



ALU-POWER

SOLID CARBIDE END MILLS

Excellent Cutting Qualities
on Nonferrous Materials like Aluminum
Increased Tool Life and Higher Cutting
Accuracy Mirror Surface – Excellent Surface
Finish Superior Chip Evacuation
with Optimized Cutting Edges

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Note The new address above has currently been updated since Korean new postal standard was valid from 2014.
Be noticed that the physical Headquarter location is NOT changed.



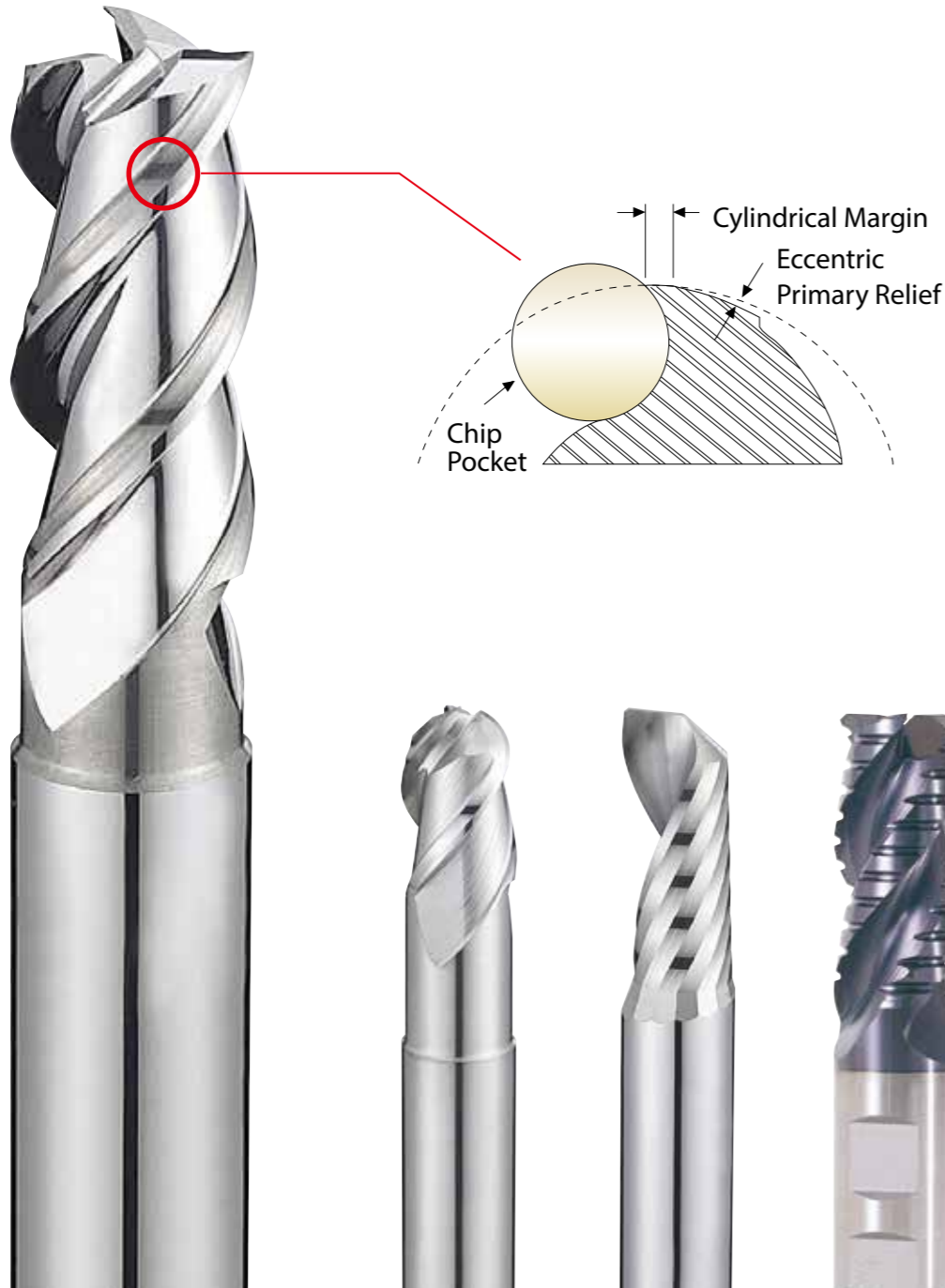
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YG1YEAP180620003

HIGH PERFORMANCE END MILLS

Ultra Micro Grain Solid Carbide End Mills for Aluminum

- ✓ Excellent Cutting Qualities on **Nonferrous Materials like Aluminum**
- ✓ Increased **Tool Life** and Higher **Cutting Accuracy**
- ✓ **Mirror Surface** – Excellent Surface Finish
- ✓ **Superior Chip Evacuation** with Optimized Cutting Edges



CASE STUDY - TEST 1



▶ Ø10 - 2 Flute Square 45° Helix End Mill

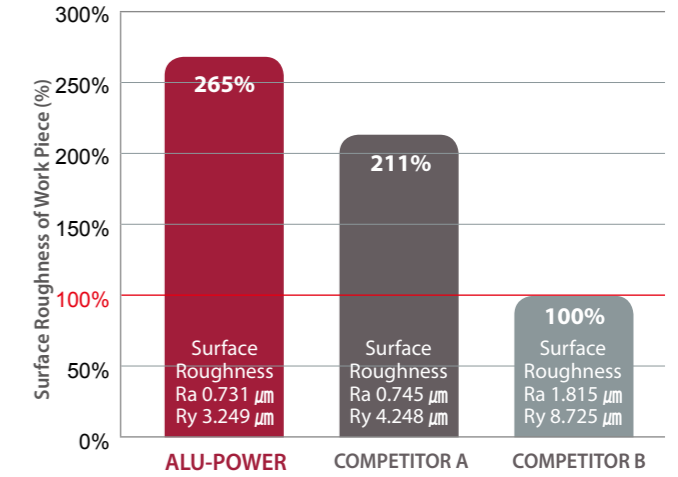
ALU-POWER



Competitor A



Competitor B



Tool	2 Flute Square, 45° Helix
Size	Ø10 x Ø10 x 27 x 75
Work Material	AL6061
RPM	7,500 rev./min.
Feed	1,750 mm/min.
Cutting Depth	3 mm (Axial)
Coolant	Wet Cut
Milling Method	Slotting
Machine	Machining Center

