SOLID CARBIDE ENDMILLS

WORKPIECE MATERIAL	ISO	Page
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ALUMINUM / NON FERROUS MATERIALS	N	103
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P (Steel Materials)

Tool Selection Priorities

Tool	Rough	Semi-Finish	Finish/H.S.M
EC-H6/20	-	-	1
EC-E7/H7-CF	-	-	2
EFS-B44	5	6	-
EFS-E44-CF	4	5	-
ECR-B-MF	6	7	-
EC-E5L-CF	7	1	4
EC-E4L-CF	3	3	5
ECP-H4L-CF	2	4	-
EC-H4M-CF-E	1	2	3

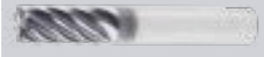
ROUGHING

	Designation	Ø	LU (Neck)	a_p	ZEFF	Corner Type	Coolant	Page
	EC-H4M-CF-E	6-20	-	2xDC	4	CHWx45	NO	115
	ECP-H4L-CFR	6-20	3XDC	2xDC	4	RE	NO	116
	EC-E4L-CF	1-25	3XDC	2xDC	4	CHWx45	NO	117
	EFS-E44	6-25	-	2xDC	4	CHWx45	NO	125
	EFS-B44	4-25	3xDC	2xDC	4	CHWx45	NO	126
	ECR-B-MF	6-25	-	2xDC	4/6	CHWx45	NO	129
	EC-E5L-CF	6-20	-	2xDC	5	CHWx45	NO	127

FINISHING

P (Steel Materials)								
	Designation	Ø	**LU (Neck)**	**a_p**	**ZEFF**	**Corner Type**	**Coolant**	**Page**
	EC-E5L-CF	6-20	-	2xDC	5	CHWx45	NO	127
	EC-E7/H7-CF	2-20	-	2xDC, 4xDC	7	-	NO	119-120
	EC-H-CF	6-20	-	2xDC	6-20	CHWx45	NO	123
	ECXL-B-4/6	10-20	-	6xDC	4/6	-	NO	152
	ECH-B-6	6-20	-	2xDC	6	-	NO	151

TROCHOIDAL / DYNAMIC MILLING

	Designation	Ø	**LU (Neck)**	**a_p**	**ZEFF**	**Corner Type**	**Coolant**	**Page**
	EC-E7/H7-CF	2-20	-	2xDC, 4xDC	7	-	NO	119-120
	EC-H-CF	6-20	-	2xDC	6-20	CHWx45	NO	123

HIGH FEED MILLING

	Designation	Ø	**LU (Neck)**	**a_p**	**ZEFF**	**Corner Type**	**Coolant**	**Page**
	EFP-E4,5CF	6-20	-	2.5xDC	4/5	RE	NO	132
	EFF-S	1-20	3xDC	MIN.	2/4	RE	NO	132

CHAMFERING AND DEBURRING

	Designation	Ø	LU (Neck)	a_p	ZEFF	Corner Type	Coolant	Page
	ECF.../45	4-12	-	2.5xDC	4	-	NO	174
	ECD-S2	3-12	2xDC	0.5xDC	2	-	NO	175

P (Steel Materials)	
Tool Type	**Features**
EC-H4M-CF-E (ECO Type)	• Rough and finish operations • General use • Low power machines • **CHATTERFREE**
ECP-H4L-CFR	• Rough operations • General use • Chip splitter **CHATTERFREE**
EC-E4L-CF	• Rough and finish operations • Used for machining alloyed steel and general use • Low power machines **CHATTERFREE**
EC-E5L-CF	• Rough and finish operations • Used for machining alloyed steel and general use • High material removal rates
ECR-B-MF	• Rough operations • Used in unstable components
EFS-E44	• Used for machining alloyed steel • Combination of VIBRAFREE and FINISHROUGH
EFS-B44	• Unique design • Used for machining titanium, stainless and alloyed steel • Fully effective • Semi-finish surface quality
EC-E7/H7-CF	• For high speed machining • Trochoidal milling • Finish operations up to 10% X DC
EC-H-CF	• High speed machining • Multiflute solid endmill • Tools for super finish • Up to 5% X DC

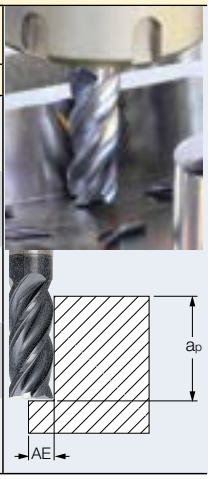
P (Steel Materials)

ROUGH: AE = 40% - Full Cut , a_p = 2 x DC

Material Group Parameters	Unalloyed Steel		Low Alloyed Steel		High Alloyed Steel		Martensitic Steels	Ferritic Steels
	1-4	5	6-7	8-9	10	11	12	13
V_c (IC900/608) (m/min)	160-180	140-150	120-160	130-150	130-150	70-90	80-100	60-90
V_c (IC300) (m/min)	130-160	110-120	100-130	100-120	100-120	60-80	60-90	50-80
F_z (Ø6-8) (mm/t)	0.025-0.035	0.025-0.035	0.02-0.03	0.02-0.03	0.02-0.03	0.02-0.03	0.02-0.035	0.02-0.035
F_z (Ø10-12) (mm/t)	0.03-0.045	0.03-0.045	0.03-0.045	0.03-0.045	0.03-0.045	0.03-0.045	0.03-0.04	0.03-0.04
F_z (Ø16-20) (mm/t)	0.04-0.055	0.04-0.055	0.04-0.055	0.04-0.055	0.04-0.055	0.04-0.055	0.035-0.045	0.035-0.045

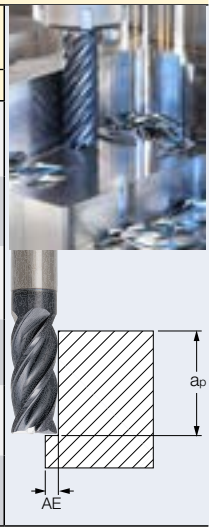
SEMI-FINISH: AE = 10% - 40%, a_p = 2 x DC

Material Group Parameters	Unalloyed Steel		Low Alloyed Steel		High Alloyed Steel		Martensitic Steels	Ferritic Steels
	1-4	5	6-7	8-9	10	11	12	13
V_c (IC900/608) (m/min)	200-220	150-170	160-180	150-170	150-160	90-110	100-130	90-120
V_c (IC300) (m/min)	160-190	120-130	130-150	120-130	120-130	80-90	90-110	80-100
F_z (Ø6-8) (mm/t)	0.03-0.06	0.03-0.06	0.02-0.05	0.02-0.05	0.02-0.05	0.02-0.05	0.025-0.04	0.025-0.04
F_z (Ø10-12) (mm/t)	0.06-0.07	0.06-0.07	0.04-0.065	0.04-0.065	0.04-0.065	0.04-0.065	0.035-0.045	0.035-0.045
F_z (Ø16-20) (mm/t)	0.07-0.08	0.07-0.08	0.045-0.07	0.045-0.07	0.045-0.07	0.045-0.07	0.04-0.05	0.04-0.05



FINISH: AE = 5% - 10%, a_p = Max. cutting length

Material Group Parameters	Unalloyed Steel		Low Alloyed Steel		High Alloyed Steel		Martensitic Steels	Ferritic Steels
	1-4	5	6-7	8-9	10	11	12	13
V_c (IC900/608) (m/min)	220-280	170-180	180-220	170-180	160-180	110-120	130-160	120-150
V_c (IC300) (m/min)	190-220	130-140	150-180	130-140	130-140	90-100	110-130	100-120
V_c (IC902/903/702) (m/min)	230-290	180-200	190-230	180-230	170-190	120-130	140-170	130-160
F_z (Ø6-8) (mm/t)	0.05-0.07	0.05-0.07	0.05-0.07	0.05-0.07	0.05-0.07	0.05-0.07	0.03-0.045	0.03-0.045
F_z (Ø10-12) (mm/t)	0.07-0.08	0.07-0.08	0.07-0.08	0.07-0.08	0.07-0.08	0.07-0.08	0.04-0.05	0.04-0.05
F_z (Ø16-20) (mm/t)	0.08-0.1	0.08-0.1	0.08-0.1	0.08-0.1	0.08-0.1	0.08-0.1	0.045-0.06	0.045-0.06



M (Stainless Steel)			
Tool Selection Priorities			
Tool	**Rough**	**Semi-Finish**	**Finish/H.S.M**
EC-H-CF	-	-	1
EC-E7/H7-CF	-	-	2
EFS-B44	5	6	-
ECP-E4L	4	5	-
EC-H5M-CFR	-	3	3
EC-H4M-CFR	3	4	5
ECP-H4L-CFR	2	2	-
EC-H4M-CF-E	1	1	4

ROUGHING

	Designation	Ø	LU (Neck)	a_p	ZEFF	Corner Type	Coolant	Page
	EC-H4M-CF-E	6-20	-	2xDC	4	CHWx45	NO	115
	ECP-H4L-CFR	6-20	3XDC	2xDC	4	RE	NO	116
	EC-H5M-CFR	4-20	-	2xDC	5	RE	NO	118
	EC-H4-L/M/XL/CFR	3-25	-	2xDC	-	RE	NO	117
	EFS-B44	6-25	3xDC	2xDC	4	CHWx45	NO	126
	ECP-E4L	5-20	3xDC	2xDC	4	CHWx45	NO	130

FINISHING

	Designation	Ø	LU (Neck)	a_p	ZEFF	Corner Type	Coolant	Page
	EC-E7/H7-CF	2-20	-	2xDC, 4xDC	7	-	NO	119-120
	EC-H-CF	6-20	-	2xDC	6-20	CHWx45	NO	123
	EC-H5M-CFR	4-20	-	2xDC	5	RE	NO	118
	ECXL-B-4/6	10-20	-	6xDC	7	-	NO	152
	ECH-B-6	6-20	-	2xDC	6	-	NO	151

TROCHOIDAL / DYNAMIC MILLING

	Designation	Ø	LU (Neck)	a_p	ZEFF	Corner Type	Coolant	Page
	EC-E7/H7-CF	2-20	-	2xDC, 4xDC	7	-	NO	119-120
	EC-H-CF	6-20	-	2xDC	6-20	CHWx45	NO	123

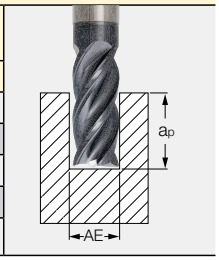
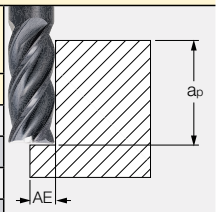
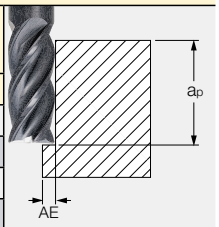
HIGH FEED MILLING

M (Stainless Steel)								
	Designation	Ø	LU (Neck)	a_p	ZEFF	Corner Type	Coolant	Page
	EFP-E4,5CF	6-20	-	2.5xDC	4/5	RE	NO	132
	EFF-S	1-20	3xDC	MIN.	2/4	RE	NO	132

CHAMFERING AND DEBURRING

M (Stainless Steel)								
	Designation	Ø	LU (Neck)	a_p	ZEFF	Corner Type	Coolant	Page
	ECF.../45	4-12	-	2.5xDC	4	-	NO	174
	ECD-S2	3-12	2xDC	0.5xDC	2	-	NO	174

Tool Type	Features
EC-H4M-CF-E (ECO Type)	• Rough and finish operations • General use • Low power machines • **CHATTERFREE**
ECP-H4L-CFR	• Rough operations • General use • Chip splitter **CHATTERFREE**
EC-H4M-CFR	• Rough and finish operations • Used for machining stainless steel • High material removal rates
EC-H5M-CFR	• Rough and finish operations • Used for machining stainless steel • High material removal rates
ECP-E4L	• Used for machining stainless steel and high-temperature alloys • Chip Splitter
EFS-B44	• Unique design • Used for machining titanium, stainless and alloyed steel • Fully effective • Semi-finish surface quality
EC-E7/H7-CF	• For high speed machining • Trochoidal milling • Finish operations up to 10% X DC
EC-H-CF	• High speed machining • Multiflute solid endmill • Tools for super finish • Up to 5% X DC

M (Stainless Steel)		
ROUGH: AE = 40% - Full Cut , a_p = 2 x DC		
Material Group Parameters	**Austenitic Steels**	
	14	
V_c (IC900/608) (m/min)	60-80	
V_c (IC300) (m/min)	50-70	
F_z (Ø6-8) (mm/t)	0.02-0.035	
F_z (Ø10-12) (mm/t)	0.03-0.04	
F_z (Ø16-20) (mm/t)	0.035-0.045	
SEMI-FINISH: AE = 10% - 40%, a_p = 2 x DC		
Material Group Parameters	**Austenitic Steels**	
	14	
V_c (IC900/608) (m/min)	80-100	
V_c (IC300) (m/min)	70-90	
F_z (Ø6-8) (mm/t)	0.025-0.04	
F_z (Ø10-12) (mm/t)	0.035-0.045	
F_z (Ø16-20) (mm/t)	0.04-0.05	
FINISH / H.S.M: AE = 5% - 10%, a_p = Max. cutting length		
Material Group Parameters	**Austenitic Steels**	
	14	
V_c (IC900/608) (m/min)	100-120	
V_c (IC300) (m/min)	90-100	
V_c (IC902/903/702) (m/min)	110-130	
F_z (Ø6-8) (mm/t)	0.03-0.045	
F_z (Ø10-12) (mm/t)	0.04-0.05	
F_z (Ø16-20) (mm/t)	0.045-0.06	

K (Cast Iron)			
Tool Selection Priorities			
Tool	**Rough**	**Semi-Finish**	**Finish/H.S.M**
EC-H-CF	-	-	1
EC-E7/H7-CF	-	-	2
EFS-B44	2	7	-
EFS-E44	5	6	-
ECR-B-MF	4	3	-
EC-E5L-CF	7	1	4
EC-E4L-CF	6	5	5
ECP-H4L-CFR	3	4	-
EC-H4M-CF-E	1	2	3

ROUGHING

	Designation	Ø	LU (Neck)	a_p	ZEFF	Corner Type	Coolant	Page
	EC-H4M-CF-E	6-20	-	2xDC	4	CHWx45	NO	115
	ECP-H4L-CFR	6-20	3XDC	2xDC	4	RE	NO	116
	EC-E4L-CF	1-25	3XDC	2xDC	4	CHWx45	NO	127
	EFS-E44	6-25	-	2xDC	4	CHWx45	NO	125
	EFS-B44	4-25	3xDC	2xDC	4	CHWx45	NO	126
	ECR-B-MF	6-20	-	2xDC	4/6	CHWx45	NO	129
	EC-E5L-CF	6-20	-	2xDC	5	CHWx45	NO	127

FINISHING

	Designation	Ø	LU (Neck)	a_p	ZEFF	Corner Type	Coolant	Page
	EC-E5L-CF	6-20	-	2xDC	5	CHWx45	NO	127
	EC-E7/H7-CF	2-20	-	2xDC, 4xDC	7	-	NO	119-120
	EC-H-CF	6-20	-	2xDC	6-20	CHWx45	NO	123
	ECXL-B-4/6	10-20	-	6xDC	4/6	-	NO	152
	ECH-B-6	6-20	-	2xDC	6	-	NO	151

TROCHOIDAL / DYNAMIC MILLING

	Designation	Ø	LU (Neck)	a_p	ZEFF	Corner Type	Coolant	Page
	EC-E7/H7-CF	2-20	-	2xDC, 4xDC	7	-	NO	119-120
	EC-H-CF	6-20	-	2xDC	6-20	CHWx45	NO	123

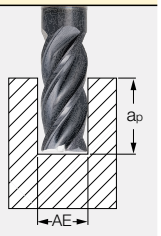
HIGH FEED MILLING

K (Cast Iron)								
	Designation	**Ø**	**LU (Neck)**	**a_p**	**ZEFF**	**Corner Type**	**Coolant**	**Page**
	EFP-E4,5CF	6-20	-	2.5xDC	4/5	RE	NO	132
	EFF-S	1-20	3xDC	MIN.	2/4	RE	NO	132

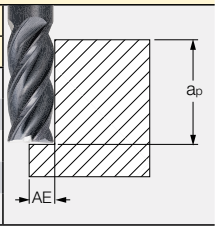
CHAMFERING AND DEBURRING

	Designation	**Ø**	**LU (Neck)**	**a_p**	**ZEFF**	**Corner Type**	**Coolant**	**Page**
	ECF.../45	4-12	-	2.5xDC	4	-	NO	174
	ECD-S2	3-12	2xDC	0.5xDC	2	-	NO	174

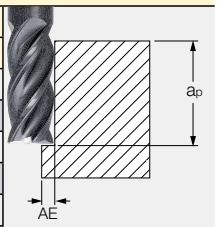
Tool Type	**Features**
EC-H4M-CF-E (ECO Type)	• Rough and finish operations • General use • Low power machines • **CHATTERFREE**
ECP-H4L-CFR	• Rough operations • General use • Chip splitter **CHATTERFREE**
EC-E4L-CF	• Rough and finish operations • Used for machining alloyed steel and general use • Low power machines no vibrations
EC-E5L-CF	• Rough and finish operations • Used for machining alloyed steel and general use • High material removal rates
ECR-B-MF	• Rough operations • Used on unstable components
EFS-E44	• Used for machining alloyed steel • Combination of VIBRAFREE and FINISHROUGH
EFS-B44	• Unique design • Used for machining titanium, stainless and alloyed steel • Fully effective • Semi-finish surface quality
EC-E7/H7-CF	• For high speed machining • Trochoidal milling • Finish operations up to 10% X DC
EC-H-CF	• High speed machining • Multiflute solid endmill • Tools for Super-Finish • Up to 5% X DC

ROUGH: AE = 40% - Full Cut , a_p = 2 x DC				
Material Group Parameters	**Grey Cast Iron**	**Ductile Cast Iron**	**Malleable Cast Iron**	
	15-16	**17-18**	**19-20**	
V_c (IC900/608) (m/min)	80-130	90-130	140-180	
V_c (IC300) (m/min)	60-140	70-140	110-150	
F_z (Ø6–8) (mm/t)	0.02-0.04	0.02-0.04	0.02-0.04	
F_z (Ø10-12) (mm/t)	0.03-0.05	0.03-0.05	0.03-0.05	
F_z (Ø16-20) (mm/t)	0.04-0.06	0.04-0.06	0.04-0.06	

K (Cast Iron)			
SEMI-FINISH: AE = 10% - 40%, a_p = 2 x DC			
Material Group Parameters	**Grey Cast Iron**	**Ductile Cast Iron**	**Malleable Cast Iron**
	15-16	**17-18**	**19-20**
V_c (IC900/608) (m/min)	130-180	130-200	180-220
V_c (IC300) (m/min)	140-180	140-180	150-180
F_z (Ø6–8) (mm/t)	0.03-0.05	0.03-0.05	0.03-0.05
F_z (Ø 10-12) (mm/t)	0.04-0.06	0.04-0.06	0.04-0.06
F_z (Ø16-20) (mm/t)	0.06-0.07	0.06-0.07	0.06-0.07



FINISH / H.S.M: AE = 5% - 10%, a_p = Max. cutting length			
Material Group Parameters	**Grey Cast Iron**	**Ductile Cast Iron**	**Malleable Cast Iron**
	15-16	**17-18**	**19-20**
V_c (IC900/608) (m/min)	180-260	200-280	220-280
V_c (IC300) (m/min)	180-210	180-220	180-220
V_c (IC902/903/702) (m/min)	190-270	210-290	220-290
F_z (Ø6–8) (mm/t)	0.035-0.06	0.035-0.06	0.035-0.06
F_z (Ø10-12) (mm/t)	0.06-0.065	0.06-0.065	0.06-0.065
F_z (Ø16-20) (mm/t)	0.065-0.08	0.065-0.08	0.065-0.08



N (Non-Ferrous Metals)			
Tool Selection Priorities			
Tool	**Rough**	**Semi-Finish**	**Finish/H.S.M**
ECR-B3-R	5	6	-
ECA-B-3	6	3	3
ECA-H4-CF	2	1	1
ECAP-H3-CF	3	4	-
ECA-H3-CF	4	5	4
ECA-H3-CF-C	1	2	2

ROUGHING

	Designation	Ø	**LU (Neck)**	**a_p**	**ZEFF**	**Corner Type**	**Coolant**	**Page**
	ECA-H3-CF	1.5-25	3XDC	2xDC	3	RE	NO	154-156
	ECAP-H3-CF	10-25	5XDC	2xDC	3	RE	YES	157
	ECA-H4-CF	6-25	5XDC	2xDC	4	RE	NO	156
	ECA-B-3	4-20	4xDC	2xDC	3	RE	NO	160
	ECR-B3-R	6-20	-	1xDC	3	RE	NO	158

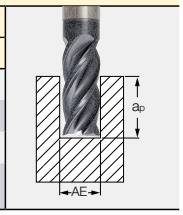
FINISHING

	Designation	Ø	LU (Neck)	a_p	ZEFF	Corner Type	Coolant	Page
	ECA-H3-CF	1-25	3XDC	2xDC	3	RE	NO	154-156
	ECA-H4-CF	6-25	5XDC	2xDC	4	RE	NO	156
	ECA-B-3	4-20	4xDC	2xDC	3	RE	NO	160

N (Non-Ferrous Metals)	
Tool Type	**Features**
ECA-H3-CF	• Suitable for roughing and finishing operations • **CHATTERFREE** • Full slot up to 1.5XDC and 2XDC * • Excellent solution for low power machines
ECA-H3-CF-C	• Suitable for roughing and finishing operations • **CHATTERFREE** • Full slot up to 2XDC • Internal coolant for better chip evacuation in deep cavity
ECAP-H3-CF	• Suitable for roughing • Chip splitter **CHATTERFREE** • Internal coolant for better chip evacuation in deep cavity
ECA-H4-CF	• Suitable for roughing and finishing operations • **CHATTERFREE** • Full slot up to 1XDC
ECA-B-3	• Suitable for roughing and finishing operations • Excellent surface finish
ECR-B3-R	• Suitable for roughing • Good cheap evacuation

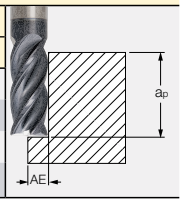
D 2x ROUGH: AE = 40% - Full Cut , a_p = 1.5xDC*

Material Group Parameters	Alu Wrought alloy 21-22	Alu Cast Alloy 23-25	Copper Alloy 26-27	Electrolitic Copper 28	Non-Metallic 29-30
V_c (IC08) (m/min)	700-760	400-550	500-520	350-360	350-360
F_z (Ø6–8) (mm/t)	0.02-0.04	0.02-0.04	0.02-0.04	0.02-0.04	0.02-0.04
F_z (Ø10-12) (mm/t)	0.03-0.05	0.03-0.05	0.03-0.05	0.03-0.05	0.03-0.05
F_z (Ø 16-20) (mm/t)	0.03-0.07	0.03-0.07	0.03-0.07	0.03-0.07	0.03-0.07



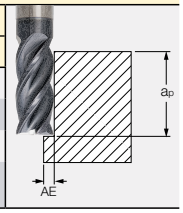
SEMI-FINISH: AE = 10% - 40%, a_p = 2 x DC

Material Group Parameters	Alu Wrought alloy 21-22	Alu Cast Alloy 23-25	Copper Alloy 26-27	Electrolitic Copper 28	Non-Metallic 29-30
V_c (IC08) (m/min)	760-840	550-700	520-530	360-370	360-370
F_z (Ø6–8) (mm/t)	0.04-0.06	0.04-0.06	0.03-0.05	0.03-0.05	0.03-0.05
F_z (Ø 10-12) (mm/t)	0.06-0.08	0.06-0.08	0.045-0.055	0.045-0.055	0.045-0.055
F_z (Ø 16-20) (mm/t)	0.08-0.1	0.08-0.1	0.055-0.07	0.055-0.07	0.055-0.07



FINISH / H.S.M: AE = 5% - 10%, a_p = Max. cutting length

Material Group Parameters	Alu Wrought alloy 21-22	Alu Cast Alloy 23-25	Copper Alloy 26-27	Electrolitic Copper 28	Non-Metallic 29-30
V_c (IC08) (m/min)	840-900	700-900	530-550	370-380	370-380
F_z (Ø6–8)(mm/t)	0.045-0.07	0.045-0.07	0.035-0.06	0.035-0.06	0.035-0.06
F_z (Ø10-12) (mm/t)	0.07-0.1	0.07-0.1	0.06-0.07	0.06-0.07	0.06-0.07
F_z (Ø16-20) (mm/t)	0.1-0.15	0.1-015	0.065-0.08	0.065-0.08	0.065-0.08



S (High Heat Resistant Alloys)			
Tool Selection Priorities			
Tool	**Rough**	**Semi-Finish**	**Finish/H.S.M**
EC-H-CF	-	-	1
EC-E7/H7-CF	-	-	2
EFS-B44 (IC300)	1	1	-
ECK-H4M-CFR	3	3	-
ECR-B-MF	2	2	-
EC-H5M-CFR	7	4	3
EC-H4M-CFR	6	7	5
ECP-H4L-CFR	4	5	-
EC-H4M-CF-E	5	6	4

ROUGHING

	Designation	Ø	LU (Neck)	a_p	ZEFF	Corner Type	Coolant	Page
	EC-H4M-CF-E	6-20	-	2xDC	4	CHWx45	NO	115
	ECP-H4L-CFR	6-20	3XDC	2xDC	4	RE	NO	116
	EC-E4L-CF	1-25	3XDC	2xDC	4	CHWx45	NO	127
	ECK-H4M-CFR	6-20	-	2xDC	4	-	NO / YES	123
	EFS-B44	4-25	3xDC	2xDC	4	CHWx45	NO	126
	ECR-B-MF	6-25	-	2xDC	4/6	CHWx45	NO	129
	EC-E5L-CF	6-20	-	2xDC	5	CHWx45	NO	127

FINISHING

	Designation	Ø	LU (Neck)	a_p	ZEFF	Corner Type	Coolant	Page
	EC-E5L-CF	6-20	-	2xDC	5	CHWx45	NO	127
	EC-E7/H7-CF	2-20	-	2xDC, 4xDC	7	-	NO	119-120
	EC-H-CF	6-20	-	2xDC	6-20	CHWx45	NO	123
	ECXL-B-4/6	10-20	-	6xDC	4/6	-	NO	152
	ECH-B-6	6-20	-	2xDC	6	-	NO	151

TROCHOIDAL / DYNAMIC MILLING

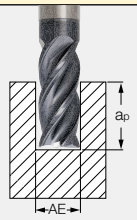
S (High Heat Resistant Alloys)								
	Designation	**Ø**	**LU (Neck)**	**a_p**	**ZEFF**	**Corner Type**	**Coolant**	**Page**
	EC-E7/H7-CF	2-20	-	2xDC, 4xDC	7	-	NO	119-120
	EC-H-CF	6-20	-	2xDC	6-20	CHWx45	NO	123

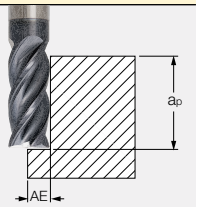
HIGH FEED MILLING

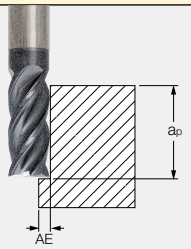
	Designation	**Ø**	**LU (Neck)**	**a_p**	**ZEFF**	**Corner Type**	**Coolant**	**Page**
	EFP-E4,5CF	6-20	-	2.5xDC	4/5	RE	NO	132
	EFF-S	1-20	3xDC	MIN.	2/4	RE	NO	132

CHAMFERING AND DEBURRING

	Designation	**Ø**	**LU (Neck)**	**a_p**	**ZEFF**	**Corner Type**	**Coolant**	**Page**
	ECF.../45	4-12	-	2.5xDC	4	-	NO	174
	ECD-S2	3-12	2xDC	0.5xDC	2	-	NO	174

***ROUGH: AE = 40% - Full Cut , a_p = 1.5 x DC**			
Material Group Parameters	**Nickel based Alloys**	**Titanium and Ti Alloys**	
	31-35	**36-37**	
V_c (IC900/608) (m/min)	20-40	30-50	
V_c (IC300) (m/min)	20-30	20-40	
F_z (Ø6–8) (mm/t)	0.02-0.03	0.02-0.03	
F_z (Ø 10-12) (mm/t)	0.03-0.04	0.03-0.04	
F_z (Ø 16-20) (mm/t)	0.03-0.07	0.03-0.07	

SEMI-FINISH: AE = 10% - 40%, a_p = 2 x DC			
Material Group Parameters	**Nickel based Alloys**	**Titanium and Ti Alloys**	
	31-35	**36-37**	
V_c (IC900/608) (m/min)	40-50	50-60	
V_c (IC300) (m/min)	30-45	40-50	
F_z (Ø6–8) (mm/t)	0.03-0.04	0.03-0.04	
F_z (Ø 10-12) (mm/t)	0.035-0.05	0.035-0.05	
F_z (Ø 16-20) (mm/t)	0.05-0.08	0.05-0.08	

FINISH / H.S.M: AE = 5% - 10%, a_p = Max. cutting length			
Material Group Parameters	**Nickel based Alloys**	**Titanium and Ti Alloys**	
	31-35	**36-37**	
V_c (IC900/608) (m/min)	50-70	60-70	
V_c (IC300) (m/min)	45-60	50-60	
V_c (IC902/903/702) (m/min)	55-80	65-80	
F_z (Ø6–8) (mm/t)	0.035-0.05	0.035-0.05	
F_z (Ø 10-12) (mm/t)	0.04-0.06	0.04-0.06	
F_z (Ø 16-20) (mm/t)	0.06-0.085	0.06-0.085	

H (Hard Materials)			
Tool Selection Priorities			
Tool	**Rough**	**Semi-Finish**	**Finish/H.S.M**
EC-H-CF	-	-	1
EC-E7/H7-CF	-	-	2
EFS-B44	2	3	-
ECR-B-MF	1	1	-
EC-E5L-CF	6	2	3
EC-E4L-CF	5	6	5
ECP-H4L-CFR	3	4	-
EC-H4M-CF-E	4	5	4

ROUGHING

	Designation	Ø	LU (Neck)	a_p	ZEFF	Corner Type	Coolant	Page
	EC-H4M-CF-E	6-20	-	2xDC	4	CHWx45	NO	115
	ECP-H4L-CFR	6-20	3XDC	2xDC	4	RE	NO	116
	EC-E4L-CF	1-25	3XDC	2xDC	4	CHWx45	NO	127
	EFS-B44	4-25	3xDC	2xDC	4	CHWx45	NO	126
	ECR-B-MF	6-25	-	2xDC	4/6	CHWx45	NO	129
	EC-E5L-CF	6-20	-	2xDC	5	CHWx45	NO	127

FINISHING

	Designation	Ø	LU (Neck)	a_p	ZEFF	Corner Type	Coolant	Page
	EC-E5L-CF	6-20	-	2xDC	5	CHWx45	NO	127
	EC-E7/H7-CF	2-20	-	2xDC, 4xDC	7	-	NO	119-120
	EC-H-CF	6-20	-	2xDC	6-20	CHWx45	NO	123
	ECXL-B-4/6	10-20	-	6xDC	4/6	-	NO	152
	ECH-B-6	6-20	-	2xDC	6	-	NO	151

TROCHOIDAL / DYNAMIC MILLING

H (Hard Materials)								
	Designation	**Ø**	**LU (Neck)**	**a_p**	**ZEFF**	**Corner Type**	**Coolant**	**Page**
	EC-E7/H7-CF	2-20	-	2xDC, 4xDC	7	-	NO	119-120
	EC-H-CF	6-20	-	2xDC	6-20	CHWx45	NO	123

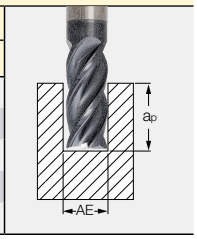
HIGH FEED MILLING

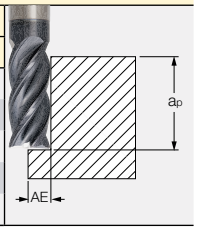
	Designation	**Ø**	**LU (Neck)**	**a_p**	**ZEFF**	**Corner Type**	**Coolant**	**Page**
	EFP-E4,5CF	6-20	-	2.5xDC	4/5	RE	NO	132
	EFF-S	1-20	3xDC	MIN.	2/4	RE	NO	132

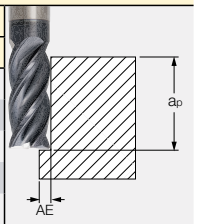
CHAMFERING AND DEBURRING

	Designation	**Ø**	**LU (Neck)**	**a_p**	**ZEFF**	**Corner Type**	**Coolant**	**Page**
	ECF.../45	4-12	-	2.5xDC	4	-	NO	174
	ECD-S2	3-12	2xDC	0.5xDC	2	-	NO	174

Tool Type	**Features**
EC-H4M-CF-E (ECO Type)	• Rough and finish operations • General use • Low power machines • **CHATTERFREE**
ECP-H4L-CFR	• Rough operations • General use • Chip splitter **CHATTERFREE**
EC-E4L-CF	• Rough and finish operations • Used for machining alloyed steel and general use • Low power machines no vibrations
EC-E5L-CF	• Rough and finish operations • Used for machining alloyed steel and general use • High material removal rates
ECR-B-MF	• Rough operations • Used on unstable components
EFS-B44	• Unique design • Used for machining titanium, stainless and alloyed steel • Fully effective • Semi-finish surface quality
EC-E7/H7-CF	• For high speed machining • Trochoidal milling • Finish operations up to 10% X DC
EC-H-CF	• High speed machining • Multiflute solid endmill • Tools for super finish • Up to 5% X DC

H (Hard Materials)				
ROUGH: AE = 40% - Full Cut , Ap = 2 x DC				
Material Group Parameters	**Hardened Steel**	**Chilled Cast Iron**	**Cast Iron**	
	38-39	**40**	**41**	
V_c (IC900/608) (m/min)	20-30	60-65	30-35	
V_c (MC300) (m/min)	20-25	50-55	20-25	
F_z (Ø6 – 8) (mm/z)	0.01-0.015	0.01-0.015	0.01-0.015	
F_z (Ø 10 -12) (mm/z)	0.03-0.045	0.03-0.045	0.03-0.045	
F_z (Ø 16 -20) (mm/z)	0.04-0.05	0.04-0.05	0.04-0.05	

SEMI-FINISH: AE = 10% - 40%, Ap = 2 x DC				
Material Group Parameters	**Hardened Steel**	**Chilled Cast Iron**	**Cast Iron**	
	38-39	**40**	**41**	
V_c (IC900/608) (m/min)	30-40	65-70	35-40	
V_c (MC300) (m/min)	25-30	50-55	25-30	
F_z (Ø6 – 8) (mm/z)	0.015-0.035	0.015-0.035	0.015-0.035	
F_z (Ø 10 -12) (mm/z)	0.035-0.055	0.035-0.055	0.035-0.055	
F_z (Ø 16 -20) (mm/z)	0.045-0.06	0.045-0.06	0.045-0.06	

FINISH / H.S.M: AE = 5% - 10%, Ap = Max. Cutting Length				
Material Group Parameters	**Hardened Steel**	**Chilled Cast Iron**	**Cast Iron**	
	38-39	**40**	**41**	
V_c (IC900/608) (m/min)	40-50	70-80	40-50	
V_c (MC300) (m/min)	30-40	55-60	30-40	
V_c (IC902/903/702) (m/min)	45-60	75-90	45-60	
F_z (Ø6 – 8) (mm/z)	0.02-0.04	0.02-0.04	0.02-0.04	
F_z (Ø 10 -12) (mm/z)	0.04-0.06	0.04-0.06	0.04-0.06	
F_z (Ø 16 -20) (mm/z)	0.05-0.07	0.05-0.07	0.05-0.07	

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(1) Provides high surface finish in rough machining conditions

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(1) Provides high surface finish in rough machining conditions

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(1) Provides high surface finish in rough machining conditions

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(1) Provides high surface finish in rough machining conditions

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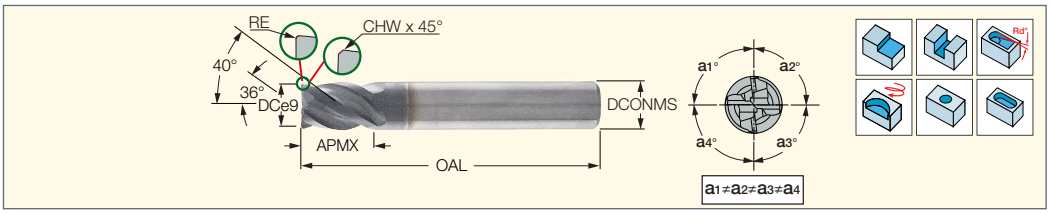
(1) Provides high surface finish in rough machining conditions

SOLIDMILL TEC LINE
CHATTERFREE SOLID MILL LINE

EC-H4S-CF

Short 4 Flute Endmills with Different Helix and Variable Pitch for Chatter Dampening



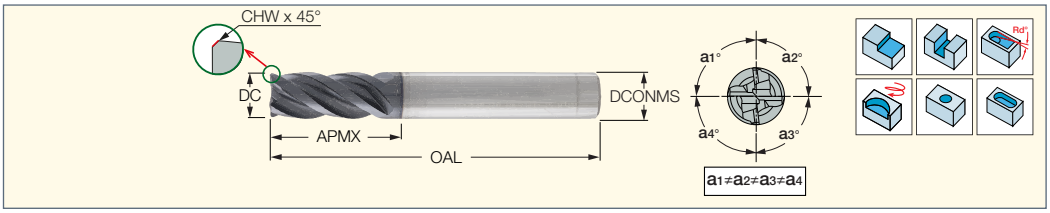
Designation	Dimensions										Tough ↔ Hard		Recommended Machining Data
	DC	DCONMS	APMX	OAL	NOF(1)	RE	RMPX°(2)	Shank(3)	CHW	KCH	IC900	IC608	f_z (mm/t)
EC-H4S 06-06C06CF-E50	6.00	6.00	6.00	50.00	4	-	5.0	C	0.25	45.0	•	•	0.03-0.08
EC-H4S 06-06C06CFR.2E50	6.00	6.00	6.00	50.00	4	0.20	5.0	C	-	-	•	•	0.03-0.08
EC-H4S 06-06W06CF-E50	6.00	6.00	6.00	50.00	4	-	5.0	W	0.25	45.0	•	•	0.03-0.08
EC-H4S 08-08C08CF-E63	8.00	8.00	8.00	63.00	4	-	5.0	C	0.30	45.0	•	•	0.03-0.08
EC-H4S 08-08C08CFR.4E63	8.00	8.00	8.00	63.00	4	0.40	5.0	C	-	-	•	•	0.03-0.08
EC-H4S 08-08W08CF-E63	8.00	8.00	8.00	63.00	4	-	5.0	W	0.30	45.0	•	•	0.03-0.08
EC-H4S 10-10C10CF-E66	10.00	10.00	10.00	66.00	4	-	5.0	C	0.40	45.0	•	•	0.03-0.10
EC-H4S 10-10C10CFR.5E66	10.00	10.00	10.00	66.00	4	0.50	5.0	C	-	-	•	•	0.03-0.10
EC-H4S 10-10W10CF-E66	10.00	10.00	10.00	66.00	4	-	5.0	W	0.40	45.0	•	•	0.03-0.10
EC-H4S 12-12C12CF-E73	12.00	12.00	12.00	73.00	4	-	5.0	C	0.50	45.0	•	•	0.04-0.10
EC-H4S 12-12C12CFR.6E73	12.00	12.00	12.00	73.00	4	0.60	5.0	C	-	-	•	•	0.04-0.10
EC-H4S 12-12W12CF-E73	12.00	12.00	12.00	73.00	4	-	5.0	W	0.50	45.0	•	•	0.04-0.10
EC-H4S 16-16C16CF-E82	16.00	16.00	16.00	82.00	4	-	5.0	C	0.60	45.0	•	•	0.05-0.11
EC-H4S 16-16W16CF-E82	16.00	16.00	16.00	82.00	4	-	5.0	W	0.60	45.0	•	•	0.05-0.11
EC-H4S 20-20C20CF-E92	20.00	20.00	20.00	92.00	4	-	5.0	C	0.60	45.0	•	•	0.05-0.11
EC-H4S 20-20W20CF-E92	20.00	20.00	20.00	92.00	4	-	5.0	W	0.60	45.0	•	•	0.05-0.11

• For user guide, see pages 177-184
(1) Number of flutes
(2) Maximum ramping angle
(3) C-Cylindrical, W-Weldon

SOLIDMILL TEC LINE
CHATTERFREE SOLID MILL LINE

EC-H4M-CF-E

4 Flute Endmills with Different Helix and Variable Pitch for Chatter Dampening



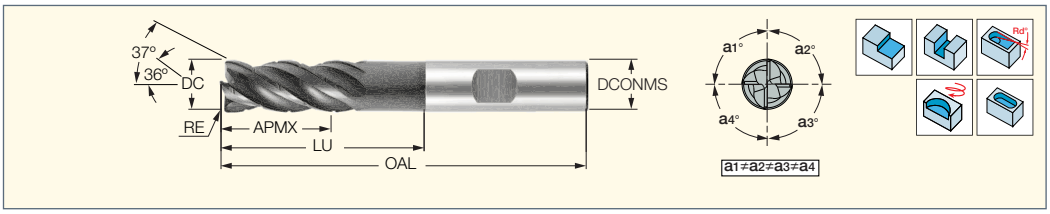
Designation	Dimensions									IC900	Recommended Machining Data
	DC	DCONMS	APMX	OAL	NOF(1)	RMPX°(2)	Shank(3)	CHW	KCH		f_z (mm/t)
EC-H4M 06-12C06CF-E57	6.00	6.00	12.00	57.00	4	5.0	C	0.25	45.0	•	0.03-0.07
EC-H4M 06-12W06CF-E57	6.00	6.00	12.00	57.00	4	5.0	W	0.25	45.0	•	0.03-0.07
EC-H4M 08-16C08CF-E63	8.00	8.00	16.00	63.00	4	5.0	C	0.30	45.0	•	0.03-0.09
EC-H4M 08-16W08CF-E63	8.00	8.00	16.00	63.00	4	5.0	W	0.30	45.0	•	0.03-0.09
EC-H4M 10-20C10CF-E72	10.00	10.00	20.00	72.00	4	5.0	C	0.40	45.0	•	0.03-0.09
EC-H4M 10-20W10CF-E72	10.00	10.00	20.00	72.00	4	5.0	W	0.40	45.0	•	0.03-0.09
EC-H4M 12-24C12CF-E83	12.00	12.00	24.00	83.00	4	5.0	C	0.50	45.0	•	0.04-0.10
EC-H4M 12-24W12CF-E83	12.00	12.00	24.00	83.00	4	5.0	W	0.50	45.0	•	0.04-0.10
EC-H4M 16-32C16CF-E92	16.00	16.00	32.00	92.00	4	5.0	C	0.60	45.0	•	0.05-0.11
EC-H4M 16-32W16CF-E92	16.00	16.00	32.00	92.00	4	5.0	W	0.60	45.0	•	0.05-0.11
EC-H4M 20-40C20CF-E104	20.00	20.00	40.00	104.00	4	5.0	C	0.60	45.0	•	0.05-0.11
EC-H4M 20-40W20CF-E104	20.00	20.00	40.00	104.00	4	5.0	W	0.60	45.0	•	0.05-0.11

• For user guide, see pages 177-184
(1) Number of flutes
(2) Maximum ramping angle
(3) C-Cylindrical, W-Weldon

CHATTERFREE
SOLID MILL LINE

ECP-H4L-CFR

4 Flute Solid Carbide Endmills with Different Helix, Variable Pitch and Chip Splitting Cutting Edges for Roughing



Designation	Dimensions								IC900
	DC	DCONMS	APMX	LU	OAL	NOF[1]	Shank[2]	RE	
ECP-H4L 10-22/32W10CFR.5	10.00	10.00	22.00	32.0	72.00	4	W	0.50	●
ECP-H4L 10-22/40W10CFR.5	10.00	10.00	22.00	40.0	80.00	4	W	0.50	●
ECP-H4L 12-26/38W12CFR.5	12.00	12.00	26.00	38.0	83.00	4	W	0.50	●
ECP-H4L 12-26/50W12CFR.5	12.00	12.00	26.00	50.0	95.00	4	W	0.50	●
ECP-H4L 16-34/50W16CFR1	16.00	16.00	34.00	50.0	100.00	4	W	1.00	●
ECP-H4L 16-34/64W16CFR1	16.00	16.00	34.00	64.0	116.00	4	W	1.00	●
ECP-H4L 20-42/62W20CFR1	20.00	20.00	42.00	62.0	112.00	4	W	1.00	●
ECP-H4L 20-42/75W20CFR1	20.00	20.00	42.00	75.0	125.00	4	W	1.00	●

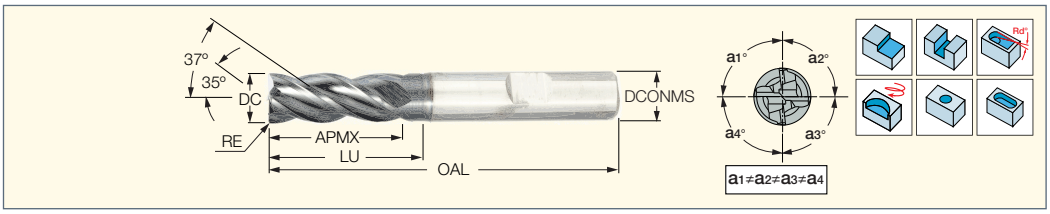
(1) Number of flutes
(2) C-Cylindrical, W-Weldon

SOLIDMILL PREMIUM LINE

CHATTERFREE SOLID MILL LINE

EC-H4-L/M/XL-CFR

4 Flute Endmills with Different Helix and Variable Pitch for Chatter Dampening with Assorted Radii



Designation	Dimensions DC	DCONMS	APMX	LU	OAL	NOF(1)	RE	RMPX°(2)	Shank(3)	CSP(4)	IC900	Recommended Machining Data f_z (mm/t)
EC-H4L 03-08/10C6CFR.2	3.00	6.00	8.00	10.00	52.00	4	0.20	5.0	C	0	•	-
EC-H4L 04-11/13C6CFR.2	4.00	6.00	11.00	13.00	52.00	4	0.20	5.0	C	0	•	-
EC-H4L 05-13/20C6CFR.2	5.00	6.00	13.00	20.00	57.00	4	0.20	5.0	C	0	•	-
EC-H4L 06-14/20C6CFR.2	6.00	6.00	14.00	20.00	52.00	4	0.20	5.0	C	0	•	-
EC-H4L 06-14/20C6CFR.2C	6.00	6.00	14.00	20.00	52.00	4	0.20	5.0	C	1	•	-
EC-H4L 06-14/25C6CFR.2	6.00	6.00	14.00	25.00	57.00	4	0.20	5.0	C	0	•	-
EC-H4L 06-14/25C6CFR.2C	6.00	6.00	14.00	25.00	57.00	4	0.20	5.0	C	1	•	-
EC-H4M 06-12C06CFR0.2-57	6.00	6.00	12.00	-	57.00	4	0.20	5.0	C	0	•	0.03-0.06
EC-H4M 06-12W06CFR0.2-57	6.00	6.00	12.00	-	57.00	4	0.20	5.0	W	0	•	0.03-0.06
EC-H4XL 06-12/25C06CFR.2	6.00	6.00	12.00	25.00	61.00	4	0.20	5.0	C	0	•	0.03-0.06
EC-H4XL 06-12/25W06CFR.2	6.00	6.00	12.00	25.00	61.00	4	0.20	5.0	W	0	•	0.03-0.06
EC-H4L 08-18/25W8CFR.3	8.00	8.00	18.00	25.00	63.00	4	0.30	5.0	W	0	•	-
EC-H4L 08-18/25W8CFR.3C	8.00	8.00	18.00	25.00	63.00	4	0.30	5.0	W	1	•	-
EC-H4L 08-18/32W8CFR.3	8.00	8.00	18.00	32.00	63.00	4	0.30	5.0	W	0	•	-
EC-H4L 08-18/32W8CFR.3C	8.00	8.00	18.00	32.00	63.00	4	0.30	5.0	W	1	•	-
EC-H4M 08-16C08CFR0.4-63	8.00	8.00	16.00	-	63.00	4	0.40	5.0	C	0	•	0.03-0.08
EC-H4M 08-16W08CFR0.4-63	8.00	8.00	16.00	-	63.00	4	0.40	5.0	W	0	•	0.03-0.08
EC-H4XL 08-16/32C08CFR.4	8.00	8.00	16.00	32.00	68.00	4	0.40	5.0	C	0	•	0.03-0.08
EC-H4XL 08-16/32W08CFR.4	8.00	8.00	16.00	32.00	68.00	4	0.40	5.0	W	0	•	0.03-0.08
EC-H4L 10-22/32W10CFR.5	10.00	10.00	22.00	32.00	72.00	4	0.50	5.0	W	0	•	-
EC-H4L 10-22/32W10CFR.5C	10.00	10.00	22.00	32.00	72.00	4	0.50	5.0	W	1	•	-
EC-H4L 10-22/40W10CFR.5	10.00	10.00	22.00	40.00	80.00	4	0.50	5.0	W	0	•	-
EC-H4L 10-22/40W10CFR.5C	10.00	10.00	22.00	40.00	80.00	4	0.50	5.0	W	1	•	-
EC-H4M 10-20C10CFR0.5-72	10.00	10.00	20.00	-	72.00	4	0.50	5.0	C	0	•	0.03-0.09
EC-H4M 10-20W10CFR0.5-72	10.00	10.00	20.00	-	72.00	4	0.50	5.0	W	0	•	0.03-0.09
EC-H4XL 10-20/40C10CFR.5	10.00	10.00	20.00	40.00	80.00	4	0.50	5.0	C	0	•	0.03-0.09
EC-H4XL 10-20/40W10CFR.5	10.00	10.00	20.00	40.00	80.00	4	0.50	5.0	W	0	•	0.03-0.09
EC-H4L 12-26/38W12CFR.5	12.00	12.00	26.00	38.00	83.00	4	0.50	5.0	W	0	•	-
EC-H4L 12-26/38W12CFR.5C	12.00	12.00	26.00	38.00	83.00	4	0.50	5.0	W	1	•	-
EC-H4L 12-26/50W12CFR.5	12.00	12.00	26.00	50.00	95.00	4	0.50	5.0	W	0	•	-
EC-H4L 12-26/50W12CFR.5C	12.00	12.00	26.00	50.00	95.00	4	0.50	5.0	W	1	•	-
EC-H4M 12-24C12CFR0.6-83	12.00	12.00	24.00	-	83.00	4	0.60	5.0	C	0	•	0.04-0.10
EC-H4M 12-24W12CFR0.6-83	12.00	12.00	24.00	-	83.00	4	0.60	5.0	W	0	•	0.04-0.10
EC-H4XL 12-24/50C12CFR.6	12.00	12.00	24.00	50.00	95.00	4	0.60	5.0	C	0	•	0.04-0.10
EC-H4XL 12-24/50W12CFR.6	12.00	12.00	24.00	50.00	95.00	4	0.60	5.0	W	0	•	0.04-0.10
EC-H4M 14-28C14CFR0.7-83	14.00	14.00	28.00	-	83.00	4	0.70	5.0	C	0	•	0.04-0.11
EC-H4M 14-28W14CFR0.7-83	14.00	14.00	28.00	-	83.00	4	0.70	5.0	W	0	•	0.04-0.11
EC-H4L 16-34/50W16CFR1	16.00	16.00	34.00	50.00	100.00	4	1.00	5.0	W	0	•	-
EC-H4L 16-34/50W16CFR1C	16.00	16.00	34.00	50.00	100.00	4	1.00	5.0	W	1	•	-
EC-H4L 16-34/64W16CFR1	16.00	16.00	34.00	64.00	116.00	4	1.00	5.0	W	0	•	-
EC-H4L 16-34/64W16CFR1C	16.00	16.00	34.00	64.00	116.00	4	1.00	5.0	W	1	•	-
EC-H4M 16-32C16CFR0.8-92	16.00	16.00	32.00	-	92.00	4	0.80	5.0	C	0	•	0.05-0.11
EC-H4M 16-32W16CFR0.8-92	16.00	16.00	32.00	-	92.00	4	0.80	5.0	W	0	•	0.05-0.11
EC-H4XL 16-32/64C16CFR.8	16.00	16.00	32.00	64.00	115.00	4	0.80	5.0	C	0	•	0.05-0.11
EC-H4XL 16-32/64W16CFR.8	16.00	16.00	32.00	64.00	115.00	4	0.80	5.0	W	0	•	0.05-0.11
EC-H4L 20-42/64W20CFR1	20.00	20.00	42.00	64.00	116.00	4	1.00	5.0	W	0	•	-
EC-H4L 20-42/64W20CFR1C	20.00	20.00	42.00	64.00	112.00	4	1.00	5.0	W	1	•	-
EC-H4L 20-42/75W20CFR1	20.00	20.00	42.00	75.00	125.00	4	1.00	5.0	W	0	•	-
EC-H4L 20-42/75W20CFR1C	20.00	20.00	42.00	75.00	125.00	4	1.00	5.0	W	1	•	-
EC-H4M 20-40C20CFR1.0-104	20.00	20.00	40.00	-	104.00	4	1.00	5.0	C	0	•	0.05-0.11
EC-H4M 20-40W20CFR1.0-104	20.00	20.00	40.00	-	104.00	4	1.00	5.0	W	0	•	0.05-0.11
EC-H4XL 20-40/75C20CFR1.0	20.00	20.00	40.00	75.00	125.00	4	1.00	5.0	C	0	•	0.05-0.11
EC-H4XL 20-40/75W20CFR1.0	20.00	20.00	40.00	75.00	125.00	4	1.00	5.0	W	0	•	0.05-0.11
EC-H4M 25-50C25CFR1.2-121	25.00	25.00	50.00	-	121.00	4	1.20	5.0	C	0	•	0.06-0.11
EC-H4M 25-50W25CFR1.2-121	25.00	25.00	50.00	-	121.00	4	1.20	5.0	W	0	•	0.06-0.11

• For user guide, see pages 177-184

(1) Number of flutes

(2) Maximum ramping angle

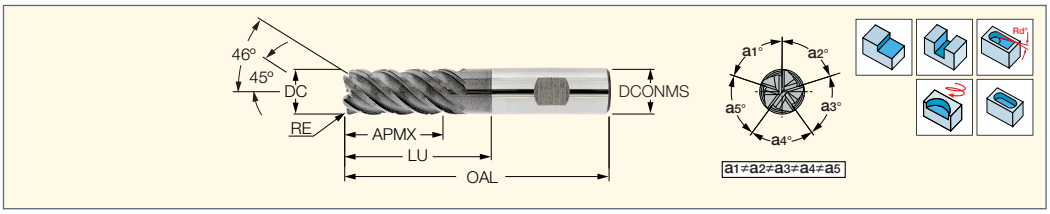
(3) C-Cylindrical, W-Weldon

(4) 0 - Without coolant supply, 1 - With coolant supply

CHATTERFREE SOLID MILL LINE

ECP-H5L-CFR

5 Flute Solid Carbide Endmills with Different Helix, Variable Pitch and Chip Splitting Cutting Edges for Roughing



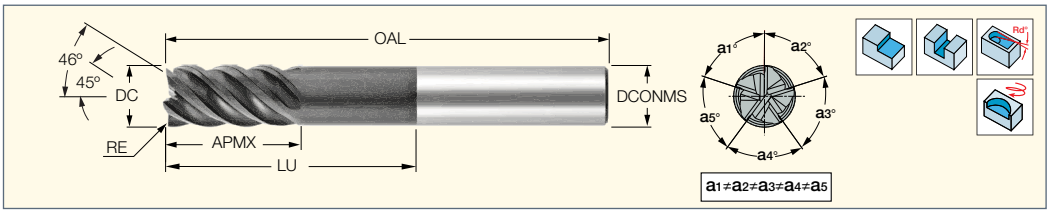
Designation	Dimensions DC	DCONMS	APMX	LU	OAL	NOF(1)	Shank	RE	IC900
ECP-H5L 08-18/26W08CFR.3	8.00	8.00	18.00	26.0	63.00	5	W	0.30	●
ECP-H5L 08-18/32W08CFR.3	8.00	8.00	18.00	32.0	68.00	5	W	0.30	●
ECP-H5L 10-22/32W10CFR.5	10.00	10.00	22.00	32.0	72.00	5	W	0.50	●
ECP-H5L 10-22/40W10CFR.5	10.00	10.00	22.00	40.0	80.00	5	W	0.50	●
ECP-H5L 12-26/38W12CFR.5	12.00	12.00	26.00	38.0	83.00	5	W	0.50	●
ECP-H5L 12-26/50W12CFR.5	12.00	12.00	26.00	50.0	95.00	5	W	0.50	●
ECP-H5L 16-34/50W16CFR1	16.00	16.00	34.00	50.0	100.00	5	W	1.00	●
ECP-H5L 16-34/64W16CFR1	16.00	16.00	34.00	64.0	116.00	5	W	1.00	●
ECP-H5L 20-42/62W20CFR1	20.00	20.00	42.00	62.0	112.00	5	W	1.00	●
ECP-H5L 20-42/75W20CFR1	20.00	20.00	42.00	75.0	125.00	5	W	1.00	●

