Leading Through Innovation

SOLID CARBIDE

ALU-POWER HPC END MILLS

Alu Power HPC VHM Fräser

- For Aluminium, Aluminum Die Cast, Non-ferrous Alloys and Plastics
- Für Aluminium, Aluminiumdruckguss, Nichteisenlegierungen und Kunststoffe

SELECTION GUIDE

MILLING TOOLS

SOLID CARBIDE ALU-POWER HPC END MILLS

3-Flute, High-Performance,
For Aluminum, Aluminum Die Cast,
Non-Ferrous Alloys And Plastics

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P 474

SERIES	E5H24 JAH24	E5H25 JAH25	E5H22 JAH22	E5H23 JAH23
FLUTE	3	3	3	3
HELIX ANGLE	37°	37°	37°	37°
CUTTING EDGE SHAPE	CORNER RADIUS	CORNER RADIUS	SQUARE	SQUARE
SIZE MIN	D6.0	D6.0	D3.0	D6.0
SIZE MAX	D20.0	D20.0	D25.0	D20.0
PAGE	466	469	472	473
	-	EXTENDED NECK	-	EXTENDED NECK
	Uncoated	Uncoated	Uncoated	Uncoated
	DLC	DLC	DLC	DLC

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc	E5H24 JAH24	E5H25 JAH25	E5H22 JAH22	E5H23 JAH23
P	1	Non-alloy steel	About 0.15% C	Annealed	125					
	2		About 0.45% C	Annealed	190	13				
	3		About 0.45% C	Quenched & Tempered	250	25				
	4		About 0.75% C	Annealed	270	28				
	5		About 0.75% C	Quenched & Tempered	300	32				
	6	Low alloy steel		Annealed	180	10				
	7			Quenched & Tempered	275	29				
	8			Quenched & Tempered	300	32				
	9			Quenched & Tempered	350	38				
	10	High alloyed steel, and tool steel		Annealed	200	15				
	11			Quenched & Tempered	325	35				
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15				
	13		Martensitic	Quenched & Tempered	240	23				
	14		Austenitic		180	10				
K	15	Grey cast iron	Pearlitic / ferritic		180	10				
	16		Pearlitic (Martensitic)		260	26				
	17	Nodular cast iron	Ferritic		160	3				
	18		Pearlitic		250	25				
	19	Malleable cast iron	Ferritic		130					
	20		Pearlitic		230	21				
N	21	Aluminum-wrought alloy	Not Curable		60		◎	◎	◎	◎
	22		Curable	Hardened	100		◎	◎	◎	◎
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75		◎	◎	◎	◎
	24		≤ 12% Si, Curable	Hardened	90		◎	◎	◎	◎
	25		> 12% Si, Not Curable		130		○	○	○	○
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110		○	○	○	○
	27		CuZn, CuSnZn (Brass)		90		○	○	○	○
	28		CuSn, lead-free copper and electrolytic copper		100		○	○	○	○
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic				○	○	○	○
	30		Rubber, Wood, etc.							
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15				
	32			Cured	280	30				
	33		Ni or Co Based	Annealed	250	25				
	34			Cured	350	38				
	35			Cast	320	34				
	36	Titanium Alloys	Pure Titanium		400 Rm					
	37		Alpha + Beta Alloys	Hardened	1050 Rm					
H	38	Hardened steel		Hardened	550	55				
	39			Hardened	630	60				
	40	Chilled Cast Iron		Cast	400	42				
	41	Hardened Cast Iron		Hardened	550	55				

Scan QR Code to See Catalogue
AEROSPACE SOLUTIONS & COMPOSITE METERIALS

CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR TYPE END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
JET-POWER END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-POWER END MILLS
D-POWER GRAPHITE END MILLS
D-POWER CFRP END MILLS
ROUTERS
CRX S END MILLS
K-2 END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTER
TECHNICAL DATA

ALU-POWER HPC END MILLS

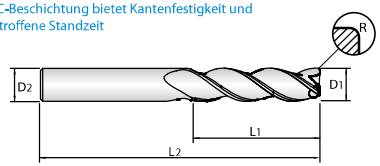
UNCOATED **E5H24** SERIES
DLC COATED **JAH24** SERIES
PLAIN SHANK

CARBIDE, 3 FLUTE 37° HELIX CORNER RADIUS

Vollhartmetall, 3 Schneiden 37° Eckradius
Fraise carbure, 3 dents, torique, hélice 37°
3 TAGLIENTI, ELICA 37°, SPIGOLO RAGGIATO

- Balanced cutting with less vibration
- Ability to run at higher speeds with less heat in aluminum
- More efficient chip evacuation
- Ability to counteract extreme radial forces
- DLC Coating provides edge strength and unsurpassed tool life

- Ausgewogenes Fräsen, mit weniger Vibrationen
- Höhere Schnittgeschwindigkeiten möglich bei weniger Wärmeeinbringung in den Werkstoff Aluminium
- Effizientere Spanabfuhr
- Fähigkeit, extremen Radialkräften entgegenzuwirken
- Die DLC-Beschichtung bietet Kantenfestigkeit und unübertroffene Standzeit