CASE STUDY - TEST 2



▶ Ø10 - 3 Flute Square 45° Helix End Mill

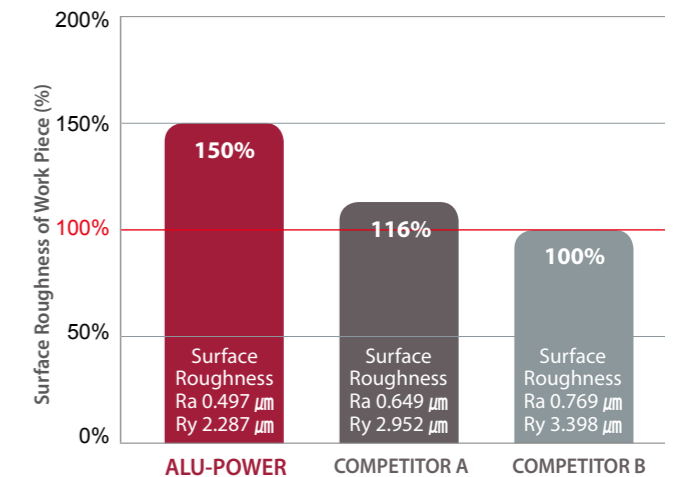
ALU-POWER



Competitor A



Competitor B



Tool	3 Flute Square, 45° Helix
Size	Ø10 x Ø10 x 27 x 75
Work Material	AL6061
RPM	7,500 rev./min.
Feed	2,500 mm/min.
Cutting Depth	20 mm (Axial) x 0.15 (Radial)
Coolant	Wet Cut
Milling Method	Down & Side Cutting
Machine	Machining Center

SELECTION GUIDE
ALU-POWER

SOLID CARBIDE END MILLS

◎ : Excellent ○ : Good

ITEM	MODEL	DESCRIPTION	SIZE		PAGE
			Min.	Max.	
E5910		2 FLUTE 50° HELIX BALL NOSE with NECK	R3.0	R10.0	6
E5908		3 FLUTE 40° HELIX BALL NOSE with NECK	R1.0	R8.0	7
E5909		2 FLUTE CORNER RADIUS with NECK	D4.0	D20.0	8
E5930		2 FLUTE 25° HELIX CORNER RADIUS with NECK	D2.0	D20.0	9
E5E51		3 FLUTE 45° HELIX LONG LENGTH CORNER RADIUS	D3.0	D20.0	10
E5E47		1 FLUTE	D2.0	D12.0	11
E5E48		2 FLUTE 45° HELIX SHORT LENGTH	D3.0	D20.0	12
E5522 E5521		2 FLUTE 45° HELIX LONG LENGTH	D3.0	D20.0	13
E5E49		3 FLUTE 45° HELIX LONG LENGTH	D3.0	D20.0	14
E5E50		3 FLUTE 45° HELIX with NECK	D3.0	D20.0	15
E5742 E5711		3 FLUTE LONG LENGTH ROUGHING	D6.0	D25.0	16
E5E39 E5E40		3 FLUTE ROUGHING with NECK	D6.0	D20.0	17
EP922 EP923		YPM, 3 FLUTE 42° HELIX SHORT LENGTH ROUGHING TiAIN COATED	D12.0	D32.0	18
EP924 EP925		YPM, 3 FLUTE 42° HELIX LONG LENGTH ROUGHING TiAIN COATED	D12.0	D32.0	19
RECOMMENDED CUTTING CONDITIONS					20

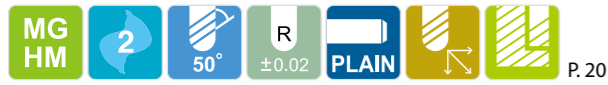
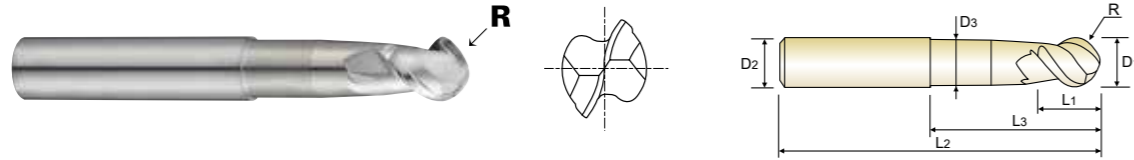
P					H	M	K	N				S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
-HB225	HB225-325	HRC30-40	HRC40-45	HRC45-55	HRC55-70								
									○			◎	
									○			◎	
									○			◎	
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GUIDE LINE TO ICONS

Tool Raw Material Micro Grain Carbide YPM YG-1 Premium Powder Metallurgy HSS	No. of Flutes 	Tolerance of Ball Radius
Standard of Tools YG-1 Standard	Helix Angle 	Chamfer Angle
Type of Periphery Roughing for Aluminum	Cutting Condition Pages 	Type of Shank Plain Shank (with DIN Standard) Flat Shank (with DIN Standard)

**SOLID CARBIDE ALU-POWER END MILLS
2 FLUTE 50° HELIX BALL NOSE with NECK**
E5910 PLAIN SHANK

- ▶ Excellent cutting qualities on aluminum and copper
- ▶ Increased tool life and higher cutting accuracy
- ▶ Mirror surface - Excellent surface finish



Unit : mm

EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R(±0.01)	D1	D2	L1	L3	L2	D3
E5910060	R3.0	6.0	6	5.5	25	55	5.4
E5910080	R4.0	8.0	8	7	30	65	7.2
E5910100	R5.0	10.0	10	8.5	35	75	9
E5910120	R6.0	12.0	12	10.5	40	75	11
E5910160	R8.0	16.0	16	14	50	90	14.5
E5910200	R10.0	20.0	20	17	50	100	18

▶ TiN, TiCN and TiAlN Coatings are available on your request.

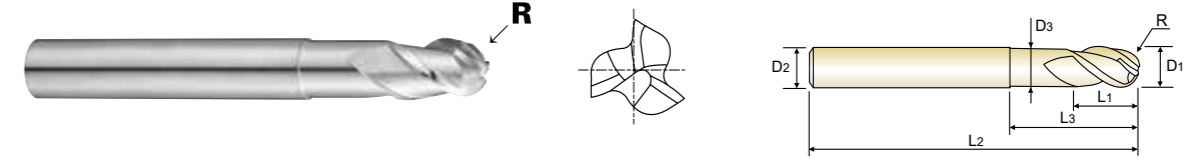
Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
± 0.02	h6

◎: Excellent ○: Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
								○						◎

**SOLID CARBIDE ALU-POWER END MILLS
3 FLUTE 40° HELIX BALL NOSE with NECK**
E5908 PLAIN SHANK

- ▶ Excellent cutting qualities on aluminum and copper
- ▶ Increased tool life and higher cutting accuracy
- ▶ Mirror surface - Excellent surface finish



Unit : mm

EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R(±0.01)	D1	D2	L1	L3	L2	D3
E5908020	R1.0	2.0	6	3	5	60	1.9
E5908025	R1.25	2.5	6	4	6	60	2.4
E5908030	R1.5	3.0	6	4.5	6.5	60	2.8
E5908035	R1.75	3.5	6	5	7	65	3.2
E5908040	R2.0	4.0	6	6	8	65	3.7
E5908050	R2.5	5.0	6	7.5	10	65	4.6
E5908060	R3.0	6.0	6	9	12	75	5.6
E5908080	R4.0	8.0	8	12	25	75	7.4
E5908100	R5.0	10.0	10	15	30	80	9.4
E5908120	R6.0	12.0	12	18	36	90	11.4
E5908160	R8.0	16.0	16	24	40	100	15.4

▶ TiN, TiCN and TiAlN Coatings are available on your request.

