



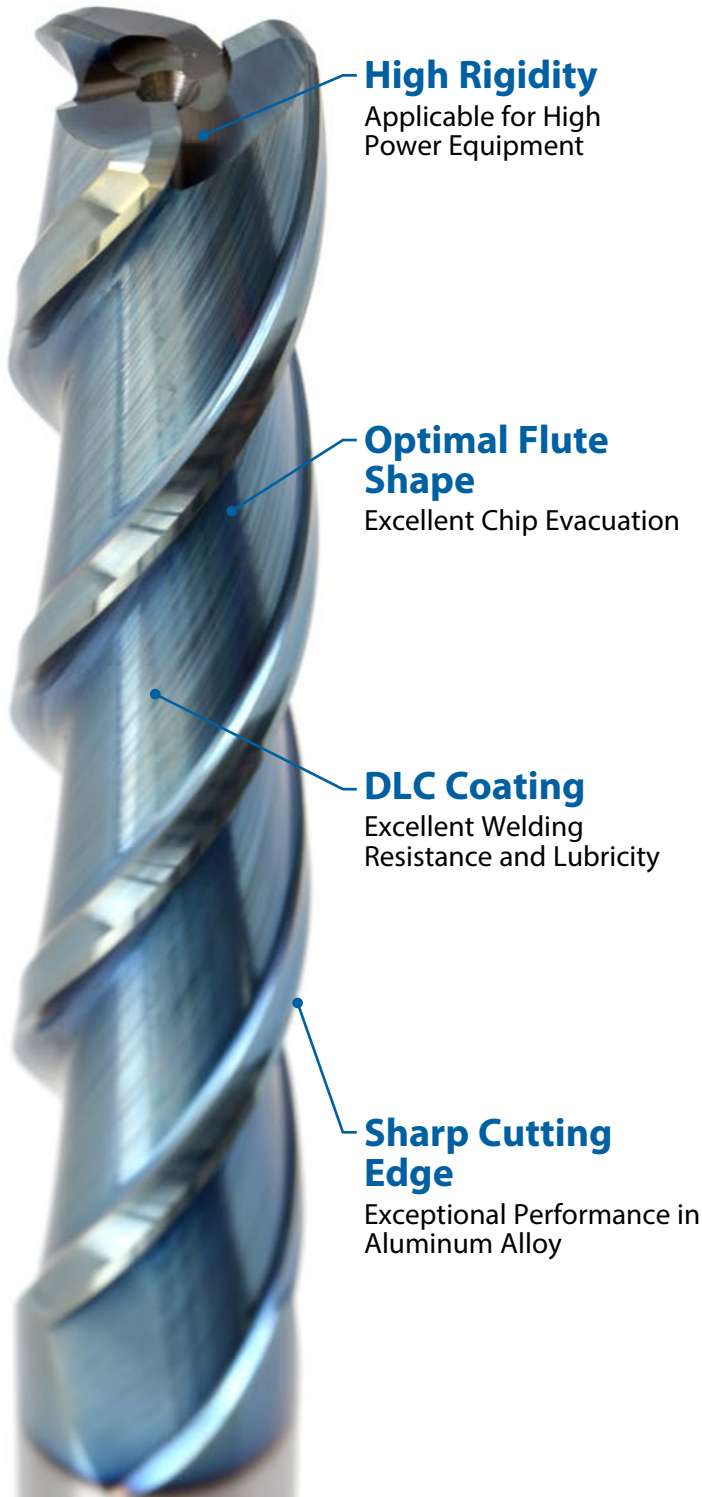
High Speed Carbide End Mills for Aluminum Alloy

Vol 1

EXOCARB® AERO-DLC

AERO-EDS • AERO-ETS • AERO-O-ETS • AERO-ETL • AERO-ETXL

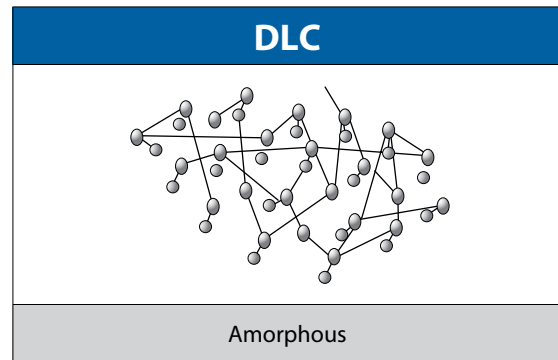
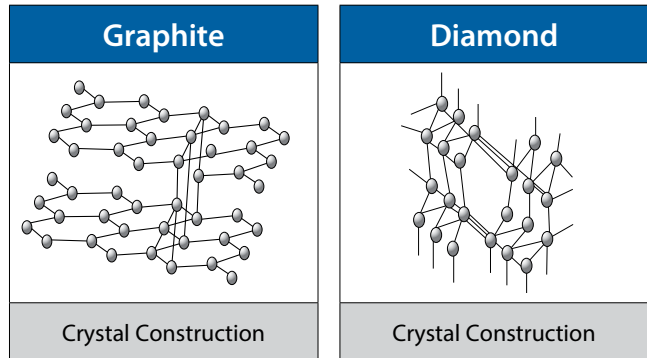




