



Leading Through Innovation

SOLID CARBIDE

ALU-POWER HPC END MILLS

Alu Power HPC VHM Fräser

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

SELECTION GUIDE



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	C508	C511	C514	C515

E5I86 E5I87	
FLUTE	3
HELIX ANGLE	37°
CORNER RADIUS	
D6.0	
D20.0	
C516	

SOLID CARBIDE
ALU-POWER HPC
END MILLS

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

	E5H24 JAH24	E5H25 JAH25	E5H22 JAH22	E5H23 JAH23
	-	EXTENDED NECK	-	EXTENDED NECK
Uncoated	Uncoated	Uncoated	Uncoated	Uncoated
DLC	DLC	DLC	DLC	DLC



CHIP BREAKER

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : p. C518

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRc				
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		Ferritic	130					
20	Malleable cast iron	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 Rubber, Wood, etc.			○	○	○
	30								
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				

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AEROSPACE SOLUTIONS & COMPOSITE MATERIALS





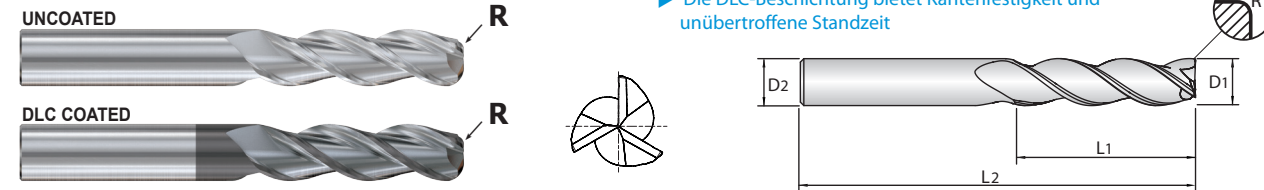
UNCOATED **E5H24** SERIES
 DLC COATED **JAH24** SERIES
 PLAIN SHANK

CARBIDE, 3 FLUTE 37° HELIX CORNER RADIUS

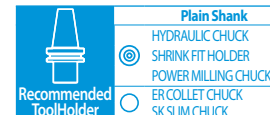
- VOLLHARTMETALL, 3 SCHNEIDEN 37° ECKRADIUS
- FRAISE CARBURE, 3 DENTS, TORIQUE, HÉLICE 37°
- 3 TAGLIENTI, ELICA 37°, SPIGOLO RAGGIATO

- ▶ 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



p.C518



Unit : mm

EDP No.		Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
UNCOATED	DLC	R	D1	D2	L1	L2
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

Mill Diameter Tolerances (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	

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron		
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
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	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	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											
	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					
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HB	60	100	75	90	130	110	90	100			15	30	25	38	34	400 Rm	1050 Rm	550	630	400	550	
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎



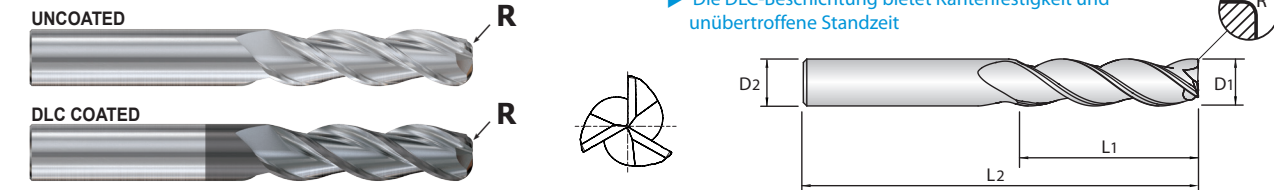
UNCOATED **E5H24** SERIES
 DLC COATED **JAH24** SERIES
 PLAIN SHANK

CARBIDE, 3 FLUTE 37° HELIX CORNER RADIUS

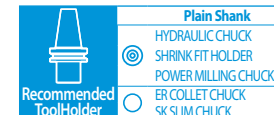
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p.C518



Unit : mm

EDP No.		Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
UNCOATED	DLC	R	D1	D2	L1	L2
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

Mill Diameter Tolerances (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	
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▶ NEXT PAGE

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ISO	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron		
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
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	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	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											
	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					
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HB	60	100	75	90	130	110	90	100			15	30	25	38	34	400 Rm	1050 Rm	550	630	400	550	
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