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.03	h6

◎: Excellent ○: Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
								○						◎

**SOLID CARBIDE ALU-POWER END MILLS
2 FLUTE CORNER RADIUS with NECK**
E5909 PLAIN SHANK

- ▶ Excellent cutting qualities on aluminum and copper
- ▶ Increased tool life and higher cutting accuracy
- ▶ Mirror surface - Excellent surface finish
- ▶ Superior chip evacuation
- ▶ Reduces chipping of corner edges



Unit : mm

EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R	D1	D2	L1	L3	L2	D3
E5909040	R0.3	4.0	6	5	10	50	3.6
E5909060	R0.5	6.0	6	8	20	60	5.4
E5909080	R0.6	8.0	8	10	30	70	7.2
E5909100	R0.8	10.0	10	12	36	80	9
E5909120	R1.0	12.0	12	14	40	90	11
E5909160	R1.3	16.0	16	18	45	100	14.5
E5909200	R1.6	20.0	20	24	45	100	18

▶ TiN, TiCN and TiAlN Coatings are available on your request.

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.03	h6

◎: Excellent ○: Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
								○						◎

**SOLID CARBIDE ALU-POWER END MILLS
2 FLUTE 25° HELIX CORNER RADIUS with NECK**
E5930 PLAIN SHANK

- ▶ Designed for machining nonferrous materials like aluminum and aluminum alloys
- ▶ Mirror surface - Excellent surface finish
- ▶ Increased tool life and higher cutting accuracy
- ▶ Maximum-metal removal rate
- ▶ Superior chip evacuation
- ▶ Corner Radius to avoid chipping problems



Unit : mm

EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R	D1	D2	L1	L3	L2	D3
E5930020	R0.2	2.0	3	3	6	40	1.9
E5930030	R0.2	3.0	3	4	8	40	2.9
E5930040	R0.2	4.0	4	5	12	50	3.8
E5930050	R0.2	5.0	5	8	14	50	4.8
E5930060	R0.2	6.0	6	8	18	65	5.7
E5930080	R0.2	8.0	8	10	22	70	7.7
E5930100	R0.2	10.0	10	14	28	80	9.7
E5930120	R0.2	12.0	12	16	35	90	11.5
E5930160	R0.2	16.0	16	20	40	90	15.5
E5930200	R0.2	20.0	20	25	50	100	19.5

▶ TiN, TiCN and TiAlN Coatings are available on your request.

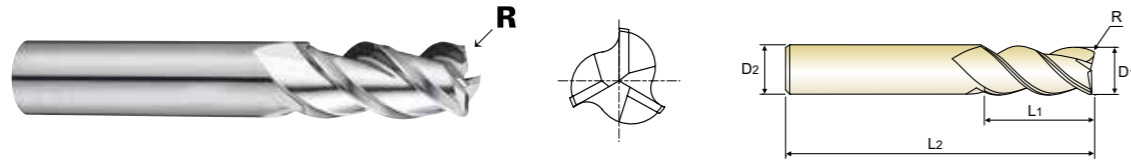
Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.03	h6

◎: Excellent ○: Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
														◎

**SOLID CARBIDE ALU-POWER END MILLS
3 FLUTE 45° HELIX LONG LENGTH CORNER RADIUS**
E5E51 PLAIN SHANK

- ▶ Excellent cutting qualities on aluminum and copper
- ▶ Increased tool life and higher cutting accuracy
- ▶ Mirror surface - Excellent surface finish
- ▶ Superior chip evacuation
- ▶ Reduces chipping of corner edges

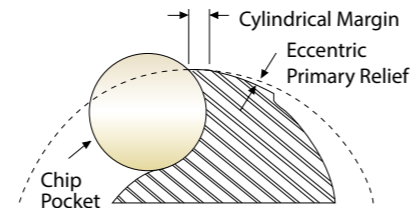


Unit : mm

EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R	D1	D2	L1	L2
E5E51030	R0.5	3.0	6	12	57
E5E51901	R1.0	3.0	6	12	57
E5E51040	R0.5	4.0	6	15	57
E5E51902	R1.0	4.0	6	15	57
E5E51050	R0.5	5.0	6	20	57
E5E51903	R1.0	5.0	6	20	57
E5E51060	R0.5	6.0	6	20	65
E5E51904	R1.0	6.0	6	20	65
E5E51080	R0.5	8.0	8	22	65
E5E51905	R1.0	8.0	8	22	65
E5E51100	R0.5	10.0	10	25	70
E5E51906	R1.0	10.0	10	25	70
E5E51907	R2.0	10.0	10	25	70
E5E51120	R0.5	12.0	12	25	75
E5E51908	R1.0	12.0	12	25	75
E5E51909	R2.0	12.0	12	25	75
E5E51160	R0.5	16.0	16	35	90
E5E51910	R1.0	16.0	16	35	90
E5E51911	R2.0	16.0	16	35	90
E5E51200	R0.5	20.0	20	40	100
E5E51912	R1.0	20.0	20	40	100
E5E51913	R2.0	20.0	20	40	100

▶ TiN, TiCN and TiAlN Coatings are available on your request.

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ -0.015	h6

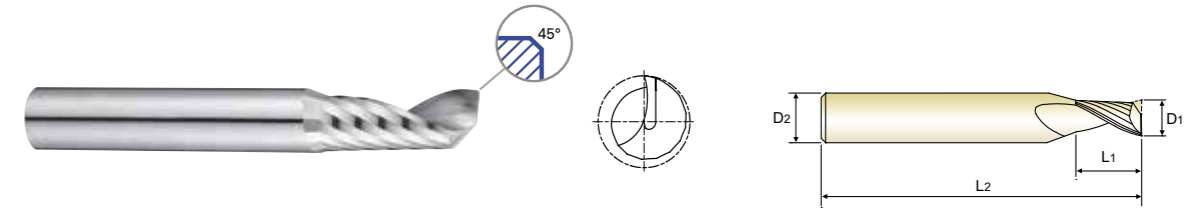


◎: Excellent ○: Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
-HB225	HB225-325	HRc30-40	HRc40-45	HRc45-55	HRc55-70									
										◎				

**SOLID CARBIDE ALU-POWER END MILLS
1 FLUTE**
E5E47 PLAIN SHANK

- ▶ Designed for nonferrous materials like aluminum and nonmetals like acrylic
- ▶ 1 Flute allows excellent finished workpiece and chip evacuation

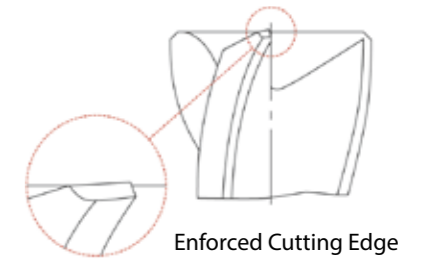


Unit : mm

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length	Chamfer
	D1	D2	L1	L2	
E5E47020	2.0	3	8	50	0.04
E5E47030	3.0	3	12	50	0.05
E5E47040	4.0	4	15	60	0.07
E5E47050	5.0	5	17	60	0.09
E5E47060	6.0	6	20	65	0.10
E5E47080	8.0	8	22	65	0.14
E5E47100	10.0	10	25	75	0.14
E5E47120	12.0	12	30	80	0.14

▶ TiN, TiCN and TiAlN Coatings are available on your request.