DLC Coating

Diamond Like Carbon Coating

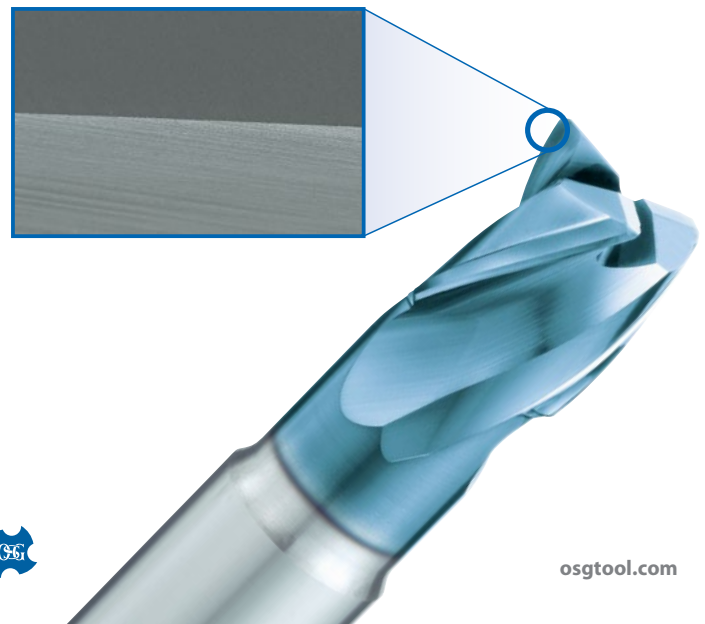
OSG's DLC smooth coating optimizes end mill performance in aluminum alloy that requires welding resistance and lubricity.



Amorphous : no polycrystalline structure with free-grain boundaries.

Ultra Thin Coating Layer (Approximately 1µm)

OSG's DLC is a thin coating (approximately 1µm) that maintains a sharp cutting edge, resulting in a superior surface finish.



Exceptional Chip Evacuation

A7075

The AERO-DLC's optimal flute shape allows for excellent chip evacuation. When machining A7075, the 25mm AERO-DLC was able to remove material at a rate of **3,543 in³/min!**

Tool	AERO-ETS
Tool Size	25mm x R3
Work Material	A7075
Cutting Speed	7,726 SFM (30,000 RPM)
Feed	1,417 IPM (0.0157 IPT)
Depth of Cut	Aa = 0.3937" / Ar = 1D
Coolant	Water Soluble (External)
Machine	High Efficiency Machining Center for Aluminum Alloys

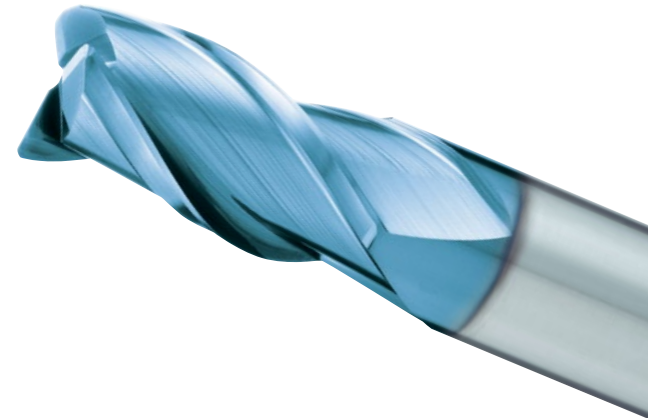


High Quality Surface Even in High Speed Machining

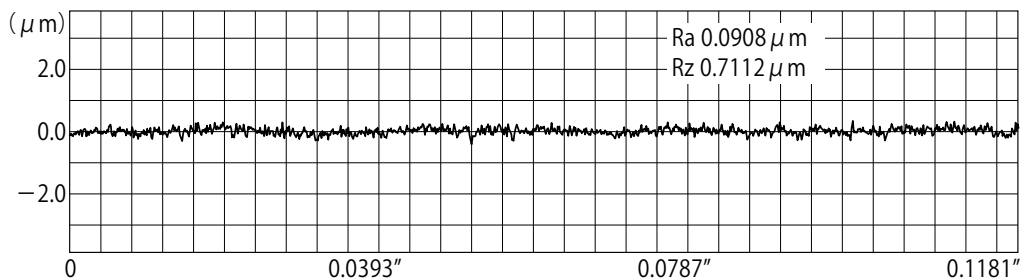
A7075

OSG's DLC coating enables the AERO-DLC to produce a superior surface finish even in high speed machining applications.