CARBIDE 3 37° PLAIN P.474

Unit : mm

EDP No. Uncoated	EDP No. DLC	Corner Radius R	Mill Diameter D_1	Shank Diameter D_2	Length of Cut L_1	Overall Length L_2
E5H24060	JAH24060	R0.5	6.0	6	13	57
E5H24901	JAH24901	R1.0	6.0	6	13	57
E5H24902	JAH24902	R1.5	6.0	6	13	57
E5H24903	JAH24903	R0.8	6.0	6	13	72
E5H24904	JAH24904	R1.2	6.0	6	13	72
E5H24905	JAH24905	R0.5	6.0	6	24	75
E5H24906	JAH24906	R1.0	6.0	6	24	75
E5H24080	JAH24080	R0.3	8.0	8	19	63
E5H24907	JAH24907	R0.5	8.0	8	19	63
E5H24908	JAH24908	R1.0	8.0	8	19	63
E5H24909	JAH24909	R1.5	8.0	8	19	63
E5H24910	JAH24910	R0.5	8.0	8	32	75
E5H24911	JAH24911	R1.0	8.0	8	32	75
E5H24912	JAH24912	R1.5	8.0	8	32	75
E5H24913	JAH24913	R2.0	8.0	8	32	75
E5H24100	JAH24100	R0.3	10.0	10	22	72
E5H24914	JAH24914	R0.5	10.0	10	22	72
E5H24915	JAH24915	R1.0	10.0	10	22	72
E5H24916	JAH24916	R1.5	10.0	10	22	72
E5H24917	JAH24917	R0.5	10.0	10	40	100

▶ NEXT PAGE

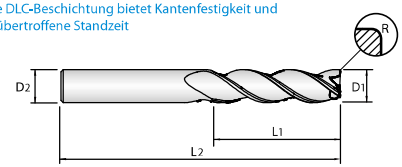
Mill Diameter Tolerences (mm)		Shank Diameter Tolerance
Diameter	Tolerance	
Up to 3	+0/-0.006	h5
Over 3 ~ up to 6	+0/-0.008	
Over 6 ~ up to 10	+0/-0.009	
Over 10 ~ up to 18	+0/-0.011	
Over 18 ~ up to 25	+0/-0.013	

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend																				

ISO	N									S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials	Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	◎	◎	◎	◎	○	○	○	○	○												

ALU-POWER HPC END MILLS
UNCOATED E5H24 SERIES
DLC COATED JAH24 SERIES
PLAIN SHANK
CARBIDE, 3 FLUTE 37° HELIX CORNER RADIUS
Vollhartmetall, 3 Schneiden 37° Eckradius
Fraise carbure, 3 dents, torique, hélice 37°
3 TAGLIENTI, ELICA 37°, SPIGOLO RAGGIATO
- Balanced cutting with less vibration
- Ability to run at higher speeds with less heat in aluminum
- More efficient chip evacuation
- Ability to counteract extreme radial forces
- DLC Coating provides edge strength and unsurpassed tool life
- Ausgewogenes Fräsen, mit weniger Vibrationen
- Höhere Schnittgeschwindigkeiten möglich bei weniger Wärmeeinbringung in den Werkstoff Aluminium
- Effizientere Spanabfuhr
- Fähigkeit, extremen Radialkräften entgegenzuwirken
- Die DLC-Beschichtung bietet Kantenfestigkeit und unübertroffene Standzeit



CARBIDE 3 37° PLAIN P.474
Unit : mm

EDP No. Uncoated	EDP No. DLC	Corner Radius R	Mill Diameter D_1	Shank Diameter D_2	Length of Cut L_1	Overall Length L_2
E5H24918	JAH24918	R1.0	10.0	10	40	100
E5H24919	JAH24919	R1.5	10.0	10	40	100
E5H24920	JAH24920	R2.0	10.0	10	40	100
E5H24120	JAH24120	R1.5	12.0	12	26	83
E5H24921	JAH24921	R2.0	12.0	12	26	83
E5H24922	JAH24922	R2.5	12.0	12	26	83
E5H24923	JAH24923	R3.0	12.0	12	26	83
E5H24924	JAH24924	R0.5	12.0	12	48	100
E5H24925	JAH24925	R1.0	12.0	12	48	100
E5H24926	JAH24926	R1.5	12.0	12	48	100
E5H24927	JAH24927	R2.0	12.0	12	48	100
E5H24928	JAH24928	R2.5	12.0	12	48	100
E5H24929	JAH24929	R3.0	12.0	12	48	100
E5H24140	JAH24140	R1.0	14.0	14	30	89
E5H24930	JAH24930	R2.0	14.0	14	30	89
E5H24931	JAH24931	R3.0	14.0	14	30	89
E5H24160	JAH24160	R1.5	16.0	16	32	92
E5H24932	JAH24932	R2.0	16.0	16	32	92
E5H24933	JAH24933	R2.5	16.0	16	32	92
E5H24934	JAH24934	R3.0	16.0	16	32	92

