



FEATURED PRODUCT
TECHNOLOGIES

STELLRAM® CUTTING TOOL SYSTEMS

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3F Turning Geometry



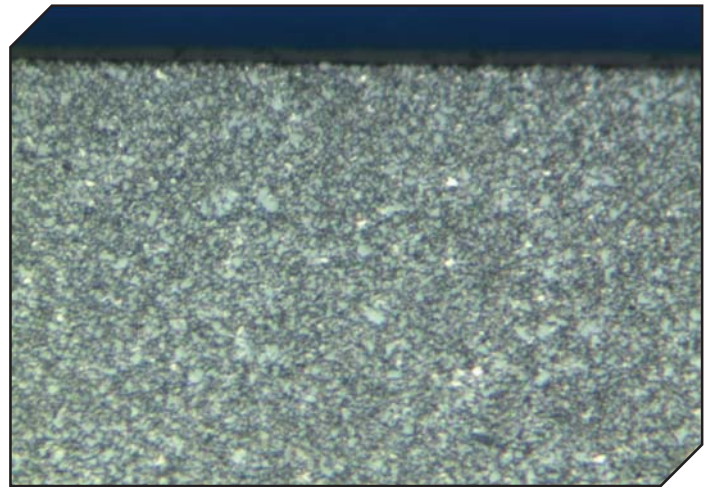
3F Geometry machining ATI 6-4™ Titanium Alloy

The new 3F geometry is a semi-finishing and finishing geometry that is ideal for machining high accuracy components with thin wall sections such as turbine discs and fan discs found in aerospace engines. The periphery ground edges allow for high accuracy profiling and excellent indexability. The 3F geometry was designed to perform in Stainless Steel, Aluminum alloys, High Nickel, High Cobalt and Titanium based alloys.

Product Offering

EDP	Grade	ISO Part No.	ANSI Part No.
031543	SP0819	CNGG120402F-3F	CNGG430.5-3F
031544	SP0819	CNGG120404F-3F	CNGG431-3F
031545	SP0819	CNGG120408F-3F	CNGG432-3F
031546	SP0819	CNGG120412F-3F	CNGG433-3F
031561	SP0819	DNNG150402F-3F	DNNG430.5-3F
031562	SP0819	DNNG150404F-3F	DNNG431-3F
031563	SP0819	DNNG150408F-3F	DNNG432-3F
031564	SP0819	DNNG150412F-3F	DNNG433-3F
031547	SP0819	DNNG150602F-3F	DNNG440.5-3F
031548	SP0819	DNNG150604F-3F	DNNG441-3F
031565	SP0819	DNNG150608F-3F	DNNG442-3F
031566	SP0819	DNNG150612F-3F	DNNG443-3F
031549	SP0819	VNNG160402F-3F	VNNG330.5-3F
031550	SP0819	VNNG160404F-3F	VNNG331-3F
031551	SP0819	VNNG160408F-3F	VNNG332-3F
031552	SP0819	WNNG080402F-3F	WNNG430.5-3F
031553	SP0819	WNNG080404F-3F	WNNG431-3F
031554	SP0819	WNNG080408F-3F	WNNG432-3F
031567	SP0819	WNNG080412F-3F	WNNG433-3F

* NOTE: ANSI only name change, was CNGP..... is now CNGG....



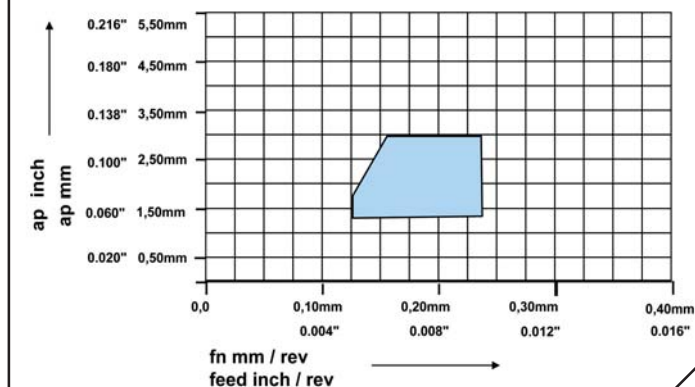
Grade SP0819

The combination of a micro-grain substrate with a new generation of TiAlN Nano coating, makes this PVD coat extremely hard for unmatched performance.

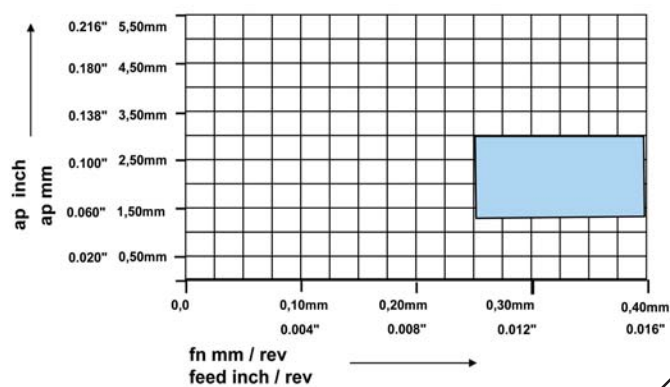


3F Turning Geometry

Insert: CNGG120404F-3F (CNGG431-3F)
Material: ATI 6-4™ Titanium Alloy



Insert: CNGG120408F-3F (CNGG432-3F)
Material: ATI 6-4™ Titanium Alloy



Cutting Speed (V_c)

ISO	Material	R_m and Hardness	SP0819			
			m/min		sfm	
			Min - Max	Min - Max	Min - Max	Min - Max
M	Stainless Steel	Austenitic + Ferritic 300 series	145	305	470	1000
		Martensitic 400 series	150	315	490	1040
		Refractory P.H.	75	165	250	535
N	Nonferrous Metals	<16% Silicon 116 HBN	580	850	1900	2790
		>16% Silicon	365	550	1200	1800
S	High Temperature Alloys	Iron Based	30	65	100	215
		Cobalt Based	25	55	80	175
		Nickel Based	30	60	90	190
		Titanium Based	40	90	140	295



3F Geometry machining ATI 718 Plus® Nickel Alloy

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-62 Turning Geometry

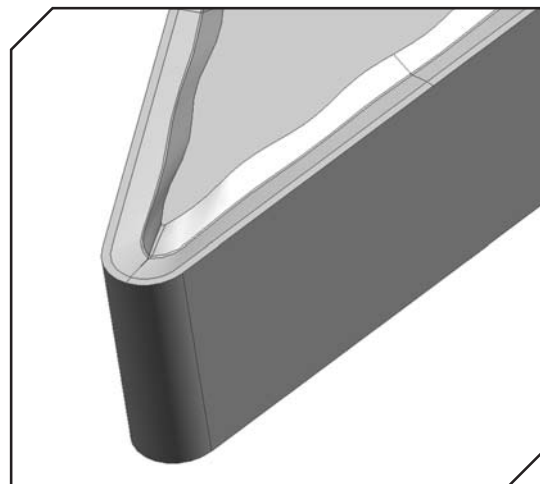
The -62 A versatile finishing geometry/chipbreaker for machining steel, stainless steel, high nickel, high cobalt and titanium alloys.

The -62 finishing chipbreaker is part of the Stellram® positive insert program for machining steels and high performance materials. It was designed to be applied to a wide variety of finishing applications.

Features and Benefits

- Light cutting action with fine chip control
- Precision ground periphery
- High accuracy ground radius
- Small radii available (0.050mm 0.002")

Cutting Speed (V _c)			PVD Coating			
ISO	Material	R _m and Hardness	SP4019			
			m/min		SFM	
			Min - Max		Min - Max	
P	Unalloyed Steel	<600 N/mm ² <180HBN	210	440	680	1450
		<950 N/mm ² <280HBN	135	285	440	940
	Alloyed Steel	700 - 950 N/mm ² 200 - 280 HBN	125	265	405	860
		950 - 1200 N/mm ² 280 - 355 HBN	-	-	-	-
		1200 - 1400 N/mm ² 355 - 415 HBN	-	-	-	-
M	Stainless Steel	Austenitic + Ferritic 300 series	140	300	460	980
		Martensitic 400 series	145	310	480	102
	Stainless Steel	Refractory P.H.	75	160	245	525
K	Cast Iron	Grey GG-Ft	205	440	675	1435
		Spheroidal-Ductile GGG-FGS	180	380	585	1240
		Malleable GTS - MN/MP	120	255	395	835
N	Aluminium & Alloys	< 16% 116HB	365	975	1200	3200
	Aluminium + Silicon	> 16% 92HB	-	-	-	-
S	High Temperature Alloys	Iron Based	30	65	100	210
		Cobalt Based	25	50	80	170
		Nickel Based	25	55	85	185
		Titanium Based	40	90	135	290



Application

External and internal turning of small delicate components such as shafts nozzles, disc and screws used in Watch, Medical and Aerospace Industries.



Grade SP4019

The combination of a micro-grain substrate with new generation TiAlN Nano coating, makes this PVD coat extremely hard for unmatched performance.

-62 Turning Geometry

-62 Geometry				Application		
Item	ISO Description	ANSI	Grade	Finishing	Semi-Medium	Roughing
031243	CCGT060200E-62	CCGT21.50A-62	SP4019	◆◆◆◆◆	—	—
030568	CCGT060201E-62	CCGT21.50.2A-62	SP4019	◆◆◆◆◆	—	—
030569	CCGT060202E-62	CCGT21.50.5A-62	SP4019	◆◆◆◆◆	—	—
030570	CCGT060204E-62	CCGT21.51A-62	SP4019	◆◆◆◆◆	—	—
030571	CCGT09T300E-62	CCGT32.50A-62	SP4019	◆◆◆◆◆	—	—
030572	CCGT09T301E-62	CCGT32.50.2A-62	SP4019	◆◆◆◆◆	—	—
030573	CCGT09T302E-62	CCGT32.50.5A-62	SP4019	◆◆◆◆◆	—	—
030574	CCGT09T304E-62	CCGT32.51A-62	SP4019	◆◆◆◆◆	—	—
030575	CCGT09T308E-62	CCGT32.52A-62	SP4019	◆◆◆◆◆	—	—
031401	DCGX0702005E-62	DCGX21.50.002A-62	SP4019	◆◆◆◆◆	—	—
030577	DCGT070201E-62	DCGT21.50.2A-62	SP4019	◆◆◆◆◆	—	—
030578	DCGT070202E-62	DCGT21.50.5A-62	SP4019	◆◆◆◆◆	—	—
030579	DCGT070204E-62	DCGT21.51A-62	SP4019	◆◆◆◆◆	—	—
031402	DCGX11T3005E-62	DCGX32.50.002A-62	SP4019	◆◆◆◆◆	—	—
030581	DCGT11T301E-62	DCGT32.50.2A-62	SP4019	◆◆◆◆◆	—	—
030582	DCGT11T302E-62	DCGT32.50.5A-62	SP4019	◆◆◆◆◆	—	—
030583	DCGT11T304E-62	DCGT32.51A-62	SP4019	◆◆◆◆◆	—	—
030584	DCGT11T308E-62	DCGT32.52A-62	SP4019	◆◆◆◆◆	—	—
030612	EPGT040201E-62	EPGT040201E-62	SP4019	◆◆◆◆◆	—	—
030585	EPGT040202E-62	EPGT040202E-62	SP4019	◆◆◆◆◆	—	—
030586	EPGT040204E-62	EPGT040204E-62	SP4019	◆◆◆◆◆	—	—
030587	EPGT060202E-62	EPGT060202E-62	SP4019	◆◆◆◆◆	—	—
030588	EPGT060204E-62	EPGT060204E-62	SP4019	◆◆◆◆◆	—	—
031403	EPGX08M3005E-62	EPGX08M3005E-62	SP4019	◆◆◆◆◆	—	—
030590	EPGT08M301E-62	EPGT08M301E-62	SP4019	◆◆◆◆◆	—	—
030591	EPGT08M302E-62	EPGT08M302E-62	SP4019	◆◆◆◆◆	—	—
030592	EPGT08M304E-62	EPGT08M304E-62	SP4019	◆◆◆◆◆	—	—
030593	EPGT08M308E-62	EPGT08M308E-62	SP4019	◆◆◆◆◆	—	—
031608	VCGX1103005E-62	VCGX1103005E-62	SP4019	◆◆◆◆◆	—	—
031609	VCGT110301E-62	VCGT110301E-62	SP4019	◆◆◆◆◆	—	—
031610	VCGT110302E-62	VCGT110302E-62	SP4019	◆◆◆◆◆	—	—
031611	VCGT110304E-62	VCGT110304E-62	SP4019	◆◆◆◆◆	—	—
030594	VCGT130301E-62	VCGT130301E-62	SP4019	◆◆◆◆◆	—	—
030595	VCGT130302E-62	VCGT130302E-62	SP4019	◆◆◆◆◆	—	—
030596	VCGT130304E-62	VCGT130304E-62	SP4019	◆◆◆◆◆	—	—
031665	VBGT160402E-62	VBGT330.5A-62	SP4019	◆◆◆◆◆	—	—
031666	VBGT160404E-62	VBGT331A-62	SP4019	◆◆◆◆◆	—	—
031667	VBGT160408E-62	VBGT332A-62	SP4019	◆◆◆◆◆	—	—