Tool	AERO-ETL
Tool Size	12mm x R1
Work Material	A7075
Cutting Speed	1,732 SFM (14,000 RPM)
Feed	157.5 IPM (0.0037 IPT)
Depth of Cut	Aa = 1.772" / Ar = 0.006"
M.R.R.	10.63 in ³ /min



Roughness



High Efficiency for Both Roughing and Finishing

A7075

Tool	AERO-O-ETS	
Tool Size	25mm x R3	
Work Material	A7075	
Milling Method	Roughing	Finishing
Cutting Speed	4,636 SFM (18,000 RPM)	6,181 SFM (24,000 RPM)
Feed	708 IPM (0.012 IPT)	283 IPM (0.003 IPT)
Coolant	Mist (Through Spindle)	
Machine	5-Axis Machining Center	
M.R.R.	1,968 in ³ /min	

Leading Edge Rib
Size: 19.3 × 19.3 × 1.3 (in)



Finish Side Milling with Extra Long Flute Length

A7075

Tool	AERO-EXTL
Tool Size	20mm x R3
Work Material	A7075
Cutting Speed	2,946 SFM (14,300 RPM)
Feed	253.36 IPM (0.005 IPT)
Coolant	Water-Soluble
Machine	5-Axis Machining Center



Return Flange Process

A7075

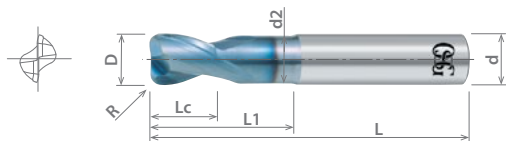
Tool	Solid Carbide T-Slot Cutter (Special)
Tool Size	40mm x R3 x 12
Work Material	A7075
Cutting Speed	9,895 SFM (24,000 RPM)
Feed	283.5 IPM
Coolant	Water-Soluble
Machine	5-Axis Machining Center
M.R.R.	169.3 in ³ /min



List 2863

AERO-EDS, 2 Flute, Stub Length, Corner Radius

NEW	SPEED FEED P15	CARBIDE	DLC		STUB	25°	SHANK h6
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Milling Diameter Tolerance	
1/2 ≤ D ≤ 1	+0 / -0.0012"

EDP Number	Mill Diameter	Corner Radius	Overall Length	Length of Cut	Neck Length	Neck Diameter	Shank Diameter
	D	R	L	Lc	L1	d2	d
28630000	1/2	0.030	4	3/4	2.205	0.461	1/2
28630100	1/2	0.060	4	3/4	2.205	0.461	1/2
28630200	1/2	0.090	4	3/4	2.205	0.461	1/2
28630400	1/2	0.120	4	3/4	2.205	0.461	1/2
28630600	5/8	0.030	4	1	2.205	0.559	5/8
28630700	5/8	0.060	4	1	2.205	0.559	5/8
28630800	5/8	0.090	4	1	2.205	0.559	5/8
28630900	5/8	0.120	4	1	2.205	0.559	5/8
28631000	5/8	0.190	4	1	2.205	0.559	5/8
28631200	3/4	0.030	4	1-1/8	2.205	0.669	3/4
28631300	3/4	0.060	4	1-1/8	2.205	0.669	3/4
28631400	3/4	0.090	4	1-1/8	2.205	0.669	3/4
28631500	3/4	0.120	4	1-1/8	2.205	0.669	3/4
28631600	3/4	0.190	4	1-1/8	2.205	0.669	3/4
28631800	7/8	0.030	4	1-5/16	2.205	0.787	7/8
28631900	7/8	0.060	4	1-5/16	2.205	0.787	7/8
28632000	7/8	0.090	4	1-5/16	2.205	0.787	7/8
28632100	7/8	0.120	4	1-5/16	2.205	0.787	7/8
28632200	7/8	0.190	4	1-5/16	2.205	0.787	7/8
28632400	1	0.030	4	1-1/2	2.205	0.921	1
28632500	1	0.060	4	1-1/2	2.205	0.921	1
28632600	1	0.090	4	1-1/2	2.205	0.921	1
28632700	1	0.120	4	1-1/2	2.205	0.921	1
28632800	1	0.190	4	1-1/2	2.205	0.921	1

Packed: 1 pc.
Available DLC coating only.



List No.	Work Material																
	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
2863	1010 1018	1035 1045	1065	4140 4340						⊙	⊙						

○ good ⊙ best



EXOCARB® AERO DLC

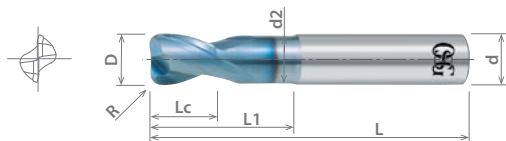
High Speed Carbide End Mills for Aluminum Alloy

List 2963

AERO-EDS, 2 Flute, Stub Length, Corner Radius

NEW SPEED FEED P15 CARBIDE DLC STUB 25° SHANK h6

Milling Diameter Tolerance	
12 ≤ D ≤ 25	+0 / -0.03mm



EDP Number	Mill Diameter	Corner Radius	Overall Length	Length of Cut	Neck Length	Neck Diameter	Shank Diameter
	D	R	L	Lc	L1	d2	d
8528822	12	1.0	90	14	40	11.0	12
8528823	12	1.6	90	14	40	11.0	12
8528826	12	3.0	90	14	40	11.0	12
8528862	16	1.0	100	18	45	14.4	16
8528863	16	1.6	100	18	45	14.4	16
8528866	16	3.0	100	18	45	14.4	16
8528902	20	1.0	110	22	56	18.0	20
8528903	20	1.6	110	22	56	18.0	20
8528906	20	3.0	110	22	56	18.0	20
8528952	25	1.0	110	27	56	23.0	25
8528953	25	1.6	110	27	56	23.0	25
8528956	25	3.0	110	27	56	23.0	25

Packed: 1 pc.
Available DLC coating only.