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ -0.03	h6



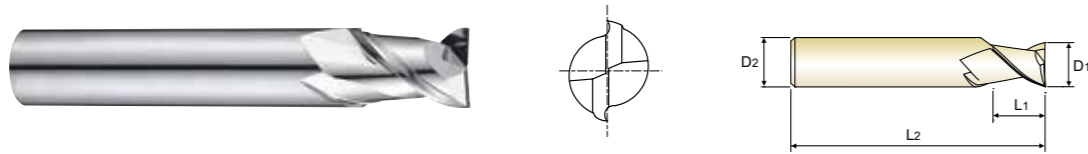
Enforced Cutting Edge

◎: Excellent ○: Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
-HB225	HB225-325	HRc30-40	HRc40-45	HRc45-55	HRc55-70									
										◎	◎			

**SOLID CARBIDE ALU-POWER END MILLS
2 FLUTE 45° HELIX SHORT LENGTH**
E5E48 PLAIN SHANK

- ▶ Suitable for high speed machining in aluminum and other nonferrous materials
- ▶ Mirror surface - Excellent surface finish
- ▶ Superior chip evacuation

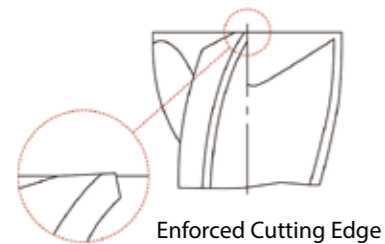
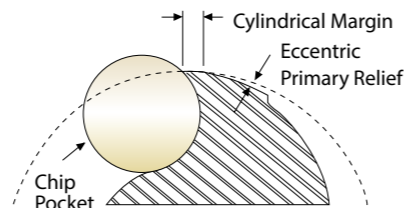


Unit : mm

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
E5E48030	3.0	6	5	50
E5E48040	4.0	6	8	54
E5E48050	5.0	6	9	54
E5E48060	6.0	6	10	54
E5E48080	8.0	8	12	58
E5E48100	10.0	10	14	66
E5E48120	12.0	12	16	73
E5E48140	14.0	14	18	75
E5E48160	16.0	16	22	82
E5E48180	18.0	18	24	84
E5E48200	20.0	20	26	92

▶ TiN, TiCN and TiAlN Coatings are available on your request.

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ -0.015	h6

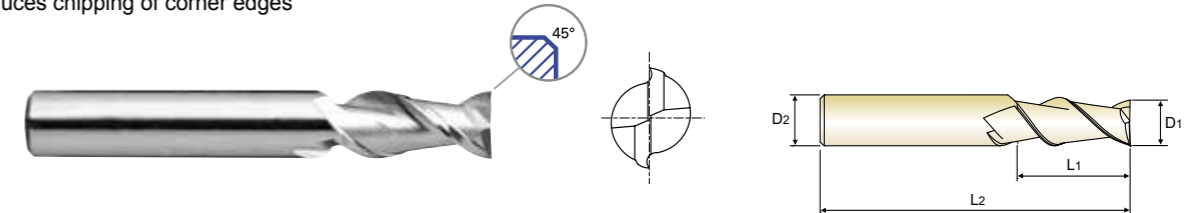


◎: Excellent ○: Good

P				H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225-325	HRc30-40	HRc40-45 HRc45-55	HRc55-70									
									◎				

**SOLID CARBIDE ALU-POWER END MILLS
2 FLUTE 45° HELIX LONG LENGTH**
**E5522 PLAIN SHANK
E5521 FLAT SHANK**

- ▶ Suitable for high speed machining in aluminum and other nonferrous materials
- ▶ Mirror surface - Excellent surface finish
- ▶ Superior chip evacuation
- ▶ Reduces chipping of corner edges

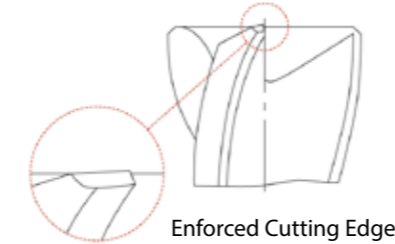
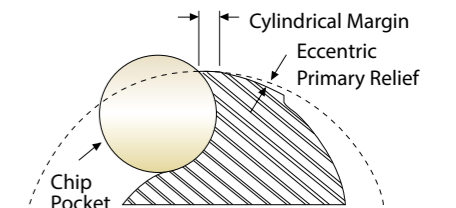


Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Overall Length	Chamfer
PLAIN	FLAT	D1	D2	L1	L2	
E5522030	E5521030	3.0	6	8	57	0.05
E5522040	E5521040	4.0	6	11	57	0.05
E5522050	E5521050	5.0	6	13	57	0.05
E5522060	E5521060	6.0	6	13	57	0.05
E5522080	E5521080	8.0	8	19	63	0.05
E5522100	E5521100	10.0	10	22	72	0.10
E5522120	E5521120	12.0	12	26	83	0.10
E5522140	E5521140	14.0	14	26	83	0.10
E5522160	E5521160	16.0	16	32	92	0.10
E5522180	E5521180	18.0	18	32	92	0.10
E5522200	E5521200	20.0	20	38	104	0.10

▶ TiN, TiCN and TiAlN Coatings are available on your request.

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ -0.015	h6

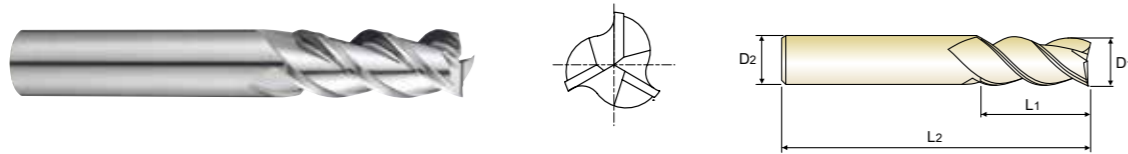


◎: Excellent ○: Good

P				H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225-325	HRc30-40	HRc40-45 HRc45-55	HRc55-70									
									◎				

**SOLID CARBIDE ALU-POWER END MILLS
3 FLUTE 45° HELIX LONG LENGTH**
E5E49 PLAIN SHANK

- ▶ Excellent cutting qualities on aluminum and copper
- ▶ Increased tool life and higher cutting accuracy
- ▶ Mirror surface - Excellent surface finish
- ▶ Superior chip evacuation

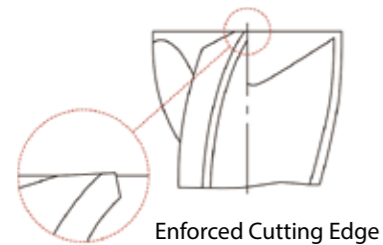
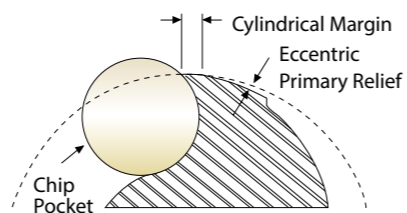


Unit : mm

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
E5E49030	3.0	6	12	57
E5E49040	4.0	6	15	57
E5E49050	5.0	6	20	57
E5E49060	6.0	6	20	65
E5E49080	8.0	8	22	65
E5E49100	10.0	10	25	70
E5E49120	12.0	12	25	75
E5E49160	16.0	16	35	90
E5E49200	20.0	20	40	100

▶ TiN, TiCN and TiAlN Coatings are available on your request.