Material Designations

P ◆ Unalloyed Steels	M ◆ Stainless Steels	K ◆ Cast Irons	S ◆ High Temp. Alloys
P ◆ Alloyed Steels	M ◆ PH Stainless	N ◆ Aluminium & Alloys	H ◆ Hard Materials

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7792VXE16 High Feed Milling Cutter

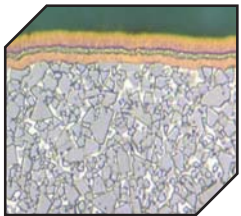
We consider the new Stellram® 7792VXE16 high-feed face mill to be the perfect cutter for exotic material machining and you will too after the very first time you use it. The versatility of this tool is far reaching since it is capable of facing, slotting, plunging as well as pocketing. Designed to yield the highest levels of material removal rates in Titanium and other High Performance Metals; tests show metal removal rates far in excess than those of comparable cutters in today's market. The design of the 7792VXE16 directs the dramatic cutting forces axially back into the spindle, generating less stress on the machine allowing for higher feed rates and increased productivity.

Features and Benefits

- Cutting forces are predominately in the axial direction ensuring stability between the cutting edge and work piece resulting in higher metal removal rates and consistent tool life
- Dramatically reduces component costs by utilizing high feed rates increasing metal removal rates up to 5 times greater than conventional cutters.
- Inserts feature four cutting edges for improved tool economy.
- Faceted insert geometry improves surface finish during facing and pocketing operations.
- A versatile tool that can be used for facing, slotting, plunging and pocketing.

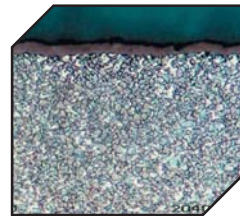


US Patent # 7,220,083,
7,600,952/ 7,806,634/ 7,988,387/ 8,162,152
& EU Patent #EP1689 548 B1/ EP1867 643 B1



Grade X500

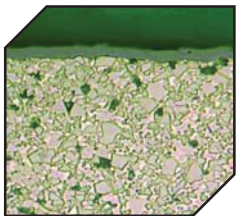
This high performance premium X-Grade™ Technology carbide grade is designed for the toughest of applications in Nickel-based alloys, Cobalt-based alloys, Titanium & Titanium-based alloys.



Grade X400

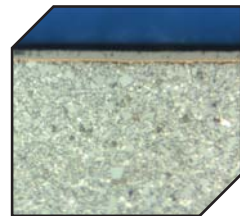
This high performance premium X-Grade™ Technology carbide grade is designed for the toughest of applications in Steels and Hardened Materials to 53HRC. For use in heavy impact, poor rigidity & low cutting speed conditions.

US Patent # 7,244,519 & foreign patents pending



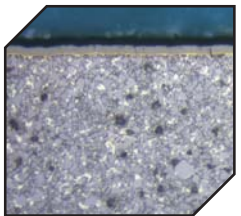
Grade SP6519

The combination of a tough substrate with the latest generation of TiAlN super nano coating makes this a versatile grade which is unmatched in performance. Equally suited for high temperature alloys and stainless steels.



Grade SC3025

The combination of a tough substrate and a wear resistant CVD coating enhances performance in difficult cast iron machining conditions. Equally suited for either Grey or Ductile Cast Irons.



Grade SC6525

A unique substrate/coating combination, designed strictly for milling and is coated with a TiN – TiCN – Al₂O₃ CVD coating. This new high performance grade is available for milling unalloyed and alloyed steels at elevated surface speeds and feeds.

Cutting Data											
		Speeds (Vc)									
Material	ISO	X400 sfm Min - Max		X500 sfm Min - Max		SC3025 sfm Min - Max		SP6519 sfm Min - Max		SC6525 sfm Min - Max	
Unalloyed Steels	P	400	770							395	1190
Alloyed Steels	P	230	495	250	525					165	930
Stainless Steel	M			380	790			410	870		
PH Stainless	M			160	320			190	400		
Cast Irons	K	Grey Iron				500	1,300				
		Ductile Iron				400	1,100				
Hi Temp Alloys	S	Nickel Based		80	165			80	165		
		Titanium Based		90	200			90	200		
Hard Materials	H	115	330								

7792VXE16 High Feed Milling Cutter



SP6519

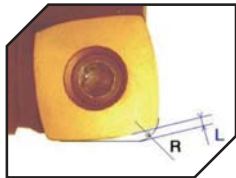
Cutting Data

			Feeds h_m					
Material	ISO		Facing		Slotting		Plunging	
			D.O.C. a_p	ipt	D.O.C. a_p	ipt	W.O.C. a_e	ipt
Unalloyed Steels	P		0.138	.012 - .060	0.118	.012 - .050	0.512	.004 - .008
Alloyed Steels	P		0.138	.012 - .060	0.118	.012 - .050	0.512	.004 - .007
Stainless Steel	M		0.138	.008 - .040	0.118	.008 - .032	0.512	.005 - .007
PH Stainless	M		0.138	.008 - .025	0.118	.008 - .020	0.512	.003 - .005
Cast Irons	K	Grey Iron	0.138	.012 - .080	0.118	.012 - .060	0.512	.004 - .008
		Ductle Iron	0.138	.012 - .080	0.118	.012 - .060	0.512	.004 - .008
Hi Temp Alloys	S	Nickel Based	0.138	.008 - .024	0.118	.004 - .016	0.512	.002 - .004
		Titanium Based	0.138	.008 - .032	0.118	.004 - .020	0.512	.002 - .004
Hard Materials	H		0.138	.012 - .032	0.118	.012 - .024	0.512	.003 - .005

Product Range

EDP	Item Description	Diameter D	Length H	Bore Dia d_1	Number of Inserts		
031282	C7792VXE16-A2.5Z05R	2.5"	1.574"	1.00"	5	DP5013T EDP 031225	TP20 EDP 030819
031283	C7792VXE16-A3.0Z06R	3.0"	1.968"	1.00"	6		
031284	C7792VXE16-A4.0Z08R	4.0"	1.968"	1.25"	8		
031285	C7792VXE16-A5.0Z10R	5.0"	2.480"	1.50"	10		
031286	C7792VXE16-6.0Z12R	6.0"	2.480"	1.50"	12		

Note: For cutter diameters in excess of 6" use cartridge EDP 031308 (80VX92R-16) with any A8000 series body.



R	L
0.164"	0.057"

Milling Methods Data Table

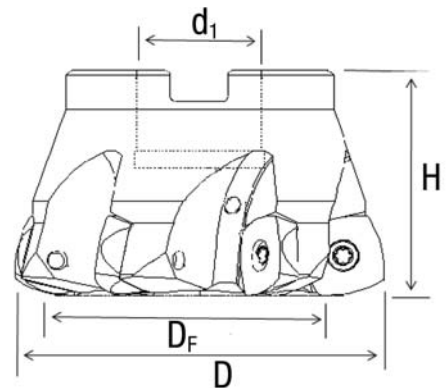
D	Max Ramp Angle		Helical Interpolation		Max Flat Surface D_F
	A	B	Min Dia	Max Dia	
2.5"	0.86°	1.00°	3.82"	4.92"	1.46"
3.0"	0.58°	0.65°	4.82"	5.92"	1.96"
4.0"	0.42°	0.51°	6.82"	7.92"	2.96"
5.0"	0.32°	0.37°	8.82"	9.92"	3.96"
6.0"	0.23°	0.27°	10.82"	11.92"	4.96"

Inserts

EDP	Insert Description	Grade	Material Applications
031291	XELW160512SR-D	X400	
031293	XELT160512ER-D41	X500	
031294	XELT160512ER-D41	SP6519	
33069	XELT160512ER-D41	SC6525	
031292	XELW160512SR-D	SC3025	

Material Designations

P 	Unalloyed Steels	M 	Stainless Steels	K 	Cast Irons	S 	High Temp. Alloys
P 	Alloyed Steels	M 	PH Stainless	N 	Aluminium & Alloys	H 	Hard Materials



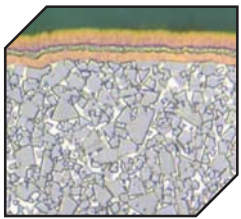
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5230VS09 & 5230VS12 Chevron Cutters

The Stellram® 5230VS12 Cutter is capable of both slotting and profiling. Designed for high material removal rates in Titanium and High Performance Metals; tests have shown metal removal rates of up to two times greater than those of comparable cutters on the market. The advanced chevron design ensures that one cutting point is always in contact with the material during entrance and exit. This provides optimum harmonic stability – resulting in maximum tool life and a 30% improvement in surface finish. A generous flute capacity coupled with each individual cutting edge having it's own jet of coolant provides for excellent chip evacuation. This works to further enhance surface finish and increase metal removal rates to a higher level of productivity.

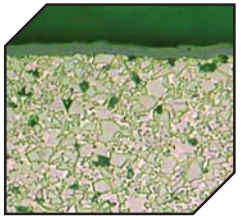
Features and Benefits

- Insert positioning provides smooth progressive penetration and cutting action for extended tool life.
- Individual coolant jets to each insert provides constant chip evacuation and temperature stability in the cutting zone.
- The advanced Chevron design improves stability and lowers power consumption, increasing tool life up to 2 times greater than comparable cutters in today's market.
- Proven versatility in a wide application area in High Performance Metals increasing productivity.



Grade X500

This high performance premium X-Grade™ Technology carbide grade is designed for the toughest of applications in Nickel-based alloys, Cobalt-based alloys, Titanium & Titanium-based Alloys.



Grade SP6519

The combination of a tough substrate with the latest generation of TiAlN super nano coating makes this a versatile grade which is unmatched in performance. Equally suited for both high temperature alloys and stainless steels.