CARBIDE, 3 FLUTE 37° HELIX CORNER RADIUS

- VOLLHARTMETALL, 3 SCHNEIDEN 37° ECKRADIUS
- FRAISE CARBURE, 3 DENTS, TORIQUE, HÉLICE 37°
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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 Tolerances (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 Material Description	P										M				K					
	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	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend																				

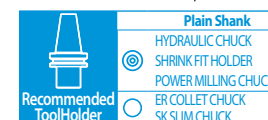
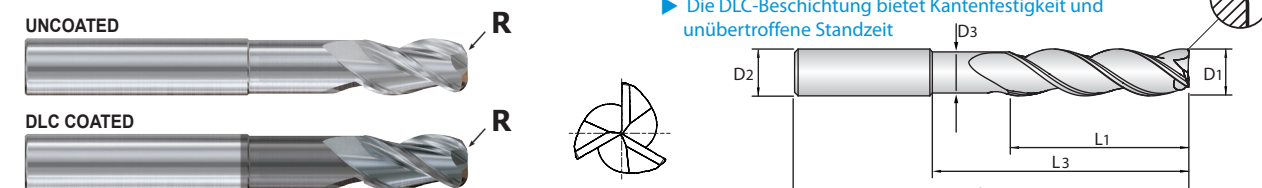
ISO Material Description	N					S					H										
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys	Hardened steel	Chilled Cast Iron	Hardened Cast Iron				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRC											15	30	25	38	34	55	60	42	55	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, 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

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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

Mill Diameter Tolerances (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	

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO Material Description	P										M				K					
	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	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend																				

ISO Material Description	N					S					H										
	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	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	◎	◎	◎	◎	○	○	○	○	○	○											

YG ALU-POWER HPC END MILLS

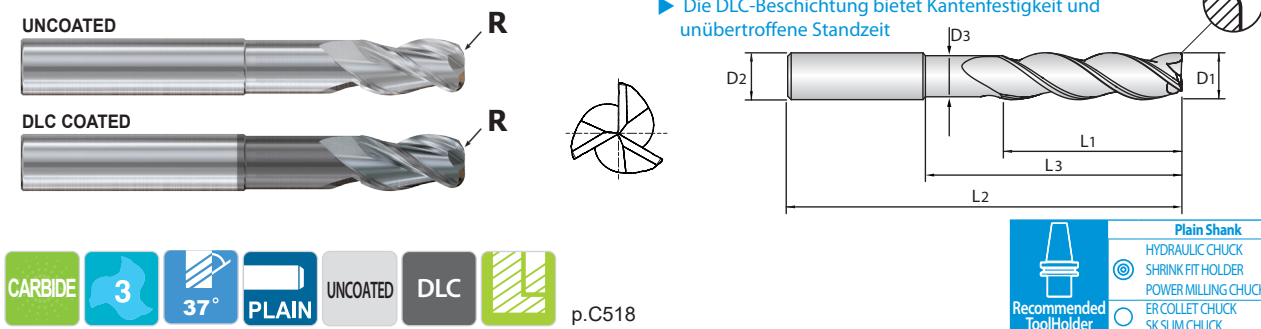
UNCOATED **E5H25** SERIES
 DLC COATED **JAH25** SERIES
 PLAIN SHANK

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 Wärmebringung in den Werkstoff Aluminium
- ▶ Effizientere Spanabfuhr
- ▶ Fähigkeit, extremen Radialkräften entgegenzuwirken
- ▶ Die DLC-Beschichtung bietet Kantenfestigkeit und unübertroffene Standzeit



CARBIDE 3 37° PLAIN UNCOATED DLC p.C518

Plain Shank
 HYDRAULIC CHUCK
 SHRINK FIT HOLDER
 POWER MILLING CHUCK
 ER COLLET CHUCK
 SK SLIM CHUCK
 Recommended ToolHolder

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
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

Mill Diameter Tolerances (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	

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO Material Description	P										M				K					
	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	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend																				

ISO Material Description	N					S					H										
	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	◎	◎	◎	◎	○	○	○	○													

