series "AR" 3-Flute Aluminum Rougher Feeds and Speeds
Aluminum > 12% Si and Copper Alloys, Brass & Bronze

Axial Depth		1 X DIA	1.5 X DIA	2 X DIA	2 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/4"	0.250	0.0024	0.0033	0.0042	0.0051	0.0060	320	440	560	680	800
5/16"	0.312	0.0028	0.0039	0.0049	0.0060	0.0070	360	495	630	765	900
3/8"	0.375	0.0032	0.0044	0.0056	0.0068	0.0080	370	509	648	786	925
7/16"	0.437	0.0036	0.0050	0.0063	0.0077	0.0090	380	523	665	808	950
1/2"	0.500	0.0048	0.0066	0.0084	0.0102	0.0120	400	550	700	850	1000
5/8"	0.625	0.0056	0.0077	0.0098	0.0119	0.0140	400	550	700	850	1000
3/4"	0.750	0.0064	0.0088	0.0112	0.0136	0.0160	400	550	700	850	1000
7/8"	0.875	0.0072	0.0099	0.0126	0.0153	0.0180	400	550	700	850	1000
1"	1.000	0.0080	0.0110	0.0140	0.0170	0.0200	400	550	700	850	1000
1 1/4"	1.250	0.0088	0.0121	0.0154	0.0187	0.0220	400	550	700	850	1000

"AF"

Series "AF" 4-Flute Aluminum Feeds and Speeds
Aluminum > 12% Si and Copper Alloys, Brass & Bronze

Axial Depth		1 X DIA	1.5 X DIA	2 X DIA	2 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/4"	0.250	Not Advised	0.0022	0.0028	0.0034	0.0040	336	462	588	714	840
5/16"	0.312	Not Advised	0.0028	0.0035	0.0043	0.0050	384	528	672	816	960
3/8"	0.375	Not Advised	0.0033	0.0042	0.0051	0.0060	432	594	756	918	1080
7/16"	0.437	Not Advised	0.0044	0.0056	0.0068	0.0080	440	605	770	935	1100
1/2"	0.500	Not Advised	0.0055	0.0070	0.0085	0.0100	480	660	840	1020	1200
5/8"	0.625	Not Advised	0.0061	0.0077	0.0094	0.0110	480	660	840	1020	1200
3/4"	0.750	Not Advised	0.0066	0.0084	0.0102	0.0120	480	660	840	1020	1200
7/8"	0.875	Not Advised	0.0072	0.0091	0.0111	0.0130	480	660	840	1020	1200
1"	1.000	Not Advised	0.0077	0.0098	0.0119	0.0140	480	660	840	1020	1200
1 1/4"	1.250	Not Advised	0.0088	0.0112	0.0136	0.0160	480	660	840	1020	1200

"AF"

Series "AF" 5-Flute Aluminum Feeds and Speeds
Aluminum > 12% Si and Copper Alloys, Brass & Bronze

Axial Depth		1 X DIA	1.5 X DIA	2 X DIA	2 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/4"	0.250	Not Advised	Not Advised	0.0028	0.0034	0.0040	336	462	588	714	840
5/16"	0.312	Not Advised	Not Advised	0.0035	0.0043	0.0050	384	528	672	816	960
3/8"	0.375	Not Advised	Not Advised	0.0042	0.0051	0.0060	432	594	756	918	1080
7/16"	0.437	Not Advised	Not Advised	0.0056	0.0068	0.0080	440	605	770	935	1100
3/4"	0.500	Not Advised	Not Advised	0.0070	0.0085	0.0100	480	660	840	1020	1200
7/8"	0.625	Not Advised	Not Advised	0.0077	0.0094	0.0110	480	660	840	1020	1200
3/4"	0.750	Not Advised	Not Advised	0.0084	0.0102	0.0120	480	660	840	1020	1200
7/8"	0.875	Not Advised	Not Advised	0.0091	0.0111	0.0130	480	660	840	1020	1200
1"	1.000	Not Advised	Not Advised	0.0098	0.0119	0.0140	480	660	840	1020	1200
1 1/4"	1.250	Not Advised	Not Advised	0.0112	0.0136	0.0160	480	660	840	1020	1200

SwiftCARB High Performance Speeds & Feeds for Aluminum Cutters - Uncoated

"AS"		Series "AS" 3-Flute Aluminum Feeds and Speeds Aluminum > 12% Si and Copper Alloys, Brass & Bronze									
Axial Depth		1 X DIA	1.5 X DIA	2 X DIA	2 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0010	0.0014	0.0018	0.0021	0.0025	240	330	420	510	600
3/16"	0.187	0.0012	0.0017	0.0021	0.0026	0.0030	288	396	504	612	720
1/4"	0.250	0.0020	0.0028	0.0035	0.0043	0.0050	336	462	588	714	840
5/16"	0.312	0.0026	0.0036	0.0046	0.0055	0.0065	384	528	672	816	960
3/8"	0.375	0.0030	0.0041	0.0053	0.0064	0.0075	432	594	756	918	1080
7/16"	0.437	0.0040	0.0055	0.0070	0.0085	0.0100	440	605	770	935	1100
1/2"	0.500	0.0048	0.0066	0.0084	0.0102	0.0120	480	660	840	1020	1200
5/8"	0.625	0.0052	0.0072	0.0091	0.0111	0.0130	480	660	840	1020	1200
3/4"	0.750	0.0056	0.0077	0.0098	0.0119	0.0140	480	660	840	1020	1200
7/8"	0.875	0.0060	0.0083	0.0105	0.0128	0.0150	480	660	840	1020	1200
1"	1.000	0.0064	0.0088	0.0112	0.0136	0.0160	480	660	840	1020	1200
1 1/4"	1.250	0.0072	0.0099	0.0126	0.0153	0.0180	480	660	840	1020	1200

"AC"		Series "AC" Aluminum Rough Finish Feeds and Speeds Aluminum > 12% Si and Copper Alloys, Brass & Bronze									
Axial Depth		1 X DIA	1.5 X DIA	2 X DIA	2 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0010	0.0014	0.0018	0.0021	0.0025	240	330	420	510	600
3/16"	0.187	0.0012	0.0017	0.0021	0.0026	0.0030	288	396	504	612	720
1/4"	0.250	0.0018	0.0025	0.0032	0.0038	0.0045	320	440	560	680	800
5/16"	0.312	0.0220	0.0303	0.0385	0.0468	0.0550	360	495	630	765	900
3/8"	0.375	0.0028	0.0039	0.0049	0.0060	0.0070	380	523	665	808	950
7/16"	0.437	0.0036	0.0050	0.0063	0.0077	0.0090	400	550	700	850	1000
1/2"	0.500	0.0040	0.0055	0.0070	0.0085	0.0100	440	605	770	935	1100
5/8"	0.625	0.0048	0.0066	0.0084	0.0102	0.0120	440	605	770	935	1100
3/4"	0.750	0.0052	0.0072	0.0091	0.0111	0.0130	440	605	770	935	1100
7/8"	0.875	0.0056	0.0077	0.0098	0.0119	0.0140	440	605	770	935	1100
1"	1.000	0.0060	0.0083	0.0105	0.0128	0.0150	440	605	770	935	1100
1 1/4"	1.250	0.0064	0.0088	0.0112	0.0136	0.0160	440	605	770	935	1100

Industry Standard Tools ALTIN & TIALN Coated

Series "SS" "SM" "SF" "SD" "SH" "GM" "TM" "TB" Feeds and Speeds ALTIN & TIALN Coated Non-Alloy Steel, Cast Steel, Free Cutting Steel 1018, 1020, A36, 8620											
Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0006	0.0009	0.0011	0.0014	0.0016	184	253	322	391	460
5/32"	0.156	0.0007	0.0010	0.0013	0.0015	0.0018	216	297	378	459	540
3/16"	0.187	0.0008	0.0012	0.0015	0.0018	0.0021	232	319	406	493	580
7/32"	0.218	0.0010	0.0013	0.0017	0.0020	0.0024	240	330	420	510	600
1/4"	0.250	0.0011	0.0015	0.0018	0.0022	0.0026	256	352	448	544	640
9/32"	0.281	0.0012	0.0017	0.0021	0.0026	0.0030	264	363	462	561	660
5/16"	0.312	0.0013	0.0018	0.0022	0.0027	0.0032	272	374	476	578	680
11/32"	0.343	0.0014	0.0019	0.0024	0.0029	0.0034	280	385	490	595	700
3/8"	0.375	0.0014	0.0020	0.0025	0.0031	0.0036	288	396	504	612	720
7/16"	0.437	0.0016	0.0022	0.0028	0.0034	0.0040	296	407	518	629	740
1/2"	0.500	0.0018	0.0025	0.0032	0.0038	0.0045	304	418	532	646	760
5/8"	0.625	0.0022	0.0030	0.0039	0.0047	0.0055	304	418	532	646	760
3/4"	0.750	0.0024	0.0033	0.0042	0.0051	0.0060	304	418	532	646	760
7/8"	0.875	0.0026	0.0036	0.0046	0.0055	0.0065	304	418	532	646	760
1"	1.000	0.0028	0.0039	0.0049	0.0060	0.0070	304	418	532	646	760
1 1/4"	1.250	0.0030	0.0041	0.0052	0.0063	0.0074	304	418	532	646	760

Industry Standard Tools ALTIN & TIALN Coated

Series "SS" "SM" "SF" "SD" "SH" "GM" "TM" "TB" Feeds and Speeds ALTIN & TIALN Coated

Low Alloy Steel, Cast Steel 4130, 4140, 8620, 4330, 4340

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0006	0.0008	0.0010	0.0012	0.0014	144	198	252	306	360
5/32"	0.156	0.0006	0.0009	0.0011	0.0013	0.0016	152	209	266	323	380
3/16"	0.187	0.0007	0.0010	0.0013	0.0015	0.0018	160	220	280	340	400
7/32"	0.218	0.0009	0.0012	0.0015	0.0019	0.0022	168	231	294	357	420
1/4"	0.250	0.0011	0.0015	0.0018	0.0022	0.0026	176	242	308	374	440
9/32"	0.281	0.0012	0.0017	0.0021	0.0026	0.0030	184	253	322	391	460
5/16"	0.312	0.0013	0.0018	0.0023	0.0028	0.0033	192	264	336	408	480
11/32"	0.343	0.0014	0.0020	0.0025	0.0031	0.0036	200	275	350	425	500
3/8"	0.375	0.0016	0.0021	0.0027	0.0033	0.0039	208	286	364	442	520
7/16"	0.437	0.0016	0.0022	0.0029	0.0035	0.0041	216	297	378	459	540
1/2"	0.500	0.0018	0.0024	0.0031	0.0037	0.0044	224	308	392	476	560
5/8"	0.625	0.0021	0.0029	0.0036	0.0044	0.0052	224	308	392	476	560
3/4"	0.750	0.0022	0.0031	0.0039	0.0048	0.0056	224	308	392	476	560
7/8"	0.875	0.0024	0.0033	0.0042	0.0051	0.0060	224	308	392	476	560
1"	1.000	0.0025	0.0035	0.0044	0.0054	0.0063	224	308	392	476	560
1 1/4"	1.250	0.0026	0.0036	0.0046	0.0055	0.0065	224	308	392	476	560

Series "SS" "SM" "SF" "SD" "SH" "GM" "TM" "TB" Feeds and Speeds ALTIN & TIALN Coated

Die & Mold Steels P20, A-2, D-2, M2, M42, T15

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0005	0.0007	0.0008	0.0010	0.0012	120	165	210	255	300
5/32"	0.156	0.0005	0.0007	0.0009	0.0011	0.0013	128	176	224	272	320
3/16"	0.187	0.0006	0.0009	0.0011	0.0014	0.0016	136	187	238	289	340
7/32"	0.218	0.0007	0.0010	0.0013	0.0015	0.0018	140	193	245	298	350
1/4"	0.250	0.0010	0.0013	0.0017	0.0020	0.0024	144	198	252	306	360
9/32"	0.281	0.0010	0.0014	0.0018	0.0022	0.0026	152	209	266	323	380
5/16"	0.312	0.0011	0.0015	0.0020	0.0024	0.0028	156	215	273	332	390
11/32"	0.343	0.0012	0.0016	0.0020	0.0025	0.0029	160	220	280	340	400
3/8"	0.375	0.0012	0.0017	0.0021	0.0026	0.0030	164	226	287	349	410
7/16"	0.437	0.0013	0.0018	0.0023	0.0028	0.0033	168	231	294	357	420
1/2"	0.500	0.0014	0.0020	0.0025	0.0031	0.0036	176	242	308	374	440
5/8"	0.625	0.0015	0.0021	0.0027	0.0032	0.0038	176	242	308	374	440
3/4"	0.750	0.0017	0.0023	0.0029	0.0036	0.0042	176	242	308	374	440
7/8"	0.875	0.0018	0.0024	0.0031	0.0037	0.0044	176	242	308	374	440
1"	1.000	0.0018	0.0025	0.0032	0.0039	0.0046	176	242	308	374	440
1 1/4"	1.250	0.0020	0.0028	0.0035	0.0043	0.0050	176	242	308	374	440

Series "SS" "SM" "SF" "SD" "SH" "GM" "TM" "TB" Feeds and Speeds ALTIN & TIALN Coated

Nodular Cast Iron, Grey Cast Iron, Malleable Cast Iron

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0006	0.0009	0.0011	0.0014	0.0016	192	264	336	408	480
5/32"	0.156	0.0007	0.0010	0.0013	0.0015	0.0018	196	270	343	417	490
3/16"	0.187	0.0008	0.0012	0.0015	0.0018	0.0021	200	275	350	425	500
7/32"	0.218	0.0010	0.0013	0.0017	0.0020	0.0024	204	281	357	434	510
1/4"	0.250	0.0011	0.0015	0.0018	0.0022	0.0026	208	286	364	442	520
9/32"	0.281	0.0012	0.0017	0.0021	0.0026	0.0030	212	292	371	451	530
5/16"	0.312	0.0013	0.0018	0.0022	0.0027	0.0032	216	297	378	459	540
11/32"	0.343	0.0014	0.0019	0.0024	0.0029	0.0034	220	303	385	468	550
3/8"	0.375	0.0014	0.0020	0.0025	0.0031	0.0036	224	308	392	476	560
7/16"	0.437	0.0016	0.0022	0.0028	0.0034	0.0040	228	314	399	485	570
1/2"	0.500	0.0018	0.0025	0.0032	0.0038	0.0045	240	330	420	510	600
5/8"	0.625	0.0022	0.0030	0.0039	0.0047	0.0055	240	330	420	510	600
3/4"	0.750	0.0024	0.0033	0.0042	0.0051	0.0060	240	330	420	510	600
7/8"	0.875	0.0026	0.0036	0.0046	0.0055	0.0065	240	330	420	510	600
1"	1.000	0.0028	0.0039	0.0049	0.0060	0.0070	240	330	420	510	600
1 1/4"	1.250	0.0030	0.0041	0.0052	0.0063	0.0074	240	330	420	510	600