Cutting Data

Material	ISO	Speeds (V _c)		Feed (h _m)		recommended min-max feed/revolution (inch)			
		X500 sfm min-max	SP6519 sfm min-max	9mm insert ipt min-max (h _m)	12mm insert ipt min-max (h _m)	Ø2.00" x 4 flutes feed/rev (Inch) min-max (h _m)	Ø2.50" x 4 flutes feed/rev (Inch) min-max (h _m)	Ø3.00" x 5 flutes feed/rev (Inch) min-max (h _m)	Ø4.00" x 6 flutes feed/rev (Inch) min-max (h _m)
Unalloyed Steel	P	295 - 575	300 - 600	0.0020 - 0.0045	0.0020 - 0.0055	0.0080 - 0.0180	0.0080 - 0.0220	0.0100 - 0.0275	0.0120 - 0.0330
Alloyed Steel	P	245 - 525	255 - 570	0.0020 - 0.0045	0.0020 - 0.0055	0.0080 - 0.0180	0.0080 - 0.0220	0.0100 - 0.0275	0.0120 - 0.0330
Stainless Steel	M	370 - 780	380 - 850	0.0020 - 0.0045	0.0020 - 0.0055	0.0080 - 0.0180	0.0080 - 0.0220	0.0100 - 0.0275	0.0120 - 0.0330
PH Stainless	M	130 - 255	150 - 300	0.0020 - 0.0045	0.0020 - 0.0055	0.0080 - 0.0180	0.0080 - 0.0220	0.0100 - 0.0275	0.0120 - 0.0330
High Temperature Alloys	S	Iron Based	130 - 280	0.0020 - 0.0030	0.0020 - 0.0035	0.0080 - 0.0120	0.0080 - 0.0140	0.0100 - 0.0175	0.0120 - 0.0210
		Cobalt Based	65 - 150	0.0020 - 0.0030	0.0020 - 0.0035	0.0080 - 0.0120	0.0080 - 0.0140	0.0100 - 0.0175	0.0120 - 0.0210
		Nickel Based	80 - 165	0.0020 - 0.0040	0.0020 - 0.0045	0.0080 - 0.0160	0.0080 - 0.0180	0.0100 - 0.0225	0.0120 - 0.0270
		Titanium Based	90 - 325	0.0020 - 0.0055	0.0020 - 0.0055	0.0080 - 0.0180	0.0080 - 0.0220	0.0100 - 0.0275	0.0120 - 0.0330

Note: Above feed rates are calculated on centerline

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5230VS09 & 5230VS12 Chevron Cutters

Product Range (inch)

EDP	Item Description	Insert Style	Diameter (D)	Flute Length (L ₁)	OAL (L)	Size of Bore (d ₁)	Number of Inserts	Number of Flutes			
033073	C5230VS09-CA2.0Z4R4.0	SD...09	2.0	4.000	10.000	2"	56	4	F3508T EDP 015269	T15 EDP 015240	T9 EDP 013214
031430	C5230VS09-A2.0Z4R2.0	SD...09	2.0	2.010	2.990	1	28				
031581	C5230VS09-A2.0Z4R3.1	SD...09	2.0	3.150	4.173	1	44	4			
031234	C5230VS12-A2.5Z4R2.24	SD...12	2.5	2.244	3.346	1	24	4	F4011T EDP 015270	T20 EDP 015241	T9 EDP 013214
031133	C5230VS12-A2.5Z4R3.70	SD...12	2.5	3.700	4.881	1	40	4			
031606	C5230VS12-A3.0Z5R2.56	SD...12	3	2.560	3.740	1 1/4	35	5			
031607	C5230VS12-A3.0Z5R4.33	SD...12	3	4.433	5.629	1 1/4	60	5			
031236	C5230VS12-A4.0Z6R3.00	SD...12	4	3.000	3.937	1 1/2	48	6			
031237	C5230VS12-A4.0Z6R5.23	SD...12	4	5.236	6.496	1 1/2	84	6			

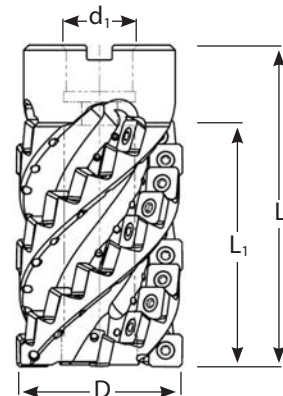
All cutters except C5230VS09CA2.0Z4R4.0 are supplied with insert screws, coolant control screws, steel coolant plug, nord-lock washer & mounting screw. C5230VS09CA2.0Z4R4.0 is supplied with insert screws and coolant control screws. This cutter has a 2.0" cylindrical shank with a 4.50" reach length.

Spare Parts

EDP	Item Description	Insert Style	Coolant Control Screws		Collant Plug™		Nord Lock Washer		Mounting Screw	
			EDP	Qty.	EDP		EDP		EDP	
033073	C5230VS09-CA2.0Z4R4.0	SD...09	015062	F3006T 12	-	-	-	-	-	-
031430	C5230VS09-A2.0Z4R2.0	SD...09	015062	F3006T 12	031436	SB-3413	031258	NLW0.375	017420	1/2-20X1-1/4 SHCSA
031581	C5230VS09-A2.0Z4R3.1	SD...09	015062	F3006T 12	031582	SB-3621	031258	NLW0.375	017420	1/2-20X1-1/4 SHCSA
031234	C5230VS12-A2.5Z4R2.24	SD...12	015062	F3006T 8	031262	SB-3229	031258	NLW0.375	017420	1/2-20X1-1/4 SHCSA
031133	C5230VS12-A2.5Z4R3.70	SD...12	015062	F3006T 12	031263	SB-3230	031258	NLW0.375	017420	1/2-20X1-1/4 SHCSA
031606	C5230VS12-A3.0Z5R2.56	SD...12	015062	F3006T 10	031264	SB-3231	031226	NLW12SP	017424	5/8-18X1-1/2 SHCSA
031607	C5230VS12-A3.0Z5R4.33	SD...12	015062	F3006T 15	031265	SB-3232	031226	NLW12SP	017424	5/8-18X1-1/2 SHCSA
031236	C5230VS12-A4.0Z6R3.00	SD...12	015062	F3006T 12	031266	SB-3233	031259	NLW16SP	017422	3/4-16X1-3/4 SHCSA
031237	C5230VS12-A4.0Z6R5.23	SD...12	015062	F3006T 18	031267	SB-3234	031259	NLW16SP	017422	3/4-16X1-3/4 SHCSA

Inserts

EDP	Insert Size	Insert Description	Grade	Material Applications
031260	9 mm	SDHT09T308EN-423	X500	◆◆◆
033074	9 mm	SDHT09T308EN-423	SP6519	◆◆◆
031261	9 mm	SDHT09T308EN-422	X500	◆◆◆
033075	9 mm	SDHT09T308EN-422	SP6519	◆◆◆
017325	9 mm	SDMT09T308EN-41	MP91M	◆◆◆
031479	9 mm	SDMT09T308EN-41	SP6519	◆◆◆
014410	9 mm	SDMT09T308EN-41	X500	◆◆◆
030717	12 mm	SDHT120412EN-422	X500	◆◆◆
030728	12 mm	SDHT120412EN-422	SP6519	◆◆◆
031218	12 mm	SDHT120412EN-423	X500	◆◆◆
031321	12 mm	SDHT120412EN-423	SP6519	◆◆◆
014411	12 mm	SDMT120412EN-41	X500	◆◆◆
031480	12 mm	SDMT120412EN-41	SP6519	◆◆◆



Material Designations

P ◆ Unalloyed Steels	M ◆ Stainless Steels	K ◆ Cast Irons	S ◆ High Temp. Alloys
P ◆ Alloyed Steels	M ◆ PH Stainless	N ◆ Aluminium & Alloys	H ◆ Hard Materials

7710VRD20 Milling Cutter

ATI Stellram's 7710VRD line of milling cutters are used for face milling, slotting, pocketing, contour and hole milling. The combination of the 20mm (0.787") diameter button insert, positive cutting action, and unique patented anti-rotation system make this a robust solution for machining High Performance Metals.

Features and Benefits

- Round 20mm (0.787") insert is capable of handling varying depths of cut while reducing the risk of failure.
- Patented anti-rotation system prevents insert movement even under demanding conditions.
- Cutters are designed with maximum number of inserts to maintain higher linear feed rates, even in High Performance Metals, increasing productivity.
- Perfectly suited for face milling forgings where material allowance is unpredictable.
- Through the tool coolant and unique pocket design maximizes chip evacuation and increases tool life.
- Proven versatility in a wide application area in High Performance Metals increasing productivity.



US Patent # 7,722,297; Foreign Patents Pending

7710VRD20

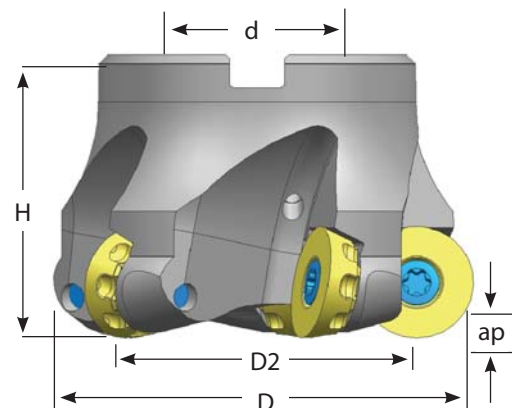
													Linear Ramping		Helical Interpolation	
EDP	Description	D	D ₂	d	H	Z		EDP		EDP	Mounting Screw	Ramping Degree	a _p	Length	Dia. Min	Dia. Max
030945	C7710VRD20-A2.50Z04R	2.50	1.712	0.75	1.575	4	D6014T	029640	T20	015241	017423	7.3	0.394	3.073	3.504	4.921
030668	C7710VRD20-A3.00Z05R	3.00	2.212	1.00	1.969	5	D6014T	029640	T20	015241	017420	6.4	0.394	2.700	4.504	5.921
030664	C7710VRD20-A4.00Z06R	4.00	3.212	1.25	1.969	6	D6014T	029640	T20	015241	017424	4.1	0.394	3.746	6.504	7.921
030667	C7710VRD20-A5.00Z07R	5.00	4.212	1.50	2.480	7	D6014T	029640	T20	015241	017422	3.0	0.394	5.775	8.504	9.921
030666	C7710VRD20-6.00Z08R	6.00	5.212	1.50	2.480	8	D6014T	029640	T20	015241	-	2.4	0.394	7.041	10.504	11.921
031077	C7710VRD20-8.50Z12R	8.50	7.712	2.50	2.480	12	D6014T	029640	T20	015241	-	1.5	0.394	13.265	15.504	16.921

* Cutters are supplied with insert and mounting screws

Inserts			
EDP	Grade	ISO/ANSI	Material
029309	X500	RDHW2006M0E-X8	
029310	X500	RDHT2006M0E-42-X8	
031533	SP6519	RDHT2006M0E-42-X8	
031661	X500	RDHW2006M0S-X8	
031662	SP6519	RDHW2006M0S-X8	
031660	X500	RDHW2006M0S-25-X8	
031576	SP6519	RDHW2006M0S-25-X8	

Cartridges	
EDP	Description
030969	80VRD00R-20
030970	80VRD00L-20

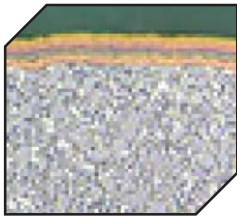
* For cutter diameters larger than 6.00" you can use the cartridges with A8000, A8010, or A8100 series modular bodies found in our milling catalog.



Material Designations

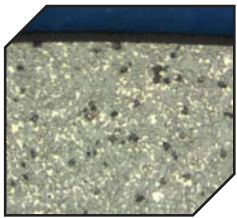
P	 Unalloyed Steels	M	 Stainless Steels	K	 Cast Irons	S	 High Temp. Alloys
P	 Alloyed Steels	M	 PH Stainless	N	 Aluminum & Alloys	H	 Hard Materials

7710VRD20 Milling Cutter



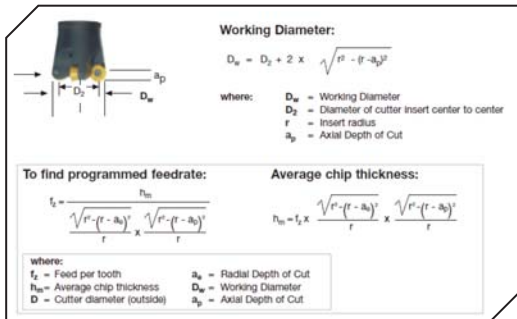
Grade X500—X-Grade™ Technology

This high performance premium carbide grade has a high level of toughness and a specially developed carbide substrate with a CVD coating for demanding milling applications. This unique grade operates at low to medium cutting speeds and is capable of high metal removal rates whilst retaining a secure cutting edge. Its primary use is in alloyed steels, stainless steels and high temperature alloys.



Grade SP6519

The combination of a tough substrate with the latest generation of TiAlN super nano coating makes this a versatile grade which is unmatched in performance. Equally suited for both high temperature alloys and stainless steels.