YG ALU-POWER HPC END MILLS

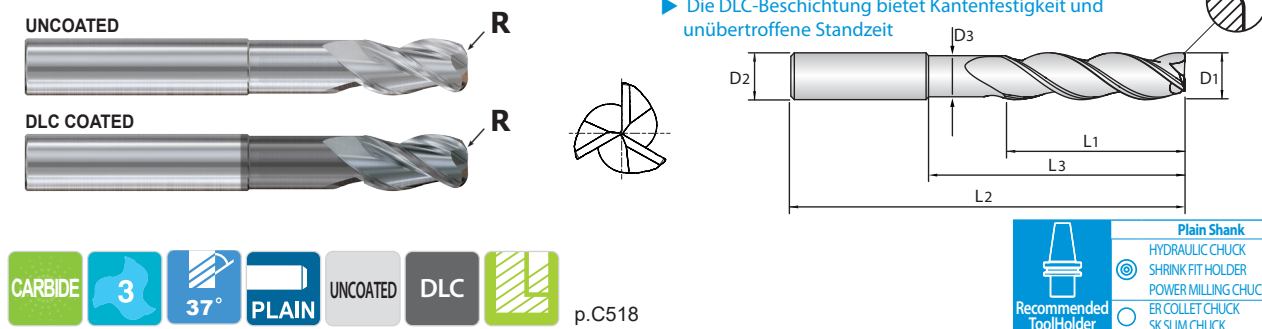
UNCOATED **E5H25** SERIES
 DLC COATED **JAH25** SERIES
 PLAIN SHANK

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
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- ▶ Balanced cutting with less vibration
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- ▶ Höhere Schnittgeschwindigkeiten möglich bei weniger Wärmebringung in den Werkstoff Aluminium
- ▶ Effizientere Spanabfuhr
- ▶ Fähigkeit, extremen Radialkräften entgegenzuwirken
- ▶ Die DLC-Beschichtung bietet Kantenfestigkeit und unübertroffene Standzeit



CARBIDE 3 37° PLAIN UNCOATED DLC p.C518

Plain Shank
 HYDRAULIC CHUCK
 SHRINK FIT HOLDER
 POWER MILLING CHUCK
 ER COLLET CHUCK
 SK SLIM CHUCK
 Recommended ToolHolder

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
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 Tolerances (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 Material Description	P										M				K					
	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	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend																				

ISO Material Description	N					S					H										
	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	◎	◎	◎	◎	○	○	○	○													

YG ALU-POWER HPC END MILLS

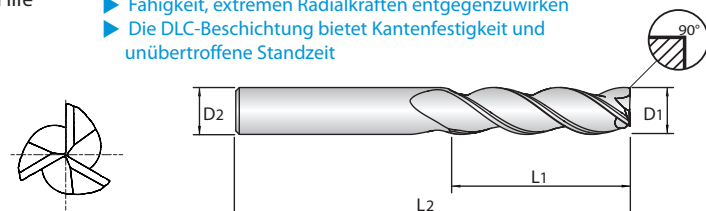
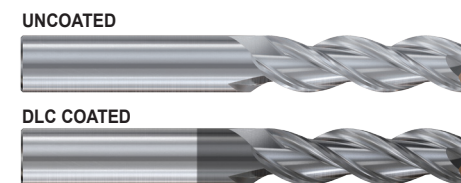
UNCOATED **E5H22** SERIES
 DLC COATED **JAH22** SERIES
 PLAIN SHANK

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



CARBIDE 3 37° PLAIN UNCOATED DLC p.C519

Plain Shank
 Recommended ToolHolder: HYDRAULIC CHUCK, SHRINK FIT HOLDER, POWER MILLING CHUCK, ER COLLET CHUCK, SK SLIM CHUCK

Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Overall Length
UNCOATED	DLC	D1	D2	L1	L2
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 Tolerances (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						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron	Nodular cast iron		Malleable cast iron			
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
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	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

YG ALU-POWER HPC END MILLS

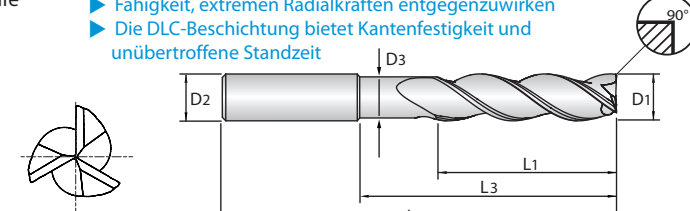
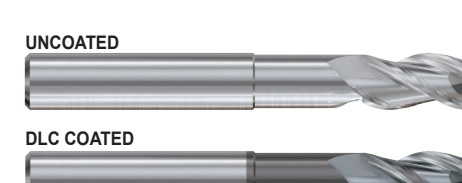
UNCOATED **E5H23** SERIES
 DLC COATED **JAH23** SERIES
 PLAIN SHANK