Work Material																			
List No.	P			Alloy Steels	Die Steels	M			K	N		S		H					
	Carbon Steels					Stainless Steels				Aluminum		Nickel Alloy	Titanium	Hardened Steels					
	Low	Med.	High			300	400	17-4 PH		6061	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
2963	1010	1035	1065	4140	4340					⊙	⊙								

○ good ⊙ best

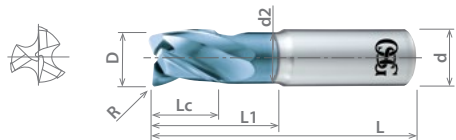


List 2873

AERO-ETS, 3 Flute, Stub Length, Square & Corner Radius

NEW SIZES	SPEED FEED P16	CARBIDE	DLC		STUB	30°	SHANK h6
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Milling Diameter Tolerance	
1/2 ≤ D ≤ 1	+0 / -0.0008"



EDP Number	Mill Diameter	Corner Radius	Overall Length	Length of Cut	Neck Length	Neck Diameter	Shank Diameter
	D	R	L	Lc	L1	d2	d
28730050	1/2	-	4	3/4	2.205	0.461	1/2
28730000	1/2	0.030	4	3/4	2.205	0.461	1/2
28730100	1/2	0.060	4	3/4	2.205	0.461	1/2
28730200	1/2	0.090	4	3/4	2.205	0.461	1/2
28730300	1/2	0.120	4	3/4	2.205	0.461	1/2
28731050	5/8	-	4	1	2.205	0.559	5/8
28731000	5/8	0.030	4	1	2.205	0.559	5/8
28731100	5/8	0.060	4	1	2.205	0.559	5/8
28731200	5/8	0.090	4	1	2.205	0.559	5/8
28731300	5/8	0.120	4	1	2.205	0.559	5/8
28731400	5/8	0.190	4	1	2.205	0.559	5/8
28732050	3/4	-	4	1-1/8	2.205	0.669	3/4
28732100	3/4	0.030	4	1-1/8	2.205	0.669	3/4
28732200	3/4	0.060	4	1-1/8	2.205	0.669	3/4
28732300	3/4	0.090	4	1-1/8	2.205	0.669	3/4
28732400	3/4	0.120	4	1-1/8	2.205	0.669	3/4
28732500	3/4	0.190	4	1-1/8	2.205	0.669	3/4
28734050	7/8	-	4	1-5/16	2.205	0.787	7/8
28734400	7/8	0.030	4	1-5/16	2.205	0.787	7/8
28734500	7/8	0.060	4	1-5/16	2.205	0.787	7/8
28734600	7/8	0.090	4	1-5/16	2.205	0.787	7/8
28734700	7/8	0.120	4	1-5/16	2.205	0.787	7/8
28734800	7/8	0.190	4	1-5/16	2.205	0.787	7/8
28735050	1	-	4	1-1/2	2.205	0.921	1
28735500	1	0.030	4	1-1/2	2.205	0.921	1
28735600	1	0.060	4	1-1/2	2.205	0.921	1
28735700	1	0.090	4	1-1/2	2.205	0.921	1
28735800	1	0.120	4	1-1/2	2.205	0.921	1
28735900	1	0.190	4	1-1/2	2.205	0.921	1

Packed: 1 pc.
Available DLC coating only.



List No.	Work Material																
	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
2873										⊙	⊙						

○ good ⊙ best



EXOCARB® AERO DLC-CR

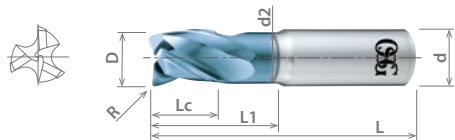
High Speed Carbide End Mills for Aluminum Alloy

List 2973

AERO-ETS, 3 Flute, Stub Length, Square & Corner Radius

NEW SIZES	SPEED FEED P16	CARBIDE	DLC		STUB	30°	SHANK h6
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Milling Diameter Tolerance	
12 ≤ D ≤ 25	+0 / -0.02mm