▶ NEXT PAGE

Mill Diameter Tolerences (mm) / Shank Diameter Tolerance
Diameter / Tolerance
Up to 3 +0/-0.006
Over 3 ~ up to 6 +0/-0.008
Over 6 ~ up to 10 +0/-0.009
Over 10 ~ up to 18 +0/-0.011
Over 18 ~ up to 25 +0/-0.013
h5
◎ : Excellent ○ : Good
ISO P M K
Material Description: Non-alloy steel, Low alloy steel, High alloyed steel and tool steel, Stainless steel, Grey cast iron, Nodular cast iron, Malleable cast iron
VDI 3323 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
HRc 13 25 28 32 10 29 32 38 15 35 15 23 10 10 26 3 25 21
HB 125 190 250 270 300 180 275 300 350 200 325 200 240 180 180 260 160 250 130 230
Recommend
ISO N S H
Material Description: Aluminum-wrought alloy, Aluminum-cast, alloyed, Copper and Copper Alloys (Bronze / Brass), Non Metallic Materials, Heat Resistant Super Alloys, Titanium Alloys, Hardened steel, Chilled Cast Iron, Hardened Cast Iron
VDI 3323 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41
HRc 15 30 25 38 34 55 60 42 55
HB 60 100 75 90 130 110 90 100 200 280 250 350 320 400 Rm 1050 Rm 550 630 400 550
Recommend ◎ ◎ ◎ ◎ ○ ○ ○ ○ ○

ALU-POWER HPC END MILLS

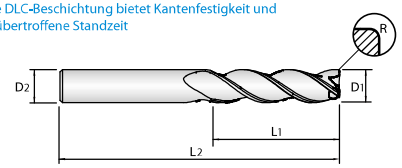
UNCOATED **E5H24** SERIES
DLC COATED **JAH24** SERIES
PLAIN SHANK

CARBIDE, 3 FLUTE 37° HELIX CORNER RADIUS

Vollhartmetall, 3 Schneiden 37° Eckradius
Fraise carbure, 3 dents, torique, hélice 37°
3 TAGLIENTI, ELICA 37°, SPIGOLO RAGGIATO

- Balanced cutting with less vibration
- Ability to run at higher speeds with less heat in aluminum
- More efficient chip evacuation
- Ability to counteract extreme radial forces
- DLC Coating provides edge strength and unsurpassed tool life

- Ausgewogenes Fräsen, mit weniger Vibrationen
- Höhere Schnittgeschwindigkeiten möglich bei weniger Wärmeeinbringung in den Werkstoff Aluminium
- Effizientere Spanabfuhr
- Fähigkeit, extremen Radialkräften entgegenzuwirken
- Die DLC-Beschichtung bietet Kantenfestigkeit und unübertroffene Standzeit



CARBIDE 3 37° PLAIN P.474

Unit : mm

EDP No.		Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
Uncoated	DLC	R	D1	D2	L1	L2
E5H24935	JAH24935	R4.0	16.0	16	32	92
E5H24936	JAH24936	R0.5	16.0	16	64	125
E5H24937	JAH24937	R1.0	16.0	16	64	125
E5H24938	JAH24938	R1.5	16.0	16	64	125
E5H24939	JAH24939	R2.0	16.0	16	64	125
E5H24940	JAH24940	R2.5	16.0	16	64	125
E5H24941	JAH24941	R3.0	16.0	16	64	125
E5H24942	JAH24942	R4.0	16.0	16	64	125
E5H24200	JAH24200	R2.0	20.0	20	38	104
E5H24943	JAH24943	R2.5	20.0	20	38	104
E5H24944	JAH24944	R3.0	20.0	20	38	104
E5H24945	JAH24945	R4.0	20.0	20	38	104
E5H24946	JAH24946	R0.5	20.0	20	80	150
E5H24947	JAH24947	R1.0	20.0	20	80	150
E5H24948	JAH24948	R1.5	20.0	20	80	150
E5H24949	JAH24949	R2.0	20.0	20	80	150
E5H24950	JAH24950	R2.5	20.0	20	80	150
E5H24951	JAH24951	R3.0	20.0	20	80	150
E5H24952	JAH24952	R4.0	20.0	20	80	150

Mill Diameter Tolerences (mm)		Shank Diameter Tolerance
Diameter	Tolerance	
Up to 3	+0/-0.006	h5
Over 3 ~ up to 6	+0/-0.008	
Over 6 ~ up to 10	+0/-0.009	
Over 10 ~ up to 18	+0/-0.011	
Over 18 ~ up to 25	+0/-0.013	

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend																				

ISO	N									S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials	Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	◎	◎	◎	◎	○	○	○	○	○												

ALU-POWER HPC END MILLS

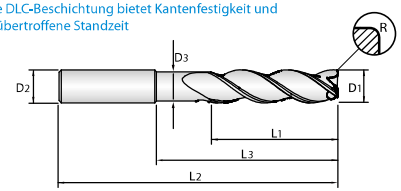
UNCOATED **E5H25** SERIES
DLC COATED **JAH25** SERIES
PLAIN SHANK