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ -0.015	h6

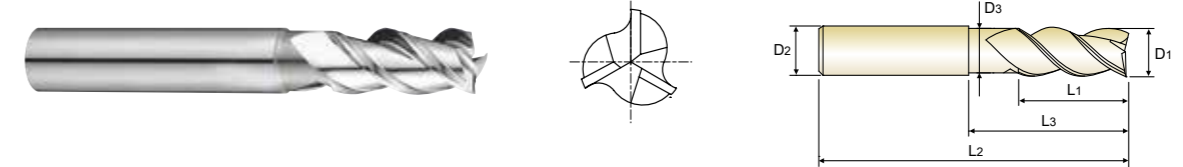


◎: Excellent ○: Good

P				H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45 HRc45~55	HRc55~70									
									◎				

**SOLID CARBIDE ALU-POWER END MILLS
3 FLUTE 45° HELIX with NECK**
E5E50 PLAIN SHANK

- ▶ Excellent cutting qualities on aluminum and copper
- ▶ Increased tool life and higher cutting accuracy
- ▶ Mirror surface - Excellent surface finish
- ▶ Superior chip evacuation

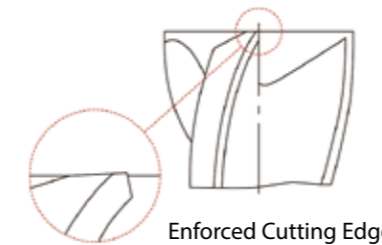
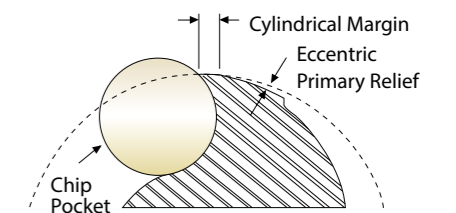


Unit : mm

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	D1	D2	L1	L3	L2	D3
E5E50030	3.0	6	8	12	57	2.7
E5E50040	4.0	6	11	18	57	3.7
E5E50050	5.0	6	13	18	57	4.7
E5E50060	6.0	6	13	18	57	5.7
E5E50080	8.0	8	21	25	63	7.4
E5E50100	10.0	10	22	30	72	9.2
E5E50120	12.0	12	26	36	83	11
E5E50160	16.0	16	36	42	92	15
E5E50200	20.0	20	41	52	104	19

▶ TiN, TiCN and TiAlN Coatings are available on your request.

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ -0.015	h6

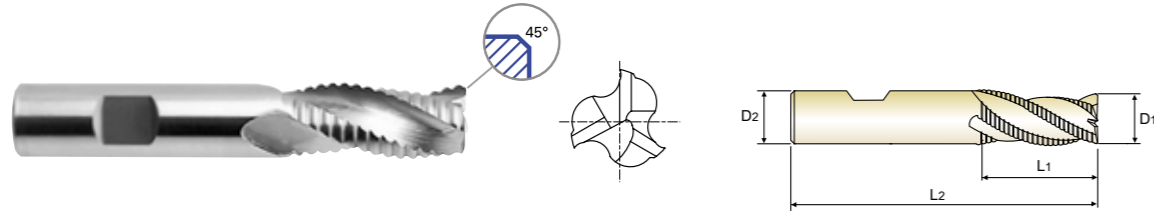


◎: Excellent ○: Good

P				H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45 HRc45~55	HRc55~70									
									◎				

**SOLID CARBIDE ALU-POWER END MILLS
3 FLUTE LONG LENGTH ROUGHING**
E5742 PLAIN SHANK
E5711 FLAT SHANK

- ▶ Excellent cutting qualities on aluminum and copper
- ▶ Increased tool life and higher cutting accuracy
- ▶ Mirror surface - Excellent surface finish



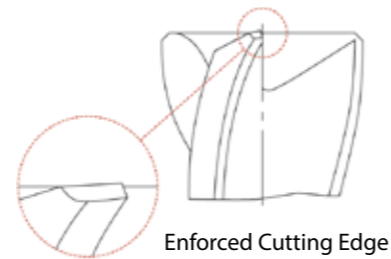
Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Overall Length	Chamfer
PLAIN	FLAT	D1(h10)	D2(h6)	L1	L2	
E5742060	E5711060	6.0	6	16	57	0.60
E5742070	E5711070	7.0	8	16	63	0.60
E5742080	E5711080	8.0	8	16	63	0.60
E5742090	E5711090	9.0	10	19	72	0.60
E5742100	E5711100	10.0	10	22	72	0.60
E5742120	E5711120	12.0	12	26	83	0.60
E5742140	E5711140	14.0	14	26	83	0.91
E5742160	E5711160	16.0	16	32	92	0.91
E5742180	E5711180	18.0	18	32	92	0.91
E5742200	E5711200	20.0	20	38	104	0.91
E5742250	E5711250	25.0	25	45	121	0.91

▶ TiN, TiCN and TiAlN Coatings are available on your request.

Tolerances according to DIN 7160 & 7161

Tolerance range in μm					
Nominal-Diameter in μm					
	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
h10	0 -40	0 -48	0 -58	0 -70	0 -84
h6	0 -6	0 -8	0 -9	0 -11	0 -13

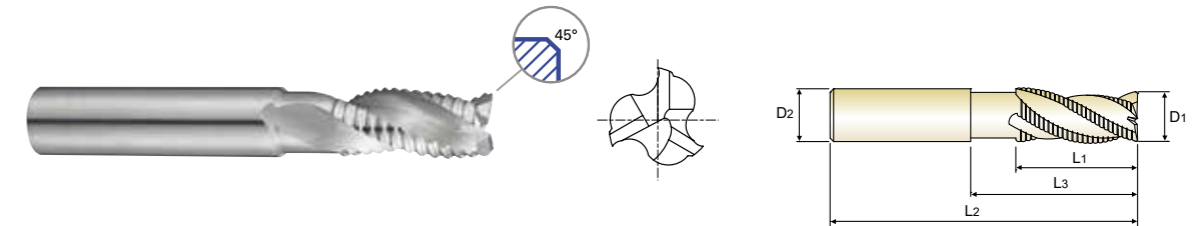


◎: Excellent ○: Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
-HB225	HB225-325	HRc30-40	HRc40-45	HRc45-55	HRc55-70									
○	○						○			◎				