Feeds and Speeds

Insert	Insert Size	a_p doc	$h_{m,r}$ min	$h_{m,r}$ max	f_z (ipt) min	f_z (ipt) max
RDHW2006M0E-X8	0.787	0.050	0.004	0.010	0.0159	0.0397
RDHW2006M0E-X8	0.787	0.100	0.004	0.010	0.0112	0.0281
RDHW2006M0E-X8	0.787	0.120	0.004	0.010	0.0102	0.0256
RDHW2006M0E-X8	0.787	0.150	0.004	0.010	0.0092	0.0229
RDHW2006M0E-X8	0.787	0.200	0.004	0.010	0.0079	0.0198
RDHW2006M0E-X8	0.787	0.250	0.004	0.010	0.0071	0.0177
RDHW2006M0E-X8	0.787	0.300	0.004	0.010	0.0065	0.0162
RDHW2006M0E-X8	0.787	0.394	0.004	0.010	0.0057	0.0141
RDHW2006M0S-X8	0.787	0.050	0.005	0.010	0.0198	0.0397
RDHW2006M0S-X8	0.787	0.100	0.005	0.010	0.0140	0.0281
RDHW2006M0S-X8	0.787	0.120	0.005	0.010	0.0128	0.0256
RDHW2006M0S-X8	0.787	0.150	0.005	0.010	0.0115	0.0229
RDHW2006M0S-X8	0.787	0.200	0.005	0.010	0.0099	0.0198
RDHW2006M0S-X8	0.787	0.250	0.005	0.010	0.0089	0.0177
RDHW2006M0S-X8	0.787	0.300	0.005	0.010	0.0081	0.0162
RDHW2006M0S-X8	0.787	0.394	0.005	0.010	0.0071	0.0141
RDHT2006M0E-42-X8	0.787	0.050	0.003	0.008	0.0119	0.0317
RDHT2006M0E-42-X8	0.787	0.100	0.003	0.008	0.0084	0.0224
RDHT2006M0E-42-X8	0.787	0.120	0.003	0.008	0.0077	0.0205
RDHT2006M0E-42-X8	0.787	0.150	0.003	0.008	0.0069	0.0183
RDHT2006M0E-42-X8	0.787	0.200	0.003	0.008	0.0060	0.0159
RDHT2006M0E-42-X8	0.787	0.250	0.003	0.008	0.0053	0.0142
RDHT2006M0E-42-X8	0.787	0.300	0.003	0.008	0.0049	0.0130
RDHT2006M0E-42-X8	0.787	0.394	0.003	0.008	0.0042	0.0113
RDHW2006M0S-25-X8	0.787	0.050	0.009	0.014	0.0357	0.0555
RDHW2006M0S-25-X8	0.787	0.100	0.009	0.014	0.0252	0.0393
RDHW2006M0S-25-X8	0.787	0.120	0.009	0.014	0.0230	0.0359
RDHW2006M0S-25-X8	0.787	0.150	0.009	0.014	0.0206	0.0321
RDHW2006M0S-25-X8	0.787	0.200	0.009	0.014	0.0179	0.0278
RDHW2006M0S-25-X8	0.787	0.250	0.009	0.014	0.0160	0.0248
RDHW2006M0S-25-X8	0.787	0.300	0.009	0.014	0.0146	0.0227
RDHW2006M0S-25-X8	0.787	0.394	0.009	0.014	0.0127	0.0198

* The above chart calculates in relation with axial d.o.c. only and not radial cut.

Formula: Program Feed Rate (f_z)

$$f_z = h_m \times \sqrt{\frac{d}{a_p}}$$

h_m = Average chip thickness

f_z = Feed per tooth

Formula: Average Chip Thickness (h_m)

$$h_m = f_z \times \sqrt{\frac{a_p}{d}}$$

a_p = Depth of cut

d = Insert diameter

Cutting Data

ISO	Material	Grade SP6519	Grade X500	RDHW2006M0E-X8	RDHT2006M0E-42-X8	RDHW2006M0S-X8	RDHW2006M0S-25-X8
		vc sfm	vc sfm	h_m (min-max)	h_m (min-max)	h_m (min-max)	h_m (min-max)
		min-max	min-max	inch	inch	inch	inch
P	Unalloyed Steel	400 - 885	370 - 820	0.004 - 0.010	0.003 - 0.008	-	0.009 - 0.014
	Alloyed Steel	250 - 670	250 - 655	0.004 - 0.008	0.003 - 0.007	-	0.009 - 0.013
M	Stainless Steels	345 - 780	335 - 720	-	0.003 - 0.007	-	-
	PH Stainless	160 - 390	160 - 350	-	0.003 - 0.006	-	-
S	High Temperature Alloys	90 - 260	65 - 285	0.004 - 0.008	0.003 - 0.006	* 0.005 - 0.010	-
K	Cast Irons	400-790	-	-	-	-	0.009 - 0.014

* Denotes: RDHW2006M0S-X8 for use in Titanium when machining forgings with heavy scale.

New Milling Geometry -442

Material Applications

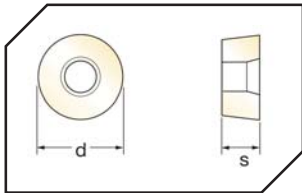
Stainless Steel, Nickel & Titanium Alloys. This insert geometry is mainly developed for high surface speeds.

Grade Selection

- SP6519: First choice for Stainless Steel, Nickel & Titanium Alloys.
- X500: For Nickel Alloys & Stainless Steel with heavy scale or vibrations with lower cutting speed compared to SP6519.
- X700: For Stainless Steel & Titanium Alloys when more toughness is required.

Features and Benefits

- New positive Geometry for smooth cutting.
- New surface coating for less friction & temperature.
- New edge preparation for longer tool life.
- Periphery ground for higher precision.
- This new design has the advantage to run at higher surface speed than other existing round button inserts.



Product Range (inch)										
EDP	Item Description	Grade	Application & Material			Dimensions (inch)				
			Roughing ▼	Semi-Finishing ▼▼	Finishing ▼▼▼	d (IC)	l	s	r	h _m min
			Depth of Cut							
			a _p max 0.200"	a _p min- max 0.040" - 0.100"	a _p min- max					
032128	RPHT1204M0E-442-X4	SP6519	◆◆◆	◆◆◆		0.472"	-	0.187"	-	0.002"
032129	RPHT1204M0E-442-X4	X500	◆◆◆	◆◆◆		0.472"	-	0.187"	-	0.002"
032130	RPHT1204M0E-442-X4	X700	◆◆◆	◆◆◆		0.472"	-	0.187"	-	0.002"

Material Designations

P ◆ Unalloyed Steels	M ◆ Stainless Steels	K ◆ Cast Irons	S ◆ High Temp. Alloys
P ◆ Alloyed Steels	M ◆ PH Stainless	N ◆ Aluminium & Alloys	H ◆ Hard Materials

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New Milling Geometry -442

Feeds f_z (inch/tooth)								
ISO	Material	R_m and Hardness	Depth of cut					average chip thickness
			a_p 0.040"	a_p 0.060"	a_p 0.080"	a_p 0.100"	a_p 0.120"	h_m
			f_z min - max	f_z min - max	f_z min - max	f_z min - max	f_z min - max	min - max
M	Stainless Steel	Austenitic + Ferritic 300 series	0.008 - 0.022	0.007 - 0.018	0.006 - 0.015	0.005 - 0.014	0.005 - 0.013	0.003 - 0.006
		Martensitic 400 series	0.008 - 0.022	0.007 - 0.018	0.006 - 0.015	0.005 - 0.014	0.005 - 0.013	0.003 - 0.006
		Refractory P.H.	0.006 - 0.017	0.004 - 0.016	0.004 - 0.011	0.003 - 0.010	0.003 - 0.009	0.002 - 0.005
S	High Temperature Alloys	Iron Based	0.006 - 0.013	0.004 - 0.011	0.004 - 0.009	0.003 - 0.009	-	0.002 - 0.004
		Cobalt Based	0.006 - 0.013	0.004 - 0.011	0.004 - 0.009	0.003 - 0.009	-	0.002 - 0.004
		Nickel Based	0.006 - 0.013	0.004 - 0.011	0.004 - 0.009	0.003 - 0.009	-	0.002 - 0.004
		Titanium Based	0.006 - 0.017	0.004 - 0.016	0.004 - 0.011	0.003 - 0.010	-	0.002 - 0.005

Calculation of the average chip thickness in relation with the axial d.o.c:

Formula: Program Feed Rate (f_z)

$$f_z = h_m \times \sqrt{\frac{d}{a_p}}$$

h_m = Average chip thickness

Formula: Average Chip Thickness (h_m)

$$h_m = f_z \times \sqrt{\frac{a_p}{d}}$$

a_p = Depth of cut

f_z = Feed per tooth

d = Insert diameter

Speeds v_c (feet/min)										
Coolant recommendation Recommended • Possible ◊			Wear Resistance							
			Speed min - max							
			 	PVD X Grade X500	 	PVD X Grade X700	 	PVD Standard SP6519		
ISO	Material									
M	Stainless Steel	Austenitic + Ferritic 300 series	◊	•	375 820	◊	375 850	◊	•	375 885
		Martensitic 400 series	•		330 720		340 755			340 770
		Refractory P.H.	•		165 360	•	165 395	•		165 395
S	High Temperature Alloys	Iron Based			75 160		75 170			75 180
		Cobalt Based	•		70 145	•	75 150	•		75 160
		Nickel Based			80 170		85 175			85 180
		Titanium Based			115 240		120 250			120 260

5720VZ16 Aluminum Milling Cutter Program

ATI Stellram's 5720VZ16 cutters are our latest design for high metal removal in aluminum applications. This tool is designed, manufactured and tested in accordance with EN ISO 15641:2001 for maximum stability in high speed applications. The tools are capable of 51,000 RPM depending on diameter. The unique 16mm (0.630") insert with -721 geometry allows machining in thin-wall applications due to low pressure of the cutting edge.

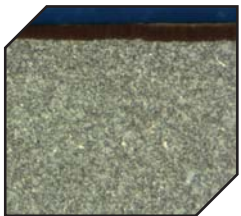
Features and Benefits

- Cylindrical shank cutter bodies are balanced by design and manufactured at G6.3 @ 30,000 RPM. *
- Pocket is reinforced to allow for heavy feed, safe ramping and more line contact when utilizing a larger radius insert for more stability during machining, increasing tool life and productivity.
- 12 different radii sizes (facet to 0.236") are available, each with the same cutting depth capacity of 16mm (0.630").
- This new patented design allows each body to hold all inserts with different radii without losing any gauge height of the cutter length.
- Through the tool coolant allows better chip evacuation and higher feed rates.
- HSK specials are available upon request with specific shank and reach lengths.

* Note: Shellmill and modular head cutters are not balanced. It is recommended to balance the cutter and adapter as a set for high speed machining.



US Patent # 7,905,689
Foreign Patents Pending



Grade GH1 micrograin is specifically designed for high speed machining of Aluminums. The grade works well with or without coolant.

Ramp Angle (Shown in Degrees)

	Radius (inch)											
	PDFR	R0.4	R0.8	R1.2	R1.6	R2.0	R2.5	R3.0	R3.2	R4.0	R5.0	R6.0
Cutter Dia	Facet	0.016	0.031	0.047	0.062	0.079	0.098	0.118	0.125	0.157	0.216	0.236
1.00	14.4	14.4	14.4	14.4	17.1	9.3	9.7	18.6	18.6	9.7	10.9	11.4
* 1.25 - Z2	13.2	13.2	13.2	13.2	13.5	13.7	13.9	14.6	14.6	14.5	15.5	16.4
* 1.25 - Z3	11.4	11.4	11.4	11.4	12.1	12.1	12.2	12.7	12.7	13.4	14.2	14.9
1.50	11.2	11.2	11.2	11.2	10.6	10.8	11.4	11.3	11.3	12.5	13.9	13.2
2.00	7.8	7.8	7.8	7.8	7.1	7.2	7.7	7.4	7.4	8.8	8.8	9
2.50	5.8	5.8	5.8	5.8	5.3	5.4	5.7	5.5	5.5	6.9	6.5	6.6
3.00	4.6	4.6	4.6	4.6	4.3	4.3	4.6	4.4	4.4	5.4	5.1	5.2

* Denotes: 1.25" Diameter has different ramp angles for the 2 pocket vs 3 pocket design.