CARBIDE, 3 FLUTE 37° HELIX CORNER RADIUS with EXTENDED NECK

Vollhartmetall, 3 Schneiden 37° Eckradius mit verlängertem Hals
Fraise carbure, 3 dents, torique, hélice 37°, détalonnée, extra-courte
3 TAGLIENTI , ELICA 37°, SPIGOLO RAGGIATO SCARICATA

- Balanced cutting with less vibration
- Ability to run at higher speeds with less heat in aluminum
- More efficient chip evacuation
- Ability to counteract extreme radial forces
- DLC Coating provides edge strength and unsurpassed tool life

- Ausgewogenes Fräsen, mit weniger Vibrationen
- Höhere Schnittgeschwindigkeiten möglich bei weniger Wärmeeinbringung in den Werkstoff Aluminium
- Effizientere Spanabfuhr
- Fähigkeit, extremen Radialkräften entgegenzuwirken
- Die DLC-Beschichtung bietet Kantenfestigkeit und unübertroffene Standzeit



CARBIDE 3 37° PLAIN P.474

Unit : mm

EDP No.		Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
Uncoated	DLC	R	D1	D2	L1	L3	L2	D3
E5H25060	JAH25060	R0.5	6.0	6	10	20	63	5.7
E5H25901	JAH25901	R1.0	6.0	6	10	20	63	5.7
E5H25902	JAH25902	R0.5	6.0	6	13	30	72	5.7
E5H25903	JAH25903	R1.0	6.0	6	13	30	72	5.7
E5H25080	JAH25080	R0.3	8.0	8	12	25	75	7.4
E5H25904	JAH25904	R0.5	8.0	8	12	25	75	7.4
E5H25905	JAH25905	R0.8	8.0	8	12	25	75	7.4
E5H25906	JAH25906	R1.0	8.0	8	12	25	75	7.4
E5H25907	JAH25907	R1.2	8.0	8	12	25	75	7.4
E5H25908	JAH25908	R1.5	8.0	8	12	25	75	7.4
E5H25909	JAH25909	R1.6	8.0	8	12	25	75	7.4
E5H25100	JAH25100	R0.3	10.0	10	14	35	100	9.2
E5H25910	JAH25910	R0.5	10.0	10	14	35	100	9.2
E5H25911	JAH25911	R0.8	10.0	10	14	35	100	9.2
E5H25912	JAH25912	R1.0	10.0	10	14	35	100	9.2
E5H25913	JAH25913	R1.2	10.0	10	14	35	100	9.2
E5H25914	JAH25914	R1.5	10.0	10	14	35	100	9.2
E5H25915	JAH25915	R1.6	10.0	10	14	35	100	9.2

▶ NEXT PAGE

Mill Diameter Tolerences (mm)		Shank Diameter Tolerance
Diameter	Tolerance	
Up to 3	+0/-0.006	h5
Over 3 ~ up to 6	+0/-0.008	
Over 6 ~ up to 10	+0/-0.009	
Over 10 ~ up to 18	+0/-0.011	
Over 18 ~ up to 25	+0/-0.013	

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend																				

ISO	N									S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials	Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	◎	◎	◎	◎	○	○	○	○	○												

CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
JET-POWER END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-POWER END MILLS
D-POWER GRAPHITE END MILLS
D-POWER CFRP END MILLS
ROUTERS
CRX S END MILLS
K-2 END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

ALU-POWER HPC END MILLS

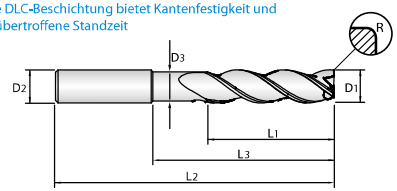
UNCOATED **E5H25** SERIES
DLC COATED **JAH25** SERIES
PLAIN SHANK

CARBIDE, 3 FLUTE 37° HELIX CORNER RADIUS with EXTENDED NECK

Vollhartmetall, 3 Schneiden 37° Eckradius mit verlängertem Hals
Fraise carbure, 3 dents, torique, hélice 37°, détalonnée, extra-courte
3 TAGLIENTI , ELICA 37°, SPIGOLO RAGGIATO SCARICATA

- Balanced cutting with less vibration
- Ability to run at higher speeds with less heat in aluminum
- More efficient chip evacuation
- Ability to counteract extreme radial forces
- DLC Coating provides edge strength and unsurpassed tool life

- Ausgewogenes Fräsen, mit weniger Vibrationen
- Höhere Schnittgeschwindigkeiten möglich bei weniger Wärmeeinbringung in den Werkstoff Aluminium
- Effizientere Spanabfuhr
- Fähigkeit, extremen Radialkräften entgegenzuwirken
- Die DLC-Beschichtung bietet Kantenfestigkeit und unübertroffene Standzeit