EDP Number	Mill Diameter	Corner Radius	Overall Length	Length of Cut	Neck Length	Neck Diameter	Shank Diameter
	D	R	L	Lc	L1	d2	d
8533249	12	-	100	18	55	11.0	12
8533250	12	1.0	100	18	55	11.0	12
8533251	12	1.6	100	18	55	11.0	12
8533252	12	3.0	100	18	55	11.0	12
8533253	16	-	100	24	55	14.4	16
8533254	16	1.0	100	24	55	14.4	16
8533255	16	1.6	100	24	55	14.4	16
8533256	16	3.0	100	24	55	14.4	16
8533257	16	4.0	100	24	55	14.4	16
8533258	16	5.0	100	24	55	14.4	16
8533259	20	-	100	30	55	18.0	20
8533260	20	1.0	100	30	55	18.0	20
8533261	20	1.6	100	30	55	18.0	20
8533262	20	3.0	100	30	55	18.0	20
8533263	20	4.0	100	30	55	18.0	20
8533264	20	5.0	100	30	55	18.0	20
8533265	25	-	100	37.5	55	23.0	25
8533266	25	1.0	100	37.5	55	23.0	25
8533267	25	1.6	100	37.5	55	23.0	25
8533268	25	3.0	100	37.5	55	23.0	25
8533269	25	4.0	100	37.5	55	23.0	25
8533270	25	5.0	100	37.5	55	23.0	25

Packed: 1 pc.
Available DLC coating only.



Work Material																	
List No.	P				Die Steels	M			K Cast Iron	N		S		H			
	Carbon Steels			Alloy Steels		Stainless Steels				Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
2973	1010 1018	1035 1045	1065	4140 4340						⊙	⊙						

○ good ⊙ best



EXOCARB® AERO DLC-CR-OIL

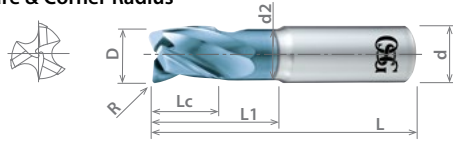
High Speed Coolant-Through End Mills for Aluminum Alloy

List 2874

AERO-O-ETS, 3 Flute, Stub Length, Coolant-Through, Square & Corner Radius

NEW SIZES	SPEED FEED P17	CARBIDE	DLC		STUB		30°	SHANK h6
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Milling Diameter Tolerance	
5/8 ≤ D ≤ 1	+0 / -0.0008"



EDP Number	Mill Diameter	Corner Radius	Overall Length	Length of Cut	Neck Length	Neck Diameter	Shank Diameter
	D	R	L	Lc	L1	d2	d
28740050	5/8	-	4	1.016	2.205	0.559	5/8
28741550	3/4	-	4	1.142	2.205	0.669	3/4
28740000	3/4	0.030	4	1.142	2.205	0.669	3/4
28740500	3/4	0.060	4	1.142	2.205	0.669	3/4
28741000	3/4	0.090	4	1.142	2.205	0.669	3/4
28741500	3/4	0.120	4	1.142	2.205	0.669	3/4
28742000	3/4	0.190	4	1.142	2.205	0.669	3/4
28741050	7/8	-	4	1.327	2.205	0.787	7/8
28740550	1	-	4	1.523	2.205	0.921	1
28742500	1	0.030	4	1.523	2.205	0.921	1
28743000	1	0.060	4	1.523	2.205	0.921	1
28743500	1	0.090	4	1.523	2.205	0.921	1
28744000	1	0.120	4	1.523	2.205	0.921	1
28744500	1	0.190	4	1.523	2.205	0.921	1

Packed: 1 pc.
Available DLC coating only.



Work Material																	
List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High	300		400	17-4 PH	6061 7075		Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	
2874										⊙	⊙						

○ good ⊙ best

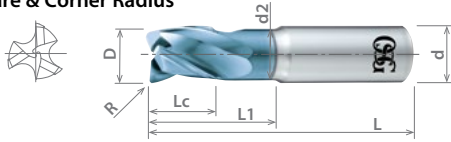


EXOCARB® AERO DLC-CR-OIL

High Speed Coolant-Through End Mills for Aluminum Alloy

List 2974

AERO-O-ETS, 3 Flute, Stub Length, Coolant-Through, Square & Corner Radius



NEW SIZES	SPEED FEED P17	CARBIDE	DLC		STUB		30°	SHANK h6
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Milling Diameter Tolerance	
20 ≤ D ≤ 25	+0 / -0.02mm

EDP Number	Mill Diameter	Corner Radius	Overall Length	Length of Cut	Neck Length	Neck Diameter	Shank Diameter
	D	R	L	Lc	L1	d2	d
8533300	20	-	100	30.0	55	18	20
8533301	20	1.0	100	30.0	55	18	20
8533302	20	1.6	100	30.0	55	18	20
8533303	20	3.0	100	30.0	55	18	20
8533304	20	4.0	100	30.0	55	18	20
8533305	20	5.0	100	30.0	55	18	20
8533306	25	-	100	37.5	55	23	25
8533307	25	1.0	100	37.5	55	23	25
8533308	25	1.6	100	37.5	55	23	25
8533309	25	3.0	100	37.5	55	23	25
8533310	25	4.0	100	37.5	55	23	25
8533311	25	5.0	100	37.5	55	23	25

Packed: 1 pc.
Available DLC coating only.