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
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- ▶ 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 UNCOATED DLC p.C519

Plain Shank
 Recommended ToolHolder: HYDRAULIC CHUCK, SHRINK FIT HOLDER, POWER MILLING CHUCK, ER COLLET CHUCK, SK SLIM CHUCK

Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
UNCOATED	DLC	D1	D2	L1	L3	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 Tolerances (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

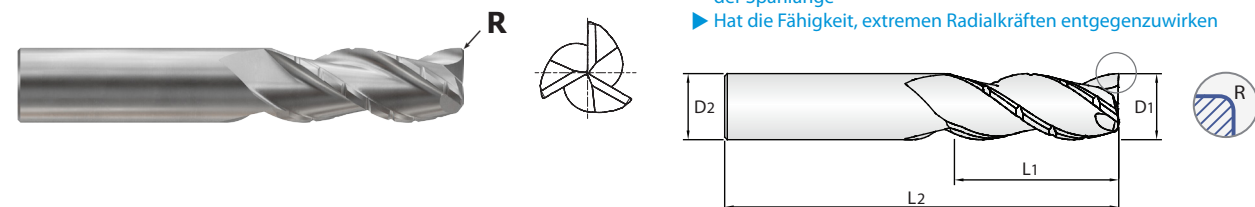
ISO	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron	Nodular cast iron		Malleable cast iron			
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17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

CARBIDE, 3 FLUTE EXTENDED LENGTH - CHIP BREAKER

- HARTMETALL, 3 SCHNEIDEN EXTRA LANG MIT SPANBRECHER
- FRAISE CARBURE, 3 DENTS, LONGUEUR ÉTENDUE - BRISE-COPEAUX
- FRESA MD, 3 TAGLIENTI, SERIE EXTRA LUNGA CON ROMPIRUCIOLO

- ▶ Balanced cutting with less vibration
- ▶ Ability to run at higher speeds with less heat in aluminum
- ▶ Chip Breaker Improves chip evacuation by shortening the chip length
- ▶ Ability to counteract extreme radial forces

- ▶ Geschmeidiger Schnitt mit wenig Vibrationen
- ▶ Höhere Geschwindigkeiten bei geringerer Wärmeentwicklung in der Aluminiumbearbeitung
- ▶ Die Spanbrecher verbessern die Spanabfuhr durch Verkürzung der Spanlänge
- ▶ Hat die Fähigkeit, extremen Radialkräften entgegenzuwirken

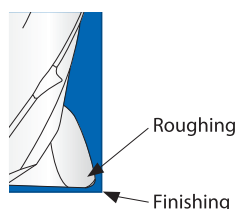


Recommended Toolholder	Flat Shank	Plain Shank
○	END MILL HOLDER	POWER MILLING CHUCK
○	-	HYDRAULIC CHUCK SHRINK FIT HOLDER
○	-	ER COLLET CHUCK

Unit : mm

EDP No.		Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
PLAIN	FLAT	R	D1	D2	L1	L2
E5186060	E5187060	R0.25	6.0	6	13	57
E5186902	E5187902	R0.25	6.0	6	24	75
E5186080	E5187080	R0.25	8.0	8	19	63
E5186905	E5187905	R0.25	8.0	8	32	75
E5186100	E5187100	R0.5	10.0	10	22	72
E5186908	E5187908	R0.5	10.0	10	40	100
E5186120	E5187120	R0.5	12.0	12	26	83
E5186911	E5187911	R0.5	12.0	12	48	100
E5186160	E5187160	R1.0	16.0	16	32	92
E5186914	E5187914	R1.0	16.0	16	64	125
E5186200	E5187200	R1.0	20.0	20	38	104
E5186917	E5187917	R1.0	20.0	20	80	150

Mill Diameter Tolerances (mm)		Shank Diameter Tolerance
Diameter	Tolerance	
ø6	+0/-0.008	h5
Over ø6 ~ up to ø10	+0/-0.009	
Over ø10 ~ up to ø16	+0/-0.011	
ø20	+0/-0.013	



▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO Material Description	P									M				K							
	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	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