(1) Number of flutes

CHATTERFREE SOLID MILL LINE

EC-H5M-CFR

5 Flute Endmills with Different Helix and Variable Pitch for Chatter Dampening with Assorted Radii



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	RE	RMPX°(2)	Shank(3)	CSP(4)	LU	IC900
EC-H5M 04-09C06CFR0.2-57	4.00	6.00	9.00	57.00	5	0.20	2.0	C	0	6.00	●
EC-H5M 05-11C06CFR0.2-57	5.00	6.00	11.00	57.00	5	0.20	2.0	C	0	6.00	●
EC-H5M 06-10/25C06CFR.1	6.00	6.00	12.00	61.00	5	0.10	2.0	C	0	25.00	●
EC-H5M 06-10/25C06CFR.1C	6.00	6.00	10.00	61.00	5	0.10	2.0	C	1	25.00	●
EC-H5M 06-13/19C06CFR.1	6.00	6.00	12.00	55.00	5	0.10	2.0	C	0	19.00	●
EC-H5M 06-13/19C06CFR.1C	6.00	6.00	13.00	55.00	5	0.10	2.0	C	1	19.00	●
EC-H5M 08-13/33C08CFR.1	8.00	8.00	13.00	69.00	5	0.10	2.0	C	0	33.00	●
EC-H5M 08-13/33C08CFR.1C	8.00	8.00	13.00	69.00	5	0.10	2.0	C	1	33.00	●
EC-H5M 08-17/25C08CFR.1	8.00	8.00	17.00	61.00	5	0.10	2.0	C	0	25.00	●
EC-H5M 08-17/25C08CFR.1C	8.00	8.00	17.00	61.00	5	0.10	2.0	C	1	25.00	●
EC-H5M 10-17/42C10CFR.1	10.00	10.00	17.00	82.00	5	0.10	2.0	C	0	42.00	●
EC-H5M 10-17/42C10CFR.1C	10.00	10.00	17.00	82.00	5	0.10	2.0	C	1	42.00	●
EC-H5M 10-22/32C10CFR.1	10.00	10.00	22.00	72.00	5	0.10	2.0	C	0	32.00	●
EC-H5M 10-22/32C10CFR.1C	10.00	10.00	22.00	72.00	5	0.10	2.0	C	1	32.00	●
EC-H5M 12-20/50C12CFR.2	12.00	12.00	20.00	95.00	5	0.20	2.0	C	0	50.00	●
EC-H5M 12-20/50C12CFR.2C	12.00	12.00	20.00	95.00	5	0.20	2.0	C	1	50.00	●
EC-H5M 12-26/38C12CFR.2	12.00	12.00	26.00	83.00	5	0.20	2.0	C	0	38.00	●
EC-H5M 12-26/38C12CFR.2C	12.00	12.00	26.00	83.00	5	0.20	2.0	C	1	38.00	●
EC-H5M 16-26/66C16CFR.2	16.00	16.00	26.00	116.00	5	0.20	2.0	C	0	66.00	●
EC-H5M 16-26/66C16CFR.2C	16.00	16.00	26.00	114.00	5	0.20	2.0	C	1	66.00	●
EC-H5M 16-34/50C16CFR.2	16.00	16.00	34.00	98.00	5	0.20	2.0	C	0	50.00	●
EC-H5M 16-34/50C16CFR.2C	16.00	16.00	34.00	98.00	5	0.20	2.0	C	1	50.00	●
EC-H5M 20-32/82C20CFR.2	20.00	20.00	32.00	132.00	5	0.20	2.0	C	0	82.00	●
EC-H5M 20-32/82C20CFR.2C	20.00	20.00	32.00	132.00	5	0.20	2.0	C	1	82.00	●
EC-H5M 20-42/62C20CFR.2	20.00	20.00	42.00	112.00	5	0.20	2.0	C	0	62.00	●
EC-H5M 20-42/62C20CFR.2C	20.00	20.00	42.00	112.00	5	0.20	2.0	C	1	62.00	●

• For user guide, see pages 177-184

(1) Number of flutes

(2) Maximum ramping angle

(3) C-Cylindrical, W-Weldon

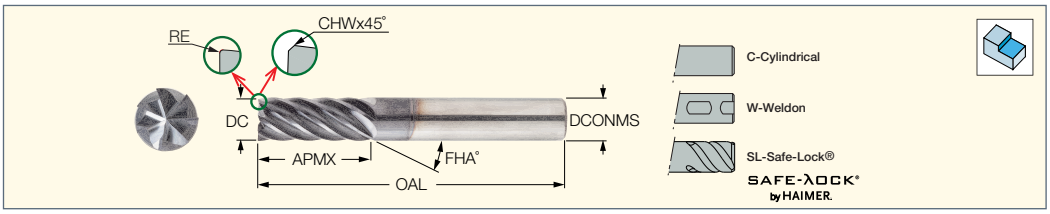
(4) 0 - Without coolant supply, 1 - With coolant supply

SOLIDMILL PREMIUM LINE

CHATTERFREE SOLID MILL LINE

EC-E7/H7-CF

7 Flute Endmills with Different Helix and Variable Pitch for CHATTERFREE High Speed Finish Milling



Designation	Dimensions												IC902	Recommended Machining Data
	DC	DCONMS	APMX	OAL	Shank[2]	NOF[3]	FHA	RE	RETOL[4]	CHW	KCH	RMPX°[5]		f_z (mm/t)
EC-E7 02-04C06CF-M57	2.00	6.00	4.00	57.00	C	7	38.0	-	-	0.05	45.0	3.0	•	0.01-0.02
EC-E7 03-06C06CF-M57	3.00	6.00	6.00	57.00	C	7	38.0	-	-	0.10	45.0	3.0	•	0.02-0.05
EC-E7 04-08C06CF-M57	4.00	6.00	8.00	57.00	C	7	38.0	-	-	0.10	45.0	3.0	•	0.02-0.05
EC-E7 05-10C06CF-M57	5.00	6.00	10.00	57.00	C	7	38.0	-	-	0.20	45.0	3.0	•	0.03-0.07
EC-H7 06-12C06CF-M57	6.00	6.00	12.00	57.00	C	7	37.0	0.00	-	-	-	3.0	•	0.03-0.07
EC-H7 06-12C06CFR.2M57	6.00	6.00	12.00	57.00	C	7	37.0	0.20	0.050	-	-	3.0	•	0.03-0.10
EC-H7 06-18C06CF-M65	6.00	6.00	18.00	65.00	C	7	37.0	-	-	0.20	45.0	3.0	•	0.03-0.07
EC-H7 06-24C06CF-70	6.00	6.00	24.00	70.00	C	7	37.0	-	-	0.20	45.0	3.0	•	0.03-0.07
EC-H7 06-36C06CF-90	6.00	6.00	36.00	90.00	C	7	37.0	-	-	0.20	45.0	3.0	•	0.03-0.07
EC-H7 08-16C08CF-M63	8.00	8.00	16.00	63.00	C	7	37.0	0.00	-	-	-	3.0	•	0.03-0.09
EC-H7 08-16C08CFR.4M63	8.00	8.00	16.00	63.00	C	7	37.0	0.40	0.050	-	-	3.0	•	0.04-0.12
EC-H7 08-24C08CF-M90	8.00	8.00	24.00	90.00	C	7	37.0	-	-	0.20	45.0	3.0	•	0.03-0.08
EC-H7 08-32C08CF-90	8.00	8.00	32.00	90.00	C	7	37.0	-	-	0.20	45.0	3.0	•	0.03-0.09
EC-H7 08-48C08CF-110	8.00	8.00	48.00	110.00	C	7	37.0	-	-	0.20	45.0	3.0	•	0.03-0.08
EC-H7 10-20C10CF-M72	10.00	10.00	20.00	72.00	C	7	37.0	0.00	-	-	-	3.0	•	0.03-0.10
EC-H7 10-20C10CFR.5M72	10.00	10.00	20.00	72.00	C	7	37.0	0.50	-	-	-	3.0	•	0.03-0.10
EC-H7 10-20C10CFR1.6-M72	10.00	10.00	20.00	72.00	C	7	37.0	1.60	0.050	-	-	3.0	•	0.03-0.10
EC-H7 10-20C10CFR2.0-M72	10.00	10.00	20.00	72.00	C	7	37.0	2.00	0.050	-	-	3.0	•	0.03-0.10
EC-H7 10-20C10CFR2.5-M72	10.00	10.00	20.00	72.00	C	7	37.0	2.50	0.050	-	-	3.0	•	0.03-0.10
EC-H7 10-20C10CFR3.0-M72	10.00	10.00	20.00	72.00	C	7	37.0	3.00	0.070	-	-	3.0	•	0.03-0.10
EC-H7 10-20W10CF-M72	10.00	10.00	20.00	72.00	W	7	37.0	0.00	-	-	-	3.0	•	0.03-0.10
EC-H7 10-30C10CF-M100	10.00	10.00	30.00	85.00	C	7	37.0	-	-	0.30	45.0	3.0	•	0.03-0.10
EC-H7 10-30C10CFR0.5-M85	10.00	10.00	30.00	85.00	C	7	37.0	0.50	0.050	-	-	3.0	•	0.03-0.10
EC-H7 10-30C10CFR1.6-M85	10.00	10.00	30.00	85.00	C	7	37.0	1.60	0.050	-	-	3.0	•	0.03-0.10
EC-H7 10-30C10CFR2.0-M85	10.00	10.00	30.00	85.00	C	7	37.0	2.00	0.050	-	-	3.0	•	0.03-0.10
EC-H7 10-30C10CFR2.5-M85	10.00	10.00	30.00	85.00	C	7	37.0	2.50	0.050	-	-	3.0	•	0.03-0.10
EC-H7 10-30C10CFR3.0-M85	10.00	10.00	30.00	85.00	C	7	37.0	3.00	0.070	-	-	3.0	•	0.03-0.10
EC-H7 10-40C10CF-100	10.00	10.00	40.00	100.00	C	7	37.0	-	-	0.30	45.0	3.0	•	0.03-0.10
EC-H7 10-40C10CFR0.5-M100	10.00	10.00	40.00	100.00	C	7	37.0	0.50	0.050	-	-	3.0	•	0.03-0.10
EC-H7 10-40C10CFR1.6-M100	10.00	10.00	40.00	100.00	C	7	37.0	1.60	0.070	-	-	3.0	•	0.03-0.10
EC-H7 10-40C10CFR2.0-M100	10.00	10.00	40.00	100.00	C	7	37.0	2.00	0.070	-	-	3.0	•	0.03-0.10
EC-H7 10-40C10CFR2.5-M100	10.00	10.00	40.00	100.00	C	7	37.0	2.50	0.070	-	-	3.0	•	0.03-0.10
EC-H7 10-40C10CFR3.0-M100	10.00	10.00	40.00	100.00	C	7	37.0	3.00	0.080	-	-	3.0	•	0.03-0.10
EC-H7 10-60C10CF-130	10.00	10.00	60.00	130.00	C	7	37.0	-	-	0.30	45.0	3.0	•	0.03-0.10
EC-H7 10-60C10CFR0.5-M130	10.00	10.00	60.00	130.00	C	7	37.0	0.50	0.050	-	-	3.0	•	0.03-0.10
EC-H7 10-60C10CFR1.0-M130	10.00	10.00	60.00	130.00	C	7	37.0	1.00	0.050	-	-	3.0	•	0.03-0.10
EC-H7 12-24C12CF-M83	12.00	12.00	24.00	83.00	C	7	37.0	0.00	-	-	-	3.0	•	0.04-0.11
EC-H7 12-24C12CFR.6M83	12.00	12.00	24.00	83.00	C	7	37.0	0.60	-	-	-	3.0	•	0.04-0.11
EC-H7 12-24C12CFR1.6-M83	12.00	12.00	24.00	83.00	C	7	37.0	1.60	-	-	-	3.0	•	0.04-0.11
EC-H7 12-24C12CFR2.0-M83	12.00	12.00	24.00	83.00	C	7	37.0	2.00	-	-	-	3.0	•	0.04-0.11
EC-H7 12-24C12CFR2.5-M83	12.00	12.00	24.00	83.00	C	7	37.0	2.50	-	-	-	3.0	•	0.04-0.11
EC-H7 12-24C12CFR3.0-M83	12.00	12.00	24.00	83.00	C	7	37.0	3.00	-	-	-	3.0	•	0.04-0.11
EC-H7 12-24SL12CF-M83 [1]	12.00	12.00	24.00	83.00	SL	7	37.0	0.00	-	-	-	3.0	•	0.04-0.12
EC-H7 12-24SL12CFR.6M83 [1]	12.00	12.00	24.00	83.00	SL	7	37.0	0.60	-	-	-	3.0	•	0.04-0.12
EC-H7 12-24W12CF-M83	12.00	12.00	24.00	83.00	W	7	37.0	0.00	-	-	-	3.0	•	0.04-0.12
EC-H7 12-36C12CF-M95	12.00	12.00	36.00	95.00	C	7	37.0	-	-	0.30	45.0	3.0	•	0.04-0.12
EC-H7 12-36C12CFR0.6-M95	12.00	12.00	36.00	95.00	C	7	37.0	0.60	0.050	-	-	3.0	•	0.04-0.11
EC-H7 12-36C12CFR1.6-M95	12.00	12.00	36.00	95.00	C	7	37.0	1.60	0.050	-	-	3.0	•	0.04-0.11
EC-H7 12-36C12CFR2.0-M95	12.00	12.00	36.00	95.00	C	7	37.0	2.00	0.050	-	-	3.0	•	0.04-0.11
EC-H7 12-36C12CFR2.5-M95	12.00	12.00	36.00	95.00	C	7	37.0	2.50	0.050	-	-	3.0	•	0.04-0.11
EC-H7 12-36C12CFR3.0-M95	12.00	12.00	36.00	95.00	C	7	37.0	3.00	0.070	-	-	3.0	•	0.04-0.11
EC-H7 12-36SL12CF-M95 [1]	12.00	12.00	36.00	95.00	SL	7	37.0	-	-	-	-	3.0	•	0.04-0.12
EC-H7 12-48C12CF-110	12.00	12.00	48.00	110.00	C	7	37.0	-	-	0.30	45.0	3.0	•	0.04-0.11
EC-H7 12-48C12CFR0.6-M110	12.00	12.00	48.00	110.00	C	7	37.0	0.60	0.050	-	-	3.0	•	0.04-0.11
EC-H7 12-48C12CFR1.6-M110	12.00	12.00	48.00	110.00	C	7	37.0	1.60	0.070	-	-	3.0	•	0.04-0.11
EC-H7 12-48C12CFR2.0-M110	12.00	12.00	48.00	110.00	C	7	37.0	2.00	0.070	-	-	3.0	•	0.04-0.11

• Enables processing at a radial width of cut (AE) of up to 0.10xDC ,For user guide,see pages 177-184

[1] With Safe-Lock® (by Haimer) pull-out prevention helical grooves

[2] C-Cylindrical, W-Weldon, SL-Safe-Lock® (by Haimer)

[3] Number of flutes

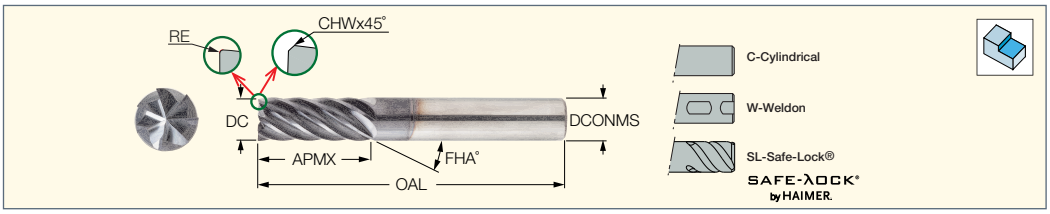
[4] Corner radius tolerance (+/-)

[5] Maximum ramping angle

SOLIDMILL PREMIUM LINE
CHATTERFREE SOLID MILL LINE

EC-E7/H7-CF (continued)

7 Flute Endmills with Different Helix and Variable Pitch for CHATTERFREE High Speed Finish Milling



Designation	Dimensions												IC902	Recommended Machining Data
	DC	DCONMS	APMX	OAL	Shank[2]	NOF[3]	FHA	RE	RETOL[4]	CHW	KCH	RMPX°[5]		f_z (mm/t)
EC-H7 12-48C12CFR2.5-M110	12.00	12.00	48.00	110.00	C	7	37.0	2.50	0.070	-	-	3.0	•	0.04-0.11
EC-H7 12-48C12CFR3.0-M110	12.00	12.00	48.00	110.00	C	7	37.0	3.00	0.080	-	-	3.0	•	0.04-0.11
EC-H7 12-48SL12CF-110 [1]	12.00	12.00	48.00	110.00	SL	7	37.0	-	-	0.30	45.0	3.0	•	0.04-0.12
EC-H7 12-72C12CF-140	12.00	12.00	72.00	140.00	C	7	37.0	-	-	0.30	45.0	3.0	•	0.04-0.12
EC-H7 12-72C12CFR1.0-M140	12.00	12.00	72.00	140.00	C	7	37.0	1.00	0.050	-	-	3.0	•	0.04-0.11
EC-H7 12-72SL12CF-140 [1]	12.00	12.00	72.00	140.00	SL	7	37.0	-	-	0.30	45.0	3.0	•	0.04-0.12
EC-H7 16-32C16CF-M92	16.00	16.00	32.00	92.00	C	7	37.0	0.00	-	-	-	3.0	•	0.05-0.13
EC-H7 16-32C16CFR.8M92	16.00	16.00	32.00	92.00	C	7	37.0	0.80	-	-	-	3.0	•	0.05-0.13
EC-H7 16-32C16CFR1.6-M92	16.00	16.00	32.00	92.00	C	7	37.0	1.60	-	-	-	3.0	•	0.04-0.12
EC-H7 16-32C16CFR2.0-M92	16.00	16.00	32.00	92.00	C	7	37.0	2.00	-	-	-	3.0	•	0.04-0.12
EC-H7 16-32C16CFR2.5-M92	16.00	16.00	32.00	92.00	C	7	37.0	2.50	-	-	-	3.0	•	0.04-0.12
EC-H7 16-32C16CFR3.0-M92	16.00	16.00	32.00	92.00	C	7	37.0	3.00	-	-	-	3.0	•	0.04-0.12
EC-H7 16-32C16CFR4.0-M92	16.00	16.00	32.00	92.00	C	7	37.0	4.00	-	-	-	3.0	•	0.04-0.12
EC-H7 16-32SL16CF-M92 [1]	16.00	16.00	32.00	92.00	SL	7	37.0	-	-	-	-	3.0	•	0.04-0.12
EC-H7 16-32SL16CFR.8M92 [1]	16.00	16.00	32.00	92.00	SL	7	37.0	0.80	-	-	-	3.0	•	0.04-0.12
EC-H7 16-32W16CF-M92	16.00	16.00	32.00	92.00	W	7	37.0	0.00	-	-	-	3.0	•	0.05-0.13
EC-H7 16-48C16CF-M110	16.00	16.00	48.00	110.00	C	7	37.0	-	-	0.30	45.0	3.0	•	0.05-0.13
EC-H7 16-48C16CFR0.8-M110	16.00	16.00	48.00	110.00	C	7	37.0	0.80	0.050	-	-	3.0	•	0.05-0.13
EC-H7 16-48C16CFR1.6-M110	16.00	16.00	48.00	110.00	C	7	37.0	1.60	0.050	-	-	3.0	•	0.05-0.13
EC-H7 16-48C16CFR2.0-M110	16.00	16.00	48.00	110.00	C	7	37.0	2.00	0.050	-	-	3.0	•	0.05-0.13
EC-H7 16-48C16CFR2.5-M110	16.00	16.00	48.00	110.00	C	7	37.0	2.50	0.050	-	-	3.0	•	0.05-0.13
EC-H7 16-48C16CFR3.0-M110	16.00	16.00	48.00	110.00	C	7	37.0	3.00	0.070	-	-	3.0	•	0.05-0.13
EC-H7 16-48C16CFR4.0-M110	16.00	16.00	48.00	110.00	C	7	37.0	4.00	0.070	-	-	3.0	•	0.05-0.13
EC-H7 16-48SL16CF-M110 [1]	16.00	16.00	48.00	110.00	SL	7	37.0	-	-	0.30	45.0	3.0	•	0.04-0.12
EC-H7 16-64C16CF-131	16.00	16.00	64.00	131.00	C	7	37.0	-	-	0.30	45.0	3.0	•	0.05-0.13
EC-H7 16-64C16CFR0.8-M131	16.00	16.00	64.00	131.00	C	7	37.0	0.80	0.050	-	-	3.0	•	0.05-0.13
EC-H7 16-64C16CFR1.6-M131	16.00	16.00	64.00	131.00	C	7	37.0	1.60	0.070	-	-	3.0	•	0.05-0.13
EC-H7 16-64C16CFR2.0-M131	16.00	16.00	64.00	131.00	C	7	37.0	2.00	0.070	-	-	3.0	•	0.05-0.13
EC-H7 16-64C16CFR2.5-M131	16.00	16.00	64.00	131.00	C	7	37.0	2.50	0.070	-	-	3.0	•	0.05-0.13
EC-H7 16-64C16CFR3.0-M131	16.00	16.00	64.00	131.00	C	7	37.0	3.00	0.080	-	-	3.0	•	0.05-0.13
EC-H7 16-64C16CFR4.0-M131	16.00	16.00	64.00	131.00	C	7	37.0	4.00	0.080	-	-	3.0	•	0.05-0.13
EC-H7 16-64SL16CF-131 [1]	16.00	16.00	64.00	131.00	SL	7	37.0	-	-	0.30	45.0	3.0	•	0.04-0.12
EC-H7 16-96C16CF-175	16.00	16.00	96.00	175.00	C	7	37.0	-	-	0.30	45.0	3.0	•	0.05-0.13
EC-H7 16-96C16CFR1.0M175	16.00	16.00	96.00	175.00	C	7	37.0	1.00	0.050	-	-	3.0	•	0.05-0.13
EC-H7 16-96SL16CF-175 [1]	16.00	16.00	96.00	175.00	SL	7	37.0	-	-	0.30	45.0	3.0	•	0.04-0.12
EC-H7 20-40C20CF-M104	20.00	20.00	40.00	104.00	C	7	37.0	0.00	-	-	-	3.0	•	0.05-0.13
EC-H7 20-40C20CFR1.6-M104	20.00	20.00	40.00	104.00	C	7	37.0	1.60	0.060	-	-	3.0	•	0.05-0.13
EC-H7 20-40C20CFR1M104	20.00	20.00	40.00	104.00	C	7	37.0	1.00	-	-	-	3.0	•	0.05-0.13
EC-H7 20-40C20CFR2.0-M104	20.00	20.00	40.00	104.00	C	7	37.0	2.00	0.060	-	-	3.0	•	0.05-0.13
EC-H7 20-40C20CFR2.5-M104	20.00	20.00	40.00	104.00	C	7	37.0	2.50	0.060	-	-	3.0	•	0.05-0.13
EC-H7 20-40C20CFR3.0-M104	20.00	20.00	40.00	104.00	C	7	37.0	3.00	0.060	-	-	3.0	•	0.05-0.13
EC-H7 20-40C20CFR4.0-M104	20.00	20.00	40.00	104.00	C	7	37.0	4.00	0.080	-	-	3.0	•	0.05-0.13
EC-H7 20-40SL20CF-M104 [1]	20.00	20.00	40.00	104.00	SL	7	37.0	0.00	-	-	-	3.0	•	0.04-0.12
EC-H7 20-40SL20CFR1M104 [1]	20.00	20.00	40.00	104.00	SL	7	37.0	1.00	-	-	-	3.0	•	0.05-0.15
EC-H7 20-40W20CF-M104	20.00	20.00	40.00	104.00	W	7	37.0	0.00	-	-	-	3.0	•	0.05-0.13
EC-H7 20-60C20CF-M140	20.00	20.00	60.00	140.00	C	7	37.0	-	-	0.40	45.0	3.0	•	0.05-0.13
EC-H7 20-60C20CFR1.0-M140	20.00	20.00	60.00	140.00	C	7	37.0	1.00	0.060	-	-	3.0	•	0.05-0.13
EC-H7 20-60C20CFR2.0-M140	20.00	20.00	60.00	140.00	C	7	37.0	2.00	0.060	-	-	3.0	•	0.05-0.13
EC-H7 20-60C20CFR2.5-M140	20.00	20.00	60.00	140.00	C	7	37.0	2.50	0.060	-	-	3.0	•	0.05-0.13
EC-H7 20-60C20CFR3.0-M140	20.00	20.00	60.00	140.00	C	7	37.0	3.00	0.060	-	-	3.0	•	0.05-0.13
EC-H7 20-60C20CFR4.0-M140	20.00	20.00	60.00	140.00	C	7	37.0	4.00	0.080	-	-	3.0	•	0.05-0.13
EC-H7 20-60SL20CF-M140 [1]	20.00	20.00	60.00	140.00	SL	7	37.0	-	-	0.40	45.0	3.0	•	0.05-0.15
EC-H7 20-80C20CF-140	20.00	20.00	80.00	140.00	C	7	37.0	-	-	0.40	45.0	3.0	•	0.05-0.13
EC-H7 20-80C20CFR1.0-M140	20.00	20.00	80.00	140.00	C	7	37.0	1.00	0.060	-	-	3.0	•	0.05-0.13

• Enables processing at a radial width of cut (AE) of up to 0.10xDC ,For user guide,see pages 177-184

[1] With Safe-Lock® (by Haimer) pull-out prevention helical grooves

[2] C-Cylindrical, W-Weldon, SL-Safe-Lock® (by Haimer)

[3] Number of flutes

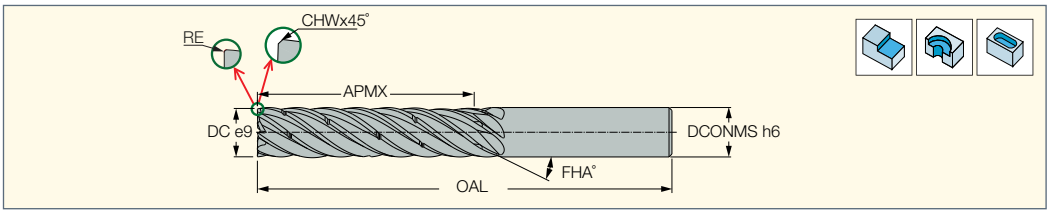
[4] Corner radius tolerance (+/-)

[5] Maximum ramping angle

CHATTERFREE SOLID MILL LINE

ECP-H7-CF

7 Flute Solid Carbide Endmills with Different Helix, Variable Pitch and Chip Splitting Cutting Edges



Designation	Dimensions											IC902	Recommended Machining Data
	DC	DCONMS	APMX	OAL	NOF[1]	FHA	Shank[2]	RE	RETOL[3]	CHW	KCH		f_z (mm/t)
ECP-H7 06-18C06CF-65	6.00	6.00	18.00	65.00	7	36.0	C	-	-	0.20	45.0	●	0.02-0.07
ECP-H7 06-24C06CF-70	6.00	6.00	24.00	70.00	7	36.0	C	-	-	0.20	45.0	●	0.02-0.07
ECP-H7 06-36C06CF-90	6.00	6.00	36.00	90.00	7	36.0	C	-	-	0.20	45.0	●	0.02-0.07
ECP-H7 08-24C08CF-90	8.00	8.00	24.00	90.00	7	36.0	C	-	-	0.20	45.0	●	0.02-0.08
ECP-H7 08-32C08CF-90	8.00	8.00	32.00	90.00	7	36.0	C	-	-	0.20	45.0	●	0.02-0.09
ECP-H7 08-48C08CF-110	8.00	8.00	48.00	110.00	7	36.0	C	-	-	0.20	45.0	●	0.02-0.08
ECP-H7 10-30C10CF-85	10.00	10.00	30.00	85.00	7	36.0	C	-	-	0.30	45.0	●	0.02-0.10
ECP-H7 10-30C10CFR0.5-85	10.00	10.00	30.00	85.00	7	36.0	C	0.50	0.050	-	-	●	0.02-0.10
ECP-H7 10-30C10CFR1.6-85	10.00	10.00	30.00	85.00	7	36.0	C	1.60	0.050	-	-	●	0.02-0.10
ECP-H7 10-30C10CFR2.0-85	10.00	10.00	30.00	85.00	7	36.0	C	2.00	0.080	-	-	●	0.02-0.10
ECP-H7 10-30C10CFR2.5-85	10.00	10.00	30.00	85.00	7	36.0	C	2.50	0.080	-	-	●	0.02-0.10
ECP-H7 10-30C10CFR3.0-85	10.00	10.00	30.00	85.00	7	36.0	C	3.00	0.080	-	-	●	0.02-0.10
ECP-H7 10-40C10CF-100	10.00	10.00	40.00	100.00	7	36.0	C	-	-	0.30	45.0	●	0.02-0.10
ECP-H7 10-40C10CFR0.5-100	10.00	10.00	40.00	100.00	7	36.0	C	0.50	0.050	-	-	●	0.02-0.10
ECP-H7 10-40C10CFR1.6-100	10.00	10.00	40.00	100.00	7	36.0	C	1.60	0.050	-	-	●	0.02-0.10
ECP-H7 10-40C10CFR2.0-100	10.00	10.00	40.00	100.00	7	36.0	C	2.00	0.080	-	-	●	0.02-0.10
ECP-H7 10-40C10CFR2.5-100	10.00	10.00	40.00	100.00	7	36.0	C	2.50	0.080	-	-	●	0.02-0.10
ECP-H7 10-40C10CFR3.0-100	10.00	10.00	40.00	100.00	7	36.0	C	3.00	0.080	-	-	●	0.02-0.10
ECP-H7 10-60C10CF-130	10.00	10.00	60.00	130.00	7	36.0	C	-	-	0.30	45.0	●	0.02-0.10
ECP-H7 10-60C10CFR0.5-130	10.00	10.00	60.00	130.00	7	36.0	C	0.50	0.050	-	-	●	0.04-0.12
ECP-H7 10-60C10CFR1.0-130	10.00	10.00	60.00	130.00	7	36.0	C	1.00	0.050	-	-	●	0.05-0.13
ECP-H7 12-36C12CF-95	12.00	12.00	36.00	95.00	7	36.0	C	-	-	0.30	45.0	●	0.04-0.12
ECP-H7 12-36C12CFR0.6-95	12.00	12.00	36.00	95.00	7	36.0	C	0.60	0.050	-	-	●	0.05-0.13
ECP-H7 12-36C12CFR1.6-95	12.00	12.00	36.00	95.00	7	36.0	C	1.60	0.070	-	-	●	0.05-0.13
ECP-H7 12-36C12CFR2.0-95	12.00	12.00	36.00	95.00	7	36.0	C	2.00	0.050	-	-	●	0.05-0.13
ECP-H7 12-36C12CFR2.5-95	12.00	12.00	36.00	95.00	7	36.0	C	2.50	0.050	-	-	●	0.05-0.13
ECP-H7 12-36C12CFR3.0-95	12.00	12.00	36.00	95.00	7	36.0	C	3.00	0.070	-	-	●	0.05-0.13
ECP-H7 12-36C12CFR4.0-95	12.00	12.00	36.00	110.00	7	36.0	C	4.00	0.080	-	-	●	0.05-0.13
ECP-H7 12-48C12CF-110	12.00	12.00	48.00	110.00	7	36.0	C	-	-	0.30	45.0	●	0.04-0.11
ECP-H7 12-48C12CFR0.6-110	12.00	12.00	48.00	110.00	7	36.0	C	0.60	0.050	-	-	●	0.05-0.13
ECP-H7 12-48C12CFR1.6-110	12.00	12.00	48.00	110.00	7	36.0	C	1.60	0.070	-	-	●	0.05-0.13
ECP-H7 12-48C12CFR2.0-110	12.00	12.00	48.00	110.00	7	36.0	C	2.00	0.060	-	-	●	0.05-0.13
ECP-H7 12-48C12CFR2.5-110	12.00	12.00	48.00	110.00	7	36.0	C	2.50	0.050	-	-	●	0.05-0.13
ECP-H7 12-48C12CFR3.0-110	12.00	12.00	48.00	110.00	7	36.0	C	3.00	0.070	-	-	●	0.05-0.13
ECP-H7 12-48C12CFR4.0-110	12.00	12.00	48.00	110.00	7	36.0	C	4.00	0.080	-	-	●	0.05-0.13
ECP-H7 12-72C12CF-140	12.00	12.00	72.00	140.00	7	36.0	C	-	-	0.30	45.0	●	0.04-0.12
ECP-H7 12-72C12CFR1.0-140	12.00	12.00	72.00	140.00	7	36.0	C	1.00	0.050	-	-	●	0.05-0.13
ECP-H7 16-48C16CF-110	16.00	16.00	48.00	110.00	7	36.0	C	-	-	0.30	45.0	●	0.05-0.13
ECP-H7 16-48C16CFR0.8-110	16.00	16.00	48.00	110.00	7	36.0	C	0.80	0.050	-	-	●	0.05-0.13
ECP-H7 16-48C16CFR1.6-110	16.00	16.00	48.00	110.00	7	36.0	C	1.60	0.050	-	-	●	0.05-0.13
ECP-H7 16-48C16CFR2.0-110	16.00	16.00	48.00	110.00	7	36.0	C	2.00	0.050	-	-	●	0.05-0.13
ECP-H7 16-48C16CFR2.5-110	16.00	16.00	48.00	110.00	7	36.0	C	2.50	0.050	-	-	●	0.05-0.13
ECP-H7 16-48C16CFR3.0-110	16.00	16.00	48.00	110.00	7	36.0	C	3.00	0.070	-	-	●	0.05-0.13
ECP-H7 16-48C16CFR4.0-110	16.00	16.00	48.00	110.00	7	36.0	C	4.00	0.070	-	-	●	0.05-0.13
ECP-H7 16-64C16CF-131	16.00	16.00	64.00	131.00	7	36.0	C	-	-	0.30	45.0	●	0.05-0.13
ECP-H7 16-64C16CFR0.8-131	16.00	16.00	64.00	131.00	7	36.0	C	0.80	0.050	-	-	●	0.05-0.13
ECP-H7 16-96C16CF-175	16.00	16.00	96.00	175.00	7	36.0	C	-	-	0.30	45.0	●	0.05-0.13
ECP-H7 16-96C16CFR1.0-175	16.00	16.00	96.00	175.00	7	36.0	C	1.00	0.050	-	-	●	0.05-0.13
ECP-H7 20-60C20CF-140	20.00	20.00	60.00	140.00	7	36.0	C	-	-	0.40	45.0	●	0.07-0.20
ECP-H7 20-60C20CFR1.0-140	20.00	20.00	60.00	140.00	7	36.0	C	1.00	0.050	-	-	●	0.07-0.20
ECP-H7 20-60C20CFR2.0-140	20.00	20.00	60.00	140.00	7	36.0	C	2.00	0.050	-	-	●	0.07-0.20
ECP-H7 20-60C20CFR2.5-140	20.00	20.00	60.00	140.00	7	36.0	C	2.50	0.050	-	-	●	0.07-0.20
ECP-H7 20-60C20CFR3.0-140	20.00	20.00	60.00	140.00	7	36.0	C	3.00	0.050	-	-	●	0.07-0.20
ECP-H7 20-60C20CFR4.0-140	20.00	20.00	60.00	140.00	7	36.0	C	4.00	0.080	-	-	●	0.07-0.20
ECP-H7 20-80C20CF-140	20.00	20.00	80.00	140.00	7	36.0	C	-	-	0.40	45.0	●	0.05-0.20

(1) Number of flutes
(2) C-Cylindrical
(3) Corner radius tolerance (+/-)

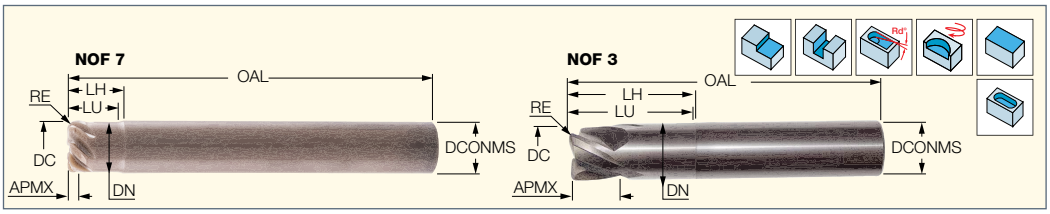
Table - Average Cutting Data for ECP-H7...

Workpiece Material						Cutting Speed	f_z [mm/tooth]		
ISO class DIN/ISO 513	Description	ISCAR mat group*	Hardness HB	Typical Materials AISI/SAE/ASTM	Typical Materials DIN W.-Nr.	V_c [m/min]	Starting	Range	Coolant
P	Non-alloy steel and cast steel, free cutting steel <0.25%C	1	125	1020	1.1151	210-300	0.12	0.05-0.2	Dry
	Non-alloy steel and cast steel, free cutting steel >=0.25%C	2	190	1040	1.0511	200-280	0.12	0.05-0.2	
	Non-alloy steel and cast steel, free cutting steel <0.55%C	3	250	1040	1.1186	200-260	0.1	0.05-0.2	
	Non-alloy steel and cast steel, free cutting steel >=0.55%C	4	220	1060	1.0601	180-250	0.1	0.05-0.2	
	Non-alloy steel and cast steel, free cutting steel >=0.55%C	5	300	E 360	1.0070	180-240	0.1	0.05-0.2	
	Low alloy & cast steel (less than 5% of alloying elements)	6	200	5120	1.0841	170-240	0.1	0.05-0.2	
		7	275	4340	1.6565	160-230	0.1	0.05-0.2	
		8	300	6150	1.8159	150-230	0.1	0.05-0.2	
		9	350		1.4882	140-220	0.1	0.05-0.2	
	High alloyed steel, cast steel and tool steel	10	200	H13	1.2344	120-210	0.08	0.05-0.2	
		11	325	T15	1.3243	110-170	0.08	0.05-0.2	
	Ferritic and martensitic stainless	12	200	420	1.4028	150-230	0.08	0.03-0.16	Dry / Wet
		13	240	430	1.4021	140-220	0.08	0.03-0.16	
M	Austenitic and duplex stainless	14	180	304L	1.4306	100-160	0.06	0.03-0.16	Wet
K	Grey cast iron	15	180	CLASS25	0.6015	150-250	0.1	0.03-0.16	Dry
		16	260	CLASS45	0.6030	120-200	0.1	0.03-0.16	
	Nodular cast iron	17	160	80-55-06	0.7050	150-300	0.08	0.03-0.16	
		18	250	100/70/03	0.7070	100-250	0.08	0.03-0.16	
	Malleable cast iron	19	130	32510	0.8135	150-300	0.08	0.03-0.16	
		20	230	90001	0.8170	100-220	0.08	0.03-0.16	
S	High temp. alloys, Fe-based	31	200	330	1.4864	50-60	0.08	0.02-0.16	Wet
		32	280		1.4977	40-50	0.03	0.02-0.16	
	High temp. alloys, Ni- or Co- based	33	250	Inconel 625	2.4856	35-50	0.04	0.02-0.16	
		34	350	Inconel 718	2.4668	25-35	0.03	0.02-0.16	
		35	320	Inconel X-750	2.4669	30-40	0.03	0.02-0.16	
	Titanium (pure)	36	HRC 30-32	AMS 5397	2.4674	65-110	0.1	0.02-0.16	
	Titanium alloys	37	HRC 30-32	AMS R56400	3.7165	35-70	0.08	0.02-0.16	
H	Hardened steel	38.1	HRC 45-49	4340	1.6565	55-75	0.03	0.02-0.16	Dry
		38.2	HRC 50-55	P20	1.2330	55-75	---	---	

SOLIDMILL CERAMIC ENDMILL

EC-E3/E7-CE (ceramic)

3 and 7 Flute Solid Ceramic Endmills with Relieved Necks for Machining Nickel Base Alloys, Cast Iron and Graphite



Designation	Dimensions DC	APMX	LU	LH	DN	RE(1)	NOF(2)	DCONMS	RMPX°(3)	OAL	Shank(4)	Tough ↔ Hard IS35	IS6	Recommended Machining Data f_z (mm/t)
EC-E3 06-06/15C06R.4N50CE	6.00	6.00	14.50	15.0	5.50	0.42	3	6.00	3.0	50.00	C	•		0.02-0.03
EC-E3 08-08/20C08R.5N57CE	8.00	8.00	19.50	20.0	7.50	0.56	3	8.00	3.0	57.00	C	•		0.02-0.03
EC-E3 10-10/25C10R.7N65CE	10.00	10.00	24.50	25.0	9.50	0.70	3	10.00	3.0	65.00	C	•		0.02-0.03
EC-E3 12-12/30C12R1.N72CE	12.00	12.00	29.50	30.0	11.50	1.10	3	12.00	3.0	72.00	C	•		0.02-0.03
EC-E3 16-16/35C16R2.N83CE	16.00	16.00	34.50	35.0	15.50	1.90	3	16.00	3.0	83.00	C	•		0.02-0.04
EC-E3 20-20/40C20R2.N93CE	20.00	15.00	39.50	40.0	19.50	2.50	3	20.00	3.0	93.00	C	•		0.02-0.04
EC-E7 08-02C08R1.0N63CE	8.00	0.40	8.00	9.5	7.50	1.00	7	8.00	3.0	63.00	C		•	0.02-0.03
EC-E7 10-02C10R1.5N72CE	10.00	0.70	10.00	11.5	9.50	1.50	7	10.00	3.0	72.00	C		•	0.02-0.03
EC-E7 12-02C12R1.5N83CE	12.00	1.30	10.00	12.0	11.50	1.50	7	12.00	3.0	83.00	C		•	0.02-0.03

• Recommended cutting speed on high temperature nickel-based superalloys: 250-1000 m/min • Maximum width of cut for the 3 flute cutters is 0.1xDC
• Maximum width of cut for the 7 flute cutters is DC • Only air coolant should be used

(1) Programming radius
(2) Number of flutes
(3) Maximum ramping angle
(4) C-Cylindrical

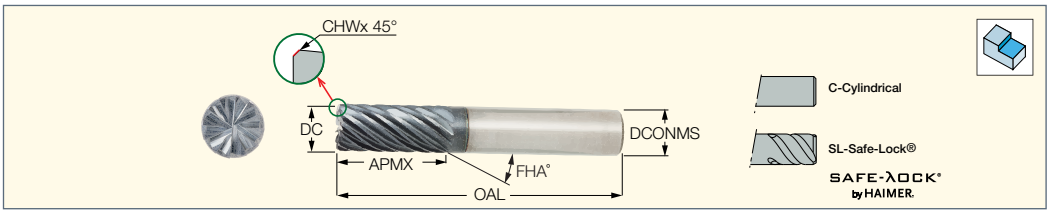
P	M	K	N(K)	S(M)	H(P/K)
		+	+	+	

+ recommended

SOLIDMILL PREMIUM LINE
CHATTERFREE SOLID MILL LINE

EC-H-CF

6-20 Flute Endmills with Different Helix and Variable Pitch for CHATTERFREE High Speed Finish Milling



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(2)	FHA	Shank(3)	CHW	KCH	IC902	Recommended Machining Data f_z (mm/t)
EC-H6 06-12C06CF-H57	6.00	6.00	12.00	57.00	6	45.0	C	0.20	45.0	●	0.03-0.07
EC-H8 08-16C08CF-H63	8.00	8.00	16.00	63.00	8	45.0	C	0.20	45.0	●	0.03-0.09
EC-H10 10-20C10CF-H72	10.00	10.00	20.00	72.00	10	35.0	C	0.30	45.0	●	0.03-0.10
EC-H10 10-20SL10CF-H72 (1)	10.00	10.00	20.00	72.00	10	35.0	SL	-	-	●	0.03-0.10
EC-H12 12-24C12CF-H83	12.00	12.00	24.00	83.00	12	35.0	C	0.30	45.0	●	0.04-0.11
EC-H12 12-24SL12CF-H83 (1)	12.00	12.00	20.00	72.00	12	35.0	SL	-	-	●	0.04-0.11
EC-H16 16-32C16CF-H92	16.00	16.00	32.00	92.00	16	35.0	C	0.30	45.0	●	0.05-0.13
EC-H16 16-32SL16CF-H92 (1)	16.00	16.00	20.00	72.00	16	35.0	SL	-	-	●	0.05-0.13
EC-H20 20-40C20CFH104	20.00	20.00	40.00	104.00	20	30.0	C	0.40	45.0	●	0.05-0.13
EC-H20 20-40SL20CFH104 (1)	20.00	20.00	41.00	105.00	20	35.0	SL	-	-	●	0.05-0.13

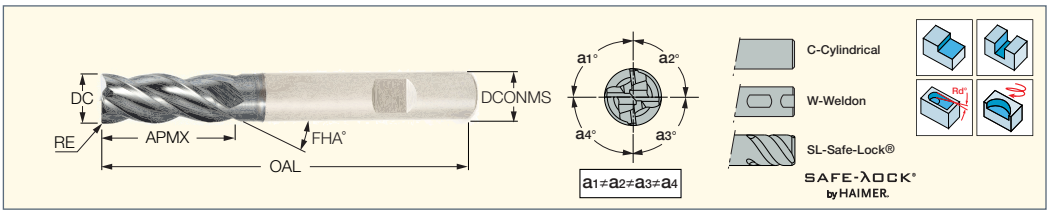
- Enables processing at a radial width of cut (AE) of up to 0.06xDC .For user guide,see pages 177-184

(1) With Safe-Lock® (by Haimer) pull-out prevention helical grooves
(2) Number of flutes
(3) C-Cylindrical, SL-Safe-Lock® (by Haimer)

CHATTERFREE SOLID MILL LINE
Ti-TURBO SOLID MILL LINE

ECK-H4M-CFR

Endmills with Different Helix, Chamfered Edges and Variable Pitch for Chatter Dampening on Titanium



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(3)	RE	FHA	RMPX°(4)	Shank(5)	CSP(6)	Tough ↔ Hard IC300	IC900	Recommended Machining Data f_z (mm/t)
ECK-H4M 04-08C06CFR0.2-57	4.00	6.00	8.00	57.00	4	0.20	36.0	5.0	C	0		●	0.02-0.05
ECK-H4M 05-10C06CFR0.2-57	5.00	6.00	10.00	57.00	4	0.20	36.0	5.0	C	0		●	0.02-0.05
ECK-H4M 06-12C06CFR.2-57C (1)	6.00	6.00	12.00	57.00	4	0.20	36.0	5.0	C	1	●		0.03-0.06
ECK-H4M 06-12C06CFR0.2-57	6.00	6.00	12.00	57.00	4	0.20	36.0	5.0	C	0		●	0.03-0.06
ECK-H4M 06-12W06CFR0.2-57	6.00	6.00	12.00	57.00	4	0.20	36.0	5.0	W	0		●	0.03-0.06
ECK-H4M 08-16C08CFR0.4-63	8.00	8.00	16.00	63.00	4	0.40	36.0	5.0	C	0		●	0.03-0.06
ECK-H4M 08-16W08CFR.4-63C (1)	8.00	8.00	16.00	63.00	4	0.40	36.0	5.0	W	1	●		0.03-0.06
ECK-H4M 08-16W08CFR0.4-63	8.00	8.00	16.00	63.00	4	0.40	36.0	5.0	W	0		●	0.03-0.06
ECK-H4 10-20SL10CFR.5-72C (2)	10.00	10.00	20.00	72.00	4	0.50	36.0	5.0	SL	1		●	0.03-0.07
ECK-H4 10-20SL10CFR0.5-72 (2)	10.00	10.00	20.00	72.00	4	0.50	36.0	5.0	SL	0		●	0.03-0.07
ECK-H4M 10-20C10CFR0.5-72	10.00	10.00	20.00	72.00	4	0.50	36.0	5.0	C	0		●	0.03-0.07
ECK-H4M 10-20W10CFR.5-72C (1)	10.00	10.00	20.00	72.00	4	0.50	36.0	5.0	W	1	●		0.03-0.07
ECK-H4M 10-20W10CFR0.5-72	10.00	10.00	20.00	72.00	4	0.50	36.0	5.0	W	0		●	0.03-0.07
ECK-H4 12-24SL12CFR0.6-83 (2)	12.00	12.00	24.00	83.00	4	0.60	36.0	5.0	SL	0		●	0.04-0.08
ECK-H4M 12-24C12CFR0.6-83	12.00	12.00	24.00	83.00	4	0.60	36.0	5.0	C	0		●	0.04-0.08
ECK-H4M 12-24W12CFR.6	12.00	12.00	24.00	83.00	4	0.60	36.0	5.0	W	0	●		0.04-0.08
ECK-H4M 12-24W12CFR.6-83C (1)	12.00	12.00	24.00	83.00	4	0.60	36.0	5.0	W	1	●		0.04-0.08
ECK-H4M 12-24W12CFR0.6-83	12.00	12.00	24.00	83.00	4	0.60	36.0	5.0	W	0		●	0.04-0.08
ECK-H4 16-32SL16CFR.8-92C (2)	16.00	16.00	32.00	92.00	4	0.80	36.0	5.0	SL	1		●	0.05-0.08
ECK-H4 16-32SL16CFR0.8-92 (2)	16.00	16.00	32.00	92.00	4	0.80	36.0	5.0	SL	0		●	0.05-0.08
ECK-H4M 16-32C16CFR0.8-92	16.00	16.00	32.00	92.00	4	0.80	36.0	5.0	C	0		●	0.05-0.08
ECK-H4M 16-32W16CFR.8-92C (1)	16.00	16.00	32.00	92.00	4	0.80	36.0	5.0	W	1	●		0.05-0.08
ECK-H4M 16-32W16CFR0.8-92	16.00	16.00	32.00	92.00	4	0.80	36.0	5.0	W	0		●	0.05-0.08
ECK-H4 20-40SL20CFR1.-104 (2)	20.00	20.00	40.00	104.00	4	1.00	36.0	5.0	SL	0		●	0.05-0.08
ECK-H4M 20-40C20CFR1.-104	20.00	20.00	40.00	104.00	4	1.00	36.0	5.0	C	0		●	0.05-0.08
ECK-H4M 20-40W20CFR1.-104	20.00	20.00	40.00	104.00	4	1.00	36.0	5.0	W	0		●	0.05-0.08

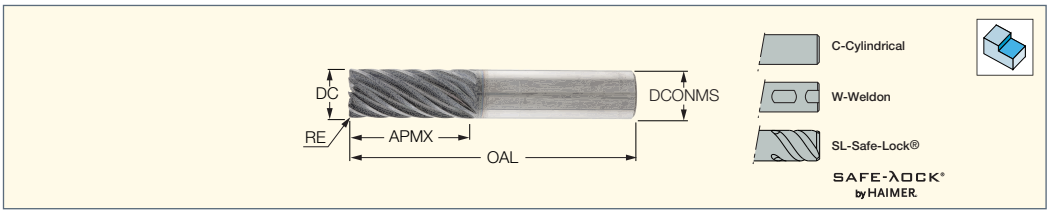
- For user guide, see pages 177-184

(1) With coolant channel
(2) With Safe-Lock® (by Haimer) pull-out prevention helical grooves
(3) Number of flutes
(4) Maximum ramping angle
(5) C-Cylindrical, W-Weldon, SL-Safe-Lock® (by Haimer)
(6) 0 - Without coolant supply, 1 - With coolant supply

CHATTERFREE SOLID MILL LINE
Ti-TURBO SOLID MILL LINE

ECK-H7/9-CFR

7 and 9 Flute Endmills with Different Helix and Variable Pitch for Chatter Dampening on Titanium



Designation	Dimensions								IC900
	DC	DCONMS	APMX	OAL	NOF[2]	RE	RMPX°[3]	Shank[4]	
ECK-H7 06-13C06CFR0.2T57	6.00	6.00	13.00	57.00	7	0.20	5.0	C	•
ECK-H7 06-13W06CFR0.2T57	6.00	6.00	13.00	57.00	7	0.20	5.0	W	•
ECK-H7 08-19C08CFR0.4T63	8.00	8.00	19.00	63.00	7	0.40	5.0	C	•
ECK-H7 08-19W08CFR0.4T63	8.00	8.00	19.00	63.00	7	0.40	5.0	W	•
ECK-H7 10-22C10CFR0.5T72	10.00	10.00	22.00	72.00	7	0.50	5.0	C	•
ECK-H7 10-22SL10CFR0.5T72 [1]	10.00	10.00	22.00	72.00	7	0.50	5.0	SL	•
ECK-H7 10-22W10CFR0.5T72	10.00	10.00	22.00	72.00	7	0.50	5.0	W	•
ECK-H7 12-26C12CFR0.6T83	12.00	12.00	26.00	83.00	7	0.60	5.0	C	•
ECK-H7 12-26SL12CFR0.6T83 [1]	12.00	12.00	26.00	83.00	7	0.60	5.0	SL	•
ECK-H7 12-26W12CFR0.6T83	12.00	12.00	26.00	83.00	7	0.60	5.0	W	•
ECK-H9 16-32C16CFR0.8T92	16.00	16.00	32.00	92.00	9	0.80	5.0	C	•
ECK-H9 16-32SL16CFR0.8T92 [1]	16.00	16.00	32.00	92.00	9	0.80	5.0	SL	•
ECK-H9 16-32W16CFR0.8T92	16.00	16.00	32.00	92.00	9	0.80	5.0	W	•
ECK-H9 20-38C20CFR1T104	20.00	20.00	38.00	104.00	9	1.00	5.0	C	•
ECK-H9 20-38SL20CFR1T104 [1]	20.00	20.00	38.00	104.00	9	1.00	5.0	SL	•
ECK-H9 20-38W20CFR1T104	20.00	20.00	38.00	104.00	9	1.00	5.0	W	•

• Enables processing at a radial width of cut (AE) of up to 0.10xDC ,For user guide,see pages 177-184

[1] With Safe-Lock® (by Haimer) pull-out prevention helical grooves

[2] Number of flutes

[3] Maximum ramping angle

[4] C-Cylindrical, W-Weldon, SL-Safe-Lock® (by Haimer)

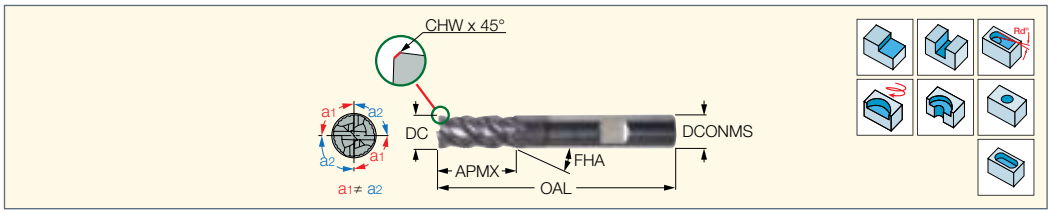
Feed Recommendations

Designation	Finishing		High Speed Machining	
	$f_{z\ (min)}$ mm/t	$f_{z\ (max)}$ mm/t	$f_{z\ (min)}$ mm/t	$f_{z\ (max)}$ mm/t
ECK-H7 06-13C06CFR0.2T57	0.02	0.04	0.08	0.15
ECK-H7 06-13W06CFR0.2T57	0.02	0.04	0.08	0.15
ECK-H7 08-19C08CFR0.4T63	0.02	0.04	0.08	0.15
ECK-H7 08-19W08CFR0.4T63	0.02	0.04	0.08	0.15
ECK-H7 10-22C10CFR0.5T72	0.03	0.05	0.1	0.25
ECK-H7 10-22W10CFR0.5T72	0.03	0.05	0.1	0.25
ECK-H7 12-26C12CFR0.6T83	0.03	0.05	0.1	0.25
ECK-H7 12-26W12CFR0.6T83	0.03	0.05	0.1	0.25
ECK-H9 16-32C16CFR0.8T92	0.04	0.07	0.15	0.3
ECK-H9 16-32W16CFR0.8T92	0.04	0.07	0.15	0.3
ECK-H9 20-38C20CFR1T104	0.04	0.07	0.15	0.3
ECK-H9 20-38W20CFR1T104	0.04	0.07	0.15	0.3

FINISHRED

EFS-E44

Combination of Roughing and Finishing Solid Carbide Endmills with Variable Pitch for CHATTERFREE Milling



Designation	Dimensions										IC900	Recommended Machining Data
	DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	CHW	KCH		f_z (mm/t)
EFS-E44 06-14C06CF57	6.00	6.00	14.00	57.00	4	38.0	5.0	C	0.25	45.0	•	0.03-0.06
EFS-E44 06-14W06CF57	6.00	6.00	14.00	57.00	4	38.0	5.0	W	0.25	45.0	•	0.03-0.06
EFS-E44 08-18C08CF63	8.00	8.00	18.00	63.00	4	38.0	5.0	C	0.30	45.0	•	0.03-0.08
EFS-E44 08-18W08CF63	8.00	8.00	18.00	63.00	4	38.0	5.0	W	0.30	45.0	•	0.03-0.08
EFS-E44 10-22C10CF72	10.00	10.00	22.00	72.00	4	38.0	5.0	C	0.40	45.0	•	0.03-0.09
EFS-E44 10-22W10CF72	10.00	10.00	22.00	72.00	4	38.0	5.0	W	0.40	45.0	•	0.03-0.09
EFS-E44 12-26C12CF83	12.00	12.00	26.00	83.00	4	38.0	5.0	C	0.50	45.0	•	0.04-0.10
EFS-E44 12-26W12CF83	12.00	12.00	26.00	83.00	4	38.0	5.0	W	0.50	45.0	•	0.04-0.10
EFS-E44 14-30C14CF83	14.00	14.00	30.00	83.00	4	38.0	5.0	C	0.50	45.0	•	0.04-0.11
EFS-E44 14-30W14CF83	14.00	14.00	30.00	83.00	4	38.0	5.0	W	0.50	45.0	•	0.04-0.11
EFS-E44 16-34C16CF92	16.00	16.00	34.00	92.00	4	38.0	5.0	C	0.60	45.0	•	0.05-0.11
EFS-E44 16-34W16CF92	16.00	16.00	34.00	92.00	4	38.0	5.0	W	0.60	45.0	•	0.05-0.11
EFS-E44 20-42C20CF104	20.00	20.00	42.00	104.00	4	38.0	5.0	C	0.60	45.0	•	0.05-0.11
EFS-E44 20-42W20CF104	20.00	20.00	42.00	104.00	4	38.0	5.0	W	0.60	45.0	•	0.05-0.11
EFS-E44 25-52C25CF121	25.00	25.00	52.00	121.00	4	38.0	5.0	C	0.60	45.0	•	0.06-0.11
EFS-E44 25-52W25CF121	25.00	25.00	52.00	121.00	4	38.0	5.0	W	0.60	45.0	•	0.06-0.11

• Minimum width of cut for semi-finishing operation >= 0.05 x DC • For user guide, see pages 177-184