**SOLID CARBIDE ALU-POWER END MILLS
3 FLUTE ROUGHING with NECK**
E5E39 PLAIN SHANK
E5E40 FLAT SHANK

- ▶ Excellent cutting qualities on aluminum and copper
- ▶ Increased tool life and higher cutting accuracy
- ▶ Mirror surface - Excellent surface finish



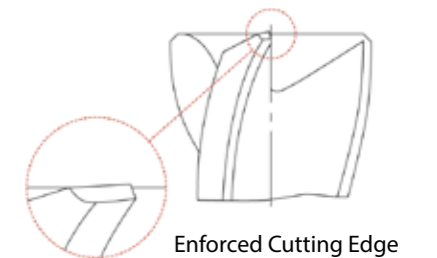
Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter	Chamfer
PLAIN	FLAT	D1	D2	L1	L3	L2	D3	
E5E39060	E5E40060	6.0	6	16	20	57	5	0.60
E5E39080	E5E40080	8.0	8	16	25	63	7	0.60
E5E39100	E5E40100	10.0	10	22	30	72	9	0.60
E5E39120	E5E40120	12.0	12	26	36	83	10.5	0.60
E5E39160	E5E40160	16.0	16	32	42	92	14.5	0.91
E5E39200	E5E40200	20.0	20	38	52	104	18.5	0.91

▶ TiN, TiCN and TiAlN Coatings are available on your request.

Tolerances according to DIN 7160 & 7161

Tolerance range in μm					
Nominal-Diameter in μm					
	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
h10	0 -40	0 -48	0 -58	0 -70	0 -84
h6	0 -6	0 -8	0 -9	0 -11	0 -13



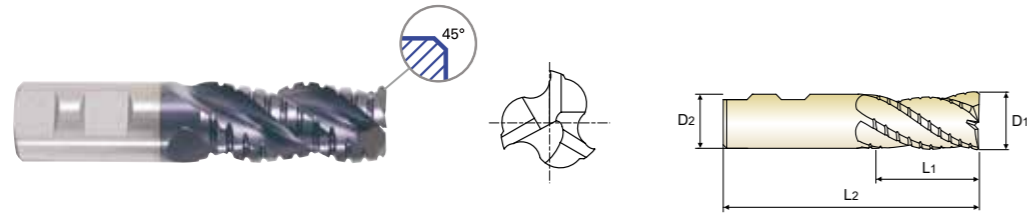
◎: Excellent ○: Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
-HB225	HB225-325	HRc30-40	HRc40-45	HRc45-55	HRc55-70									
○	○						○			◎				

ALU-POWER END MILLS

**YPM, 3 FLUTE 42° HELIX
SHORT LENGTH ROUGHING TiAIN COATED**
EP922 PLAIN SHANK
EP923 FLAT SHANK

- ▶ Maximum metal removal rate at High Speed Condition
- ▶ Reduces vibrations and improves surface roughness
- ▶ Reduces chipping of corner edges

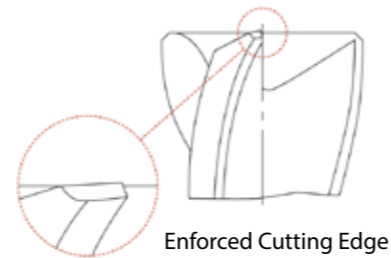


Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Overall Length	Chamfer
PLAIN	FLAT	D1(js12)	D2(h6)	L1	L2	
EP922120	EP923120	12.0	12	26	83	1.10
EP922140	EP923140	14.0	12	26	83	1.10
EP922160	EP923160	16.0	16	32	92	1.10
EP922180	EP923180	18.0	16	32	92	1.10
EP922200	EP923200	20.0	20	38	104	1.10
EP922220	EP923220	22.0	20	38	104	1.10
EP922250	EP923250	25.0	25	45	121	1.10
EP922280	EP923280	28.0	25	45	121	1.22
EP922320	EP923320	32.0	32	53	133	1.22

Tolerances according to DIN 7160 & 7161

Tolerance range in μm						
Nominal-Diameter in μm						
	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 10 to 18	over 30 to 50
js12	±50	±60	±75	±90	±105	±125
h6	0 -6	0 -8	0 -9	0 -11	0 -11	0 -13



Enforced Cutting Edge

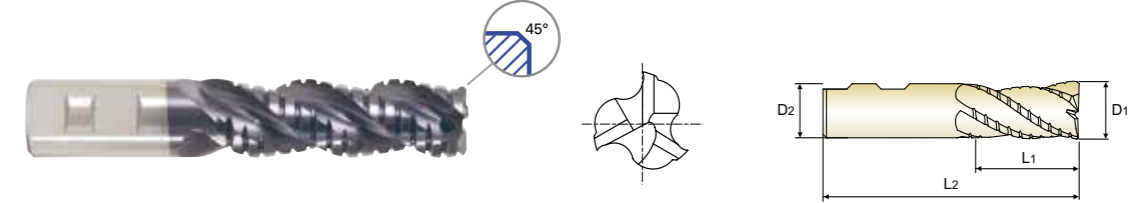
◎: Excellent ○: Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
-HB225	HB225-325	HRc30-40	HRc40-45	HRc45-55	HRc55-70									
							○			◎				

ALU-POWER END MILLS

**YPM, 3 FLUTE 42° HELIX
LONG LENGTH ROUGHING TiAIN COATED**
EP924 PLAIN SHANK
EP925 FLAT SHANK

- ▶ Maximum metal removal rate at High Speed Condition
- ▶ Reduces vibrations and improves surface roughness
- ▶ Reduces chipping of corner edges

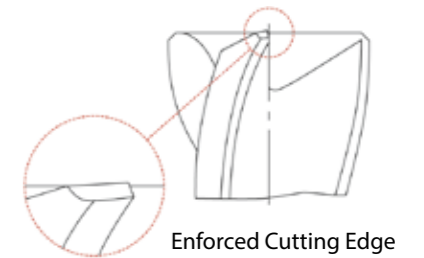


Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Overall Length	Chamfer
PLAIN	FLAT	D1(js12)	D2(h6)	L1	L2	
EP924120	EP925120	12.0	12	53	110	1.10
EP924140	EP925140	14.0	12	53	110	1.10
EP924160	EP925160	16.0	16	63	123	1.10
EP924180	EP925180	18.0	16	63	123	1.10
EP924200	EP925200	20.0	20	75	141	1.10
EP924220	EP925220	22.0	20	75	141	1.10
EP924250	EP925250	25.0	25	90	166	1.10
EP924280	EP925280	28.0	25	90	166	1.22
EP924320	EP925320	32.0	32	106	186	1.22