Metal Removal (inch)

Calculation for N 24,000 rpm		
Diam.	Z	MRR in ³ /min
1.00	2	95
1.25	2	197
1.25	3	182.7
1.50	2	257
1.50	3	316
1.50	4	300
2.00	3	483
2.00	4	527
2.50	4	811
2.50	5	830
3.00	4	1030
3.00	5	1288

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5720VZ16 Aluminum Milling Cutter Program

Cylindrical Shank

EDP	Description	D	L ₂	L ₁	Z	d ₁		EDP		EDP	Max RPM
031347	C5720VZ16CA1.0Z2R2.75	1.00	2.75	5.03	2	1.00	DP5009A	030820	TP20	030819	50,000
031348	C5720VZ16CA1.25Z2R3.0	1.25	3.00	5.28	2	1.25	DP5009A	030820	TP20	030819	41,500
031664	C5720VZ16CA1.25Z3R3.0	1.25	3.00	5.28	3	1.25	DP5009A	030820	TP20	030819	41,500

Shell Mill

EDP	Description	D	H	d ₁	Z		EDP		EDP	Max RPM
031331	C5720VZ16-A1.50Z03R	1.50	1.574	0.50	3	DP5009A	030820	TP20	030819	36,500
031332	C5720VZ16-A2.00Z03R	2.00	1.574	0.75	3	DP5009A	030820	TP20	030819	30,000
031333	C5720VZ16-A2.00Z04R	2.00	1.574	0.75	4	DP5009A	030820	TP20	030819	30,000
031334	C5720VZ16-A2.50Z04R	2.50	1.574	1.00	4	DP5009A	030820	TP20	030819	26,000
031335	C5720VZ16-A2.50Z05R	2.50	1.574	1.00	5	DP5009A	030820	TP20	030819	26,000
031336	C5720VZ16-A3.00Z04R	3.00	1.970	1.00	4	DP5009A	030820	TP20	030819	23,000
031337	C5720VZ16-A3.00Z05R	3.00	1.970	1.00	5	DP5009A	030820	TP20	030819	23,000

Modular Head

EDP	Description	D	L	M	d ₁	# of Inserts		EDP		EDP	Max RPM
031341	A5720VZ16SA1.00Z2R2	1.00	1.97	M12	0.492	2	DP5009A	030820	TP20	030819	50,000
031342	A5720VZ16SA1.25Z2R2	1.25	1.97	M16	0.669	2	DP5009A	030820	TP20	030819	41,500
031640	A5720VZ16SA1.25Z3R2	1.25	1.97	M16	0.669	3	DP5009A	030820	TP20	030819	41,500

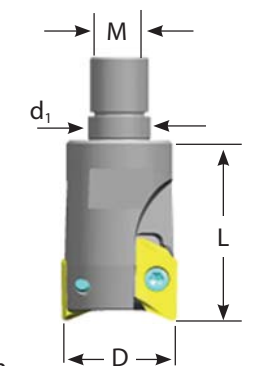
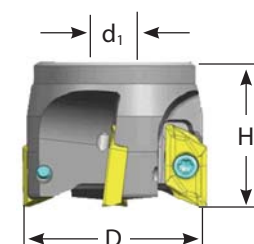
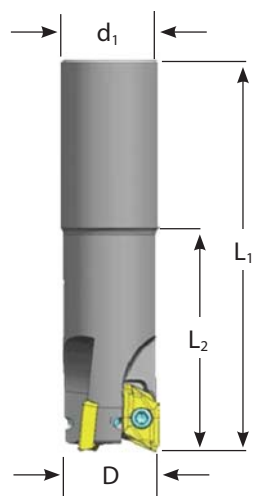
Inserts

EDP	Grade	ISO	ANSI	Radius
030927	GH1	ZDET16M5PDR-721	ZDET16M5PDR-721	Facet
031384	GH1	ZDET16M504FR-721	ZDET16M504FR-721	0.016
030928	GH1	ZDET16M508FR-721	ZDET16M508FR-721	0.031
031385	GH1	ZDET16M512FR-721	ZDET16M512FR-721	0.047
030929	GH1	ZDET16M516FR-721	ZDET16M516FR-721	0.062
030930	GH1	ZDET16M520FR-721	ZDET16M520FR-721	0.079
030931	GH1	ZDET16M525FR-721	ZDET16M525FR-721	0.098
030932	GH1	ZDET16M530FR-721	ZDET16M530FR-721	0.118
030933	GH1	ZDET16M532FR-721	ZDET16M532FR-721	0.125
030934	GH1	ZDET16M540FR-721	ZDET16M540FR-721	0.157
030935	GH1	ZDET16M550FR-721	ZDET16M550FR-721	0.216
030936	GH1	ZDET16M560FR-721	ZDET16M560FR-721	0.236



A_pmax16mm
(0.630")

See insert chart for Radius



- Insert screw torque 6 Nm or 53 in. lb or 4.42 ft. lbs
- Always replace the insert screw when the insert is changed
- Inserts are shipped with extra screws

Feeds & Speeds

Material	Roughing			Semi-Finishing			Finishing		
	Speed V _c (feet/min)	Feed h _m (inch)	D. O. C. a _p (inch)	Speed V _c (feet/min)	Feed h _m (inch)	D. O. C. a _p (inch)	Speed V _c (feet/min)	Feed h _m (inch)	D. O. C. a _p (inch)
Aluminum & Alloys	655 - 10,000	0.0008 - 0.0098	0.008 - 0.630	655 - 10,000	0.0008 - 0.0098	0.008 - 0.630	655 - 10,000	0.0008 - 0.0098	0.008 - 0.630

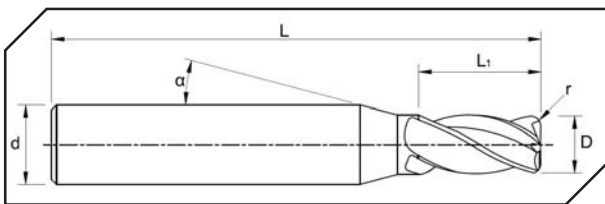
XE - XER Aerospace Solid Carbide Endmill Program

ATI Stellram's new generation of XE - XER Solid Carbide Endmills have been specifically designed for machining Mission Critical Metallics® — materials that are typically used in the Aerospace, Defense, Medical and Oil and Gas Industries.

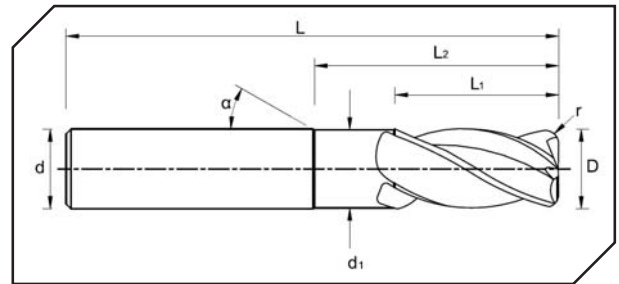
This new geometry, in combination with our toughest but most wear-resistant submicron substrate and PVD Nano TiAlN coating, makes it possible for these endmills to run at unprecedented metal removal rates.

Features and Benefits

- Advanced geometric design to improve stability with suppression of vibration and harmonics.
- High precision radii providing a full 90 degree to tangent point.
- Excellent chip control.
- Extended reach due to a reduced shank behind the flutes.
- Advanced PVD Coating for performance at elevated surface speeds.
- Increased application area for slotting and profiling.
- Increased performance by volume by providing up to 2 times greater metal removal rates in high performance metals than comparable tools in today's market.
- Elevated speeds and feeds are possible even in the most arduous of conditions.



Drawing A

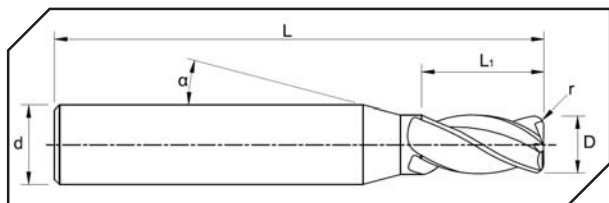


Drawing B

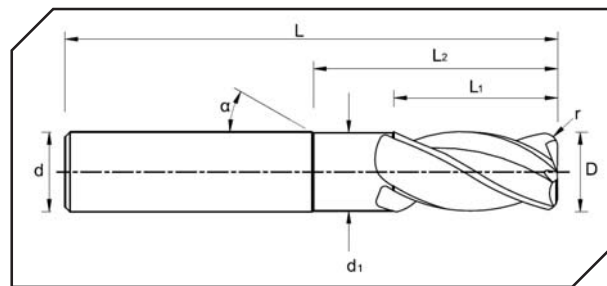
XE Product Range (inch)

EDP	Description	D	d	L	L ₁	L ₂	d ₁	Z	r	a (deg.)	See Drawing	Material Application
031373	C- XE 0125MTN4-C	1/8	1/4	2 1/2	1/4	-	-	4	0.010	15	A	◆◆◆◆
031374	C- XE 0156MTN4-C	5/32	1/4	2 1/2	5/16	-	-	4	0.010	10	A	◆◆◆◆
031375	C- XE 0187MTN4-C	3/16	1/4	3	3/8	-	-	4	0.010	10	A	◆◆◆◆
031376	C- XE 0250MN4-C	1/4	1/4	3	1/2	3/4	15/64	4	0.010	30	B	◆◆◆◆
031377	C- XE 0312MN4-C	5/16	5/16	3	5/8	15/16	19/64	4	0.010	30	B	◆◆◆◆
031378	C- XE 0375MN4-C	3/8	3/8	4	3/4	1 1/8	23/64	4	0.010	30	B	◆◆◆◆
031379	C- XE 0500MN4-C	1/2	1/2	4	1	1 1/2	31/64	4	0.010	30	B	◆◆◆◆
031380	C- XE 0625MN4-C	5/8	5/8	4 1/2	1 1/4	1 7/8	39/64	4	0.010	30	B	◆◆◆◆
031381	C- XE 0750MN4-C	3/4	3/4	5	1 1/2	2 1/4	47/64	4	0.010	30	B	◆◆◆◆
031382	C- XE 1000MN4-C	1	1	6	2	3	63/64	4	0.010	30	B	◆◆◆◆
tolerance (inch)		g ⁹	h6	+0.030 -0.010	+0.040 -0.000	+0.040 -0.000	-	-	+0.002 -0.002	-		

XE - XER Aerospace Solid Carbide Endmill Program



Drawing A



Drawing B

XE Product Range (metric)

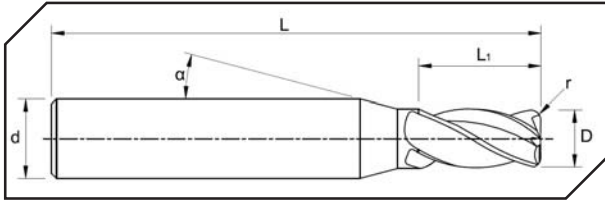
EDP	Description	D	d	L	L ₁	L ₂	d ₁	Z	r	a (deg.)	See Drawing	Material Application
031360	XE 020MTN4-C	2	6	65	4	6	-	4	0.25	15	A	◆◆◆
031361	XE 025MTN4-C	2.5	6	65	5	7.5	-	4	0.25	15	A	◆◆◆
031362	XE 030MTN4-C	3	6	65	6	9	-	4	0.25	15	A	◆◆◆
031363	XE 035MTN4-C	3.5	6	65	7	10.5	-	4	0.25	15	A	◆◆◆
031364	XE 040MTN4-C	4	6	65	8	12	-	4	0.25	10	A	◆◆◆
031365	XE 045MTN4-C	4.5	6	65	9	13.5	-	4	0.25	10	A	◆◆◆
031366	XE 050MTN4-C	5	6	75	10	15	-	4	0.25	10	A	◆◆◆
031367	XE 060MN4-C	6	6	75	12	18	5.75	4	0.25	30	B	◆◆◆
031368	XE 080MN4-C	8	8	75	16	24	7.75	4	0.25	30	B	◆◆◆
031369	XE 100MN4-C	10	10	100	20	30	9.75	4	0.25	30	B	◆◆◆
031370	XE 120MN4-C	12	12	100	24	36	11.75	4	0.25	30	B	◆◆◆
031371	XE 160MN4-C	16	16	115	32	48	15.75	4	0.25	30	B	◆◆◆
031372	XE 200MN4-C	20	20	120	40	60	19.75	4	0.25	30	B	◆◆◆
tolerance (metric)		g ⁹	h6	+0.7 -0.3	+1.0 -0.0	+1.0 -0.0	-	-	+0.05 -0.05	-		