Industry Standard Tools ALTIN & TIALN Coated

Series "SS" "SM" "SF" "SD" "SH" "GM" "TM" "TB" Feeds and Speeds ALTIN & TIALN Coated

Stainless Steel (Precipitation) 15-5PH, 17-4PH

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0005	0.0007	0.0008	0.0010	0.0012	144	198	252	306	360
5/32"	0.156	0.0005	0.0007	0.0009	0.0011	0.0013	149	205	260	316	372
3/16"	0.187	0.0006	0.0009	0.0011	0.0014	0.0016	154	211	269	326	384
7/32"	0.218	0.0008	0.0011	0.0014	0.0017	0.0020	158	218	277	337	396
1/4"	0.250	0.0010	0.0013	0.0017	0.0020	0.0024	163	224	286	347	408
9/32"	0.281	0.0011	0.0015	0.0020	0.0024	0.0028	168	231	294	357	420
5/16"	0.312	0.0012	0.0017	0.0021	0.0026	0.0030	173	238	302	367	432
11/32"	0.343	0.0013	0.0018	0.0022	0.0027	0.0032	178	244	311	377	444
3/8"	0.375	0.0014	0.0019	0.0024	0.0029	0.0034	182	251	319	388	456
7/16"	0.437	0.0015	0.0021	0.0027	0.0032	0.0038	187	257	328	398	468
1/2"	0.500	0.0017	0.0023	0.0029	0.0036	0.0042	192	264	336	408	480
5/8"	0.625	0.0019	0.0026	0.0034	0.0041	0.0048	192	264	336	408	480
3/4"	0.750	0.0021	0.0029	0.0036	0.0044	0.0052	192	264	336	408	480
7/8"	0.875	0.0022	0.0030	0.0038	0.0046	0.0054	192	264	336	408	480
1"	1.000	0.0022	0.0031	0.0039	0.0048	0.0056	192	264	336	408	480
1 1/4"	1.250	0.0023	0.0032	0.0041	0.0049	0.0058	192	264	336	408	480

Series "SS" "SM" "SF" "SD" "SH" "GM" "TM" "TB" Feeds and Speeds ALTIN & TIALN Coated

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

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0005	0.0007	0.0008	0.0010	0.0012	86	119	151	184	216
5/32"	0.156	0.0005	0.0007	0.0009	0.0011	0.0013	91	125	160	194	228
3/16"	0.187	0.0006	0.0009	0.0011	0.0014	0.0016	96	132	168	204	240
7/32"	0.218	0.0007	0.0010	0.0013	0.0015	0.0018	101	139	176	214	252
1/4"	0.250	0.0010	0.0013	0.0017	0.0020	0.0024	106	145	185	224	264
9/32"	0.281	0.0010	0.0014	0.0018	0.0022	0.0026	110	152	193	235	276
5/16"	0.312	0.0011	0.0015	0.0020	0.0024	0.0028	115	158	202	245	288
11/32"	0.343	0.0012	0.0016	0.0020	0.0025	0.0029	120	165	210	255	300
3/8"	0.375	0.0012	0.0017	0.0021	0.0026	0.0030	125	172	218	265	312
7/16"	0.437	0.0013	0.0018	0.0022	0.0027	0.0032	130	178	227	275	324
1/2"	0.500	0.0014	0.0020	0.0025	0.0031	0.0036	134	185	235	286	336
5/8"	0.625	0.0015	0.0209	0.0266	0.0323	0.0380	134	185	235	286	336
3/4"	0.750	0.0017	0.0023	0.0029	0.0036	0.0042	134	185	235	286	336
7/8"	0.875	0.0018	0.0024	0.0031	0.0037	0.0044	134	185	235	286	336
1"	1.000	0.0018	0.0025	0.0032	0.0039	0.0046	134	185	235	286	336
1 1/4"	1.250	0.0020	0.0028	0.0035	0.0043	0.0050	134	185	235	286	336

Series "SS" "SM" "SF" "SD" "SH" "GM" "TM" "TB" Feeds and Speeds ALTIN & TIALN Coated

High Temp Alloys, Titanium Alloys Ti-6AL4V

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0005	0.0007	0.0008	0.0010	0.0012	58	79	101	122	144
5/32"	0.156	0.0005	0.0007	0.0009	0.0011	0.0013	62	86	109	133	156
3/16"	0.187	0.0006	0.0009	0.0011	0.0014	0.0016	67	92	118	143	168
7/32"	0.218	0.0007	0.0010	0.0013	0.0015	0.0018	72	99	126	153	180
1/4"	0.250	0.0010	0.0013	0.0017	0.0020	0.0024	77	106	134	163	192
9/32"	0.281	0.0010	0.0014	0.0018	0.0022	0.0026	82	112	143	173	204
5/16"	0.312	0.0011	0.0015	0.0020	0.0024	0.0028	86	119	151	184	216
11/32"	0.343	0.0012	0.0016	0.0020	0.0025	0.0029	91	125	160	194	228
3/8"	0.375	0.0012	0.0017	0.0021	0.0026	0.0030	96	132	168	204	240
7/16"	0.437	0.0013	0.0018	0.0022	0.0027	0.0032	101	139	176	214	252
1/2"	0.500	0.0014	0.0020	0.0025	0.0031	0.0036	106	145	185	224	264
5/8"	0.625	0.0015	0.0209	0.0266	0.0323	0.0380	106	145	185	224	264
3/4"	0.750	0.0017	0.0023	0.0029	0.0036	0.0042	106	145	185	224	264
7/8"	0.875	0.0018	0.0024	0.0031	0.0037	0.0044	106	145	185	224	264
1"	1.000	0.0018	0.0025	0.0032	0.0039	0.0046	106	145	185	224	264
1 1/4"	1.250	0.0020	0.0028	0.0035	0.0043	0.0050	106	145	185	224	264

Industry Standard Tools ALTIN & TIALN Coated

Series "SS" "SM" "SF" "SD" "SH" "GM" "TM" "TB" Feeds and Speeds ALTIN & TIALN Coated												
High Temp Alloys (Nickel and Cobalt Based) Monel 400, Hastelloy, Nimonic 75, Inconel 625, 718												
Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA						
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%	
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min					
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX	
1/8"	0.125	0.0005	0.0007	0.0008	0.0010	0.0012	17	23	29	36	42	
5/32"	0.156	0.0005	0.0007	0.0009	0.0011	0.0013	17	23	29	36	42	
3/16"	0.187	0.0006	0.0009	0.0011	0.0014	0.0016	17	23	29	36	42	
7/32"	0.218	0.0007	0.0010	0.0013	0.0015	0.0018	19	26	34	41	48	
1/4"	0.250	0.0010	0.0013	0.0017	0.0020	0.0024	19	26	34	41	48	
9/32"	0.281	0.0010	0.0014	0.0018	0.0022	0.0026	19	26	34	41	48	
5/16"	0.312	0.0011	0.0015	0.0020	0.0024	0.0028	24	33	42	51	60	
11/32"	0.343	0.0012	0.0016	0.0020	0.0025	0.0029	24	33	42	51	60	
3/8"	0.375	0.0012	0.0017	0.0021	0.0026	0.0030	24	33	42	51	60	
7/16"	0.437	0.0013	0.0018	0.0022	0.0027	0.0032	24	33	42	51	60	
1/2"	0.500	0.0014	0.0020	0.0025	0.0031	0.0036	29	40	50	61	72	
5/8"	0.625	0.0015	0.0209	0.0266	0.0323	0.0380	29	40	50	61	72	
3/4"	0.750	0.0017	0.0023	0.0029	0.0036	0.0042	29	40	50	61	72	
7/8"	0.875	0.0018	0.0024	0.0031	0.0037	0.0044	29	40	50	61	72	
1"	1.000	0.0018	0.0024	0.0031	0.0037	0.0044	29	40	50	61	72	
1 1/4"	1.250	0.0020	0.0028	0.0035	0.0043	0.0050	29	40	50	61	72	

Premium Tools - Speeds & Feeds for MDC Coated Tools

Series "SS" "SM" "SF" "SD" "SH" "GM" "TM" "TB" "XD" Feeds and Speeds for MDC Coated Tools												
Non-Alloy Steel, Cast Steel, Free Cutting Steel 1018, 1020, A36, 8620												
Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA						
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%	
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min					
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX	
1/8"	0.125	0.0006	0.0009	0.0011	0.0014	0.0016	212	291	370	450	529	
5/32"	0.156	0.0007	0.0010	0.0013	0.0015	0.0018	248	342	435	528	621	
3/16"	0.187	0.0008	0.0012	0.0015	0.0018	0.0021	267	367	467	567	667	
7/32"	0.218	0.0010	0.0013	0.0017	0.0020	0.0024	276	380	483	587	690	
1/4"	0.250	0.0011	0.0015	0.0018	0.0022	0.0026	294	405	515	626	736	
9/32"	0.281	0.0012	0.0017	0.0021	0.0026	0.0030	304	417	531	645	759	
5/16"	0.312	0.0013	0.0018	0.0022	0.0027	0.0032	313	430	547	665	782	
11/32"	0.343	0.0014	0.0019	0.0024	0.0029	0.0034	322	443	564	684	805	
3/8"	0.375	0.0014	0.0020	0.0025	0.0031	0.0036	331	455	580	704	828	
7/16"	0.437	0.0016	0.0022	0.0028	0.0034	0.0040	340	468	596	723	851	
1/2"	0.500	0.0018	0.0025	0.0032	0.0038	0.0045	350	481	612	743	874	
5/8"	0.625	0.0022	0.0030	0.0039	0.0047	0.0055	350	481	612	743	874	
3/4"	0.750	0.0024	0.0033	0.0042	0.0051	0.0060	350	481	612	743	874	
7/8"	0.875	0.0026	0.0036	0.0046	0.0055	0.0065	350	481	612	743	874	
1"	1.000	0.0028	0.0039	0.0049	0.0060	0.0070	350	481	612	743	874	
1 1/4"	1.250	0.0030	0.0041	0.0052	0.0063	0.0074	350	481	612	743	874	

Series "SS" "SM" "SF" "SD" "SH" "GM" "TM" "TB" "XD" Feeds and Speeds for MDC Coated Tools												
Low Alloy Steel, Cast Steel 4130, 4140, 8620, 4330, 4340												
Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA						
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%	
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min					
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX	
1/8"	0.125	0.0006	0.0008	0.0010	0.0012	0.0014	166	228	290	352	414	
5/32"	0.156	0.0006	0.0009	0.0011	0.0013	0.0016	175	240	306	371	437	
3/16"	0.187	0.0007	0.0010	0.0013	0.0015	0.0018	184	253	322	391	460	
7/32"	0.218	0.0009	0.0012	0.0015	0.0019	0.0022	193	266	338	411	483	
1/4"	0.250	0.0011	0.0015	0.0018	0.0022	0.0026	202	278	354	430	506	
9/32"	0.281	0.0012	0.0017	0.0021	0.0026	0.0030	212	291	370	450	529	
5/16"	0.312	0.0013	0.0018	0.0023	0.0028	0.0033	221	304	386	469	552	
11/32"	0.343	0.0014	0.0020	0.0025	0.0031	0.0036	230	316	403	489	575	
3/8"	0.375	0.0016	0.0021	0.0027	0.0033	0.0039	239	329	419	508	598	
7/16"	0.437	0.0016	0.0022	0.0029	0.0035	0.0041	248	342	435	528	621	
1/2"	0.500	0.0018	0.0024	0.0031	0.0037	0.0044	258	354	451	547	644	
5/8"	0.625	0.0021	0.0029	0.0036	0.0044	0.0052	258	354	451	547	644	
3/4"	0.750	0.0022	0.0031	0.0039	0.0048	0.0056	258	354	451	547	644	
7/8"	0.875	0.0024	0.0033	0.0042	0.0051	0.0060	258	354	451	547	644	
1"	1.000	0.0025	0.0035	0.0044	0.0054	0.0063	258	354	451	547	644	
1 1/4"	1.250	0.0026	0.0036	0.0046	0.0055	0.0065	258	354	451	547	644	

Premium Tools - Speeds & Feeds for MDC Coated Tools

Series "SS" "SM" "SF" "SD" "SH" "GM" "TM" "TB" "XD" Feeds and Speeds for MDC Coated Tools

Die & Mold Steels P20, A-2, D-2, M2, M42, T15

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0005	0.0007	0.0008	0.0010	0.0012	138	190	242	293	345
5/32"	0.156	0.0005	0.0007	0.0009	0.0011	0.0013	147	202	258	313	368
3/16"	0.187	0.0006	0.0009	0.0011	0.0014	0.0016	156	215	274	332	391
7/32"	0.218	0.0007	0.0010	0.0013	0.0015	0.0018	161	221	282	342	403
1/4"	0.250	0.0010	0.0013	0.0017	0.0020	0.0024	166	228	290	352	414
9/32"	0.281	0.0010	0.0014	0.0018	0.0022	0.0026	175	240	306	371	437
5/16"	0.312	0.0011	0.0015	0.0020	0.0024	0.0028	179	247	314	381	449
11/32"	0.343	0.0012	0.0016	0.0020	0.0025	0.0029	184	253	322	391	460
3/8"	0.375	0.0012	0.0017	0.0021	0.0026	0.0030	189	259	330	401	472
7/16"	0.437	0.0013	0.0018	0.0023	0.0028	0.0033	193	266	338	411	483
1/2"	0.500	0.0014	0.0020	0.0025	0.0031	0.0036	202	278	354	430	506
5/8"	0.625	0.0015	0.0021	0.0027	0.0032	0.0038	202	278	354	430	506
3/4"	0.750	0.0017	0.0023	0.0029	0.0036	0.0042	202	278	354	430	506
7/8"	0.875	0.0018	0.0024	0.0031	0.0037	0.0044	202	278	354	430	506
1"	1.000	0.0018	0.0025	0.0032	0.0039	0.0046	202	278	354	430	506
1 1/4"	1.250	0.0020	0.0028	0.0035	0.0043	0.0050	202	278	354	430	506

Series "SS" "SM" "SF" "SD" "SH" "GM" "TM" "TB" "XD" Feeds and Speeds for MDC Coated Tools