Tolerances according to DIN 7160 & 7161

Tolerance range in μm						
Nominal-Diameter in μm						
	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 10 to 18	over 30 to 50
js12	±50	±60	±75	±90	±105	±125
h6	0 -6	0 -8	0 -9	0 -11	0 -11	0 -13



Enforced Cutting Edge

◎: Excellent ○: Good

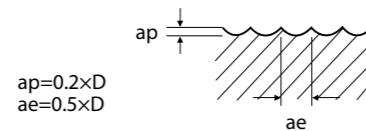
P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
-HB225	HB225-325	HRc30-40	HRc40-45	HRc45-55	HRc55-70									
							○			◎				

SOLID CARBIDE ALU-POWER END MILLS
2 FLUTE 50° HELIX BALL NOSE with NECK

E5910 SERIES

RPM = rev./min. Vc = m/min.
FEED = mm/min. Fz = mm/tooth

MATERIAL	N							
	ALUMINUM ALUMINUM ALLOYS				COPPER ALLOYS			
DIAMETER	RPM	FEED	Vc	Fz	RPM	FEED	Vc	Fz
R3.0 × 6.0	14400	1400	270	0.049	4400	350	85	0.040
R4.0 × 8.0	11200	1600	280	0.071	3360	400	85	0.060
R5.0 × 10.0	11200	1880	350	0.084	3360	465	105	0.069
R6.0 × 12.0	11200	2400	420	0.107	3360	600	125	0.089
R8.0 × 16.0	8800	2160	440	0.123	2640	535	135	0.101
R10.0 × 20.0	5600	1760	350	0.157	1680	440	105	0.131

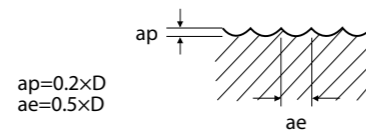


SOLID CARBIDE ALU-POWER END MILLS
3 FLUTE 40° HELIX BALL NOSE with NECK

E5908 SERIES

RPM = rev./min. Vc = m/min.
FEED = mm/min. Fz = mm/tooth

MATERIAL	N							
	ALUMINUM ALUMINUM ALLOYS				COPPER ALLOYS			
DIAMETER	RPM	FEED	Vc	Fz	RPM	FEED	Vc	Fz
R1.0 × 2.0	21600	760	135	0.018	6400	190	40	0.015
R1.25 × 2.5	17600	760	140	0.022	5200	190	40	0.018
R1.5 × 3.0	14400	760	135	0.026	4400	190	40	0.022
R1.75 × 3.5	14400	800	160	0.028	4400	190	50	0.022
R2.0 × 4.0	14400	1000	180	0.035	4400	250	55	0.028
R2.5 × 5.0	14400	1080	225	0.038	4400	270	70	0.031
R3.0 × 6.0	14400	1400	270	0.049	4400	350	85	0.040
R4.0 × 8.0	11200	1600	280	0.071	3360	400	85	0.060
R5.0 × 10.0	11200	1880	350	0.084	3360	465	105	0.069
R6.0 × 12.0	11200	2400	420	0.107	3360	600	125	0.089
R8.0 × 16.0	8800	2160	440	0.123	2640	535	135	0.101

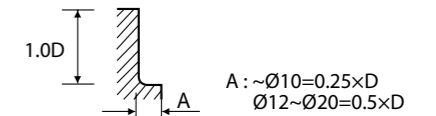
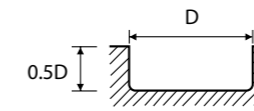


SOLID CARBIDE ALU-POWER END MILLS
2 FLUTE CORNER RADIUS with NECK

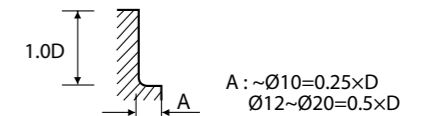
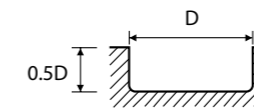
E5909 SERIES

RPM = rev./min. Vc = m/min.
FEED = mm/min. Fz = mm/tooth

MATERIAL	N							
	ALUMINUM ALUMINUM ALLOYS							
DIAMETER	RPM	FEED	Vc	Fz	RPM	FEED	Vc	Fz
4.0	10400	960	130	0.046	10400	1120	130	0.054
6.0	10400	1200	195	0.058	10400	1600	195	0.077
8.0	8000	1440	200	0.090	8000	1840	200	0.115
10.0	8000	1760	250	0.110	8000	2160	250	0.135
12.0	8000	2160	300	0.135	8000	2720	300	0.170
16.0	6400	2000	320	0.156	6400	2480	320	0.194
20.0	4000	1600	250	0.200	4000	2000	250	0.250



MATERIAL	N							
	COPPER ALLOYS							
DIAMETER	RPM	FEED	Vc	Fz	RPM	FEED	Vc	Fz
4.0	3120	240	40	0.038	3120	280	40	0.045
6.0	3120	305	60	0.049	3120	400	60	0.064
8.0	2400	360	60	0.075	2400	465	60	0.097
10.0	2400	440	75	0.092	2400	545	75	0.114
12.0	2400	545	90	0.114	2400	680	90	0.142
16.0	1920	505	95	0.132	1920	625	95	0.163
20.0	1200	400	75	0.167	1200	505	75	0.210

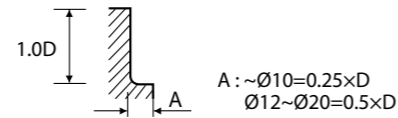
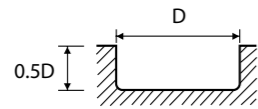


SOLID CARBIDE ALU-POWER END MILLS
2FLUTE 25° HELIX CORNER RADIUS with NECK

E5930 SERIES

RPM = rev./min. Vc = m/min.
FEED = mm/min. Fz = mm/tooth

MATERIAL	N							
	ALUMINUM ALUMINUM ALLOYS							
DIAMETER	RPM	FEED	Vc	Fz	RPM	FEED	Vc	Fz
2.0	10400	460	65	0.022	10400	810	65	0.039
3.0	10400	720	100	0.035	10400	960	100	0.046
4.0	10400	960	130	0.046	10400	1120	130	0.054
5.0	10400	1040	165	0.050	10400	1360	165	0.065
6.0	10400	1200	195	0.058	10400	1600	195	0.077
8.0	8000	1440	200	0.090	8000	1840	200	0.115
10.0	8000	1760	250	0.110	8000	2160	250	0.135
12.0	8000	2160	300	0.135	8000	2720	300	0.170
16.0	6400	2000	320	0.156	6400	2480	320	0.194
20.0	4000	1600	250	0.200	4000	2000	250	0.250

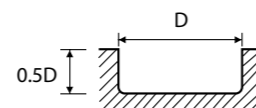
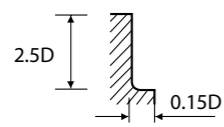