Material Designations

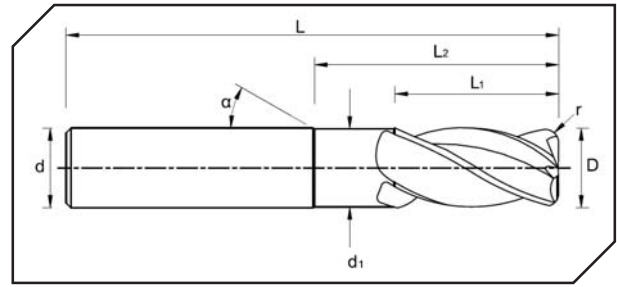
P ◆ Unalloyed Steels	M ◆ Stainless Steels	K ◆ Cast Irons	S ◆ High Temp. Alloys
P ◆ Alloyed Steels	M ◆ PH Stainless	N ◆ Aluminium & Alloys	H ◆ Hard Materials

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C-XER Aerospace Solid Carbide Endmill Program



Drawing A

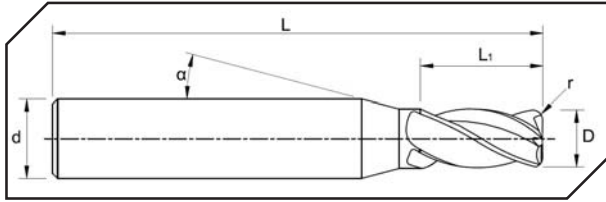


Drawing B

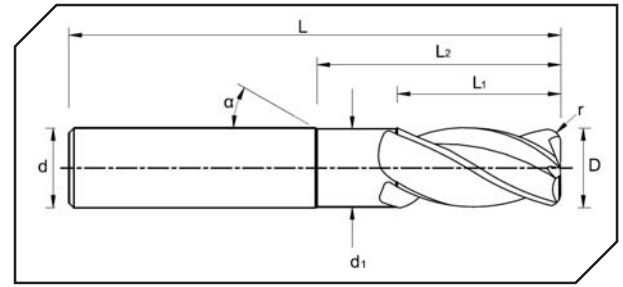
C-XER Product Range (inch) 0.125" to 0.469"

EDP	Description	D	d	L	L ₁	L ₂	d ₁	Z	r	a (deg.)	See Drawing	Material Application
032074	C-XER 0125NTN4-C	1/8	1/4	2 1/2	0.290	-	-	4	0.010	15	A	◆◆◆◆
032075	C-XER 0125NTN4-F	1/8	1/4	2 1/2	0.290	-	-	4	0.030	15	A	◆◆◆◆
032076	C-XER 0156NTN4-C	5/32	1/4	2 1/2	0.353	-	-	4	0.010	10	A	◆◆◆◆
032077	C-XER 0187NTN4-C	3/16	1/4	2 1/2	0.415	-	-	4	0.010	10	A	◆◆◆◆
032078	C-XER 0187NTN4-F	3/16	1/4	2 1/2	0.415	-	-	4	0.030	10	A	◆◆◆◆
032079	C-XER 0218NTN4-C	7/32	1/4	2 1/2	0.478	-	-	4	0.010	10	A	◆◆◆◆
032080	C-XER 0218NTN4-E	7/32	1/4	2 1/2	0.478	-	-	4	0.020	10	A	◆◆◆◆
032081	C-XER 0250NN4-C	1/4	1/4	2 1/2	0.540	0.750	0.23	4	0.010	30	B	◆◆◆◆
032082	C-XER 0250NN4-E	1/4	1/4	2 1/2	0.540	0.750	0.23	4	0.020	30	B	◆◆◆◆
032083	C-XER 0250NN4-F	1/4	1/4	2 1/2	0.540	0.750	0.23	4	0.030	30	B	◆◆◆◆
032084	C-XER 0281NTN4-C	9/32	5/16	2 1/2	0.603	-	-	4	0.010	10	A	◆◆◆◆
032085	C-XER 0281NTN4-E	9/32	5/16	2 1/2	0.603	-	-	4	0.020	10	A	◆◆◆◆
032086	C-XER 0312NN4-C	5/16	5/16	2 1/2	0.665	0.938	0.30	4	0.010	30	B	◆◆◆◆
032087	C-XER 0312NN4-E	5/16	5/16	2 1/2	0.665	0.938	0.30	4	0.020	30	B	◆◆◆◆
032088	C-XER 0312NN4-F	5/16	5/16	2 1/2	0.665	0.938	0.30	4	0.030	30	B	◆◆◆◆
032089	C-XER 0343NTN4-C	11/32	3/8	2 1/2	0.728	-	-	4	0.010	10	A	◆◆◆◆
032090	C-XER 0343NTN4-E	11/32	3/8	2 1/2	0.728	-	-	4	0.020	10	A	◆◆◆◆
032091	C-XER 0375NN4-C	3/8	3/8	2 1/2	0.790	1.125	0.36	4	0.010	30	B	◆◆◆◆
032092	C-XER 0375NN4-E	3/8	3/8	2 1/2	0.790	1.125	0.36	4	0.020	30	B	◆◆◆◆
032093	C-XER 0375NN4-F	3/8	3/8	2 1/2	0.790	1.125	0.36	4	0.030	30	B	◆◆◆◆
032094	C-XER 0375NN4-J	3/8	3/8	2 1/2	0.790	1.125	0.36	4	0.060	30	B	◆◆◆◆
032095	C-XER 0406NTN4-C	13/32	7/16	3	0.853	-	-	4	0.010	10	A	◆◆◆◆
032096	C-XER 0406NTN4-E	13/32	7/16	3	0.853	-	-	4	0.020	10	A	◆◆◆◆
032097	C-XER 0437NN4-C	7/16	7/16	3	0.915	1.313	0.42	4	0.010	30	B	◆◆◆◆
032098	C-XER 0437NN4-E	7/16	7/16	3	0.915	1.313	0.42	4	0.020	30	B	◆◆◆◆
032099	C-XER 0437NN4-F	7/16	7/16	3	0.915	1.313	0.42	4	0.030	30	B	◆◆◆◆
032100	C-XER 0437NN4-J	7/16	7/16	3	0.915	1.313	0.42	4	0.060	30	B	◆◆◆◆
032101	C-XER 0469NTN4-C	15/32	1/2	3	0.978	-	-	4	0.010	10	A	◆◆◆◆
032102	C-XER 0469NTN4-E	15/32	1/2	3	0.978	-	-	4	0.020	10	A	◆◆◆◆
Tolerance (inch)		g ⁹	h6	+0.030 -0.010	+0.040 -0.000	+0.040 -0.000	-	-	+0.002 -0.002			

C-XER Aerospace Solid Carbide Endmill Program



Drawing A



Drawing B

C-XER Product Range (inch) 0.500" to 1.000"

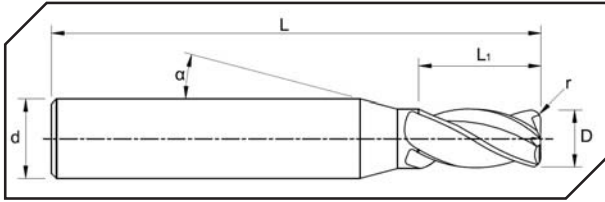
EDP	Description	D	d	L	L ₁	L ₂	d ₁	Z	r	a (deg.)	See Drawing	Material Application
032103	C-XER 0500NN4-C	1/2	1/2	3	1.040	1.500	0.48	4	0.010	30	B	◆◆◆
032104	C-XER 0500NN4-F	1/2	1/2	3	1.040	1.500	0.48	4	0.030	30	B	◆◆◆
032105	C-XER 0500NN4-J	1/2	1/2	3	1.040	1.500	0.48	4	0.060	30	B	◆◆◆
032106	C-XER 0500NN4-K	1/2	1/2	3	1.040	1.500	0.48	4	0.090	30	B	◆◆◆
032107	C-XER 0500NN4-L	1/2	1/2	3	1.040	1.500	0.48	4	0.120	30	B	◆◆◆
032108	C-XER 0625NN4-C	5/8	5/8	3 1/2	1.290	1.875	0.61	4	0.010	30	B	◆◆◆
032109	C-XER 0625NN4-F	5/8	5/8	3 1/2	1.290	1.875	0.61	4	0.030	30	B	◆◆◆
032110	C-XER 0625NN4-J	5/8	5/8	3 1/2	1.290	1.875	0.61	4	0.060	30	B	◆◆◆
032111	C-XER 0625NN4-K	5/8	5/8	3 1/2	1.290	1.875	0.61	4	0.090	30	B	◆◆◆
032112	C-XER 0625NN4-L	5/8	5/8	3 1/2	1.290	1.875	0.61	4	0.120	30	B	◆◆◆
032113	C-XER 0750NN4-C	3/4	3/4	4	1.540	2.250	0.73	4	0.010	30	B	◆◆◆
032114	C-XER 0750NN4-F	3/4	3/4	4	1.540	2.250	0.73	4	0.030	30	B	◆◆◆
032115	C-XER 0750NN4-J	3/4	3/4	4	1.540	2.250	0.73	4	0.060	30	B	◆◆◆
032116	C-XER 0750NN4-K	3/4	3/4	4	1.540	2.250	0.73	4	0.090	30	B	◆◆◆
032117	C-XER 0750NN4-L	3/4	3/4	4	1.540	2.250	0.73	4	0.120	30	B	◆◆◆
032118	C-XER 0750NN4-M	3/4	3/4	4	1.540	2.250	0.73	4	0.156	30	B	◆◆◆
032119	C-XER 0750NN4-P	3/4	3/4	4	1.540	2.250	0.73	4	0.190	30	B	◆◆◆
032120	C-XER 1000NN4-C	1	1	5	2.040	3.000	0.98	4	0.010	30	B	◆◆◆
032121	C-XER 1000NN4-F	1	1	5	2.040	3.000	0.98	4	0.030	30	B	◆◆◆
032122	C-XER 1000NN4-J	1	1	5	2.040	3.000	0.98	4	0.060	30	B	◆◆◆
032123	C-XER 1000NN4-K	1	1	5	2.040	3.000	0.98	4	0.090	30	B	◆◆◆
032124	C-XER 1000NN4-L	1	1	5	2.040	3.000	0.98	4	0.120	30	B	◆◆◆
032125	C-XER 1000NN4-M	1	1	5	2.040	3.000	0.98	4	0.156	30	B	◆◆◆
032126	C-XER 1000NN4-P	1	1	5	2.040	3.000	0.98	4	0.190	30	B	◆◆◆
Tolerance (inch)		g ⁹	h6	+0.030 -0.010	+0.040 -0.000	+0.040 -0.000	-	-	+0.002 -0.002			

Material Designations

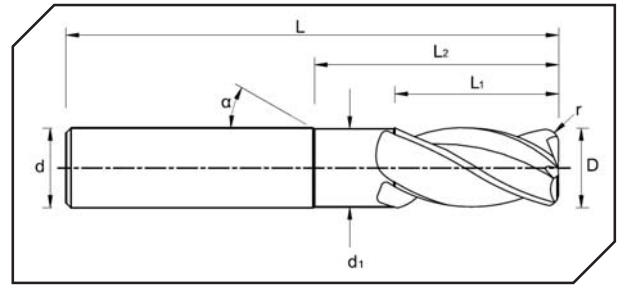
P ◆ Unalloyed Steels	M ◆ Stainless Steels	K ◆ Cast Irons	S ◆ High Temp. Alloys
P ◆ Alloyed Steels	M ◆ PH Stainless	N ◆ Aluminium & Alloys	H ◆ Hard Materials

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XER Aerospace Solid Carbide Endmill Program