(1) Number of flutes

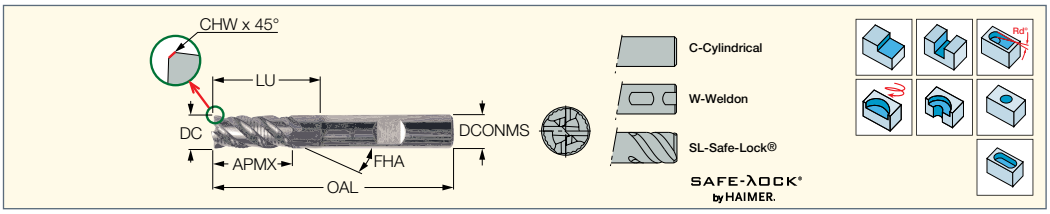
(2) Maximum ramping angle

(3) C-Cylindrical, W-Weldon

FINISHRED

EFS-B44

Combination of Roughing and Finishing Solid Carbide Endmills with a Single Tool



Designation	Dimensions												Tough ↔ Hard			Recommended Machining Data
	DC	DCONMS	APMX	LU	OAL	NOF[2]	FHA	RMPX°[3]	Shank[4]	CSP[5]	CHW	KCH	IC300	IC900	IC608	f_z (mm/t)
EFS-B44 04-10C06-57	4.00	6.00	10.00	-	57.00	4	45.0	5.0	C	0	0.12	45.0		•		0.03-0.05
EFS-B44 05-12C06-57	5.00	6.00	12.00	-	57.00	4	45.0	5.0	C	0	0.18	45.0		•		0.03-0.06
EFS-B44 06-14/20C06-57	6.00	6.00	14.00	20.0	57.00	4	45.0	5.0	C	0	0.25	45.0		•		0.03-0.06
EFS-B44 06-14/20W06-57	6.00	6.00	14.00	20.0	57.00	4	45.0	5.0	W	0	0.25	45.0		•		0.03-0.06
EFS-B44 06-14C06-57	6.00	6.00	14.00	-	57.00	4	45.0	5.0	C	0	0.25	45.0	•	•	•	0.03-0.06
EFS-B44 06-14C06-57C	6.00	6.00	14.00	-	57.00	4	45.0	5.0	C	1	0.25	45.0	•			0.03-0.05
EFS-B44 06-14W06-57	6.00	6.00	14.00	-	57.00	4	45.0	5.0	W	0	0.25	45.0		•	•	0.03-0.06
EFS-B44 08-18/26C08-63	8.00	8.00	18.00	26.0	63.00	4	45.0	5.0	C	0	0.30	45.0		•		0.03-0.08
EFS-B44 08-18/26W08-63	8.00	8.00	18.00	26.0	63.00	4	45.0	5.0	W	0	0.30	45.0		•		0.03-0.08
EFS-B44 08-18C08-63	8.00	8.00	18.00	-	63.00	4	45.0	5.0	C	0	0.30	45.0	•	•	•	0.03-0.08
EFS-B44 08-18W08-63	8.00	8.00	18.00	-	63.00	4	45.0	5.0	W	0	0.30	45.0		•	•	0.03-0.08
EFS-B44 08-18W08-63C	8.00	8.00	18.00	-	63.00	4	45.0	5.0	W	1	0.30	45.0	•			0.03-0.06
EFS-B44 10-22/32C10-72	10.00	10.00	22.00	32.0	72.00	4	45.0	5.0	C	0	0.30	45.0		•		0.03-0.09
EFS-B44 10-22/32SL10-72 (1)	10.00	10.00	22.00	32.0	72.00	4	45.0	5.0	SL	0	0.00	45.0		•		0.03-0.09
EFS-B44 10-22/32W10-72	10.00	10.00	22.00	32.0	72.00	4	45.0	5.0	W	0	0.30	45.0		•		0.03-0.09
EFS-B44 10-22C10-72	10.00	10.00	22.00	-	72.00	4	45.0	5.0	C	0	0.30	45.0	•	•	•	0.03-0.09
EFS-B44 10-22SL10-72 (1)	10.00	10.00	22.00	-	72.00	4	45.0	5.0	SL	0	0.30	45.0		•		0.03-0.09
EFS-B44 10-22SL10-72C (1)	10.00	10.00	22.00	-	72.00	4	45.0	5.0	SL	1	0.30	45.0		•		0.04-0.07
EFS-B44 10-22W10-72	10.00	10.00	22.00	-	72.00	4	45.0	5.0	W	0	0.30	45.0		•	•	0.03-0.09
EFS-B44 10-22W10-72C	10.00	10.00	22.00	-	72.00	4	45.0	5.0	W	1	0.30	45.0	•			0.04-0.07
EFS-B44 12-26/38C12-83	12.00	12.00	26.00	38.0	83.00	4	45.0	5.0	C	0	0.40	45.0		•		0.04-0.10
EFS-B44 12-26/38SL12-83 (1)	12.00	12.00	26.00	38.0	83.00	4	45.0	5.0	SL	0	0.40	45.0		•		0.04-0.10
EFS-B44 12-26/38W12-83	12.00	12.00	26.00	38.0	83.00	4	45.0	5.0	W	0	0.40	45.0		•		0.04-0.10
EFS-B44 12-26C12-83	12.00	12.00	26.00	-	83.00	4	45.0	5.0	C	0	0.40	45.0		•	•	0.04-0.10
EFS-B44 12-26SL12-83 (1)	12.00	12.00	26.00	-	83.00	4	45.0	5.0	SL	0	0.40	45.0		•		0.04-0.10
EFS-B44 12-26SL12-83C (1)	12.00	12.00	26.00	-	83.00	4	45.0	5.0	SL	1	0.40	45.0		•		0.04-0.08
EFS-B44 12-26W12-83	12.00	12.00	26.00	-	83.00	4	45.0	5.0	W	0	0.40	45.0	•	•	•	0.04-0.10
EFS-B44 12-26W12-83C	12.00	12.00	26.00	-	83.00	4	45.0	5.0	W	1	0.40	45.0	•			0.04-0.08
EFS-B44 14-30C14-83	14.00	14.00	30.00	-	83.00	4	45.0	5.0	C	0	0.40	45.0		•	•	0.04-0.11
EFS-B44 14-30W14-83	14.00	14.00	30.00	-	83.00	4	45.0	5.0	W	0	0.40	45.0		•	•	0.04-0.11
EFS-B44 16-34/50C16-100	16.00	16.00	34.00	50.0	100.00	4	45.0	5.0	C	0	0.60	45.0		•		0.05-0.11
EFS-B44 16-34/50SL16-100 (1)	16.00	16.00	34.00	50.0	100.00	4	45.0	5.0	SL	0	0.60	45.0		•		0.05-0.11
EFS-B44 16-34/50W16-100	16.00	16.00	34.00	50.0	100.00	4	45.0	5.0	W	0	0.60	45.0		•		0.05-0.11
EFS-B44 16-34C16-92	16.00	16.00	34.00	-	92.00	4	45.0	5.0	C	0	0.60	45.0	•	•	•	0.05-0.11
EFS-B44 16-34SL16-92 (1)	16.00	16.00	34.00	-	92.00	4	45.0	5.0	SL	0	0.60	45.0		•		0.05-0.11
EFS-B44 16-34SL16-92C (1)	16.00	16.00	34.00	-	92.00	4	45.0	5.0	SL	1	0.60	45.0		•		0.05-0.08
EFS-B44 16-34W16-92	16.00	16.00	34.00	-	92.00	4	45.0	5.0	W	0	0.60	45.0		•	•	0.05-0.11
EFS-B44 16-34W16-92C	16.00	16.00	34.00	-	92.00	4	45.0	5.0	W	1	0.60	45.0	•			0.05-0.08
EFS-B44 20-42/62C20-125	20.00	20.00	42.00	62.0	125.00	4	45.0	5.0	C	0	0.60	45.0		•		0.05-0.11
EFS-B44 20-42/62SL20-125 (1)	20.00	20.00	42.00	62.0	125.00	4	45.0	5.0	SL	0	0.60	45.0		•		0.05-0.11
EFS-B44 20-42/62W20-125	20.00	20.00	42.00	62.0	125.00	4	45.0	5.0	W	0	0.60	45.0		•		0.05-0.11
EFS-B44 20-42C20-104	20.00	20.00	42.00	-	104.00	4	45.0	5.0	C	0	0.60	45.0	•	•	•	0.05-0.11
EFS-B44 20-42SL20-104 (1)	20.00	20.00	42.00	-	104.00	4	45.0	5.0	SL	0	0.60	45.0		•		0.05-0.11
EFS-B44 20-42W20-104	20.00	20.00	42.00	-	104.00	4	45.0	5.0	W	0	0.60	45.0		•	•	0.05-0.11
EFS-B44 25-52C25-121	25.00	25.00	52.00	-	121.00	4	45.0	5.0	C	0	0.60	45.0		•	•	0.06-0.11
EFS-B44 25-52SL25-121 (1)	25.00	25.00	52.00	-	121.00	4	45.0	5.0	SL	0	0.60	45.0		•		0.06-0.11
EFS-B44 25-52W25-121	25.00	25.00	52.00	-	121.00	4	45.0	5.0	W	0	0.60	45.0	•	•	•	0.06-0.11

- Minimum width of cut for semi-finishing operation >= 0.05 x DC
- IC300 should be mainly used for machining exotic materials
- For user guide, see pages 177-184

(1) With Safe-Lock® (by Haimer) pull-out prevention helical grooves

(2) Number of flutes

(3) Maximum ramping angle

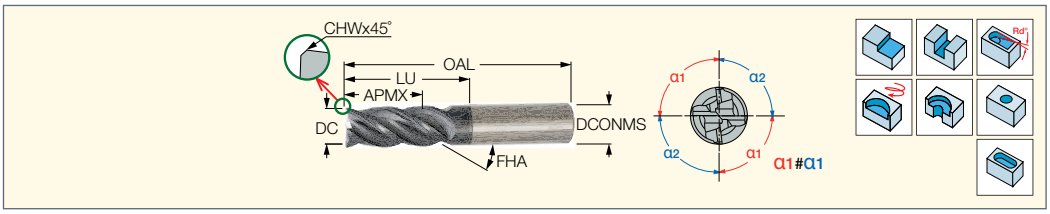
(4) C-Cylindrical, W-Weldon, SL-Safe-Lock® (by Haimer)

(5) 0 - Without coolant supply, 1 - With coolant supply

CHATTERFREE SOLID MILL LINE

EC-E4L-CF

4 Flute, 38° Helix Endmills with 3xD Relieved Neck and Variable Pitch for Chatter Dampening



Designation	Dimensions DC	DCONMS	APMX	LU	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	CHW	KCH	Tough ↔ Hard IC300	IC900	IC608	Recommended Machining Data f_z (mm/t)
EC-E4L 01-2/04C04CF50	1.00	4.00	2.20	4.00	50.00	4	38.0	5.0	C	0.04	45.0		●		0.02-0.05
EC-E4L 02-4/06C04CF50	2.00	4.00	4.30	6.10	50.00	4	38.0	5.0	C	0.08	45.0		●		0.02-0.05
EC-E4L 03-8/11C06CF57	3.00	6.00	8.00	11.00	57.00	4	38.0	5.0	C	0.10	45.0	●	●	●	0.02-0.05
EC-E4L 04-10/14C06CF57	4.00	6.00	10.00	14.00	57.00	4	38.0	5.0	C	0.15	45.0	●	●	●	0.02-0.05
EC-E4L 05-12/17C06CF57	5.00	6.00	12.00	17.00	57.00	4	38.0	5.0	C	0.18	45.0	●	●	●	0.02-0.06
EC-E4L 06-14/20C06CF57	6.00	6.00	14.00	20.00	57.00	4	38.0	5.0	C	0.25	45.0	●	●	●	0.03-0.07
EC-E4L 06-14/20W06CF57	6.00	6.00	14.00	20.00	57.00	4	38.0	5.0	W	0.25	45.0	●	●	●	0.03-0.07
EC-E4L 08-18/26C08CFS63	8.00	8.00	18.00	26.00	63.00	4	38.0	5.0	C	-	-		●		0.03-0.08
EC-E4L 08-18/26C08CF63	8.00	8.00	18.00	26.00	63.00	4	38.0	5.0	C	0.30	45.0	●	●	●	0.03-0.09
EC-E4L 08-18/26W08CF63	8.00	8.00	18.00	26.00	63.00	4	38.0	5.0	W	0.30	45.0		●	●	0.03-0.09
EC-E4L 10-22/32C10CFS72	10.00	10.00	22.00	32.00	72.00	4	38.0	5.0	C	-	-		●		0.03-0.09
EC-E4L 10-22/32C10CF72	10.00	10.00	22.00	32.00	72.00	4	38.0	5.0	C	0.40	45.0	●	●	●	0.03-0.10
EC-E4L 10-22/32W10CF72	10.00	10.00	22.00	32.00	72.00	4	38.0	5.0	W	0.40	45.0	●	●	●	0.03-0.10
EC-E4L 12-26/38C12CFS83	12.00	12.00	26.00	38.00	83.00	4	38.0	5.0	C	-	-		●		0.04-0.10
EC-E4L 12-26/38C12CF83	12.00	12.00	26.00	38.00	83.00	4	38.0	5.0	C	0.50	45.0	●	●	●	0.04-0.11
EC-E4L 12-26/38W12CF83	12.00	12.00	26.00	38.00	83.00	4	38.0	5.0	W	0.50	45.0	●	●	●	0.04-0.11
EC-E4L 16-34/50C16CF100	16.00	16.00	34.00	50.00	100.00	4	38.0	5.0	C	0.60	45.0	●	●	●	0.05-0.13
EC-E4L 16-34/50W16CF100	16.00	16.00	34.00	50.00	100.00	4	38.0	5.0	W	0.60	45.0	●	●	●	0.05-0.13
EC-E4L 20-42/60C20CF110	20.00	20.00	42.00	60.00	110.00	4	38.0	5.0	C	0.60	45.0	●	●	●	0.05-0.17
EC-E4L 20-42/60W20CF110	20.00	20.00	42.00	60.00	110.00	4	38.0	5.0	W	0.60	45.0		●	●	0.05-0.17
EC-E4L 25-50/65C25CF121	25.00	25.00	50.00	65.00	121.00	4	38.0	5.0	C	0.60	45.0		●		0.05-0.17
EC-E4L 25-50/65W25CF121	25.00	25.00	50.00	65.00	121.00	4	38.0	5.0	W	0.60	45.0		●		0.05-0.17

• IC300 should be mainly used for machining exotic materials • For user guide, see pages 177-184

(1) Number of flutes

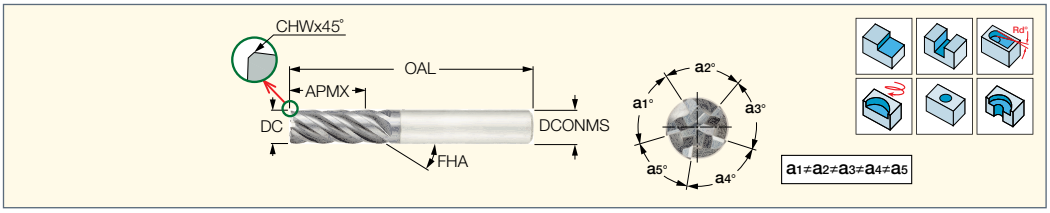
(2) Maximum ramping angle

(3) C-Cylindrical, W-Weldon

CHATTERFREE SOLID MILL LINE

EC-E5L-CF

5 Flute, 38° Helix Medium Length (2.5xD) Variable Pitch Endmills



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	CHW	KCH	IC900	Recommended Machining Data f_z (mm/t)
EC-E5L 06-15C06CF57	6.00	6.00	15.00	57.00	5	38.0	5.0	C	0.20	45.0	●	0.03-0.07
EC-E5L 06-15W06CF57	6.00	6.00	15.00	57.00	5	38.0	5.0	W	0.20	45.0	●	0.03-0.07
EC-E5L 08-20C08CF63	8.00	8.00	20.00	63.00	5	38.0	5.0	C	0.25	45.0	●	0.03-0.09
EC-E5L 08-20W08CF63	8.00	8.00	20.00	63.00	5	38.0	5.0	W	0.25	45.0	●	0.03-0.09
EC-E5L 10-25C10CF72	10.00	10.00	25.00	72.00	5	38.0	5.0	C	0.30	45.0	●	0.03-0.10
EC-E5L 10-25W10CF72	10.00	10.00	25.00	72.00	5	38.0	5.0	W	0.30	45.0	●	0.03-0.10
EC-E5L 12-30C12CF83	12.00	12.00	30.00	83.00	5	38.0	5.0	C	0.40	45.0	●	0.04-0.11
EC-E5L 12-30W12CF83	12.00	12.00	30.00	83.00	5	38.0	5.0	W	0.40	45.0	●	0.04-0.11
EC-E5L 16-40C16CF100	16.00	16.00	40.00	100.00	5	38.0	5.0	C	0.50	45.0	●	0.05-0.13
EC-E5L 16-40W16CF100	16.00	16.00	40.00	100.00	5	38.0	5.0	W	0.50	45.0	●	0.05-0.13
EC-E5L 20-50C20CF125	20.00	20.00	50.00	125.00	5	38.0	5.0	C	0.50	45.0	●	0.05-0.17
EC-E5L 20-50W20CF125	20.00	20.00	50.00	125.00	5	38.0	5.0	W	0.50	45.0	●	0.05-0.17

• For user guide, see pages 177-184

(1) Number of flutes

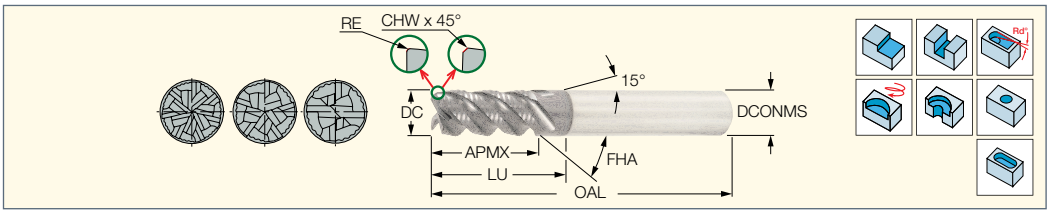
(2) Maximum ramping angle

(3) C-Cylindrical, W-Weldon

SOLIDSHRED

ECR-B-X/L/M/S

4-7 Flute, 45° Helix with Different Length Solid Carbide Roughing Endmills



Designation	Dimensions												Tough ↔ Hard		Recommended Machining Data
	DC	DCONMS	APMX	LU	OAL	NOF[2]	FHA	RMPX°[3]	Shank[4]	RE	CHW	KCH	IC300	IC900	f_z (mm/t)
ECR-B4M 05-10C06-57	5.00	6.00	10.00	15.00	57.00	4	45.0	5.0	C	-	0.20	45.0		•	0.02-0.05
ECR-B4M 05-10W06-57	5.00	6.00	10.00	15.00	57.00	4	45.0	5.0	W	-	0.20	45.0		•	0.02-0.05
ECR-B4S 05-05C06-57	5.00	6.00	5.00	10.00	57.00	4	45.0	5.0	C	-	0.20	45.0		•	0.02-0.05
ECR-B4S 05-05W06-57	5.00	6.00	5.00	10.00	57.00	4	45.0	5.0	W	-	0.20	45.0		•	0.02-0.05
ECR-B4L 06-12/18C06-57	6.00	6.00	12.00	18.00	57.00	4	45.0	5.0	C	-	0.25	45.0		•	0.03-0.06
ECR-B4L 06-12/18W06-57	6.00	6.00	12.00	18.00	57.00	4	45.0	5.0	W	-	0.25	45.0	•	•	0.03-0.06
ECR-B4M 06-12C06-57	6.00	6.00	12.00	-	57.00	4	45.0	5.0	C	-	0.25	45.0		•	0.03-0.06
ECR-B4M 06-12W06-57	6.00	6.00	12.00	-	57.00	4	45.0	5.0	W	-	0.25	45.0		•	0.03-0.06
ECR-B4S 06-06C06-57	6.00	6.00	6.00	-	57.00	4	45.0	5.0	C	-	0.25	45.0		•	0.03-0.06
ECR-B4S 06-06W06-57	6.00	6.00	6.00	-	57.00	4	45.0	5.0	W	-	0.25	45.0		•	0.03-0.06
ECR-B4S 07-07C08-63	7.00	8.00	7.00	-	63.00	4	45.0	5.0	C	-	0.25	45.0		•	0.03-0.07
ECR-B4L 08-16/24C08-63	8.00	8.00	16.00	24.00	63.00	4	45.0	5.0	C	-	0.25	45.0		•	0.03-0.08
ECR-B4L 08-16/24W08-63	8.00	8.00	16.00	24.00	63.00	4	45.0	5.0	W	-	0.25	45.0	•	•	0.03-0.08
ECR-B4M 08-16C08-63	8.00	8.00	16.00	-	63.00	4	45.0	5.0	C	-	0.25	45.0		•	0.03-0.08
ECR-B4M 08-16W08-63	8.00	8.00	16.00	-	63.00	4	45.0	5.0	W	-	0.25	45.0		•	0.03-0.08
ECR-B4S 08-08C08-63	8.00	8.00	8.00	-	63.00	4	45.0	5.0	C	-	0.25	45.0		•	0.03-0.08
ECR-B4S 08-08W08-63	8.00	8.00	8.00	-	63.00	4	45.0	5.0	W	-	0.25	45.0		•	0.03-0.08
ECR-B4X 08-12/32C08-68	8.00	8.00	12.00	32.00	68.00	4	45.0	5.0	C	-	0.25	45.0		•	0.03-0.08
ECR-B4X 08-12/32W08-68	8.00	8.00	12.00	32.00	68.00	4	45.0	5.0	W	-	0.25	45.0		•	0.03-0.08
ECR-B4L 10-20/30C10-72	10.00	10.00	20.00	30.00	72.00	4	45.0	5.0	C	-	0.30	45.0		•	0.03-0.09
ECR-B4L 10-20/30W10-72	10.00	10.00	20.00	30.00	72.00	4	45.0	5.0	W	-	0.30	45.0	•	•	0.03-0.09
ECR-B4M 10-20C10-72	10.00	10.00	20.00	-	72.00	4	45.0	5.0	C	-	0.30	45.0		•	0.03-0.09
ECR-B4M 10-20C10-72R1.0	10.00	10.00	20.00	-	72.00	4	45.0	5.0	C	1.00	-	-		•	0.03-0.09
ECR-B4M 10-20W10-72	10.00	10.00	20.00	-	72.00	4	45.0	5.0	W	-	0.30	45.0		•	0.03-0.09
ECR-B4S 10-10C10-72	10.00	10.00	10.00	-	72.00	4	45.0	5.0	C	-	0.30	45.0		•	0.03-0.09
ECR-B4S 10-10W10-72	10.00	10.00	10.00	-	72.00	4	45.0	5.0	W	-	0.30	45.0		•	0.03-0.09
ECR-B4X 10-15/40C10-80 90	10.00	10.00	15.00	40.00	80.00	4	45.0	5.0	C	-	0.30	45.0		•	0.03-0.09
ECR-B4X 10-15/40W10-80 90	10.00	10.00	15.00	40.00	80.00	4	45.0	5.0	W	-	0.30	45.0		•	0.03-0.09
ECR-B4L 12-24/36C12-83	12.00	12.00	24.00	36.00	83.00	4	45.0	5.0	C	-	0.35	45.0		•	0.04-0.10
ECR-B4L 12-24/36W12-83	12.00	12.00	24.00	36.00	83.00	4	45.0	5.0	W	-	0.35	45.0		•	0.04-0.10
ECR-B4M 12-24C12-83	12.00	12.00	24.00	-	83.00	4	45.0	5.0	C	-	0.35	45.0		•	0.04-0.10
ECR-B4M 12-24C12-83R1.2	12.00	12.00	24.00	-	83.00	4	45.0	5.0	C	1.20	-	-		•	0.04-0.10
ECR-B4M 12-24W12-83	12.00	12.00	24.00	-	83.00	4	45.0	5.0	W	-	0.35	45.0		•	0.04-0.10
ECR-B4M 12-24W12-83R1.2	12.00	12.00	24.00	-	83.00	4	45.0	5.0	W	1.20	-	-		•	0.04-0.10
ECR-B4S 12-12C12-83	12.00	12.00	12.00	-	83.00	4	45.0	5.0	C	-	0.35	45.0		•	0.04-0.10
ECR-B4S 12-12W12-83	12.00	12.00	12.00	-	83.00	4	45.0	5.0	W	-	0.35	45.0		•	0.04-0.10
ECR-B4X 12-18/48C12-100	12.00	12.00	18.00	48.00	100.00	4	45.0	5.0	C	-	0.35	45.0		•	0.04-0.10
ECR-B4X 12-18/48W12-100	12.00	12.00	18.00	48.00	100.00	4	45.0	5.0	W	-	0.35	45.0		•	0.05-0.11
ECR-B5L 16-32/48C16-100 (1)	16.00	16.00	32.00	48.00	100.00	5	45.0	5.0	C	-	0.40	45.0		•	0.05-0.11
ECR-B5L 16-32/48W16-100 (1)	16.00	16.00	32.00	48.00	100.00	5	45.0	5.0	W	-	0.40	45.0		•	0.05-0.11
ECR-B5M 16-32C16-92 (1)	16.00	16.00	32.00	-	92.00	5	45.0	5.0	C	-	0.40	45.0		•	0.05-0.11
ECR-B5M 16-32C16-92R1.6 (1)	16.00	16.00	32.00	-	92.00	5	45.0	5.0	C	1.60	-	-		•	0.05-0.11
ECR-B5M 16-32W16-92 (1)	16.00	16.00	32.00	-	92.00	5	45.0	5.0	W	-	0.40	45.0		•	0.05-0.11
ECR-B5M 16-32W16-92R1.6 (1)	16.00	16.00	32.00	-	92.00	5	45.0	5.0	W	1.60	-	-		•	0.05-0.11
ECR-B5S 16-16C16-92 (1)	16.00	16.00	16.00	-	92.00	5	45.0	5.0	C	-	0.40	45.0		•	0.05-0.11
ECR-B5S 16-16W16-92 (1)	16.00	16.00	16.00	-	92.00	5	45.0	5.0	W	-	0.40	45.0		•	0.05-0.11
ECR-B5X 16-24/64C16-115 (1)	16.00	16.00	24.00	64.00	115.00	5	45.0	5.0	C	-	0.40	45.0		•	0.05-0.11
ECR-B5X 16-24/64W16-115 (1)	16.00	16.00	24.00	64.00	115.00	5	45.0	5.0	W	-	0.40	45.0		•	0.05-0.11
ECR-B7L 20-40/60C20-110 (1)	20.00	20.00	40.00	60.00	110.00	7	45.0	5.0	C	-	0.40	45.0		•	0.05-0.11
ECR-B7L 20-40/60W20-110 (1)	20.00	20.00	40.00	60.00	110.00	7	45.0	5.0	W	-	0.40	45.0		•	0.05-0.11
ECR-B7M 20-40C20-104 (1)	20.00	20.00	40.00	-	104.00	7	45.0	5.0	C	-	0.40	45.0		•	0.05-0.11
ECR-B7M 20-40W20-104 (1)	20.00	20.00	40.00	-	104.00	7	45.0	5.0	W	-	0.40	45.0		•	0.05-0.11
ECR-B7S 20-20C20-104 (1)	20.00	20.00	20.00	-	104.00	7	45.0	5.0	C	-	0.40	45.0		•	0.05-0.11
ECR-B7S 20-20W20-104 (1)	20.00	20.00	20.00	-	104.00	7	45.0	5.0	W	-	0.40	45.0		•	0.05-0.11

• For user guide, see pages 177-184

(1) Cannot be used for plunging application

(2) Number of flutes

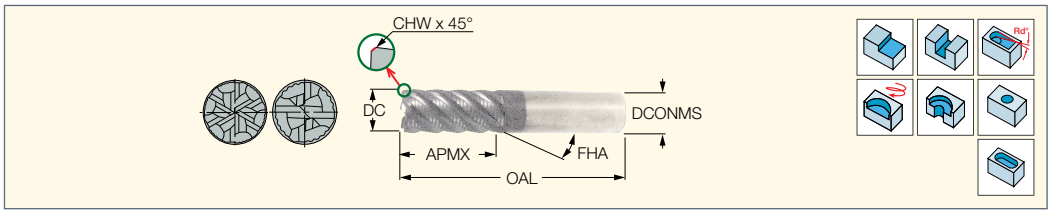
(3) Maximum ramping angle

(4) C-Cylindrical, W-Weldon

SOLIDSHRED

ECR-B-MF

4 and 6 Flute, 45° Helix
Medium Length Solid Carbide
Roughing Endmills for
Materials up to 65 HRc



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(2)	FHA	RMPX°(3)	Shank(4)	CHW	KCH	IC900	Recommended Machining Data f_z (mm/t)
ECR-B4MF 06-14C06-57	6.00	6.00	14.00	57.00	4	45.0	5.0	C	0.25	45.0	•	0.03-0.06
ECR-B4MF 06-14W06-57	6.00	6.00	14.00	57.00	4	45.0	5.0	W	0.25	45.0	•	0.03-0.06
ECR-B4MF 08-18C08-63	8.00	8.00	18.00	63.00	4	45.0	5.0	C	0.30	45.0	•	0.03-0.08
ECR-B4MF 08-18W08-63	8.00	8.00	18.00	63.00	4	45.0	5.0	W	0.30	45.0	•	0.03-0.08
ECR-B4MF 10-22C10-72	10.00	10.00	22.00	72.00	4	45.0	5.0	C	0.30	45.0	•	0.03-0.09
ECR-B4MF 10-22W10-72	10.00	10.00	22.00	72.00	4	45.0	5.0	W	0.30	45.0	•	0.03-0.09
ECR-B4MF 12-26C12-83	12.00	12.00	26.00	83.00	4	45.0	5.0	C	0.40	45.0	•	0.04-0.10
ECR-B4MF 12-26W12-83	12.00	12.00	26.00	83.00	4	45.0	5.0	W	0.40	45.0	•	0.04-0.10
ECR-B4MF 14-30C14-83	14.00	14.00	30.00	83.00	4	45.0	5.0	C	0.40	45.0	•	0.04-0.11
ECR-B4MF 14-30W14-83	14.00	14.00	30.00	83.00	4	45.0	5.0	W	0.40	45.0	•	0.04-0.11
ECR-B6MF 16-34C16-92 (1)	16.00	16.00	34.00	92.00	6	45.0	5.0	C	0.50	45.0	•	0.05-0.11
ECR-B6MF 16-34W16-92 (1)	16.00	16.00	34.00	92.00	6	45.0	5.0	W	0.50	45.0	•	0.05-0.11
ECR-B6MF 20-42C20-104 (1)	20.00	20.00	42.00	104.00	6	45.0	5.0	C	0.70	45.0	•	0.05-0.11
ECR-B6MF 20-42W20-104 (1)	20.00	20.00	42.00	104.00	6	45.0	5.0	W	0.70	45.0	•	0.05-0.11
ECR-B6MF 25-52C25-121 (1)	25.00	25.00	52.00	121.00	6	45.0	5.0	C	0.90	45.0	•	0.06-0.11
ECR-B6MF 25-52W25-121 (1)	25.00	25.00	52.00	121.00	6	45.0	5.0	W	0.90	45.0	•	0.06-0.11

• The rougher's cutting edge profile has shallow serrations. • A very durable design which leaves only a small amount of material for the finishing cut.
• For user guide, see pages 177-184

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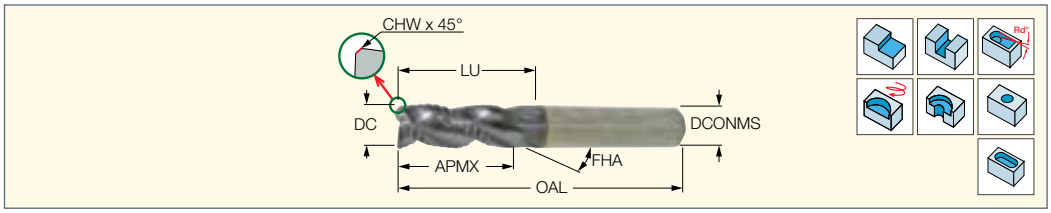
(1) Cannot be used for plunging application
(2) Number of flutes
(3) Maximum ramping angle
(4) C-Cylindrical, W-Weldon

SOLIDSHRED

ECP-E3L

3 Flute, 38° Helix Solid Carbide
Roughing Endmills with 3xD
Relieved Necks and Chip
Splitting Cutting Edges



Designation	Dimensions DC	DCONMS	APMX	LU	OAL	NOF(1)	RMPX°(2)	FHA	Shank(3)	CHW	KCH	IC900	Recommended Machining Data f_z (mm/t)
ECP-E3L 05-12/17C06S57	5.00	6.00	12.00	17.0	57.00	3	5.0	38.0	C	0.20	45.0	•	0.02-0.05
ECP-E3L 05-12/17W06S57	5.00	6.00	12.00	17.0	57.00	3	5.0	38.0	W	0.20	45.0	•	0.02-0.05
ECP-E3L 06-14/20C06S57	6.00	6.00	14.00	20.0	57.00	3	5.0	38.0	C	0.30	45.0	•	0.03-0.06
ECP-E3L 06-14/20W06S57	6.00	6.00	14.00	20.0	57.00	3	5.0	38.0	W	0.30	45.0	•	0.03-0.06
ECP-E3L 08-18/26C08S63	8.00	8.00	18.00	26.0	63.00	3	5.0	38.0	C	0.40	45.0	•	0.03-0.08
ECP-E3L 08-18/26W08S63	8.00	8.00	18.00	26.0	63.00	3	5.0	38.0	W	0.40	45.0	•	0.03-0.08
ECP-E3L 10-22/32C10S72	10.00	10.00	22.00	32.0	72.00	3	5.0	38.0	C	0.40	45.0	•	0.03-0.09
ECP-E3L 10-22/32W10S72	10.00	10.00	22.00	32.0	72.00	3	5.0	38.0	W	0.40	45.0	•	0.03-0.09
ECP-E3L 12-26/38C12S83	12.00	12.00	26.00	38.0	83.00	3	5.0	38.0	C	0.40	45.0	•	0.04-0.10
ECP-E3L 12-26/38W12S83	12.00	12.00	26.00	38.0	83.00	3	5.0	38.0	W	0.40	45.0	•	0.04-0.10
ECP-E3L 14-30/44C14S100	14.00	14.00	30.00	44.0	100.00	3	5.0	38.0	C	0.50	45.0	•	0.05-0.11
ECP-E3L 14-30/44W14S100	14.00	14.00	30.00	44.0	100.00	3	5.0	38.0	W	0.50	45.0	•	0.05-0.11
ECP-E3L 16-34/50C16S100	16.00	16.00	34.00	50.0	100.00	3	5.0	38.0	C	0.50	45.0	•	0.05-0.11
ECP-E3L 16-34/50W16S100	16.00	16.00	34.00	50.0	100.00	3	5.0	38.0	W	0.50	45.0	•	0.05-0.11
ECP-E3L 20-42/62C20S125	20.00	20.00	42.00	62.0	125.00	3	5.0	38.0	C	0.50	45.0	•	0.05-0.11
ECP-E3L 20-42/62W20S125	20.00	20.00	42.00	62.0	125.00	3	5.0	38.0	W	0.50	45.0	•	0.05-0.11

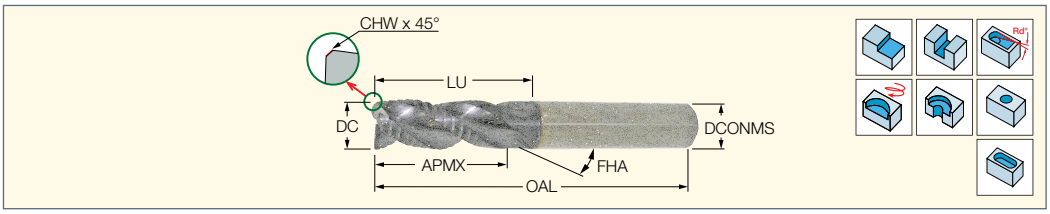
• Most recommended for machining stainless steel. • For user guide, see pages 177-184

(1) Number of flutes
(2) Maximum ramping angle
(3) C-Cylindrical, W-Weldon

SOLIDSHRED

ECP-E4L

4 Flute, 38° Helix Solid Carbide Roughing Endmills with 3xD Relieved Necks and Chip Splitting Cutting Edges



Designation	Dimensions DC	DCONMS	APMX	LU	OAL	NOF(1)	FHA	Shank(2)	CHW	KCH	IC900	Recommended Machining Data f_z (mm/t)
ECP-E4L 05-12/17C06S57	5.00	6.00	12.00	17.0	57.00	4	38.0	C	0.20	45.0	•	0.02-0.05
ECP-E4L 05-12/17W06S57	5.00	6.00	12.00	17.0	57.00	4	38.0	W	0.20	45.0	•	0.02-0.05
ECP-E4L 06-14/20C06S57	6.00	6.00	14.00	20.0	57.00	4	38.0	C	0.30	45.0	•	0.03-0.06
ECP-E4L 06-14/20W06S57	6.00	6.00	14.00	20.0	57.00	4	38.0	W	0.30	45.0	•	0.03-0.06
ECP-E4L 08-18/26C08S63	8.00	8.00	18.00	26.0	63.00	4	38.0	C	0.40	45.0	•	0.03-0.08
ECP-E4L 08-18/26W08S63	8.00	8.00	18.00	26.0	63.00	4	38.0	W	0.40	45.0	•	0.03-0.08
ECP-E4L 10-22/32C10S72	10.00	10.00	22.00	32.0	72.00	4	38.0	C	0.40	45.0	•	0.03-0.09
ECP-E4L 10-22/32W10S72	10.00	10.00	22.00	32.0	72.00	4	38.0	W	0.40	45.0	•	0.03-0.09
ECP-E4L 12-26/38C12S83	12.00	12.00	26.00	38.0	83.00	4	38.0	C	0.40	45.0	•	0.04-0.10
ECP-E4L 12-26/38W12S83	12.00	12.00	26.00	38.0	83.00	4	38.0	W	0.40	45.0	•	0.04-0.10
ECP-E4L 14-30/44C14S100	14.00	14.00	30.00	44.0	100.00	4	38.0	C	0.50	45.0	•	0.04-0.11
ECP-E4L 14-30/44W14S100	14.00	14.00	30.00	44.0	100.00	4	38.0	W	0.50	45.0	•	0.04-0.11
ECP-E4L 16-34/50C16S100	16.00	16.00	34.00	50.0	100.00	4	38.0	C	0.50	45.0	•	0.05-0.12
ECP-E4L 16-34/50W16S100	16.00	16.00	34.00	50.0	100.00	4	38.0	W	0.50	45.0	•	0.05-0.12
ECP-E4L 20-42/62C20S125	20.00	20.00	42.00	62.0	125.00	4	38.0	C	0.50	45.0	•	0.05-0.15
ECP-E4L 20-42/62W20S125	20.00	20.00	42.00	62.0	125.00	4	38.0	W	0.50	45.0	•	0.05-0.15

• Most recommended for machining stainless steel. • For user guide, see pages 177-184

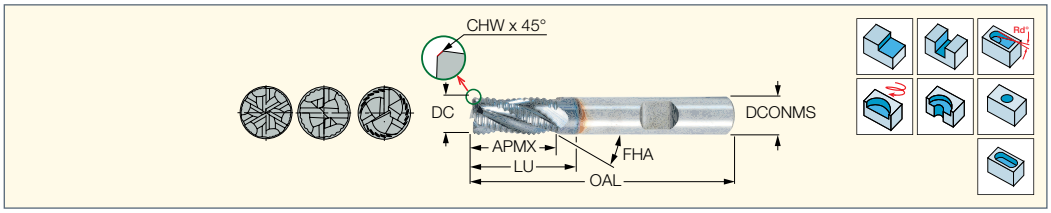
(1) Number of flutes

(2) C-Cylindrical, W-Weldon

SOLIDSHRED

ERF-A/E-3,4,6

3, 4, and 6 Flute, 30° and 38° Helix Solid Carbide Roughing Endmills with 3xD Relieved Neck for Alloy Steel



Designation	Dimensions DC	DCONMS	APMX	LU	OAL	NOF(2)	FHA	RMPX°(3)	Shank(4)	CHW	KCH	IC900	Recommended Machining Data f_z (mm/t)
ERF040E08-3C06	4.00	6.00	8.00	13.00	57.00	3	38.0	5.0	C	0.25	45.0	•	0.02-0.05
ERF050E10-3C06	5.00	6.00	10.00	17.00	57.00	3	38.0	5.0	C	0.30	45.0	•	0.02-0.05
ERF060E13-3C06	6.00	6.00	13.00	21.00	57.00	3	38.0	5.0	C	0.30	45.0	•	0.03-0.06
ERF060E13-3W06	6.00	6.00	13.00	21.00	57.00	3	38.0	5.0	W	0.30	45.0	•	0.03-0.06
ERF070E20-3C08	7.00	8.00	20.00	26.00	63.00	3	38.0	5.0	C	0.30	45.0	•	0.03-0.07
ERF080E20-3C08	8.00	8.00	20.00	28.00	63.00	3	38.0	5.0	C	0.30	45.0	•	0.03-0.08
ERF080E20-3W08	8.00	8.00	20.00	28.00	63.00	3	38.0	5.0	W	0.30	45.0	•	0.03-0.08
ERF090A22-4C10	9.00	10.00	22.00	30.00	72.00	4	30.0	5.0	C	0.30	45.0	•	0.03-0.08
ERF100A22-4C10	10.00	10.00	22.00	30.00	72.00	4	30.0	5.0	C	0.30	45.0	•	0.03-0.09
ERF100A22-4W10	10.00	10.00	22.00	30.00	72.00	4	30.0	5.0	W	0.30	45.0	•	0.03-0.09
ERF110A25-4C12	11.00	12.00	25.00	31.00	83.00	4	30.0	5.0	C	0.30	45.0	•	0.03-0.09
ERF120A25-4C12	12.00	12.00	25.00	37.00	83.00	4	30.0	5.0	C	0.40	45.0	•	0.04-0.10
ERF120A25-4W12	12.00	12.00	25.00	37.00	83.00	4	30.0	5.0	W	0.40	45.0	•	0.04-0.10
ERF130A25-4C14	13.00	14.00	25.00	32.00	83.00	4	30.0	5.0	C	0.40	45.0	•	0.04-0.10
ERF140A25-4C14	14.00	14.00	25.00	37.00	83.00	4	30.0	5.0	C	0.50	45.0	•	0.04-0.11
ERF140A25-4W14	14.00	14.00	25.00	37.00	83.00	4	30.0	5.0	W	0.50	45.0	•	0.04-0.11
ERF160A32-4C16	16.00	16.00	32.00	44.00	92.00	4	30.0	5.0	C	0.50	45.0	•	0.05-0.11
ERF160A32-4W16	16.00	16.00	32.00	44.00	92.00	4	30.0	5.0	W	0.50	45.0	•	0.05-0.11
ERF180A32-4C18	18.00	18.00	32.00	44.00	92.00	4	30.0	5.0	C	0.50	45.0	•	0.05-0.11
ERF180A32-4W18	18.00	18.00	32.00	44.00	92.00	4	30.0	5.0	W	0.50	45.0	•	0.05-0.11
ERF200A38-4C20	20.00	20.00	38.00	55.00	104.00	4	30.0	5.0	C	0.60	45.0	•	0.05-0.11
ERF200A38-4W20	20.00	20.00	38.00	55.00	104.00	4	30.0	5.0	W	0.60	45.0	•	0.05-0.11
ERF250A45-6W25 (1)	25.00	25.00	45.00	64.00	121.00	6	30.0	5.0	W	0.60	45.0	•	0.06-0.11

• For user guide, see pages 177-184

(1) No center cutting • Cannot be used for plunging application

(2) Number of flutes

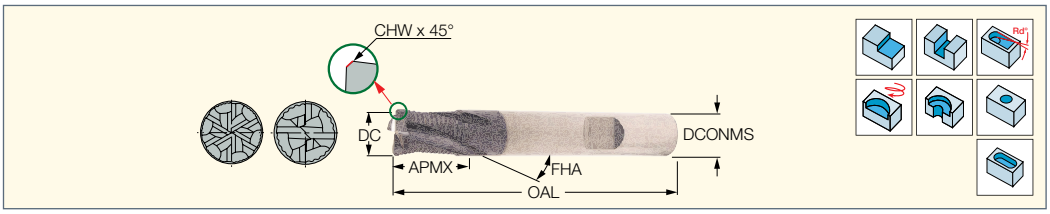
(3) Maximum ramping angle

(4) C-Cylindrical, W-Weldon

SOLIDSHRED

ECR-T-M

4 Flute, 20° Helix Medium Length Solid Carbide Roughing Endmills for High Stock Removal Rates



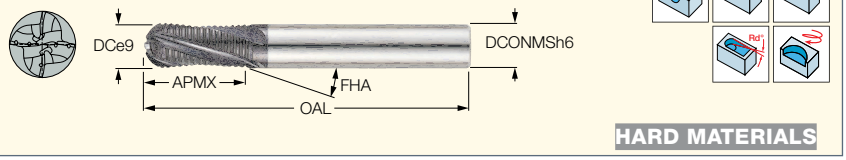
Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	CHW	KCH	IC900	Recommended Machining Data f_z (mm/t)
ECR-T4M 06-10-C06-57	6.00	6.00	10.00	57.00	4	20.0	5.0	C	0.30	45.0	●	0.03-0.06
ECR-T4M 06-10-W06-57	6.00	6.00	10.00	57.00	4	20.0	5.0	W	0.30	45.0	●	0.03-0.06
ECR-T4M 08-16-C08-63	8.00	8.00	16.00	63.00	4	20.0	5.0	C	0.40	45.0	●	0.03-0.08
ECR-T4M 08-16-W08-63	8.00	8.00	16.00	63.00	4	20.0	5.0	W	0.40	45.0	●	0.03-0.08
ECR-T4M 10-20-C10-72	10.00	10.00	20.00	72.00	4	20.0	5.0	C	0.40	45.0	●	0.03-0.09
ECR-T4M 10-20-W10-72	10.00	10.00	20.00	72.00	4	20.0	5.0	W	0.40	45.0	●	0.03-0.09
ECR-T4M 12-24-C12-83	12.00	12.00	24.00	83.00	4	20.0	5.0	C	0.40	45.0	●	0.04-0.10
ECR-T4M 12-24-W12-83	12.00	12.00	24.00	83.00	4	20.0	5.0	W	0.40	45.0	●	0.04-0.10
ECR-T4M 16-32-C16-92	16.00	16.00	32.00	92.00	4	20.0	5.0	C	0.50	45.0	●	0.05-0.11
ECR-T4M 16-32-W16-92	16.00	16.00	32.00	92.00	4	20.0	5.0	W	0.50	45.0	●	0.05-0.11
ECR-T4M 20-40-C20-104	20.00	20.00	40.00	104.00	4	20.0	5.0	C	0.50	45.0	●	0.05-0.11
ECR-T4M 20-40-W20-104	20.00	20.00	40.00	104.00	4	20.0	5.0	W	0.50	45.0	●	0.05-0.11

• For user guide, see pages 177-184
(1) Number of flutes
(2) Maximum ramping angle
(3) C-Cylindrical, W-Weldon

SOLIDSHRED

EBRF-T

3, 4 Flute, 20° Helix Long Solid Carbide Ball Nose Endmills for Roughing Materials up to 55 HRC



HARD MATERIALS

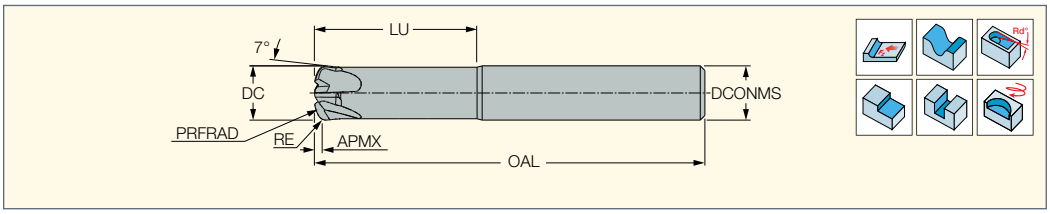
Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	Shank(2)	RETOL(3)	IC903
EBRF-T3 06-16C06M57	6.00	6.00	16.00	57.00	3	20.0	C	0.010	●
EBRF-T3 08-16C08M63	8.00	8.00	16.00	63.00	3	20.0	C	0.010	●
EBRF-T4 10-22C10M72	10.00	10.00	22.00	72.00	4	20.0	C	0.010	●
EBRF-T4 12-26C12M83	12.00	12.00	26.00	83.00	4	20.0	C	0.012	●
EBRF-T4 14-26C14M83	14.00	14.00	26.00	83.00	4	20.0	C	0.012	●
EBRF-T4 16-32C16M92	16.00	16.00	32.00	92.00	4	20.0	C	0.012	●
EBRF-T4 18-32C18M92 IC902	18.00	18.00	32.00	92.00	4	20.0	C	0.012	●
EBRF-T4 20-38C20M104	20.00	20.00	38.00	104.00	4	20.0	C	0.012	●

• For user guide, see pages 177-184
(1) Number of flutes
(2) C-Cylindrical
(3) Corner radius tolerance (+/-)

SOLID FEED MILL

EFF-S2/S4/S6

Solid Carbide Endmills with Relieved Necks for Fast Feed High Productivity



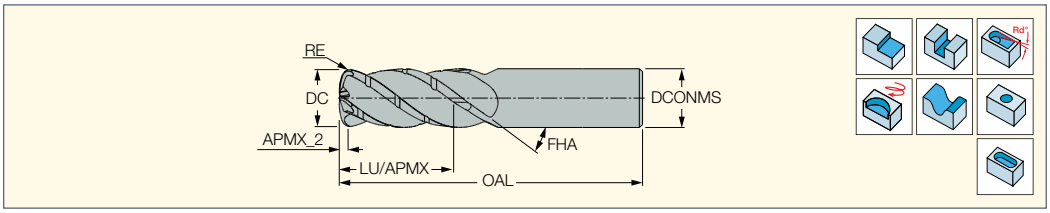
Designation	Dimensions DC	DCONMS	OAL	NOF(1)	LU	RE(2)	PRFRAD	APMX	Shank(3)	Tough ↔ Hard IC903	IC902	Recommended Machining Data f_z (mm/t)
EFF-S2 01-04/03C6RP.15M50	1.00	6.00	50.00	2	3.0	0.15	0.1	0.06	C		●	0.02-0.05
EFF-S2 02-07/06C6RP0.3M50	2.00	6.00	50.00	2	6.0	0.30	0.2	0.12	C		●	0.10-0.14
EFF-S2 03-1/09C06RP0.5M50	3.00	6.00	50.00	2	9.0	0.50	0.4	0.20	C		●	0.10-0.20
EFF-S4-04 020/14C06M57	4.00	6.00	57.00	4	14.0	0.70	0.5	0.20	C		●	0.10-0.25
EFF-S4-05 022/17C06M57	5.00	6.00	57.00	4	17.0	0.90	0.6	0.30	C		●	0.10-0.30
EFF-S4-06 030/20C06R1.0M	6.00	6.00	57.00	4	20.0	1.23	5.3	0.30	C	●		0.10-0.30
EFF-S6-06 025/20C06R0.7M	6.00	6.00	50.00	6	20.0	0.40	5.0	0.35	C		●	0.10-0.25
EFF-S4-08 035/26C08R1.3M	8.00	8.00	63.00	4	26.0	1.62	7.0	0.40	C	●		0.10-0.40
EFF-S6-08 025/26C08R0.86M	8.00	8.00	63.00	6	26.0	0.86	6.0	0.40	C		●	0.10-0.35
EFF-S4-10 040/30C10R1.6M	10.00	10.00	72.00	4	30.0	2.01	8.8	0.50	C	●		0.15-0.50
EFF-S6-10 025/30C10R1.0M	10.00	10.00	72.00	6	30.0	1.00	6.0	0.50	C		●	0.15-0.45
EFF-S4-12 045/34C12R2.0M	12.00	12.00	83.00	4	34.0	2.47	10.6	0.60	C	●		0.15-0.50
EFF-S6-12 030/34C12R1.2M	12.00	12.00	83.00	6	34.0	1.20	10.0	0.65	C		●	0.15-0.45
EFF-S4-16 055/42C16R2.6M	16.00	16.00	92.00	4	42.0	3.25	14.0	0.80	C	●		0.20-0.60
EFF-S6-16 045/42C16R2.0M	16.00	16.00	92.00	6	42.0	2.00	16.0	1.10	C		●	0.20-0.55
EFF-S4-20 060/46C20R3.2M	20.00	20.00	104.00	4	46.0	4.02	17.7	1.00	C	●		0.20-0.70

• For user guide, see pages 177-184
(1) Number of flutes
(2) Should be used for programming
(3) C-Cylindrical

CHATTERFREE SOLID MILL LINE
SOLID FEED MILL

EFP-E4,5CF

Solid Carbide Roughing Endmills with Chip Splitting Cutting Edges, Variable Pitch and Large Radius Frontal Edge



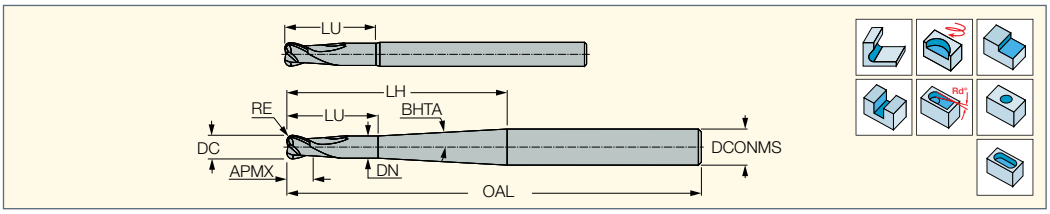
Designation	Dimensions DC	DCONMS	OAL	RE(2)	NOF(3)	FHA	APMX_2(4)	LU	RMPX°(5)	Shank(6)	IC903	Recommended Machining Data f_z (mm/t)
EFP-E4CF 06-12C06R1.0M57	6.00	6.00	57.00	1.00	4	38.0	0.30	12.00	5.0	C	●	0.02-0.30
EFP-E4CF 08-16C08R1.4M63	8.00	8.00	63.00	1.40	4	38.0	0.40	16.00	5.0	C	●	0.03-0.40
EFP-E4CF 10-20C10R1.7M72	10.00	10.00	72.00	1.70	4	38.0	0.50	20.00	5.0	C	●	0.03-0.50
EFP-E4CF 12-25C12R2.0M83	12.00	12.00	83.00	2.00	4	38.0	0.60	24.00	5.0	C	●	0.04-0.50
EFP-E4CF 16-32C16R2.7M92	16.00	16.00	92.00	2.70	4	38.0	0.80	32.00	5.0	C	●	0.05-0.60
EFP-E5CF 16-40C16R2.7M92 (1)	16.00	16.00	92.00	2.70	5	38.0	0.80	40.00	5.0	C	●	0.05-0.60
EFP-E4CF 20-40C20R3.4M104	20.00	20.00	104.00	3.40	4	38.0	1.00	40.00	5.0	C	●	0.05-0.70
EFP-E5CF 20-48C20R3.4M104 (1)	20.00	20.00	104.00	3.40	5	38.0	1.00	48.00	5.0	C	●	0.05-0.70

• For user guide, see pages 177-184
(1) Cannot be used for plunging application
(2) Used for programming
(3) Number of flutes
(4) Maximum D.O.C. for high feed milling (FEEDMILL)
(5) Maximum ramping angle
(6) C-Cylindrical

SOLIDMILL PREMIUM LINE

ETR-A2

2 Flute Toroidal Endmills



Designation	Dimensions												IC900	Recommended Machining Data
	DC	DCONMS	APMX	OAL	NOF(1)	LU	DN	LH	BHTA	RMPX°(2)	RE	Shank(3)		f_z (mm/t)
ETR-A2 02-2/08C06R.5M80	2.00	6.00	2.00	80.00	2	8.0	1.90	40.0	3.6	5.0	0.50	C	●	0.01-0.03
ETR-A2 03-2/12C06R.5M80	3.00	6.00	2.00	80.00	2	12.0	2.80	40.0	3.3	5.0	0.50	C	●	0.01-0.04
ETR-A2 04-3/16C06R1M80	4.00	6.00	3.00	80.00	2	16.0	3.70	40.0	2.8	5.0	1.00	C	●	0.02-0.05
ETR-A2 06-4/25C08R2M100	6.00	8.00	4.00	100.00	2	25.0	5.60	66.0	2.0	5.0	2.00	C	●	0.03-0.07
ETR-A2 10-6/40C12R3M160	10.00	12.00	6.00	158.00	2	40.0	9.60	110.0	1.0	5.0	3.00	C	●	0.03-0.10