Nodular Cast Iron, Grey Cast Iron, Malleable Cast Iron

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0006	0.0009	0.0011	0.0014	0.0016	221	304	386	469	552
5/32"	0.156	0.0007	0.0010	0.0013	0.0015	0.0018	225	310	394	479	564
3/16"	0.187	0.0008	0.0012	0.0015	0.0018	0.0021	230	316	403	489	575
7/32"	0.218	0.0010	0.0013	0.0017	0.0020	0.0024	235	323	411	499	587
1/4"	0.250	0.0011	0.0015	0.0018	0.0022	0.0026	239	329	419	508	598
9/32"	0.281	0.0012	0.0017	0.0021	0.0026	0.0030	244	335	427	518	610
5/16"	0.312	0.0013	0.0018	0.0022	0.0027	0.0032	248	342	435	528	621
11/32"	0.343	0.0014	0.0019	0.0024	0.0029	0.0034	253	348	443	538	633
3/8"	0.375	0.0014	0.0020	0.0025	0.0031	0.0036	258	354	451	547	644
7/16"	0.437	0.0016	0.0022	0.0028	0.0034	0.0040	262	361	459	557	656
1/2"	0.500	0.0018	0.0025	0.0032	0.0038	0.0045	276	380	483	587	690
5/8"	0.625	0.0022	0.0030	0.0039	0.0047	0.0055	276	380	483	587	690
3/4"	0.750	0.0024	0.0033	0.0042	0.0051	0.0060	276	380	483	587	690
7/8"	0.875	0.0026	0.0036	0.0046	0.0055	0.0065	276	380	483	587	690
1"	1.000	0.0028	0.0039	0.0049	0.0060	0.0070	276	380	483	587	690
1 1/4"	1.250	0.0030	0.0041	0.0052	0.0063	0.0074	276	380	483	587	690

Series "SS" "SM" "SF" "SD" "SH" "GM" "TM" "TB" "XD" Feeds and Speeds for MDC Coated Tools

Stainless Steel (Precipitation) 15-5PH, 17-4PH

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0005	0.0007	0.0008	0.0010	0.0012	166	228	290	352	414
5/32"	0.156	0.0005	0.0007	0.0009	0.0011	0.0013	171	235	299	364	428
3/16"	0.187	0.0006	0.0009	0.0011	0.0014	0.0016	177	243	309	375	442
7/32"	0.218	0.0008	0.0011	0.0014	0.0017	0.0020	182	250	319	387	455
1/4"	0.250	0.0010	0.0013	0.0017	0.0020	0.0024	188	258	328	399	469
9/32"	0.281	0.0011	0.0015	0.0020	0.0024	0.0028	193	266	338	411	483
5/16"	0.312	0.0012	0.0017	0.0021	0.0026	0.0030	199	273	348	422	497
11/32"	0.343	0.0013	0.0018	0.0022	0.0027	0.0032	204	281	357	434	511
3/8"	0.375	0.0014	0.0019	0.0024	0.0029	0.0034	210	288	367	446	524
7/16"	0.437	0.0015	0.0021	0.0027	0.0032	0.0038	215	296	377	457	538
1/2"	0.500	0.0017	0.0023	0.0029	0.0036	0.0042	221	304	386	469	552
5/8"	0.625	0.0019	0.0026	0.0034	0.0041	0.0048	221	304	386	469	552
3/4"	0.750	0.0021	0.0029	0.0036	0.0044	0.0052	221	304	386	469	552
7/8"	0.875	0.0022	0.0030	0.0038	0.0046	0.0054	221	304	386	469	552
1"	1.000	0.0022	0.0031	0.0039	0.0048	0.0056	221	304	386	469	552
1 1/4"	1.250	0.0023	0.0032	0.0041	0.0049	0.0058	221	304	386	469	552

Premium Tools - Speeds & Feeds for MDC Coated Tools

Series "SS" "SM" "SF" "SD" "SH" "GM" "TM" "TB" "XD" Feeds and Speeds for MDC Coated Tools

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

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0005	0.0007	0.0008	0.0010	0.0012	99	137	174	211	248
5/32"	0.156	0.0005	0.0007	0.0009	0.0011	0.0013	105	144	184	223	262
3/16"	0.187	0.0006	0.0009	0.0011	0.0014	0.0016	110	152	193	235	276
7/32"	0.218	0.0007	0.0010	0.0013	0.0015	0.0018	116	159	203	246	290
1/4"	0.250	0.0010	0.0013	0.0017	0.0020	0.0024	121	167	213	258	304
9/32"	0.281	0.0010	0.0014	0.0018	0.0022	0.0026	127	175	222	270	317
5/16"	0.312	0.0011	0.0015	0.0020	0.0024	0.0028	132	182	232	282	331
11/32"	0.343	0.0012	0.0016	0.0020	0.0025	0.0029	138	190	242	293	345
3/8"	0.375	0.0012	0.0017	0.0021	0.0026	0.0030	144	197	251	305	359
7/16"	0.437	0.0013	0.0018	0.0022	0.0027	0.0032	149	205	261	317	373
1/2"	0.500	0.0014	0.0020	0.0025	0.0031	0.0036	155	213	270	328	386
5/8"	0.625	0.0015	0.0209	0.0266	0.0323	0.0380	155	213	270	328	386
3/4"	0.750	0.0017	0.0023	0.0029	0.0036	0.0042	155	213	270	328	386
7/8"	0.875	0.0018	0.0024	0.0031	0.0037	0.0044	155	213	270	328	386
1"	1.000	0.0018	0.0025	0.0032	0.0039	0.0046	155	213	270	328	386
1 1/4"	1.250	0.0020	0.0028	0.0035	0.0043	0.0050	155	213	270	328	386

Series "SS" "SM" "SF" "SD" "SH" "GM" "TM" "TB" "XD" Feeds and Speeds for MDC Coated Tools

High Temp Alloys, Titanium Alloys Ti-6AL4V

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0005	0.0007	0.0008	0.0010	0.0012	66	91	116	141	166
5/32"	0.156	0.0005	0.0007	0.0009	0.0011	0.0013	72	99	126	152	179
3/16"	0.187	0.0006	0.0009	0.0011	0.0014	0.0016	77	106	135	164	193
7/32"	0.218	0.0007	0.0010	0.0013	0.0015	0.0018	83	114	145	176	207
1/4"	0.250	0.0010	0.0013	0.0017	0.0020	0.0024	88	121	155	188	221
9/32"	0.281	0.0010	0.0014	0.0018	0.0022	0.0026	94	129	164	199	235
5/16"	0.312	0.0011	0.0015	0.0020	0.0024	0.0028	99	137	174	211	248
11/32"	0.343	0.0012	0.0016	0.0020	0.0025	0.0029	105	144	184	223	262
3/8"	0.375	0.0012	0.0017	0.0021	0.0026	0.0030	110	152	193	235	276
7/16"	0.437	0.0013	0.0018	0.0022	0.0027	0.0032	116	159	203	246	290
1/2"	0.500	0.0014	0.0020	0.0025	0.0031	0.0036	121	167	213	258	304
5/8"	0.625	0.0015	0.0209	0.0266	0.0323	0.0380	121	167	213	258	304
3/4"	0.750	0.0017	0.0023	0.0029	0.0036	0.0042	121	167	213	258	304
7/8"	0.875	0.0018	0.0024	0.0031	0.0037	0.0044	121	167	213	258	304
1"	1.000	0.0018	0.0025	0.0032	0.0039	0.0046	121	167	213	258	304
1 1/4"	1.250	0.0020	0.0028	0.0035	0.0043	0.0050	121	167	213	258	304

Series "SS" "SM" "SF" "SD" "SH" "GM" "TM" "TB" "XD" Feeds and Speeds for MDC Coated Tools

High Temp Alloys (Nickel and Cobalt Based) Monel 400, Hastelloy, Nimonic 75, Inconel 625, 718

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0005	0.0007	0.0008	0.0010	0.0012	19	27	34	41	48
5/32"	0.156	0.0005	0.0007	0.0009	0.0011	0.0013	19	27	34	41	48
3/16"	0.187	0.0006	0.0009	0.0011	0.0014	0.0016	19	27	34	41	48
7/32"	0.218	0.0007	0.0010	0.0013	0.0015	0.0018	22	30	39	47	55
1/4"	0.250	0.0010	0.0013	0.0017	0.0020	0.0024	22	30	39	47	55
9/32"	0.281	0.0010	0.0014	0.0018	0.0022	0.0026	22	30	39	47	55
5/16"	0.312	0.0011	0.0015	0.0020	0.0024	0.0028	28	38	48	59	69
11/32"	0.343	0.0012	0.0016	0.0020	0.0025	0.0029	28	38	48	59	69
3/8"	0.375	0.0012	0.0017	0.0021	0.0026	0.0030	28	38	48	59	69
7/16"	0.437	0.0013	0.0018	0.0022	0.0027	0.0032	28	38	48	59	69
1/2"	0.500	0.0014	0.0020	0.0025	0.0031	0.0036	33	46	58	70	83
5/8"	0.625	0.0015	0.0209	0.0266	0.0323	0.0380	33	46	58	70	83
3/4"	0.750	0.0017	0.0023	0.0029	0.0036	0.0042	33	46	58	70	83
7/8"	0.875	0.0018	0.0024	0.0031	0.0037	0.0044	33	46	58	70	83
1"	1.000	0.0018	0.0024	0.0031	0.0037	0.0044	33	46	58	70	83
1 1/4"	1.250	0.0020	0.0028	0.0035	0.0043	0.0050	33	46	58	70	83

Extreme Performance Tools - Speeds & Feeds for "XM" Series MDC Coated Tools

"XM"

Series "XM" NON-Coolant & Thru-Coolant Feeds and Speeds for MDC Coating ONLY

Non-Alloy Steel, Cast Steel, Free Cutting Steel 1018, 1020, A36, 8620

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0006	0.0009	0.0011	0.0014	0.0016	245	336	428	520	612
5/32"	0.156	0.0007	0.0010	0.0013	0.0015	0.0018	287	395	503	610	718
3/16"	0.187	0.0008	0.0012	0.0015	0.0018	0.0021	309	424	540	656	771
7/32"	0.218	0.0010	0.0013	0.0017	0.0020	0.0024	319	439	559	678	798
1/4"	0.250	0.0011	0.0015	0.0018	0.0022	0.0026	340	468	596	724	851
9/32"	0.281	0.0012	0.0017	0.0021	0.0026	0.0030	351	483	614	746	878
5/16"	0.312	0.0013	0.0018	0.0022	0.0027	0.0032	362	497	633	769	904
11/32"	0.343	0.0014	0.0019	0.0024	0.0029	0.0034	372	512	652	791	931
3/8"	0.375	0.0014	0.0020	0.0025	0.0031	0.0036	383	527	670	814	958
7/16"	0.437	0.0016	0.0022	0.0028	0.0034	0.0040	394	541	689	837	984
1/2"	0.500	0.0018	0.0025	0.0032	0.0038	0.0045	404	556	708	859	1011
5/8"	0.625	0.0022	0.0030	0.0039	0.0047	0.0055	404	556	708	859	1011
3/4"	0.750	0.0024	0.0033	0.0042	0.0051	0.0060	404	556	708	859	1011
7/8"	0.875	0.0026	0.0036	0.0046	0.0055	0.0065	404	556	708	859	1011
1"	1.000	0.0028	0.0039	0.0049	0.0060	0.0070	404	556	708	859	1011
1 1/4"	1.250	0.0030	0.0041	0.0052	0.0063	0.0074	404	556	708	859	1011

"XM"

Series "XM" NON-Coolant & Thru-Coolant Feeds and Speeds for MDC Coating ONLY

Low Alloy Steel, Cast Steel 4130, 4140, 8620, 4330, 4340

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0006	0.0008	0.0010	0.0012	0.0014	192	263	335	407	479
5/32"	0.156	0.0006	0.0009	0.0011	0.0013	0.0016	202	278	354	430	505
3/16"	0.187	0.0007	0.0010	0.0013	0.0015	0.0018	213	293	372	452	532
7/32"	0.218	0.0009	0.0012	0.0015	0.0019	0.0022	223	307	391	475	559
1/4"	0.250	0.0011	0.0015	0.0018	0.0022	0.0026	234	322	410	497	585
9/32"	0.281	0.0012	0.0017	0.0021	0.0026	0.0030	245	336	428	520	612
5/16"	0.312	0.0013	0.0018	0.0023	0.0028	0.0033	255	351	447	543	638
11/32"	0.343	0.0014	0.0020	0.0025	0.0031	0.0036	266	366	466	565	665
3/8"	0.375	0.0016	0.0021	0.0027	0.0033	0.0039	277	380	484	588	692
7/16"	0.437	0.0016	0.0022	0.0029	0.0035	0.0041	287	395	503	610	718
1/2"	0.500	0.0018	0.0024	0.0031	0.0037	0.0044	298	410	521	633	745
5/8"	0.625	0.0021	0.0029	0.0036	0.0044	0.0052	298	410	521	633	745
3/4"	0.750	0.0022	0.0031	0.0039	0.0048	0.0056	298	410	521	633	745
7/8"	0.875	0.0024	0.0033	0.0042	0.0051	0.0060	298	410	521	633	745
1"	1.000	0.0025	0.0035	0.0044	0.0054	0.0063	298	410	521	633	745
1 1/4"	1.250	0.0026	0.0036	0.0046	0.0055	0.0065	298	410	521	633	745

"XM"

Series "XM" NON-Coolant & Thru-Coolant Feeds and Speeds for MDC Coating ONLY

Die & Mold Steels P20, A-2, D-2, M2, M42, T15

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0005	0.0007	0.0008	0.0010	0.0012	160	219	279	339	399
5/32"	0.156	0.0005	0.0007	0.0009	0.0011	0.0013	170	234	298	362	426
3/16"	0.187	0.0006	0.0009	0.0011	0.0014	0.0016	181	249	317	384	452
7/32"	0.218	0.0007	0.0010	0.0013	0.0015	0.0018	186	256	326	396	466
1/4"	0.250	0.0010	0.0013	0.0017	0.0020	0.0024	192	263	335	407	479
9/32"	0.281	0.0010	0.0014	0.0018	0.0022	0.0026	202	278	354	430	505
5/16"	0.312	0.0011	0.0015	0.0020	0.0024	0.0028	207	285	363	441	519
11/32"	0.343	0.0012	0.0016	0.0020	0.0025	0.0029	213	293	372	452	532
3/8"	0.375	0.0012	0.0017	0.0021	0.0026	0.0030	218	300	382	464	545
7/16"	0.437	0.0013	0.0018	0.0023	0.0028	0.0033	223	307	391	475	559
1/2"	0.500	0.0014	0.0020	0.0025	0.0031	0.0036	234	322	410	497	585
5/8"	0.625	0.0015	0.0021	0.0027	0.0032	0.0038	234	322	410	497	585
3/4"	0.750	0.0017	0.0023	0.0029	0.0036	0.0042	234	322	410	497	585
7/8"	0.875	0.0018	0.0024	0.0031	0.0037	0.0044	234	322	410	497	585
1"	1.000	0.0018	0.0025	0.0032	0.0039	0.0046	234	322	410	497	585
1 1/4"	1.250	0.0020	0.0028	0.0035	0.0043	0.0050	234	322	410	497	585