CARBIDE 3 37° PLAIN P.474

Unit : mm

EDP No. Uncoated	EDP No. DLC	Corner Radius R	Mill Diameter D_1	Shank Diameter D_2	Length of Cut L_1	Length Below Shank L_3	Overall Length L2	Neck Diameter D3
E5H25916	**JAH25916**	R2.4	**10.0**	10	14	35	100	9.2
E5H25120	**JAH25120**	R0.5	**12.0**	12	16	40	100	11.0
E5H25917	**JAH25917**	R0.8	**12.0**	12	16	40	100	11.0
E5H25918	**JAH25918**	R1.0	**12.0**	12	16	40	100	11.0
E5H25919	**JAH25919**	R1.2	**12.0**	12	16	40	100	11.0
E5H25920	**JAH25920**	R1.5	**12.0**	12	16	40	100	11.0
E5H25921	**JAH25921**	R1.6	**12.0**	12	16	40	100	11.0
E5H25922	**JAH25922**	R2.0	**12.0**	12	16	40	100	11.0
E5H25923	**JAH25923**	R2.4	**12.0**	12	16	40	100	11.0
E5H25924	**JAH25924**	R2.5	**12.0**	12	16	40	100	11.0
E5H25925	**JAH25925**	R3.0	**12.0**	12	16	40	100	11.0
E5H25926	**JAH25926**	R4.0	**12.0**	12	16	40	100	11.0
E5H25140	**JAH25140**	R1.0	**14.0**	14	18	45	125	13.0
E5H25927	**JAH25927**	R2.0	**14.0**	14	18	45	125	13.0
E5H25928	**JAH25928**	R3.0	**14.0**	14	18	45	125	13.0
E5H25929	**JAH25929**	R4.0	**14.0**	14	18	45	125	13.0
E5H25160	**JAH25160**	R0.8	**16.0**	16	20	50	125	15.0
E5H25930	**JAH25930**	R1.2	**16.0**	16	20	50	125	15.0

▶ NEXT PAGE

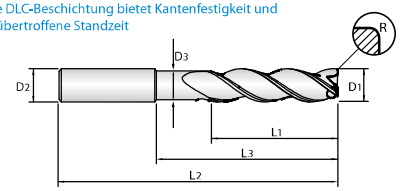
Mill Diameter Tolerences (mm)		Shank Diameter Tolerance
Diameter	Tolerance	
Up to 3	+0/-0.006	h5
Over 3 ~ up to 6	+0/-0.008	
Over 6 ~ up to 10	+0/-0.009	
Over 10 ~ up to 18	+0/-0.011	
Over 18 ~ up to 25	+0/-0.013	

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend																				

ISO	N									S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials	Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	◎	◎	◎	◎	○	○	○	○	○												

ALU-POWER HPC END MILLS
UNCOATED E5H25 SERIES
DLC COATED JAH25 SERIES
PLAIN SHANK
CARBIDE, 3 FLUTE 37° HELIX CORNER RADIUS with EXTENDED NECK
Vollhartmetall, 3 Schneiden 37° Eckradius mit verlängertem Hals
Fraise carbure, 3 dents, torique, hélice 37°, détalonnée, extra-courte
3 TAGLIENTI , ELICA 37°, SPIGOLO RAGGIATO SCARICATA
Balanced cutting with less vibration
Ability to run at higher speeds with less heat in aluminum
More efficient chip evacuation
Ability to counteract extreme radial forces
DLC Coating provides edge strength and unsurpassed tool life
Ausgewogenes Fräsen, mit weniger Vibrationen
Höhere Schnittgeschwindigkeiten möglich bei weniger Wärmeeinbringung in den Werkstoff Aluminium
Effizientere Spanabfuhr
Fähigkeit, extremen Radialkräften entgegenzuwirken
Die DLC-Beschichtung bietet Kantenfestigkeit und unübertroffene Standzeit



CARBIDE 3 37° PLAIN P.474

Unit : mm

EDP No. Uncoated	EDP No. DLC	Corner Radius R	Mill Diameter D_1	Shank Diameter D_2	Length of Cut L_1	Length Below Shank L_3	Overall Length L2	Neck Diameter D3
E5H25931	**JAH25931**	R1.6	**16.0**	16	20	50	125	15.0
E5H25932	**JAH25932**	R2.0	**16.0**	16	20	50	125	15.0
E5H25933	**JAH25933**	R2.4	**16.0**	16	20	50	125	15.0
E5H25934	**JAH25934**	R2.5	**16.0**	16	20	50	125	15.0
E5H25935	**JAH25935**	R3.0	**16.0**	16	20	50	125	15.0
E5H25936	**JAH25936**	R3.2	**16.0**	16	20	50	125	15.0
E5H25937	**JAH25937**	R4.0	**16.0**	16	20	50	125	15.0
E5H25200	**JAH25200**	R0.8	**20.0**	20	25	65	150	19.0
E5H25938	**JAH25938**	R1.2	**20.0**	20	25	65	150	19.0
E5H25939	**JAH25939**	R1.6	**20.0**	20	25	65	150	19.0
E5H25940	**JAH25940**	R2.0	**20.0**	20	25	65	150	19.0
E5H25941	**JAH25941**	R2.4	**20.0**	20	25	65	150	19.0
E5H25942	**JAH25942**	R2.5	**20.0**	20	25	65	150	19.0
E5H25943	**JAH25943**	R3.0	**20.0**	20	25	65	150	19.0
E5H25944	**JAH25944**	R3.2	**20.0**	20	25	65	150	19.0
E5H25945	**JAH25945**	R4.0	**20.0**	20	25	65	150	19.0