Work Material

List No.	P				Die Steels	M			K Cast Iron	N		S	H					
	Carbon Steels			Alloy Steels		Stainless Steels				Aluminum		Nickel Alloy	Titanium	Hardened Steels				
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	
2974	1010 1018	1035 1045	1065	4140 4340						⊙	⊙							

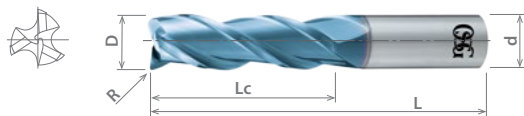
⊙ good ⊗ best



List 2843

AERO-ETL, 3 Flute, Long Length, Square & Corner Radius

NEW SIZES	SPEED FEED P18	CARBIDE	DLC		LONG	35°	SHANK h6
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Milling Diameter Tolerance	
1/2 ≤ D ≤ 1	+0 / -0.0008"

EDP Number	Mill Diameter	Corner Radius	Overall Length	Length of Cut	Shank Diameter
	D	R	L	Lc	d
28430000	1/2	-	4-1/2	2.024	1/2
28430400	1/2	0.030	4-1/2	2.024	1/2
28430550	1/2	0.060	4-1/2	2.024	1/2
28430600	1/2	0.090	4-1/2	2.024	1/2
28430700	1/2	0.120	4-1/2	2.024	1/2
28430800	1/2	0.150	4-1/2	2.024	1/2
28430900	1/2	0.190	4-1/2	2.024	1/2
28431000	5/8	-	4-1/2	2.024	5/8
28431550	5/8	0.030	4-1/2	2.024	5/8
28431600	5/8	0.060	4-1/2	2.024	5/8
28431700	5/8	0.090	4-1/2	2.024	5/8
28431800	5/8	0.120	4-1/2	2.024	5/8
28431900	5/8	0.150	4-1/2	2.024	5/8
28432050	5/8	0.190	4-1/2	2.024	5/8
28432000	3/4	-	4-1/2	2.024	3/4
28432600	3/4	0.030	4-1/2	2.024	3/4
28432700	3/4	0.060	4-1/2	2.024	3/4
28432800	3/4	0.090	4-1/2	2.024	3/4
28432900	3/4	0.120	4-1/2	2.024	3/4
28433050	3/4	0.150	4-1/2	2.024	3/4
28433100	3/4	0.190	4-1/2	2.024	3/4
28433500	7/8	-	4-1/2	2.024	7/8
28433800	7/8	0.030	4-1/2	2.024	7/8
28433900	7/8	0.060	4-1/2	2.024	7/8
28434050	7/8	0.090	4-1/2	2.024	7/8
28434100	7/8	0.120	4-1/2	2.024	7/8
28434200	7/8	0.150	4-1/2	2.024	7/8
28434300	7/8	0.190	4-1/2	2.024	7/8
28434500	1	-	4-1/2	2.024	1
28434900	1	0.030	4-1/2	2.024	1
28435050	1	0.030	4-1/2	2.024	1
28435100	1	0.090	4-1/2	2.024	1
28435200	1	0.120	4-1/2	2.024	1
28435300	1	0.150	4-1/2	2.024	1
28435400	1	0.190	4-1/2	2.024	1

Packed: 1 pc.
Available DLC coating only.



Work Material																	
List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
2843										⊙	⊙						

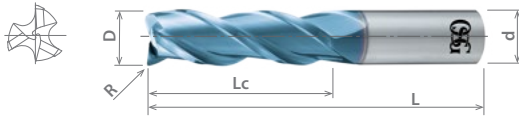
○ good ⊙ best



List 2943

AERO-ETL, 3 Flute, Long Length, Square & Corner Radius

NEW SIZES	SPEED FEED P18	CARBIDE	DLC		LONG	35°	SHANK h6
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Milling Diameter Tolerance	
12 ≤ D ≤ 20	+0 / -0.02mm

EDP Number	Mill Diameter	Corner Radius	Overall Length	Length of Cut	Shank Diameter
	D	R	L	Lc	d
8533350	12	-	110	50	12
8533351	12	1.0	110	50	12
8533352	12	1.6	110	50	12
8533353	12	3.0	110	50	12
8533354	12	4.0	110	50	12
8533355	16	-	110	50	16
8533356	16	1.0	110	50	16
8533357	16	1.6	110	50	16
8533358	16	3.0	110	50	16
8533359	16	4.0	110	50	16
8533360	16	5.0	110	50	16
8533361	20	-	110	50	20
8533362	20	1.0	110	50	20
8533363	20	1.6	110	50	20
8533364	20	3.0	110	50	20
8533365	20	4.0	110	50	20
8533366	20	5.0	110	50	20

Packed: 1 pc.
Available DLC coating only.



Work Material																	
List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
	1010	1035	1065	4140	4340				7075								
2943									○	○							

○ good ⊗ best



List 2853

AERO-ETXL, 3 Flute, Extra Long Length, Square & Corner Radius

NEW	SPEED FEED P19	CARBIDE	DLC		EXTRA LONG	35°	SHANK h6
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Milling Diameter Tolerance	
3/4	+0 / -0.0008"



EDP Number	Mill Diameter	Corner Radius	Overall Length	Length of Cut	Shank Diameter
	D	R	L	Lc	d
28530000	3/4	-	6-1/2	4	3/4
28530100	3/4	0.030	6-1/2	4	3/4
28530200	3/4	0.060	6-1/2	4	3/4
28530300	3/4	0.090	6-1/2	4	3/4
28530400	3/4	0.120	6-1/2	4	3/4
28530500	3/4	0.150	6-1/2	4	3/4
28530600	3/4	0.190	6-1/2	4	3/4

Packed: 1 pc.
Available DLC coating only.