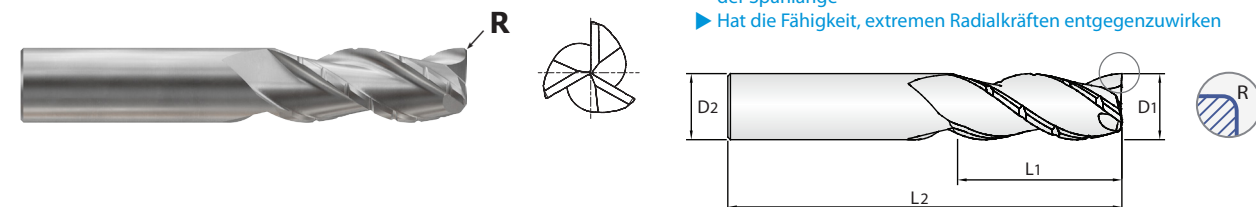
ISO Material Description	N					S					H											
	Aluminum-wrought alloy		Aluminum-cast, alloyed		Copper and Copper Alloys (Bronze / Brass)	Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys	Hardened steel	Chilled Cast Iron	Hardened Cast Iron								
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HRc	21	22	23	24	25	26	27	28	29	30	15	30	25	38	34	55	60	42	55	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, 3 FLUTE EXTENDED LENGTH - CHIP BREAKER

- HARTMETALL, 3 SCHNEIDEN EXTRA LANG MIT SPANBRECHER
- FRAISE CARBURE, 3 DENTS, LONGUEUR ÉTENDUE - BRISE-COPEAUX
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- ▶ Geschmeidiger Schnitt mit wenig Vibrationen
- ▶ Höhere Geschwindigkeiten bei geringerer Wärmeentwicklung in der Aluminiumbearbeitung
- ▶ Die Spanbrecher verbessern die Spanabfuhr durch Verkürzung der Spanlänge
- ▶ Hat die Fähigkeit, extremen Radialkräften entgegenzuwirken

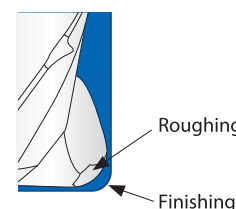


Recommended Toolholder	Plain Shank
○	HYDRAULIC CHUCK
○	SHRINK FIT HOLDER
○	POWER MILLING CHUCK
○	ER COLLET CHUCK
○	SK SLIM CHUCK

Unit : mm

EDP No.		Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
PLAIN	FLAT	R	D1	D2	L1	L2
E5186901	E5187901	R1.5	6.0	6	13	57
E5186903	E5187903	R1.5	6.0	6	24	75
E5186904	E5187904	R2.0	8.0	8	19	63
E5186906	E5187906	R2.0	8.0	8	32	75
E5186907	E5187907	R2.0	10.0	10	22	72
E5186909	E5187909	R2.0	10.0	10	40	100
E5186910	E5187910	R3.0	12.0	12	26	83
E5186912	E5187912	R3.0	12.0	12	48	100
E5186913	E5187913	R4.0	16.0	16	32	92
E5186915	E5187915	R4.0	16.0	16	64	125
E5186916	E5187916	R4.0	20.0	20	38	104
E5186918	E5187918	R4.0	20.0	20	80	150

Mill Diameter Tolerances (mm)		Shank Diameter Tolerance
Diameter	Tolerance	
ø6	+0/-0.008	h5
Over ø6 ~ up to ø10	+0/-0.009	
Over ø10 ~ up to ø16	+0/-0.011	
ø20	+0/-0.013	



◎ : Excellent ○ : Good

ISO Material Description	P									M				K							
	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	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

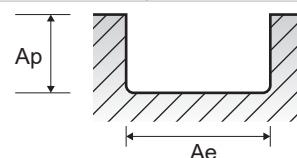
ISO Material Description	N					S					H											
	Aluminum-wrought alloy		Aluminum-cast, alloyed		Copper and Copper Alloys (Bronze / Brass)	Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys	Hardened steel	Chilled Cast Iron	Hardened Cast Iron								
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HRc	21	22	23	24	25	26	27	28	29	30	15	30	25	38	34	55	60	42	55	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	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