Mill Diameter Tolerences (mm)		Shank Diameter Tolerance
Diameter	Tolerance	
Up to 3	+0/-0.006	h5
Over 3 ~ up to 6	+0/-0.008	
Over 6 ~ up to 10	+0/-0.009	
Over 10 ~ up to 18	+0/-0.011	
Over 18 ~ up to 25	+0/-0.013	

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend																				

ISO	N									S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials	Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	◎	◎	◎	◎	○	○	○	○	○												

CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
JET-POWER END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-POWER END MILLS
D-POWER GRAPHITE END MILLS
D-POWER CFRP END MILLS
ROUTERS
CRX S END MILLS
K-2 END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

ALU-POWER HPC END MILLS

UNCOATED **E5H22** SERIES
DLC COATED **JAH22** SERIES
PLAIN SHANK

CARBIDE, 3 FLUTE 37° HELIX

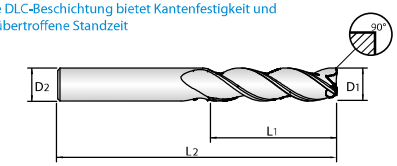
Vollhartmetall, 3 Schneiden 37°
Fraise carbure, torique, hélice 37°
3 TAGLIENTI, ELICA 37°

- Balanced cutting with less vibration
- Ability to run at higher speeds with less heat in aluminum
- More efficient chip evacuation
- Ability to counteract extreme radial forces
- DLC Coating provides edge strength and unsurpassed tool life

- Ausgewogenes Fräsen, mit weniger Vibrationen
- Höhere Schnittgeschwindigkeiten möglich bei weniger Wärmeeinbringung in den Werkstoff Aluminium
- Effizientere Spanabfuhr
- Fähigkeit, extremen Radialkräften entgegenzuwirken
- Die DLC-Beschichtung bietet Kantenfestigkeit und unübertroffene Standzeit

UNCOATED

DLC COATED



CARBIDE 3 37° PLAIN P.475

Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Overall Length
Uncoated	DLC	D_1	D_2	L_1	L_2
E5H22030	**JAH22030**	**3.0**	6	8	52
E5H22040	**JAH22040**	**4.0**	6	11	55
E5H22050	**JAH22050**	**5.0**	6	13	57
E5H22060	**JAH22060**	**6.0**	6	13	57
E5H22901	**JAH22901**	**6.0**	6	13	72
E5H22902	**JAH22902**	**6.0**	6	24	75
E5H22080	**JAH22080**	**8.0**	8	19	63
E5H22903	**JAH22903**	**8.0**	8	32	75
E5H22100	**JAH22100**	**10.0**	10	22	72
E5H22904	**JAH22904**	**10.0**	10	40	100
E5H22120	**JAH22120**	**12.0**	12	26	83
E5H22905	**JAH22905**	**12.0**	12	48	100
E5H22140	**JAH22140**	**14.0**	14	30	89
E5H22160	**JAH22160**	**16.0**	16	32	92
E5H22906	**JAH22906**	**16.0**	16	64	125
E5H22200	**JAH22200**	**20.0**	20	38	104
E5H22907	**JAH22907**	**20.0**	20	80	150
E5H22250	**JAH22250**	**25.0**	25	50	125

Mill Diameter Tolerences (mm)		Shank Diameter Tolerance
Diameter	Tolerance	
Up to 3	+0/-0.006	h5
Over 3 ~ up to 6	+0/-0.008	
Over 6 ~ up to 10	+0/-0.009	
Over 10 ~ up to 18	+0/-0.011	
Over 18 ~ up to 25	+0/-0.013	

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend																				

ISO	N									S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	◎	◎	◎	◎	○	○	○	○	○												

ALU-POWER HPC END MILLS

UNCOATED **E5H23** SERIES
DLC COATED **JAH23** SERIES
PLAIN SHANK

CARBIDE, 3 FLUTE 37° HELIX with EXTENDED NECK

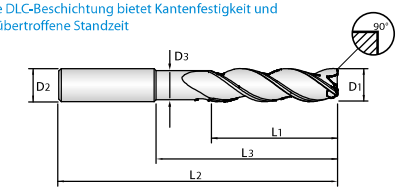
Vollhartmetall, 3 Schneiden 37°
Fraise carbure, 3 dents, hélice 37°, détalonnée, extra-courte
3 TAGLIENTI, ELICA 37°, SCARICATA

- Balanced cutting with less vibration
- Ability to run at higher speeds with less heat in aluminum
- More efficient chip evacuation
- Ability to counteract extreme radial forces
- DLC Coating provides edge strength and unsurpassed tool life

- Ausgewogenes Fräsen, mit weniger Vibrationen
- Höhere Schnittgeschwindigkeiten möglich bei weniger Wärmeeinbringung in den Werkstoff Aluminium
- Effizientere Spanabfuhr
- Fähigkeit, extremen Radialkräften entgegenzuwirken
- Die DLC-Beschichtung bietet Kantenfestigkeit und unübertroffene Standzeit