- For user guide, see pages 177-184

(1) Number of flutes

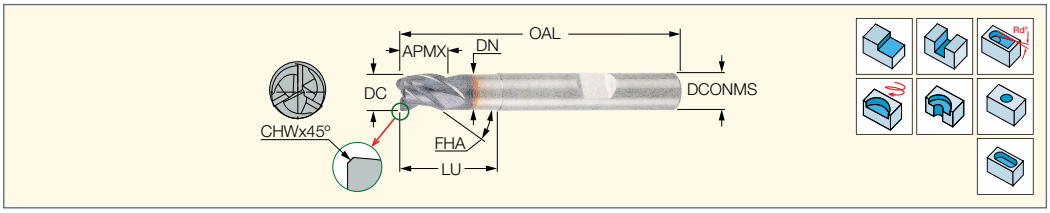
(2) Maximum ramping angle

(3) C-Cylindrical

SOLIDMILL PREMIUM LINE

ECS/ECCS-E-3

3 Flute, 38° Helix Short Solid Carbide Slot / Drill Endmills with 3xD Relieved Necks and Chamfered Corners



Designation	Dimensions												Tough ↔ Hard		Recommended Machining Data
	DC	DCONMS	APMX	LU	DN	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	CHW	KCH	IC300	IC900	f_z (mm/t)
ECS020E03-3W06-57	2.00	6.00	3.00	8.00	1.90	57.00	3	38.0	5.0	W	-	-		●	0.01-0.03
ECS025E03-3W06-57	2.50	6.00	3.00	8.00	2.40	57.00	3	38.0	5.0	W	-	-		●	0.01-0.03
ECS030E04-3W06-57	3.00	6.00	4.00	9.00	2.90	57.00	3	38.0	5.0	W	-	-		●	0.01-0.04
ECS035E04-3W06-57	3.50	6.00	4.00	12.00	3.40	57.00	3	38.0	5.0	W	-	-		●	0.01-0.04
ECS040E05-3W06-57	4.00	6.00	5.00	13.00	3.90	57.00	3	38.0	5.0	W	-	-	●	●	0.02-0.05
ECS050E06-3W06-57	5.00	6.00	6.00	14.00	4.90	57.00	3	38.0	5.0	W	-	-		●	0.02-0.06
ECCS060E07-3W06-57	6.00	6.00	7.00	15.00	5.90	57.00	3	38.0	5.0	W	0.15	45.0		●	0.03-0.07
ECCS070E08-3W08-63	7.00	8.00	8.00	20.00	6.70	63.00	3	38.0	5.0	W	0.15	45.0		●	0.03-0.08
ECCS080E09-3W08-63	8.00	8.00	9.00	21.00	7.60	63.00	3	38.0	5.0	W	0.15	45.0		●	0.03-0.09
ECCS090E10-3W10-72	9.00	10.00	10.00	22.00	8.60	72.00	3	38.0	5.0	W	0.15	45.0		●	0.03-0.09
ECCS100E11-3W10-72	10.00	10.00	11.00	23.00	9.50	72.00	3	38.0	5.0	W	0.25	45.0		●	0.03-0.10
ECCS120E12-3W12-83	12.00	12.00	12.00	24.00	11.30	83.00	3	38.0	5.0	W	0.25	45.0		●	0.04-0.11
ECCS160E16-3W16-92	16.00	16.00	16.00	33.00	15.20	92.00	3	38.0	5.0	W	0.25	45.0		●	0.05-0.13

- For user guide, see pages 177-184

(1) Number of flutes

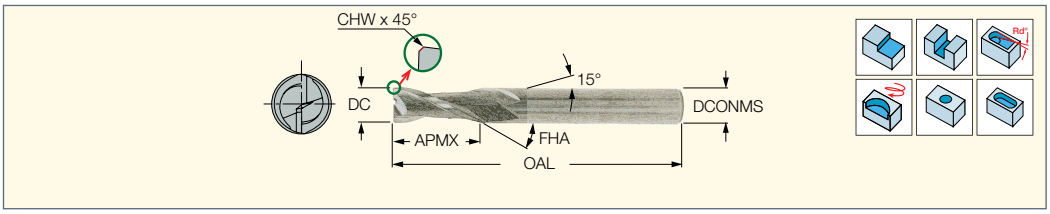
(2) Maximum ramping angle

(3) W-Weldon

SOLIDMILL PREMIUM LINE

EC/ECC-A-2

2 Flute, 30 and 45° Helix
Medium Length Solid Carbide
Slot / Drill Endmills



Designation	Dimensions										Tough ↔ Hard			Recommended Machining Data
	DC	DCONMS	APMX	OAL	NOF[1]	FHA	RMPX°[2]	Shank[3]	KCH	CHW	IC08	IC300	IC900	f_z (mm/t)
ECC020B07-2C03	2.00	3.00	7.00	38.00	2	45.0	5.0	C	0.10	45.0			●	0.01-0.03
EC020B07-2C03	2.00	3.00	7.00	38.00	2	45.0	5.0	C	-	-	●	●		0.01-0.03
EC020B07-2C06	2.00	6.00	7.00	57.00	2	45.0	5.0	C	-	-			●	0.01-0.03
ECC025A07-2C03	2.50	3.00	7.00	38.00	2	30.0	5.0	C	0.10	45.0			●	0.01-0.03
EC025A07-2C03	2.50	3.00	7.00	38.00	2	30.0	5.0	C	-	-	●	●		0.01-0.03
ECC030A10-2C03	3.00	3.00	10.00	38.00	2	30.0	5.0	C	0.10	45.0			●	0.01-0.04
EC030A10-2C03	3.00	3.00	10.00	38.00	2	30.0	5.0	C	-	-	●	●		0.01-0.04
EC030A10-2C06	3.00	6.00	10.00	57.00	2	30.0	5.0	C	-	-		●	●	0.01-0.04
ECC035A12-2C04	3.50	4.00	12.00	50.00	2	30.0	5.0	C	45.0	0.10		●		0.01-0.04
EC035A12-2C04	3.50	4.00	12.00	50.00	2	30.0	5.0	C	-	-	●	●		0.01-0.04
ECC040A12-2C04	4.00	4.00	12.00	50.00	2	30.0	5.0	C	45.0	0.15			●	0.02-0.05
EC040A12-2C04	4.00	4.00	12.00	50.00	2	30.0	5.0	C	-	-	●	●	●	0.02-0.05
EC040A12-2C06	4.00	6.00	12.00	57.00	2	30.0	5.0	C	-	-	●	●	●	0.02-0.05
EC045A14-2C06	4.50	6.00	14.00	57.00	2	30.0	5.0	C	-	-		●		0.02-0.05
ECC050A14-2C05	5.00	5.00	14.00	50.00	2	30.0	5.0	C	0.15	45.0		●	●	0.02-0.06
EC050A14-2C05	5.00	5.00	14.00	50.00	2	30.0	5.0	C	-	-	●	●		0.02-0.06
EC050A14-2C06	5.00	6.00	14.00	57.00	2	30.0	5.0	C	-	-		●	●	0.02-0.06
EC055A16-2C06	5.50	6.00	16.00	57.00	2	30.0	5.0	C	-	-		●		0.02-0.06
ECC060A16-2C06	6.00	6.00	16.00	57.00	2	30.0	5.0	C	45.0	0.15			●	0.03-0.07
EC060A16-2C06	6.00	6.00	16.00	57.00	2	30.0	5.0	C	-	-	●	●	●	0.03-0.07
EC060A16-2W06	6.00	6.00	16.00	57.00	2	30.0	5.0	W	-	-			●	0.03-0.07
EC065A20-2C07	6.50	7.00	20.00	60.00	2	30.0	5.0	C	-	-		●		0.03-0.07
EC070A20-2C07	7.00	7.00	20.00	60.00	2	30.0	5.0	C	-	-	●	●		0.03-0.08
ECC080A20-2C08	8.00	8.00	20.00	63.00	2	30.0	5.0	C	0.15	45.0			●	0.03-0.09
EC080A20-2C08	8.00	8.00	20.00	63.00	2	30.0	5.0	C	-	-	●	●	●	0.03-0.09
EC080A20-2W08	8.00	8.00	20.00	63.00	2	30.0	5.0	W	-	-			●	0.03-0.09
EC085A22-2C10	8.50	10.00	22.00	72.00	2	30.0	5.0	C	-	-		●		0.03-0.09
ECC100A22-2C10	10.00	10.00	22.00	72.00	2	30.0	5.0	C	45.0	0.25			●	0.03-0.10
EC100A22-2C10	10.00	10.00	22.00	72.00	2	30.0	5.0	C	-	-	●	●	●	0.03-0.10
ECC120A25-2C12	12.00	12.00	25.00	83.00	2	30.0	5.0	C	0.25	45.0			●	0.04-0.11
EC120A25-2C12	12.00	12.00	25.00	83.00	2	30.0	5.0	C	-	-	●	●	●	0.04-0.11
EC140A25-2C14	14.00	14.00	25.00	83.00	2	30.0	5.0	C	-	-	●		●	0.04-0.12
ECC160A32-2C16	16.00	16.00	32.00	92.00	2	30.0	5.0	C	45.0	0.25			●	0.05-0.13
EC160A32-2C16	16.00	16.00	32.00	92.00	2	30.0	5.0	C	-	-		●	●	0.05-0.13
EC180A32-2C18	18.00	18.00	32.00	92.00	2	30.0	5.0	C	-	-	●	●		0.05-0.13
ECC200A38-2C20	20.00	20.00	38.00	104.00	2	30.0	5.0	C	0.25	45.0			●	0.05-0.13
EC200A38-2C20	20.00	20.00	38.00	104.00	2	30.0	5.0	C	-	-	●		●	0.05-0.13

• For user guide, see pages 177-184

[1] Number of flutes

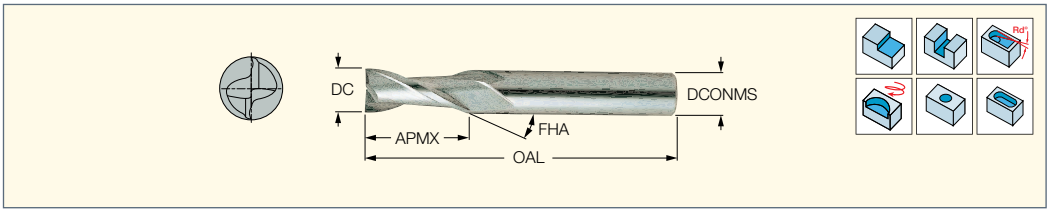
[2] Maximum ramping angle

[3] C-Cylindrical, W-Weldon

SOLIDMILL TEC LINE

EC-A2 (economical-short/ medium/extra long)

Economical Type 2 Flute, 30° Helix Center Cutting, Short/ Medium/Extra Long Length Solid Carbide Endmills



Designation	Dimensions								Tough ↔ Hard		Recommended Machining Data
	DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	IC08	IC900	f_z (mm/t)
EC-A2 01-03C04E50	1.00	4.00	3.00	50.00	2	30.0	5.0	C	●	●	0.00-0.01
EC-A2 015-045C04E50	1.50	4.00	4.50	50.00	2	30.0	5.0	C	●	●	0.00-0.02
EC-A2 02-08C02E32	2.00	2.00	8.00	32.00	2	30.0	5.0	C	●	●	0.01-0.03
EC-A2 02-03W06E50	2.00	6.00	3.00	50.00	2	30.0	5.0	W	●	●	0.01-0.03
EC-A2 025-08C025E32	2.50	2.50	8.00	32.00	2	30.0	5.0	C	●	●	0.01-0.03
EC-A2 03-12C03E38	3.00	3.00	12.00	38.00	2	30.0	5.0	C	●	●	0.01-0.04
EC-A2 03-30C03E75	3.00	3.00	30.00	75.00	2	30.0	5.0	C	●	●	0.01-0.04
EC-A2 03-04W06E50	3.00	6.00	4.00	50.00	2	30.0	5.0	W	●	●	0.01-0.04
EC-A2 035-12C035E32	3.50	3.50	12.00	32.00	2	30.0	5.0	C	●	●	0.01-0.04
EC-A2 04-12C04E50	4.00	4.00	12.00	50.00	2	30.0	5.0	C	●	●	0.02-0.05
EC-A2 04-30C04E75	4.00	4.00	30.00	75.00	2	30.0	5.0	C	●	●	0.02-0.05
EC-A2 04-05W06E54	4.00	6.00	5.00	54.00	2	30.0	5.0	W	●	●	0.02-0.05
EC-A2 045-05W06E54	4.50	6.00	5.00	54.00	2	30.0	5.0	W	●	●	0.02-0.05
EC-A2 05-14C05E50	5.00	5.00	14.00	50.00	2	30.0	5.0	C	●	●	0.02-0.06
EC-A2 05-40C05E100	5.00	5.00	40.00	100.00	2	30.0	5.0	C	●	●	0.02-0.06
EC-A2 05-06W06E54	5.00	6.00	6.00	54.00	2	30.0	5.0	W	●	●	0.02-0.06
EC-A2 055-16C055E50	5.50	5.50	16.00	50.00	2	30.0	5.0	C	●	●	0.02-0.06
EC-A2 06-07W06E54	6.00	6.00	7.00	54.00	2	30.0	5.0	W	●	●	0.03-0.07
EC-A2 06-16C06E50	6.00	6.00	16.00	50.00	2	30.0	5.0	C	●	●	0.03-0.07
EC-A2 06-50C06E150	6.00	6.00	50.00	150.00	2	30.0	5.0	C	●	●	0.03-0.07
EC-A2 07-20C07E60	7.00	7.00	20.00	60.00	2	30.0	5.0	C	●	●	0.03-0.08
EC-A2 08-09W08E58	8.00	8.00	9.00	58.00	2	30.0	5.0	W	●	●	0.03-0.09
EC-A2 08-20C08E63	8.00	8.00	20.00	60.00	2	30.0	5.0	C	●	●	0.03-0.09
EC-A2 08-50C08E150	8.00	8.00	50.00	150.00	2	30.0	5.0	C	●	●	0.03-0.09
EC-A2 09-20C09E60	9.00	9.00	20.00	60.00	2	30.0	5.0	C	●	●	0.03-0.09
EC-A2 10-11W10E66	10.00	10.00	11.00	66.00	2	30.0	5.0	W	●	●	0.03-0.10
EC-A2 10-22C10E72	10.00	10.00	22.00	72.00	2	30.0	5.0	C	●	●	0.03-0.10
EC-A2 10-60C10E150	10.00	10.00	60.00	150.00	2	30.0	5.0	C	●	●	0.03-0.10
EC-A2 12-22C12E73	12.00	12.00	22.00	73.00	2	30.0	5.0	C	●	●	0.04-0.11
EC-A2 12-75C12E150	12.00	12.00	75.00	150.00	2	30.0	5.0	C	●	●	0.04-0.11
EC-A2 14-25C14E75	14.00	14.00	25.00	75.00	2	30.0	5.0	C	●	●	0.04-0.12
EC-A2 14-65C14E150	14.00	14.00	65.00	150.00	2	30.0	5.0	C	●	●	0.04-0.12
EC-A2 16-25C16E92	16.00	16.00	25.00	92.00	2	30.0	5.0	C	●	●	0.05-0.13
EC-A2 16-65C16E150	16.00	16.00	65.00	150.00	2	30.0	5.0	C	●	●	0.05-0.13
EC-A2 18-18W18E84	18.00	18.00	18.00	84.00	2	30.0	5.0	W	●		0.05-0.13
EC-A2 18-65C18E150	18.00	18.00	65.00	150.00	2	30.0	5.0	C	●	●	0.05-0.13
EC-A2 20-20W20E92	20.00	20.00	20.00	92.00	2	30.0	5.0	W	●	●	0.05-0.13
EC-A2 20-32C20E100	20.00	20.00	32.00	100.00	2	30.0	5.0	C	●	●	0.05-0.13
EC-A2 20-65C20E150	20.00	20.00	65.00	150.00	2	30.0	5.0	C	●	●	0.05-0.13

• For user guide, see pages 177-184

(1) Number of flutes

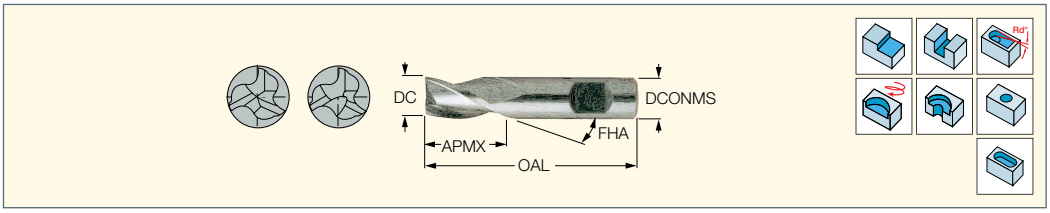
(2) Maximum ramping angle

(3) C-Cylindrical,W-Weldon

SOLIDMILL TEC LINE

EC-A3/E3 (economical-short/medium)

Economical Type 3 Flute, 30° and 38° Helix, Center Cutting, Short/Mediun Length Solid Carbide Endmills



Designation	Dimensions								Tough ↔ Hard		Recommended Machining Data
	DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	IC08	IC900	f_z (mm/t)
EC-A3 005-015C03E38	0.50	3.00	1.50	38.00	3	30.0	5.0	C	●	●	0.0070-0.0100
EC-A3 008-02C03E38	0.80	3.00	2.00	38.00	3	30.0	5.0	C	●	●	0.0070-0.0100
EC-A3 01-02C03E38	1.00	3.00	2.00	38.00	3	30.0	5.0	C	●		0.0100-0.0300
EC-A3 012-02C03E38	1.20	3.00	2.00	38.00	3	30.0	5.0	C	●	●	0.0100-0.0300
EC-A3 015-02C03E38	1.50	3.00	2.00	38.00	3	30.0	5.0	C	●	●	0.0100-0.0300
EC-A3 018-02C03E38	1.80	3.00	2.00	38.00	3	30.0	5.0	C	●	●	0.0100-0.0300
EC-E3 02-08C02E32	2.00	2.00	8.00	32.00	3	38.0	5.0	C	●	●	0.0100-0.0300
EC-E3 02-04C06E35	2.00	6.00	4.00	35.00	3	38.0	5.0	C	●	●	0.0100-0.0300
EC-E3 025-08C025E32	2.50	2.50	8.00	32.00	3	38.0	5.0	C	●	●	0.0100-0.0300
EC-E3 025-05C06E36	2.50	6.00	5.00	36.00	3	38.0	5.0	C	●	●	0.0100-0.0300
EC-E3 03-12C03E38	3.00	3.00	12.00	38.00	3	38.0	5.0	C	●	●	0.0100-0.0400
EC-E3 03-05C06E36	3.00	6.00	5.00	36.00	3	38.0	5.0	C	●	●	0.0100-0.0400
EC-A3 035-12C035E32	3.50	3.50	12.00	32.00	3	30.0	5.0	C	●	●	0.0100-0.0400
EC-A3 035-06W06E37	3.50	6.00	6.00	37.00	3	30.0	5.0	W	●	●	0.0100-0.0400
EC-E3 04-12C04E50	4.00	4.00	12.00	50.00	3	38.0	5.0	C	●	●	0.0200-0.0500
EC-E3 04-07C06E39	4.00	6.00	7.00	39.00	3	38.0	5.0	C	●	●	0.0200-0.0500
EC-A3 045-14C045E50	4.50	4.50	14.00	50.00	3	30.0	5.0	C	●	●	0.0200-0.0500
EC-A3 045-08W06E38	4.50	6.00	8.00	38.00	3	30.0	5.0	W	●	●	0.0200-0.0500
EC-E3 05-14C05E50	5.00	5.00	14.00	50.00	3	38.0	5.0	C	●	●	0.0200-0.0600
EC-A3 05-08W06E39	5.00	6.00	8.00	39.00	3	30.0	5.0	W	●		0.0200-0.0600
EC-E3 05-08C06E39	5.00	6.00	8.00	39.00	3	30.0	5.0	C		●	0.0200-0.0600
EC-A3 055-16C055E50	5.50	5.50	16.00	50.00	3	30.0	5.0	C	●	●	0.0200-0.0600
EC-A3 055-08W06E39	5.50	6.00	8.00	39.00	3	30.0	5.0	W	●	●	0.0200-0.0600
EC-E3 06-08C06E39	6.00	6.00	8.00	39.00	3	38.0	5.0	C	●	●	0.0300-0.0700
EC-E3 06-16C06E50	6.00	6.00	16.00	50.00	3	38.0	5.0	C	●	●	0.0300-0.0700
EC-A3 0675-10W08E42	6.75	8.00	10.00	42.00	3	30.0	5.0	W	●	●	0.0300-0.0700
EC-E3 07-20C07E60	7.00	7.00	20.00	60.00	3	30.0	5.0	C	●	●	0.0300-0.0800
EC-A3 07-10W08E42	7.00	8.00	10.00	42.00	3	30.0	5.0	W	●	●	0.0300-0.0800
EC-E3 08-11C08E43	8.00	8.00	11.00	43.00	3	38.0	5.0	C	●	●	0.0300-0.0900
EC-E3 08-20C08E63	8.00	8.00	20.00	63.00	3	38.0	5.0	C	●	●	0.0300-0.0900
EC-A3 09-20C09E60	9.00	9.00	20.00	60.00	3	30.0	5.0	C	●	●	0.0300-0.0900
EC-A3 09-11W10E48	9.00	10.00	11.00	48.00	3	30.0	5.0	W	●	●	0.0300-0.0900
EC-A3 097-11W10E48	9.70	10.00	11.00	48.00	3	30.0	5.0	W	●	●	0.0300-0.0900
EC-E3 10-13C10E50	10.00	10.00	13.00	50.00	3	38.0	5.0	C	●	●	0.0300-0.1000
EC-E3 10-22C10E72	10.00	10.00	22.00	72.00	3	38.0	5.0	C	●	●	0.0300-0.1000
EC-E3 12-15C12E55	12.00	12.00	15.00	55.00	3	30.0	5.0	C	●	●	0.0400-0.1100
EC-E3 12-22C12E73	12.00	12.00	22.00	73.00	3	38.0	5.0	C	●	●	0.0400-0.1100
EC-A3 14-25C14E75	14.00	14.00	25.00	75.00	3	30.0	5.0	C	●	●	0.0400-0.1200
EC-A3 16-18W16E62	16.00	16.00	18.00	62.00	3	30.0	5.0	W	●	●	0.0500-0.1300
EC-A3 16-25C16E75	16.00	16.00	25.00	75.00	3	30.0	5.0	C	●	●	0.0500-0.1300
EC-E3 20-32C20E104	20.00	20.00	32.00	104.00	3	38.0	5.0	C	●		0.0500-0.1300

• For user guide, see pages 177-184

(1) Number of flutes

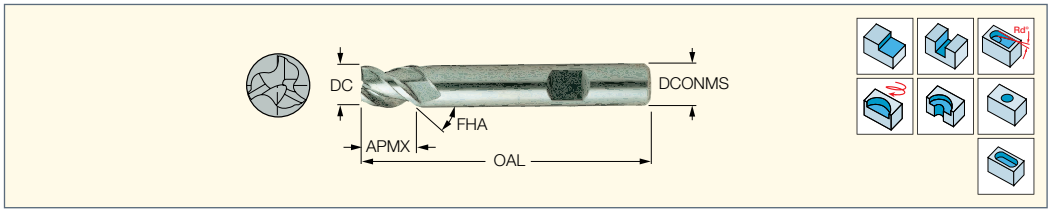
(2) Maximum ramping angle

(3) C-Cylindrical, W-Weldon

SOLIDMILL TEC LINE

EC-B3
(economical-short/medium)

Economical Type 3 Flute,
45° Helix, Center Cutting,
Short/Medium Length
Solid Carbide Endmills



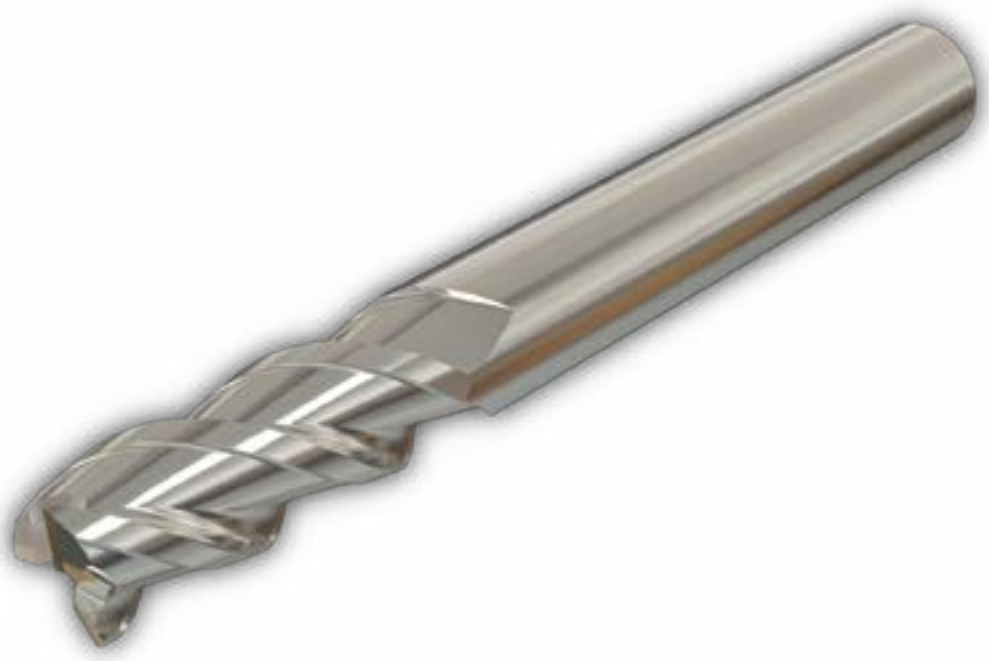
Designation	Dimensions								Tough ↔ Hard		Recommended Machining Data
	DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	IC08	IC900	f_z (mm/t)
EC-B3 015-03C03E38	1.50	3.00	3.00	38.00	3	45.0	5.0	C	●	●	0.00-0.02
EC-B3 02-03W06E50	2.00	6.00	3.00	50.00	3	45.0	5.0	W	●	●	0.01-0.03
EC-B3 03-04W06E50	3.00	6.00	4.00	50.00	3	45.0	5.0	W	●	●	0.01-0.04
EC-B3 03-08C06E50	3.00	6.00	8.00	50.00	3	45.0	5.0	C	●	●	0.01-0.04
EC-B3 035-04W06E50	3.50	6.00	4.00	50.00	3	45.0	5.0	W	●	●	0.01-0.04
EC-B3 04-05W06E54	4.00	6.00	5.00	54.00	3	45.0	5.0	W	●	●	0.02-0.05
EC-B3 04-11C06E50	4.00	6.00	11.00	50.00	3	45.0	5.0	C	●	●	0.02-0.05
EC-B3 045-05W06E54	4.50	6.00	5.00	54.00	3	45.0	5.0	W	●	●	0.02-0.05
EC-B3 05-06C06E57	5.00	6.00	6.00	57.00	3	45.0	5.0	C	●	●	0.02-0.06
EC-B3 05-13C06E50	5.00	6.00	13.00	50.00	3	45.0	5.0	C	●	●	0.02-0.06
EC-B3 06-07W06E54	6.00	6.00	7.00	54.00	3	45.0	5.0	W	●	●	0.03-0.07
EC-B3 06-13C06E50	6.00	6.00	13.00	50.00	3	45.0	5.0	C	●	●	0.03-0.07
EC-B3 08-09W08E58	8.00	8.00	9.00	58.00	3	45.0	5.0	W	●	●	0.03-0.09
EC-B3 08-19C08E63	8.00	8.00	19.00	63.00	3	45.0	5.0	C	●	●	0.03-0.09
EC-B3 09-10W10E66	9.00	10.00	10.00	66.00	3	45.0	5.0	W	●	●	0.03-0.09
EC-B3 10-11W10E66	10.00	10.00	11.00	66.00	3	45.0	5.0	W	●	●	0.03-0.10
EC-B3 10-22C10E72	10.00	10.00	22.00	72.00	3	45.0	5.0	C	●	●	0.03-0.10
EC-B3 12-12W12E73	12.00	12.00	12.00	73.00	3	45.0	5.0	W	●	●	0.04-0.11
EC-B3 12-26C12E73	12.00	12.00	26.00	73.00	3	45.0	5.0	C	●	●	0.04-0.11
EC-B3 14-14W14E75	14.00	14.00	14.00	75.00	3	45.0	5.0	W	●	●	0.04-0.12
EC-B3 14-26C14E75	14.00	14.00	26.00	75.00	3	45.0	5.0	C	●	●	0.04-0.12
EC-B3 16-16W16E82	16.00	16.00	16.00	82.00	3	45.0	5.0	W	●	●	0.05-0.13
EC-B3 16-25C16E92	16.00	16.00	25.00	92.00	3	45.0	5.0	C	●	●	0.05-0.13
EC-B3 20-20W20E92	20.00	20.00	20.00	92.00	3	45.0	5.0	W	●	●	0.05-0.13
EC-B3 20-32C20E104	20.00	20.00	32.00	104.00	3	45.0	5.0	C	●	●	0.05-0.13

• For user guide, see pages 177-184

(1) Number of flutes

(2) Maximum ramping angle

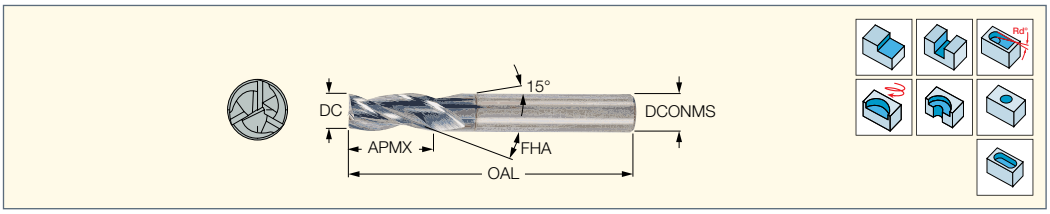
(3) C-Cylindrical, W-Weldon



SOLIDMILL PREMIUM LINE

EC-E-3

3 Flute, 38° Helix Medium Length Solid Carbide Endmills



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	Tough ↔ Hard IC08	IC300	IC900	Recommended Machining Data f_z (mm/t)
EC010E025-3C03	1.00	3.00	2.50	38.00	3	38.0	5.0	C		•	•	0.01-0.01
EC015E04-3C04	1.50	4.00	4.00	50.00	3	38.0	5.0	C		•	•	0.01-0.02
EC025E07-3C03	2.50	3.00	7.00	38.00	3	38.0	5.0	C			•	0.01-0.03
EC030E10-3C03	3.00	3.00	10.00	38.00	3	38.0	5.0	C	•	•	•	0.01-0.04
EC030E10-3C06	3.00	6.00	10.00	57.00	3	38.0	5.0	C			•	0.01-0.04
EC035E12-3C04	3.50	4.00	12.00	50.00	3	38.0	5.0	C	•		•	0.01-0.04
EC040E12-3C04	4.00	4.00	12.00	50.00	3	38.0	5.0	C	•	•	•	0.02-0.05
EC040E12-3C06	4.00	6.00	12.00	57.00	3	38.0	5.0	C			•	0.02-0.05
EC045E14-3C06	4.50	6.00	14.00	57.00	3	38.0	5.0	C	•		•	0.02-0.05
EC050E14-3C05	5.00	5.00	14.00	50.00	3	38.0	5.0	C	•	•	•	0.02-0.06
EC050E14-3C06	5.00	6.00	14.00	57.00	3	38.0	5.0	C			•	0.02-0.06
EC050E14-3W06	5.00	6.00	14.00	57.00	3	38.0	5.0	W			•	0.02-0.06
EC060E16-3C06	6.00	6.00	16.00	57.00	3	38.0	5.0	C	•	•	•	0.03-0.07
EC060E16-3W06	6.00	6.00	16.00	57.00	3	38.0	5.0	W			•	0.03-0.07
EC070E20-3C07	7.00	7.00	20.00	60.00	3	38.0	5.0	C	•		•	0.03-0.08
EC080E20-3C08	8.00	8.00	20.00	63.00	3	38.0	5.0	C	•	•	•	0.03-0.09
EC080E20-3W08	8.00	8.00	20.00	63.00	3	38.0	5.0	W			•	0.03-0.09
EC100E22-3C10	10.00	10.00	22.00	72.00	3	38.0	5.0	C	•	•	•	0.03-0.10
EC100E22-3W10	10.00	10.00	22.00	72.00	3	38.0	5.0	W		•	•	0.03-0.10
EC120E25-3C12	12.00	12.00	25.00	83.00	3	38.0	5.0	C	•	•	•	0.04-0.11
EC120E25-3W12	12.00	12.00	25.00	83.00	3	38.0	5.0	W			•	0.04-0.11
EC140E25-3C14	14.00	14.00	25.00	83.00	3	38.0	5.0	C			•	0.04-0.12
EC140E25-3W14	14.00	14.00	25.00	83.00	3	38.0	5.0	W			•	0.04-0.12
EC160E32-3C16	16.00	16.00	32.00	92.00	3	38.0	5.0	C	•		•	0.05-0.13
EC160E32-3W16	16.00	16.00	32.00	92.00	3	38.0	5.0	W			•	0.05-0.13
EC180E32-3C18	18.00	18.00	32.00	92.00	3	38.0	5.0	C			•	0.05-0.13
EC180E32-3W18	18.00	18.00	32.00	92.00	3	38.0	5.0	W			•	0.05-0.13
EC200E38-3C20	20.00	20.00	38.00	104.00	3	38.0	5.0	C			•	0.05-0.13
EC200E38-3W20	20.00	20.00	38.00	104.00	3	38.0	5.0	W			•	0.05-0.13

• Multi-purpose endmill. • Suitable for deep slotting. • For user guide, see pages 177-184

(1) Number of flutes

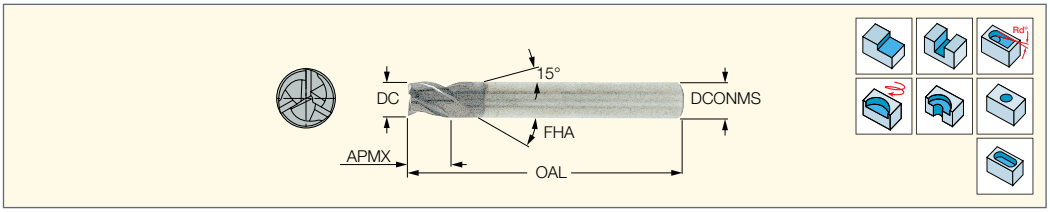
(2) Maximum ramping angle

(3) C-Cylindrical, W-Weldon

SOLIDMILL PREMIUM LINE

ECU-E-3

3 Flute, 38° Helix Short Undersized Slot / Drill Solid Carbide Endmills



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	IC900	Recommended Machining Data f_z (mm/t)
ECU028E04-3W06-57	2.80	6.00	4.00	57.00	3	38.0	5.0	W	•	0.01-0.04
ECU038E05-3W06-57	3.80	6.00	5.00	57.00	3	38.0	5.0	W	•	0.01-0.04
ECU048E06-3W06-57	4.80	6.00	6.00	57.00	3	38.0	5.0	W	•	0.02-0.05
ECU057E07-3W06-57	5.70	6.00	7.00	57.00	3	38.0	5.0	W	•	0.02-0.06
ECU067E08-3W08-63	6.70	8.00	8.00	63.00	3	38.0	5.0	W	•	0.03-0.07
ECU077E09-3W08-63	7.70	8.00	9.00	63.00	3	38.0	5.0	W	•	0.03-0.08
ECU097E11-3W10-72	9.70	10.00	11.00	72.00	3	38.0	5.0	W	•	0.03-0.09
ECU117E12-3W12-73	11.70	12.00	12.00	73.00	3	38.0	5.0	W	•	0.03-0.10
ECU137E16-3W14-83	13.70	14.00	14.00	83.00	3	38.0	5.0	W	•	0.04-0.11
ECU157E16-3W16-92	15.70	16.00	16.00	92.00	3	38.0	5.0	W	•	0.04-0.12
ECU177E18-3W18-92	17.70	18.00	18.00	92.00	3	38.0	5.0	W	•	0.05-0.13

• Undersized short design for keyholes • For user guide, see pages 177-184

(1) Number of flutes

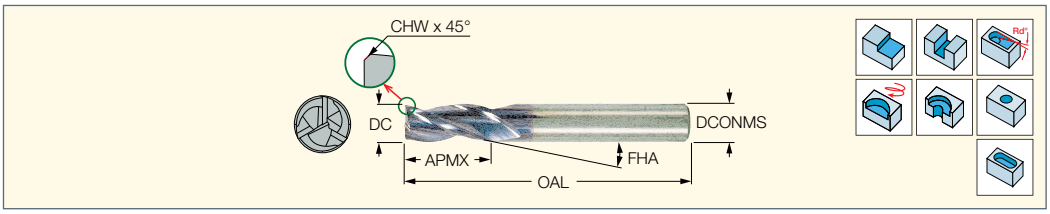
(2) Maximum ramping angle

(3) W-Weldon

SOLIDMILL PREMIUM LINE

ECC-E-3

3 Flute, 38 and 45° Helix Medium Length Slot / Drill Solid Carbide Endmills with Chamfered Corners



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	CHW	KCH	Tough ↔ Hard IC300	IC900	Recommended Machining Data f_z (mm/t)
ECC020B07-3C03	2.00	3.00	7.00	38.00	3	45.0	5.0	C	0.10	45.0	•		0.01-0.03
ECC025E07-3C03	2.50	3.00	7.00	38.00	3	38.0	5.0	C	0.10	45.0	•		0.01-0.03
ECC030E10-3C03	3.00	3.00	10.00	38.00	3	38.0	5.0	C	0.10	45.0	•	•	0.01-0.04
ECC035E12-3C04	3.50	4.00	12.00	50.00	3	38.0	5.0	C	0.10	45.0		•	0.01-0.04
ECC040E12-3C04	4.00	4.00	12.00	50.00	3	38.0	5.0	C	0.15	45.0		•	0.02-0.05
ECC050E14-3C05	5.00	5.00	14.00	50.00	3	38.0	5.0	C	0.15	45.0	•	•	0.02-0.06
ECC060E16-3C06	6.00	6.00	16.00	57.00	3	38.0	5.0	C	0.15	45.0		•	0.03-0.07
ECC060E16-3W06	6.00	6.00	16.00	57.00	3	38.0	5.0	W	0.15	45.0		•	0.03-0.07
ECC080E20-3C08	8.00	8.00	20.00	63.00	3	38.0	5.0	C	0.15	45.0		•	0.03-0.09
ECC080E20-3W08	8.00	8.00	20.00	63.00	3	38.0	5.0	W	0.15	45.0		•	0.03-0.09
ECC100E22-3C10	10.00	10.00	22.00	72.00	3	38.0	5.0	C	0.25	45.0		•	0.03-0.10
ECC100E22-3W10	10.00	10.00	22.00	72.00	3	38.0	5.0	W	0.25	45.0		•	0.03-0.10
ECC120E25-3C12	12.00	12.00	25.00	83.00	3	38.0	5.0	C	0.25	45.0		•	0.04-0.11
ECC120E25-3W12	12.00	12.00	25.00	83.00	3	38.0	5.0	W	0.25	45.0		•	0.04-0.11
ECC160E32-3C16	16.00	16.00	32.00	92.00	3	38.0	5.0	C	0.25	45.0		•	0.05-0.13
ECC160E32-3W16	16.00	16.00	32.00	92.00	3	38.0	5.0	W	0.25	45.0		•	0.05-0.13
ECC200E38-3C20	20.00	20.00	38.00	104.00	3	38.0	5.0	C	0.25	45.0		•	0.05-0.13
ECC200E38-3W20	20.00	20.00	38.00	104.00	3	38.0	5.0	W	0.25	45.0		•	0.05-0.13

• Multi-purpose endmill • Suitable for deep slotting • For user guide, see pages 177-184

(1) Number of flutes

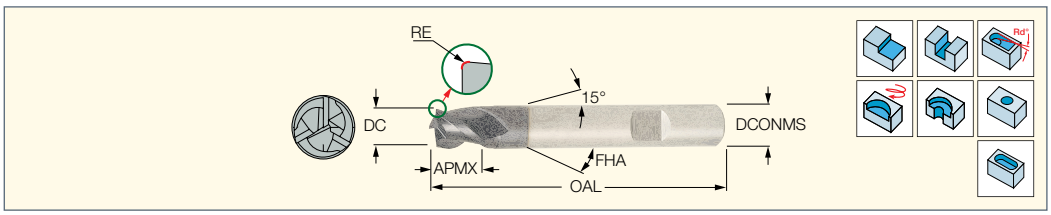
(2) Maximum ramping angle

(3) C-Cylindrical, W-Weldon

SOLIDMILL PREMIUM LINE

ECU-E-3-R

3 Flute, 38° Helix Short Undersized Slot / Drill Solid Carbide Endmills with Various Radii According to DIN 6885



Designation	Dimensions DC	DCONMS	APMX	RE	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	IC900	Recommended Machining Data f_z (mm/t)
ECU038E05-3W06R01L57	3.80	6.00	5.00	0.10	57.00	3	38.0	5.0	W	•	0.01-0.04
ECU048E06-3W06R02L57	4.80	6.00	6.00	0.20	57.00	3	38.0	5.0	W	•	0.02-0.05
ECU057E07-3W06R02L57	5.70	6.00	7.00	0.20	57.00	3	38.0	5.0	W	•	0.02-0.06
ECU077E09-3W08R02L63	7.70	8.00	9.00	0.20	63.00	3	38.0	5.0	W	•	0.03-0.08
ECU097E11-3W10R03L72	9.70	10.00	11.00	0.30	72.00	3	38.0	5.0	W	•	0.03-0.09
ECU117E12-3W12R03L83	11.70	12.00	12.00	0.30	83.00	3	38.0	5.0	W	•	0.03-0.10

• For user guide, see pages 177-184

(1) Number of flutes

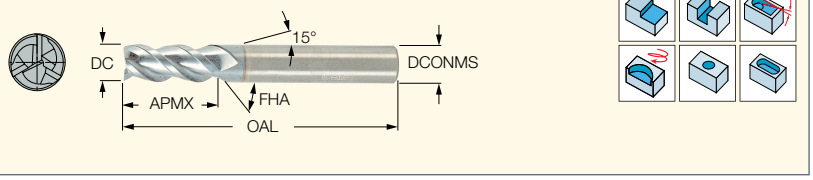
(2) Maximum ramping angle

(3) W-Weldon

SOLIDMILL PREMIUM LINE

EC-B-3/3R

3 Flute, 45° Helix Medium Length Slot / Drill Solid Carbide Endmills



Designation	Dimensions									Tough ↔ Hard			Recommended Machining Data
	DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	RE	IC08	IC300	IC900	f_z (mm/t)
EC020B07-3C03	2.00	3.00	7.00	38.00	3	45.0	5.0	C	-	•		•	0.01-0.03
EC020B07-3C06	2.00	6.00	7.00	57.00	3	45.0	5.0	C	-			•	0.01-0.03
EC025B07-3C03	2.50	3.00	7.00	38.00	3	45.0	5.0	C	-	•		•	0.01-0.03
EC030B10-3C03	3.00	3.00	10.00	38.00	3	45.0	5.0	C	-		•	•	0.01-0.04
EC030B10-3C06	3.00	6.00	10.00	57.00	3	45.0	5.0	C	-		•	•	0.01-0.04
EC040B12-3C04	4.00	4.00	12.00	50.00	3	45.0	5.0	C	-		•	•	0.02-0.05
EC040B12-3C06	4.00	6.00	12.00	57.00	3	45.0	5.0	C	-		•	•	0.02-0.05
EC050B14-3C05	5.00	5.00	14.00	50.00	3	45.0	5.0	C	-			•	0.02-0.06
EC050B14-3C06	5.00	6.00	14.00	57.00	3	45.0	5.0	C	-		•	•	0.02-0.06
EC060B13-3C06R0.5	6.00	6.00	13.00	57.00	3	45.0	5.0	C	0.50			•	0.03-0.07
EC060B13-3C06R1.0	6.00	6.00	13.00	57.00	3	45.0	5.0	C	1.00			•	0.03-0.07
EC060B16-3C06	6.00	6.00	16.00	57.00	3	45.0	5.0	C	-		•	•	0.03-0.07
EC060B16-3W06	6.00	6.00	16.00	57.00	3	45.0	5.0	W	-			•	0.03-0.07
EC070B16-3C07	7.00	7.00	16.00	60.00	3	45.0	5.0	C	-		•	•	0.03-0.08
EC080B20-3C08	8.00	8.00	20.00	63.00	3	45.0	5.0	C	-		•	•	0.03-0.09
EC080B20-3C08R0.5	8.00	8.00	20.00	63.00	3	45.0	5.0	C	0.50			•	0.03-0.09
EC080B20-3C08R1	8.00	8.00	20.00	63.00	3	45.0	5.0	C	1.00			•	0.03-0.09
EC080B20-3C08R1.5	8.00	8.00	20.00	63.00	3	45.0	5.0	C	1.50			•	0.03-0.09
EC080B20-3C08R2	8.00	8.00	20.00	63.00	3	45.0	5.0	C	2.00			•	0.03-0.09
EC080B20-3W08	8.00	8.00	20.00	63.00	3	45.0	5.0	W	-			•	0.03-0.09
EC090B20-3C09	9.00	9.00	20.00	67.00	3	45.0	5.0	C	-			•	0.03-0.09
EC100B22-3C10	10.00	10.00	22.00	72.00	3	45.0	5.0	C	-		•	•	0.03-0.10
EC100B22-3C10R0.5	10.00	10.00	22.00	72.00	3	45.0	5.0	C	0.50			•	0.03-0.10
EC100B22-3C10R1	10.00	10.00	22.00	72.00	3	45.0	5.0	C	1.00			•	0.03-0.10
EC100B22-3C10R1.5	10.00	10.00	22.00	72.00	3	45.0	5.0	C	1.50			•	0.03-0.10
EC100B22-3C10R2	10.00	10.00	22.00	72.00	3	45.0	5.0	C	2.00			•	0.03-0.10
EC100B22-3C10R3	10.00	10.00	22.00	72.00	3	45.0	5.0	C	3.00			•	0.03-0.10
EC100B22-3W10	10.00	10.00	22.00	72.00	3	45.0	5.0	W	-			•	0.03-0.10
EC120B25-3C12	12.00	12.00	25.00	83.00	3	45.0	5.0	C	-		•	•	0.04-0.11
EC120B25-3C12R0.5	12.00	12.00	25.00	83.00	3	45.0	5.0	C	0.50			•	0.04-0.11
EC120B25-3C12R1	12.00	12.00	25.00	83.00	3	45.0	5.0	C	1.00			•	0.04-0.11
EC120B25-3C12R1.5	12.00	12.00	25.00	83.00	3	45.0	5.0	C	1.50			•	0.04-0.11
EC120B25-3C12R2	12.00	12.00	25.00	83.00	3	45.0	5.0	C	2.00			•	0.04-0.11
EC120B25-3C12R3	12.00	12.00	25.00	83.00	3	45.0	5.0	C	3.00			•	0.04-0.11
EC120B25-3W12	12.00	12.00	25.00	83.00	3	45.0	5.0	W	-			•	0.04-0.11
EC140B25-3C14	14.00	14.00	25.00	83.00	3	45.0	5.0	C	-			•	0.04-0.12
EC140B25-3W14	14.00	14.00	25.00	83.00	3	45.0	5.0	W	-			•	0.04-0.12
EC160B32-3C16	16.00	16.00	32.00	92.00	3	45.0	5.0	C	-			•	0.05-0.13
EC160B32-3C16R0.5	16.00	16.00	32.00	92.00	3	45.0	5.0	C	0.50			•	0.05-0.13
EC160B32-3C16R1	16.00	16.00	32.00	92.00	3	45.0	5.0	C	1.00			•	0.05-0.13
EC160B32-3C16R2	16.00	16.00	32.00	92.00	3	45.0	5.0	C	2.00			•	0.05-0.13
EC160B32-3C16R3	16.00	16.00	32.00	92.00	3	45.0	5.0	C	3.00			•	0.05-0.13
EC160B32-3W16	16.00	16.00	32.00	92.00	3	45.0	5.0	W	-			•	0.05-0.13
EC180B32-3C18	18.00	18.00	32.00	92.00	3	45.0	5.0	C	-			•	0.05-0.13
EC180B32-3W18	18.00	18.00	32.00	92.00	3	45.0	5.0	W	-			•	0.05-0.13
EC200B38-3C20	20.00	20.00	38.00	104.00	3	45.0	5.0	C	-			•	0.05-0.13
EC200B38-3C20R0.5	20.00	20.00	38.00	104.00	3	45.0	5.0	C	0.50			•	0.05-0.13
EC200B38-3C20R1	20.00	20.00	38.00	104.00	3	45.0	5.0	C	1.00			•	0.05-0.13
EC200B38-3C20R2	20.00	20.00	38.00	104.00	3	45.0	5.0	C	2.00			•	0.05-0.13
EC200B38-3C20R3	20.00	20.00	38.00	104.00	3	45.0	5.0	C	3.00			•	0.05-0.13
EC200B38-3C20R4	20.00	20.00	38.00	104.00	3	45.0	5.0	C	4.00			•	0.05-0.13
EC200B38-3W20	20.00	20.00	38.00	104.00	3	45.0	5.0	W	-			•	0.05-0.13

• Excellent for deep slotting and shouldering. • For user guide, see pages 177-184

(1) Number of flutes

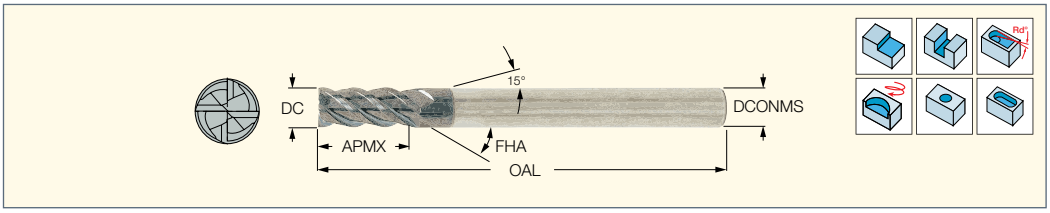
(2) Maximum ramping angle

(3) C-Cylindrical, W-Weldon

SOLIDMILL PREMIUM LINE

EC-B-4/4R

4 Flute, 45° Helix Medium Length Solid Carbide Endmills



Designation	Dimensions									Tough ↔ Hard		Recommended Machining Data
	DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	RE	IC900	IC902	f_z (mm/t)
EC020B07-4C03	2.00	3.00	7.00	38.00	4	45.0	5.0	C	-	•		0.01-0.03
EC020B07-4C03R0.25-38	2.00	3.00	7.00	38.00	4	45.0	5.0	C	0.25		•	0.01-0.03
EC020B07-4C06	2.00	6.00	7.00	57.00	4	45.0	5.0	C	-	•		0.01-0.03
EC030B10-4C03	3.00	3.00	10.00	38.00	4	45.0	5.0	C	-	•		0.01-0.04
EC030B10-4C06	3.00	6.00	10.00	57.00	4	45.0	5.0	C	-	•		0.01-0.04
EC040B12-4C04	4.00	4.00	12.00	50.00	4	45.0	5.0	C	-	•		0.02-0.05
EC040B12-4C06	4.00	6.00	12.00	57.00	4	45.0	5.0	C	-	•		0.02-0.05
EC050B14-4C05	5.00	5.00	14.00	50.00	4	45.0	5.0	C	-	•		0.02-0.06
EC050B14-4C06	5.00	6.00	14.00	57.00	4	45.0	5.0	C	-	•		0.02-0.06
EC060B16-4C06	6.00	6.00	16.00	57.00	4	45.0	5.0	C	-	•		0.03-0.07
EC060B16-4C06R0.5	6.00	6.00	16.00	57.00	4	45.0	5.0	C	0.50	•		0.03-0.07
EC060B16-4C06R1	6.00	6.00	16.00	57.00	4	45.0	5.0	C	1.00	•		0.03-0.07
EC060B16-4W06	6.00	6.00	16.00	57.00	4	45.0	5.0	W	-	•		0.03-0.07
EC070B16-4C07	7.00	7.00	16.00	60.00	4	45.0	5.0	C	-	•		0.03-0.08
EC080B20-4C08	8.00	8.00	20.00	63.00	4	45.0	5.0	C	-	•		0.03-0.09
EC080B20-4C08R0.5	8.00	8.00	20.00	63.00	4	45.0	5.0	C	0.50	•		0.03-0.09
EC080B20-4C08R1	8.00	8.00	20.00	63.00	4	45.0	5.0	C	1.00	•		0.03-0.09
EC080B20-4C08R1.5	8.00	8.00	20.00	63.00	4	45.0	5.0	C	1.50	•		0.03-0.09
EC080B20-4C08R2	8.00	8.00	20.00	63.00	4	45.0	5.0	C	2.00	•		0.03-0.09
EC080B20-4W08	8.00	8.00	20.00	63.00	4	45.0	5.0	W	-	•		0.03-0.09
EC090B20-4C09	9.00	9.00	20.00	67.00	4	45.0	5.0	C	-	•		0.03-0.09
EC100B22-4C10	10.00	10.00	22.00	72.00	4	45.0	5.0	C	-	•		0.03-0.10
EC100B22-4C10R0.5	10.00	10.00	22.00	72.00	4	45.0	5.0	C	0.50	•		0.03-0.10
EC100B22-4C10R1	10.00	10.00	22.00	72.00	4	45.0	5.0	C	1.00	•		0.03-0.10
EC100B22-4C10R1.5	10.00	10.00	22.00	72.00	4	45.0	5.0	C	1.50	•		0.03-0.10
EC100B22-4C10R2	10.00	10.00	22.00	72.00	4	45.0	5.0	C	2.00	•		0.03-0.10
EC100B22-4C10R3	10.00	10.00	22.00	72.00	4	45.0	5.0	C	3.00	•		0.03-0.10
EC100B22-4W10	10.00	10.00	22.00	72.00	4	45.0	5.0	W	-	•		0.03-0.10
EC120B25-4C12	12.00	12.00	25.00	83.00	4	45.0	5.0	C	-	•		0.04-0.11
EC120B25-4C12R0.5	12.00	12.00	25.00	83.00	4	45.0	5.0	C	0.50	•		0.04-0.11
EC120B25-4C12R1	12.00	12.00	25.00	83.00	4	45.0	5.0	C	1.00	•		0.04-0.11
EC120B25-4C12R1.5	12.00	12.00	25.00	83.00	4	45.0	5.0	C	1.50	•		0.04-0.11
EC120B25-4C12R2	12.00	12.00	25.00	83.00	4	45.0	5.0	C	2.00	•		0.04-0.11
EC120B25-4C12R3	12.00	12.00	25.00	83.00	4	45.0	5.0	C	3.00	•		0.04-0.11
EC120B25-4W12	12.00	12.00	25.00	83.00	4	45.0	5.0	W	-	•		0.04-0.11
EC140B25-4C14	14.00	14.00	25.00	83.00	4	45.0	5.0	C	-	•		0.04-0.12
EC160B32-4C16	16.00	16.00	32.00	92.00	4	45.0	5.0	C	-	•		0.05-0.13
EC160B32-4C16R0.5	16.00	16.00	32.00	92.00	4	45.0	5.0	C	0.50	•		0.05-0.13
EC160B32-4C16R1	16.00	16.00	32.00	92.00	4	45.0	5.0	C	1.00	•		0.05-0.13
EC160B32-4C16R1.5	16.00	16.00	32.00	92.00	4	45.0	5.0	C	1.50	•		0.05-0.13
EC160B32-4C16R2	16.00	16.00	32.00	92.00	4	45.0	5.0	C	2.00	•		0.05-0.13
EC160B32-4C16R2.5	16.00	16.00	32.00	92.00	4	45.0	5.0	C	2.50	•		0.05-0.13
EC160B32-4C16R3	16.00	16.00	32.00	92.00	4	45.0	5.0	C	3.00	•		0.05-0.13
EC160B32-4W16	16.00	16.00	32.00	92.00	4	45.0	5.0	W	-	•		0.05-0.13
EC180B32-4C18	18.00	18.00	32.00	92.00	4	45.0	5.0	C	-	•		0.05-0.13
EC200B38-4C20	20.00	20.00	38.00	104.00	4	45.0	5.0	C	-	•		0.05-0.13
EC200B38-4C20R0.5	20.00	20.00	38.00	104.00	4	45.0	5.0	C	0.50	•		0.05-0.13
EC200B38-4C20R1	20.00	20.00	38.00	104.00	4	45.0	5.0	C	1.00	•		0.05-0.13
EC200B38-4C20R1.5	20.00	20.00	38.00	104.00	4	45.0	5.0	C	1.50	•		0.05-0.13
EC200B38-4C20R2	20.00	20.00	38.00	104.00	4	45.0	5.0	C	2.00	•		0.05-0.13
EC200B38-4C20R2.5	20.00	20.00	38.00	104.00	4	45.0	5.0	C	2.50	•		0.05-0.13
EC200B38-4C20R3	20.00	20.00	38.00	104.00	4	45.0	5.0	C	3.00	•		0.05-0.13
EC200B38-4C20R4	20.00	20.00	38.00	104.00	4	45.0	5.0	C	4.00	•		0.05-0.13
EC200B38-4C20R5	20.00	20.00	38.00	104.00	4	45.0	5.0	C	5.00	•		0.05-0.13
EC200B38-4W20	20.00	20.00	38.00	104.00	4	45.0	5.0	W	-	•		0.05-0.13