E5H24, JAH24, E5H25, JAH25 SERIES

3 FLUTE CORNER RADIUS - SLOTTING

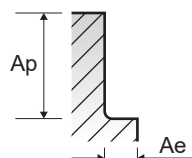
ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)					
						6.0	10.0	12.0	16.0	20.0	
N	21~22	Aluminum-wrought alloy	1.0D	1.0D	Vc	488	488	488	488	488	
					fz	0.076	0.114	0.152	0.168	0.191	
					RPM	25889	15533	12945	9708	7767	
	23~25	Aluminum-cast, alloyed	1.0D	1.0D	Vc	183	183	183	183	183	
					fz	0.076	0.114	0.152	0.168	0.191	
					RPM	9708	5825	4854	3641	2913	
	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	
	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

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



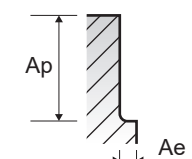
3 FLUTE CORNER RADIUS - SIDE CUTTING

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)					
						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	
	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	
	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	
	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	Diameter (Ø)					
						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	
	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	
	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	
	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

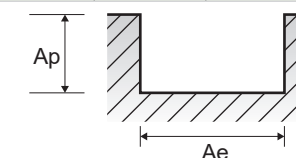


E5H22, JAH22, E5H23, JAH23 SERIES

3 FLUTE - SLOTTING

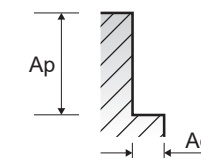
ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)							
						3.0	6.0	10.0	12.0	16.0	20.0	25.0	
N	21~22	Aluminum-wrought alloy	1.0D	1.0D	Vc	488	488	488	488	488	488	488	
					fz	0.025	0.076	0.114	0.152	0.168	0.191		
					RPM	51778	25889	15533	12945	9708	7767		
	23~25	Aluminum-cast, alloyed	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		
					RPM	19417	9708	5825	4854	3641	2913		
	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		
					RPM	28436	14218	8531	7109	5332	4265		
	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		
					RPM	53370	26685	16011	13342	10007	8005		
						FEED	6100	8134	9150	10167	8388	7320	6832

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



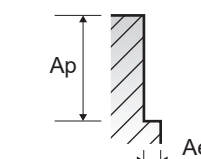
3 FLUTE - SIDE CUTTING

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	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		
					RPM	64723	32361	19417	16181	12136	9708		
	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		
					RPM	25889	12945	7767	6472	4854	3883		
	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		
					RPM	37242	18621	11173	9311	6983	5586		
	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		
					RPM	66314	33157	19894	16579	12434	9947		
						FEED	7580	10106	11370	12633	10422	9096	8489



3 FLUTE - SIDE CUTTING HSM (Light)

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	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		
					RPM	106740	53370	32022	26685	20014	16011		
	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		
					RPM	38834	19417	11650	9708	7281	5825		
	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		
					RPM	59842	29921	17953	14961	11220	8976		
	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		
					RPM	108331	54166	32499	27083	20312	16250		
						FEED	28066	37147	42100	47465	38695	34051	31699



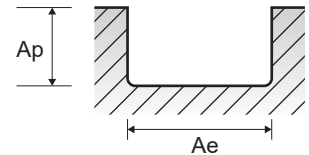


E5186, E5187 SERIES

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	Diameter (Ø)				
						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
	23~25	Aluminum-cast, alloyed	1.0D	1.0D	FEED	5918	5326	5918	4883	4439
					Vc	183	183	183	183	183
					fz	0.076	0.114	0.152	0.168	0.191
	26-28	Copper and Copper Alloys (Bronze / Brass)	1.0D	1.0D	RPM	9708	5825	4854	3641	2913
					FEED	2219	1997	2219	1831	1665
					Vc	268	268	268	268	268
	29.1	Non Metallic Materials	1.0D	1.0D	fz	0.051	0.102	0.127	0.14	0.152
					RPM	14218	8531	7109	5332	4265
					FEED	2167	2600	2708	2235	1950
					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	Diameter (Ø)				
						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
	23~25	Aluminum-cast, alloyed	0.5D	1.5D	FEED	7398	6658	7398	6103	5548
					Vc	244	244	244	244	244
					fz	0.076	0.114	0.152	0.168	0.191
	26-28	Copper and Copper Alloys (Bronze / Brass)	0.5D	1.5D	RPM	12945	7767	6472	4854	3883
					FEED	2959	2663	2959	2441	2219
					Vc	351	351	351	351	351
	29.1	Non Metallic Materials	0.5D	1.5D	fz	0.051	0.102	0.127	0.14	0.152
					RPM	18621	11173	9311	6983	5586
					FEED	2838	3405	3547	2927	2554
					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