UNCOATED

DLC COATED



CARBIDE 3 37° PLAIN P.475

Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
Uncoated	DLC	D_1	D_2	L_1	L_3	L2	D3
E5H23060	**JAH23060**	**6.0**	6	10	20	75	5.7
E5H23080	**JAH23080**	**8.0**	8	12	25	75	7.4
E5H23100	**JAH23100**	**10.0**	10	14	35	100	9.2
E5H23120	**JAH23120**	**12.0**	12	16	40	100	11.0
E5H23140	**JAH23140**	**14.0**	14	18	45	125	13.0
E5H23160	**JAH23160**	**16.0**	16	20	50	125	15.0
E5H23200	**JAH23200**	**20.0**	20	25	65	150	19.0

Mill Diameter Tolerences (mm)		Shank Diameter Tolerance
Diameter	Tolerance	
Up to 3	+0/-0.006	h5
Over 3 ~ up to 6	+0/-0.008	
Over 6 ~ up to 10	+0/-0.009	
Over 10 ~ up to 18	+0/-0.011	
Over 18 ~ up to 25	+0/-0.013	

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend																				

ISO	N									S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	◎	◎	◎	◎	○	○	○	○	○												

CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
JET-POWER END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-POWER END MILLS
D-POWER GRAPHITE END MILLS
D-POWER CFRP END MILLS
ROUTERS
CRX S END MILLS
K-2 END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

ALU-POWER HPC END MILLS

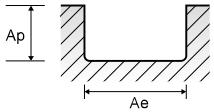
RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDPARAMETER

E5H24, JAH24, E5H25, JAH25 SERIES

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

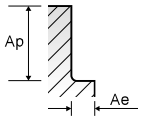
3 FLUTE CORNER RADIUS - SLOTTING

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	6.0	10.0	12.0	16.0	20.0
N	21~22	Aluminum-wrought alloy	1.0D	1.0D	Vc	488	488	488	488	488
					fz	0.076	0.114	0.152	0.168	0.191
					RPM	25889	15533	12945	9708	7767
					FEED	5918	5326	5918	4883	4439
	23~25	Aluminum-cast, alloyed	1.0D	1.0D	Vc	183	183	183	183	183
					fz	0.076	0.114	0.152	0.168	0.191
					RPM	9708	5825	4854	3641	2913
					FEED	2219	1997	2219	1831	1665
	26-28	Copper and Copper Alloys (Bronze / Brass)	1.0D	1.0D	Vc	268	268	268	268	268
					fz	0.051	0.102	0.127	0.140	0.152
					RPM	14218	8531	7109	5332	4265
					FEED	2167	2600	2708	2235	1950
	29.1	Non Metallic Materials	1.0D	1.0D	Vc	503	503	503	503	503
					fz	0.102	0.191	0.254	0.279	0.305
					RPM	26685	16011	13342	10007	8005
					FEED	8134	9150	10167	8388	7320



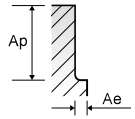
3 FLUTE CORNER RADIUS - SIDE CUTTING

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	6.0	10.0	12.0	16.0	20.0
N	21~22	Aluminum-wrought alloy	0.5D	1.5D	Vc	610	610	610	610	610
					fz	0.076	0.114	0.152	0.168	0.191
					RPM	32361	19417	16181	12136	9708
					FEED	7398	6658	7398	6103	5548
	23~25	Aluminum-cast, alloyed	0.5D	1.5D	Vc	244	244	244	244	244
					fz	0.076	0.114	0.152	0.168	0.191
					RPM	12945	7767	6472	4854	3883
					FEED	2959	2663	2959	2441	2219
	26-28	Copper and Copper Alloys (Bronze / Brass)	0.5D	1.5D	Vc	351	351	351	351	351
					fz	0.051	0.102	0.127	0.140	0.152
					RPM	18621	11173	9311	6983	5586
					FEED	2838	3405	3547	2927	2554
	29.1	Non Metallic Materials	0.5D	1.5D	Vc	625	625	625	625	625
					fz	0.102	0.191	0.254	0.279	0.305
					RPM	33157	19894	16579	12434	9947
					FEED	10106	11370	12633	10422	9096



3 FLUTE CORNER RADIUS - SIDE CUTTING HSM (Light)

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	6.0	10.0	12.0	16.0	20.0
N	21~22	Aluminum-wrought alloy	0.05D	2.0D	Vc	1006	1006	1006	1006	1006
					fz	0.140	0.267	0.356	0.381	0.419
					RPM	53370	32022	26685	20014	16011
					FEED	22367	25621	28467	22876	20131
	23~25	Aluminum-cast, alloyed	0.05D	2.0D	Vc	366	366	366	366	366
					fz	0.140	0.267	0.356	0.381	0.419
					RPM	19417	11650	9708	7281	5825
					FEED	8138	9321	10357	8323	7324
	26-28	Copper and Copper Alloys (Bronze / Brass)	0.05D	2.0D	Vc	564	564	564	564	564
					fz	0.114	0.216	0.292	0.330	0.356
					RPM	29921	17953	14961	11220	8976
					FEED	10260	11628	13110	11115	9576
	29.1	Non Metallic Materials	0.05D	2.0D	Vc	1021	1021	1021	1021	1021
					fz	0.229	0.432	0.584	0.635	0.699
					RPM	54166	32499	27083	20312	16250
					FEED	37147	42100	47465	38695	34051