• For user guide, see pages 177-184

(1) Number of flutes

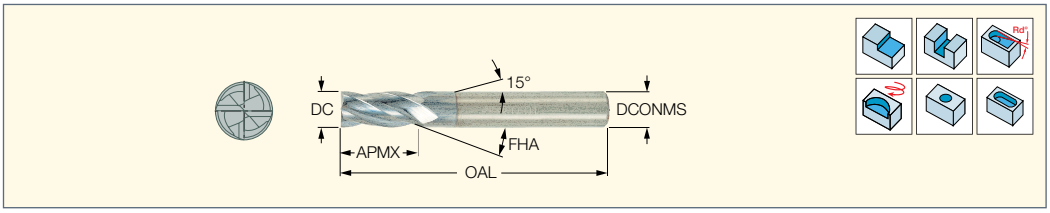
(2) Maximum ramping angle

(3) C-Cylindrical, W-Weldon

SOLIDMILL PREMIUM LINE

EC-A-4/4R

4 Flute, 30° Helix Medium Length Solid Carbide Endmills with Various Radii



Designation	Dimensions									Tough ↔ Hard			Recommended Machining Data
	DC	DCONMS	APMX	OAL	NOF[1]	FHA	RMPX°[2]	Shank[3]	RE	IC08	IC300	IC900	f_z (mm/t)
EC020A07-4C03	2.00	3.00	7.00	38.00	4	30.0	5.0	C	-		●	●	0.01-0.03
EC020A10-4C05R0.4	2.00	5.00	10.00	50.00	4	30.0	5.0	C	0.40			●	0.01-0.04
EC025A07-4C03	2.50	3.00	7.00	38.00	4	30.0	5.0	C	-			●	0.01-0.03
EC030A10-4C03	3.00	3.00	10.00	38.00	4	30.0	5.0	C	-		●	●	0.01-0.04
EC030A10-4C03R0.6	3.00	3.00	10.00	38.00	4	30.0	5.0	C	0.60			●	0.01-0.04
EC030A10-4C03R0.8	3.00	3.00	10.00	38.00	4	30.0	5.0	C	0.80			●	0.01-0.04
EC030A10-4C04R0.4	3.00	4.00	10.00	50.00	4	30.0	5.0	C	0.40			●	0.01-0.04
EC030A10-4C06	3.00	6.00	10.00	57.00	4	30.0	5.0	C	-			●	0.01-0.04
EC035A12-4C04	3.50	4.00	12.00	50.00	4	30.0	5.0	C	-			●	0.01-0.04
EC035A12-4C04R0.4	3.50	4.00	12.00	50.00	4	30.0	5.0	C	0.40			●	0.01-0.04
EC040A07-4C04R0.4	4.00	4.00	7.00	50.00	4	30.0	5.0	C	0.40			●	0.02-0.05
EC040A10-4C04R1.0	4.00	4.00	10.00	50.00	4	30.0	5.0	C	1.00			●	0.02-0.05
EC040A12-4C04	4.00	4.00	12.00	50.00	4	30.0	5.0	C	-		●	●	0.02-0.05
EC040A12-4C04R0.4	4.00	4.00	12.00	50.00	4	30.0	5.0	C	0.40			●	0.02-0.05
EC040A12-4C04R0.8	4.00	4.00	12.00	50.00	4	30.0	5.0	C	0.80			●	0.02-0.05
EC040A12-4C06	4.00	6.00	12.00	57.00	4	30.0	5.0	C	-			●	0.02-0.05
EC045A14-4C06	4.50	6.00	14.00	57.00	4	30.0	5.0	C	-			●	0.02-0.05
EC050A14-4C05	5.00	5.00	14.00	50.00	4	30.0	5.0	C	-		●	●	0.02-0.06
EC050A14-4C05R0.5	5.00	5.00	14.00	50.00	4	30.0	5.0	C	0.50			●	0.02-0.06
EC050A20-4C05R0.8	5.00	5.00	20.00	50.00	4	30.0	5.0	C	0.80			●	0.02-0.06
EC050A14-4C06	5.00	6.00	14.00	57.00	4	30.0	5.0	C	-			●	0.02-0.06
EC060A16-4C06	6.00	6.00	16.00	57.00	4	30.0	5.0	C	-	●	●	●	0.03-0.07
EC060A16-4C06R0.4	6.00	6.00	16.00	57.00	4	30.0	5.0	C	0.40			●	0.03-0.07
EC060A16-4C06R0.8	6.00	6.00	16.00	57.00	4	30.0	5.0	C	0.80			●	0.03-0.07
EC060A16-4W06	6.00	6.00	16.00	57.00	4	30.0	5.0	W	-			●	0.03-0.07
EC070A20-4C07	7.00	7.00	20.00	60.00	4	30.0	5.0	C	-	●		●	0.03-0.08
EC075A20-4C08	7.50	8.00	20.00	63.00	4	30.0	5.0	C	-			●	0.03-0.08
EC080A20-4C08	8.00	8.00	20.00	63.00	4	30.0	5.0	C	-	●	●	●	0.03-0.09
EC080A20-4C08R0.8	8.00	8.00	20.00	63.00	4	30.0	5.0	C	0.80			●	0.03-0.09
EC080A20-4W08	8.00	8.00	20.00	63.00	4	30.0	5.0	W	-			●	0.03-0.09
EC100A22-4C10	10.00	10.00	22.00	72.00	4	30.0	5.0	C	-	●	●	●	0.03-0.10
EC100A22-4W10	10.00	10.00	22.00	72.00	4	30.0	5.0	W	-			●	0.03-0.10
EC120A25-4C12	12.00	12.00	25.00	83.00	4	30.0	5.0	C	-	●	●	●	0.04-0.11
EC120A25-4W12	12.00	12.00	25.00	83.00	4	30.0	5.0	W	-			●	0.04-0.11
EC140A25-4C14	14.00	14.00	25.00	83.00	4	30.0	5.0	C	-	●		●	0.04-0.12
EC140A32-4C14	14.00	14.00	32.00	83.00	4	30.0	5.0	C	-			●	0.04-0.12
EC160A32-4C16	16.00	16.00	32.00	92.00	4	30.0	5.0	C	-	●	●	●	0.05-0.13
EC160A32-4W16	16.00	16.00	32.00	92.00	4	30.0	5.0	W	-			●	0.05-0.13
EC160A40-4C16-92	16.00	16.00	40.00	92.00	4	30.0	5.0	C	-			●	0.05-0.13
EC180A32-4C18	18.00	18.00	32.00	92.00	4	30.0	5.0	C	-			●	0.05-0.13
EC200A38-4C20	20.00	20.00	38.00	104.00	4	30.0	5.0	C	-			●	0.05-0.13
EC200A38-4W20	20.00	20.00	38.00	104.00	4	30.0	5.0	W	-			●	0.05-0.13

• For user guide, see pages 177-184

(1) Number of flutes

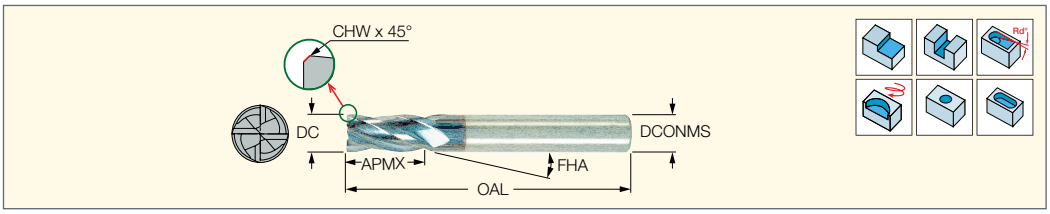
(2) Maximum ramping angle

(3) C-Cylindrical, W-Weldon

SOLIDMILL PREMIUM LINE

ECC-A-4

4 Flute, 30° Helix Medium Length Solid Carbide Endmills with Chamfered Corners



Designation	Dimensions										Tough ↔ Hard		Recommended Machining Data
	DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	CHW	KCH	IC300	IC900	f_z (mm/t)
ECC020B07-4C03	2.00	3.00	7.00	38.00	4	45.0	5.0	C	0.10	45.0		•	0.01-0.03
ECC025A07-4C03	2.50	3.00	7.00	38.00	4	30.0	5.0	C	0.10	45.0		•	0.01-0.03
ECC030A10-4C03	3.00	3.00	10.00	38.00	4	30.0	5.0	C	0.10	45.0		•	0.01-0.04
ECC035A12-4C04	3.50	4.00	12.00	50.00	4	30.0	5.0	C	0.10	45.0		•	0.01-0.04
ECC040A12-4C04	4.00	4.00	12.00	50.00	4	30.0	5.0	C	0.15	45.0	•	•	0.02-0.05
ECC050A14-4C05	5.00	5.00	14.00	50.00	4	30.0	5.0	C	0.15	45.0		•	0.02-0.06
ECC060A16-4C06	6.00	6.00	16.00	57.00	4	30.0	5.0	C	0.15	45.0		•	0.03-0.07
ECC080A20-4C08	8.00	8.00	20.00	63.00	4	30.0	5.0	C	0.15	45.0		•	0.03-0.09
ECC080A20-4W08	8.00	8.00	20.00	63.00	4	30.0	5.0	W	0.15	45.0		•	0.03-0.09
ECC100A22-4C10	10.00	10.00	22.00	72.00	4	30.0	5.0	C	0.25	45.0		•	0.03-0.10
ECC100A22-4W10	10.00	10.00	22.00	72.00	4	30.0	5.0	W	0.25	45.0		•	0.03-0.10
ECC120A25-4C12	12.00	12.00	25.00	83.00	4	30.0	5.0	C	0.25	45.0		•	0.04-0.11
ECC120A25-4W12	12.00	12.00	25.00	83.00	4	30.0	5.0	W	0.25	45.0		•	0.04-0.11
ECC160A32-4C16	16.00	16.00	32.00	92.00	4	30.0	5.0	C	0.25	45.0		•	0.05-0.13
ECC160A32-4W16	16.00	16.00	32.00	92.00	4	30.0	5.0	W	0.25	45.0		•	0.05-0.13
ECC200A38 4W20	20.00	20.00	38.00	104.00	4	30.0	5.0	W	0.25	45.0		•	0.05-0.13
ECC200A38-4C20	20.00	20.00	38.00	104.00	4	30.0	5.0	C	0.25	45.0		•	0.05-0.13

• For user guide, see pages 177-184

(1) Number of flutes

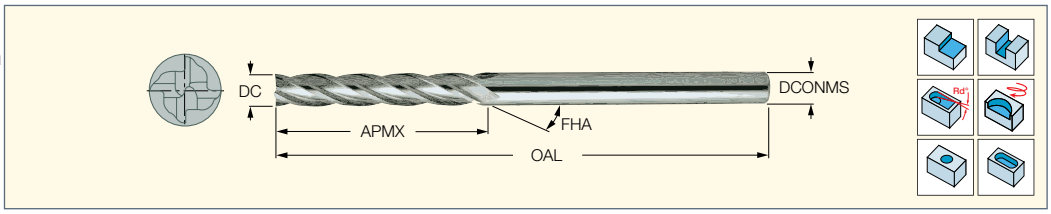
(2) Maximum ramping angle

(3) C-Cylindrical, W-Weldon

SOLIDMILL TEC LINE

EC-A4(economical-medium & extra long)

Economical Type 4 Flute, 30° Helix, Center Cutting, Medium & Extra Long Solid Carbide Endmills



Designation	Dimensions								Tough ↔ Hard		Recommended Machining Data
	DC	DCONMS	APMX	OAL	NOF[1]	FHA	RMPX°[2]	Shank[3]	IC08	IC900	f_z (mm/t)
EC-A4 02-08C02E32	2.00	2.00	8.00	32.00	4	30.0	5.0	C	•	•	0.01-0.03
EC-A4 025-08C025E32	2.50	2.50	8.00	32.00	4	30.0	5.0	C	•	•	0.01-0.03
EC-A4 03-12C03E38	3.00	3.00	12.00	38.00	4	30.0	5.0	C	•	•	0.01-0.04
EC-A4 03-30C03E75	3.00	3.00	30.00	75.00	4	30.0	5.0	C	•	•	0.01-0.04
EC-A4 04-12C04E50	4.00	4.00	12.00	50.00	4	30.0	5.0	C	•	•	0.02-0.05
EC-A4 04-30C04E75	4.00	4.00	30.00	75.00	4	30.0	5.0	C	•	•	0.02-0.05
EC-A4 05-14C05E50	5.00	5.00	14.00	50.00	4	30.0	5.0	C	•	•	0.02-0.06
EC-A4 05-40C05E100	5.00	5.00	40.00	100.00	4	30.0	5.0	C	•	•	0.02-0.06
EC-A4 055-16C055E50	5.50	5.50	16.00	50.00	4	30.0	5.0	C	•	•	0.02-0.06
EC-A4 06-16C06E50	6.00	6.00	16.00	50.00	4	30.0	5.0	C	•	•	0.03-0.07
EC-A4 06-50C06E150	6.00	6.00	50.00	150.00	4	30.0	5.0	C	•	•	0.03-0.07
EC-A4 07-20C07E60	7.00	7.00	20.00	60.00	4	30.0	5.0	C	•	•	0.03-0.08
EC-A4 08-20C08E63	8.00	8.00	20.00	63.00	4	30.0	5.0	C	•	•	0.03-0.09
EC-A4 08-50C08E150	8.00	8.00	50.00	150.00	4	30.0	5.0	C	•	•	0.03-0.09
EC-A4 09-20C09E60	9.00	9.00	20.00	60.00	4	30.0	5.0	C	•	•	0.03-0.09
EC-A4 10-22C10E72	10.00	10.00	22.00	70.00	4	30.0	5.0	C	•	•	0.03-0.10
EC-A4 10-60C10E150	10.00	10.00	60.00	150.00	4	30.0	5.0	C	•	•	0.03-0.10
EC-A4 12-22C12E73	12.00	12.00	22.00	73.00	4	30.0	5.0	C	•	•	0.04-0.11
EC-A4 12-75C12E150	12.00	12.00	75.00	150.00	4	30.0	5.0	C	•	•	0.04-0.11
EC-A4 14-25C14E83	14.00	14.00	25.00	83.00	4	30.0	5.0	C	•	•	0.04-0.12
EC-A4 14-65C14E150	14.00	14.00	65.00	150.00	4	30.0	5.0	C	•	•	0.04-0.12
EC-A4 16-25C16E82	16.00	16.00	25.00	82.00	4	30.0	5.0	C	•	•	0.05-0.13
EC-A4 16-65C16E150	16.00	16.00	65.00	150.00	4	30.0	5.0	C	•	•	0.05-0.13
EC-A4 18-65C18E150	18.00	18.00	65.00	150.00	4	30.0	5.0	C	•	•	0.05-0.13
EC-A4 20-32C20E104	20.00	20.00	32.00	104.00	4	30.0	5.0	C	•	•	0.05-0.13
EC-A4 20-65C20E150	20.00	20.00	65.00	150.00	4	30.0	5.0	C	•	•	0.05-0.13

• For user guide, see pages 177-184

(1) Number of flutes

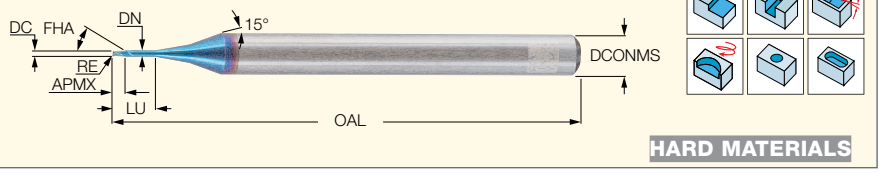
(2) Maximum ramping angle

(3) C-Cylindrical

SOLIDMILL PREMIUM LINE

EC-A2-R/H (rib processing)

2 Flute, 30° Helix and Corner Radii Solid Carbide Endmills for Rib Processing on Hard Materials up to 65 HRC



HARD MATERIALS

Designation	Dimensions										IC702	Recommended Machining Data
	DC	DCONMS	APMX	RE	LU	OAL	DN	NOF(1)	FHA	Shank(2)		f_z (mm/t)
EC-A2 001-0015/003C4H45	0.10	4.00	0.15	-	0.3	45.00	0.09	2	30.0	C	•	0.0020-0.0025
EC-A2 002-003/005C4H45	0.20	4.00	0.30	-	0.5	45.00	0.17	2	30.0	C	•	0.0030-0.0030
EC-A2 003-0045/01C4H45	0.30	4.00	0.45	-	1.0	45.00	0.27	2	30.0	C	•	0.0030-0.0040
EC-A2 003-0045/03C4H45	0.30	4.00	0.45	-	3.0	45.00	0.27	2	30.0	C	•	0.0030-0.0040
EC-A2 004-006/01C4H45	0.40	4.00	0.60	-	1.0	45.00	0.37	2	30.0	C	•	0.0030-0.0050
EC-A2 004-006/02C4H45	0.40	4.00	0.60	-	2.0	45.00	0.37	2	30.0	C	•	0.0030-0.0050
EC-A2 005-007/02C4H45	0.50	4.00	0.70	-	2.0	45.00	0.45	2	30.0	C	•	0.0030-0.0050
EC-A2 005-007/04C4H45	0.50	4.00	0.70	-	4.0	45.00	0.45	2	30.0	C	•	0.0030-0.0050
EC-A2 005-007/1.5C4R05H45	0.50	4.00	0.70	0.05	1.5	45.00	0.45	2	30.0	C	•	0.0010-0.0020
EC-A2 005-007/2.5C4R05H45	0.50	4.00	0.70	0.05	2.5	45.00	0.45	2	30.0	C	•	0.0010-0.0020
EC-A2 006-009/02C4H45	0.60	4.00	0.90	-	2.0	45.00	0.55	2	30.0	C	•	0.0030-0.0070
EC-A2 006-009/3C4R05H45	0.60	4.00	0.90	0.05	3.0	45.00	0.55	2	30.0	C	•	0.0010-0.0020
EC-A2 007-010/4C4R.1H45	0.70	4.00	1.00	0.10	4.0	45.00	0.65	2	30.0	C	•	0.0010-0.0030
EC-A2 008-012/04C4H45	0.80	4.00	1.20	-	4.0	45.00	0.75	2	30.0	C	•	0.0030-0.0080
EC-A2 008-012/06C4H45	0.80	4.00	1.20	-	6.0	45.00	0.75	2	30.0	C	•	0.0030-0.0090
EC-A2 008-012/4C4R.1H45	0.80	4.00	1.20	0.10	4.0	45.00	0.75	2	30.0	C	•	0.0010-0.0030
EC-A2 008-012/6C4R.1H45	0.80	4.00	1.20	0.10	6.0	45.00	0.75	2	30.0	C	•	0.0010-0.0030
EC-A2 010-015/04C4H45	1.00	4.00	1.50	-	4.0	45.00	0.97	2	30.0	C	•	0.0040-0.0120
EC-A2 010-015/06C4H45	1.00	4.00	1.50	-	6.0	45.00	0.97	2	30.0	C	•	0.0040-0.0120
EC-A2 010-015/08C4H45	1.00	4.00	1.50	-	8.0	45.00	0.95	2	30.0	C	•	0.0040-0.0120
EC-A2 010-015/10C4H45	1.00	4.00	1.50	-	10.0	45.00	0.95	2	30.0	C	•	0.0040-0.0120
EC-A2 010-015/12C4H45	1.00	4.00	1.50	-	12.0	45.00	0.93	2	30.0	C	•	0.0040-0.0120
EC-A2 010-015/20C4H55	1.00	4.00	1.50	-	20.0	55.00	0.93	2	30.0	C	•	0.0040-0.0120
EC-A2 010-015/4C6R.1H50	1.00	6.00	1.50	0.10	4.0	50.00	0.95	2	30.0	C	•	0.0020-0.0060
EC-A2 010-015/4C6R.2H50	1.00	6.00	1.50	0.20	4.0	50.00	0.95	2	30.0	C	•	0.0020-0.0060
EC-A2 010-015/4C6R.3H50	1.00	6.00	1.50	0.30	4.0	50.00	0.95	2	30.0	C	•	0.0020-0.0060
EC-A2 010-015/6C6R.1H50	1.00	6.00	1.50	0.10	6.0	50.00	0.95	2	30.0	C	•	0.0020-0.0060
EC-A2 010-015/6C6R.2H50	1.00	6.00	1.50	0.20	6.0	50.00	0.95	2	30.0	C	•	0.0020-0.0060
EC-A2 010-015/6C6R.3H50	1.00	6.00	1.50	0.30	6.0	50.00	0.95	2	30.0	C	•	0.0020-0.0060
EC-A2 010-015/8C6R.3H50	1.00	6.00	1.50	0.30	8.0	50.00	0.95	2	30.0	C	•	0.0020-0.0060
EC-A2 012-018/06C4H45	1.20	4.00	1.80	-	6.0	45.00	1.17	2	30.0	C	•	0.0050-0.0150
EC-A2 015-023/06C4H45	1.50	4.00	2.30	-	6.0	45.00	1.47	2	30.0	C	•	0.0050-0.0150
EC-A2 015-023/08C4H45	1.50	4.00	2.30	-	8.0	45.00	1.45	2	30.0	C	•	0.0050-0.0150
EC-A2 015-023/10C4H45	1.50	4.00	2.30	-	10.0	45.00	1.45	2	30.0	C	•	0.0050-0.0150
EC-A2 015-023/12C4H45	1.50	4.00	2.30	-	12.0	45.00	1.41	2	30.0	C	•	0.0050-0.0150
EC-A2 015-025/10C6R.2H50	1.50	6.00	2.50	0.20	10.0	50.00	1.45	2	30.0	C	•	0.0030-0.0080
EC-A2 015-025/12C6R.2H50	1.50	6.00	2.50	0.20	12.0	50.00	1.45	2	30.0	C	•	0.0030-0.0080
EC-A2 015-025/4C6R.2H50	1.50	6.00	2.50	0.20	4.0	50.00	1.45	2	30.0	C	•	0.0030-0.0080
EC-A2 015-025/4C6R.3H50	1.50	6.00	2.50	0.30	4.0	50.00	1.45	2	30.0	C	•	0.0030-0.0080
EC-A2 015-025/6C6R.2H50	1.50	6.00	2.50	0.20	6.0	50.00	1.45	2	30.0	C	•	0.0030-0.0080
EC-A2 015-025/6C6R.3H50	1.50	6.00	2.50	0.30	6.0	50.00	1.45	2	30.0	C	•	0.0030-0.0080
EC-A2 015-025/8C6R.2H50	1.50	6.00	2.50	0.20	8.0	50.00	1.45	2	30.0	C	•	0.0030-0.0080
EC-A2 015-025/8C6R.3H50	1.50	6.00	2.50	0.30	8.0	50.00	1.45	2	30.0	C	•	0.0030-0.0080
EC-A2 020-030/06C4H45	2.00	4.00	3.00	-	6.0	45.00	1.97	2	30.0	C	•	0.0100-0.0200
EC-A2 020-030/08C4H45	2.00	4.00	3.00	-	8.0	45.00	1.95	2	30.0	C	•	0.0100-0.0200
EC-A2 020-030/10C4H45	2.00	4.00	3.00	-	10.0	45.00	1.95	2	30.0	C	•	0.0100-0.0200
EC-A2 020-030/12C4H45	2.00	4.00	3.00	-	12.0	45.00	1.93	2	30.0	C	•	0.0100-0.0200
EC-A2 020-030/14C4H50	2.00	4.00	3.00	-	14.0	50.00	1.93	2	30.0	C	•	0.0100-0.0200
EC-A2 020-030/16C4H50	2.00	4.00	3.00	-	16.0	50.00	1.91	2	30.0	C	•	0.0100-0.0200
EC-A2 020-030/20C4H55	2.00	4.00	3.00	-	20.0	55.00	1.89	2	30.0	C	•	0.0100-0.0200
EC-A2 020-030/25C4H60	2.00	4.00	3.00	-	25.0	60.00	1.89	2	30.0	C	•	0.0100-0.0200
EC-A2 020-030/10C6R.2H55	2.00	6.00	3.00	0.20	10.0	55.00	1.95	2	30.0	C	•	0.0040-0.0100
EC-A2 020-030/10C6R.3H55	2.00	6.00	3.00	0.30	10.0	55.00	1.95	2	30.0	C	•	0.0040-0.0100
EC-A2 020-030/10C6R.5H55	2.00	6.00	3.00	0.50	10.0	55.00	1.95	2	30.0	C	•	0.0040-0.0100

• For user guide, see pages 177-184

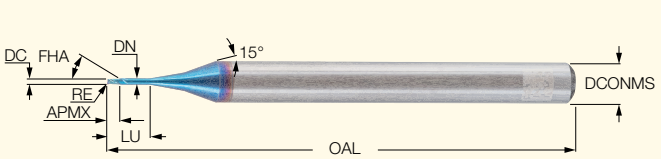
(1) Number of flutes

(2) C-Cylindrical

SOLIDMILL PREMIUM LINE

EC-A2-R/H (rib processing) (continued)

2 Flute, 30° Helix and Corner Radii Solid Carbide Endmills for Rib Processing on Hard Materials up to 65 HRC



HARD MATERIALS

Designation	Dimensions DC	DCONMS	APMX	RE	LU	OAL	DN	NOF(1)	FHA	Shank(2)	IC702	Recommended Machining Data f_z (mm/t)
EC-A2 020-030/16C6R.3H55	2.00	6.00	3.00	0.30	16.0	55.00	1.95	2	30.0	C	•	0.0040-0.0100
EC-A2 020-030/6C6R.2H50	2.00	6.00	3.00	0.20	6.0	50.00	1.95	2	30.0	C	•	0.0040-0.0100
EC-A2 020-030/6C6R.3H50	2.00	6.00	3.00	0.30	6.0	50.00	1.95	2	30.0	C	•	0.0040-0.0100
EC-A2 020-030/6C6R.5H50	2.00	6.00	3.00	0.50	6.0	50.00	1.95	2	30.0	C	•	0.0040-0.0100
EC-A2 030-040/10C6R.2H55	3.00	6.00	4.00	0.20	10.0	55.00	2.85	2	30.0	C	•	0.0050-0.0150
EC-A2 030-040/10C6R.5H55	3.00	6.00	4.00	0.50	10.0	55.00	2.85	2	30.0	C	•	0.0050-0.0150
EC-A2 030-040/12C6R.2H55	3.00	6.00	4.00	0.20	12.0	55.00	2.85	2	30.0	C	•	0.0050-0.0150
EC-A2 030-040/12C6R.3H55	3.00	6.00	4.00	0.30	12.0	55.00	2.85	2	30.0	C	•	0.0050-0.0150
EC-A2 030-040/12C6R.5H55	3.00	6.00	4.00	0.50	12.0	55.00	2.85	2	30.0	C	•	0.0050-0.0150
EC-A2 030-040/16C6R.2H55	3.00	6.00	4.00	0.20	16.0	55.00	2.85	2	30.0	C	•	0.0050-0.0150
EC-A2 030-040/16C6R.5H55	3.00	6.00	4.00	0.50	16.0	55.00	2.85	2	30.0	C	•	0.0050-0.0150
EC-A2 030-040/20C6R.5H55	3.00	6.00	4.00	0.50	20.0	55.00	2.85	2	30.0	C	•	0.0050-0.0150
EC-A2 030-040/8C6R.2H55	3.00	6.00	4.00	0.20	8.0	55.00	2.85	2	30.0	C	•	0.0050-0.0150
EC-A2 030-040/8C6R.3H55	3.00	6.00	4.00	0.30	8.0	55.00	2.85	2	30.0	C	•	0.0050-0.0150
EC-A2 030-045/12C6H45	3.00	6.00	4.50	-	12.0	45.00	2.85	2	30.0	C	•	0.0150-0.0300
EC-A2 030-045/16C6H55	3.00	6.00	4.50	-	16.0	55.00	2.85	2	30.0	C	•	0.0150-0.0300
EC-A2 030-045/30C6H70	3.00	6.00	4.50	-	30.0	70.00	2.85	2	30.0	C	•	0.0150-0.0300
EC-A2 030-045/35C6H80	3.00	6.00	4.50	-	35.0	80.00	2.85	2	30.0	C	•	0.0150-0.0300
EC-A2 040-050/12C6R.2H55	4.00	6.00	5.00	0.20	12.0	55.00	3.85	2	30.0	C	•	0.0060-0.0200
EC-A2 040-050/12C6R.5H55	4.00	6.00	5.00	0.50	12.0	55.00	3.85	2	30.0	C	•	0.0060-0.0200
EC-A2 040-050/12C6R1.H55	4.00	6.00	5.00	1.00	12.0	55.00	3.85	2	30.0	C	•	0.0060-0.0200
EC-A2 040-050/16C6R.2H55	4.00	6.00	5.00	0.20	16.0	55.00	3.85	2	30.0	C	•	0.0060-0.0200
EC-A2 040-050/16C6R.5H55	4.00	6.00	5.00	0.50	16.0	55.00	3.85	2	30.0	C	•	0.0060-0.0200
EC-A2 040-050/20C6R.2H55	4.00	6.00	5.00	0.20	20.0	55.00	3.85	2	30.0	C	•	0.0060-0.0200
EC-A2 040-050/20C6R.3H55	4.00	6.00	5.00	0.30	20.0	55.00	3.85	2	30.0	C	•	0.0060-0.0200
EC-A2 040-050/20C6R.5H55	4.00	6.00	5.00	0.50	20.0	55.00	3.85	2	30.0	C	•	0.0060-0.0200
EC-A2 040-060/16C6H60	4.00	6.00	6.00	-	16.0	60.00	3.80	2	30.0	C	•	0.0200-0.0500
EC-A2 060-070/20C6R.3H60	6.00	6.00	7.00	0.30	20.0	60.00	5.85	2	30.0	C	•	0.0080-0.0300
EC-A2 060-070/20C6R.5H60	6.00	6.00	7.00	0.50	20.0	60.00	5.85	2	30.0	C	•	0.0080-0.0300
EC-A2 060-070/20C6R1.H60	6.00	6.00	7.00	1.00	20.0	60.00	5.85	2	30.0	C	•	0.0080-0.0300
EC-A2 060-070/20C6R1.5H60	6.00	6.00	7.00	1.50	20.0	60.00	5.85	2	30.0	C	•	0.0080-0.0300
EC-A2 060-070/20C6R2.H60	6.00	6.00	7.00	2.00	20.0	60.00	5.85	2	30.0	C	•	0.0080-0.0300
EC-A2 080-090/25C8R1.H60	8.00	8.00	9.00	1.00	25.0	60.00	7.70	2	30.0	C	•	0.0100-0.0350
EC-A2 080-090/25C8R2.H60	8.00	8.00	9.00	2.00	25.0	60.00	7.70	2	30.0	C	•	0.0100-0.0350
EC-A2 100-090/32C10R.3H70	10.00	10.00	9.00	0.30	32.0	70.00	9.70	2	30.0	C	•	0.0100-0.0400
EC-A2 100-110/32C10R.5H70	10.00	10.00	11.00	0.50	32.0	70.00	9.70	2	30.0	C	•	0.0100-0.0400

• For user guide, see pages 177-184

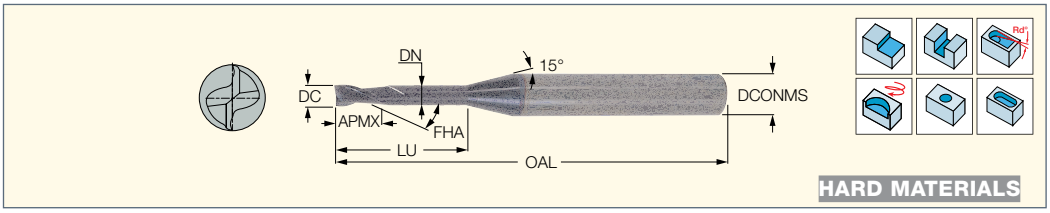
(1) Number of flutes

(2) C-Cylindrical

SOLIDMILL PREMIUM LINE

EC-A2-M (rib processing)

2 Flute, 30° Helix Solid Carbide Endmills for Rib Processing on Hard Materials up to 55 HRC



Designation	Dimensions										IC903	Recommended Machining Data
	DC	DCONMS	APMX	LU	OAL	DN	NOF(1)	FHA	RMPX°(2)	Shank(3)		f_z (mm/t)
EC-A2 004-006/02C4M45	0.40	4.00	0.60	2.0	45.00	0.37	2	30.0	3.0	C	•	0.0010-0.0030
EC-A2 004-006/03C4M45	0.40	4.00	0.60	3.0	45.00	0.37	2	30.0	3.0	C	•	0.0010-0.0030
EC-A2 004-006/04C4M45	0.40	4.00	0.60	4.0	45.00	0.37	2	30.0	3.0	C	•	0.0010-0.0030
EC-A2 004-006/05C4M45	0.40	4.00	0.60	5.0	45.00	0.37	2	30.0	3.0	C	•	0.0010-0.0030
EC-A2 005-007/02C4M45	0.50	4.00	0.70	2.0	45.00	0.45	2	30.0	3.0	C	•	0.0010-0.0030
EC-A2 005-007/04C4M45	0.50	4.00	0.70	4.0	45.00	0.45	2	30.0	3.0	C	•	0.0010-0.0030
EC-A2 005-007/06C4M45	0.50	4.00	0.70	6.0	45.00	0.45	2	30.0	3.0	C	•	0.0010-0.0030
EC-A2 005-007/08C4M45	0.50	4.00	0.70	8.0	45.00	0.45	2	30.0	3.0	C	•	0.0010-0.0030
EC-A2 006-009/02C4M45	0.60	4.00	0.90	2.0	45.00	0.55	2	30.0	3.0	C	•	0.0010-0.0030
EC-A2 006-009/04C4M45	0.60	4.00	0.90	4.0	45.00	0.55	2	30.0	3.0	C	•	0.0010-0.0030
EC-A2 006-009/06C4M45	0.60	4.00	0.90	6.0	45.00	0.55	2	30.0	3.0	C	•	0.0010-0.0030
EC-A2 006-009/08C4M45	0.60	4.00	0.90	8.0	45.00	0.55	2	30.0	3.0	C	•	0.0010-0.0030
EC-A2 006-009/10C4M45	0.60	4.00	0.90	10.0	45.00	0.55	2	30.0	3.0	C	•	0.0010-0.0030
EC-A2 007-010/02C4M45	0.70	4.00	1.00	2.0	45.00	0.65	2	30.0	3.0	C	•	0.0010-0.0030
EC-A2 007-010/08C4M45	0.70	4.00	1.00	8.0	45.00	0.65	2	30.0	3.0	C	•	0.0010-0.0030
EC-A2 008-012/04C4M45	0.80	4.00	1.20	4.0	45.00	0.75	2	30.0	3.0	C	•	0.0020-0.0040
EC-A2 008-012/06C4M45	0.80	4.00	1.20	6.0	45.00	0.75	2	30.0	3.0	C	•	0.0020-0.0040
EC-A2 008-012/08C4M45	0.80	4.00	1.20	8.0	45.00	0.75	2	30.0	3.0	C	•	0.0020-0.0040
EC-A2 008-012/10C4M45	0.80	4.00	1.20	10.0	45.00	0.75	2	30.0	3.0	C	•	0.0020-0.0040
EC-A2 009-0135/06C4M45	0.90	4.00	1.35	6.0	45.00	0.85	2	30.0	3.0	C	•	0.0030-0.0050
EC-A2 009-0135/10C4M45	0.90	4.00	1.35	10.0	45.00	0.85	2	30.0	3.0	C	•	0.0030-0.0050
EC-A2 009-0135/15C4M50	0.90	4.00	1.35	15.0	50.00	0.85	2	30.0	3.0	C	•	0.0030-0.0050
EC-A2 010-015/04C4M45	1.00	4.00	1.50	4.0	45.00	0.97	2	30.0	3.0	C	•	0.0040-0.0060
EC-A2 010-015/06C4M45	1.00	4.00	1.50	6.0	45.00	0.97	2	30.0	3.0	C	•	0.0040-0.0060
EC-A2 010-015/08C4M45	1.00	4.00	1.50	8.0	45.00	0.95	2	30.0	3.0	C	•	0.0040-0.0060
EC-A2 010-015/10C4M45	1.00	4.00	1.50	10.0	45.00	0.95	2	30.0	3.0	C	•	0.0040-0.0060
EC-A2 010-015/12C4M45	1.00	4.00	1.50	12.0	45.00	0.93	2	30.0	3.0	C	•	0.0040-0.0060
EC-A2 010-015/16C4M50	1.00	4.00	1.50	16.0	50.00	0.93	2	30.0	3.0	C	•	0.0040-0.0060
EC-A2 010-015/20C4M55	1.00	4.00	1.50	20.0	55.00	0.93	2	30.0	3.0	C	•	0.0040-0.0060
EC-A2 012-018/06C4M45	1.20	4.00	1.80	6.0	45.00	1.17	2	30.0	3.0	C	•	0.0040-0.0075
EC-A2 012-018/08C4M45	1.20	4.00	1.80	8.0	45.00	1.15	2	30.0	3.0	C	•	0.0040-0.0075
EC-A2 012-018/10C4M45	1.20	4.00	1.80	10.0	45.00	1.15	2	30.0	3.0	C	•	0.0040-0.0075
EC-A2 012-018/16C4M50	1.20	4.00	1.80	16.0	50.00	1.13	2	30.0	3.0	C	•	0.0040-0.0075
EC-A2 014-021/06C4M45	1.40	4.00	2.10	6.0	45.00	1.35	2	30.0	3.0	C	•	0.0040-0.0080
EC-A2 014-021/08C4M45	1.40	4.00	2.10	8.0	45.00	1.35	2	30.0	3.0	C	•	0.0040-0.0080
EC-A2 014-021/10C4M45	1.40	4.00	2.10	10.0	45.00	1.35	2	30.0	3.0	C	•	0.0040-0.0080
EC-A2 015-023/06C4M45	1.50	4.00	2.30	6.0	45.00	1.47	2	30.0	3.0	C	•	0.0050-0.0100
EC-A2 015-023/08C4M45	1.50	4.00	2.30	8.0	45.00	1.45	2	30.0	3.0	C	•	0.0050-0.0100
EC-A2 015-023/10C4M45	1.50	4.00	2.30	10.0	45.00	1.45	2	30.0	3.0	C	•	0.0050-0.0100
EC-A2 015-023/12C4M45	1.50	4.00	2.30	12.0	45.00	1.41	2	30.0	3.0	C	•	0.0050-0.0100
EC-A2 015-023/14C4M50	1.50	4.00	2.30	14.0	50.00	1.41	2	30.0	3.0	C	•	0.0050-0.0100
EC-A2 015-023/16C4M50	1.50	4.00	2.30	16.0	50.00	1.41	2	30.0	3.0	C	•	0.0050-0.0100
EC-A2 015-023/20C4M55	1.50	4.00	2.30	20.0	55.00	1.41	2	30.0	3.0	C	•	0.0050-0.0100
EC-A2 016-024/06C4M45	1.60	4.00	2.40	6.0	45.00	1.57	2	30.0	3.0	C	•	0.0050-0.0100
EC-A2 016-024/08C4M45	1.60	4.00	2.40	8.0	45.00	1.55	2	30.0	3.0	C	•	0.0050-0.0100
EC-A2 016-024/10C4M45	1.60	4.00	2.40	10.0	45.00	1.55	2	30.0	3.0	C	•	0.0050-0.0100
EC-A2 016-024/18C4M55	1.60	4.00	2.40	18.0	55.00	1.53	2	30.0	3.0	C	•	0.0050-0.0100
EC-A2 016-024/26C4M60	1.60	4.00	2.40	26.0	60.00	1.53	2	30.0	3.0	C	•	0.0050-0.0100
EC-A2 018-027/06C4M45	1.80	4.00	2.70	6.0	45.00	1.77	2	30.0	3.0	C	•	0.0060-0.0100
EC-A2 018-027/08C4M45	1.80	4.00	2.70	8.0	45.00	1.75	2	30.0	3.0	C	•	0.0060-0.0100
EC-A2 018-027/10C4M45	1.80	4.00	2.70	10.0	45.00	1.75	2	30.0	3.0	C	•	0.0060-0.0100
EC-A2 018-027/12C4M45	1.80	4.00	2.70	12.0	45.00	1.73	2	30.0	3.0	C	•	0.0060-0.0100
EC-A2 018-027/14C4M50	1.80	4.00	2.70	14.0	50.00	1.73	2	30.0	3.0	C	•	0.0060-0.0100

• The DC tolerance is: 0 - -0.015 mm • For user guide, see pages 177-184

(1) Number of flutes

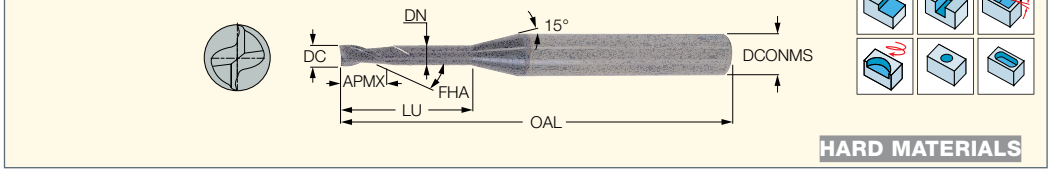
(2) Maximum ramping angle

(3) C-Cylindrical

SOLIDMILL PREMIUM LINE

EC-A2-M (rib processing) (continued)

2 Flute, 30° Helix Solid Carbide Endmills for Rib Processing on Hard Materials up to 55 HRC



Designation	Dimensions										IC903	Recommended Machining Data
	DC	DCONMS	APMX	LU	OAL	DN	NOF(1)	FHA	RMPX°(2)	Shank(3)		f_z (mm/t)
EC-A2 020-030/06C4M45	2.00	4.00	3.00	6.0	45.00	1.97	2	30.0	3.0	C	•	0.0080-0.0150
EC-A2 020-030/08C4M45	2.00	4.00	3.00	8.0	45.00	1.95	2	30.0	3.0	C	•	0.0080-0.0150
EC-A2 020-030/10C4M45	2.00	4.00	3.00	10.0	45.00	1.95	2	30.0	3.0	C	•	0.0080-0.0150
EC-A2 020-030/12C4M45	2.00	4.00	3.00	12.0	45.00	1.93	2	30.0	3.0	C	•	0.0080-0.0150
EC-A2 020-030/14C4M50	2.00	4.00	3.00	14.0	50.00	1.93	2	30.0	3.0	C	•	0.0080-0.0150
EC-A2 020-030/16C4M50	2.00	4.00	3.00	16.0	50.00	1.91	2	30.0	3.0	C	•	0.0080-0.0150
EC-A2 020-030/18C4M55	2.00	4.00	3.00	18.0	55.00	1.91	2	30.0	3.0	C	•	0.0080-0.0150
EC-A2 020-030/20C4M55	2.00	4.00	3.00	20.0	55.00	1.89	2	30.0	3.0	C	•	0.0080-0.0150
EC-A2 020-030/25C4M60	2.00	4.00	3.00	25.0	60.00	1.89	2	30.0	3.0	C	•	0.0080-0.0150
EC-A2 020-030/30C4M70	2.00	4.00	3.00	30.0	70.00	1.89	2	30.0	3.0	C	•	0.0080-0.0150
EC-A2 025-037/08C4M45	2.50	4.00	3.70	8.0	45.00	2.40	2	30.0	3.0	C	•	0.0090-0.0180
EC-A2 025-037/10C4M45	2.50	4.00	3.70	10.0	45.00	2.40	2	30.0	3.0	C	•	0.0090-0.0180
EC-A2 025-037/12C4M45	2.50	4.00	3.70	12.0	45.00	2.40	2	30.0	3.0	C	•	0.0090-0.0180
EC-A2 025-037/14C4M50	2.50	4.00	3.70	14.0	50.00	2.40	2	30.0	3.0	C	•	0.0090-0.0180
EC-A2 025-037/16C4M55	2.50	4.00	3.70	16.0	55.00	2.40	2	30.0	3.0	C	•	0.0090-0.0180
EC-A2 025-037/18C4M55	2.50	4.00	3.70	18.0	55.00	2.40	2	30.0	3.0	C	•	0.0090-0.0180
EC-A2 025-037/20C4M60	2.50	4.00	3.70	20.0	60.00	2.40	2	30.0	3.0	C	•	0.0090-0.0180
EC-A2 025-037/25C4M70	2.50	4.00	3.70	25.0	70.00	2.40	2	30.0	3.0	C	•	0.0090-0.0180
EC-A2 025-037/30C4M80	2.50	4.00	3.70	30.0	80.00	2.40	2	30.0	3.0	C	•	0.0090-0.0180
EC-A2 030-045/08C6M45	3.00	6.00	4.50	8.0	45.00	2.85	2	30.0	3.0	C	•	0.0100-0.0180
EC-A2 030-045/10C6M45	3.00	6.00	4.50	10.0	45.00	2.85	2	30.0	3.0	C	•	0.0100-0.0180
EC-A2 030-045/12C6M45	3.00	6.00	4.50	12.0	45.00	2.85	2	30.0	3.0	C	•	0.0100-0.0180
EC-A2 030-045/14C6M50	3.00	6.00	4.50	14.0	50.00	2.85	2	30.0	3.0	C	•	0.0100-0.0180
EC-A2 030-045/16C6M55	3.00	6.00	4.50	16.0	55.00	2.85	2	30.0	3.0	C	•	0.0100-0.0180
EC-A2 030-045/18C6M55	3.00	6.00	4.50	18.0	55.00	2.85	2	30.0	3.0	C	•	0.0100-0.0180
EC-A2 030-045/20C6M60	3.00	6.00	4.50	20.0	60.00	2.85	2	30.0	3.0	C	•	0.0100-0.0180
EC-A2 030-045/25C6M65	3.00	6.00	4.50	25.0	65.00	2.85	2	30.0	3.0	C	•	0.0100-0.0180
EC-A2 030-045/30C6M70	3.00	6.00	4.50	30.0	70.00	2.85	2	30.0	3.0	C	•	0.0100-0.0180
EC-A2 030-045/35C6M80	3.00	6.00	4.50	35.0	80.00	2.85	2	30.0	3.0	C	•	0.0100-0.0180
EC-A2 030-045/40C6M90	3.00	6.00	4.50	40.0	90.00	2.85	2	30.0	3.0	C	•	0.0100-0.0180
EC-A2 040-060/12C6M50	4.00	6.00	6.00	12.0	50.00	3.80	2	30.0	3.0	C	•	0.0100-0.0200
EC-A2 040-060/16C6M60	4.00	6.00	6.00	16.0	60.00	3.80	2	30.0	3.0	C	•	0.0100-0.0200
EC-A2 040-060/20C6M60	4.00	6.00	6.00	20.0	60.00	3.80	2	30.0	3.0	C	•	0.0100-0.0200
EC-A2 040-060/25C6M70	4.00	6.00	6.00	25.0	70.00	3.80	2	30.0	3.0	C	•	0.0100-0.0200
EC-A2 040-060/30C6M70	4.00	6.00	6.00	30.0	70.00	3.80	2	30.0	3.0	C	•	0.0100-0.0200
EC-A2 040-060/35C6M80	4.00	6.00	6.00	35.0	80.00	3.80	2	30.0	3.0	C	•	0.0100-0.0200
EC-A2 040-060/40C6M90	4.00	6.00	6.00	40.0	90.00	3.80	2	30.0	3.0	C	•	0.0100-0.0200
EC-A2 040-060/45C6M90	4.00	6.00	6.00	45.0	90.00	3.80	2	30.0	3.0	C	•	0.0100-0.0200
EC-A2 040-060/50C6M100	4.00	6.00	6.00	50.0	100.00	3.80	2	30.0	3.0	C	•	0.0100-0.0200
EC-A2 050-075/16C6M60	5.00	6.00	7.50	16.0	60.00	4.80	2	30.0	3.0	C	•	0.0100-0.0250
EC-A2 050-075/20C6M60	5.00	6.00	7.50	20.0	60.00	4.80	2	30.0	3.0	C	•	0.0100-0.0250
EC-A2 050-075/25C6M70	5.00	6.00	7.50	25.0	70.00	4.80	2	30.0	3.0	C	•	0.0100-0.0250
EC-A2 050-075/30C6M80	5.00	6.00	7.50	30.0	80.00	4.80	2	30.0	3.0	C	•	0.0100-0.0250
EC-A2 050-075/35C6M80	5.00	6.00	7.50	35.0	80.00	4.80	2	30.0	3.0	C	•	0.0100-0.0250
EC-A2 050-075/40C6M80	5.00	6.00	7.50	40.0	80.00	4.80	2	30.0	3.0	C	•	0.0100-0.0250
EC-A2 050-075/50C6M110	5.00	6.00	7.50	50.0	110.00	4.80	2	30.0	3.0	C	•	0.0100-0.0250
EC-A2 060-090/20C6M80	6.00	6.00	9.00	20.0	80.00	5.70	2	30.0	3.0	C	•	0.0150-0.0300
EC-A2 060-090/30C6M90	6.00	6.00	9.00	30.0	90.00	5.70	2	30.0	3.0	C	•	0.0150-0.0300
EC-A2 060-090/40C6M100	6.00	6.00	9.00	40.0	100.00	5.60	2	30.0	3.0	C	•	0.0150-0.0300
EC-A2 060-090/50C6M110	6.00	6.00	9.00	50.0	110.00	5.60	2	30.0	3.0	C	•	0.0150-0.0300

• The DC tolerance is: 0 - -0.015 mm • For user guide, see pages 177-184

(1) Number of flutes

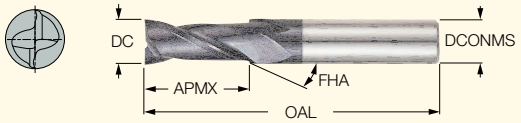
(2) Maximum ramping angle

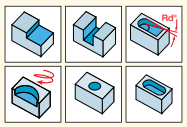
(3) C-Cylindrical

SOLIDMILL PREMIUM LINE

EC-A2 (medium length)

2 Flute, 30° Helix Medium Length Solid Carbide Endmills for Hard Materials up to 65 HRC





HARD MATERIALS

Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	IC903	Recommended Machining Data f_z (mm/t)
EC-A2 010-025C06-40	1.00	6.00	2.50	40.00	2	30.0	5.0	C	●	0.00-0.01
EC-A2 015-040C06-40	1.50	6.00	4.00	40.00	2	30.0	5.0	C	●	0.00-0.02
EC-A2 020-060C06-40	2.00	6.00	6.00	40.00	2	30.0	5.0	C	●	0.01-0.03
EC-A2 025-080C06-40	2.50	6.00	8.00	40.00	2	30.0	5.0	C	●	0.01-0.03
EC-A2 030-080C06-45	3.00	6.00	8.00	45.00	2	30.0	5.0	C	●	0.01-0.04
EC-A2 035-10C06M45	3.50	6.00	10.00	45.00	2	30.0	5.0	C	●	0.01-0.04
EC-A2 040-11C06-45	4.00	6.00	11.00	45.00	2	30.0	5.0	C	●	0.02-0.05
EC-A2 045-11C06-45	4.50	6.00	11.00	45.00	2	30.0	5.0	C	●	0.02-0.05
EC-A2 050-13C06-50	5.00	6.00	13.00	50.00	2	30.0	5.0	C	●	0.02-0.06
EC-A2 055-13C06-50	5.50	6.00	13.00	50.00	2	30.0	5.0	C	●	0.02-0.06
EC-A2 060-13C06-50	6.00	6.00	13.00	50.00	2	30.0	5.0	C	●	0.03-0.07
EC-A2 065-16C08-60	6.50	8.00	16.00	60.00	2	30.0	5.0	C	●	0.03-0.07
EC-A2 070-16C08-60	7.00	8.00	16.00	60.00	2	30.0	5.0	C	●	0.03-0.08
EC-A2 075-16C08-60	7.50	8.00	16.00	60.00	2	30.0	5.0	C	●	0.03-0.08
EC-A2 080-19C08-60	8.00	8.00	19.00	60.00	2	30.0	5.0	C	●	0.03-0.09
EC-A2 085-19C10-70	8.50	10.00	19.00	70.00	2	30.0	5.0	C	●	0.03-0.09
EC-A2 090-19C10-70	9.00	10.00	19.00	70.00	2	30.0	5.0	C	●	0.03-0.09
EC-A2 095-19C10-70	9.50	10.00	19.00	70.00	2	30.0	5.0	C	●	0.03-0.09
EC-A2 100-22C10-70	10.00	10.00	22.00	70.00	2	30.0	5.0	C	●	0.03-0.10
EC-A2 110-22C12-75	11.00	12.00	22.00	75.00	2	30.0	5.0	C	●	0.03-0.10
EC-A2 120-26C12-75	12.00	12.00	26.00	75.00	2	30.0	5.0	C	●	0.04-0.11
EC-A2 130-26C12-85	13.00	12.00	26.00	85.00	2	30.0	5.0	C	●	0.04-0.11
EC-A2 140-26C14-85	14.00	14.00	26.00	85.00	2	30.0	5.0	C	●	0.04-0.12
EC-A2 150-26C16-90	15.00	16.00	26.00	90.00	2	30.0	5.0	C	●	0.04-0.12
EC-A2 160-32C16-100	16.00	16.00	32.00	100.00	2	30.0	5.0	C	●	0.05-0.13
EC-A2 170-32C16-100	17.00	16.00	32.00	100.00	2	30.0	5.0	C	●	0.05-0.13
EC-A2 180-32C18-100	18.00	18.00	32.00	100.00	2	30.0	5.0	C	●	0.05-0.13
EC-A2 200-38C20-105	20.00	20.00	38.00	105.00	2	30.0	5.0	C	●	0.05-0.13
EC-A2 220-38C20-105	22.00	20.00	38.00	105.00	2	30.0	5.0	C	●	0.05-0.13

• For user guide, see pages 177-184

(1) Number of flutes

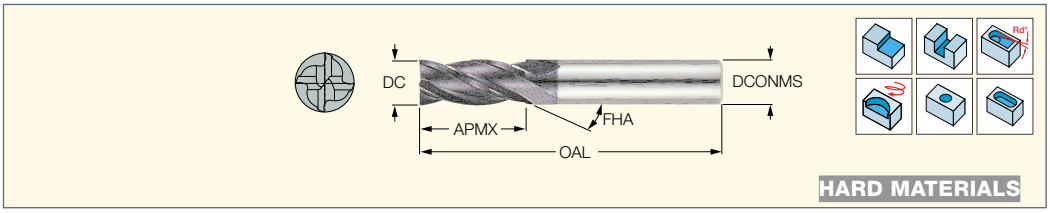
(2) Maximum ramping angle

(3) C-Cylindrical

SOLIDMILL PREMIUM LINE

EC-A4

4 Flute, 30° Helix Medium Length Solid Carbide Endmills for Hard Materials up to 65 HRC



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	IC903	Recommended Machining Data f_z (mm/t)
EC-A4 020-060C06-50	2.00	6.00	6.00	50.00	4	30.0	5.0	C	•	0.01-0.03
EC-A4 025-080C06-50	2.50	6.00	8.00	50.00	4	30.0	5.0	C	•	0.01-0.03
EC-A4 030-080C06-50	3.00	6.00	8.00	50.00	4	30.0	5.0	C	•	0.01-0.04
EC-A4 035-10C06-50	3.50	6.00	10.00	50.00	4	30.0	5.0	C	•	0.01-0.04
EC-A4 040-11C06-50	4.00	6.00	11.00	50.00	4	30.0	5.0	C	•	0.02-0.05
EC-A4 045-11C06-50	4.50	6.00	11.00	50.00	4	30.0	5.0	C	•	0.02-0.05
EC-A4 050-13C06-50	5.00	6.00	13.00	50.00	4	30.0	5.0	C	•	0.02-0.06
EC-A4 055-13C06-50	5.50	6.00	13.00	50.00	4	30.0	5.0	C	•	0.02-0.06
EC-A4 060-13C06-50	6.00	6.00	13.00	50.00	4	30.0	5.0	C	•	0.03-0.07
EC-A4 065-16C08-63	6.50	8.00	16.00	63.00	4	30.0	5.0	C	•	0.03-0.07
EC-A4 070-16C08-63	7.00	8.00	16.00	63.00	4	30.0	5.0	C	•	0.03-0.08
EC-A4 075-16C08-63	7.50	8.00	16.00	63.00	4	30.0	5.0	C	•	0.03-0.08
EC-A4 080-19C08-63	8.00	8.00	19.00	63.00	4	30.0	5.0	C	•	0.03-0.09
EC-A4 085-19C10-72	8.50	10.00	19.00	72.00	4	30.0	5.0	C	•	0.03-0.09
EC-A4 090-19C10-72	9.00	10.00	19.00	72.00	4	30.0	5.0	C	•	0.03-0.09
EC-A4 095-19C10-70	9.50	10.00	19.00	70.00	4	30.0	5.0	C	•	0.03-0.09
EC-A4 100-22C10-72	10.00	10.00	22.00	72.00	4	30.0	5.0	C	•	0.03-0.10
EC-A4 105-22C12-75	10.50	12.00	22.00	75.00	4	30.0	5.0	C	•	0.03-0.10
EC-A4 110-22C12-75	11.00	12.00	22.00	75.00	4	30.0	5.0	C	•	0.03-0.10
EC-A4 115-22C12-75	11.50	12.00	22.00	75.00	4	30.0	5.0	C	•	0.03-0.10
EC-A4 120-26C12-73	12.00	12.00	26.00	73.00	4	30.0	5.0	C	•	0.04-0.11
EC-A4 130-26C12-85	13.00	12.00	26.00	85.00	4	30.0	5.0	C	•	0.04-0.11
EC-A4 140-26C12-85	14.00	12.00	26.00	85.00	4	30.0	5.0	C	•	0.04-0.12
EC-A4 140-26C14-83	14.00	14.00	26.00	83.00	4	30.0	5.0	C	•	0.04-0.12
EC-A4 140-26C16-85	14.00	16.00	26.00	85.00	4	30.0	5.0	C	•	0.04-0.12
EC-A4 150-26C16-92	15.00	16.00	26.00	92.00	4	30.0	5.0	C	•	0.04-0.12
EC-A4 160-32C16-92	16.00	16.00	32.00	92.00	4	30.0	5.0	C	•	0.05-0.13
EC-A4 170-32C16-100	17.00	16.00	32.00	100.00	4	30.0	5.0	C	•	0.05-0.13
EC-A4 180-32C18-100	18.00	18.00	32.00	100.00	4	30.0	5.0	C	•	0.05-0.13
EC-A4 190-32C20-100	19.00	20.00	32.00	100.00	4	30.0	5.0	C	•	0.05-0.13
EC-A4 200-38C20-104	20.00	20.00	38.00	104.00	4	30.0	5.0	C	•	0.05-0.13
EC-A4 220-38C20-105	22.00	20.00	38.00	105.00	4	30.0	5.0	C	•	0.05-0.13
EC-A4 250-45C25-120	25.00	25.00	45.00	120.00	4	30.0	5.0	C	•	0.05-0.13

• The DC tolerance is: 0 - -0.03 mm • For user guide, see pages 177-184

(1) Number of flutes

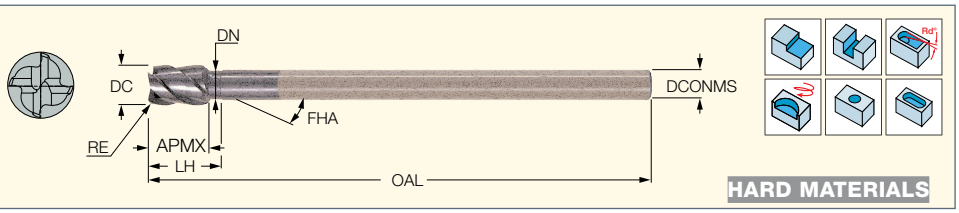
(2) Maximum ramping angle

(3) C-Cylindrical

SOLIDMILL PREMIUM LINE

EC-B4-R

4 Flute, 45° Helix Extra-Long Solid Carbide Endmills with Various Corner Radii for Hardened Steel



Designation	Dimensions DC	DCONMS	RE	APMX	LH	DN	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	IC903	Recommended Machining Data f_z (mm/t)
EC-B4 10-15C08R.5M130	10.00	8.00	0.50	15.00	19.2	7.50	130.00	4	45.0	5.0	C	•	0.03-0.10
EC-B4 12-18C10R.5M150	12.00	10.00	0.50	18.00	22.2	9.50	150.00	4	45.0	5.0	C	•	0.04-0.11
EC-B4 14-21C12R.5M160	14.00	12.00	0.50	21.00	25.2	11.50	160.00	4	45.0	5.0	C	•	0.04-0.12
EC-B4 14-21C12R1M160	14.00	12.00	1.00	21.00	25.2	11.50	160.00	4	45.0	5.0	C	•	0.04-0.12
EC-B4 18-27C16R0.5M180	18.00	16.00	0.50	27.00	31.2	15.50	180.00	4	45.0	5.0	C	•	0.05-0.13
EC-B4 22-33C20R.5M200	22.00	20.00	0.50	33.00	37.2	19.50	200.00	4	45.0	5.0	C	•	0.05-0.13