Extreme Performance Tools - Speeds & Feeds for "XM" Series MDC Coated Tools

"XM"		Series "XM" NON-Coolant & Thru-Coolant Feeds and Speeds for MDC Coating ONLY Nodular Cast Iron, Grey Cast Iron, Malleable Cast Iron									
Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0006	0.0009	0.0011	0.0014	0.0016	255	351	447	543	638
5/32"	0.156	0.0007	0.0010	0.0013	0.0015	0.0018	261	358	456	554	652
3/16"	0.187	0.0008	0.0012	0.0015	0.0018	0.0021	266	366	466	565	665
7/32"	0.218	0.0010	0.0013	0.0017	0.0020	0.0024	271	373	475	577	678
1/4"	0.250	0.0011	0.0015	0.0018	0.0022	0.0026	277	380	484	588	692
9/32"	0.281	0.0012	0.0017	0.0021	0.0026	0.0030	282	388	493	599	705
5/16"	0.312	0.0013	0.0018	0.0022	0.0027	0.0032	287	395	503	610	718
11/32"	0.343	0.0014	0.0019	0.0024	0.0029	0.0034	293	402	512	622	732
3/8"	0.375	0.0014	0.0020	0.0025	0.0031	0.0036	298	410	521	633	745
7/16"	0.437	0.0016	0.0022	0.0028	0.0034	0.0040	303	417	531	644	758
1/2"	0.500	0.0018	0.0025	0.0032	0.0038	0.0045	319	439	559	678	798
5/8"	0.625	0.0022	0.0030	0.0039	0.0047	0.0055	319	439	559	678	798
3/4"	0.750	0.0024	0.0033	0.0042	0.0051	0.0060	319	439	559	678	798
7/8"	0.875	0.0026	0.0036	0.0046	0.0055	0.0065	319	439	559	678	798
1"	1.000	0.0028	0.0039	0.0049	0.0060	0.0070	319	439	559	678	798
1 1/4"	1.250	0.0030	0.0041	0.0052	0.0063	0.0074	319	439	559	678	798

"XM"		Series "XM" NON-Coolant & Thru-Coolant Feeds and Speeds for MDC Coating ONLY Stainless Steel (Precipitation) 15-5PH, 17-4PH									
Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0005	0.0007	0.0008	0.0010	0.0012	192	263	335	407	479
5/32"	0.156	0.0005	0.0007	0.0009	0.0011	0.0013	198	272	346	421	495
3/16"	0.187	0.0006	0.0009	0.0011	0.0014	0.0016	204	281	358	434	511
7/32"	0.218	0.0008	0.0011	0.0014	0.0017	0.0020	211	290	369	448	527
1/4"	0.250	0.0010	0.0013	0.0017	0.0020	0.0024	217	298	380	461	543
9/32"	0.281	0.0011	0.0015	0.0020	0.0024	0.0028	223	307	391	475	559
5/16"	0.312	0.0012	0.0017	0.0021	0.0026	0.0030	230	316	402	488	575
11/32"	0.343	0.0013	0.0018	0.0022	0.0027	0.0032	236	325	413	502	591
3/8"	0.375	0.0014	0.0019	0.0024	0.0029	0.0034	243	334	425	516	606
7/16"	0.437	0.0015	0.0021	0.0027	0.0032	0.0038	249	342	436	529	622
1/2"	0.500	0.0017	0.0023	0.0029	0.0036	0.0042	255	351	447	543	638
5/8"	0.625	0.0019	0.0026	0.0034	0.0041	0.0048	255	351	447	543	638
3/4"	0.750	0.0021	0.0029	0.0036	0.0044	0.0052	255	351	447	543	638
7/8"	0.875	0.0022	0.0030	0.0038	0.0046	0.0054	255	351	447	543	638
1"	1.000	0.0022	0.0031	0.0039	0.0048	0.0056	255	351	447	543	638
1 1/4"	1.250	0.0023	0.0032	0.0041	0.0049	0.0058	255	351	447	543	638

"XM"		Series "XM" NON-Coolant & Thru-Coolant Feeds and Speeds for MDC Coating ONLY Stainless Steels (Austenitic) 303, 304, 304L, 312, 316, 316L									
Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0005	0.0007	0.0008	0.0010	0.0012	115	158	201	244	287
5/32"	0.156	0.0005	0.0007	0.0009	0.0011	0.0013	121	167	212	258	303
3/16"	0.187	0.0006	0.0009	0.0011	0.0014	0.0016	128	176	223	271	319
7/32"	0.218	0.0007	0.0010	0.0013	0.0015	0.0018	134	184	235	285	335
1/4"	0.250	0.0010	0.0013	0.0017	0.0020	0.0024	140	193	246	298	351
9/32"	0.281	0.0010	0.0014	0.0018	0.0022	0.0026	147	202	257	312	367
5/16"	0.312	0.0011	0.0015	0.0020	0.0024	0.0028	153	211	268	326	383
11/32"	0.343	0.0012	0.0016	0.0020	0.0025	0.0029	160	219	279	339	399
3/8"	0.375	0.0012	0.0017	0.0021	0.0026	0.0030	166	228	290	353	415
7/16"	0.437	0.0013	0.0018	0.0022	0.0027	0.0032	172	237	302	366	431
1/2"	0.500	0.0014	0.0020	0.0025	0.0031	0.0036	179	246	313	380	447
5/8"	0.625	0.0015	0.0209	0.0266	0.0323	0.0380	179	246	313	380	447
3/4"	0.750	0.0017	0.0023	0.0029	0.0036	0.0042	179	246	313	380	447
7/8"	0.875	0.0018	0.0024	0.0031	0.0037	0.0044	179	246	313	380	447
1"	1.000	0.0018	0.0025	0.0032	0.0039	0.0046	179	246	313	380	447
1 1/4"	1.250	0.0020	0.0028	0.0035	0.0043	0.0050	179	246	313	380	447

Extreme Performance Tools - Speeds & Feeds for "XM" Series MDC Coated Tools

"XM"

Series "XM" NON-Coolant & Thru-Coolant Feeds and Speeds for MDC Coating ONLY

High Temp Alloys, Titanium Alloys Ti-6AL4V

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0005	0.0007	0.0008	0.0010	0.0012	77	105	134	163	192
5/32"	0.156	0.0005	0.0007	0.0009	0.0011	0.0013	83	114	145	176	207
3/16"	0.187	0.0006	0.0009	0.0011	0.0014	0.0016	89	123	156	190	223
7/32"	0.218	0.0007	0.0010	0.0013	0.0015	0.0018	96	132	168	203	239
1/4"	0.250	0.0010	0.0013	0.0017	0.0020	0.0024	102	140	179	217	255
9/32"	0.281	0.0010	0.0014	0.0018	0.0022	0.0026	109	149	190	231	271
5/16"	0.312	0.0011	0.0015	0.0020	0.0024	0.0028	115	158	201	244	287
11/32"	0.343	0.0012	0.0016	0.0020	0.0025	0.0029	121	167	212	258	303
3/8"	0.375	0.0012	0.0017	0.0021	0.0026	0.0030	128	176	223	271	319
7/16"	0.437	0.0013	0.0018	0.0022	0.0027	0.0032	134	184	235	285	335
1/2"	0.500	0.0014	0.0020	0.0025	0.0031	0.0036	140	193	246	298	351
5/8"	0.625	0.0015	0.0209	0.0266	0.0323	0.0380	140	193	246	298	351
3/4"	0.750	0.0017	0.0023	0.0029	0.0036	0.0042	140	193	246	298	351
7/8"	0.875	0.0018	0.0024	0.0031	0.0037	0.0044	140	193	246	298	351
1"	1.000	0.0018	0.0025	0.0032	0.0039	0.0046	140	193	246	298	351
1 1/4"	1.250	0.0020	0.0028	0.0035	0.0043	0.0050	140	193	246	298	351

"XM"

Series "XM" NON-Coolant & Thru-Coolant Feeds and Speeds for MDC Coating ONLY

High Temp Alloys (Nickel & Cobalt Based) Monel 400, Hastelloy, Nimonic 75, Inconel 625, 718

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0005	0.0007	0.0008	0.0010	0.0012	22	31	39	47	56
5/32"	0.156	0.0005	0.0007	0.0009	0.0011	0.0013	22	31	39	47	56
3/16"	0.187	0.0006	0.0009	0.0011	0.0014	0.0016	22	31	39	47	56
7/32"	0.218	0.0007	0.0010	0.0013	0.0015	0.0018	26	35	45	54	64
1/4"	0.250	0.0010	0.0013	0.0017	0.0020	0.0024	26	35	45	54	64
9/32"	0.281	0.0010	0.0014	0.0018	0.0022	0.0026	26	35	45	54	64
5/16"	0.312	0.0011	0.0015	0.0020	0.0024	0.0028	32	44	56	68	80
11/32"	0.343	0.0012	0.0016	0.0020	0.0025	0.0029	32	44	56	68	80
3/8"	0.375	0.0012	0.0017	0.0021	0.0026	0.0030	32	44	56	68	80
7/16"	0.437	0.0013	0.0018	0.0022	0.0027	0.0032	32	44	56	68	80
1/2"	0.500	0.0014	0.0020	0.0025	0.0031	0.0036	38	53	67	81	96
5/8"	0.625	0.0015	0.0209	0.0266	0.0323	0.0380	38	53	67	81	96
3/4"	0.750	0.0017	0.0023	0.0029	0.0036	0.0042	38	53	67	81	96
7/8"	0.875	0.0018	0.0024	0.0031	0.0037	0.0044	38	53	67	81	96
1"	1.000	0.0018	0.0024	0.0031	0.0037	0.0044	38	53	67	81	96
1 1/4"	1.250	0.0020	0.0028	0.0035	0.0043	0.0050	38	53	67	81	96

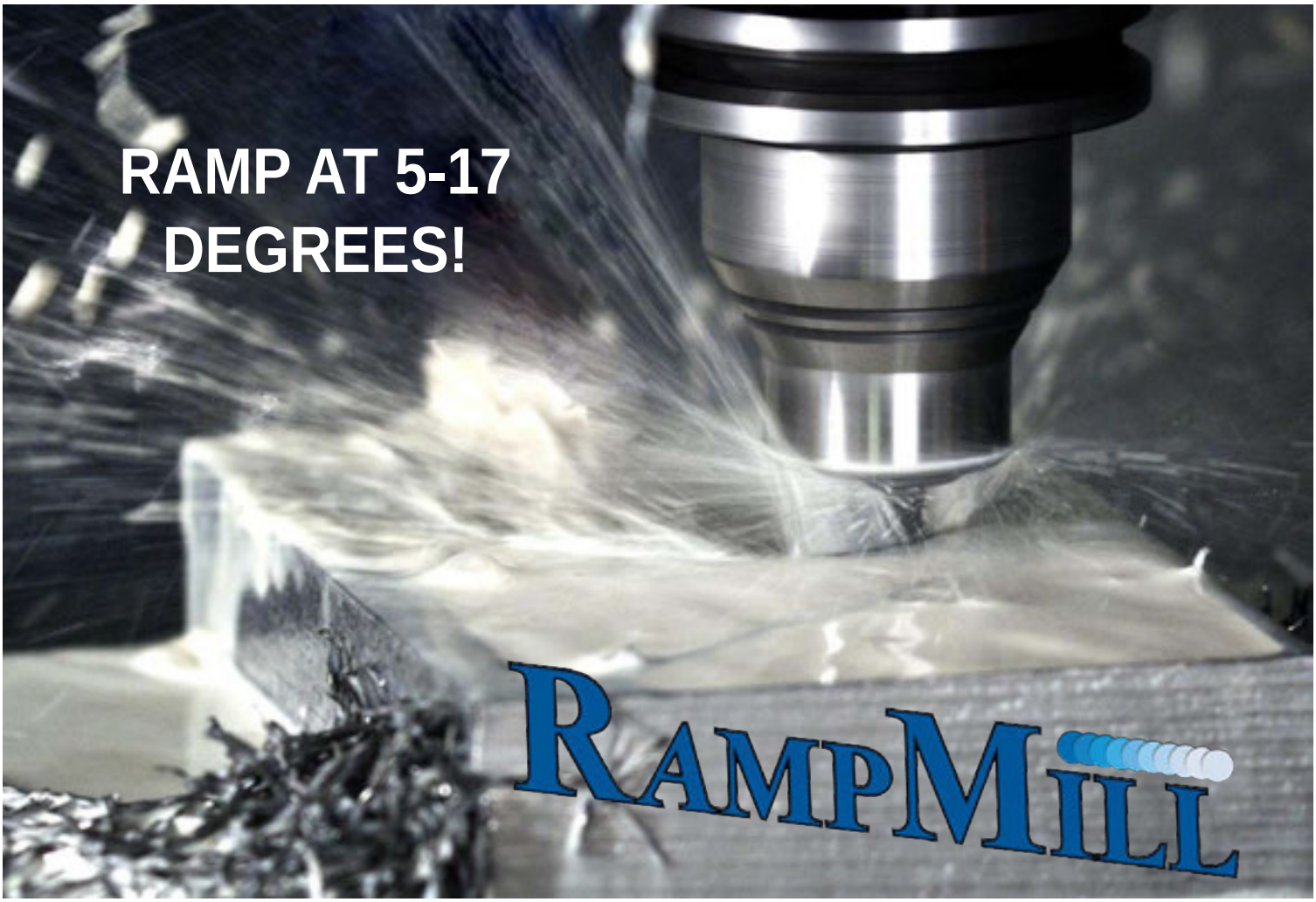
"XM"

Series "XM" NON-Coolant & Thru-Coolant Feeds and Speeds for MDC Coating ONLY

Hardened Steels (55-60HRC)

Axial Depth		.5 X DIA	.75 X DIA	1.25 X DIA	1.5 X DIA	2 X DIA					
Radial Engagement		100-85%	85-50%	50-25%	25-10%	10-0%	100-85%	85-50%	50-25%	25-10%	10-0%
Chip Load Range at TEA		Full	Heavy	Medium	Light	Light	Surface Feet Per Min				
Diameter		Slotting	Roughing	Roughing	Roughing	Finishing	MIN		MID		MAX
1/8"	0.125	0.0005	0.0007	0.0008	0.0010	0.0012	45	62	78	95	112
5/32"	0.156	0.0005	0.0007	0.0009	0.0011	0.0013	51	70	90	109	128
3/16"	0.187	0.0006	0.0009	0.0011	0.0014	0.0016	58	79	101	122	144
7/32"	0.218	0.0007	0.0010	0.0013	0.0015	0.0018	64	88	112	136	160
1/4"	0.250	0.0010	0.0013	0.0017	0.0020	0.0024	64	88	112	136	160
9/32"	0.281	0.0010	0.0014	0.0018	0.0022	0.0026	70	97	123	150	176
5/16"	0.312	0.0011	0.0015	0.0020	0.0024	0.0028	70	97	123	150	176
11/32"	0.343	0.0012	0.0016	0.0020	0.0025	0.0029	77	106	134	163	192
3/8"	0.375	0.0012	0.0017	0.0021	0.0026	0.0030	77	106	134	163	192
7/16"	0.437	0.0013	0.0018	0.0022	0.0027	0.0032	77	106	134	163	192
1/2"	0.500	0.0014	0.0020	0.0025	0.0031	0.0036	83	114	146	177	208
5/8"	0.625	0.0015	0.0209	0.0266	0.0323	0.0380	83	114	146	177	208
3/4"	0.750	0.0017	0.0023	0.0029	0.0036	0.0042	83	114	146	177	208
7/8"	0.875	0.0018	0.0024	0.0031	0.0037	0.0044	83	114	146	177	208
1"	1.000	0.0018	0.0025	0.0032	0.0039	0.0046	83	114	146	177	208
1 1/4"	1.250	0.0019	0.0026	0.0034	0.0041	0.0048	83	114	146	177	208

RAMPMILL SPEEDS AND FEEDS



Helical Ramp Entry Hole Size

RampMill Diameter		Entry Hole Diameter: Coolant-Through	Entry Hole Diameter: Flood only	
3/16"	0.187	0.262	0.345	RPM & FEED RATE MUST BE REDUCED DURING RAMP ENTRY. REFER TO THE NEXT PAGES FOR SPECIFIC REDUCTIONS BASED ON EACH MATERIAL & GEOMETRY.
1/4"	0.250	0.339	0.440	
5/16"	0.312	0.427	0.565	
3/8"	0.375	0.504	0.690	
7/16"	0.437	0.591	0.815	
1/2"	0.500	0.700	0.880	
5/8"	0.625	0.853	1.130	
3/4"	0.750	1.039	1.380	
7/8"	0.875	1.193	1.630	
1"	1.000	1.346	1.880	

WARNING: Using helical ramp parameters outside the guidelines listed above will result in poor tool life and can cause tool breakage.