Work Material																	
List No.	P					M			K	N		S		H			
	Carbon Steels			Alloy Steels	Die Steels	Stainless Steels			Cast Iron	Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High			300	400	17-4 PH		6061 7075	Casting			Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC
2853										⊙	⊙						

○ good ⊙ best



EXOCARB® AERO DLC

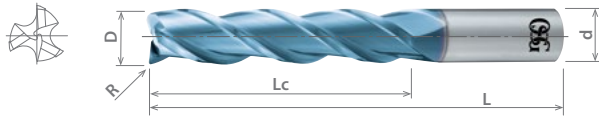
High Speed Carbide End Mills for Aluminum Alloy

List 2953

AERO-ETXL, 3 Flute, Extra Long Length, Square & Corner Radius

NEW	SPEED FEED P19	CARBIDE	DLC		EXTRA LONG	35°	SHANK h6
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Milling Diameter Tolerance	
20mm	+0 / -0.0008"



EDP Number	Mill Diameter	Corner Radius	Overall Length	Length of Cut	Shank Diameter
	D	R	L	Lc	d
8533400	20	-	160	100	20
8533401	20	1.0	160	100	20
8533402	20	1.6	160	100	20
8533403	20	3.0	160	100	20
8533404	20	4.0	160	100	20
8533405	20	5.0	160	100	20

Packed: 1 pc.
Available DLC coating only.

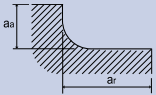


Work Material																	
List No.	P				Die Steels	M			K Cast Iron	N		S		H			
	Carbon Steels			Alloy Steels		Stainless Steels				Aluminum		Nickel Alloy	Titanium	Hardened Steels			
	Low	Med.	High	4140 4340		300	400	17-4 PH		6061 7075	Casting	Inconel	6Al4V (30 HRC)	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC
2953										⊙	⊙						

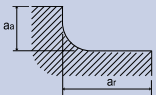
○ good ⊙ best



List 2863: 2 Flute, Stub Length, Corner Radius

Work Material	Aluminum Alloy					
Cutting Speed	3,280 SFM - 9,840 SFM					
Depth of Cut	<table border="1"> <tr> <td>a_a</td> <td>a_r</td> </tr> <tr> <td>0.6D</td> <td>1D</td> </tr> </table> 		a_a	a_r	0.6D	1D
a_a	a_r					
0.6D	1D					
Mill Dia.	Speed RPM	Feed in/min				
1/2	≤33000	≤360 IPM				
5/8	≤33000	≤470 IPM				
3/4	≤33000	≤590 IPM				
1	≤33000	≤590 IPM				

List 2963: 2 Flute, Stub Length, Corner Radius

Work Material	Aluminum Alloy					
Cutting Speed	3,280 SFM - 9,840 SFM					
Depth of Cut	<table border="1"> <tr> <td>a_a</td> <td>a_r</td> </tr> <tr> <td>0.6D</td> <td>1D</td> </tr> </table> 		a_a	a_r	0.6D	1D
a_a	a_r					
0.6D	1D					
Mill Dia.	Speed RPM	Feed in/min				
12	≤33000	≤360 IPM				
16	≤33000	≤470 IPM				
20	≤33000	≤590 IPM				
25	≤33000	≤590 IPM				

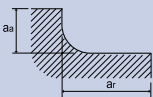
List 2873: 3 Flute, Stub Length

Work Material	Aluminum Alloy					
Depth of Cut	<table border="1"> <tr> <td>a_a</td> <td>a_r</td> </tr> <tr> <td>0.4D</td> <td>1D</td> </tr> </table>	a_a	a_r	0.4D	1D	
a_a	a_r					
0.4D	1D					
Mill Dia.	Speed RPM	Feed in/min				
5/8	≤33000	≤790 IPM				
3/4	≤33000	≤1010 IPM				
1	≤33000	≤1280 IPM				

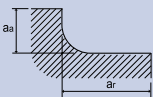
List 2973: 3 Flute, Stub Length

Work Material	Aluminum Alloy					
Depth of Cut	<table border="1"> <tr> <td>a_a</td> <td>a_r</td> </tr> <tr> <td>0.4D</td> <td>1D</td> </tr> </table>	a_a	a_r	0.4D	1D	
a_a	a_r					
0.4D	1D					
Mill Dia.	Speed RPM	Feed in/min				
20	≤33000	≤1010 IPM				
25	≤33000	≤1280 IPM				

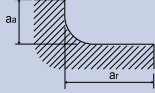
List 2874: 3 Flute, Stub Length, Coolant-Through

Work Material	Aluminum Alloy					
Depth of Cut	<table border="1"> <tr> <td>a_a</td> <td>a_r</td> </tr> <tr> <td>0.4D</td> <td>1D</td> </tr> </table>	a_a	a_r	0.4D	1D	
a_a	a_r					
0.4D	1D					
Mill Dia.	Speed RPM	Feed in/min				
3/4	≤33000	≤1010 IPM				
1	≤33000	≤1280 IPM				