Drawing A



Drawing B

XER Product Range (metric) 2.0 mm to 10 mm

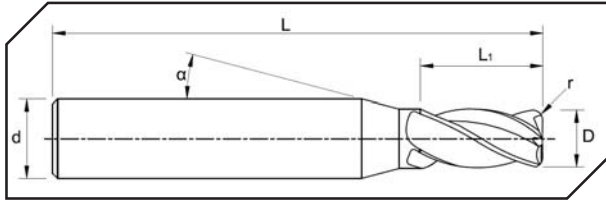
EDP	Description	D	d	L	L ₁	L ₂	d ₁	Z	r	a (deg.)	See Drawing	Material Application
031936	XER 020NTN4-C	2.0	6.0	57.0	7.0	-	-	4	0.25	15	A	◆◆◆◆
031937	XER 025NTN4-C	2.5	6.0	57.0	8.0	-	-	4	0.25	15	A	◆◆◆◆
031938	XER 030NTN4-C	3.0	6.0	57.0	8.0	-	-	4	0.25	15	A	◆◆◆◆
031939	XER 035NTN4-C	3.5	6.0	57.0	10.0	-	-	4	0.25	15	A	◆◆◆◆
031940	XER 040NTN4-C	4.0	6.0	57.0	11.0	-	-	4	0.25	10	A	◆◆◆◆
031941	XER 040NTN4-E	4.0	6.0	57.0	11.0	-	-	4	0.50	10	A	◆◆◆◆
031942	XER 050NTN4-C	5.0	6.0	57.0	13.0	-	-	4	0.25	10	A	◆◆◆◆
031943	XER 050NTN4-E	5.0	6.0	57.0	13.0	-	-	4	0.50	10	A	◆◆◆◆
031944	XER 050NTN4-F	5.0	6.0	57.0	13.0	-	-	4	0.75	10	A	◆◆◆◆
031945	XER 060NN4-C	6.0	6.0	57.0	13.0	21.0	5.75	4	0.25	30	B	◆◆◆◆
031946	XER 060NN4-E	6.0	6.0	57.0	13.0	21.0	5.75	4	0.50	30	B	◆◆◆◆
031947	XER 060NN4-G	6.0	6.0	57.0	13.0	21.0	5.75	4	1.00	30	B	◆◆◆◆
031948	XER 080NN4-C	8.0	8.0	63.0	19.0	27.0	7.75	4	0.25	30	B	◆◆◆◆
031949	XER 080NN4-E	8.0	8.0	63.0	19.0	27.0	7.75	4	0.50	30	B	◆◆◆◆
031950	XER 080NN4-G	8.0	8.0	63.0	19.0	27.0	7.75	4	1.00	30	B	◆◆◆◆
031951	XER 100NN4-C	10.0	10.0	72.0	22.0	32.0	9.75	4	0.25	30	B	◆◆◆◆
031952	XER 100NN4-E	10.0	10.0	72.0	22.0	32.0	9.75	4	0.50	30	B	◆◆◆◆
031953	XER 100NN4-G	10.0	10.0	72.0	22.0	32.0	9.75	4	1.00	30	B	◆◆◆◆
031954	XER 100NN4-J	10.0	10.0	72.0	22.0	32.0	9.75	4	1.50	30	B	◆◆◆◆
tolerance (metric)		g ⁹	h6	+0.7 -0.3	+1.0 -0.0	+1.0 -0.0	-	-	+0.05 -0.05			

Material Designations

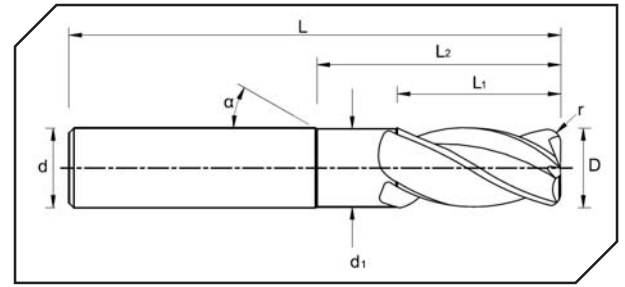
P ◆ Unalloyed Steels	M ◆ Stainless Steels	K ◆ Cast Irons	S ◆ High Temp. Alloys
P ◆ Alloyed Steels	M ◆ PH Stainless	N ◆ Aluminium & Alloys	H ◆ Hard Materials

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XER Aerospace Solid Carbide Endmill Program



Drawing A



Drawing B

XER Product Range (metric) 12.0 mm to 20 mm

EDP	Description	D	d	L	L ₁	L ₂	d ₁	Z	r	a (deg.)	See Drawing	Material Application
031955	XER 120NN4-C	12.0	12.0	83.0	26.0	38.0	11.75	4	0.25	30	B	◆◆◆◆
031956	XER 120NN4-E	12.0	12.0	83.0	26.0	38.0	11.75	4	0.50	30	B	◆◆◆◆
031957	XER 120NN4-G	12.0	12.0	83.0	26.0	38.0	11.75	4	1.00	30	B	◆◆◆◆
031958	XER 120NN4-J	12.0	12.0	83.0	26.0	38.0	11.75	4	1.50	30	B	◆◆◆◆
032269	XER 120NN4-L	12.0	12.0	83.0	26.0	38.0	11.75	4	2.50	30	B	◆◆◆◆
031959	XER 160NN4-C	16.0	16.0	92.0	32.0	44.0	15.75	4	0.25	30	B	◆◆◆◆
031960	XER 160NN4-G	16.0	16.0	92.0	32.0	44.0	15.75	4	1.00	30	B	◆◆◆◆
031961	XER 160NN4-J	16.0	16.0	92.0	32.0	44.0	15.75	4	1.50	30	B	◆◆◆◆
031962	XER 160NN4-K	16.0	16.0	92.0	32.0	44.0	15.75	4	2.00	30	B	◆◆◆◆
032270	XER 160NN4-L	16.0	16.0	92.0	32.0	44.0	15.75	4	2.50	30	B	◆◆◆◆
031963	XER 160NN4-M	16.0	16.0	92.0	32.0	44.0	15.75	4	3.00	30	B	◆◆◆◆
032271	XER 160NN4-P	16.0	16.0	92.0	32.0	44.0	15.75	4	3.00	30	B	◆◆◆◆
031964	XER 200NN4-C	20.0	20.0	104.0	38.0	54.0	19.75	4	0.25	30	B	◆◆◆◆
031965	XER 200NN4-G	20.0	20.0	104.0	38.0	54.0	19.75	4	1.00	30	B	◆◆◆◆
031966	XER 200NN4-J	20.0	20.0	104.0	38.0	54.0	19.75	4	1.50	30	B	◆◆◆◆
031967	XER 200NN4-K	20.0	20.0	104.0	38.0	54.0	19.75	4	2.00	30	B	◆◆◆◆
032272	XER 200NN4-L	20.0	20.0	104.0	38.0	54.0	19.75	4	2.50	30	B	◆◆◆◆
031968	XER 200NN4-M	20.0	20.0	104.0	38.0	54.0	19.75	4	3.00	30	B	◆◆◆◆
032273	XER 200NN4-P	20.0	20.0	104.0	38.0	54.0	19.75	4	4.00	30	B	◆◆◆◆
tolerance (metric)		g ⁹	h6	+0.7 -0.3	+1.0 -0.0	+1.0 -0.0	-	-	+0.05 -0.05			

XE - XER Aerospace Solid Carbide Endmill Program

Slotting and Profiling Applications

	Category	XE-XER
	Z	4
	Flute description	standard
Solid Carbide Endmills	profile	radius 0.010" - 0.190" 2.0mm - 4.00mm
	Grade	SP4060
	Coat	PVD Nano TiAlN
	a _e max	D
Slotting	a _p max	1.25 x D
	a _e max	0.5 x D
Profiling	a _p max	2.0 x D

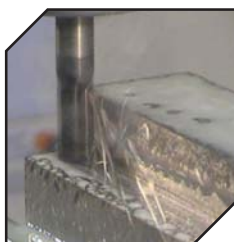


The XE series Endmills have a much larger capacity than typical Endmills, being able to slot and profile to higher radial and axial engagements.

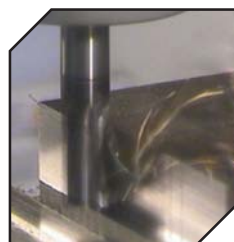
Cutting Data

ISO	Material	R _m & Hardness	Vc (sfm)	Dia. mm Inch	f _z (ipt)															
					2.0-2.5	3.0-3.5	4.0	5.0	-	6.0	-	8.0	-	10.0	-	12.0	-	16.0	20.0	-
					-	1/8	5/32	3/16	7/32	1/4	9/32	5/16	11/32	3/8	13/32	7/16	1/2	15/32	9/16	5/8
P	Alloyed Steel	700-950 N/mm ²	230		0.0002	0.0004	0.0004	0.0006	0.0007	0.0008	0.0009	0.0010	0.0010	0.0012	0.0013	0.0013	0.0014	0.0015	0.0016	0.0018
		200-280 HBN	1050		0.0003	0.0009	0.0009	0.0015	0.0018	0.0021	0.0025	0.0027	0.0030	0.0034	0.0035	0.0038	0.0040	0.0045	0.0048	0.0055
		950-1200 N/mm ²	165		0.0002	0.0004	0.0004	0.0006	0.0007	0.0008	0.0009	0.0010	0.0010	0.0012	0.0013	0.0013	0.0014	0.0015	0.0016	0.0018
		280-355 HBN	920		0.0003	0.0007	0.0007	0.0011	0.0018	0.0016	0.0018	0.0020	0.0022	0.0024	0.0026	0.0028	0.0029	0.0030	0.0033	0.0038
M	Stainless Steel	1200-1400 N/mm ²	150		0.0002	0.0004	0.0004	0.0005	0.0006	0.0007	0.0007	0.0008	0.0009	0.0010	0.0010	0.0010	0.0011	0.0012	0.0013	0.0014
		355-415 HBN	525		0.0003	0.0006	0.0006	0.0009	0.0010	0.0012	0.0013	0.0014	0.0015	0.0017	0.0018	0.0019	0.0020	0.0023	0.0023	0.0026
		Austenitic & Ferritic 300 Series	315		0.0002	0.0004	0.0004	0.0006	0.0007	0.0008	0.0009	0.0010	0.0011	0.0012	0.0013	0.0013	0.0014	0.0015	0.0016	0.0018
		Martensitic 400 Series	230		0.0002	0.0003	0.0003	0.0004	0.0005	0.0005	0.0006	0.0007	0.0008	0.0008	0.0013	0.0013	0.0010	0.0015	0.0012	0.0013
S	High Temperature Alloys	Refractory PH.	195		0.0001	0.0003	0.0003	0.0005	0.0006	0.0006	0.0007	0.0008	0.0008	0.0009	0.0010	0.0010	0.0011	0.0012	0.0013	0.0014
			360		0.0002	0.0005	0.0006	0.0008	0.0010	0.0011	0.0013	0.0014	0.0016	0.0017	0.0018	0.0019	0.0020	0.0023	0.0024	0.0027
		Iron Based	195		0.0002	0.0004	0.0004	0.0006	0.0008	0.0008	0.0009	0.0010	0.0011	0.0012	0.0013	0.0013	0.0014	0.0015	0.0016	0.0018
			455		0.0003	0.0007	0.0010	0.0012	0.0015	0.0017	0.0020	0.0022	0.0025	0.0028	0.0030	0.0032	0.0034	0.0035	0.0039	0.0045
		Cobalt Based	65		0.0001	0.0003	0.0003	0.0004	0.0005	0.0005	0.0006	0.0007	0.0008	0.0008	0.0009	0.0009	0.0010	0.0011	0.0012	0.0013
			245		0.0002	0.0006	0.0008	0.0010	0.0013	0.0014	0.0016	0.0019	0.0021	0.0023	0.0024	0.0026	0.0028	0.0030	0.0033	0.0038
		Nickel Based	80		0.0001	0.0003	0.0003	0.0004	0.0005	0.0005	0.0007	0.0007	0.0009	0.0009	0.0009	0.0009	0.0010	0.0011	0.0012	0.0013
			260		0.0002	0.0005	0.0007	0.0009	0.0011	0.0012	0.0014	0.0016	0.0018	0.0019	0.0020	0.0021	0.0023	0.0025	0.0027	0.0031
		Titanium Based	130		0.0002	0.0004	0.0005	0.0006	0.0008	0.0008	0.0009	0.0010	0.0011	0.0012	0.0013	0.0013	0.0014	0.0015	0.0016	0.0018
			390		0.0003	0.0007	0.0015	0.0012	0.0015	0.0017	0.0020	0.0022	0.0025	0.0027	0.0030	0.0032	0.0034	0.0035	0.0039	0.0045

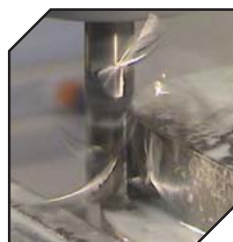
ATI 316L™



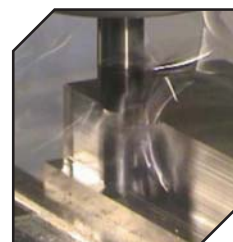
ATI 6-4™



ATI 718™



Steel M200



Test Report

Material	Dia. (inch)	Z	vc fpm	N rpm	f _z ipt	F ipm	A _p (inch)	A _e (inch)	AD in ²	Q in ³ /min	Surface finish Ra microinch
ATI 316L™	0.472	4	460	3714	0.0024	35	0.787	0.236	0.186000372	6.53	20.0
ATI 6-4™	0.472	4	330	2653	0.0028	29	0.787	0.236	0.186000372	5.44	21.6
ATI 718™	0.472	4	150	1194	0.0018	8	0.787	0.236	0.186000372	1.57	17.6
Steel M200	0.472	4	590	4775	0.0028	53	0.787	0.236	0.186000372	9.79	22.4

RSM Inch – Aerospace Endmill Program

The Stellram® RSM Aerospace Endmill program has been specifically designed to overcome a number of problems usually associated with machining titanium components, in particular, the profiling of walls, pockets and surfaces in 2D and 3D. Issues such as vibration and material tarnishing are significantly reduced by this tools' advanced cutting geometry.