THE FEEDS AND SPEEDS IN THIS SECTION ARE BASED ON USING CONTROLLED ENGAGEMENT TOOL PATHS. THE RECOMMENDATIONS ARE GUIDELINES FOR FINDING WHERE TO START ON YOUR MACHINE. IT IS NECESSARY TO USE THE SWIFTCALC CALCULATOR TO AID IN MAKING ADJUSTMENTS TO YOUR PROGRAM.

FOR MORE HELP ON SPEEDS AND FEEDS GO TO WWW.SWIFTCARB.COM OR CALL 800-227-9876.

"AV"		Series "AV" 3-Flute RampMill Aluminum Rougher Feeds and Speeds								
		Aluminum Wrought Alloy & Aluminum Alloy <12% Si, 6061-T6, 7075								
Diameter		#FL	TEA-105	TEA-85	TEA-65	MAX AXIAL DOC	105°	85°	65°	When ramping, reduce program to
			Chip Thickness at TEA				Surface Feet Per Min			
							Min	Mid	Max	RPM= 100% / Feed= 70%
1/4"	0.250	3	0.0031	0.0036	0.0051	0.500	800	1120	1600	10 - 15°
3/8"	0.375	3	0.0041	0.0048	0.0068	0.750	900	1260	1800	10 - 15°
1/2"	0.500	3	0.0072	0.0084	0.0120	1.000	1000	1400	2000	12 - 17°
5/8"	0.625	3	0.0072	0.0084	0.0120	1.250	1000	1400	2000	12 - 17°
3/4"	0.750	3	0.0084	0.0098	0.0140	1.500	1000	1400	2000	12 - 17°
1"	1.000	3	0.0102	0.0119	0.0170	2.000	1000	1400	2000	12 - 17°
1-1/4"	1.250	3	0.0114	0.0133	0.0190	2.500	1000	1400	2000	12 - 17°

"AV"		Series "AV" 3-Flute RampMill Aluminum Rougher Feeds and Speeds								
		Aluminum Wrought Alloy & Aluminum Alloy >12% Si, Copper Alloys, Brass, Bronze								
Diameter		#FL	TEA-105	TEA-85	TEA-65	MAX AXIAL DOC	105°	85°	65°	When ramping, reduce program to
			Chip Thickness at TEA				Surface Feet Per Min			
							Min	Mid	Max	RPM= 100% / Feed= 70%
1/4"	0.250	3	0.0031	0.0036	0.0051	0.500	400	560	800	10 - 15°
3/8"	0.375	3	0.0041	0.0048	0.0068	0.750	450	630	900	10 - 15°
1/2"	0.500	3	0.0072	0.0084	0.0120	1.000	500	700	1000	12 - 17°
5/8"	0.625	3	0.0072	0.0084	0.0120	1.250	500	700	1000	12 - 17°
3/4"	0.750	3	0.0084	0.0098	0.0140	1.500	500	700	1000	12 - 17°
1"	1.000	3	0.0102	0.0119	0.0170	2.000	500	700	1000	12 - 17°
1-1/4"	1.250	3	0.0114	0.0133	0.0190	2.500	500	700	1000	12 - 17°

"XD"		Series "XD" Feeds and Speeds with MDC Coating Non-Alloy Steel, Cast Steel, Free Cutting Steel 1018, 1020, A36, 8622								
Diameter		#FL	TEA-50	TEA-40	TEA-30	MAX AXIAL DOC	50°	40°	30°	When ramping, reduce program to
			Chip Thickness at TEA				Surface Feet Per Min			RPM= 80% / Feed= 50%
							Min	Mid	Max	
3/16"	0.187	4	0.0015	0.0018	0.0021	0.375	540	656	771	Helical Ramp Angle 5 - 8° Over 5 Deg for Coolant-Through Only
1/4"	0.250	4	0.0018	0.0022	0.0026	0.500	596	724	851	
5/16"	0.312	4	0.0022	0.0027	0.0032	0.625	633	769	904	
3/8"	0.375	4	0.0025	0.0031	0.0036	0.750	670	814	958	
7/16"	0.437	4	0.0028	0.0034	0.0040	0.875	689	837	984	
1/2"	0.500	4	0.0032	0.0038	0.0045	1.000	708	859	1011	
5/8"	0.625	4	0.0039	0.0047	0.0055	1.250	708	859	1011	
3/4"	0.750	4	0.0042	0.0051	0.0060	1.500	708	859	1011	
7/8"	0.875	4	0.0046	0.0055	0.0065	1.750	708	859	1011	
1"	1.000	4	0.0049	0.0060	0.0070	2.000	708	859	1011	

"XD"		Series "XD" Feeds and Speeds with MDC Coating Low Alloy Steel, Cast Steel 4130, 4140, 8620, 4330, 4340								
Diameter		#FL	TEA-55	TEA-45	TEA-35	MAX AXIAL DOC	55°	45°	35°	When ramping, reduce program to
			Chip Thickness at TEA				Surface Feet Per Min			RPM= 80% / Feed= 50%
							Min	Mid	Max	
3/16"	0.187	4	0.0013	0.0015	0.0018	0.375	372	452	532	Helical Ramp Angle 5 - 8° Over 5 Deg for Coolant-Through Only
1/4"	0.250	4	0.0018	0.0022	0.0026	0.500	410	497	585	
5/16"	0.312	4	0.0023	0.0028	0.0033	0.625	447	543	638	
3/8"	0.375	4	0.0027	0.0033	0.0039	0.750	484	588	692	
7/16"	0.437	4	0.0029	0.0035	0.0041	0.875	503	610	718	
1/2"	0.500	4	0.0031	0.0037	0.0044	1.000	521	633	745	
5/8"	0.625	4	0.0036	0.0044	0.0052	1.250	521	633	745	
3/4"	0.750	4	0.0039	0.0048	0.0056	1.500	521	633	745	
7/8"	0.875	4	0.0042	0.0051	0.0060	1.750	521	633	745	
1"	1.000	4	0.0044	0.0054	0.0063	2.000	521	633	745	

"XD"		Series "XD" Feeds and Speeds with MDC Coating Die & Mold Steels P20, A-2, D-2, M2, M42, T15								
Diameter		#FL	TEA-45	TEA-35	TEA-28	MAX AXIAL DOC	45°	35°	28°	When ramping, reduce program to
			Chip Thickness at TEA				Surface Feet Per Min			RPM= 80% / Feed= 40%
							Min	Mid	Max	
3/16"	0.187	4	0.0011	0.0014	0.0016	0.375	317	384	452	Helical Ramp Angle 5 - 8° Over 5 Deg for Coolant-Through Only
1/4"	0.250	4	0.0017	0.0020	0.0024	0.500	335	407	479	
5/16"	0.312	4	0.0020	0.0024	0.0028	0.625	363	441	519	
3/8"	0.375	4	0.0021	0.0026	0.0030	0.750	382	464	545	
7/16"	0.437	4	0.0023	0.0028	0.0033	0.875	391	475	559	
1/2"	0.500	4	0.0025	0.0031	0.0036	1.000	410	497	585	
5/8"	0.625	4	0.0027	0.0032	0.0038	1.250	410	497	585	
3/4"	0.750	4	0.0029	0.0036	0.0042	1.500	410	497	585	
7/8"	0.875	4	0.0031	0.0037	0.0044	1.750	410	497	585	
1"	1.000	4	0.0032	0.0039	0.0046	2.000	410	497	585	

"XD"		Series "XD" Feeds and Speeds with MDC Coating Nodular Cast Iron, Grey Cast Iron, Malleable Cast Iron								
Diameter		#FL	TEA-50	TEA-40	TEA-30	MAX AXIAL DOC	50°	40°	30°	When ramping, reduce program to
			Chip Thickness at TEA				Surface Feet Per Min			RPM= 80% / Feed= 50%
							Min	Mid	Max	
3/16"	0.187	4	0.0015	0.0018	0.0021	0.375	466	565	665	Helical Ramp Angle 3 - 5° Over 3 Deg for Coolant-Through Only
1/4"	0.250	4	0.0018	0.0022	0.0026	0.500	484	588	692	
5/16"	0.312	4	0.0022	0.0027	0.0032	0.625	503	610	718	
3/8"	0.375	4	0.0025	0.0031	0.0036	0.750	521	633	745	
7/16"	0.437	4	0.0028	0.0034	0.0040	0.875	531	644	758	
1/2"	0.500	4	0.0032	0.0038	0.0045	1.000	559	678	798	
5/8"	0.625	4	0.0039	0.0047	0.0055	1.250	559	678	798	
3/4"	0.750	4	0.0042	0.0051	0.0060	1.500	559	678	798	
7/8"	0.875	4	0.0046	0.0055	0.0065	1.750	559	678	798	
1"	1.000	4	0.0049	0.0060	0.0070	2.000	559	678	798	

"XD"

Series "XD" Feeds and Speeds with MDC Coating

Stainless Steel (Precipitation) 15-5PH, 17-4PH

Diameter		#FL	TEA-32	TEA-28	TEA-24	MAX AXIAL DOC	32°	28°	24°	When ramping, reduce program to	
			Chip Thickness at TEA				Surface Feet Per Min				
							Min	Mid	Max	RPM= 80%	Feed= 40%
3/16"	0.187	4	0.0011	0.0014	0.0016	0.375	329	400	470	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only	
1/4"	0.250	4	0.0017	0.0020	0.0024	0.500	350	425	500		
5/16"	0.312	4	0.0021	0.0026	0.0030	0.625	370	450	529		
3/8"	0.375	4	0.0024	0.0029	0.0034	0.750	390	473	557		
7/16"	0.437	4	0.0027	0.0032	0.0038	0.875	400	486	572		
1/2"	0.500	4	0.0029	0.0036	0.0042	1.000	410	498	586		
5/8"	0.625	4	0.0034	0.0041	0.0048	1.250	410	498	586		
3/4"	0.750	4	0.0036	0.0044	0.0052	1.500	410	498	586		
7/8"	0.875	4	0.0038	0.0046	0.0054	1.750	410	498	586		
1"	1.000	4	0.0039	0.0048	0.0056	2.000	410	498	586		

"XD"

Series "XD" Feeds and Speeds with MDC Coating

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

Diameter		#FL	TEA-30	TEA-27	TEA-24	MAX AXIAL DOC	30°	27°	24°	When ramping, reduce program to	
			Chip Thickness at TEA				Surface Feet Per Min				
							Min	Mid	Max	RPM= 70%	Feed= 30%
3/16"	0.187	4	0.0011	0.0014	0.0016	0.375	223	271	319	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only	
1/4"	0.250	4	0.0017	0.0020	0.0024	0.500	246	298	351		
5/16"	0.312	4	0.0020	0.0024	0.0028	0.625	268	326	383		
3/8"	0.375	4	0.0021	0.0026	0.0030	0.750	290	353	415		
7/16"	0.437	4	0.0022	0.0027	0.0032	0.875	302	366	431		
1/2"	0.500	4	0.0025	0.0031	0.0036	1.000	313	380	447		
5/8"	0.625	4	0.0027	0.0032	0.0038	1.250	313	380	447		
3/4"	0.750	4	0.0029	0.0036	0.0042	1.500	313	380	447		
7/8"	0.875	4	0.0031	0.0037	0.0044	1.750	313	380	447		
1"	1.000	4	0.0032	0.0039	0.0046	2.000	313	380	447		

"XD"

Series "XD" Feeds and Speeds with MDC Coating

High Temp Alloys, Titanium Alloys Ti-6AL4V

Diameter		#FL	TEA-32	TEA-28	TEA-24	MAX AXIAL DOC	32°	28°	24°	When ramping, reduce program to	
			Chip Thickness at TEA				Surface Feet Per Min				
							Min	Mid	Max	RPM= 70%	Feed= 30%
3/16"	0.187	4	0.0011	0.0014	0.0016	0.375	156	190	223	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only	
1/4"	0.250	4	0.0017	0.0020	0.0024	0.500	179	217	255		
5/16"	0.312	4	0.0020	0.0024	0.0028	0.625	201	244	287		
3/8"	0.375	4	0.0021	0.0026	0.0030	0.750	223	271	319		
7/16"	0.437	4	0.0022	0.0027	0.0032	0.875	235	285	335		
1/2"	0.500	4	0.0024	0.0029	0.0034	1.000	246	298	351		
5/8"	0.625	4	0.0025	0.0030	0.0035	1.250	246	298	351		
3/4"	0.750	4	0.0025	0.0031	0.0036	1.500	246	298	351		
7/8"	0.875	4	0.0027	0.0032	0.0038	1.750	246	298	351		
1"	1.000	4	0.0027	0.0032	0.0038	2.000	246	298	351		

"XD"

Series "XD" Feeds and Speeds with MDC Coating

High Temp Alloys (Nickel & Cobalt Based) Monel 400, Hastelloy, Nimonic 75, Inconel 625, 718