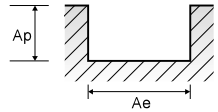
ALU-POWER HPC END MILLS
RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDPARAMETER

E5H22, JAH22, E5H23, JAH23 SERIES

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

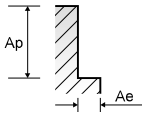
3 FLUTE - SLOTTING

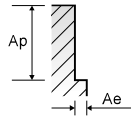
ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Mill Diameter (Ø) 3.0	6.0	10.0	12.0	16.0	20.0	25.0
N	21~22	Aluminum-wrought alloy	1.0D	1.0D	Vc	488	488	488	488	488	488	488
					fz	0.025	0.076	0.114	0.152	0.168	0.191	0.254
					RPM	51778	25889	15533	12945	9708	7767	6213
					FEED	3946	5918	5326	5918	4883	4439	4735
	23~25	Aluminum-cast, alloyed	1.0D	1.0D	Vc	183	183	183	183	183	183	183
					fz	0.025	0.076	0.114	0.152	0.168	0.191	0.254
					RPM	19417	9708	5825	4854	3641	2913	2330
					FEED	1480	2219	1997	2219	1831	1665	1775
	26-28	Copper and Copper Alloys (Bronze / Brass)	1.0D	1.0D	Vc	268	268	268	268	268	268	268
					fz	0.020	0.051	0.102	0.127	0.140	0.152	0.178
					RPM	28436	14218	8531	7109	5332	4265	3412
					FEED	1733	2167	2600	2708	2235	1950	1820
	29.1	Non Metallic Materials	1.0D	1.0D	Vc	503	503	503	503	503	503	503
					fz	0.038	0.102	0.191	0.254	0.279	0.305	0.356
					RPM	53370	26685	16011	13342	10007	8005	6404
					FEED	6100	8134	9150	10167	8388	7320	6832



3 FLUTE - SIDE CUTTING

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Mill Diameter (Ø) 3.0	6.0	10.0	12.0	16.0	20.0	25.0
N	21~22	Aluminum-wrought alloy	0.5D	1.5D	Vc	610	610	610	610	610	610	610
					fz	0.025	0.076	0.114	0.152	0.168	0.191	0.254
					RPM	64723	32361	19417	16181	12136	9708	7767
					FEED	4932	7398	6658	7398	6103	5548	5918
	23~25	Aluminum-cast, alloyed	0.5D	1.5D	Vc	244	244	244	244	244	244	244
					fz	0.025	0.076	0.114	0.152	0.168	0.191	0.254
					RPM	25889	12945	7767	6472	4854	3883	3107
					FEED	1973	2959	2663	2959	2441	2219	2367
	26-28	Copper and Copper Alloys (Bronze / Brass)	0.5D	1.5D	Vc	351	351	351	351	351	351	351
					fz	0.020	0.051	0.102	0.127	0.140	0.152	0.178
					RPM	37242	18621	11173	9311	6983	5586	4469
					FEED	2270	2838	3405	3547	2927	2554	2384
	29.1	Non Metallic Materials	0.5D	1.5D	Vc	625	625	625	625	625	625	625
					fz	0.038	0.102	0.191	0.254	0.279	0.305	0.356
					RPM	66314	33157	19894	16579	12434	9947	7958
					FEED	7580	10106	11370	12633	10422	9096	8489



3 FLUTE - SIDE CUTTING HSM (Light)

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Mill Diameter (Ø) 3.0	6.0	10.0	12.0	16.0	20.0	25.0
N	21~22	Aluminum-wrought alloy	0.05D	2.0D	Vc	1006	1006	1006	1006	1006	1006	1006
					fz	0.053	0.140	0.267	0.356	0.381	0.419	0.495
					RPM	106740	53370	32022	26685	20014	16011	12809
					FEED	17080	22367	25621	28467	22876	20131	19033
	23~25	Aluminum-cast, alloyed	0.05D	2.0D	Vc	366	366	366	366	366	366	366
					fz	0.053	0.140	0.267	0.356	0.381	0.419	0.495
					RPM	38834	19417	11650	9708	7281	5825	4660
					FEED	6214	8138	9321	10357	8323	7324	6924
	26-28	Copper and Copper Alloys (Bronze / Brass)	0.05D	2.0D	Vc	564	564	564	564	564	564	564
					fz	0.043	0.114	0.216	0.292	0.330	0.356	0.406
					RPM	59842	29921	17953	14961	11220	8976	7181
					FEED	7752	10260	11628	13110	11115	9576	8755
	29.1	Non Metallic Materials	0.05D	2.0D	Vc	1021	1021	1021	1021	1021	1021	1021
					fz	0.086	0.229	0.432	0.584	0.635	0.699	0.813
					RPM	108331	54166	32499	27083	20312	16250	13000
					FEED	28066	37147	42100	47465	38695	34051	31699