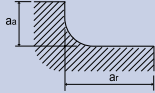
List 2974: 3 Flute, Stub Length, Coolant-Through

Work Material	Aluminum Alloy					
Depth of Cut	<table border="1"> <tr> <td>a_a</td> <td>a_r</td> </tr> <tr> <td>0.4D</td> <td>1D</td> </tr> </table>	a_a	a_r	0.4D	1D	
a_a	a_r					
0.4D	1D					
Mill Dia.	Speed RPM	Feed in/min				
20	≤33000	≤1010 IPM				
25	≤33000	≤1280 IPM				

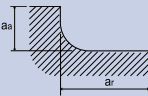
List 2843: 3 Flute, Long Length

Work Material	Aluminum Alloy																
Cutting Speed	3,280 SFM - 9,840 SFM																
Depth of Cut	<table border="1"> <thead> <tr> <th>Dia.</th> <th>a_a (in)</th> <th>a_r (in)</th> </tr> </thead> <tbody> <tr> <td>1/2</td> <td>≤1.77</td> <td>≤0.005</td> </tr> <tr> <td>5/8</td> <td>≤1.77</td> <td>≤0.007</td> </tr> <tr> <td>3/4</td> <td>≤1.77</td> <td>≤0.011</td> </tr> <tr> <td>1</td> <td>≤1.77</td> <td>≤0.011</td> </tr> </tbody> </table>	Dia.	a _a (in)	a _r (in)	1/2	≤1.77	≤0.005	5/8	≤1.77	≤0.007	3/4	≤1.77	≤0.011	1	≤1.77	≤0.011	
	Dia.	a _a (in)	a _r (in)														
	1/2	≤1.77	≤0.005														
	5/8	≤1.77	≤0.007														
	3/4	≤1.77	≤0.011														
1	≤1.77	≤0.011															
Mill Dia.	Speed RPM	Feed in/min															
1/2	≤14000	≤157 IPM															
5/8	≤14000	≤197 IPM															
3/4	≤14000	≤236 IPM															
1	≤14000	≤236 IPM															

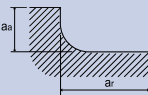
List 2943: 3 Flute, Long Length

Work Material	Aluminum Alloy																
Cutting Speed	3,280 SFM - 9,840 SFM																
Depth of Cut	<table border="1"> <thead> <tr> <th>Dia.</th> <th>a_a (in)</th> <th>a_r (in)</th> </tr> </thead> <tbody> <tr> <td>12</td> <td>≤1.77</td> <td>≤0.005</td> </tr> <tr> <td>16</td> <td>≤1.77</td> <td>≤0.007</td> </tr> <tr> <td>20</td> <td>≤1.77</td> <td>≤0.011</td> </tr> <tr> <td>25</td> <td>≤1.77</td> <td>≤0.011</td> </tr> </tbody> </table>	Dia.	a _a (in)	a _r (in)	12	≤1.77	≤0.005	16	≤1.77	≤0.007	20	≤1.77	≤0.011	25	≤1.77	≤0.011	
	Dia.	a _a (in)	a _r (in)														
	12	≤1.77	≤0.005														
	16	≤1.77	≤0.007														
	20	≤1.77	≤0.011														
25	≤1.77	≤0.011															
Mill Dia.	Speed RPM	Feed in/min															
12	≤14000	≤157 IPM															
16	≤14000	≤197 IPM															
20	≤14000	≤236 IPM															
25	≤14000	≤236 IPM															

List 2853: 3 Flute, Extra Long Length

Work Material	Aluminum Alloy					
Depth of Cut	<table border="1"> <tr> <td>a_a</td> <td>a_r</td> </tr> <tr> <td>≤95mm</td> <td>≤0.2mm</td> </tr> </table>	a_a	a_r	≤95mm	≤0.2mm	
a_a	a_r					
≤95mm	≤0.2mm					
Mill Dia.	Speed RPM	Feed in/min				
3/4	≤14000	≤236 IPM				

List 2953: 3 Flute, Extra Long Length

Work Material	Aluminum Alloy					
Depth of Cut	<table border="1"> <tr> <td>a_a</td> <td>a_r</td> </tr> <tr> <td>≤95mm</td> <td>≤0.2mm</td> </tr> </table>	a_a	a_r	≤95mm	≤0.2mm	
a_a	a_r					
≤95mm	≤0.2mm					
Mill Dia.	Speed RPM	Feed in/min				
20	≤14000	≤236 IPM				



shaping your dreams

 **Safe use of cutting tools**

- Use safety cover, safety glasses and safety shoes during operation.
- Do not touch cutting edges with bare hands.
- Do not touch cutting chips with bare hands. Chips will be hot after cutting.
- Stop cutting when the tool becomes dull.
- Stop cutting operation immediately if you hear any abnormal cutting sounds.
- Do not modify tools.
- Please use appropriate tools for the operation. Check dimensions to ensure proper selection.

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