Diameter		#FL	TEA-30	TEA-26	TEA-22	MAX AXIAL DOC	30°	26°	22°	When ramping, reduce program to	
			Chip Thickness at TEA				Surface Feet Per Min				
							Min	Mid	Max	RPM= 70%	Feed= 30%
3/16"	0.187	4	0.0011	0.0014	0.0016	0.375	39	47	56	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only	
1/4"	0.250	4	0.0017	0.0020	0.0024	0.500	45	54	64		
5/16"	0.312	4	0.0020	0.0024	0.0028	0.625	56	68	80		
3/8"	0.375	4	0.0021	0.0026	0.0030	0.750	56	68	80		
7/16"	0.437	4	0.0022	0.0027	0.0032	0.875	56	68	80		
1/2"	0.500	4	0.0024	0.0029	0.0034	1.000	67	81	96		
5/8"	0.625	4	0.0025	0.0030	0.0035	1.250	67	81	96		
3/4"	0.750	4	0.0025	0.0031	0.0036	1.500	67	81	96		
7/8"	0.875	4	0.0027	0.0032	0.0038	1.750	67	81	96		
1"	1.000	4	0.0027	0.0032	0.0038	2.000	67	81	96		

"XD"

Series "XD" Feeds and Speeds with MDC Coating

Hardened Steels (55-60HRC)

Diameter		#FL	TEA-30 Chip Thickness at TEA	TEA-26 Chip Thickness at TEA	TEA-22 Chip Thickness at TEA	MAX AXIAL DOC	30° Surface Feet Per Min Min	26° Surface Feet Per Min Mid	22° Surface Feet Per Min Max	When ramping, reduce program to RPM= 70%	Feed= 30%
3/16"	0.187	4	0.0011	0.0014	0.0016	0.375	101	122	144	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only	
1/4"	0.250	4	0.0017	0.0020	0.0024	0.500	112	136	160		
5/16"	0.312	4	0.0020	0.0024	0.0028	0.625	123	150	176		
3/8"	0.375	4	0.0021	0.0026	0.0030	0.750	134	163	192		
7/16"	0.437	4	0.0022	0.0027	0.0032	0.875	134	163	192		
1/2"	0.500	4	0.0024	0.0029	0.0034	1.000	146	177	208		
5/8"	0.625	4	0.0025	0.0030	0.0035	1.250	146	177	208		
3/4"	0.750	4	0.0025	0.0031	0.0036	1.500	146	177	208		
7/8"	0.875	4	0.0027	0.0032	0.0038	1.750	146	177	208		
1"	1.000	4	0.0027	0.0032	0.0038	2.000	146	177	208		

"XT"

Series "XT" Feeds and Speeds with MDC Coating

Non-Alloy Steel, Cast Steel, Free Cutting Steel 1018, 1020, A36, 8620

Diameter		#FL	TEA-50 Chip Thickness at TEA	TEA-40 Chip Thickness at TEA	TEA-30 Chip Thickness at TEA	MAX AXIAL DOC	50° Surface Feet Per Min Min	40° Surface Feet Per Min Mid	30° Surface Feet Per Min Max	When ramping, reduce program to RPM= 80%	Feed= 50%
3/16"	0.187	5	0.0015	0.0018	0.0021	0.375	540	656	771	Helical Ramp Angle 5 - 8° Over 5° for Coolant-Through Only	
1/4"	0.250	5	0.0018	0.0022	0.0026	0.500	596	724	851		
5/16"	0.312	5	0.0022	0.0027	0.0032	0.625	633	769	904		
3/8"	0.375	5	0.0025	0.0031	0.0036	0.750	670	814	958		
7/16"	0.437	5	0.0028	0.0034	0.0040	0.875	689	837	984		
1/2"	0.500	5	0.0032	0.0038	0.0045	1.000	708	859	1011		
5/8"	0.625	5	0.0039	0.0047	0.0055	1.250	708	859	1011		
3/4"	0.750	5	0.0042	0.0051	0.0060	1.500	708	859	1011		
7/8"	0.875	5	0.0046	0.0055	0.0065	1.750	708	859	1011		
1"	1.000	5	0.0049	0.0060	0.0070	2.000	708	859	1011		

"XT"

Series "XT" Feeds and Speeds with MDC Coating

Low Alloy Steel, Cast Steel 4130, 4140, 8620, 4330, 4340

Diameter		#FL	TEA-50 Chip Thickness at TEA	TEA-40 Chip Thickness at TEA	TEA-30 Chip Thickness at TEA	MAX AXIAL DOC	50° Surface Feet Per Min Min	40° Surface Feet Per Min Mid	30° Surface Feet Per Min Max	When ramping, reduce program to RPM= 80%	Feed= 50%
3/16"	0.187	5	0.0013	0.0015	0.0018	0.375	372	452	532	Helical Ramp Angle 5 - 8° Over 5° for Coolant-Through Only	
1/4"	0.250	5	0.0018	0.0022	0.0026	0.500	410	497	585		
5/16"	0.312	5	0.0023	0.0028	0.0033	0.625	447	543	638		
3/8"	0.375	5	0.0027	0.0033	0.0039	0.750	484	588	692		
7/16"	0.437	5	0.0029	0.0035	0.0041	0.875	503	610	718		
1/2"	0.500	5	0.0031	0.0037	0.0044	1.000	521	633	745		
5/8"	0.625	5	0.0036	0.0044	0.0052	1.250	521	633	745		
3/4"	0.750	5	0.0039	0.0048	0.0056	1.500	521	633	745		
7/8"	0.875	5	0.0042	0.0051	0.0060	1.750	521	633	745		
1"	1.000	5	0.0044	0.0054	0.0063	2.000	521	633	745		

"XT"

Series "XT" Feeds and Speeds with MDC Coating

Die & Mold Steels P20, A-2, D-2, M2, M42, T15

Diameter		#FL	TEA-50 Chip Thickness at TEA	TEA-40 Chip Thickness at TEA	TEA-30 Chip Thickness at TEA	MAX AXIAL DOC	50° Surface Feet Per Min Min	40° Surface Feet Per Min Mid	30° Surface Feet Per Min Max	When ramping, reduce program to RPM= 80%	Feed= 40%
3/16"	0.187	5	0.0011	0.0014	0.0016	0.375	317	384	452	Helical Ramp Angle 5 - 8° Over 5° for Coolant-Through Only	
1/4"	0.250	5	0.0017	0.0020	0.0024	0.500	335	407	479		
5/16"	0.312	5	0.0020	0.0024	0.0028	0.625	363	441	519		
3/8"	0.375	5	0.0021	0.0026	0.0030	0.750	382	464	545		
7/16"	0.437	5	0.0023	0.0028	0.0033	0.875	391	475	559		
1/2"	0.500	5	0.0025	0.0031	0.0036	1.000	410	497	585		
5/8"	0.625	5	0.0027	0.0032	0.0038	1.250	410	497	585		
3/4"	0.750	5	0.0029	0.0036	0.0042	1.500	410	497	585		
7/8"	0.875	5	0.0031	0.0037	0.0044	1.750	410	497	585		
1"	1.000	5	0.0032	0.0039	0.0046	2.000	410	497	585		

"XT"

Series "XT" Feeds and Speeds with MDC Coating

Nodular Cast Iron, Grey Cast Iron, Malleable Cast Iron

Diameter		#FL	TEA-50	TEA-40	TEA-30	MAX AXIAL DOC	50°	40°	30°	When ramping, reduce program to	
			Chip Thickness at TEA				Surface Feet Per Min				
							Min	Mid	Max	RPM= 80%	Feed= 50%
3/16"	0.187	5	0.0015	0.0018	0.0021	0.375	466	565	665	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only	
1/4"	0.250	5	0.0018	0.0022	0.0026	0.500	484	588	692		
5/16"	0.312	5	0.0022	0.0027	0.0032	0.625	503	610	718		
3/8"	0.375	5	0.0025	0.0031	0.0036	0.750	521	633	745		
7/16"	0.437	5	0.0028	0.0034	0.0040	0.875	531	644	758		
1/2"	0.500	5	0.0032	0.0038	0.0045	1.000	559	678	798		
5/8"	0.625	5	0.0039	0.0047	0.0055	1.250	559	678	798		
3/4"	0.750	5	0.0042	0.0051	0.0060	1.500	559	678	798		
7/8"	0.875	5	0.0046	0.0055	0.0065	1.750	559	678	798		
1"	1.000	5	0.0049	0.0060	0.0070	2.000	559	678	798		

"XT"

Series "XT" Feeds and Speeds with MDC Coating

Stainless Steel (Precipitation) 15-5PH, 17-4PH

Diameter		#FL	TEA-32	TEA-28	TEA-24	MAX AXIAL DOC	32°	28°	24°	When ramping, reduce program to	
			Chip Thickness at TEA				Surface Feet Per Min				
							Min	Mid	Max	RPM= 80%	Feed= 40%
3/16"	0.187	5	0.0011	0.0014	0.0016	0.375	329	400	470	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only	
1/4"	0.250	5	0.0017	0.0020	0.0024	0.500	350	425	500		
5/16"	0.312	5	0.0021	0.0026	0.0030	0.625	370	450	529		
3/8"	0.375	5	0.0024	0.0029	0.0034	0.750	390	473	557		
7/16"	0.437	5	0.0027	0.0032	0.0038	0.875	400	486	572		
1/2"	0.500	5	0.0029	0.0036	0.0042	1.000	410	498	586		
5/8"	0.625	5	0.0034	0.0041	0.0048	1.250	410	498	586		
3/4"	0.750	5	0.0036	0.0044	0.0052	1.500	410	498	586		
7/8"	0.875	5	0.0038	0.0046	0.0054	1.750	410	498	586		
1"	1.000	5	0.0039	0.0048	0.0056	2.000	410	498	586		

"XT"

Series "XT" Feeds and Speeds with MDC Coating

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

Diameter		#FL	TEA-30	TEA-27	TEA-24	MAX AXIAL DOC	30°	27°	24°	When ramping, reduce program to	
			Chip Thickness at TEA				Surface Feet Per Min				
							Min	Mid	Max	RPM= 70%	Feed= 30%
3/16"	0.187	5	0.0011	0.0014	0.0016	0.375	223	271	319	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only	
1/4"	0.250	5	0.0017	0.0020	0.0024	0.500	246	298	351		
5/16"	0.312	5	0.0020	0.0024	0.0028	0.625	268	326	383		
3/8"	0.375	5	0.0021	0.0026	0.0030	0.750	290	353	415		
7/16"	0.437	5	0.0022	0.0027	0.0032	0.875	302	366	431		
1/2"	0.500	5	0.0025	0.0031	0.0036	1.000	313	380	447		
5/8"	0.625	5	0.0027	0.0032	0.0038	1.250	313	380	447		
3/4"	0.750	5	0.0029	0.0036	0.0042	1.500	313	380	447		
7/8"	0.875	5	0.0031	0.0037	0.0044	1.750	313	380	447		
1"	1.000	5	0.0032	0.0039	0.0046	2.000	313	380	447		

"XT"

Series "XT" Feeds and Speeds with MDC Coating

High Temp Alloys, Titanium Alloys Ti-6AL4V

Diameter		#FL	TEA-32	TEA-28	TEA-24	MAX AXIAL DOC	32°	28°	24°	When ramping, reduce program to	
			Chip Thickness at TEA				Surface Feet Per Min				
							Min	Mid	Max	RPM= 70%	Feed= 30%
3/16"	0.187	5	0.0011	0.0014	0.0016	0.375	156	190	223	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only	
1/4"	0.250	5	0.0017	0.0020	0.0024	0.500	179	217	255		
5/16"	0.312	5	0.0020	0.0024	0.0028	0.625	201	244	287		
3/8"	0.375	5	0.0021	0.0026	0.0030	0.750	223	271	319		
7/16"	0.437	5	0.0022	0.0027	0.0032	0.875	235	285	335		
1/2"	0.500	5	0.0024	0.0029	0.0034	1.000	246	298	351		
5/8"	0.625	5	0.0025	0.0030	0.0035	1.250	246	298	351		
3/4"	0.750	5	0.0025	0.0031	0.0036	1.500	246	298	351		
7/8"	0.875	5	0.0027	0.0032	0.0038	1.750	246	298	351		
1"	1.000	5	0.0027	0.0032	0.0038	2.000	246	298	351		

"XT"		Series "XT" Feeds and Speeds with MDC Coating								
		High Temp Alloys (Nickel & Cobalt Based) Monel 400, Hastelloy, Nimonic 75, Inconel 625, 718								
Diameter		#FL	TEA-30	TEA-26	TEA-22	MAX AXIAL DOC	30°	26°	22°	When ramping, reduce program to
			Chip Thickness at TEA				Surface Feet Per Min			RPM= 70% Feed= 30%
							Min	Mid	Max	
3/16"	0.187	5	0.0011	0.0014	0.0016	0.375	39	47	56	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only
1/4"	0.250	5	0.0017	0.0020	0.0024	0.500	45	54	64	
5/16"	0.312	5	0.0020	0.0024	0.0028	0.625	56	68	80	
3/8"	0.375	5	0.0021	0.0026	0.0030	0.750	56	68	80	
7/16"	0.437	5	0.0022	0.0027	0.0032	0.875	56	68	80	
1/2"	0.500	5	0.0024	0.0029	0.0034	1.000	67	81	96	
5/8"	0.625	5	0.0025	0.0030	0.0035	1.250	67	81	96	
3/4"	0.750	5	0.0025	0.0031	0.0036	1.500	67	81	96	
7/8"	0.875	5	0.0027	0.0032	0.0038	1.750	67	81	96	
1"	1.000	5	0.0027	0.0032	0.0038	2.000	67	81	96	

"XT"		Series "XT" Feeds and Speeds with MDC Coating								
		Hardened Steels (55-60HRC)								
Diameter		#FL	TEA-30	TEA-26	TEA-22	MAX AXIAL DOC	30°	26°	22°	When ramping, reduce program to
			Chip Thickness at TEA				Surface Feet Per Min			RPM= 70% Feed= 30%
							Min	Mid	Max	
3/16"	0.187	5	0.0011	0.0014	0.0016	0.375	101	122	144	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only
1/4"	0.250	5	0.0017	0.0020	0.0024	0.500	112	136	160	
5/16"	0.312	5	0.0020	0.0024	0.0028	0.625	123	150	176	
3/8"	0.375	5	0.0021	0.0026	0.0030	0.750	134	163	192	
7/16"	0.437	5	0.0022	0.0027	0.0032	0.875	134	163	192	
1/2"	0.500	5	0.0024	0.0029	0.0034	1.000	146	177	208	
5/8"	0.625	5	0.0025	0.0030	0.0035	1.250	146	177	208	
3/4"	0.750	5	0.0025	0.0031	0.0036	1.500	146	177	208	
7/8"	0.875	5	0.0027	0.0032	0.0038	1.750	146	177	208	
1"	1.000	5	0.0027	0.0032	0.0038	2.000	146	177	208	