SOLID CARBIDE ALU-POWER END MILLS
3 FLUTE 45° HELIX LONG LENGTH CORNER RADIUS

E5E51 SERIES

RPM = rev./min. Vc = m/min.
FEED = mm/min. Fz = mm/tooth

MATERIAL	N							
	ALUMINUM ALUMINUM ALLOYS							
DIAMETER	RPM	FEED	Vc	Fz	RPM	FEED	Vc	Fz
3.0	10000	1490	95	0.050	10000	1160	95	0.039
4.0	10000	1820	125	0.061	10000	1490	125	0.050
5.0	10000	2150	155	0.072	10000	1650	155	0.055
6.0	10000	2480	190	0.083	10000	1980	190	0.066
8.0	8000	3000	200	0.125	8000	2310	200	0.096
10.0	8000	3470	250	0.145	8000	2810	250	0.117
12.0	8000	4290	300	0.179	8000	3470	300	0.145
16.0	6000	3960	300	0.220	6000	3140	300	0.174
20.0	4000	3140	250	0.262	4000	2640	250	0.220

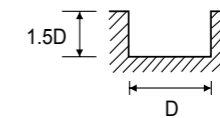


SOLID CARBIDE ALU-POWER END MILLS
1 FLUTE

E5E47 SERIES

RPM = rev./min. Vc = m/min.
FEED = mm/min. Fz = mm/tooth

MATERIAL	N							
	ACRYLIC				ALUMINUM ALUMINUM ALLOYS			
DIAMETER	RPM	FEED	Vc	Fz	RPM	FEED	Vc	Fz
2.0	32000	2200	200	0.069	23000	1500	145	0.065
3.0	25000	2400	235	0.096	18000	1700	170	0.094
4.0	20000	2400	250	0.120	15000	1800	190	0.120
5.0	15000	2200	235	0.147	12000	1800	190	0.150
6.0	13500	2300	255	0.170	10000	1800	190	0.180
8.0	10000	2400	250	0.240	7800	1900	195	0.244
10.0	8000	2400	250	0.300	6000	2000	190	0.333
12.0	6700	2300	255	0.343	5000	2200	190	0.440

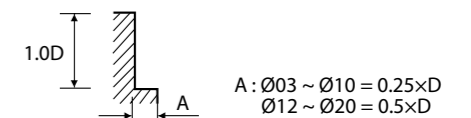
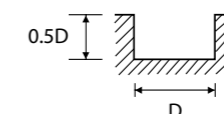


SOLID CARBIDE ALU-POWER END MILLS
2 FLUTE 45° HELIX

E5E48, E5522, E5521 SERIES

RPM = rev./min. Vc = m/min.
FEED = mm/min. Fz = mm/tooth

MATERIAL	N							
	ALUMINUM ALUMINUM ALLOYS							
DIAMETER	RPM	FEED	Vc	Fz	RPM	FEED	Vc	Fz
3.0	10000	700	95	0.035	10000	900	95	0.045
4.0	10000	900	125	0.045	10000	1100	125	0.055
5.0	10000	1000	155	0.050	10000	1300	155	0.065
6.0	10000	1200	190	0.060	10000	1500	190	0.075
8.0	8000	1400	200	0.088	8000	1800	200	0.113
10.0	8000	1700	250	0.106	8000	2100	250	0.131
12.0	8000	2100	300	0.131	8000	2600	300	0.163
14.0	6000	1800	265	0.150	6000	2200	265	0.183
16.0	6000	1900	300	0.158	6000	2400	300	0.200
18.0	4000	1400	225	0.175	4000	1800	225	0.225
20.0	4000	1600	250	0.200	4000	1900	250	0.238

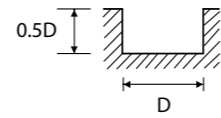
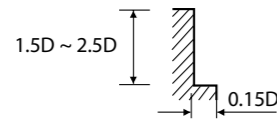


SOLID CARBIDE ALU-POWER END MILLS
3 FLUTE 45° HELIX

E5E49, E5E50 SERIES

RPM = rev./min. Vc = m/min.
FEED = mm/min. Fz = mm/tooth

MATERIAL	N							
	ALUMINUM LOW SILICON ALUMINUM							
DIAMETER	RPM	FEED	Vc	Fz	RPM	FEED	Vc	Fz
3.0	7000	940	65	0.045	7000	730	65	0.035
4.0	7000	1150	90	0.055	7000	940	90	0.045
5.0	7000	1360	110	0.065	7000	1050	110	0.050
6.0	7000	1580	130	0.075	7000	1250	130	0.060
8.0	5600	1900	140	0.113	5600	1470	140	0.088
9.0	5600	2050	160	0.122	5600	1630	160	0.097
10.0	5600	2200	175	0.131	5600	1780	175	0.106
12.0	5600	2740	210	0.163	5600	2200	210	0.131
16.0	4200	2520	210	0.200	4200	1990	210	0.158
20.0	2800	2000	175	0.238	2800	1680	175	0.200

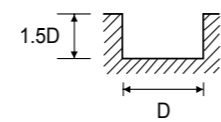
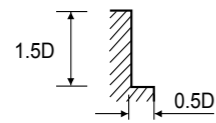


SOLID CARBIDE ALU-POWER END MILLS
3 FLUTE ROUGHING

E5742, E5711, E5E39, E5E40 SERIES

RPM = rev./min. Vc = m/min.
FEED = mm/min. Fz = mm/tooth

MATERIAL	N							
	ALUMINUM							
DIAMETER	RPM	FEED	Vc	Fz	RPM	FEED	Vc	Fz
6.0	13500	6800	254	0.168	10500	5300	198	0.168
8.0	10500	5300	264	0.168	8000	4000	201	0.167
10.0	8500	4300	267	0.169	6500	3500	204	0.179
12.0	8500	4200	320	0.165	6400	3200	241	0.167
16.0	6400	3200	322	0.167	4800	2400	241	0.167
20.0	5100	2500	320	0.163	3850	1900	242	0.165

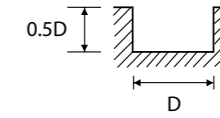
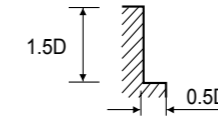


ALU-POWER END MILLS
YPM, 3 FLUTE 42° HELIX
ROUGHING TiAlN COATED

EP922, EP923, EP924, EP925 SERIES

RPM = rev./min. Vc = m/min.
FEED = mm/min. Fz = mm/tooth

MATERIAL	N							
	ALUMINUM ALUMINUM ALLOYS							
DIAMETER	RPM	FEED	Vc	Fz	RPM	FEED	Vc	Fz
12.0	2800	550	105	0.065	2800	410	105	0.049
14.0	2500	600	110	0.080	2500	450	110	0.060
16.0	2200	625	110	0.095	2200	465	110	0.070
18.0	1950	680	110	0.116	1950	510	110	0.087
20.0	1700	700	105	0.137	1700	525	105	0.103
22.0	1600	685	110	0.143	1600	515	110	0.107
25.0	1400	625	110	0.149	1400	465	110	0.111
28.0	1250	675	110	0.180	1250	505	110	0.135
32.0	1100	700	110	0.212	1100	525	110	0.159





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