• For user guide, see pages 177-184

(1) Number of flutes

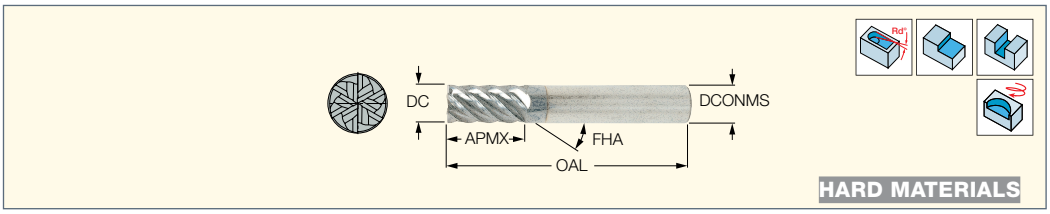
(2) Maximum ramping angle

(3) C-Cylindrical

SOLIDMILL PREMIUM LINE

ECH-B-6

6 Flute, 45° Helix Medium Length Solid Carbide Endmills for Finishing of Hard Materials up to 65 HRC



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	Shank(2)	Tough ↔ Hard IC900	IC903	Recommended Machining Data f_z (mm/t)
ECH060B16-6C06	6.00	6.00	16.00	57.00	6	45.0	C	•	•	0.03-0.07
ECH060B16-6W06	6.00	6.00	16.00	57.00	6	45.0	W	•		0.03-0.07
ECH080B20-6C08	8.00	8.00	20.00	63.00	6	45.0	C	•	•	0.03-0.09
ECH080B20-6W08	8.00	8.00	20.00	63.00	6	45.0	W	•		0.03-0.09
ECH100B22-6C10	10.00	10.00	22.00	72.00	6	45.0	C	•	•	0.03-0.10
ECH100B22-6W10	10.00	10.00	22.00	72.00	6	45.0	W	•		0.03-0.10
ECH120B25-6C12	12.00	12.00	25.00	83.00	6	45.0	C	•	•	0.04-0.11
ECH120B25-6W12	12.00	12.00	25.00	83.00	6	45.0	W	•		0.04-0.11
ECH160B32-6C16	16.00	16.00	32.00	92.00	6	45.0	C	•	•	0.05-0.13
ECH160B32-6W16	16.00	16.00	32.00	92.00	6	45.0	W	•		0.05-0.13
ECH200B38-6C20	20.00	20.00	38.00	104.00	6	45.0	C	•	•	0.05-0.13
ECH200B38-6W20	20.00	20.00	38.00	104.00	6	45.0	W	•		0.05-0.13

• Use IC903 for machining hardened steel up to 65 HRc • For user guide, see pages 177-184

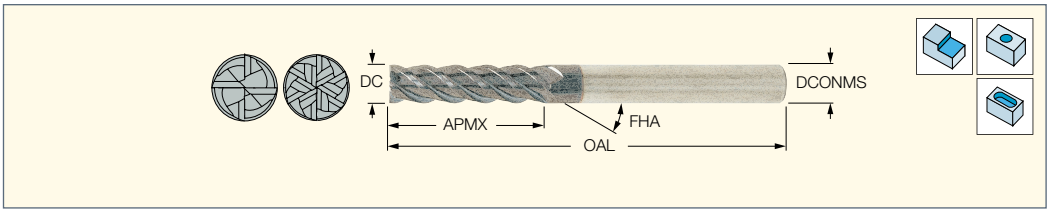
(1) Number of flutes

(2) C-Cylindrical, W-Weldon

SOLIDMILL PREMIUM LINE

ECL-B-4/6

4 & 6 Flute, 45° Helix Long Solid Carbide Endmills



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(2)	FHA	Shank(3)	IC900	Recommended Machining Data f_z (mm/t)
ECL060B24-4C06	6.00	6.00	24.00	65.00	4	45.0	C	•	0.03-0.07
ECL060B24-4W06	6.00	6.00	24.00	65.00	4	45.0	W	•	0.03-0.07
ECL080B32-4C08	8.00	8.00	32.00	79.00	4	45.0	C	•	0.03-0.09
ECL080B32-4W08	8.00	8.00	32.00	79.00	4	45.0	W	•	0.03-0.09
ECL100B40-4C10	10.00	10.00	40.00	100.00	4	45.0	C	•	0.03-0.10
ECL100B40-4W10	10.00	10.00	40.00	100.00	4	45.0	W	•	0.03-0.10
ECL120B48-4C12	12.00	12.00	48.00	100.00	4	45.0	C	•	0.04-0.11
ECL120B48-4W12	12.00	12.00	48.00	100.00	4	45.0	W	•	0.04-0.11
ECL140B50-4C14	14.00	14.00	50.00	100.00	4	45.0	C	•	0.04-0.12
ECL140B50-4W14	14.00	14.00	50.00	100.00	4	45.0	W	•	0.04-0.12
ECL160B56-6C16 (1)	16.00	16.00	56.00	115.00	6	45.0	C	•	0.05-0.13
ECL160B56-6W16 (1)	16.00	16.00	56.00	115.00	6	45.0	W	•	0.05-0.13
ECL200B60-6C20 (1)	20.00	20.00	60.00	125.00	6	45.0	C	•	0.05-0.13
ECL200B60-6W20 (1)	20.00	20.00	60.00	125.00	6	45.0	W	•	0.05-0.13

• Smooth cutting in extra long depth • For user guide, see pages 177-184

(1) Cannot be used for plunging application

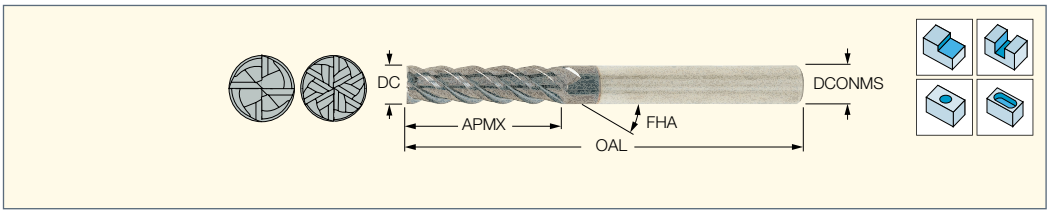
(2) Number of flutes

(3) C-Cylindrical, W-Weldon

SOLIDMILL PREMIUM LINE

ECXL-B-4/6

4 & 6 Flute, 45° Helix Extra Long Solid Carbide Endmills



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(2)	FHA	Shank(3)	IC900	Recommended Machining Data f_z (mm/t)
ECXL100B60-4C10	10.00	10.00	60.00	112.00	4	45.0	C	●	0.03-0.10
ECXL100B60-4W10	10.00	10.00	60.00	112.00	4	45.0	W	●	0.03-0.10
ECXL120B72-4C12	12.00	12.00	72.00	150.00	4	45.0	C	●	0.04-0.11
ECXL120B72-4W12	12.00	12.00	72.00	150.00	4	45.0	W	●	0.04-0.11
ECXL160B80-6C16 (1)	16.00	16.00	80.00	150.00	6	45.0	C	●	0.05-0.13
ECXL160B80-6W16 (1)	16.00	16.00	80.00	150.00	6	45.0	W	●	0.05-0.13
ECXL200B80-6C20 (1)	20.00	20.00	80.00	150.00	6	45.0	C	●	0.05-0.13

• Smooth cutting in extra long depth. • For user guide, see pages 177-184

(1) Cannot be used for plunging application

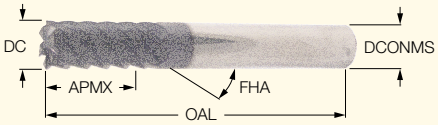
(2) Number of flutes

(3) C-Cylindrical, W-Weldon

SOLIDMILL PREMIUM LINE

EC-D6

6 Flute, 50° Helix Medium Length Solid Carbide Endmills for Finishing of Hard Materials up to 65 HRc



HARD MATERIALS

Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	Shank(2)	RMPX°(3)	IC903	Recommended Machining Data f_z (mm/t)
EC-D6 06-13C06H57	6.00	6.00	13.00	57.00	6	50.0	C	5.0	●	0.03-0.07
EC-D6 08-20C08H63	8.00	8.00	20.00	63.00	6	50.0	C	5.0	●	0.03-0.09
EC-D6 10-22C10H72	10.00	10.00	22.00	72.00	6	50.0	C	5.0	●	0.03-0.10
EC-D6 12-25C12H83	12.00	12.00	25.00	83.00	6	50.0	C	5.0	●	0.04-0.11
EC-D6 12-25W12H83	12.00	12.00	25.00	83.00	6	50.0	W	5.0	●	0.04-0.11
EC-D6 14-30C14H83	14.00	14.00	30.00	83.00	6	50.0	C	5.0	●	0.04-0.12
EC-D6 16-32C16H92	16.00	16.00	32.00	92.00	6	50.0	C	5.0	●	0.05-0.13
EC-D6 20-38C20H104	20.00	20.00	38.00	104.00	6	50.0	C	5.0	●	0.05-0.13

• For user guide, see pages 177-184

(1) Number of flutes

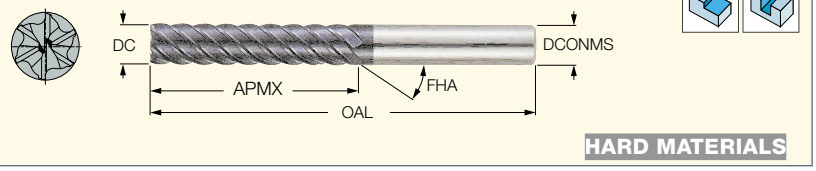
(2) C-Cylindrical, W-Weldon

(3) Maximum ramping angle

SOLIDMILL PREMIUM LINE

EC-B6

6 Flute, 45° Helix Extra Long Solid Carbide Endmills for Finishing of Hard Materials up to 65 HRC



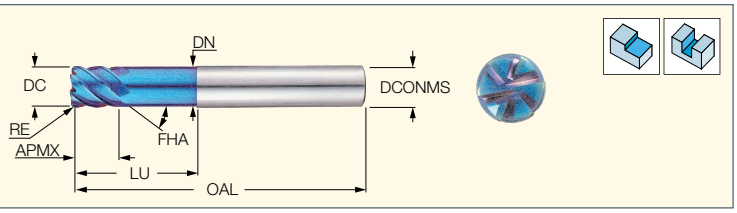
Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	Shank(2)	IC903	Recommended Machining Data f_z (mm/t)
EC-B6 060-026C06-70	6.00	6.00	26.00	70.00	6	45.0	C	●	0.03-0.07
EC-B6 080-036C08-90	8.00	8.00	36.00	90.00	6	45.0	C	●	0.03-0.09
EC-B6 100-46C10-100	10.00	10.00	46.00	100.00	6	45.0	C	●	0.03-0.10
EC-B6 120-56C12-110	12.00	12.00	56.00	110.00	6	45.0	C	●	0.04-0.11
EC-B6 160-66C16-130	16.00	16.00	66.00	130.00	6	45.0	C	●	0.05-0.13
EC-B6 200-76C20-140	20.00	20.00	76.00	140.00	6	45.0	C	●	0.05-0.13
EC-B6 250-92C25-180	25.00	25.00	92.00	180.00	6	45.0	C	●	0.05-0.13

• For user guide, see pages 177-184
(1) Number of flutes
(2) C-Cylindrical

SOLIDMILL PREMIUM LINE

EC-B6-H

6 Flute, 45° Helix Extra Long Solid Carbide Endmills for Finishing of Hard Materials up to 65 HRC



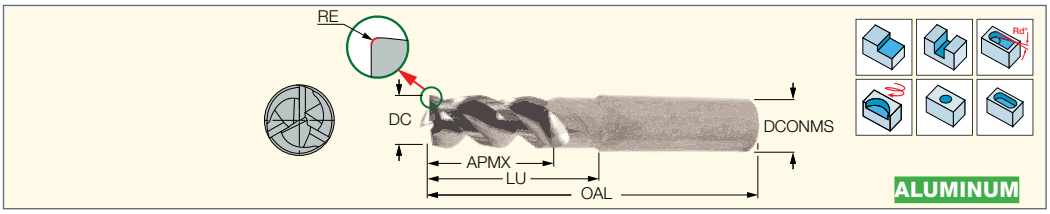
Designation	Dimensions DC	DCONMS	APMX	RE	DN	LU	OAL	NOF(1)	FHA	Shank(2)	IC702	Recommended Machining Data f_z (mm/t)
EC-B6 06-06/14C06R.25H50	6.00	6.00	6.00	0.25	5.85	14.00	50.00	6	45.0	C	●	0.03-0.07
EC-B6 06-06/14C06R.5H50	6.00	6.00	6.00	0.50	5.70	14.00	50.00	6	45.0	C	●	0.03-0.07
EC-B6 06-13C06R.5H70	6.00	6.00	13.00	0.50	6.00	-	70.00	6	45.0	C	●	0.03-0.07
EC-B6 06-26C06R.5H70	6.00	6.00	26.00	0.50	6.00	-	70.00	6	45.0	C	●	0.03-0.07
EC-B6 08-08/24C08R.5H60	8.00	8.00	8.00	0.50	7.70	24.00	60.00	6	45.0	C	●	0.03-0.09
EC-B6 08-19C08R.5H90	8.00	8.00	19.00	0.50	8.00	-	90.00	6	45.0	C	●	0.03-0.09
EC-B6 08-36C08R.5H90	8.00	8.00	36.00	0.50	8.00	-	90.00	6	45.0	C	●	0.03-0.09
EC-B6 10-22C10R.5H100	10.00	10.00	22.00	0.50	10.00	-	100.00	6	45.0	C	●	0.03-0.10
EC-B6 10-22C10R1H100	10.00	10.00	22.00	1.00	10.00	-	100.00	6	45.0	C	●	0.03-0.10
EC-B6 10-46C10R1H100	10.00	10.00	46.00	1.00	10.00	-	100.00	6	45.0	C	●	0.03-0.10
EC-B6 12-26C12R.5H110	12.00	12.00	26.00	0.50	12.00	-	110.00	6	45.0	C	●	0.04-0.11
EC-B6 12-26C12R1H110	12.00	12.00	26.00	1.00	12.00	-	110.00	6	45.0	C	●	0.04-0.11
EC-B6 12-56C12R1H110	12.00	12.00	56.00	1.00	12.00	-	110.00	6	45.0	C	●	0.04-0.11
EC-B6 20-38C20R2H140	20.00	20.00	38.00	2.00	20.00	-	140.00	6	45.0	C	●	0.05-0.13
EC-B6 20-76C20R2H140	20.00	20.00	76.00	2.00	20.00	-	140.00	6	45.0	C	●	0.05-0.13

• For user guide, see pages 177-184
(1) Number of flutes
(2) C-Cylindrical

CHATTERFREE SOLID MILL LINE

ECA-H3-CF

Solid Carbide Endmills with Different Helix, Variable Pitch and Relieved Neck for Machining Aluminum



Designation	Dimensions									Tough ↔ Hard		Recommended Machining Data
	DC	DCONMS	APMX	OAL	NOF(1)	LU	RMPX°(2)	Shank(3)	RE	IC1508	IC08	f_z (mm/t)
ECA-H3 01-04C06CF-R.05	1.00	6.00	4.00	57.00	3	6.00	5.0	C	0.05		•	0.01-0.01
ECA-H3 015-04/06C06CF-R01	1.50	6.00	4.00	57.00	3	6.00	5.0	C	0.10		•	0.01-0.01
ECA-H3 02-05/08C06CF-R01	2.00	6.00	5.00	57.00	3	8.00	5.0	C	0.10		•	0.01-0.02
ECA-H3 025-05/08C06CF-R01	2.50	6.00	5.00	57.00	3	8.00	5.0	C	0.10		•	0.01-0.02
ECA-H3 03-07/12C06CF-R01	3.00	6.00	7.00	57.00	3	12.00	5.0	C	0.10		•	0.03-0.05
ECA-H3 04-10/16C06CF-R02	4.00	6.00	10.00	57.00	3	16.00	5.0	C	0.20		•	0.03-0.05
ECA-H3 05-12/20C06CF-R02	5.00	6.00	12.00	57.00	3	20.00	5.0	C	0.20		•	0.03-0.06
ECA-H3 06-09/18C06CF-R02	6.00	6.00	9.00	57.00	3	18.00	5.0	C	0.20		•	0.03-0.07
ECA-H3 06-09/18C06CF-R02D	6.00	6.00	9.00	57.00	3	18.00	5.0	C	0.20	•		0.03-0.07
ECA-H3 06-09/18C06CF-R04	6.00	6.00	9.00	57.00	3	18.00	5.0	C	0.40		•	0.03-0.07
ECA-H3 06-09/18C06CF-R08	6.00	6.00	9.00	57.00	3	18.00	5.0	C	0.80		•	0.03-0.07
ECA-H3 06-09/30C06CF-R02	6.00	6.00	9.00	65.00	3	30.00	5.0	C	0.20		•	0.03-0.07
ECA-H3 06-09/30C06CF-R02D	6.00	6.00	9.00	65.00	3	30.00	5.0	C	0.20	•		0.03-0.07
ECA-H3 06-09/30C06CF-R04	6.00	6.00	9.00	65.00	3	30.00	5.0	C	0.40		•	0.03-0.07
ECA-H3 06-09/30C06CF-R08	6.00	6.00	9.00	65.00	3	30.00	5.0	C	0.80		•	0.03-0.07
ECA-H3 06-12/18C06CF-R02C	6.00	6.00	12.00	57.00	3	18.00	5.0	C	0.20		•	0.03-0.07
ECA-H3 06-12/30C06CF-R02C	6.00	6.00	12.00	64.00	3	30.00	5.0	C	0.20		•	0.03-0.07
ECA-H3 06-14/24C06CF-R02	6.00	6.00	14.00	60.00	3	24.00	5.0	C	0.20		•	0.03-0.07
ECA-H3 06-14/24C06CF-R02D	6.00	6.00	14.00	60.00	3	24.00	5.0	C	0.20	•		0.03-0.07
ECA-H3 08-12/24C08CF-R02	8.00	8.00	12.00	63.00	3	24.00	5.0	C	0.20		•	0.03-0.09
ECA-H3 08-12/24C08CF-R02D	8.00	8.00	12.00	63.00	3	24.00	5.0	C	0.20	•		0.03-0.09
ECA-H3 08-12/24C08CF-R04	8.00	8.00	12.00	63.00	3	24.00	5.0	C	0.40		•	0.03-0.09
ECA-H3 08-12/24C08CF-R08	8.00	8.00	12.00	63.00	3	24.00	5.0	C	0.80		•	0.03-0.09
ECA-H3 08-12/24C08CF-R30	8.00	8.00	12.00	63.00	3	24.00	5.0	C	3.00		•	0.03-0.09
ECA-H3 08-12/40C08CF-R02	8.00	8.00	12.00	79.00	3	40.00	5.0	C	0.20		•	0.03-0.09
ECA-H3 08-12/40C08CF-R02D	8.00	8.00	12.00	79.00	3	40.00	5.0	C	0.20	•		0.03-0.09
ECA-H3 08-12/40C08CF-R04	8.00	8.00	12.00	79.00	3	40.00	5.0	C	0.40		•	0.03-0.09
ECA-H3 08-12/40C08CF-R08	8.00	8.00	12.00	79.00	3	40.00	5.0	C	0.80		•	0.03-0.09
ECA-H3 08-16/24C08CF-R02C	8.00	8.00	16.00	63.00	3	24.00	5.0	C	0.20		•	0.03-0.09
ECA-H3 08-16/40C08CF-R02C	8.00	8.00	16.00	78.00	3	40.00	5.0	C	0.20		•	0.03-0.09
ECA-H3 08-18/32C08CF-R02	8.00	8.00	18.00	68.00	3	32.00	5.0	C	0.20		•	0.03-0.09
ECA-H3 08-18/32C08CF-R02D	8.00	8.00	18.00	68.00	3	32.00	5.0	C	0.20	•		0.03-0.09
ECA-H3 10-15/30C10CF-R02	10.00	10.00	15.00	72.00	3	30.00	5.0	C	0.20		•	0.03-0.10
ECA-H3 10-15/30C10CF-R02D	10.00	10.00	15.00	72.00	3	30.00	5.0	C	0.20	•		0.03-0.10
ECA-H3 10-15/30C10CF-R04	10.00	10.00	15.00	72.00	3	30.00	5.0	C	0.40		•	0.03-0.10
ECA-H3 10-15/30C10CF-R08	10.00	10.00	15.00	72.00	3	30.00	5.0	C	0.80		•	0.03-0.10
ECA-H3 10-15/30C10CF-R16	10.00	10.00	15.00	72.00	3	30.00	5.0	C	1.60		•	0.03-0.10
ECA-H3 10-15/30C10CF-R30	10.00	10.00	15.00	72.00	3	30.00	5.0	C	3.00		•	0.03-0.10
ECA-H3 10-15/50C10CF-R02	10.00	10.00	15.00	92.00	3	50.00	5.0	C	0.20		•	0.03-0.10
ECA-H3 10-15/50C10CF-R02D	10.00	10.00	15.00	92.00	3	50.00	5.0	C	0.20	•		0.03-0.10
ECA-H3 10-15/50C10CF-R04	10.00	10.00	15.00	92.00	3	50.00	5.0	C	0.40		•	0.03-0.10
ECA-H3 10-15/50C10CF-R08	10.00	10.00	15.00	92.00	3	50.00	5.0	C	0.80		•	0.03-0.10
ECA-H3 10-15/50C10CF-R16	10.00	10.00	15.00	92.00	3	50.00	5.0	C	1.60		•	0.03-0.10
ECA-H3 10-15/50C10CF-R20	10.00	10.00	15.00	92.00	3	50.00	5.0	C	2.00		•	0.03-0.10
ECA-H3 10-15/50C10CF-R30	10.00	10.00	15.00	92.00	3	50.00	5.0	C	3.00		•	0.03-0.10
ECA-H3 10-20/30C10CF-R02C	10.00	10.00	20.00	72.00	3	30.00	5.0	C	0.20		•	0.03-0.10
ECA-H3 10-20/50C10CF-R02C	10.00	10.00	20.00	100.00	3	50.00	5.0	C	0.20		•	0.03-0.10
ECA-H3 10-22/40C10CF-R02	10.00	10.00	22.00	80.00	3	40.00	5.0	C	0.20		•	0.03-0.10
ECA-H3 10-22/40C10CF-R02D	10.00	10.00	22.00	80.00	3	40.00	5.0	C	0.20	•		0.03-0.10
ECA-H3 10-22/40C10CF-R30	10.00	10.00	22.00	80.00	3	40.00	5.0	C	3.00		•	0.03-0.10
ECA-H3 12-18/36C12CF-R02	12.00	12.00	18.00	83.00	3	36.00	5.0	C	0.20		•	0.04-0.11
ECA-H3 12-18/36C12CF-R02D	12.00	12.00	18.00	83.00	3	36.00	5.0	C	0.20	•		0.04-0.11
ECA-H3 12-18/36C12CF-R04	12.00	12.00	18.00	83.00	3	36.00	5.0	C	0.40		•	0.04-0.11
ECA-H3 12-18/36C12CF-R08	12.00	12.00	18.00	83.00	3	36.00	5.0	C	0.80		•	0.04-0.11
ECA-H3 12-18/36C12CF-R16	12.00	12.00	18.00	83.00	3	36.00	5.0	C	1.60		•	0.04-0.11

• For user guide, see pages 177-184

(1) Number of flutes

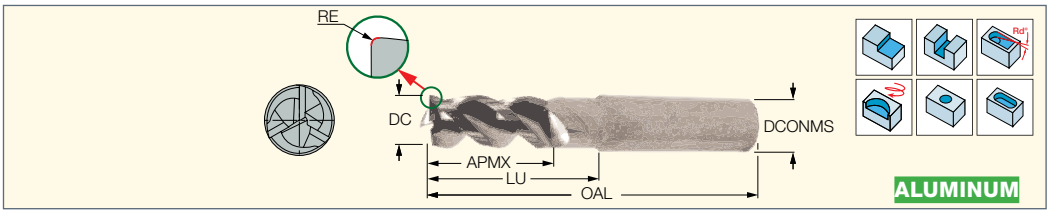
(2) Maximum ramping angle

(3) C-Cylindrical

CHATTERFREE SOLID MILL LINE

ECA-H3-CF (continued)

Solid Carbide Endmills with Different Helix, Variable Pitch and Relieved Neck for Machining Aluminum



Designation	Dimensions									Tough ↔ Hard		Recommended Machining Data
	DC	DCONMS	APMX	OAL	NOF[1]	LU	RMPX°[2]	Shank[3]	RE	IC1508	IC08	f_z (mm/t)
ECA-H3 12-18/36C12CF-R20	12.00	12.00	18.00	83.00	3	36.00	5.0	C	2.00		•	0.04-0.11
ECA-H3 12-18/36C12CF-R25	12.00	12.00	18.00	83.00	3	36.00	5.0	C	2.50		•	0.04-0.11
ECA-H3 12-18/36C12CF-R30	12.00	12.00	18.00	83.00	3	36.00	5.0	C	3.00		•	0.04-0.11
ECA-H3 12-18/60C12CF-R02	12.00	12.00	18.00	100.00	3	60.00	5.0	C	0.20		•	0.04-0.11
ECA-H3 12-18/60C12CF-R02D	12.00	12.00	18.00	100.00	3	60.00	5.0	C	0.20	•		0.04-0.11
ECA-H3 12-18/60C12CF-R04	12.00	12.00	18.00	100.00	3	60.00	5.0	C	0.40		•	0.04-0.11
ECA-H3 12-18/60C12CF-R08	12.00	12.00	18.00	100.00	3	60.00	5.0	C	0.80		•	0.04-0.11
ECA-H3 12-18/60C12CF-R16	12.00	12.00	18.00	100.00	3	60.00	5.0	C	1.60		•	0.04-0.11
ECA-H3 12-18/60C12CF-R20	12.00	12.00	18.00	100.00	3	60.00	5.0	C	2.00		•	0.04-0.11
ECA-H3 12-18/60C12CF-R25	12.00	12.00	18.00	100.00	3	60.00	5.0	C	2.50		•	0.04-0.11
ECA-H3 12-18/60C12CF-R30	12.00	12.00	18.00	100.00	3	60.00	5.0	C	3.00		•	0.04-0.11
ECA-H3 12-24/36C12CF-R02C	12.00	12.00	24.00	83.00	3	36.00	5.0	C	0.20		•	0.04-0.11
ECA-H3 12-24/60C12CF-R02C	12.00	12.00	24.00	100.00	3	60.00	5.0	C	0.20		•	0.04-0.11
ECA-H3 12-26/48C12CF-R02	12.00	12.00	26.00	93.00	3	48.00	5.0	C	0.20		•	0.04-0.11
ECA-H3 12-26/48C12CF-R02D	12.00	12.00	26.00	93.00	3	48.00	5.0	C	0.20	•		0.04-0.11
ECA-H3 16-24/48C16CF-R02	16.00	16.00	24.00	92.00	3	48.00	5.0	C	0.20		•	0.05-0.13
ECA-H3 16-24/48C16CF-R02D	16.00	16.00	24.00	92.00	3	48.00	5.0	C	0.20	•		0.05-0.13
ECA-H3 16-24/48C16CF-R04	16.00	16.00	24.00	92.00	3	48.00	5.0	C	0.40		•	0.05-0.13
ECA-H3 16-24/48C16CF-R08	16.00	16.00	24.00	92.00	3	48.00	5.0	C	0.80		•	0.05-0.13
ECA-H3 16-24/48C16CF-R16	16.00	16.00	24.00	92.00	3	48.00	5.0	C	1.60		•	0.05-0.13
ECA-H3 16-24/48C16CF-R20	16.00	16.00	24.00	92.00	3	48.00	5.0	C	2.00		•	0.05-0.13
ECA-H3 16-24/48C16CF-R25	16.00	16.00	24.00	92.00	3	48.00	5.0	C	2.50		•	0.05-0.13
ECA-H3 16-24/48C16CF-R30	16.00	16.00	24.00	92.00	3	48.00	5.0	C	3.00		•	0.05-0.13
ECA-H3 16-24/48C16CF-R32	16.00	16.00	24.00	92.00	3	48.00	5.0	C	3.20		•	0.05-0.13
ECA-H3 16-24/48C16CF-R40	16.00	16.00	24.00	92.00	3	48.00	5.0	C	4.00		•	0.05-0.13
ECA-H3 16-24/48C16CF-R50	16.00	16.00	24.00	92.00	3	48.00	5.0	C	5.00		•	0.05-0.13
ECA-H3 16-24/80C16CF-R02	16.00	16.00	24.00	128.00	3	80.00	5.0	C	0.20		•	0.05-0.13
ECA-H3 16-24/80C16CF-R04	16.00	16.00	24.00	128.00	3	80.00	5.0	C	0.40		•	0.05-0.13
ECA-H3 16-24/80C16CF-R08	16.00	16.00	24.00	128.00	3	80.00	5.0	C	0.80		•	0.05-0.13
ECA-H3 16-24/80C16CF-R16	16.00	16.00	24.00	128.00	3	80.00	5.0	C	1.60		•	0.05-0.13
ECA-H3 16-24/80C16CF-R20	16.00	16.00	24.00	128.00	3	80.00	5.0	C	2.00		•	0.05-0.13
ECA-H3 16-24/80C16CF-R25	16.00	16.00	24.00	128.00	3	80.00	5.0	C	2.50		•	0.05-0.13
ECA-H3 16-24/80C16CF-R30	16.00	16.00	24.00	128.00	3	80.00	5.0	C	3.00		•	0.05-0.13
ECA-H3 16-24/80C16CF-R32	16.00	16.00	24.00	128.00	3	80.00	5.0	C	3.20		•	0.05-0.13
ECA-H3 16-24/80C16CF-R40	16.00	16.00	24.00	128.00	3	80.00	5.0	C	4.00		•	0.05-0.13
ECA-H3 16-24/80C16CF-R50	16.00	16.00	24.00	128.00	3	80.00	5.0	C	5.00		•	0.05-0.13
ECA-H3 16-32/48C16CF-R02C	16.00	16.00	32.00	92.00	3	48.00	5.0	C	0.20		•	0.05-0.13
ECA-H3 16-32/80C16CF-R02C	16.00	16.00	32.00	127.00	3	80.00	5.0	C	0.20		•	0.05-0.13
ECA-H3 16-34/64C16CF-R02	16.00	16.00	34.00	115.00	3	64.00	5.0	C	0.20		•	0.05-0.13
ECA-H3 16-34/64C16CF-R02D	16.00	16.00	34.00	115.00	3	64.00	5.0	C	0.20	•		0.05-0.13
ECA-H3 20-30/100C20CF-R02	20.00	20.00	30.00	150.00	3	100.00	5.0	C	0.20		•	0.05-0.14
ECA-H3 20-30/100C20CF-R04	20.00	20.00	30.00	150.00	3	100.00	5.0	C	0.40		•	0.05-0.14
ECA-H3 20-30/100C20CF-R08	20.00	20.00	30.00	150.00	3	100.00	5.0	C	0.80		•	0.05-0.14
ECA-H3 20-30/100C20CF-R32	20.00	20.00	30.00	150.00	3	100.00	5.0	C	3.20		•	0.05-0.14
ECA-H3 20-30/100C20CF-R40	20.00	20.00	30.00	150.00	3	100.00	5.0	C	4.00		•	0.05-0.14
ECA-H3 20-30/100C20CF-R50	20.00	20.00	30.00	150.00	3	100.00	5.0	C	5.00		•	0.05-0.14
ECA-H3 20-30/60C20CF-R02	20.00	20.00	30.00	110.00	3	60.00	5.0	C	0.20		•	0.05-0.14
ECA-H3 20-30/60C20CF-R02D	20.00	20.00	30.00	110.00	3	60.00	5.0	C	0.20	•		0.05-0.14
ECA-H3 20-30/60C20CF-R04	20.00	20.00	30.00	110.00	3	60.00	5.0	C	0.40		•	0.05-0.14
ECA-H3 20-30/60C20CF-R08	20.00	20.00	30.00	110.00	3	60.00	5.0	C	0.80		•	0.05-0.14
ECA-H3 20-30/60C20CF-R16	20.00	20.00	30.00	110.00	3	60.00	5.0	C	1.60		•	0.05-0.14
ECA-H3 20-30/60C20CF-R20	20.00	20.00	30.00	110.00	3	60.00	5.0	C	2.00		•	0.05-0.14
ECA-H3 20-30/60C20CF-R32	20.00	20.00	30.00	110.00	3	60.00	5.0	C	3.20		•	0.05-0.14
ECA-H3 20-30/60C20CF-R40	20.00	20.00	30.00	110.00	3	60.00	5.0	C	4.00		•	0.05-0.14
ECA-H3 20-30/60C20CF-R50	20.00	20.00	30.00	110.00	3	60.00	5.0	C	5.00		•	0.05-0.14
ECA-H3 20-40/60C20CF-R02C	20.00	20.00	40.00	109.00	3	60.00	5.0	C	0.20		•	0.05-0.14

• For user guide, see pages 177-184

(1) Number of flutes

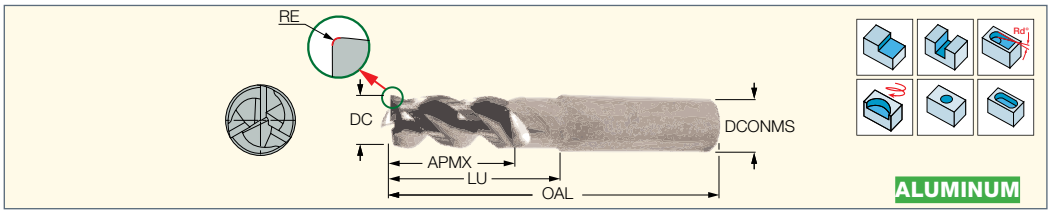
(2) Maximum ramping angle

(3) C-Cylindrical

CHATTERFREE SOLID MILL LINE

ECA-H3-CF (continued)

Solid Carbide Endmills with Different Helix, Variable Pitch and Relieved Neck for Machining Aluminum



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	LU	RMPX°(2)	Shank(3)	RE	Tough ↔ Hard IC1508	IC08	Recommended Machining Data f_z (mm/t)
ECA-H3 20-42/80C20CF-R02	20.00	20.00	42.00	130.00	3	80.00	5.0	C	0.20		•	0.05-0.14
ECA-H3 20-42/80C20CF-R02D	20.00	20.00	42.00	130.00	3	80.00	5.0	C	0.20	•		0.05-0.14
ECA-H320-40/100C20CF-R02C	20.00	20.00	40.00	149.00	3	100.00	5.0	C	0.20		•	0.05-0.14
ECA-H3 25-38/125C25CF-R02	25.00	25.00	38.00	185.00	3	125.00	5.0	C	0.20		•	0.05-0.15
ECA-H3 25-38/125C25CF-R08	25.00	25.00	38.00	185.00	3	125.00	5.0	C	0.80		•	0.05-0.15
ECA-H3 25-38/125C25CF-R16	25.00	25.00	38.00	185.00	3	125.00	5.0	C	1.60		•	0.05-0.15
ECA-H3 25-38/125C25CF-R20	25.00	25.00	38.00	185.00	3	125.00	5.0	C	2.00		•	0.05-0.15
ECA-H3 25-38/125C25CF-R40	25.00	25.00	38.00	185.00	3	125.00	5.0	C	4.00		•	0.05-0.15
ECA-H3 25-38/125C25CF-R50	25.00	25.00	38.00	185.00	3	125.00	5.0	C	5.00		•	0.05-0.15
ECA-H3 25-38/75C25CF-R02	25.00	25.00	38.00	130.00	3	75.00	5.0	C	0.20		•	0.05-0.15
ECA-H3 25-38/75C25CF-R04	25.00	25.00	38.00	130.00	3	75.00	5.0	C	0.40		•	0.05-0.15
ECA-H3 25-38/75C25CF-R16	25.00	25.00	38.00	130.00	3	75.00	5.0	C	1.60		•	0.05-0.15
ECA-H3 25-38/75C25CF-R20	25.00	25.00	38.00	130.00	3	75.00	5.0	C	2.00		•	0.05-0.15
ECA-H3 25-38/75C25CF-R32	25.00	25.00	38.00	130.00	3	75.00	5.0	C	3.20		•	0.05-0.15
ECA-H3 25-38/75C25CF-R50	25.00	25.00	38.00	130.00	3	75.00	5.0	C	5.00		•	0.05-0.15
ECA-H3 25-50/75C25CF-R02C	25.00	25.00	50.00	128.00	3	75.00	5.0	C	0.20		•	0.05-0.15
ECA-H3 25-52/100C25CF-R02	25.00	25.00	52.00	156.00	3	100.00	5.0	C	0.20		•	0.05-0.15
ECA-H325-50/125C25CF-R02C	25.00	25.00	50.00	183.00	3	125.00	5.0	C	0.20		•	0.05-0.15

• For user guide, see pages 177-184

(1) Number of flutes

(2) Maximum ramping angle

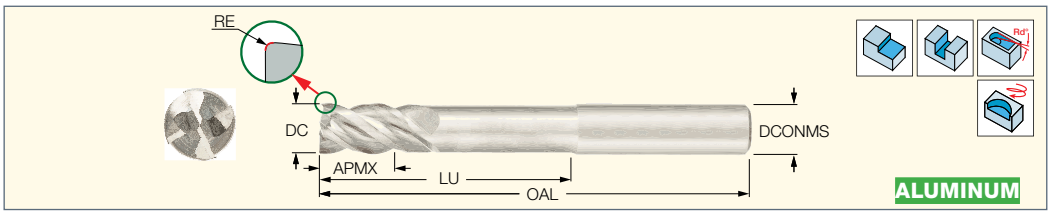
(3) C-Cylindrical

SOLIDMILL PREMIUM LINE

CHATTERFREE SOLID MILL LINE

ECA-H4-CF

Solid Carbide Endmills with Different Helix and Long Neck Relief for Machining Aluminum



Designation	Dimensions DC	APMX	LU	OAL	DCONMS	RE	NOF(1)	RMPX°(2)	Shank(3)	IC08	Recommended Machining Data f_z (mm/t)
ECA-H4 06-09/30C06CFR02	6.00	9.00	30.00	65.00	6.00	0.20	4	5.0	C	•	0.03-0.07
ECA-H4 06-12/18C06CFR02	6.00	12.00	18.00	57.00	6.00	0.20	4	5.0	C	•	0.03-0.07
ECA-H4 08-12/40C08CFR02	8.00	12.00	40.00	79.00	8.00	0.20	4	5.0	C	•	0.03-0.09
ECA-H4 08-16/24C08CFR02	8.00	16.00	24.00	63.00	8.00	0.20	4	5.0	C	•	0.03-0.09
ECA-H4 10-15/50C10CFR02	10.00	15.00	50.00	92.00	10.00	0.20	4	5.0	C	•	0.04-0.10
ECA-H4 10-20/30C10CFR02	10.00	20.00	30.00	72.00	10.00	0.20	4	5.0	C	•	0.04-0.10
ECA-H4 12-18/60C12CFR02	12.00	18.00	60.00	100.00	12.00	0.20	4	5.0	C	•	0.04-0.11
ECA-H4 12-24/36C12CFR02	12.00	24.00	36.00	83.00	12.00	0.20	4	5.0	C	•	0.04-0.11
ECA-H4 16-24/80C16CFR02	16.00	24.00	80.00	128.00	16.00	0.20	4	5.0	C	•	0.05-0.13
ECA-H4 16-32/48C16CFR02	16.00	32.00	48.00	100.00	16.00	0.20	4	5.0	C	•	0.05-0.13
ECA-H4 20-30/100C20CFR02	20.00	30.00	100.00	150.00	20.00	0.20	4	5.0	C	•	0.05-0.14
ECA-H4 20-40/60C20CFR02	20.00	40.00	60.00	110.00	20.00	0.20	4	5.0	C	•	0.05-0.14
ECA-H4 25-38/125C25CFR02	25.00	38.00	125.00	185.00	25.00	0.20	4	5.0	C	•	0.08-0.14
ECA-H4 25-50/75C25CFR02	25.00	50.00	75.00	130.00	25.00	0.20	4	5.0	C	•	0.08-0.14

• For user guide, see pages 177-184

(1) Number of flutes

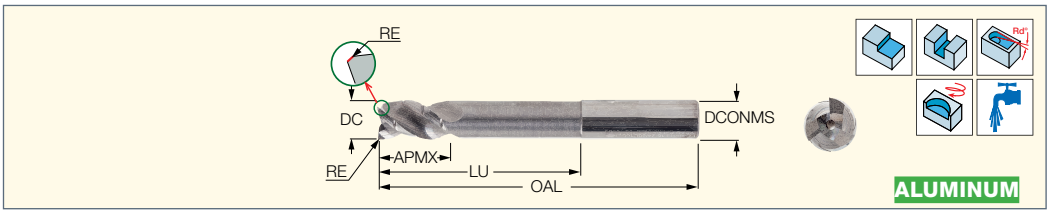
(2) Maximum ramping angle

(3) C-Cylindrical

CHATTERFREE SOLID MILL LINE

ECAP-H3-CF

Solid Carbide Endmills with Different Helix, Variable Pitch, Chip Splitters and Coolant Holes for Machining Aluminum



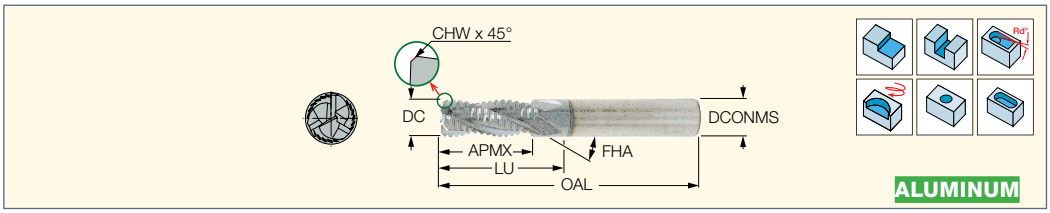
Designation	Dimensions DC	APMX	LU	OAL	DCONMS	RE	NOF(1)	RMPX°(2)	Shank(3)	IC08	Recommended Machining Data f_z (mm/t)
ECAP-H3 10-15/50C10CFR02C	10.00	15.00	50.0	92.00	10.00	0.20	3	5.0	C	•	0.03-0.10
ECAP-H3 10-22/40C10CFR02C	10.00	22.00	40.0	80.00	10.00	0.20	3	5.0	C	•	0.03-0.10
ECAP-H3 12-18/60C12CFR02C	12.00	18.00	60.0	100.00	12.00	0.20	3	5.0	C	•	0.04-0.11
ECAP-H3 12-26/48C12CFR02C	12.00	26.00	48.0	93.00	12.00	0.20	3	5.0	C	•	0.04-0.11
ECAP-H3 16-24/80C16CFR02C	16.00	24.00	80.0	128.00	16.00	0.20	3	5.0	C	•	0.05-0.13
ECAP-H3 16-34/64C16CFR02C	16.00	34.00	64.0	115.00	16.00	0.20	3	5.0	C	•	0.05-0.13
ECAP-H320-30/100C20CFR02C	20.00	30.00	100.0	150.00	20.00	0.20	3	5.0	C	•	0.05-0.14
ECAP-H3 20-42/80C20CFR02C	20.00	42.00	80.0	130.00	20.00	0.20	3	5.0	C	•	0.05-0.14
ECAP-H325-38/125C25CFR02C	25.00	38.00	125.0	185.00	25.00	0.20	3	5.0	C	•	0.05-0.14
ECAP-H325-52/100C25CFR02C	25.00	52.00	100.0	158.00	25.00	0.20	3	5.0	C	•	0.05-0.14

• For user guide, see pages 177-184
(1) Number of flutes
(2) Maximum ramping angle
(3) C-Cylindrical

SOLIDSHRED

ERC-E-3

3 Flute, 38° Helix Medium Length Solid Carbide Roughing Endmills with 3xD Relieved Necks for Machining Aluminum



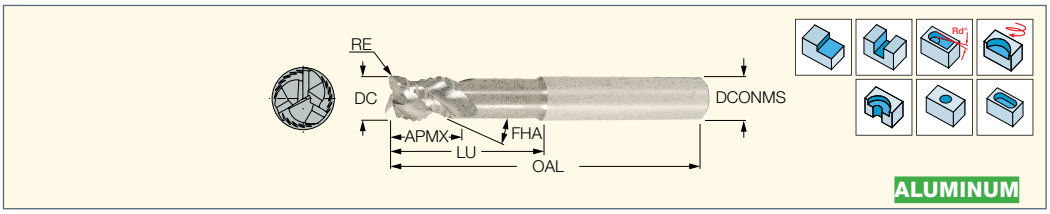
Designation	Dimensions DC	DCONMS	APMX	LU	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	CHW	KCH	Tough ↔ Hard IC1508	IC08	IC300	Recommended Machining Data f_z (mm/t)
ERC060E13-3C06	6.00	6.00	13.00	21.00	57.00	3	38.0	5.0	C	0.50	45.0		•		0.03-0.07
ERC060E13-3C06CH05DA57	6.00	6.00	13.00	21.00	57.00	3	38.0	5.0	C	0.50	45.0	•			0.03-0.07
ERC060E13-3W06	6.00	6.00	13.00	21.00	57.00	3	38.0	5.0	W	0.50	45.0		•	•	0.03-0.07
ERC080E20-3C08	8.00	8.00	20.00	28.00	63.00	3	38.0	5.0	C	0.50	45.0		•		0.03-0.15
ERC080E20-3C08CH05DA63	8.00	8.00	20.00	28.00	63.00	3	38.0	5.0	C	0.50	45.0	•			0.03-0.15
ERC080E20-3W08	8.00	8.00	20.00	28.00	63.00	3	38.0	5.0	W	0.50	45.0		•	•	0.03-0.15
ERC100E22-3C10	10.00	10.00	22.00	30.00	72.00	3	38.0	5.0	C	0.60	45.0		•		0.05-0.20
ERC100E22-3C10CH06DA72	10.00	10.00	22.00	30.00	72.00	3	38.0	5.0	C	0.60	45.0	•			0.05-0.20
ERC100E22-3W10	10.00	10.00	22.00	30.00	72.00	3	38.0	5.0	W	0.60	45.0		•	•	0.05-0.20
ERC120E25-3C12	12.00	12.00	25.00	37.00	83.00	3	38.0	5.0	C	0.60	45.0		•		0.07-0.22
ERC120E25-3C12CH06DA83	12.00	12.00	25.00	37.00	83.00	3	38.0	5.0	C	0.60	45.0	•			0.07-0.22
ERC120E25-3W12	12.00	12.00	25.00	37.00	83.00	3	38.0	5.0	W	0.60	45.0		•	•	0.07-0.22
ERC140E25-3W14	14.00	14.00	25.00	37.00	83.00	3	38.0	5.0	W	0.60	45.0			•	0.07-0.22
ERC160E32-3C16	16.00	16.00	32.00	44.00	92.00	3	38.0	5.0	C	0.60	45.0		•		0.07-0.25
ERC160E32-3C16CH06DA92	16.00	16.00	32.00	44.00	92.00	3	38.0	5.0	C	0.60	45.0	•			0.07-0.25
ERC160E32-3W16	16.00	16.00	32.00	44.00	92.00	3	38.0	5.0	W	0.60	45.0		•	•	0.07-0.25
ERC180E32-3W18	18.00	18.00	32.00	44.00	92.00	3	38.0	5.0	W	0.60	45.0			•	0.07-0.25
ERC200E38-3C20	20.00	20.00	38.00	55.00	104.00	3	38.0	5.0	C	0.70	45.0		•		0.07-0.25
ERC200E38-3W20	20.00	20.00	38.00	55.00	104.00	3	38.0	5.0	W	0.70	45.0		•	•	0.07-0.25
ERC250E45-3C25	25.00	25.00	45.00	64.00	121.00	3	38.0	5.0	C	0.70	45.0		•		0.07-0.25

• For user guide, see pages 177-184
(1) Number of flutes
(2) Maximum ramping angle
(3) C-Cylindrical, W-Weldon

SOLIDSHRED

ECR-B3-R

3 Flute, 45° Helix Solid Carbide Roughing Endmills with 3xD Relieved Necks for High Stock Removal Rates of Aluminum



Designation	Dimensions DC	DCONMS	LU	OAL	NOF(1)	FHA	RMPX°(2)	APMX	Shank(3)	RE	Tough ↔ Hard IC1508	IC08	Recommended Machining Data f_z (mm/t)
ECR-B3 06-09/21C06R02A57	6.00	6.00	21.00	57.00	3	45.0	5.0	9.00	C	0.20		•	0.03-0.07
ECR-B3 06-09/21C06R02DA57	6.00	6.00	21.00	57.00	3	45.0	5.0	9.00	C	0.20	•		0.03-0.07
ECR-B3 06-09/21W06R02A57	6.00	6.00	21.00	57.00	3	45.0	5.0	9.00	W	0.20		•	0.03-0.07
ECR-B3 06-09/30C06R02A65	6.00	6.00	30.00	65.00	3	45.0	5.0	9.00	C	0.20		•	0.03-0.07
ECR-B3 06-09/30W06R02A65	6.00	6.00	30.00	65.00	3	45.0	5.0	9.00	W	0.20		•	0.03-0.07
ECR-B3 08-12/27C08R02A63	8.00	8.00	27.00	63.00	3	45.0	5.0	12.00	C	0.20		•	0.03-0.15
ECR-B3 08-12/27C08R02DA63	8.00	8.00	27.00	63.00	3	45.0	5.0	12.00	C	0.20	•		0.03-0.15
ECR-B3 08-12/27W08R02A63	8.00	8.00	27.00	63.00	3	45.0	5.0	12.00	W	0.20		•	0.03-0.15
ECR-B3 08-12/40C08R02A78	8.00	8.00	40.00	78.00	3	45.0	5.0	12.00	C	0.20		•	0.03-0.15
ECR-B3 08-12/40W08R02A78	8.00	8.00	40.00	78.00	3	45.0	5.0	12.00	W	0.20		•	0.03-0.15
ECR-B3 10-12/31C10R02A72	10.00	10.00	31.00	72.00	3	45.0	5.0	12.00	C	0.20		•	0.05-0.20
ECR-B3 10-12/31C10R02DA72	10.00	10.00	31.00	72.00	3	45.0	5.0	12.00	C	0.20	•		0.05-0.20
ECR-B3 10-12/31W10R02A72	10.00	10.00	31.00	72.00	3	45.0	5.0	12.00	W	0.20		•	0.05-0.20
ECR-B3 10-12/50C10R02A100	10.00	10.00	50.00	100.00	3	45.0	5.0	12.00	C	0.20		•	0.05-0.20
ECR-B3 10-12/50W10R02A100	10.00	10.00	50.00	100.00	3	45.0	5.0	12.00	W	0.20		•	0.05-0.20
ECR-B3 12-12/37C12R02A83	12.00	12.00	37.00	83.00	3	45.0	5.0	12.00	C	0.20		•	0.07-0.22
ECR-B3 12-12/37C12R02DA83	12.00	12.00	37.00	83.00	3	45.0	5.0	12.00	C	0.20	•		0.07-0.22
ECR-B3 12-12/37W12R02A83	12.00	12.00	37.00	83.00	3	45.0	5.0	12.00	W	0.20		•	0.07-0.22
ECR-B3 12-14/55C12R02A100	12.00	12.00	55.00	100.00	3	45.0	5.0	14.00	C	0.20		•	0.07-0.22
ECR-B3 12-14/55W12R02A100	12.00	12.00	55.00	100.00	3	45.0	5.0	14.00	W	0.20		•	0.07-0.22
ECR-B3 16-14/43C16R02A92	16.00	16.00	43.00	92.00	3	45.0	5.0	14.00	C	0.20		•	0.07-0.25
ECR-B3 16-14/43C16R02DA92	16.00	16.00	43.00	92.00	3	45.0	5.0	14.00	C	0.20	•		0.07-0.25
ECR-B3 16-14/43W16R02A92	16.00	16.00	43.00	92.00	3	45.0	5.0	14.00	W	0.20		•	0.07-0.25
ECR-B3 16-18/80C16R02A150	16.00	16.00	80.00	150.00	3	45.0	5.0	18.00	C	0.20		•	0.07-0.25
ECR-B3 16-18/80W16R02A150	16.00	16.00	80.00	150.00	3	45.0	5.0	18.00	W	0.20		•	0.07-0.25
ECR-B3 20-17/53C20R02A104	20.00	20.00	53.00	104.00	3	45.0	5.0	17.00	C	0.20		•	0.07-0.25
ECR-B3 20-17/53W20R02A104	20.00	20.00	53.00	104.00	3	45.0	5.0	17.00	W	0.20		•	0.07-0.25
ECR-B3 20-22/80C20R02A150	20.00	20.00	80.00	150.00	3	45.0	5.0	22.00	C	0.20		•	0.07-0.25
ECR-B3 20-22/80W20R02A150	20.00	20.00	80.00	150.00	3	45.0	5.0	22.00	W	0.20		•	0.07-0.25

• For user guide, see pages 177-184

(1) Number of flutes

(2) Maximum ramping angle

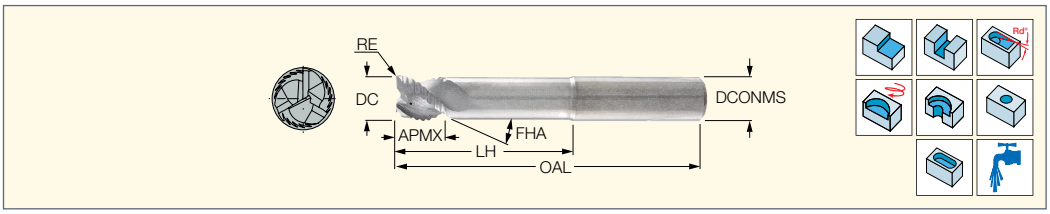
(3) C-Cylindrical, W-Weldon

SOLIDMILL PREMIUM LINE

SOLIDSHRED

ECR-B3-R-C

3 Flute, 45° Helix Solid Carbide Roughing Endmills with 3xD Relieved Necks and Coolant Channels for Aluminum



Designation	Dimensions DC	DCONMS	LH	OAL	NOF(1)	FHA	RMPX°(2)	APMX	Shank(3)	RE	IC08	Recommended Machining Data f_z (mm/t)
ECR-B3 08-12/41C08R02A83C	8.00	8.00	41.0	83.00	3	45.0	20.0	12.00	C	0.20	•	0.05-0.15
ECR-B3 08-12/41C08R20A83C	8.00	8.00	41.0	83.00	3	45.0	20.0	12.00	C	2.00	•	0.05-0.15
ECR-B3 10-12/41C10R.2A83C	10.00	10.00	41.0	83.00	3	45.0	20.0	12.00	C	0.20	•	0.07-0.20
ECR-B3 10-12/41C10R20A83C	10.00	10.00	41.0	83.00	3	45.0	20.0	12.00	C	2.00	•	0.07-0.20
ECR-B3 12-12/41C12R.2A87C	12.00	12.00	41.0	87.00	3	45.0	20.0	12.00	C	0.20	•	0.10-0.22
ECR-B3 16-14/60C16R2A109C	16.00	16.00	60.0	109.00	3	45.0	20.0	14.00	C	2.00	•	0.10-0.25
ECR-B316-14/60C16R.2A109C	16.00	16.00	60.0	109.00	3	45.0	20.0	14.00	C	0.20	•	0.10-0.25
ECR-B316-14/60C16R40A109C	16.00	16.00	60.0	109.00	3	45.0	20.0	14.00	C	4.00	•	0.10-0.25
ECR-B320-17/60C20R40A111C	20.00	20.00	60.0	111.00	3	45.0	20.0	17.00	C	4.00	•	0.10-0.25
ECR-B320-30/100C25R4A150C	20.00	20.00	100.0	150.00	3	45.0	20.0	30.00	C	4.00	•	0.10-0.25
ECR-B325-25/74C25R40A130C	25.00	25.00	74.0	130.00	3	45.0	20.0	25.00	C	4.00	•	0.10-0.25