"XT"		Series "XT" Feeds and Speeds with MDC Coating								
		Non-Alloy Steel, Cast Steel, Free Cutting Steel 1018, 1020, A36, 8620								
Diameter		#FL	TEA-45	TEA-35	TEA-30	MAX AXIAL DOC	45°	35°	30°	When ramping, reduce program to
			Chip Thickness at TEA				Surface Feet Per Min			RPM= 80% Feed= 50%
							Min	Mid	Max	
3/16"	0.187	7	0.0015	0.0018	0.0021	0.375	540	656	771	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only
1/4"	0.250	7	0.0018	0.0022	0.0026	0.500	596	724	851	
5/16"	0.312	7	0.0022	0.0027	0.0032	0.625	633	769	904	
3/8"	0.375	7	0.0025	0.0031	0.0036	0.750	670	814	958	
7/16"	0.437	7	0.0028	0.0034	0.0040	0.875	689	837	984	
1/2"	0.500	7	0.0032	0.0038	0.0045	1.000	708	859	1011	
5/8"	0.625	7	0.0039	0.0047	0.0055	1.250	708	859	1011	
3/4"	0.750	7	0.0042	0.0051	0.0060	1.500	708	859	1011	
7/8"	0.875	7	0.0046	0.0055	0.0065	1.750	708	859	1011	
1"	1.000	7	0.0049	0.0060	0.0070	2.000	708	859	1011	

"XT"		Series "XT" Feeds and Speeds with MDC Coating								
		Low Alloy Steel, Cast Steel 4130, 4140, 8620, 4330, 4340								
Diameter		#FL	TEA-45	TEA-35	TEA-30	MAX AXIAL DOC	45°	35°	30°	When ramping, reduce program to
			Chip Thickness at TEA				Surface Feet Per Min			RPM= 80% Feed= 50%
							Min	Mid	Max	
3/16"	0.187	7	0.0013	0.0015	0.0018	0.375	372	452	532	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only
1/4"	0.250	7	0.0018	0.0022	0.0026	0.500	410	497	585	
5/16"	0.312	7	0.0023	0.0028	0.0033	0.625	447	543	638	
3/8"	0.375	7	0.0027	0.0033	0.0039	0.750	484	588	692	
7/16"	0.437	7	0.0029	0.0035	0.0041	0.875	503	610	718	
1/2"	0.500	7	0.0031	0.0037	0.0044	1.000	521	633	745	
5/8"	0.625	7	0.0036	0.0044	0.0052	1.250	521	633	745	
3/4"	0.750	7	0.0039	0.0048	0.0056	1.500	521	633	745	
7/8"	0.875	7	0.0042	0.0051	0.0060	1.750	521	633	745	
1"	1.000	7	0.0044	0.0054	0.0063	2.000	521	633	745	

"XT" Series "XT" Feeds and Speeds with MDC Coating

Die & Mold Steels P20, A-2, D-2, M2, M42, T15

Diameter		#FL	TEA-45 Chip Thickness at TEA	TEA-35 Chip Thickness at TEA	TEA-30 Chip Thickness at TEA	MAX AXIAL DOC	45° Surface Feet Per Min Min	35° Surface Feet Per Min Mid	30° Surface Feet Per Min Max	When ramping, reduce program to RPM= 80%	Feed= 40%
3/16"	0.187	7	0.0011	0.0014	0.0016	0.375	317	384	452	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only	
1/4"	0.250	7	0.0017	0.0020	0.0024	0.500	335	407	479		
5/16"	0.312	7	0.0020	0.0024	0.0028	0.625	363	441	519		
3/8"	0.375	7	0.0021	0.0026	0.0030	0.750	382	464	545		
7/16"	0.437	7	0.0023	0.0028	0.0033	0.875	391	475	559		
1/2"	0.500	7	0.0025	0.0031	0.0036	1.000	410	497	585		
5/8"	0.625	7	0.0027	0.0032	0.0038	1.250	410	497	585		
3/4"	0.750	7	0.0029	0.0036	0.0042	1.500	410	497	585		
7/8"	0.875	7	0.0031	0.0037	0.0044	1.750	410	497	585		
1"	1.000	7	0.0032	0.0039	0.0046	2.000	410	497	585		

"XT" Series "XT" Feeds and Speeds with MDC Coating

Nodular Cast Iron, Grey Cast Iron, Malleable Cast Iron

Diameter		#FL	TEA-45 Chip Thickness at TEA	TEA-35 Chip Thickness at TEA	TEA-30 Chip Thickness at TEA	MAX AXIAL DOC	45° Surface Feet Per Min Min	35° Surface Feet Per Min Mid	30° Surface Feet Per Min Max	When ramping, reduce program to RPM= 80%	Feed= 50%
3/16"	0.187	7	0.0015	0.0018	0.0021	0.375	466	565	665	Helical Ramp Angle 2 - 3° Over 2° for Coolant-Through Only	
1/4"	0.250	7	0.0018	0.0022	0.0026	0.500	484	588	692		
5/16"	0.312	7	0.0022	0.0027	0.0032	0.625	503	610	718		
3/8"	0.375	7	0.0025	0.0031	0.0036	0.750	521	633	745		
7/16"	0.437	7	0.0028	0.0034	0.0040	0.875	531	644	758		
1/2"	0.500	7	0.0032	0.0038	0.0045	1.000	559	678	798		
5/8"	0.625	7	0.0039	0.0047	0.0055	1.250	559	678	798		
3/4"	0.750	7	0.0042	0.0051	0.0060	1.500	559	678	798		
7/8"	0.875	7	0.0046	0.0055	0.0065	1.750	559	678	798		
1"	1.000	7	0.0049	0.0060	0.0070	2.000	559	678	798		

"XT" Series "XT" Feeds and Speeds with MDC Coating

Stainless Steel (Precipitation) 15-5PH, 17-4PH

Diameter		#FL	TEA-32 Chip Thickness at TEA	TEA-28 Chip Thickness at TEA	TEA-24 Chip Thickness at TEA	MAX AXIAL DOC	32° Surface Feet Per Min Min	28° Surface Feet Per Min Mid	24° Surface Feet Per Min Max	When ramping, reduce program to RPM= 80%	Feed= 40%
3/16"	0.187	7	0.0011	0.0014	0.0016	0.375	329	400	470	Helical Ramp Angle 2 - 3° Over 2° for Coolant-Through Only	
1/4"	0.250	7	0.0017	0.0020	0.0024	0.500	350	425	500		
5/16"	0.312	7	0.0021	0.0026	0.0030	0.625	370	450	529		
3/8"	0.375	7	0.0024	0.0029	0.0034	0.750	390	473	557		
7/16"	0.437	7	0.0027	0.0032	0.0038	0.875	400	486	572		
1/2"	0.500	7	0.0029	0.0036	0.0042	1.000	410	498	586		
5/8"	0.625	7	0.0034	0.0041	0.0048	1.250	410	498	586		
3/4"	0.750	7	0.0036	0.0044	0.0052	1.500	410	498	586		
7/8"	0.875	7	0.0038	0.0046	0.0054	1.750	410	498	586		
1"	1.000	7	0.0039	0.0048	0.0056	2.000	410	498	586		

"XT" Series "XT" Feeds and Speeds with MDC Coating

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

Diameter		#FL	TEA-30 Chip Thickness at TEA	TEA-27 Chip Thickness at TEA	TEA-24 Chip Thickness at TEA	MAX AXIAL DOC	30° Surface Feet Per Min Min	27° Surface Feet Per Min Mid	24° Surface Feet Per Min Max	When ramping, reduce program to RPM= 70%	Feed= 30%
3/16"	0.187	7	0.0011	0.0014	0.0016	0.375	223	271	319	Helical Ramp Angle 2 - 3° Over 2° for Coolant-Through Only	
1/4"	0.250	7	0.0017	0.0020	0.0024	0.500	246	298	351		
5/16"	0.312	7	0.0020	0.0024	0.0028	0.625	268	326	383		
3/8"	0.375	7	0.0021	0.0026	0.0030	0.750	290	353	415		
7/16"	0.437	7	0.0022	0.0027	0.0032	0.875	302	366	431		
1/2"	0.500	7	0.0025	0.0031	0.0036	1.000	313	380	447		
5/8"	0.625	7	0.0027	0.0032	0.0038	1.250	313	380	447		
3/4"	0.750	7	0.0029	0.0036	0.0042	1.500	313	380	447		
7/8"	0.875	7	0.0031	0.0037	0.0044	1.750	313	380	447		
1"	1.000	7	0.0032	0.0039	0.0046	2.000	313	380	447		

"XT"		Series "XT" Feeds and Speeds with MDC Coating High Temp Alloys, Titanium Alloys Ti-6AL4V								
			TEA-32	TEA-28	TEA-24	MAX	32°	28°	24°	When ramping, reduce program to
Diameter		#FL	Chip Thickness at TEA			AXIAL DOC	Surface Feet Per Min			RPM= 70% / Feed= 30%
							Min	Mid	Max	
3/16"	0.187	7	0.0011	0.0014	0.0016	0.375	156	190	223	Helical Ramp Angle 2 - 3° Over 2° for Coolant-Through Only
1/4"	0.250	7	0.0017	0.0020	0.0024	0.500	179	217	255	
5/16"	0.312	7	0.0020	0.0024	0.0028	0.625	201	244	287	
3/8"	0.375	7	0.0021	0.0026	0.0030	0.750	223	271	319	
7/16"	0.437	7	0.0022	0.0027	0.0032	0.875	235	285	335	
1/2"	0.500	7	0.0024	0.0029	0.0034	1.000	246	298	351	
5/8"	0.625	7	0.0025	0.0030	0.0035	1.250	246	298	351	
3/4"	0.750	7	0.0025	0.0031	0.0036	1.500	246	298	351	
7/8"	0.875	7	0.0027	0.0032	0.0038	1.750	246	298	351	
1"	1.000	7	0.0027	0.0032	0.0038	2.000	246	298	351	

"XT"		Series "XT" Feeds and Speeds with MDC Coating High Temp Alloys (Nickel & Cobalt Based) Monel 400, Hastelloy, Nimonic 75, Inconel 625, 718								
			TEA-30	TEA-26	TEA-22	MAX	30°	26°	22°	When ramping, reduce program to
Diameter		#FL	Chip Thickness at TEA			AXIAL DOC	Surface Feet Per Min			RPM= 70% / Feed= 30%
							Min	Mid	Max	
3/16"	0.187	7	0.0011	0.0014	0.0016	0.375	39	47	56	Helical Ramp Angle 2 - 3° Over 2° for Coolant-Through Only
1/4"	0.250	7	0.0017	0.0020	0.0024	0.500	45	54	64	
5/16"	0.312	7	0.0020	0.0024	0.0028	0.625	56	68	80	
3/8"	0.375	7	0.0021	0.0026	0.0030	0.750	56	68	80	
7/16"	0.437	7	0.0022	0.0027	0.0032	0.875	56	68	80	
1/2"	0.500	7	0.0024	0.0029	0.0034	1.000	67	81	96	
5/8"	0.625	7	0.0025	0.0030	0.0035	1.250	67	81	96	
3/4"	0.750	7	0.0025	0.0031	0.0036	1.500	67	81	96	
7/8"	0.875	7	0.0027	0.0032	0.0038	1.750	67	81	96	
1"	1.000	7	0.0027	0.0032	0.0038	2.000	67	81	96	

"XT"		Series "XT" Feeds and Speeds with MDC Coating Hardened Steels (55-60HRC)								
			TEA-30	TEA-26	TEA-22	MAX	30°	26°	22°	When ramping, reduce program to
Diameter		#FL	Chip Thickness at TEA			AXIAL DOC	Surface Feet Per Min			RPM= 70% / Feed= 30%
							Min	Mid	Max	
3/16"	0.187	7	0.0011	0.0014	0.0016	0.375	101	122	144	Helical Ramp Angle 2 - 3° Over 2° for Coolant-Through Only
1/4"	0.250	7	0.0017	0.0020	0.0024	0.500	112	136	160	
5/16"	0.312	7	0.0020	0.0024	0.0028	0.625	123	150	176	
3/8"	0.375	7	0.0021	0.0026	0.0030	0.750	134	163	192	
7/16"	0.437	7	0.0022	0.0027	0.0032	0.875	134	163	192	
1/2"	0.500	7	0.0024	0.0029	0.0034	1.000	146	177	208	
5/8"	0.625	7	0.0025	0.0030	0.0035	1.250	146	177	208	
3/4"	0.750	7	0.0025	0.0031	0.0036	1.500	146	177	208	
7/8"	0.875	7	0.0027	0.0032	0.0038	1.750	146	177	208	
1"	1.000	7	0.0027	0.0032	0.0038	2.000	146	177	208	

"XT"		Series "XT" Feeds and Speeds with MDC Coating Non-Alloy Steel, Cast Steel, Free Cutting Steel 1018, 1020, A36, 8620								
			TEA-40	TEA-30	TEA-20	MAX	40°	30°	20°	When ramping, reduce program to
Diameter		#FL	Chip Thickness at TEA			AXIAL DOC	Surface Feet Per Min			RPM= 80% / Feed= 50%
							Min	Mid	Max	
3/16"	0.187	9	0.0015	0.0018	0.0021	0.375	540	656	771	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only
1/4"	0.250	9	0.0018	0.0022	0.0026	0.500	596	724	851	
5/16"	0.312	9	0.0022	0.0027	0.0032	0.625	633	769	904	
3/8"	0.375	9	0.0025	0.0031	0.0036	0.750	670	814	958	
7/16"	0.437	9	0.0028	0.0034	0.0040	0.875	689	837	984	
1/2"	0.500	9	0.0032	0.0038	0.0045	1.000	708	859	1011	
5/8"	0.625	9	0.0039	0.0047	0.0055	1.250	708	859	1011	
3/4"	0.750	9	0.0042	0.0051	0.0060	1.500	708	859	1011	
7/8"	0.875	9	0.0046	0.0055	0.0065	1.750	708	859	1011	
1"	1.000	9	0.0049	0.0060	0.0070	2.000	708	859	1011	

"XT"