Features and Benefits

- Made from an aerospace-approved, high-quality micrograin carbide.
- Reduced diameter shank of the RSM endmill allows the user to obtain maximum reach and work holding stability. Long and extra long version of the RSM endmill can be manufactured to order.
- Capable of thin wall machining when using the 8:1 rule.
- Cutting geometry designed to minimize adhesion to the cutting edge when machining Titanium.
- Sharp honed cutting edge with specific primary and radial clearance angles gives stress free penetration in to the parent metal.
- Excellent chip ejection promotes extended tool life during high speed machining.



Standard Cutting Parameters For Face And Profile Milling (inch)

Designation (inch)	Designation (metric)	Dimensions		Z	Profiling					Facing					Chip Thickness		Profiling				Facing	
		Dia. (inch)	Dia. (metric)		a _e min	a _e max	a _p min	a _p max	Ad in ² max	a _e min	a _e max	a _p min	a _p max	Ad in ² max	h _m min	h _m max	For ae min f _z ipt min	For ae min f _z ipt min	For ae max f _z ipt max	For ae max f _z ipt max	f _z ipt min	f _z ipt max
C-RSM0375	RSM100	0.375	10	6	0.008	0.025	0.19	0.43	0.098	Radius +0.020"	0.295	0.008	Radius +0.020"	0.050	0.0008	0.0020	0.0028	0.0070	0.0016	0.0040	0.0008	0.0022
C-RSM0500	RSM120	0.500	12	6	0.008	0.033	0.27	0.61	0.142		0.354			0.070			0.0031	0.0077	0.0016	0.0040		
C-RSM0625	RSM160	0.625	16	6	0.008	0.042	0.32	0.82	0.252		0.472			0.126			0.0035	0.0089	0.0016	0.0040		
C-RSM0625	RSM160	0.625	16	8	0.008	0.031	0.32	0.82	0.252		0.472			0.126			0.0035	0.0089	0.0018	0.0045		
C-RSM0750	RSM200	0.750	20	6	0.008	0.050	0.38	1.02	0.394		0.591			0.197			0.0040	0.0098	0.0016	0.0040		
C-RSM0750	RSM200	0.750	20	8	0.008	0.038	0.38	1.02	0.394		0.591			0.197			0.0040	0.0098	0.0018	0.0045		
C-RSM1000	RSM250	1.000	25	8	0.008	0.050	0.46	1.28	0.615		0.738			0.308			0.0044	0.0110	0.0018	0.0045		
C-RSM1000	RSM250	1.000	25	10	0.008	0.040	0.46	1.28	0.615		0.738			0.308			0.0044	0.0110	0.0020	0.0050		

Type	Commercial Name	Designation	Hardness HRB HRC HB	Rm HRB N/mm ²	Kc 0.6 N/mm ²	vc,min (m/min)	vc,max (m/min)	vc,min (fpm)	vc,max (fpm)
Titanium a	Ti-6Al-4Zr-2Mo-2Sn	ATI 6-2-4-2™	HRC28	900	1500	60	130	200	425
Titanium b	Ti 10.2.3	ATI 10-2-3™	HRC35	1100	3000	25	60	85	185
Titanium b - a b	Ti 5Al-5V-5Mo-3Cr	ATI 5553™	HRC40	1270	3400	30	60	95	200
Titanium a b	Ti-6Al-4V	ATI 6-4™	HRC30-34	1130	2400	60	120	190	395
Titanium a b	Ti-6Al-4V	ATI 6-4™	HRC35-39	1200	3000	55	110	175	365
Titanium a b	Ti-6Al-6V-2Sn	ATI 6-6-2™	HRC35	1100	2400	55	110	175	365
Titanium a b	6-4ELI	ATI 6-4 ELI™	HRC32	1000	2200	60	125	195	410

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RSM Inch – Aerospace Endmill Program



RSM Product Range (inch)

Item	Description	Cut Dia. (D)	Shank Dia. (d)	Length (L)	Flute Length (L ₂)	Nose Radius	Flutes (Z)
031061	C-RSM0375LM6X-F	0.375	0.312	5.00	0.79	0.030	6
031062	C-RSM0375LM6X-J	0.375	0.312	5.00	0.79	0.060	6
031063	C-RSM0375LM6X-K	0.375	0.312	5.00	0.79	0.090	6
031064	C-RSM0375LM6X-L	0.375	0.312	5.00	0.79	0.120	6
033044	C-RSM0500LM6X-F	0.500	0.438	5.00	0.94	0.030	6
033045	C-RSM0500LM6X-J	0.500	0.438	5.00	0.94	0.060	6
033046	C-RSM0500LM6X-K	0.500	0.438	5.00	0.94	0.090	6
033047	C-RSM0500LM6X-L	0.500	0.438	5.00	0.94	0.120	6
031049	C-RSM0625LM6X-J	0.625	0.562	6.00	1.25	0.060	6
031050	C-RSM0625LM6X-K	0.625	0.562	6.00	1.25	0.090	6
031051	C-RSM0625LM6X-L	0.625	0.562	6.00	1.25	0.120	6
031052	C-RSM0625LM6X-P	0.625	0.562	6.00	1.25	0.190	6
031053	C-RSM0625LM8X-J	0.625	0.562	6.00	1.25	0.060	8
031054	C-RSM0625LM8X-K	0.625	0.562	6.00	1.25	0.090	8
031055	C-RSM0625LM8X-L	0.625	0.562	6.00	1.25	0.120	8
031056	C-RSM0625LM8X-P	0.625	0.562	6.00	1.25	0.190	8
033048	C-RSM0750LM6X-J	0.750	0.688	6.25	1.54	0.060	6
033049	C-RSM0750LM6X-K	0.750	0.688	6.25	1.54	0.090	6
033050	C-RSM0750LM6X-L	0.750	0.688	6.25	1.54	0.120	6
033051	C-RSM0750LM6X-P	0.750	0.688	6.25	1.54	0.190	6
033052	C-RSM0750LM6X-Q	0.750	0.688	6.25	1.54	0.250	6
033053	C-RSM0750LM8X-J	0.750	0.688	6.25	1.54	0.060	8
033054	C-RSM0750LM8X-K	0.750	0.688	6.25	1.54	0.090	8
033055	C-RSM0750LM8X-L	0.750	0.688	6.25	1.54	0.120	8
033056	C-RSM0750LM8X-P	0.750	0.688	6.25	1.54	0.190	8
033057	C-RSM0750LM8X-Q	0.750	0.688	6.25	1.54	0.250	8
033058	C-RSM1000LM8X-K	1.000	0.875	6.25	1.85	0.090	8
033059	C-RSM1000LM8X-L	1.000	0.875	6.25	1.85	0.120	8
033060	C-RSM1000LM8X-P	1.000	0.875	6.25	1.85	0.190	8
033061	C-RSM1000LM8X-Q	1.000	0.875	6.25	1.85	0.250	8
033062	C-RSM1000LM10X-K	1.000	0.875	6.25	1.85	0.090	10
033063	C-RSM1000LM10X-L	1.000	0.875	6.25	1.85	0.120	10
033064	C-RSM1000LM10X-P	1.000	0.875	6.25	1.85	0.190	10
033065	C-RSM1000LM10X-Q	1.000	0.875	6.25	1.85	0.250	10

Long & Extra Long Series - Manufactured to Order

Item	Description	Cut Dia. (D)	Shank Dia. (d)	XL	XXL	Flute Length (L ₂)	Nose Radius	Flutes (Z)
Special	C-RSM1000***	1.0000	0.875	6.69	8.66	-	-	-
Special	C-RSM1125***	1.1250	1.000	7.08	8.66	-	-	-
Special	C-RSM1187***	1.1875	1.125	7.87	9.05	-	-	-
Special	C-RSM1250***	1.2500	1.125	7.87	9.84	-	-	-
Special	C-RSM1350***	1.3125	1.250	7.87	9.84	-	-	-

RSM Metric – Aerospace Endmill Program



RSM Product Range (metric)

Item	Description	Cut Dia. (D)	Shank Dia. (d)	Length (L)	Flute Length (L ₂)	Nose Radius	Flutes (Z)
031027	RSM100LM6X-E	10	9	125	20	0.5	6
031028	RSM100LM6X-G	10	9	125	20	1	6
031029	RSM100LM6X-K	10	9	125	20	2	6
031030	RSM100LM6X-M	10	9	125	20	3	6
031023	RSM120LM6X-E	12	10	125	24	0.5	6
031024	RSM120LM6X-G	12	10	125	24	1	6
031025	RSM120LM6X-K	12	10	125	24	2	6
031026	RSM120LM6X-M	12	10	125	24	3	6
031015	RSM160LM6X-G	16	14	150	32	1	6
031016	RSM160LM6X-K	16	14	150	32	2	6
031017	RSM160LM6X-M	16	14	150	32	3	6
031018	RSM160LM6X-P	16	14	150	32	4	6
031019	RSM160LM8X-G	16	14	150	32	1	8
031020	RSM160LM8X-K	16	14	150	32	2	8
031021	RSM160LM8X-M	16	14	150	32	3	8
031022	RSM160LM8X-P	16	14	150	32	4	8
031005	RSM200LM6X-G	20	18	160	39	1	6
031006	RSM200LM6X-K	20	18	160	39	2	6
031007	RSM200LM6X-M	20	18	160	39	3	6
031008	RSM200LM6X-P	20	18	160	39	4	6
031009	RSM200LM6X-Q	20	18	160	39	5	6
031010	RSM200LM8X-G	20	18	160	39	1	8
031011	RSM200LM8X-K	20	18	160	39	2	8
031012	RSM200LM8X-M	20	18	160	39	3	8
031013	RSM200LM8X-P	20	18	160	39	4	8
031014	RSM200LM8X-Q	20	18	160	39	5	8
033036	RSM250LM8X-K	25	22	160	47	2	8
033037	RSM250LM8X-M	25	22	160	47	3	8
033038	RSM250LM8X-P	25	22	160	47	4	8
033039	RSM250LM8X-Q	25	22	160	47	5	8
033040	RSM250LM10X-K	25	22	160	47	2	10
033041	RSM250LM10X-M	25	22	160	47	3	10
033042	RSM250LM10X-P	25	22	160	47	4	10
033043	RSM250LM10X-Q	25	22	160	47	5	10

Long & Extra Long Series - Manufactured to Order

Item	Description	Cut Dia. (D)	Shank Dia. (d)	XL	XXL	Flute Length (L ₂)	Nose Radius	Flutes (Z)
Special	RSM250***	25	22	170	220	-	-	-
Special	RSM280***	28	25	180	220	-	-	-
Special	RSM300***	30	28	200	230	-	-	-
Special	RSM320***	32	30	200	250	-	-	-
Special	RSM340***	34	32	200	250	-	-	-

Notes

[illegible]

[illegible]

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LANDIS® THREADING Products

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Fax: (717) 762 7126

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