• For user guide, see pages 177-184

(1) Number of flutes

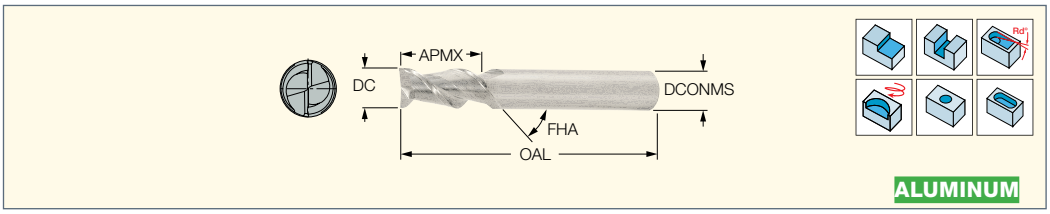
(2) Maximum ramping angle

(3) C-Cylindrical

SOLIDMILL PREMIUM LINE

ECA-B-2

2 Flute, 45° Helix Medium Length Solid Carbide Endmills for Machining Aluminum



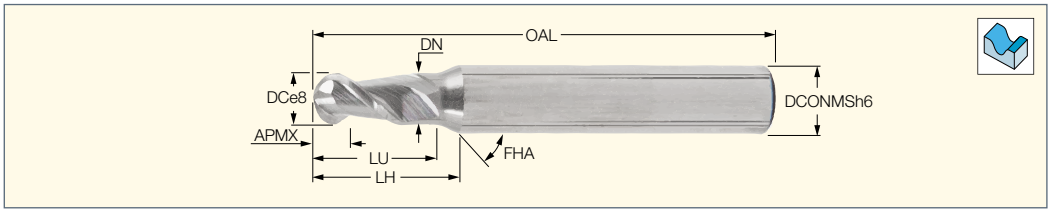
Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	IC08	Recommended Machining Data f_z (mm/t)
ECA040B12-2C06	4.00	6.00	12.00	57.00	2	45.0	5.0	C	●	0.02-0.05
ECA050B14-2C06	5.00	6.00	14.00	57.00	2	45.0	5.0	C	●	0.02-0.06
ECA060B16-2C06	6.00	6.00	16.00	57.00	2	45.0	5.0	C	●	0.03-0.07
ECA080B20-2C08	8.00	8.00	20.00	63.00	2	45.0	5.0	C	●	0.03-0.09
ECA100B22-2C10	10.00	10.00	22.00	72.00	2	45.0	5.0	C	●	0.03-0.10
ECA120B25-2C12	12.00	12.00	25.00	83.00	2	45.0	5.0	C	●	0.04-0.11
ECA160B32-2C16	16.00	16.00	32.00	92.00	2	45.0	5.0	C	●	0.05-0.13
ECA200B38-2C20	20.00	20.00	38.00	104.00	2	45.0	5.0	C	●	0.05-0.13

• For user guide, see pages 177-184
(1) Number of flutes
(2) Maximum ramping angle
(3) C-Cylindrical

SOLIDMILL PREMIUM LINE

EBA-B2

2 Flute High Precision Solid Carbide Ball Nose Endmills for Machining Aluminum



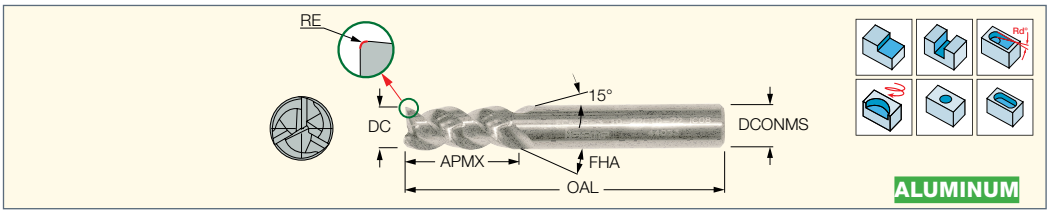
Designation	Dimensions DC	DCONMS	APMX	OAL	LU	LH	DN	NOF(1)	FHA	Shank(2)	RETOLL(3)	RETOLU(4)	IC08
EBA-B2 010-010/02C6-57	1.00	6.00	1.00	57.00	2.0	12.0	0.95	2	45.0	C	0.000	0.004	●
EBA-B2 020-020/04C6-57	2.00	6.00	2.00	57.00	4.0	12.0	1.80	2	45.0	C	0.000	0.005	●
EBA-B2 030-030/06C6-57	3.00	6.00	3.00	57.00	6.0	12.0	2.70	2	45.0	C	-0.010	0.010	●
EBA-B2 040-040/08C6-57	4.00	6.00	4.00	57.00	8.0	12.0	3.70	2	45.0	C	-0.010	0.010	●
EBA-B2 050-050/10C6-57	5.00	6.00	5.00	57.00	10.0	12.0	4.70	2	45.0	C	-0.010	0.010	●
EBA-B2 060-060/12C6-57	6.00	6.00	6.00	57.00	12.0	13.0	5.50	2	45.0	C	-0.010	0.010	●

• For user guide, see pages 177-184
(1) Number of flutes
(2) C-Cylindrical
(3) Corner radius tolerance lower
(4) Corner radius tolerance upper

SOLIDMILL PREMIUM LINE

ECA-B-3

3 Flute, 45° Helix Medium Length Solid Carbide Endmills for Machining Aluminum



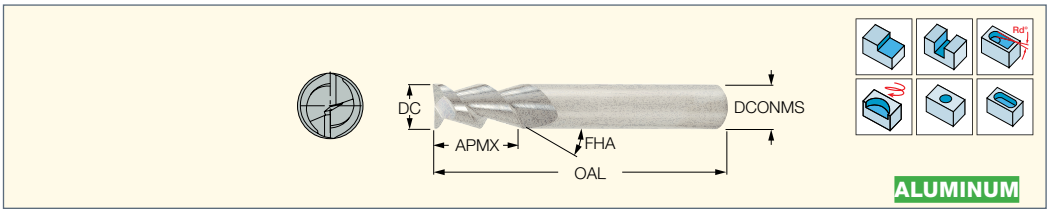
Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	RE	Tough ↔ Hard IC1508	IC08	Recommended Machining Data f_z (mm/t)
ECA-B-3 04-12C06-57	4.00	6.00	12.00	57.00	3	45.0	5.0	C	0.10		•	0.02-0.05
ECA-B-3 04-12C06-57 R02D	4.00	6.00	12.00	57.00	3	45.0	5.0	C	0.20	•		0.02-0.05
ECA-B-3 04-12W06-57	4.00	6.00	12.00	57.00	3	45.0	5.0	W	0.10		•	0.02-0.05
ECA-B-3 05-14C06-57	5.00	6.00	14.00	57.00	3	45.0	5.0	C	0.20		•	0.02-0.06
ECA-B-3 05-14C06-57 R02D	5.00	6.00	14.00	57.00	3	45.0	5.0	C	0.20	•		0.02-0.06
ECA-B-3 05-14W06-57	5.00	6.00	14.00	57.00	3	45.0	5.0	W	0.20		•	0.02-0.06
ECA-B-3 06-16C06-57	6.00	6.00	16.00	57.00	3	45.0	5.0	C	0.20		•	0.03-0.07
ECA-B-3 06-16C06-57 R02D	6.00	6.00	16.00	57.00	3	45.0	5.0	C	0.20	•		0.03-0.07
ECA-B-3 06-16W06-57	6.00	6.00	16.00	57.00	3	45.0	5.0	W	0.20		•	0.03-0.07
ECA-B-3 08-20C08-63	8.00	8.00	20.00	63.00	3	45.0	5.0	C	0.20		•	0.03-0.09
ECA-B-3 08-20C08-63 R02D	8.00	8.00	20.00	63.00	3	45.0	5.0	C	0.20	•		0.03-0.09
ECA-B-3 08-20C08R3-63	8.00	8.00	20.00	63.00	3	45.0	5.0	C	3.00		•	0.03-0.09
ECA-B-3 08-20W08-63	8.00	8.00	20.00	63.00	3	45.0	5.0	W	0.20		•	0.03-0.09
ECA-B-3 10-22C10-72	10.00	10.00	22.00	72.00	3	45.0	5.0	C	0.20		•	0.03-0.10
ECA-B-3 10-22C10-72 R02D	10.00	10.00	22.00	72.00	3	45.0	5.0	C	0.20	•		0.03-0.10
ECA-B-3 10-22W10-72	10.00	10.00	22.00	72.00	3	45.0	5.0	W	0.20		•	0.03-0.10
ECA-B-3 10-25C10R3-72	10.00	10.00	25.00	72.00	3	45.0	5.0	C	3.00		•	0.03-0.10
ECA-B-3 10-25C10R4-72	10.00	10.00	25.00	72.00	3	45.0	5.0	C	4.00		•	0.03-0.10
ECA-B-3 12-25C12-83	12.00	12.00	25.00	83.00	3	45.0	5.0	C	0.20		•	0.04-0.11
ECA-B-3 12-25C12-83 R02D	12.00	12.00	25.00	83.00	3	45.0	5.0	C	0.20	•		0.04-0.11
ECA-B-3 12-25W12-83	12.00	12.00	25.00	83.00	3	45.0	5.0	W	0.20		•	0.04-0.11
ECA-B-3 12-30C12R3-83	12.00	12.00	30.00	83.00	3	45.0	5.0	C	3.00		•	0.04-0.11
ECA-B-3 12-30C12R4-83	12.00	12.00	30.00	83.00	3	45.0	5.0	C	4.00		•	0.04-0.11
ECA-B-3 14-30C14-83	14.00	14.00	30.00	83.00	3	45.0	5.0	C	0.20		•	0.04-0.12
ECA-B-3 14-30W14-83	14.00	14.00	30.00	83.00	3	45.0	5.0	W	0.20		•	0.04-0.12
ECA-B-3 16-32C16-92	16.00	16.00	32.00	92.00	3	45.0	5.0	C	0.20		•	0.05-0.13
ECA-B-3 16-32C16-92 R02D	16.00	16.00	32.00	92.00	3	45.0	5.0	C	0.20	•		0.05-0.13
ECA-B-3 16-32W16-92	16.00	16.00	32.00	92.00	3	45.0	5.0	W	0.20		•	0.05-0.13
ECA-B-3 20-38C20-104	20.00	20.00	38.00	104.00	3	45.0	5.0	C	0.20		•	0.05-0.13
ECA-B-3 20-38C20-104 R02D	20.00	20.00	38.00	104.00	3	45.0	5.0	C	0.20	•		0.05-0.13
ECA-B-3 20-38W20-104	20.00	20.00	38.00	104.00	3	45.0	5.0	W	0.20		•	0.05-0.13

• For user guide, see pages 177-184
(1) Number of flutes
(2) Maximum ramping angle
(3) C-Cylindrical, W-Weldon

SOLIDMILL PREMIUM LINE

ECA-F-2

2 Flute, 55° Helix Medium Length Solid Carbide Endmills for Machining Aluminum



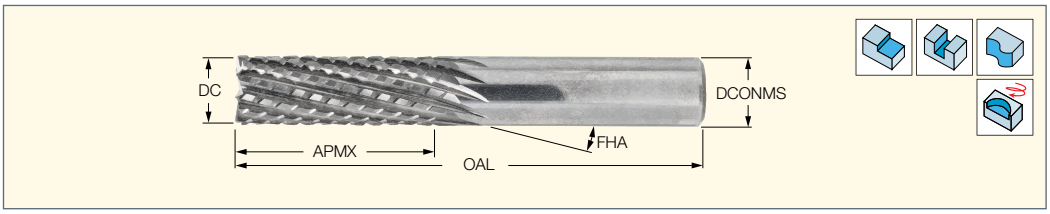
Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	RMPX°(2)	Shank(3)	IC08	Recommended Machining Data f_z (mm/t)
ECA040F11-2C04	4.00	4.00	11.00	50.00	2	55.0	5.0	C	•	0.02-0.05
ECA060F13-2C06	6.00	6.00	13.00	57.00	2	55.0	5.0	C	•	0.03-0.07
ECA080F20-2C08	8.00	8.00	20.00	63.00	2	55.0	5.0	C	•	0.03-0.09
ECA100F22-2C10	10.00	10.00	22.00	72.00	2	55.0	5.0	C	•	0.03-0.10
ECA120F25-2C12	12.00	12.00	25.00	83.00	2	55.0	5.0	C	•	0.04-0.11
ECA160F32-2C16	16.00	16.00	32.00	92.00	2	55.0	5.0	C	•	0.05-0.13
ECA200F38-2C20	20.00	20.00	38.00	104.00	2	55.0	5.0	C	•	0.05-0.13
ECA250F45-2C25	25.00	25.00	45.00	121.00	2	55.0	5.0	C	•	0.05-0.13

• For user guide, see pages 177-184
(1) Number of flutes
(2) Maximum ramping angle
(3) C-Cylindrical

SOLIDMILL PREMIUM LINE

EPN-F

Solid Endmills with a Special Edge Configuration for Machining Different Types of Composite Materials



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(2)	FHA	Shank(3)	IC02	Recommended Machining Data f_z (mm/t)
EPN-F10 03-12C03F55	3.00	3.00	12.00	55.00	10	15.0	C	•	0.01-0.02
EPN-F10 04-16C04F55	4.00	4.00	16.00	55.00	10	15.0	C	•	0.01-0.02
EPN-F10 06-19C06F57	6.00	6.00	19.00	57.00	10	15.0	C	•	0.02-0.03
EPNF060S15-3L/9C06F57 (1)	6.00	6.00	15.00	57.00	9	15.0	C	•	0.02-0.04
EPN-F12 08-25C08F63	8.00	8.00	25.00	63.00	12	15.0	C	•	0.02-0.03
EPNF080S25-3L/10C8F72 (1)	8.00	8.00	25.00	72.00	10	15.0	C	•	0.02-0.04
EPN-F12 10-25C10F72	10.00	10.00	25.00	72.00	12	15.0	C	•	0.02-0.03
EPNF100S25-3L/12C10F72 (1)	10.00	10.00	25.00	72.00	12	15.0	C	•	0.02-0.04
EPN-F12 12-25C12F83	12.00	12.00	25.00	83.00	12	15.0	C	•	0.02-0.03

• Coated tools available on request • For user guide, see pages 177-184

(1) Deep chip gullets for eliminating chip jamming.

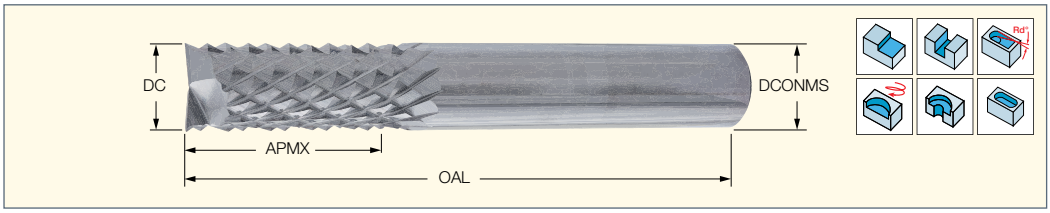
(2) Number of flutes

(3) C-Cylindrical

SOLIDMILL PREMIUM LINE

EPNC

Solid Carbide Endmill with Special Cutting Edges, for Machining Different Types of Composite Materials



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	RMPX°(2)	Shank(3)	IC02	Recommended Machining Data f_z (mm/t)
EPNC-C10 08-25C08F63	8.00	8.00	25.00	63.00	10	5.0	C	•	0.02-0.08
EPNC-C10 10-25C10F72	10.00	10.00	25.00	72.00	10	5.0	C	•	0.02-0.08
EPNC-C10 12-25C12F83	12.00	12.00	25.00	83.00	10	5.0	C	•	0.02-0.08

• For user guide, see pages 177-184

(1) Number of flutes

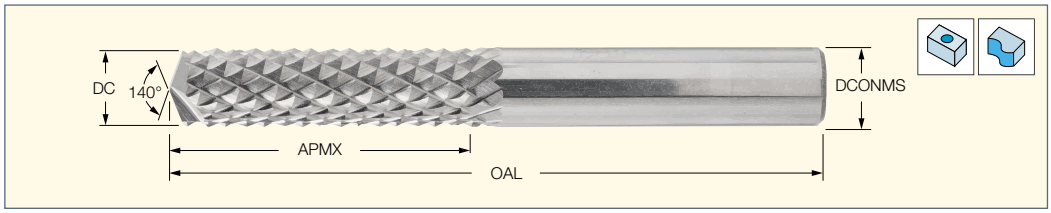
(2) Maximum ramping angle

(3) C-Cylindrical

SOLIDMILL PREMIUM LINE

EPND

Solid Carbide Endmills with Special Cutting Edges, also for Drill Mill Operation



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	Shank(2)	IC02	Recommended Machining Data f_z (mm/t)
EPND-C6 016-5C03F55	1.60	3.00	5.00	55.00	6	C	•	0.0050-0.0100
EPND-C6 024-10C03F55	2.40	3.00	10.00	55.00	6	C	•	0.0050-0.0100
EPND-C8 03-12C03F55	3.00	3.00	12.00	55.00	8	C	•	0.0050-0.0120
EPND-C8 04-16C04F60	4.00	4.00	16.00	60.00	8	C	•	0.0050-0.0120
EPND-C10 06-19C06F65	6.00	6.00	19.00	65.00	10	C	•	0.0200-0.0800
EPND-C10 08-25C08F63	8.00	8.00	25.00	63.00	10	C	•	0.0200-0.0800
EPND-C10 10-25C10F72	10.00	10.00	25.00	72.00	10	C	•	0.0200-0.0800
EPND-C10 12-25C12F83	12.00	12.00	25.00	83.00	10	C	•	0.0200-0.0800

• For user guide, see pages 177-184

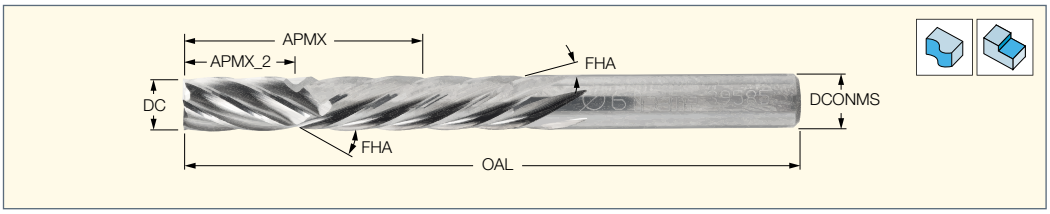
(1) Number of flutes

(2) C-Cylindrical

SOLIDMILL PREMIUM LINE

EPX

Solid Carbide Endmills with Right- and Left-Hand Helix Flutes Changing Direction at Mid Cutting Heights

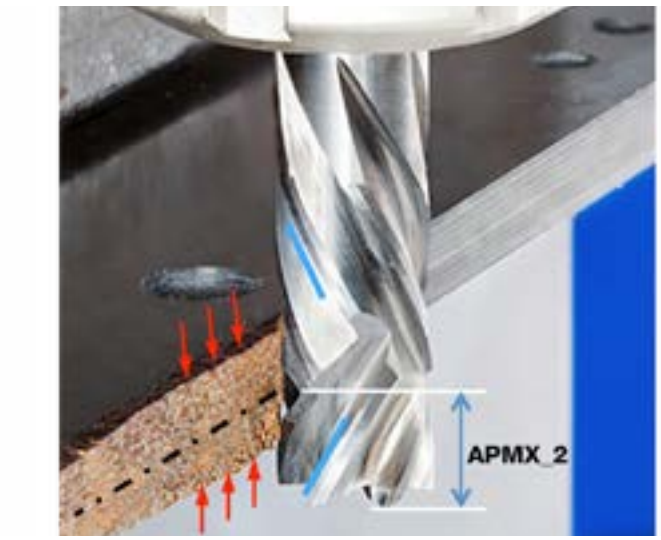


Designation	Dimensions DC	DCONMS	APMX	APMX_2	OAL	NOF(1)	FHA	Shank(2)	IC02	Recommended Machining Data f_z (mm/t)
EPX-F6 06-12C06F57	6.00	6.00	12.00	5.30	57.00	6	30.0	C	●	0.02-0.06
EPX-F6 08-16C08F63	8.00	8.00	16.00	6.60	63.00	6	30.0	C	●	0.02-0.06
EPX-F6 10-20C10F72	10.00	10.00	20.00	8.70	72.00	6	30.0	C	●	0.02-0.06
EPX-F8 12-24C12F83	12.00	12.00	24.00	10.60	83.00	8	30.0	C	●	0.02-0.06

- Important: For best results, the intersection of the alternating flute directions (APMX_2) should be positioned in the middle of the workpiece height
- Coated tools available on request • For user guide, see pages 177-184

(1) Number of flutes

(2) C-Cylindrical



SOLIDMILL PREMIUM LINE
CHATTERFREE SOLID MILL LINE

EB-H-CF

3/5 Flute Solid Carbide Ball Nose Endmills with Different Helix and Variable Pitch for Materials up to 65 HRC

Designation	Dimensions								IC902
	DC	DCONMS	APMX	OAL	NOF(1)	FHA	Shank(2)	RETOL(3)	
EB-H3 06-12C06CFH57	6.00	6.00	12.00	57.00	3	38.0	C	0.010	•
EB-H3 08-16C08CFH63	8.00	8.00	16.00	63.00	3	38.0	C	0.010	•
EB-H3 10-20C10CFH72	10.00	10.00	20.00	72.00	3	38.0	C	0.010	•
EB-H3 12-24C12CFH83	12.00	12.00	24.00	83.00	3	38.0	C	0.012	•
EB-H5 16-32C16CFH92	16.00	16.00	32.00	92.00	5	38.0	C	0.012	•
EB-H5 20-40C20CFH104	20.00	20.00	40.00	104.00	5	38.0	C	0.012	•

• For user guide, see pages 177-184
(1) Number of flutes
(2) C-Cylindrical
(3) Corner radius tolerance (+/-)

Effective Cutting Diameter as a Function of Depth of Cut

Tool DC(mm) / a_p(mm)	8	10	12
0.2	2.1	2.5	2.8	3.1
0.3	2.6	3	3.4	3.7
0.5	3.3	3.9	4.3	4.8
0.7	3.8	4.5	5.1	5.6
1	4.5	5.3	6	6.6
2	5.6	6.9	8	8.9
3	6	7.7	9.1	10.4
4	-	8	9.8	11.3
5	-	-	10	11.8
6	-	-	-	12

Feed Recommendations

ISO Class DIN/ISO 513	Material Group	f_z (mm/tooth) for DC			
		6	8	10	12
P	1-4	0.055	0.062	0.07	0.08
	5	0.043	0.05	0.06	0.068
	6-7	0.04	0.048	0.057	0.062
	8-9	0.035	0.038	0.045	0.05
	10	0.03	0.032	0.038	0.042
	11	0.025	0.028	0.035	0.038
	12-13	0.03	0.032	0.038	0.042
K	15-16	0.058	0.065	0.073	0.085
	17-18	0.058	0.065	0.073	0.085
H	38.1	0.021	0.025	0.027	0.03
	38.2	0.008	0.009	0.01	0.013
	39	0.007	0.007	0.008	0.009

The table refers to rough and semi-finish milling applications
For semi-finish and finishing applications, the table values should be reduced by 10-20%

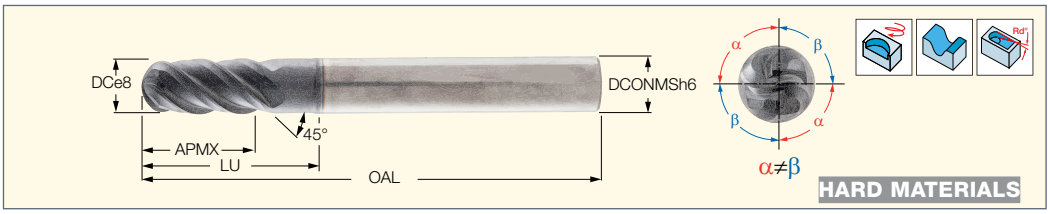
Cutting Speed Recommendations (IC902)

ISO Class DIN/ISO 513	Material Group	V_c (m/min)		
		Roughing	Semi-Finishing	Finishing
P	1	180	220	280
	2-4	150	170	200
	5	125	140	170
	6	130	150	190
	7-9	120	135	170
	10	115	130	165
	11	100	110	120
	12-13	110	110	150
K	15-16	160	180	220
	17-18	150	170	200
H	38.1	70	80	100
	38.2		40	50
	39		30	40

SOLIDMILL PREMIUM LINE
CHATTERFREE SOLID MILL LINE

EB-E4L-CF

4 Flute, 45° Helix Ball Nose Endmills with 3xD Relieved Necks and Variable Pitch for Chatter Dampening on Hard Materials



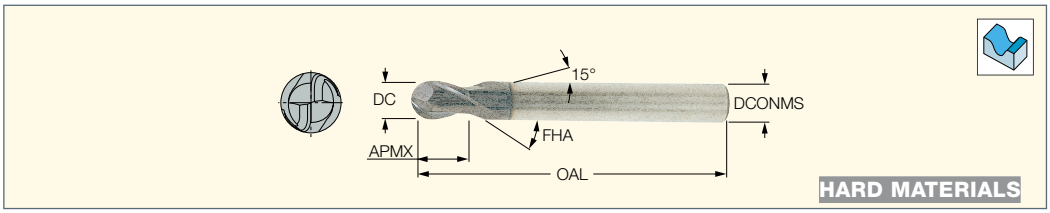
Designation	Dimensions DC	DCONMS	APMX	LU	OAL	RMPX°(1)	Shank(2)	IC902
EB-E4L 03-06/09C06CFH57	3.00	6.00	6.00	9.00	57.00	5.0	C	●
EB-E4L 04-08/12C06CFH57	4.00	6.00	8.00	12.00	57.00	5.0	C	●
EB-E4L 05-10/15C06CFH57	5.00	6.00	10.00	15.00	57.00	5.0	C	●
EB-E4L 06-12/18C06CFH57	6.00	6.00	12.00	18.00	57.00	5.0	C	●
EB-E4L 08-16/24C08CFH63	8.00	8.00	16.00	24.00	63.00	5.0	C	●
EB-E4L 10-20/30C10CFH72	10.00	10.00	20.00	30.00	72.00	5.0	C	●
EB-E4L 12-24/36C12CFH83	12.00	12.00	24.00	36.00	83.00	5.0	C	●
EB-E4L 16-32/48C16CFH92	16.00	16.00	32.00	48.00	92.00	5.0	C	●

• For user guide, see pages 177-184
(1) Maximum ramping angle
(2) C-Cylindrical

SOLIDMILL PREMIUM LINE

EB-A-2

2 Flute, 30° Helix Short Solid Carbide Ball Nose Endmills



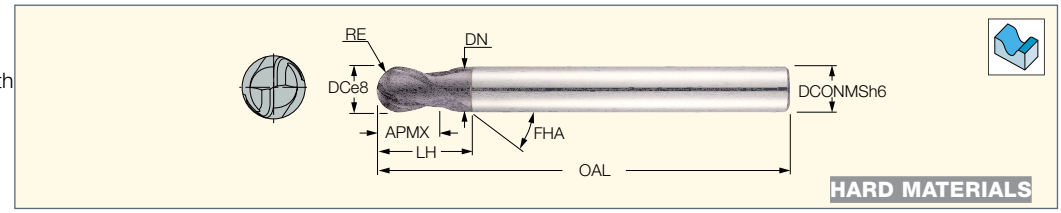
Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	Shank(2)	RETOLL(3)	RETOLU(4)	Tough ↔ Hard IC08	IC300	IC900	IC903
EB020A04-2C03	2.00	3.00	4.00	38.00	2	30.0	C	0.000	0.005			●	●
EB030A05-2C03	3.00	3.00	5.00	38.00	2	30.0	C	-0.010	0.010		●	●	
EB030A05-2C06	3.00	6.00	5.00	57.00	2	30.0	C	-0.010	0.010	●		●	●
EB040A07-2C04	4.00	4.00	7.00	50.00	2	30.0	C	-0.010	0.010			●	
EB040A07-2C06	4.00	6.00	7.00	57.00	2	30.0	C	-0.010	0.010	●		●	●
EB050A08-2C05	5.00	5.00	8.00	50.00	2	30.0	C	-0.010	0.010			●	
EB050A08-2C06	5.00	6.00	8.00	57.00	2	30.0	C	-0.010	0.010	●	●	●	●
EB060A08-2C06	6.00	6.00	8.00	57.00	2	30.0	C	-0.010	0.010	●	●	●	●
EB080A11-2C08	8.00	8.00	11.00	63.00	2	30.0	C	-0.010	0.010	●	●	●	●
EB100A13-2C10	10.00	10.00	13.00	72.00	2	30.0	C	-0.010	0.010	●		●	●
EB120A14-2C12	12.00	12.00	14.00	83.00	2	30.0	C	-0.012	0.012		●	●	●
EB160A16-2C16	16.00	16.00	16.00	92.00	2	30.0	C	-0.012	0.012			●	●
EB200A20-2C20	20.00	20.00	20.00	104.00	2	30.0	C	-0.012	0.012			●	

• Short and stable design for profiling (roughing). • For user guide, see pages 177-184
(1) Number of flutes
(2) C-Cylindrical
(3) Corner radius tolerance lower
(4) Corner radius tolerance upper

SOLIDMILL PREMIUM LINE

EB-A2 (stub cut length)

2 Flute, 30° Helix Stub Cut Length Ball Nose Solid Carbide Endmills for Materials up to 55-70 HRC



Designation	Dimensions												IC903
	DC	RE[1]	DCONMS	APMX	OAL	LH	DN	NOF[2]	FHA	Shank[3]	RETOLL[4]	RETOLU[5]	
EB-A2 01-01/02C04H50	1.00	0.50	4.00	1.00	50.00	2.2	0.95	2	30.0	C	0.000	0.004	•
EB-A2 012-012/02C04H50	1.20	0.60	4.00	1.20	50.00	2.6	1.10	2	30.0	C	-0.010	0.010	•
EB-A2 015-015/03C04H50	1.50	0.75	4.00	1.50	50.00	3.0	1.40	2	30.0	C	-0.010	0.010	•
EB-A2 02-02/04C06H50	2.00	1.00	6.00	2.00	50.00	4.0	1.90	2	30.0	C	0.000	0.005	•
EB-A2 03-03/06C06H60	3.00	1.50	6.00	3.00	60.00	6.0	2.90	2	30.0	C	-0.010	0.010	•
EB-A2 04-04/08C06H70	4.00	2.00	6.00	4.00	70.00	8.0	3.90	2	30.0	C	-0.010	0.010	•
EB-A2 05-05/10C06H80	5.00	2.50	6.00	5.00	80.00	10.0	4.90	2	30.0	C	-0.010	0.010	•
EB-A2 06-06/12C06H90	6.00	3.00	6.00	6.00	90.00	12.0	5.90	2	30.0	C	-0.010	0.010	•
EB-A2 07-07/14C08H90	7.00	3.50	8.00	7.00	90.00	14.0	6.90	2	30.0	C	-0.010	0.010	•
EB-A2 08-08/16C08H100	8.00	4.00	8.00	8.00	100.00	16.0	7.90	2	30.0	C	-0.010	0.010	•
EB-A2 10-10/20C10H100	10.00	5.00	10.00	10.00	100.00	20.0	9.90	2	30.0	C	-0.010	0.010	•
EB-A2 12-12/24C12H110	12.00	6.00	12.00	12.00	110.00	24.0	11.90	2	30.0	C	-0.012	0.012	•
EB-A2 14-14/28C14H110	14.00	7.00	14.00	14.00	110.00	28.0	13.80	2	30.0	C	-0.012	0.012	•
EB-A2 20-20/40C20H160	20.00	10.00	20.00	20.00	160.00	40.0	19.80	2	30.0	C	-0.012	0.012	•

• For user guide, see pages 177-184

(1) ±0.01 tolerance

(2) Number of flutes

(3) C-Cylindrical

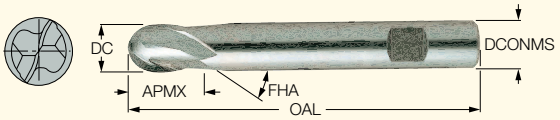
(4) Corner radius tolerance lower

(5) Corner radius tolerance upper

SOLIDMILL TEC LINE

EB-A2 (economical)

Economical Type 2 Flute, 30° Helix Ball Nose Solid Carbide Endmills



Designation	Dimensions							Tough ↔ Hard	
	DC	DCONMS	APMX	OAL	NOF[1]	FHA	Shank[2]	IC08	IC900
EB-A2 02-06C03E38	2.00	3.00	6.00	38.00	2	30.0	C	•	•
EB-A2 02-04C06E48	2.00	6.00	4.00	48.00	2	30.0	C	•	•
EB-A2 025-04C06E48	2.50	6.00	4.00	48.00	2	30.0	C	•	•
EB-A2 03-04C06E48	3.00	6.00	4.00	48.00	2	30.0	C	•	•
EB-A2 03-07W06E57	3.00	6.00	7.00	57.00	2	30.0	W	•	•
EB-A2 04-06C06E50	4.00	6.00	6.00	50.00	2	30.0	C	•	•
EB-A2 04-08W06E57	4.00	6.00	8.00	57.00	2	30.0	W	•	•
EB-A2 05-07C06E51	5.00	6.00	7.00	51.00	2	30.0	C	•	
EB-A2 05-10W06E57	5.00	6.00	10.00	57.00	2	30.0	W	•	•
EB-A2 06-07C06E51	6.00	6.00	7.00	51.00	2	30.0	C	•	•
EB-A2 06-10W06E57	6.00	6.00	10.00	57.00	2	30.0	W	•	•
EB-A2 08-09C08E63	8.00	8.00	9.00	63.00	2	30.0	C	•	•
EB-A2 08-16W08E63	8.00	8.00	16.00	63.00	2	30.0	W	•	•
EB-A2 10-10C10E66	10.00	10.00	10.00	66.00	2	30.0	C	•	•
EB-A2 10-19W10E72	10.00	10.00	19.00	72.00	2	30.0	W	•	•
EB-A2 12-14C12E71	12.00	12.00	14.00	71.00	2	30.0	C	•	•
EB-A2 12-22W12E83	12.00	12.00	22.00	83.00	2	30.0	W	•	•
EB-A2 16-26W16E92	16.00	16.00	26.00	92.00	2	30.0	W	•	
EB-A2 18-26W18E92	18.00	18.00	26.00	92.00	2	30.0	W	•	
EB-A2 20-20C20E82	20.00	20.00	20.00	82.00	2	30.0	C	•	•
EB-A2 20-32W20E104	20.00	20.00	32.00	104.00	2	30.0	W	•	•

• For user guide, see pages 177-184

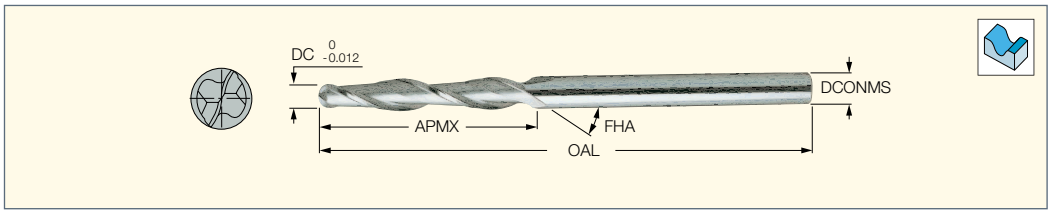
(1) Number of flutes

(2) C-Cylindrical, W-Weldon

SOLIDMILL TEC LINE

EB-A2 (economical-extra long)

Economical Type 2 Flute, 30° Helix Ball Nose Extra Long Solid Carbide Endmills



Designation	Dimensions								Tough ↔ Hard	
	DC	DCONMS	APMX	OAL	NOF(1)	FHA	Shank(2)	RETOL(3)	IC08	IC900
EB-A2 03-30C03E75	3.00	3.00	30.00	75.00	2	30.0	C	0.020	●	●
EB-A2 04-30C04E75	4.00	4.00	30.00	75.00	2	30.0	C	0.020	●	●
EB-A2 05-40C05E100	5.00	5.00	40.00	100.00	2	30.0	C	0.020	●	●
EB-A2 06-50C06E150	6.00	6.00	50.00	150.00	2	30.0	C	0.020	●	●
EB-A2 08-50C08E150	8.00	8.00	50.00	150.00	2	30.0	C	0.020	●	●
EB-A2 10-60C10E150	10.00	10.00	60.00	150.00	2	30.0	C	0.020	●	●
EB-A2 12-75C12E150	12.00	12.00	75.00	150.00	2	30.0	C	0.020	●	●
EB-A2 16-75C16E150	16.00	16.00	75.00	150.00	2	30.0	C	0.020	●	●

• For user guide, see pages 177-184

(1) Number of flutes

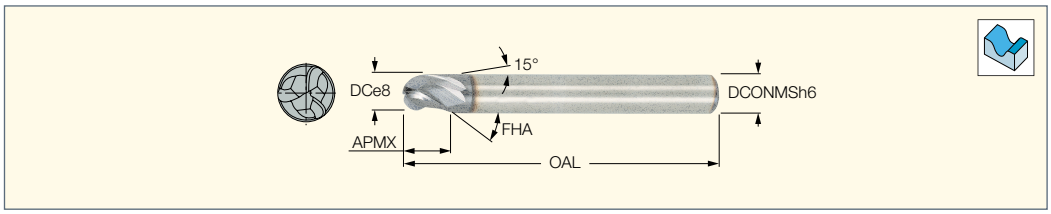
(2) C-Cylindrical

(3) Corner radius tolerance (+/-)

SOLIDMILL PREMIUM LINE

EB-A-3

3 Flute, 30° Helix Short Solid Carbide Ball Nose Endmills



Designation	Dimensions								
	DC	DCONMS	APMX	OAL	NOF(1)	FHA	Shank(2)	RETOL(3)	IC900
EB016A020-3C03	1.60	3.00	2.00	38.00	3	30.0	C	0.006	●
EB030A05-3C03	3.00	3.00	5.00	38.00	3	30.0	C	0.010	●
EB030A05-3C06	3.00	6.00	5.00	57.00	3	30.0	C	0.010	●
EB040A07-3C04	4.00	4.00	7.00	50.00	3	30.0	C	0.010	●
EB040A07-3C06	4.00	6.00	7.00	57.00	3	30.0	C	0.010	●
EB050A08-3C05	5.00	5.00	8.00	50.00	3	30.0	C	0.010	●
EB050A08-3C06	5.00	6.00	8.00	57.00	3	30.0	C	0.010	●
EB060A08-3C06	6.00	6.00	8.00	57.00	3	30.0	C	0.010	●
EB080A11-3C08	8.00	8.00	11.00	63.00	3	30.0	C	0.010	●
EB100A13-3C10	10.00	10.00	13.00	72.00	3	30.0	C	0.010	●
EB120A14-3C12	12.00	12.00	14.00	83.00	3	30.0	C	0.012	●

• Short and stable design for profiling (roughing). • For user guide, see pages 177-184

(1) Number of flutes

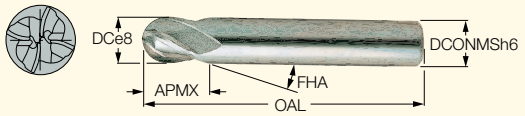
(2) C-Cylindrical

(3) Corner radius tolerance (+/-)

SOLIDMILL TEC LINE

EB-A4 (economical-short)

Economical Type 4 Flute,
30° Helix Ball Nose Short
Solid Carbide Endmills



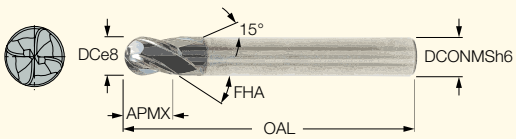
Designation	Dimensions									Tough ↔ Hard	
	DC	DCONMS	APMX	OAL	NOF(1)	FHA	Shank(2)	RETOLL(3)	RETOLU	IC08	IC900
EB-A4 02-04C06E50	2.00	6.00	4.00	50.00	4	30.0	C	0.000	0.005	•	•
EB-A4 03-04C06E50	3.00	6.00	4.00	48.00	4	30.0	C	-0.010	0.010		•
EB-A4 04-06C06E50	4.00	6.00	6.00	50.00	4	30.0	C	-0.010	0.010		•
EB-A4 05-07C06E51	5.00	6.00	7.00	51.00	4	30.0	C	-0.010	0.010	•	•
EB-A4 06-07C06E50	6.00	6.00	7.00	50.00	4	30.0	C	-0.010	0.010	•	
EB-A4 06-07C06E51	6.00	6.00	7.00	51.00	4	30.0	C	-0.010	0.010		•
EB-A4 08-09C08E59	8.00	8.00	9.00	59.00	4	30.0	C	-0.010	0.010	•	•
EB-A4 10-10C10E66	10.00	10.00	10.00	66.00	4	30.0	C	-0.010	0.010	•	•
EB-A4 12-14C12E71	12.00	12.00	14.00	71.00	4	30.0	C	-0.012	0.012	•	•
EB-A4 16-16C16E76	16.00	16.00	16.00	76.00	4	30.0	C	-0.012	0.012	•	•
EB-A4 18-18C18E76	18.00	18.00	18.00	76.00	4	30.0	C	-0.012	0.012	•	•
EB-A4 20-20C20E82	20.00	20.00	20.00	82.00	4	30.0	C	-0.012	0.012	•	•

• For user guide, see pages 177-184
(1) Number of flutes
(2) C-Cylindrical
(3) Corner radius tolerance lower

SOLIDMILL PREMIUM LINE

EB-A-4 (short length)

4 Flute, 30° Helix Short Solid
Carbide Ball Nose Endmills



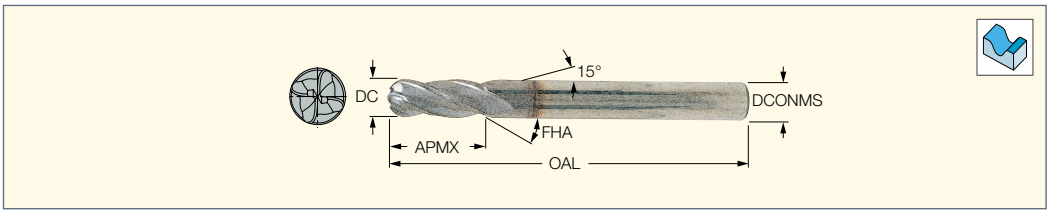
Designation	Dimensions								IC900
	DC	DCONMS	APMX	OAL	NOF(1)	FHA	Shank(2)	RETOL(3)	
EB020A03/06-4C03L38	2.00	3.00	3.00	38.00	4	30.0	C	0.006	•
EB030A05-4C03	3.00	3.00	5.00	38.00	4	30.0	C	0.010	•
EB030A05-4C06	3.00	6.00	5.00	57.00	4	30.0	C	0.010	•
EB040A07-4C04	4.00	4.00	7.00	50.00	4	30.0	C	0.010	•
EB040A07-4C06	4.00	6.00	7.00	57.00	4	30.0	C	0.010	•
EB050A08-4C06	5.00	6.00	8.00	57.00	4	30.0	C	0.010	•
EB060A08-4C06	6.00	6.00	8.00	57.00	4	30.0	C	0.010	•
EB080A11-4C08	8.00	8.00	11.00	63.00	4	30.0	C	0.010	•
EB100A13-4C10	10.00	10.00	13.00	72.00	4	30.0	C	0.010	•
EB120A14-4C12	12.00	12.00	14.00	83.00	4	30.0	C	0.012	•
EB140A14-4C14	14.00	14.00	14.00	83.00	4	30.0	C	0.012	•
EB160A16-4C16	16.00	16.00	16.00	92.00	4	30.0	C	0.012	•
EB200A20-4C20	20.00	20.00	20.00	104.00	4	30.0	C	0.012	•

• Short and stable design for profiling (finishing). • For user guide, see pages 177-184
(1) Number of flutes
(2) C-Cylindrical
(3) Corner radius tolerance (+/-)

SOLIDMILL PREMIUM LINE

EB-A-4 (medium length)

4 Flute, 30° Helix Medium Length Solid Carbide Ball Nose Endmills



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	Shank(2)	Tough ↔ Hard IC900	IC902
EB030A08-4C04	3.00	4.00	8.00	50.00	4	30.0	C	●	●
EB040A12-4C04	4.00	4.00	12.00	50.00	4	30.0	C	●	●
EB050A14-4C05	5.00	5.00	14.00	50.00	4	30.0	C	●	●
EB060A16-4C06	6.00	6.00	16.00	57.00	4	30.0	C	●	●
EB080A20-4C08	8.00	8.00	20.00	63.00	4	30.0	C	●	●
EB090A11-4C09	9.00	9.00	11.00	67.00	4	30.0	C	●	
EB100A22-4C10	10.00	10.00	22.00	72.00	4	30.0	C	●	
EB120A25-4C12	12.00	12.00	25.00	83.00	4	30.0	C	●	
EB160A32-4C16	16.00	16.00	32.00	92.00	4	30.0	C	●	
EB200A38-4C20	20.00	20.00	38.00	104.00	4	30.0	C	●	

• For user guide, see pages 177-184

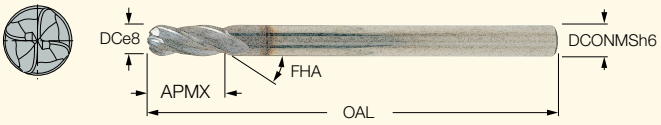
(1) Number of flutes

(2) C-Cylindrical

SOLIDMILL PREMIUM LINE

EBL-A-4

4 Flute, 30° Helix Long Solid Carbide Ball Nose Endmills



Designation	Dimensions DC	DCONMS	APMX	OAL	NOF(1)	FHA	Shank(2)	RETOL(3)	IC900
EBL040A12-4C04	4.00	4.00	12.00	80.00	4	30.0	C	0.010	●
EBL060A16-4C06	6.00	6.00	16.00	100.00	4	30.0	C	0.010	●
EBL070A16-4C07	7.00	7.00	16.00	100.00	4	30.0	C	0.010	●
EBL080A20-4C08	8.00	8.00	20.00	100.00	4	30.0	C	0.010	●
EBL090A20-4C09	9.00	9.00	20.00	100.00	4	30.0	C	0.010	●
EBL100A22-4C10	10.00	10.00	22.00	100.00	4	30.0	C	0.010	●
EBL120A25-4C12	12.00	12.00	25.00	100.00	4	30.0	C	0.012	●
EBL160A32-4C16	16.00	16.00	32.00	125.00	4	30.0	C	0.012	●

• Profiling in deep cavities • For user guide, see pages 177-184

(1) Number of flutes

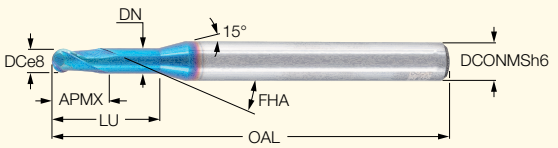
(2) C-Cylindrical

(3) Corner radius tolerance (+/-)

SOLIDMILL PREMIUM LINE

EB-A2-H (rib processing)

2 Flute, 30° Helix Rib Processing Solid Carbide Ball Nose Endmills for Materials up to 65 HRC



Designation	Dimensions										IC702	Recommended Machining Data
	DC	DCONMS	APMX	OAL	LU	DN	NOF(1)	FHA	Shank(2)	RETOL(3)		f_z (mm/t)
EB-A2 004-004/03C4H45	0.40	4.00	0.40	45.00	3.0	0.37	2	30.0	C	0.005	•	0.0100-0.0150
EB-A2 005-004/04C4H45	0.50	4.00	0.40	45.00	4.0	0.45	2	30.0	C	0.005	•	0.0100-0.0150
EB-A2 005-004/08C4H45	0.50	4.00	0.40	45.00	8.0	0.45	2	30.0	C	0.005	•	0.0100-0.0150
EB-A2 006-005/02C4H45	0.60	4.00	0.50	45.00	2.0	0.55	2	30.0	C	0.005	•	0.0100-0.0150
EB-A2 006-005/04C4H45	0.60	4.00	0.50	45.00	4.0	0.55	2	30.0	C	0.005	•	0.0100-0.0150
EB-A2 006-005/08C4H45	0.60	4.00	0.50	45.00	8.0	0.55	2	30.0	C	0.005	•	0.0100-0.0150
EB-A2 008-006/02C4H45	0.80	4.00	0.60	45.00	2.0	0.75	2	30.0	C	0.005	•	0.0150-0.0250
EB-A2 008-006/04C4H45	0.80	4.00	0.60	45.00	4.0	0.75	2	30.0	C	0.005	•	0.0150-0.0250
EB-A2 008-006/06C4H45	0.80	4.00	0.60	45.00	6.0	0.75	2	30.0	C	0.005	•	0.0150-0.0250
EB-A2 010-008/03C4H45	1.00	4.00	0.80	45.00	3.0	0.95	2	30.0	C	0.005	•	0.0200-0.0350
EB-A2 010-008/04C4H45	1.00	4.00	0.80	45.00	4.0	0.95	2	30.0	C	0.005	•	0.0200-0.0350
EB-A2 010-008/06C4H45	1.00	4.00	0.80	45.00	6.0	0.95	2	30.0	C	0.005	•	0.0200-0.0350
EB-A2 010-008/08C4H45	1.00	4.00	0.80	45.00	8.0	0.95	2	30.0	C	0.005	•	0.0200-0.0350
EB-A2 010-008/10C4H45	1.00	4.00	0.80	45.00	10.0	0.95	2	30.0	C	0.005	•	0.0200-0.0350
EB-A2 010-008/20C4M55	1.00	4.00	0.80	55.00	20.0	0.95	2	30.0	C	0.005	•	0.0200-0.0350
EB-A2 012-010/08C4H45	1.20	4.00	1.00	45.00	8.0	1.15	2	30.0	C	0.005	•	0.0200-0.0450
EB-A2 015-012/06C4H45	1.50	4.00	1.20	45.00	6.0	1.45	2	30.0	C	0.005	•	0.0200-0.0450
EB-A2 015-012/10C4H45	1.50	4.00	1.20	45.00	10.0	1.45	2	30.0	C	0.005	•	0.0200-0.0450
EB-A2 015-012/12C4H45	1.50	4.00	1.20	45.00	12.0	1.45	2	30.0	C	0.005	•	0.0200-0.0450
EB-A2 015-012/20C4H55	1.50	4.00	1.20	55.00	20.0	1.45	2	30.0	C	0.005	•	0.0200-0.0450
EB-A2 020-016/04C4H45	2.00	4.00	1.60	45.00	4.0	1.95	2	30.0	C	0.005	•	0.0300-0.0700
EB-A2 020-016/06C4H45	2.00	4.00	1.60	45.00	6.0	1.95	2	30.0	C	0.005	•	0.0300-0.0700
EB-A2 020-016/10C4H45	2.00	4.00	1.60	45.00	10.0	1.95	2	30.0	C	0.005	•	0.0300-0.0700
EB-A2 020-016/12C4H50	2.00	4.00	1.60	50.00	12.0	1.95	2	30.0	C	0.005	•	0.0300-0.0700
EB-A2 020-016/14C4H50	2.00	4.00	1.60	50.00	14.0	1.95	2	30.0	C	0.005	•	0.0300-0.0700
EB-A2 020-016/16C4H50	2.00	4.00	1.60	50.00	16.0	1.95	2	30.0	C	0.005	•	0.0300-0.0700
EB-A2 020-016/20C4H55	2.00	4.00	1.60	55.00	20.0	1.95	2	30.0	C	0.005	•	0.0300-0.0700
EB-A2 030-024/12C6H50	3.00	6.00	2.40	50.00	12.0	2.85	2	30.0	C	0.005	•	0.0500-0.1000
EB-A2 030-024/16C6H55	3.00	6.00	2.40	55.00	16.0	2.85	2	30.0	C	0.005	•	0.0500-0.1000
EB-A2 030-024/20C6H60	3.00	6.00	2.40	60.00	20.0	2.85	2	30.0	C	0.005	•	0.0500-0.1000
EB-A2 030-024/25C6H65	3.00	6.00	2.40	65.00	25.0	2.85	2	30.0	C	0.005	•	0.0500-0.1000
EB-A2 040-032/16C6H60	4.00	6.00	3.20	60.00	16.0	3.85	2	30.0	C	0.005	•	0.0600-0.1500
EB-A2 040-032/20C6H65	4.00	6.00	3.20	65.00	20.0	3.85	2	30.0	C	0.005	•	0.0600-0.1500
EB-A2 040-032/25C6H70	4.00	6.00	3.20	70.00	25.0	3.85	2	30.0	C	0.005	•	0.0600-0.1500

• For user guide, see pages 177-184

(1) Number of flutes

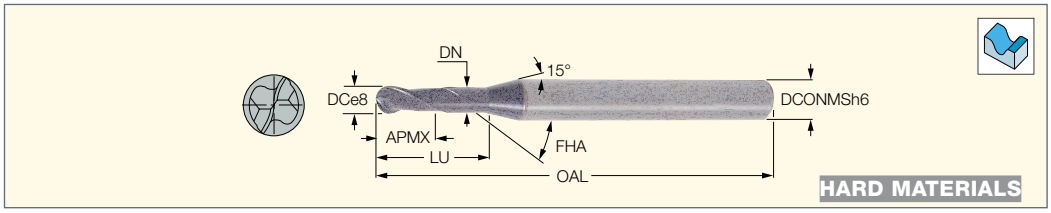
(2) C-Cylindrical

(3) Corner radius tolerance (+/-)

SOLIDMILL PREMIUM LINE

EB-A2 (rib processing)

2 Flute, 30° Helix Rib Processing Solid Carbide Ball Nose Endmills for Materials up to 55 HRc



Designation	Dimensions										IC903	Recommended Machining Data
	DC	DCONMS	APMX	OAL	LU	DN	NOF(1)	FHA	Shank(2)	RETOL(3)		f_z (mm/t)
EB-A2 004-006/01C4M45	0.40	4.00	0.60	45.00	1.0	0.36	2	30.0	C	0.010	•	0.0030-0.0060
EB-A2 004-006/02C4M45	0.40	4.00	0.60	45.00	2.0	0.36	2	30.0	C	0.010	•	0.0030-0.0060
EB-A2 004-006/03C4M45	0.40	4.00	0.60	45.00	3.0	0.36	2	30.0	C	0.010	•	0.0030-0.0060
EB-A2 005-007/02C4M45	0.50	4.00	0.70	45.00	2.0	0.45	2	30.0	C	0.010	•	0.0030-0.0060
EB-A2 005-007/04C4M45	0.50	4.00	0.70	45.00	4.0	0.45	2	30.0	C	0.010	•	0.0030-0.0060
EB-A2 005-007/06C4M45	0.50	4.00	0.70	45.00	6.0	0.45	2	30.0	C	0.010	•	0.0030-0.0060
EB-A2 005-007/08C4M45	0.50	4.00	0.70	45.00	8.0	0.45	2	30.0	C	0.010	•	0.0030-0.0060
EB-A2 006-009/02C4M45	0.60	4.00	0.90	45.00	2.0	0.55	2	30.0	C	0.010	•	0.0040-0.0080
EB-A2 006-009/04C4M45	0.60	4.00	0.90	45.00	4.0	0.55	2	30.0	C	0.010	•	0.0040-0.0080
EB-A2 008-012/02C4M45	0.80	4.00	1.20	45.00	2.0	0.75	2	30.0	C	0.010	•	0.0040-0.0080
EB-A2 008-012/04C4M45	0.80	4.00	1.20	45.00	4.0	0.75	2	30.0	C	0.010	•	0.0040-0.0080
EB-A2 008-012/06C4M45	0.80	4.00	1.20	45.00	6.0	0.75	2	30.0	C	0.010	•	0.0040-0.0080
EB-A2 008-012/10C4M45	0.80	4.00	1.20	45.00	10.0	0.75	2	30.0	C	0.010	•	0.0040-0.0080
EB-A2 010-015/03C4M45	1.00	4.00	1.50	45.00	3.0	0.97	2	30.0	C	0.010	•	0.0050-0.0100
EB-A2 010-015/04C4M45	1.00	4.00	1.50	45.00	4.0	0.97	2	30.0	C	0.010	•	0.0050-0.0100
EB-A2 010-015/05C4M45	1.00	4.00	1.50	45.00	5.0	0.97	2	30.0	C	0.010	•	0.0050-0.0100
EB-A2 010-015/06C4M45	1.00	4.00	1.50	45.00	6.0	0.97	2	30.0	C	0.010	•	0.0050-0.0100
EB-A2 010-015/07C4M45	1.00	4.00	1.50	45.00	7.0	0.95	2	30.0	C	0.010	•	0.0050-0.0100
EB-A2 010-015/08C4M45	1.00	4.00	1.50	45.00	8.0	0.95	2	30.0	C	0.010	•	0.0050-0.0100
EB-A2 010-015/10C4M45	1.00	4.00	1.50	45.00	10.0	0.95	2	30.0	C	0.010	•	0.0050-0.0100
EB-A2 010-015/12C4M45	1.00	4.00	1.50	45.00	12.0	0.93	2	30.0	C	0.010	•	0.0050-0.0100
EB-A2 010-015/14C4M50	1.00	4.00	1.50	50.00	14.0	0.93	2	30.0	C	0.010	•	0.0050-0.0100
EB-A2 010-015/16C4M50	1.00	4.00	1.50	50.00	16.0	0.93	2	30.0	C	0.010	•	0.0050-0.0100
EB-A2 010-015/20C4M55	1.00	4.00	1.50	55.00	20.0	0.93	2	30.0	C	0.010	•	0.0050-0.0100
EB-A2 012-018/08C4M45	1.20	4.00	1.80	45.00	8.0	1.17	2	30.0	C	0.010	•	0.0060-0.0150
EB-A2 012-018/12C4M45	1.20	4.00	1.80	45.00	12.0	1.13	2	30.0	C	0.010	•	0.0060-0.0150
EB-A2 014-021/08C4M45	1.40	4.00	2.10	45.00	8.0	1.35	2	30.0	C	0.010	•	0.0060-0.0150
EB-A2 014-021/16C4M50	1.40	4.00	2.10	50.00	16.0	1.31	2	30.0	C	0.010	•	0.0060-0.0150
EB-A2 015-015/03C04M50	1.50	4.00	1.50	50.00	3.0	1.47	2	30.0	C	0.010	•	0.0070-0.0160
EB-A2 015-023/06C4M45	1.50	4.00	2.30	45.00	6.0	1.47	2	30.0	C	0.010	•	0.0070-0.0160
EB-A2 015-023/08C4M45	1.50	4.00	2.30	45.00	8.0	1.45	2	30.0	C	0.010	•	0.0070-0.0160
EB-A2 015-023/10C4M45	1.50	4.00	2.30	45.00	10.0	1.45	2	30.0	C	0.010	•	0.0070-0.0160
EB-A2 015-023/12C4M45	1.50	4.00	2.30	45.00	12.0	1.43	2	30.0	C	0.010	•	0.0070-0.0160
EB-A2 015-023/20C4M55	1.50	4.00	2.30	55.00	20.0	1.39	2	30.0	C	0.010	•	0.0070-0.0160
EB-A2 016-024/08C4M45	1.60	4.00	2.40	45.00	8.0	1.55	2	30.0	C	0.010	•	0.0080-0.0170
EB-A2 016-024/12C4M45	1.60	4.00	2.40	45.00	12.0	1.53	2	30.0	C	0.010	•	0.0080-0.0170
EB-A2 018-027/08C4M45	1.80	4.00	2.70	45.00	8.0	1.75	2	30.0	C	0.010	•	0.0080-0.0180
EB-A2 018-027/12C4M45	1.80	4.00	2.70	45.00	12.0	1.73	2	30.0	C	0.010	•	0.0080-0.0180
EB-A2 018-027/16C4M50	1.80	4.00	2.70	50.00	16.0	1.71	2	30.0	C	0.010	•	0.0080-0.0180
EB-A2 020-030/04C4M45	2.00	4.00	3.00	45.00	4.0	1.97	2	30.0	C	0.010	•	0.0100-0.0210
EB-A2 020-030/06C4M45	2.00	4.00	3.00	45.00	6.0	1.97	2	30.0	C	0.010	•	0.0100-0.0210
EB-A2 020-030/10C4M45	2.00	4.00	3.00	45.00	10.0	1.93	2	30.0	C	0.010	•	0.0100-0.0210
EB-A2 020-030/12C4M50	2.00	4.00	3.00	50.00	12.0	1.93	2	30.0	C	0.010	•	0.0100-0.0210
EB-A2 020-030/14C4M50	2.00	4.00	3.00	50.00	14.0	1.93	2	30.0	C	0.010	•	0.0100-0.0210
EB-A2 020-030/16C4M50	2.00	4.00	3.00	50.00	16.0	1.91	2	30.0	C	0.010	•	0.0100-0.0210
EB-A2 020-030/20C4M55	2.00	4.00	3.00	55.00	20.0	1.89	2	30.0	C	0.010	•	0.0100-0.0210
EB-A2 020-030/25C4M60	2.00	4.00	3.00	60.00	25.0	1.89	2	30.0	C	0.010	•	0.0100-0.0210
EB-A2 020-030/30C4M70	2.00	4.00	3.00	70.00	30.0	1.89	2	30.0	C	0.010	•	0.0100-0.0210
EB-A2 030-045/08C6M50	3.00	6.00	4.50	50.00	8.0	2.85	2	30.0	C	0.010	•	0.0120-0.0300
EB-A2 030-045/10C6M50	3.00	6.00	4.50	50.00	10.0	2.85	2	30.0	C	0.010	•	0.0120-0.0300
EB-A2 030-045/12C6M50	3.00	6.00	4.50	50.00	12.0	2.85	2	30.0	C	0.010	•	0.0120-0.0300
EB-A2 030-045/16C6M55	3.00	6.00	4.50	55.00	16.0	2.85	2	30.0	C	0.010	•	0.0120-0.0300
EB-A2 030-045/20C6M60	3.00	6.00	4.50	60.00	20.0	2.85	2	30.0	C	0.010	•	0.0120-0.0300
EB-A2 030-045/25C6M65	3.00	6.00	4.50	65.00	25.0	2.85	2	30.0	C	0.010	•	0.0120-0.0300
EB-A2 030-045/30C6M70	3.00	6.00	4.50	70.00	30.0	2.85	2	30.0	C	0.010	•	0.0120-0.0300