Series "XT" Feeds and Speeds with MDC Coating

Low Alloy Steel, Cast Steel 4130, 4140, 8620, 4330, 4340

Diameter		#FL	TEA-40	TEA-30	TEA-20	MAX AXIAL DOC	40°	30°	20°	When ramping, reduce program to	
			Chip Thickness at TEA				Surface Feet Per Min			RPM= 80%	Feed= 50%
							Min	Mid	Max		
3/16"	0.187	9	0.0013	0.0015	0.0018	0.375	372	452	532	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only	
1/4"	0.250	9	0.0018	0.0022	0.0026	0.500	410	497	585		
5/16"	0.312	9	0.0023	0.0028	0.0033	0.625	447	543	638		
3/8"	0.375	9	0.0027	0.0033	0.0039	0.750	484	588	692		
7/16"	0.437	9	0.0029	0.0035	0.0041	0.875	503	610	718		
1/2"	0.500	9	0.0031	0.0037	0.0044	1.000	521	633	745		
5/8"	0.625	9	0.0036	0.0044	0.0052	1.250	521	633	745		
3/4"	0.750	9	0.0039	0.0048	0.0056	1.500	521	633	745		
7/8"	0.875	9	0.0042	0.0051	0.0060	1.750	521	633	745		
1"	1.000	9	0.0044	0.0054	0.0063	2.000	521	633	745		

"XT"

Series "XT" Feeds and Speeds with MDC Coating

Die & Mold Steels P20, A-2, D-2, M2, M42, T15

Diameter		#FL	TEA-40	TEA-30	TEA-20	MAX AXIAL DOC	40°	30°	20°	When ramping, reduce program to	
			Chip Thickness at TEA				Surface Feet Per Min			RPM= 80%	Feed= 40%
							Min	Mid	Max		
3/16"	0.187	9	0.0011	0.0014	0.0016	0.375	317	384	452	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only	
1/4"	0.250	9	0.0017	0.0020	0.0024	0.500	335	407	479		
5/16"	0.312	9	0.0020	0.0024	0.0028	0.625	363	441	519		
3/8"	0.375	9	0.0021	0.0026	0.0030	0.750	382	464	545		
7/16"	0.437	9	0.0023	0.0028	0.0033	0.875	391	475	559		
1/2"	0.500	9	0.0025	0.0031	0.0036	1.000	410	497	585		
5/8"	0.625	9	0.0027	0.0032	0.0038	1.250	410	497	585		
3/4"	0.750	9	0.0029	0.0036	0.0042	1.500	410	497	585		
7/8"	0.875	9	0.0031	0.0037	0.0044	1.750	410	497	585		
1"	1.000	9	0.0032	0.0039	0.0046	2.000	410	497	585		

"XT"

Series "XT" Feeds and Speeds with MDC Coating

Nodular Cast Iron, Grey Cast Iron, Malleable Cast Iron

Diameter		#FL	TEA-40	TEA-30	TEA-20	MAX AXIAL DOC	40°	30°	20°	When ramping, reduce program to	
			Chip Thickness at TEA				Surface Feet Per Min			RPM= 80%	Feed= 50%
							Min	Mid	Max		
3/16"	0.187	9	0.0015	0.0018	0.0021	0.375	466	565	665	Helical Ramp Angle 2 - 3° Over 2° for Coolant-Through Only	
1/4"	0.250	9	0.0018	0.0022	0.0026	0.500	484	588	692		
5/16"	0.312	9	0.0022	0.0027	0.0032	0.625	503	610	718		
3/8"	0.375	9	0.0025	0.0031	0.0036	0.750	521	633	745		
7/16"	0.437	9	0.0028	0.0034	0.0040	0.875	531	644	758		
1/2"	0.500	9	0.0032	0.0038	0.0045	1.000	559	678	798		
5/8"	0.625	9	0.0039	0.0047	0.0055	1.250	559	678	798		
3/4"	0.750	9	0.0042	0.0051	0.0060	1.500	559	678	798		
7/8"	0.875	9	0.0046	0.0055	0.0065	1.750	559	678	798		
1"	1.000	9	0.0049	0.0060	0.0070	2.000	559	678	798		

"XT"

Series "XT" Feeds and Speeds with MDC Coating

Stainless Steel (Precipitation) 15-5PH, 17-4PH

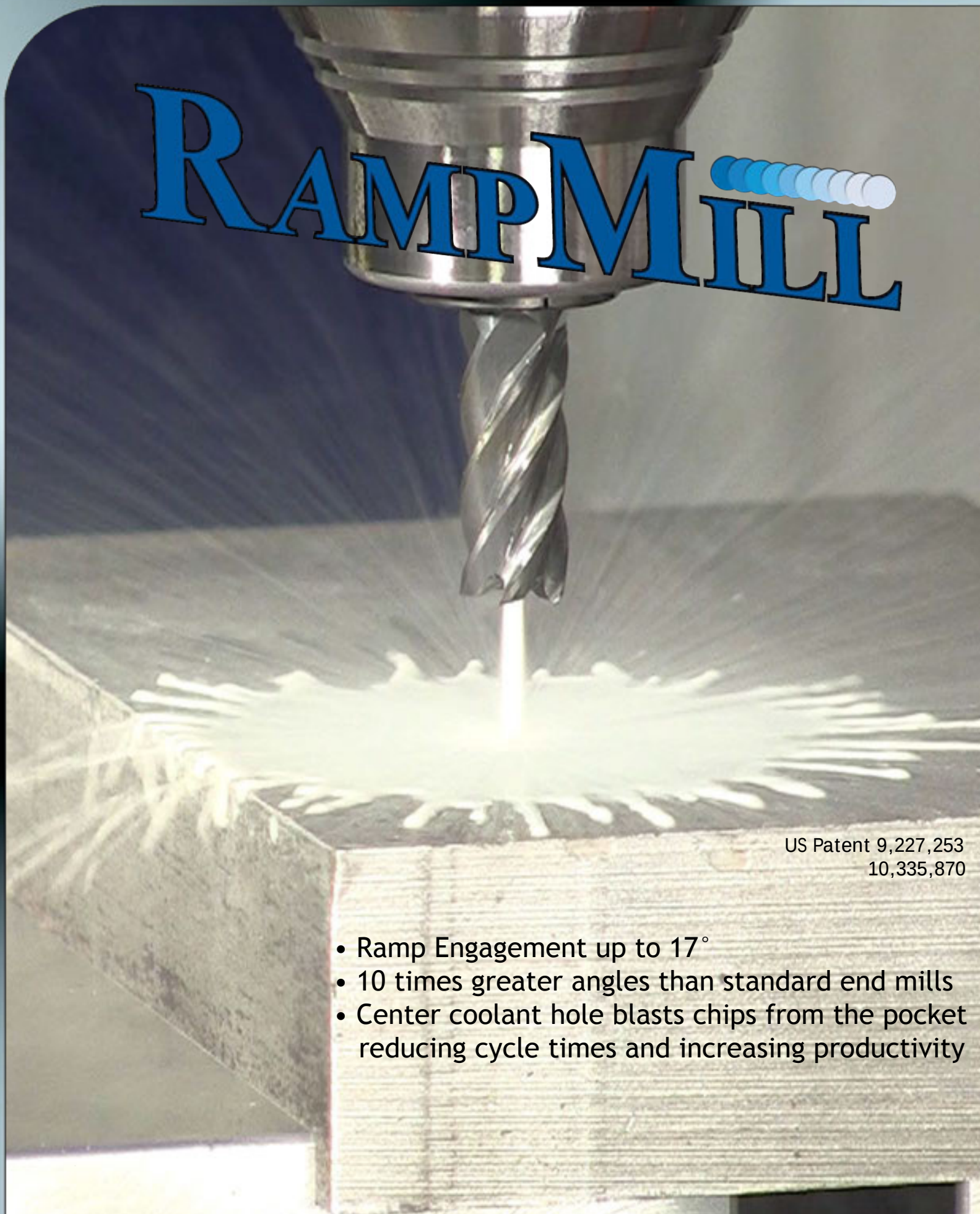
Diameter		#FL	TEA-32	TEA-28	TEA-24	MAX AXIAL DOC	32°	28°	24°	When ramping, reduce program to	
			Chip Thickness at TEA				Surface Feet Per Min			RPM= 80%	Feed= 40%
							Min	Mid	Max		
3/16"	0.187	9	0.0011	0.0014	0.0016	0.375	329	400	470	Helical Ramp Angle 2 - 3° Over 2° for Coolant-Through Only	
1/4"	0.250	9	0.0017	0.0020	0.0024	0.500	350	425	500		
5/16"	0.312	9	0.0021	0.0026	0.0030	0.625	370	450	529		
3/8"	0.375	9	0.0024	0.0029	0.0034	0.750	390	473	557		
7/16"	0.437	9	0.0027	0.0032	0.0038	0.875	400	486	572		
1/2"	0.500	9	0.0029	0.0036	0.0042	1.000	410	498	586		
5/8"	0.625	9	0.0034	0.0041	0.0048	1.250	410	498	586		
3/4"	0.750	9	0.0036	0.0044	0.0052	1.500	410	498	586		
7/8"	0.875	9	0.0038	0.0046	0.0054	1.750	410	498	586		
1"	1.000	9	0.0039	0.0048	0.0056	2.000	410	498	586		

"XT"		Series "XT" Feeds and Speeds with MDC Coating Stainless Steels (Austenitic) 303, 304, 304L, 312, 316, 316L								
			TEA-32	TEA-28	TEA-24	MAX	32°	28°	24°	When ramping, reduce program to
Diameter		#FL	Chip Thickness at TEA			AXIAL DOC	Surface Feet Per Min			RPM= 70% / Feed= 30%
							Min	Mid	Max	
3/16"	0.187	9	0.0011	0.0014	0.0016	0.375	223	271	319	Helical Ramp Angle 2 - 3° Over 2° for Coolant-Through Only
1/4"	0.250	9	0.0017	0.0020	0.0024	0.500	246	298	351	
5/16"	0.312	9	0.0020	0.0024	0.0028	0.625	268	326	383	
3/8"	0.375	9	0.0021	0.0026	0.0030	0.750	290	353	415	
7/16"	0.437	9	0.0022	0.0027	0.0032	0.875	302	366	431	
1/2"	0.500	9	0.0025	0.0031	0.0036	1.000	313	380	447	
5/8"	0.625	9	0.0027	0.0032	0.0038	1.250	313	380	447	
3/4"	0.750	9	0.0029	0.0036	0.0042	1.500	313	380	447	
7/8"	0.875	9	0.0031	0.0037	0.0044	1.750	313	380	447	
1"	1.000	9	0.0032	0.0039	0.0046	2.000	313	380	447	

"XT"		Series "XT" Feeds and Speeds with MDC Coating High Temp Alloys, Titanium Alloys Ti-6AL4V								
			TEA-32	TEA-28	TEA-24	MAX	32°	28°	24°	When ramping, reduce program to
Diameter		#FL	Chip Thickness at TEA			AXIAL DOC	Surface Feet Per Min			RPM= 70% / Feed= 30%
							Min	Mid	Max	
3/16"	0.187	9	0.0011	0.0014	0.0016	0.375	156	190	223	Helical Ramp Angle 2 - 3° Over 2° for Coolant-Through Only
1/4"	0.250	9	0.0017	0.0020	0.0024	0.500	179	217	255	
5/16"	0.312	9	0.0020	0.0024	0.0028	0.625	201	244	287	
3/8"	0.375	9	0.0021	0.0026	0.0030	0.750	223	271	319	
7/16"	0.437	9	0.0022	0.0027	0.0032	0.875	235	285	335	
1/2"	0.500	9	0.0024	0.0029	0.0034	1.000	246	298	351	
5/8"	0.625	9	0.0025	0.0030	0.0035	1.250	246	298	351	
3/4"	0.750	9	0.0025	0.0031	0.0036	1.500	246	298	351	
7/8"	0.875	9	0.0027	0.0032	0.0038	1.750	246	298	351	
1"	1.000	9	0.0027	0.0032	0.0038	2.000	246	298	351	

"XT"		Series "XT" Feeds and Speeds with MDC Coating High Temp Alloys (Nickel & Cobalt Based) Monel 400, Hastelloy, Nimonic 75, Inconel 625, 718								
			TEA-30	TEA-26	TEA-22	MAX	30°	26°	22°	When ramping, reduce program to
Diameter		#FL	Chip Thickness at TEA			AXIAL DOC	Surface Feet Per Min			RPM= 70% / Feed= 30%
							Min	Mid	Max	
3/16"	0.187	9	0.0011	0.0014	0.0016	0.375	39	47	56	Helical Ramp Angle 2 - 3° Over 2° for Coolant-Through Only
1/4"	0.250	9	0.0017	0.0020	0.0024	0.500	45	54	64	
5/16"	0.312	9	0.0020	0.0024	0.0028	0.625	56	68	80	
3/8"	0.375	9	0.0021	0.0026	0.0030	0.750	56	68	80	
7/16"	0.437	9	0.0022	0.0027	0.0032	0.875	56	68	80	
1/2"	0.500	9	0.0024	0.0029	0.0034	1.000	67	81	96	
5/8"	0.625	9	0.0025	0.0030	0.0035	1.250	67	81	96	
3/4"	0.750	9	0.0025	0.0031	0.0036	1.500	67	81	96	
7/8"	0.875	9	0.0027	0.0032	0.0038	1.750	67	81	96	
1"	1.000	9	0.0027	0.0032	0.0038	2.000	67	81	96	

"XT"		Series "XT" Feeds and Speeds with MDC Coating Hardened Steels (55-60HRC)								
			TEA-30	TEA-26	TEA-22	MAX	30°	26°	22°	When ramping, reduce program to
Diameter		#FL	Chip Thickness at TEA			AXIAL DOC	Surface Feet Per Min			RPM= 70% / Feed= 30%
							Min	Mid	Max	
3/16"	0.187	9	0.0011	0.0014	0.0016	0.375	101	122	144	Helical Ramp Angle 2 - 3° Over 2° for Coolant-Through Only
1/4"	0.250	9	0.0017	0.0020	0.0024	0.500	112	136	160	
5/16"	0.312	9	0.0020	0.0024	0.0028	0.625	123	150	176	
3/8"	0.375	9	0.0021	0.0026	0.0030	0.750	134	163	192	
7/16"	0.437	9	0.0022	0.0027	0.0032	0.875	134	163	192	
1/2"	0.500	9	0.0024	0.0029	0.0034	1.000	146	177	208	
5/8"	0.625	9	0.0025	0.0030	0.0035	1.250	146	177	208	
3/4"	0.750	9	0.0025	0.0031	0.0036	1.500	146	177	208	
7/8"	0.875	9	0.0027	0.0032	0.0038	1.750	146	177	208	
1"	1.000	9	0.0027	0.0032	0.0038	2.000	146	177	208	



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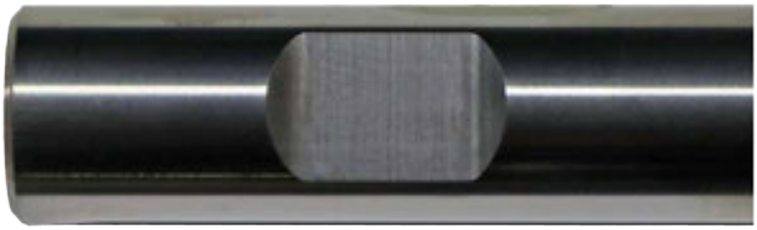

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