• For user guide, see pages 177-184

(1) Number of flutes

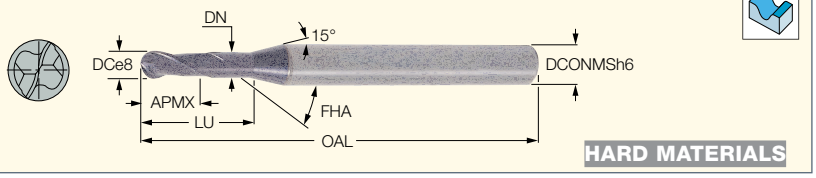
(2) C-Cylindrical

(3) Corner radius tolerance (+/-)

SOLIDMILL PREMIUM LINE

EB-A2 (rib processing) (continued)

2 Flute, 30° Helix Rib Processing Solid Carbide Ball Nose Endmills for Materials up to 55 HRc



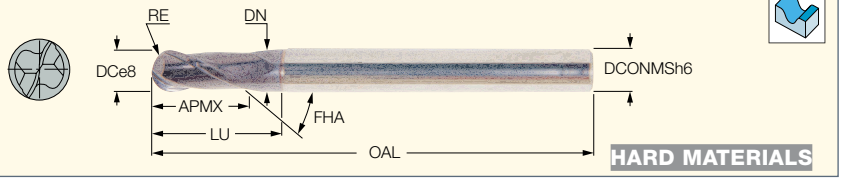
Designation	Dimensions DC	DCONMS	APMX	OAL	LU	DN	NOF(1)	FHA	Shank(2)	RETOL(3)	IC903	Recommended Machining Data f_z (mm/t)
EB-A2 030-045/35C6M80	3.00	6.00	4.50	80.00	35.0	2.85	2	30.0	C	0.010	•	0.0120-0.0300
EB-A2 040-060/10C6M60	4.00	6.00	6.00	60.00	10.0	3.80	2	30.0	C	0.010	•	0.0150-0.0350
EB-A2 040-060/12C6M60	4.00	6.00	6.00	60.00	12.0	3.80	2	30.0	C	0.010	•	0.0150-0.0350
EB-A2 040-060/16C6M60	4.00	6.00	6.00	60.00	16.0	3.80	2	30.0	C	0.010	•	0.0150-0.0350
EB-A2 040-060/20C6M65	4.00	6.00	6.00	65.00	20.0	3.80	2	30.0	C	0.010	•	0.0150-0.0350
EB-A2 040-060/25C6M70	4.00	6.00	6.00	70.00	25.0	3.80	2	30.0	C	0.010	•	0.0150-0.0350
EB-A2 040-060/30C6M70	4.00	6.00	6.00	70.00	30.0	3.80	2	30.0	C	0.010	•	0.0150-0.0350
EB-A2 040-060/35C6M80	4.00	6.00	6.00	80.00	35.0	3.80	2	30.0	C	0.010	•	0.0150-0.0350
EB-A2 040-060/45C6M90	4.00	6.00	6.00	90.00	45.0	3.80	2	30.0	C	0.010	•	0.0150-0.0350
EB-A2 050-075/20C6M60	5.00	6.00	7.50	60.00	20.0	4.80	2	30.0	C	0.010	•	0.0180-0.0440
EB-A2 050-075/25C6M70	5.00	6.00	7.50	70.00	25.0	4.80	2	30.0	C	0.010	•	0.0180-0.0440
EB-A2 050-075/30C6M80	5.00	6.00	7.50	80.00	30.0	4.80	2	30.0	C	0.010	•	0.0180-0.0440
EB-A2 050-075/35C6M80	5.00	6.00	7.50	80.00	35.0	4.80	2	30.0	C	0.010	•	0.0180-0.0440
EB-A2 060-090/20C6M80	6.00	6.00	9.00	80.00	20.0	5.80	2	30.0	C	0.010	•	0.0200-0.0500
EB-A2 060-090/30C6M90	6.00	6.00	9.00	90.00	30.0	5.80	2	30.0	C	0.010	•	0.0200-0.0500
EB-A2 060-090/40C6M100	6.00	6.00	9.00	100.00	40.0	5.80	2	30.0	C	0.010	•	0.0200-0.0500

• For user guide, see pages 177-184
(1) Number of flutes
(2) C-Cylindrical
(3) Corner radius tolerance (+/-)

SOLIDMILL PREMIUM LINE

EB-A2 (long with neck)

2 Flute, 30° Helix Long Solid Carbide Ball Nose Endmills with Relieved Necks for Materials up to 65 HRC



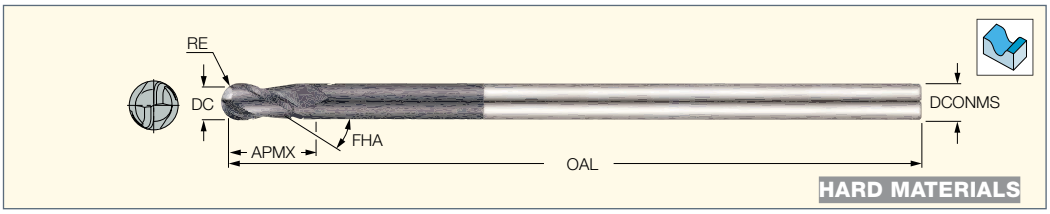
Designation	Dimensions DC	RE	DCONMS	APMX	OAL	LU	DN	NOF(1)	FHA	Shank(2)	RETOL(3)	IC903
EB-A2 03-08C06M70	3.00	1.50	6.00	8.00	70.00	-	-	2	30.0	C	0.010	•
EB-A2 04-08C06M70	4.00	2.00	6.00	8.00	70.00	-	-	2	30.0	C	0.010	•
EB-A2 05-12C06M80	5.00	2.50	6.00	12.00	80.00	-	-	2	30.0	C	0.010	•
EB-A2 06-12/22C06M80	6.00	3.00	6.00	12.00	80.00	22.00	5.80	2	30.0	C	0.010	•
EB-A2 07-14C08M90	7.00	3.50	8.00	14.00	90.00	-	-	2	30.0	C	0.020	•
EB-A2 08-14/27C08M90	8.00	4.00	8.00	14.00	90.00	27.00	7.80	2	30.0	C	0.020	•
EB-A2 10-18/31C10M100	10.00	5.00	10.00	18.00	100.00	31.00	9.80	2	30.0	C	0.020	•
EB-A2 12-22/35C12M110	12.00	6.00	12.00	22.00	110.00	35.00	11.80	2	30.0	C	0.020	•
EB-A2 16-30/50C16M140	16.00	8.00	16.00	30.00	140.00	50.00	15.80	2	30.0	C	0.020	•

• For user guide, see pages 177-184
(1) Number of flutes
(2) C-Cylindrical
(3) Corner radius tolerance (+/-)

SOLIDMILL PREMIUM LINE

EB-A2 (extra long)

2 Flute, 30° Helix Extra Long Solid Carbide Ball Nose Endmills for Materials up to 65 HRC



Designation	Dimensions DC	RE	DCONMS	APMX	OAL	NOF(1)	FHA	Shank(2)	IC903
EB-A2 02-06C03M80	2.00	1.00	3.00	6.00	80.00	2	30.0	C	●
EB-A2 03-08C03M100	3.00	1.50	3.00	8.00	100.00	2	30.0	C	●
EB-A2 04-08C04M100	4.00	2.00	4.00	8.00	100.00	2	30.0	C	●
EB-A2 06-10C06M120	6.00	3.00	6.00	10.00	120.00	2	30.0	C	●
EB-A2 08-14C08M140	8.00	4.00	8.00	14.00	140.00	2	30.0	C	●
EB-A2 10-18C10M180	10.00	5.00	10.00	18.00	180.00	2	30.0	C	●
EB-A2 12-22C12M200	12.00	6.00	12.00	22.00	200.00	2	30.0	C	●
EB-A2 16-30C16M250	16.00	8.00	16.00	30.00	250.00	2	30.0	C	●
EB-A2 20-38C20M250	20.00	10.00	20.00	38.00	250.00	2	30.0	C	●

• The DC tolerance is: 0 - -0.030 mm • For user guide, see pages 177-184

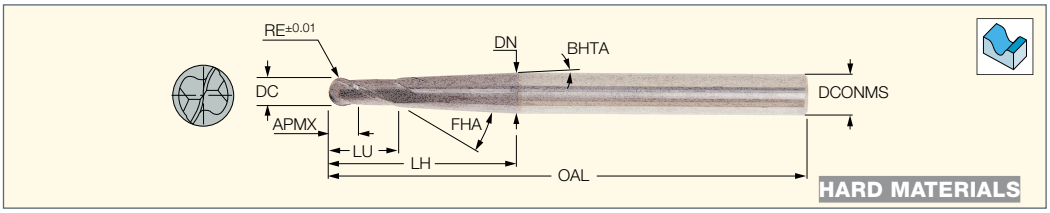
(1) Number of flutes

(2) C-Cylindrical

SOLIDMILL PREMIUM LINE

EB-A2 (tapered flute & neck)

2 Tapered Flutes, 30° Helix Solid Carbide Ball Nose Endmills with Relieved Necks for Materials up to 65 HRC



Designation	Dimensions DC	RE	DCONMS	APMX	LU	LH	DN	BHTA	OAL	NOF(1)	FHA	Shank(2)	IC903
EB-A2 01-02/04/1.5C06M60	1.00	0.50	6.00	2.00	4.0	23.0	2.00	1.5	60.00	2	30.0	C	●
EB-A2 01-02/04/3.0C06M80	1.00	0.50	6.00	2.00	4.0	42.0	5.00	3.0	80.00	2	30.0	C	●
EB-A2 01-02/04/5.0C06M60	1.00	0.50	6.00	2.00	4.0	23.0	4.30	5.0	60.00	2	30.0	C	●
EB-A2 02-04/06/1.5C06M60	2.00	1.00	6.00	4.00	6.0	23.0	2.90	1.5	60.00	2	30.0	C	●
EB-A2 02-04/06/3.0C06M80	2.00	1.00	6.00	4.00	6.0	41.0	5.70	3.0	80.00	2	30.0	C	●
EB-A2 02-04/06/5.0C06M60	2.00	1.00	6.00	4.00	6.0	23.0	5.00	5.0	60.00	2	30.0	C	●
EB-A2 03-06/08/1.5C06M90	3.00	1.50	6.00	6.00	8.0	52.0	5.30	1.5	90.00	2	30.0	C	●
EB-A2 03-06/08/3.0C06M70	3.00	1.50	6.00	6.00	8.0	32.0	5.60	3.0	70.00	2	30.0	C	●
EB-A2 04-08/10/1.5C06M90	4.00	2.00	6.00	8.00	10.0	49.0	6.00	1.5	90.00	2	30.0	C	●
EB-A2 04-08/10/3.0C06M70	4.00	2.00	6.00	8.00	10.0	28.0	6.00	3.0	70.00	2	30.0	C	●
EB-A2 05-10/12/1.5C08M110	5.00	2.50	8.00	10.00	12.0	61.0	7.60	1.5	110.00	2	30.0	C	●
EB-A2 06-12/15/1.5C08M110	6.00	3.00	8.00	12.00	15.0	53.0	8.00	1.5	110.00	2	30.0	C	●
EB-A2 06-12/15/3.0C08M90	6.00	3.00	8.00	12.00	15.0	34.0	8.00	3.0	90.00	2	30.0	C	●
EB-A2 08-14/17/1.5C10M120	8.00	4.00	10.00	14.00	17.0	55.0	10.00	1.5	120.00	2	30.0	C	●
EB-A2 08-14/17/3.0C10M100	8.00	4.00	10.00	14.00	17.0	36.0	10.00	3.0	100.00	2	30.0	C	●
EB-A2 10-18/21/1.5C12M130	10.00	5.00	12.00	18.00	21.0	59.0	12.00	1.5	130.00	2	30.0	C	●
EB-A2 10-18/21/3.0C12M110	10.00	5.00	12.00	18.00	21.0	40.0	12.00	3.0	110.00	2	30.0	C	●

• For user guide, see pages 177-184

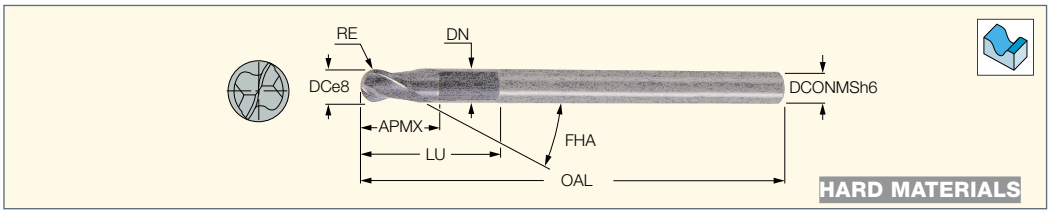
(1) Number of flutes

(2) C-Cylindrical

SOLIDMILL PREMIUM LINE

EB-A2 (precision stub cut)

2 Flute, 30° Helix Stub Cut Length High Precision Ball Nose Endmills with Relieved Necks for Materials up to 65 HRC



Designation	Dimensions DC	RE	DCONMS	APMX	LU	OAL	DN	NOF(1)	FHA	Shank(2)	RETOLL(3)	RETOLU(4)	IC903
EB-A2 01-01/02C04M50	1.00	0.50	4.00	1.00	2.20	50.00	0.95	2	30.0	C	0.000	0.004	•
EB-A2 01-01/02C06M50	1.00	0.50	6.00	1.00	2.20	50.00	0.95	2	30.0	C	-0.010	0.010	•
EB-A2 012-012/02C04M50	1.20	0.60	4.00	1.20	2.60	50.00	1.10	2	30.0	C	-0.010	0.010	•
EB-A2 02-02/04C06M50	2.00	1.00	6.00	2.00	4.00	50.00	1.90	2	30.0	C	-0.010	0.010	•
EB-A2 025-025/05C06M60	2.50	1.25	6.00	2.50	5.00	60.00	2.40	2	30.0	C	0.000	0.006	•
EB-A2 03-03/06C06M60	3.00	1.50	6.00	3.00	6.00	60.00	2.90	2	30.0	C	-0.010	0.010	•
EB-A2 04-04/08C06M70	4.00	2.00	6.00	4.00	8.00	70.00	3.90	2	30.0	C	-0.010	0.010	•
EB-A2 05-05/10C06M80	5.00	2.50	6.00	5.00	10.00	80.00	4.90	2	30.0	C	-0.010	0.010	•
EB-A2 06-06/12C06M90	6.00	3.00	6.00	6.00	12.00	90.00	5.90	2	30.0	C	-0.010	0.010	•
EB-A2 07-07/14C08M90	7.00	3.50	8.00	7.00	14.00	90.00	6.90	2	30.0	C	-0.010	0.010	•
EB-A2 08-08/16C08M100	8.00	4.00	8.00	8.00	16.00	100.00	7.90	2	30.0	C	-0.010	0.010	•
EB-A2 09-09/18C10M100	9.00	4.50	10.00	9.00	18.00	100.00	8.90	2	30.0	C	-0.010	0.010	•
EB-A2 10-10/20C10M100	10.00	5.00	10.00	10.00	20.00	100.00	9.90	2	30.0	C	-0.010	0.010	•
EB-A2 12-12/24C12M110	12.00	6.00	12.00	12.00	24.00	110.00	11.90	2	30.0	C	-0.012	0.012	•
EB-A2 14-14/28C14M110	14.00	7.00	14.00	14.00	28.00	110.00	13.80	2	30.0	C	-0.012	0.012	•
EB-A2 16-16/32C16M140	16.00	8.00	16.00	16.00	32.00	140.00	15.80	2	30.0	C	-0.012	0.012	•
EB-A2 25-25/50C25M180	25.00	12.50	25.00	25.00	50.00	180.00	24.80	2	30.0	C	-0.015	0.015	•

• For user guide, see pages 177-184
(1) Number of flutes
(2) C-Cylindrical
(3) Corner radius tolerance lower
(4) Corner radius tolerance upper

SOLIDMILL PREMIUM LINE

EBM-A-2

2 Flute, 30° Helix Medium Length Solid Carbide Miniature Ball Nose Endmills

Designation	Dimensions DC	RE	DCONMS	APMX	OAL	NOF(1)	FHA	Shank(2)	RETOLL(3)	RETOLU(4)	Tough ↔ Hard IC08	IC900	IC902
EBM004A008-2C03	0.40	0.20	3.00	0.80	38.00	2	30.0	C	0.000	0.004	•	•	
EBM005A010-2C03	0.50	0.25	3.00	1.00	38.00	2	30.0	C	0.000	0.004	•	•	
EBM006A012-2C03	0.60	0.30	3.00	1.20	38.00	2	30.0	C	0.000	0.004	•	•	
EBM007A014-2C03	0.70	0.35	3.00	1.40	38.00	2	30.0	C	0.000	0.004	•		
EBM008A016-2C03	0.80	0.40	3.00	1.60	38.00	2	30.0	C	0.000	0.004	•	•	
EBM010A025-2C04	1.00	0.50	4.00	2.50	50.00	2	30.0	C	0.000	0.004	•	•	•
EBM012A030-2C04	1.20	0.60	4.00	3.00	50.00	2	30.0	C	0.000	0.004	•	•	•
EBM016A040-2C04	1.60	0.80	4.00	4.00	50.00	2	30.0	C	0.000	0.004	•	•	•
EBM020A060-2C04	2.00	1.00	4.00	6.00	50.00	2	30.0	C	0.000	0.004	•	•	•

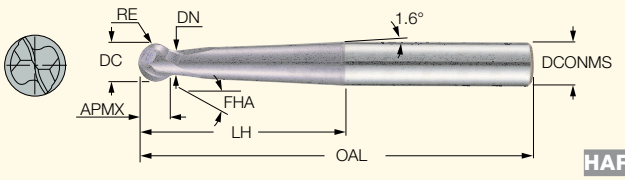
• Short and stable design for profiling (roughing). • For user guide, see pages 177-184
(1) Number of flutes
(2) C-Cylindrical
(3) Corner radius tolerance lower
(4) Corner radius tolerance upper

DC	Tolerance	
DC≤0.6	DC	0.000 -0.010
0.6<DC≤2	DC	0.000 -0.012

SOLIDMILL PREMIUM LINE

ESB-A2

2 Flute, 30° Helix Spherical Long Solid Carbide Ball Nose Endmills for Materials up to 65 HRc



HARD MATERIALS

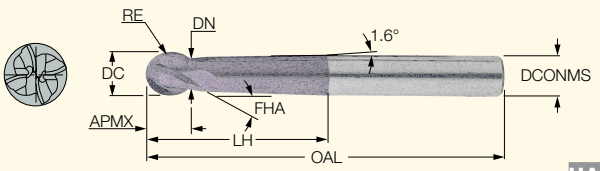
Designation	Dimensions										IC903
	DC	RE	DCONMS	APMX	LH	DN	OAL	NOF(1)	FHA	Shank(2)	
ESB-A2 03 02/30C06M80	3.00	1.50	6.00	2.30	30.0	2.50	80.00	2	30.0	C	•
ESB-A2 04 03/30C06M80	4.00	2.00	6.00	3.10	30.0	3.30	80.00	2	30.0	C	•
ESB-A2 05 03/38C06M80	5.00	2.50	6.00	3.90	38.0	4.10	80.00	2	30.0	C	•
ESB-A2 06 04/28C06M100	6.00	3.00	6.00	4.90	28.0	4.70	100.00	2	30.0	C	•
ESB-A2 08 06/33C08M100	8.00	4.00	8.00	6.30	33.0	6.50	100.00	2	30.0	C	•
ESB-A2 10 07/40C10M100	10.00	5.00	10.00	7.90	40.0	8.20	100.00	2	30.0	C	•
ESB-A2 16 12/59C16M150	16.00	8.00	16.00	12.40	59.0	13.40	150.00	2	30.0	C	•

• For user guide, see pages 177-184
(1) Number of flutes
(2) C-Cylindrical

SOLIDMILL PREMIUM LINE

ESB-A4

4 Flute, 30° Helix Spherical Long Solid Carbide Ball Nose Endmills for Materials up to 65 HRC



HARD MATERIALS

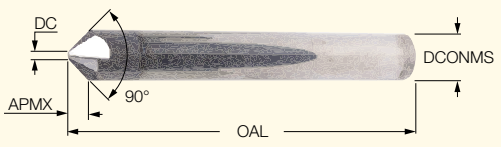
Designation	Dimensions										IC903
	DC	RE	DCONMS	APMX	LH	DN	OAL	NOF(1)	FHA	Shank(2)	
ESB-A4 05 3/38C06M80	5.00	2.50	6.00	3.90	38.0	4.10	80.00	4	30.0	C	•
ESB-A4 06 4/28C06M100	6.00	3.00	6.00	4.90	28.0	4.70	100.00	4	30.0	C	•
ESB-A4 08 6/33C08M100	8.00	4.00	8.00	6.30	33.0	6.30	100.00	4	30.0	C	•
ESB-A4 10 7/40C10M100	10.00	5.00	10.00	7.90	40.0	8.20	100.00	4	30.0	C	•
ESB-A4 12 9/49C12M100	12.00	6.00	12.00	9.50	49.0	9.80	100.00	4	30.0	C	•

• For user guide, see pages 177-184
(1) Number of flutes
(2) C-Cylindrical

SOLIDMILL PREMIUM LINE

ECF../45

45° Chamfering and Countersinking Solid Carbide Endmills



Designation	Dimensions						IC900
	DC	DCX(1)	APMX	OAL	NOF(2)	Shank(3)	
ECF D-1.5/45-4C04	1.00	4.00	1.50	50.00	4	C	•
ECF D-2/45-4C06	2.00	6.00	2.00	57.00	4	C	•
ECF D-3/45-4C08	2.00	8.00	3.00	63.00	4	C	•
ECF D-4/45-4C10	2.00	10.00	4.00	72.00	4	C	•
ECF D-5/45-4C12	2.00	12.00	5.00	83.00	4	C	•

• For user guide, see pages 177-184
(1) Cutting diameter maximum
(2) Number of flutes
(3) C-Cylindrical

SOLIDMILL PREMIUM LINE

ECD-S2

45° Chamfering and Spot Drilling Solid Carbide Tools

Designation	Dimensions						Tough ↔ Hard	
	DC	DCONMS	OAL	APMX	LU	Shank(1)	IC08	IC900
ECD-S2 030/90C03-38	3.00	3.00	38.00	1.37	6.00	C	•	•
ECD-S2 040/90C04-50	4.00	4.00	50.00	1.79	8.00	C	•	•
ECD-S2 050/90C05-50	5.00	5.00	50.00	2.24	10.00	C	•	•
ECD-S2 060/90C06-57	6.00	6.00	57.00	2.71	12.00	C	•	•
ECD-S2 080/90C08-63	8.00	8.00	63.00	3.63	16.00	C	•	•
ECD-S2 100/90C10-72	10.00	10.00	72.00	4.55	20.00	C	•	•
ECD-S2 120/90C12-73	12.00	12.00	73.00	5.47	24.00	C	•	•

• For user guide, see pages 177-184

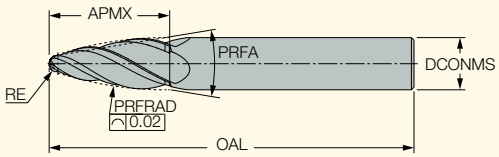
(1) C-Cylindrical

SOLIDMILL PREMIUM LINE

NEOBARREL PROFILE MILLING

SC EOB

Solid Carbide Oval-Shaped (Barrel) Endmills for 3D Profiling



Designation	Dimensions								IC902
	PRFRAD	RE	APMX	PRFA	DCONMS	NOF(1)	OAL	Shank(2)	
EOB-R1R90A24/7-4C08-63	90.00	1.00	24.80	14.88	8.00	4	63.00	C	•
EOB-R2R85A24/8-4C10-72	85.00	2.00	26.60	15.46	10.00	4	72.00	C	•
EOB-R2R80A27/9-4C12-83	80.00	2.00	27.10	18.38	12.00	4	83.00	C	•

• For user guide, see pages 177-184

(1) Number of flutes

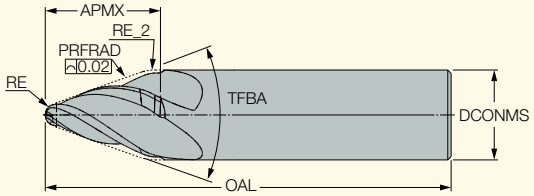
(2) C-Cylindrical

SOLIDMILL PREMIUM LINE

NEOBARREL PROFILE MILLING

SC ETB

Solid Carbide Tapered-Shaped (Barrel) Endmills for 3D Profiling



Designation	Dimensions								IC902
	PRFRAD	RE_2	RE	APMX	TFBA	DCONMS	NOF(1)	OAL	Shank(2)	
ETB-R1R250A10/20-4C08-63	250.00	4.00	1.00	10.00	40.00	8.00	4	63.00	C	•
ETB-R2R250A11/20-4C10-72	250.00	5.00	2.00	11.00	40.00	10.00	4	72.00	C	•
ETB-R3R250A12/20-4C12-83	250.00	6.00	3.00	12.00	40.00	12.00	4	83.00	C	•

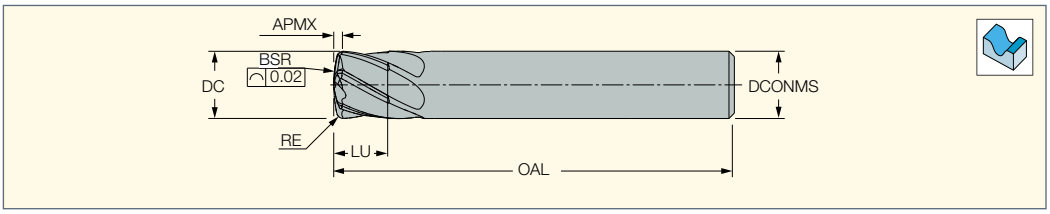
• For user guide, see pages 177-184

(1) Number of flutes

(2) C-Cylindrical

SOLIDMILL PREMIUM LINE
NEOBARREL PROFILE MILLING

SC ELB
Solid Carbide Lens-Shaped (Barrel) Endmills for 3D Profiling



Designation	Dimensions									IC902
	DC	BSR	RE	LU	APMX	DCONMS	NOF(1)	OAL	Shank	
ELB-R0.75R16A5-6C8-63	8.00	15.00	0.75	5.00	1.10	8.00	4	63.00	C	●
ELB-R1R20A7-6C10-72	10.00	20.00	1.00	7.00	1.43	10.00	6	72.00	C	●
ELB-R1R25A9-6C12-83	12.00	25.00	1.00	9.00	1.53	12.00	6	83.00	C	●

(1) Number of flutes

Table of Contents

Grade Priorities for Solid Carbide Endmills

Material Groups		ISO P		ISO M	ISO K	ISO N	ISO S	ISO H
		1 - 11	12 - 13	14	15 - 20	21 - 28	31 - 37	38 - 41
		Steel	Stainless Steel Ferritic & Martensitic	Stainless Steel Austenitic & Duplex (Ferritic-Austenitic)	Cast Iron	Nonferrous	High Temp Alloys	Hard Steel & Hardened Cast Iron
Solid & MULTI-MASTER Endmills	Harder	IC702	IC702	IC902	IS6*		IS6*	IC702
		IC902	IC902	IC903	IC902		IS902**	IC903
		IC903	IC903		**IC903**		IC903	
		IC608	IC608	**IC608**	IC608		**IC900 (908)**	IC608
		IC900 (908)	**IC900 (908)**	IC900 (908)	**IC900 (908)**		**IC300 (308)**	**IC900 (908)**
Roughing/ Semi-Finishing								
				IC300 (308)		**IC08**	IC08	
	Tougher							
Coolant		N	Y	Y	N	Y	Y	N
Solid & MULTI-MASTER Endmills	Harder	**IC702**	**IC702**	IC902	IS6*		**IC902**	**IC702**
		IC902	**IC902**	IC608	IC902		**IC903**	**IC902**
		IC903	IC903	**IC300 (308)**	**IC903**		IC900 (908)	IC903
		IC608	IC608		IC608			IC608
		IC900 (908)	IC900 (908)	IC900 (908)	IC900 (908)			IC900 (908)
							IC08	
Finishing	Tougher					**IC08**		
Coolant		N	Y	Y	N	Y	Y	N

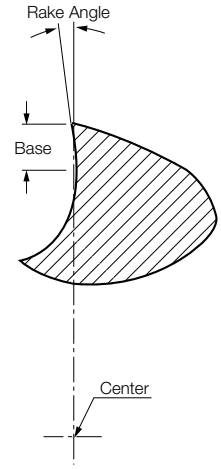
First choice
* SiAiON grade
** First choice for trochoidal milling

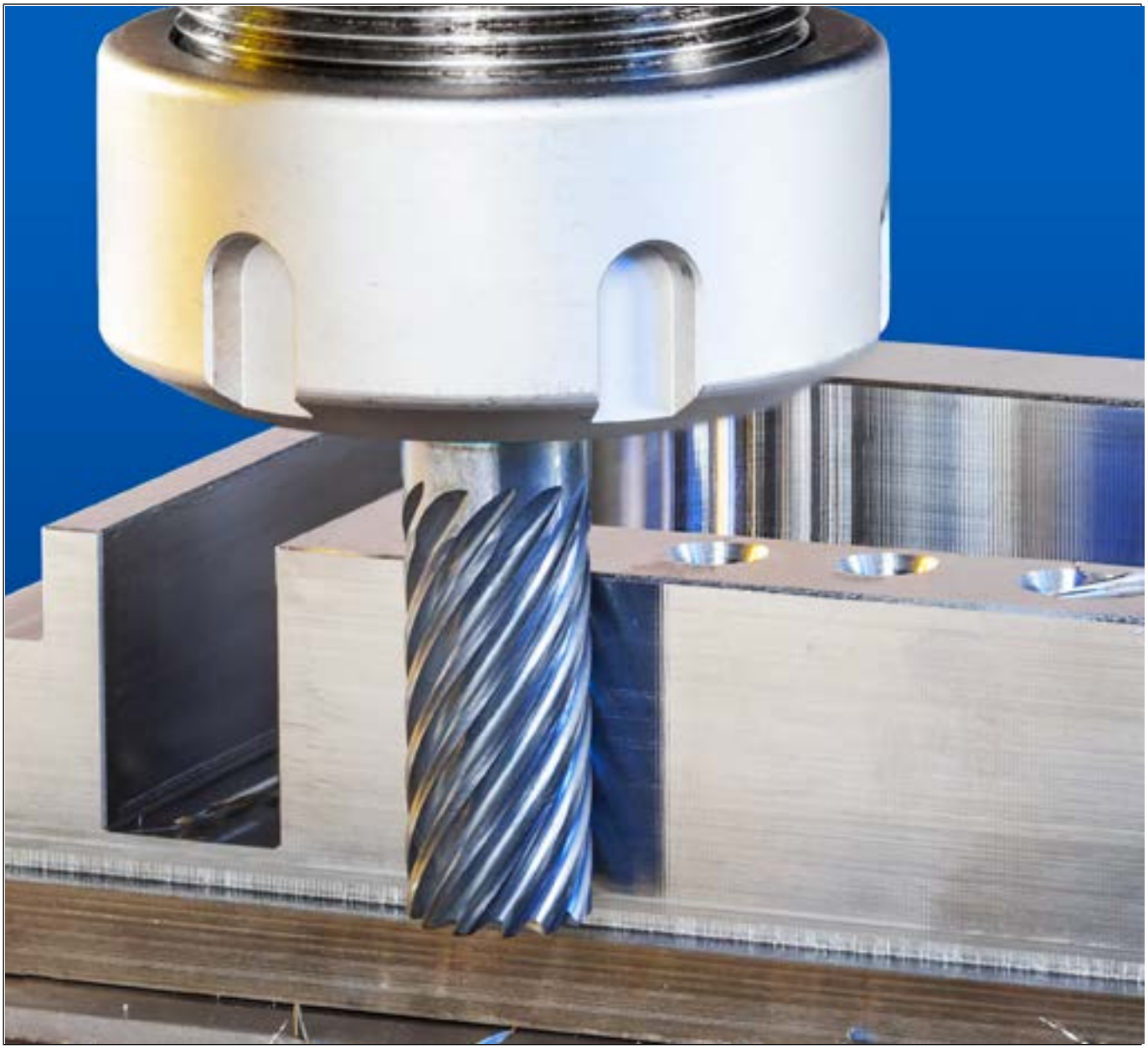
Machining Data for Solid Carbide and MULTI-MASTER Endmills

ISO	Material		Condition	Tensile Strength [N/mm²]	Hardness HB	Material No.	Cutting Speed (m/min)			
							IC900/IC608	IC903	IC300	IC08
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	1	260-280	260-280	210-220	180-200
		>= 0.25 %C	Annealed	650	190	2	200-230	200-230	160-180	140-160
		< 0.55 %C	Quenched and tempered	850	250	3	160-220	160-220	130-180	110-150
		>= 0.55 %C	Annealed	750	220	4	160-220	160-220	130-180	110-150
			Quenched and tempered	1000	300	5	140-180	140-180	110-140	100-130
	Low alloy and cast steel (less than 5% of alloying elements)		Annealed	600	200	6	160-220	160-220	130-180	110-150
			Quenched and tempered	930	275	7	120-180	120-180	100-140	80-130
				1000	300	8	130-180	130-180	100-140	90-130
				1200	350	9	140-180	140-180	110-140	100-130
	High alloyed steel, cast steel and tool steel		Annealed	680	200	10	130-180	130-180	100-140	90-130
			Quenched and tempered	1100	325	11	70-120	70-120	60-100	50-80
	Stainless steel and cast steel		Ferritic/martensitic.	680	200	12	80-160	80-160	60-130	60-110
			Martensitic	820	240	13	60-150	60-150	50-120	40-100
M	Stainless steel and cast steel		Austenitic	600	180	14	60-120	60-120	50-100	40-80
K	Grey cast iron (GG)		Ferritic/pearlitic		180	15	80-260	80-250	60-210	60-180
			Pearlitic/martensitic		260	16	130-240	130-240	100-190	90-170
	Cast iron nodular (GGG)		Ferritic		160	17	150-280	150-270	120-220	100-200
			Pearlitic		250	18	90-280	90-270	70-220	60-200
	Malleable cast iron		Ferritic		130	19	150-280	150-270	120-220	100-200
			Pearlitic		230	20	140-240	140-240	110-190	100-170
N	Aluminum-wrought alloys		Not cureable		60	21				800-900
			Cured		100	22				700-800
	Aluminum-cast-alloys	<=12% Si	Not cureable		75	23				800-900
			Cured		90	24				750-850
		>12% Si	High temperature		130	25				400-450
	Copper alloys	>1% Pb	Free cutting		110	26				500-550
			Brass		90	27				500-550
			Electrolitic copper		100	28				350-380
	Non-metallic		Duroplastics, fiber plastics			29				
			Hard rubber			30				
S	High temp. alloys	Fe based	Annealed		200	31	20-40	20-40	20-30	10-20
			Cured		280	32	20-40	20-30	20-20	10-20
		Ni or Co based	Annealed		250	33	20-50	20-30	20-20	20-50
			Cured		350	34	20-70	20-30	20-20	20-50
			Cast		320	35	30-70	30-80	20-60	20-50
	Titanium Ti alloys			RM 400		36	30-70	30-80	20-60	20-30
			Alpha+beta alloys cured	RM 1050		37	30-70	30-80	20-60	20-30
H	Hardened steel		Hardened		55 HRC	38	30-50	30-60	20-40	40-60
			Hardened		60 HRC	39	30-40	30-40	20-30	20-30
	Chilled cast iron		Cast		400	40	60-80	70-90	50-60	65-75
	Cast iron		Hardened		55 HRC	41	30-50	30-60	20-40	40-45

Regrinding Instructions for Solid Carbide Endmills (continued)
Base Distance for Rake Angle Measurement

Tool Diameter Base Distance		Tool Diameter Base Distance	
mm	in	mm	in
0.5<d1≤0.7	.02<d1≤.03	0.03	.001181
0.7<d1≤0.8	.03<d1≤.032	0.04	.001574
0.8<d1≤1.0	.032<d1≤.04	0.05	.001968
1.0<d1≤1.2	.04<d1≤.05	0.065	.002559
1.2<d1≤1.4	.05<d1≤.055	0.075	.002952
1.4<d1≤1.6	.055<d1≤.063	0.085	.003346
1.6<d1≤2	.063<d1≤.08	0.1	.003937
2<d1≤4	.08<d1≤.158	0.2	.007874
4<d1≤6.35	.158<d1≤.25	0.3	.01181
6.35<d1≤8	.25<d1≤.315	0.4	.01574
8<d1≤13	.315<d1≤.512	0.5	.01968
13<d1≤21	.512<d1≤.827	0.6	.02362
21<d1≤27	.827<d1≤1.063	0.7	.02755
27<d1≤	1.063<d1	0.8	.03149





Circle Segment Lines for Advanced Finish Milling Operations

Barrel Endmill

ISCAR's Barrel line comprises a variety of solid carbide endmills and **MULTI-MASTER** heads in different shapes: Oval, Taper & Lens.
For more information, refer to NPA 22-2020

Solid Carbide Endmills

Oval Barrel – EOB
Taper Barrel – ETB
Lens Barrel – ELB

MULTI-MASTER Heads

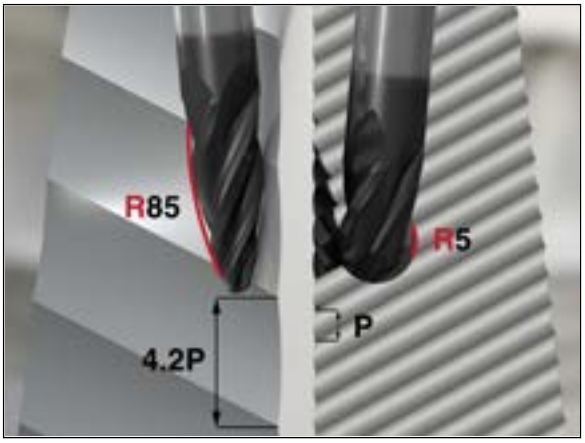
Oval Barrel – MM EOB
Lens Barrel – MM ELB

Barrel endmills are intended for finish and semi-finish machining of 3D surfaces

Blade Rough	Blade Finish
	

A prominent advantage of a Barrel endmill over a Ball-Nose is the number of stepovers and, subsequent, machining time can be significantly reduced without degradation of the surface finish parameters.

The large-diameter arc of the endmill cutting edge results in a substantial reduction of the cusp height.

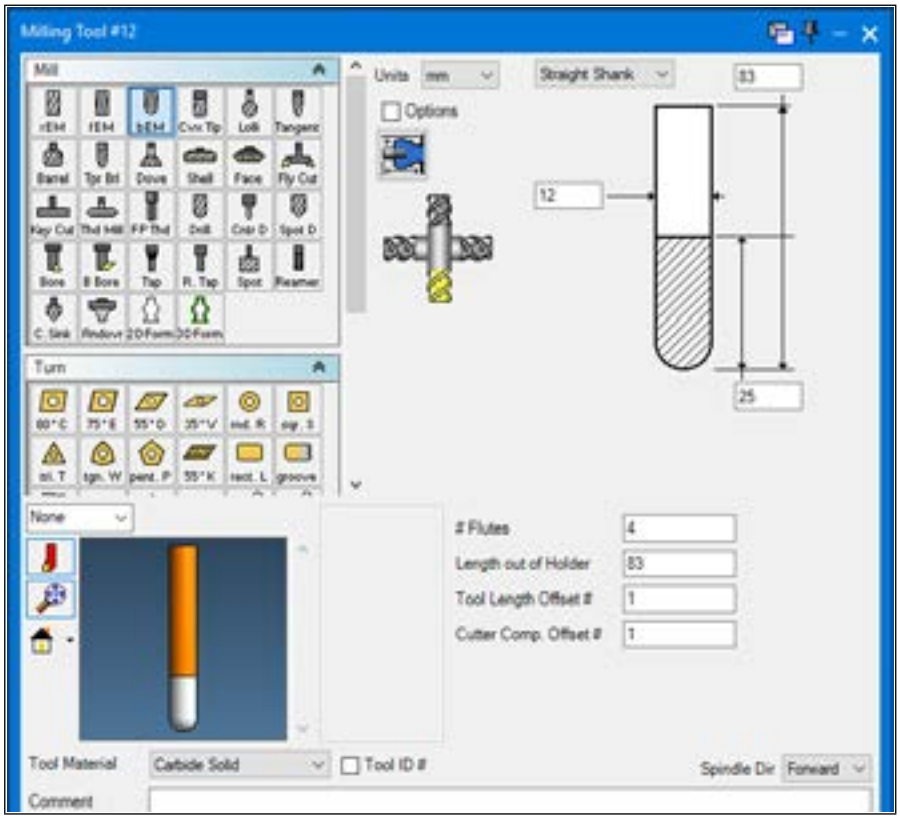


Machining Guidelines

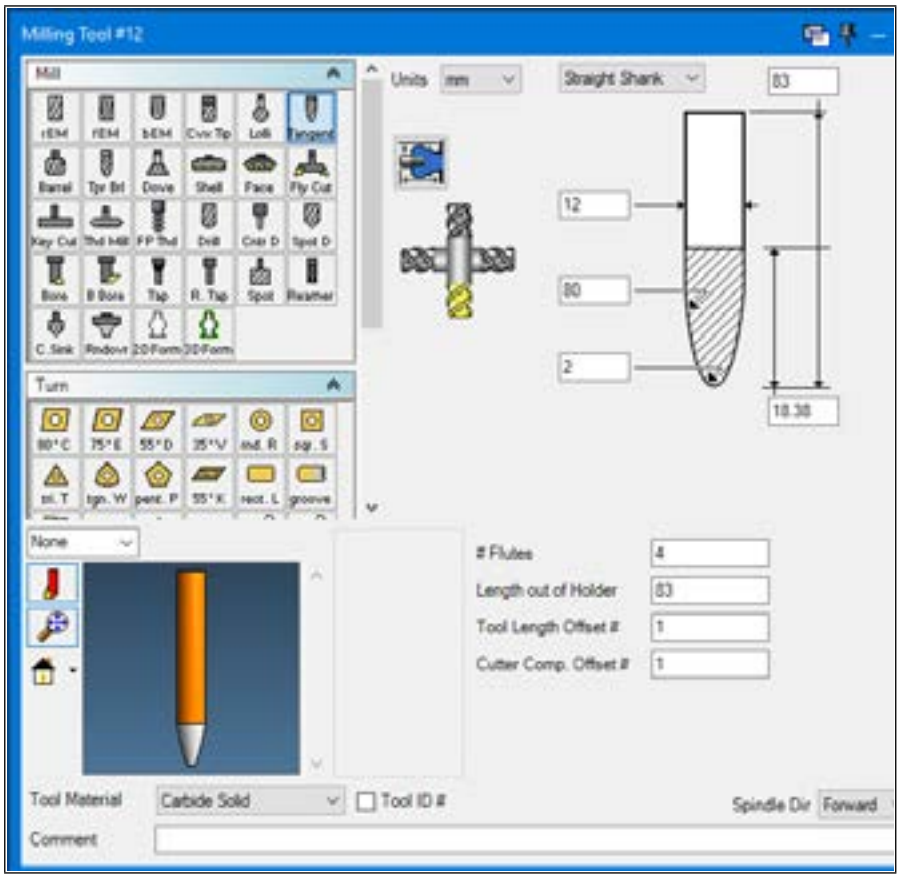
The Most Important Thing to Remember

Programming circle segment tooling requires a supporting CAM system

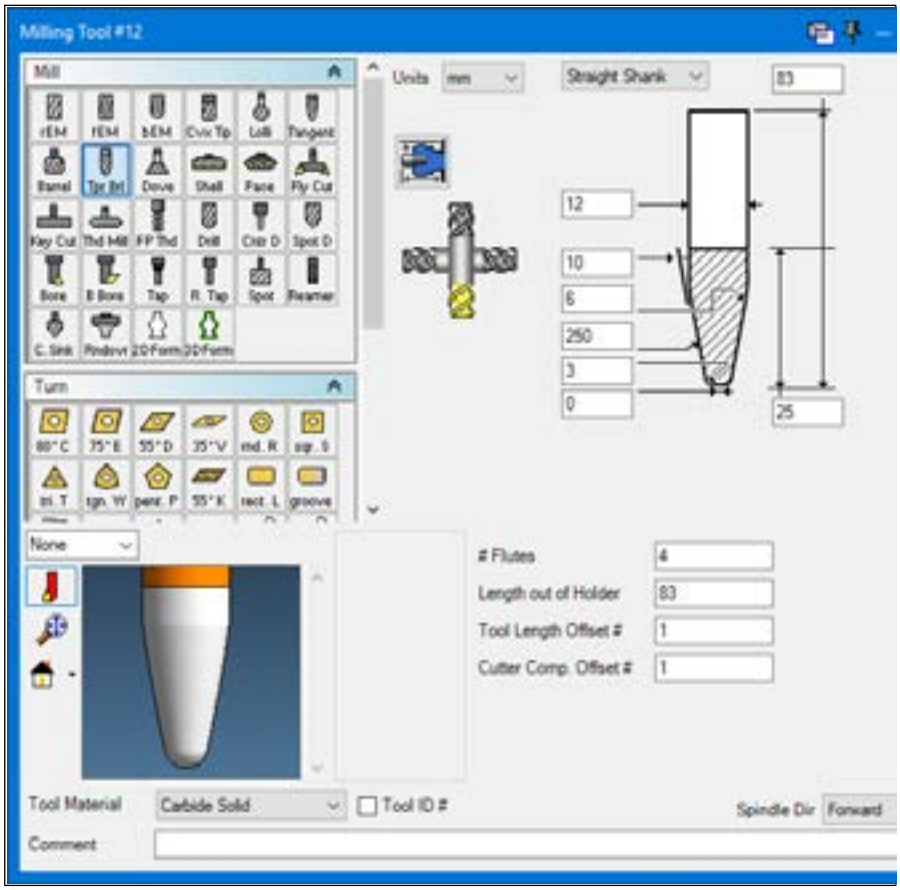
- **Step #1 – for Ball-Nose**
  Select a Ball-Nose tool configuration and define its parameters.



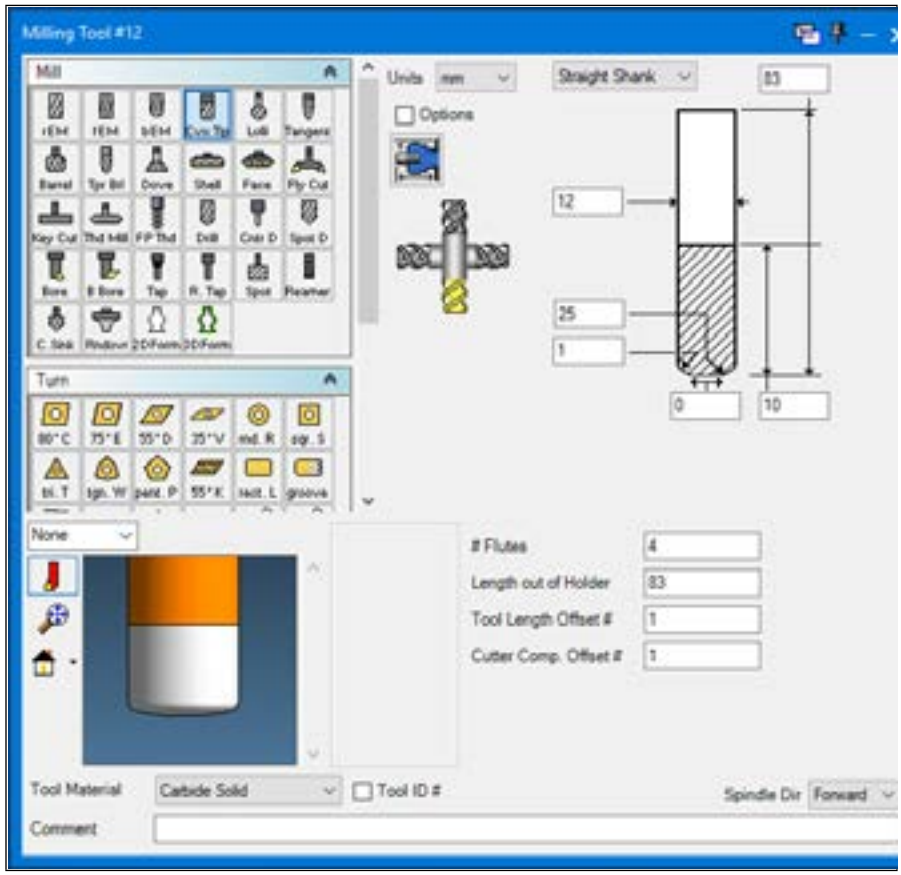
- **Step #1 – for Oval Shape**
  Select a Barrel tool configuration and define its parameters.



- **Step #1 – for Taper Shape**
  Select a Taper tool configuration and set its parameters.



- **Step #1 – for Lens Shape**
  Select a Lens tool configuration and set its parameters.



- **Step #2**
  Select the process. Each CAM defines different relevant processes, for example:
  Surface, 5-Axis, Adv3D, etc.

Remember:

The advantage of barrel endmills is realized when used for 5 axis, finish milling operations

Important

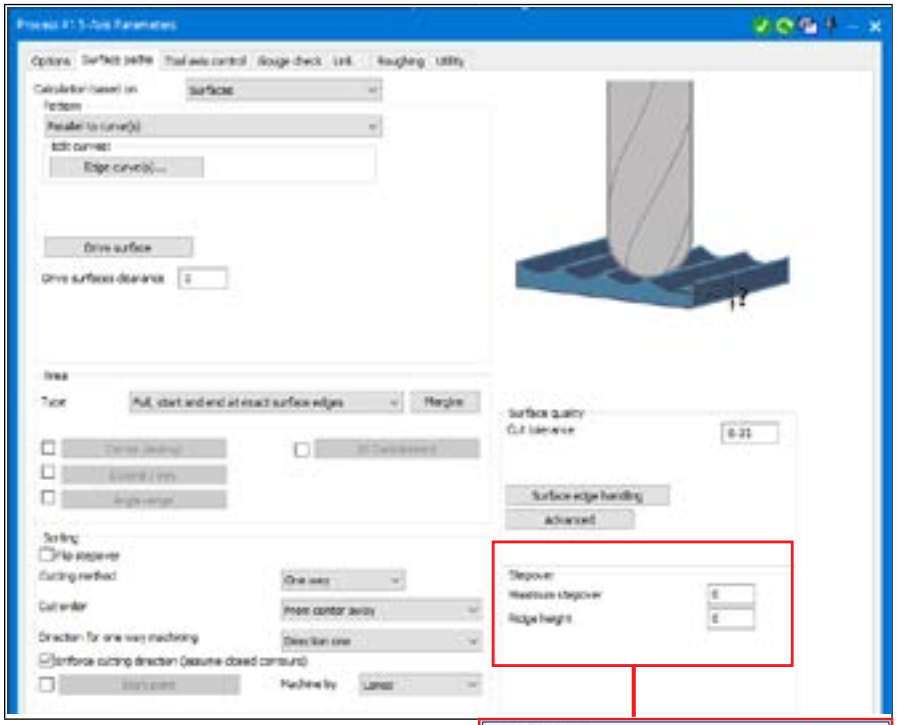
Each CAM software has its own features to configure the tools and their machining processes, but the definitions are similar.

The following example demonstrates only one way to define a Surface Finish (Ra) and is process dependent. In this example you will notice how many stepovers are required in order to obtain the same Ra with different tools.

There are many different options to define the required results from a tool.

Example

Same Ra – Different stepovers



Ball Nose Ø12 R6 [Ø.472″ R.236″]	Stepover Maximum stepover 2
Oval Ø12 R80 [Ø.472″ R3.15″]	Stepover Maximum stepover 7.4
Taper Ø12 R250 [Ø.472″ R9.84″]	Stepover Maximum stepover 13.5
Lens Ø12 R25 [Ø.472″ R.98″]	Stepover Maximum stepover 4.09

Take Into Consideration

Barrel milling should not always be considered the answer to finishing all 3D machined surfaces. Some part shapes are not conducive to Barrel milling operations. Sometimes, the blend radii of the machined part or the kinetics of the machine result in a complicated CAM tool path which may increase the cycle time compared to using a conventional Ball-Nose milling approach. This is where the need for a highly skilled programmer to make good and effective decisions comes into play.

Recommended Cutting Parameters to Start with (Metric)

ISO	Material		Condition	Tensile Strength [N/mm²]	Hardness HB	Material No. (1)	Cutting Parameters		
							V_c m/min	f_z mm/t	f_z start
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	1	210-300	0.005-0.01xD	0.006xD
		>= 0.25 %C	Annealed	650	190	2	200-250	0.005-0.01xD	0.006xD
		< 0.55 %C	Quenched and tempered						
				850	250	3	160-240	0.004-0.009xD	0.005xD
		>= 0.55 %C	Annealed	750	220	4	160-240	0.003-0.008xD	0.004xD
			Quenched and tempered	1000	300	5	140-200	0.004-0.009xD	0.005xD
	Low alloy and cast steel (less than 5% of alloying elements)		Annealed	600	200	6	160-240	0.003-0.008xD	0.004xD
			Quenched and tempered	930	275	7	120-200	0.003-0.008xD	0.004xD
				1000	300	8	130-200	0.003-0.008xD	0.004xD
				1200	350	9	140-200	0.003-0.008xD	0.004xD
	High alloyed steel, cast steel and tool steel		Annealed	680	200	10	130-200	0.003-0.008xD	0.004xD
			Quenched and tempered	1100	325	11	70-130	0.002-0.007xD	0.003xD
			Ferritic/martensitic	680	200	12	80-175	0.002-0.007xD	0.003xD
	Stainless steel and cast steel		Martensitic	820	240	13	60-165	0.002-0.007xD	0.003xD
M	Stainless steel and cast steel		Austenitic	600	180	14	60-110	0.002-0.007xD	0.003xD
K	Grey cast iron (GG)		Ferritic/pearlitic		180	15	150-275	0.005-0.01xD	0.006xD
			Pearlitic		260	16	150-265	0.005-0.01xD	0.006xD
	Cast iron nodular (GGG)		Ferritic		160	17	150-200	0.005-0.01xD	0.006xD
			Pearlitic		250	18	90-150	0.004-0.009xD	0.005xD
	Malleable cast iron		Ferritic		130	19	150-200	0.005-0.01xD	0.006xD
			Pearlitic		230	20	90-150	0.004-0.009xD	0.005xD
S	High temp. alloys	Fe based	Annealed		200	31	20-45	0.002-0.004xD	0.003xD
			Cured		280	32	20-35	0.002-0.004xD	0.003xD
		Ni or Co based	Annealed		250	33	20-35	0.002-0.004xD	0.003xD
			Cured		350	34	20-35	0.002-0.004xD	0.003xD
			Cast		320	35	60-90	0.002-0.004xD	0.003xD
	Titanium alloys		Pure	Rm = 400		36	60-90	0.002-0.004xD	0.003xD
			Alpha+beta alloys cured	Rm = 1050		37	60-90	0.002-0.004xD	0.003xD
H	Hardened steel		Hardened		55 HRC	38	40-80	0.001-0.003xD	0.002xD
			Hardened		60 HRC	39			
	Chilled cast iron		Cast		400	40	40-80	0.001-0.003xD	0.002xD
	Cast iron		Hardened		55 HRC	41	40-80	0.001-0.003xD	0.002xD