



Leading Through Innovation

CARBIDE, HSS & HSS-E

REAMERS

REIBAHLEN

- Carbide NC Machine Reamers
HSS Hand Reamers, HSS-E Chucking Reamers
- Hartmetall NC Maschinenreibahlen
HSS-Handreibahlen, HSS-E Spannfutter-Reibahlen

SELECTION GUIDE



SERIES	K4101	K4111
HOLETYPE		
FLUTETYPE	Straight	LH Spiral
SIZE MIN	D2.0	D2.0
SIZE MAX	D20.0	D20.0
PAGE	A384	A385

SURFACE TREATMENT Bright

CARBIDE, HSS & HSS-E REAMERS

Carbide NC Machine Reamers
HSS Hand Reamers
HSS-E Chucking Reamers



Please visit globalyg1.com/mat for material search
◎ : Excellent ○ : Good
Recommended cutting conditions : p.A405



ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRc	K4101	K4111	
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	Ferritic / Martensitic	Annealed	200	15	○	○	
	13	Stainless steel	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	Non Metallic Materials	CuSn, lead-free copper and electrolytic copper	100		○	○	
	29		Duroplastic, Fiber Reinforced Plastic					
	30	Rubber, Wood, etc.						
S	31	Heat Resistant Super Alloys	Fe Based Annealed	200	15			
	32		Cured	280	30			
	33		Annealed	250	25			
	34	Titanium Alloys	Ni or Co Based Cured	350	38			
	35		Cast	320	34			
	36		Pure Titanium	400 Rm				
37	Alpha + Beta Alloys	Hardened	1050 Rm					
H	38	Hardened steel	Hardened	550	55			
	39		Hardened	630	60			
	40	Hardened Cast Iron	Cast	400	42			
	41		Hardened	550	55			

SERIES	K1143	K1153	K2101	K2111	K2121	K2102	K2112	K21B1
HOLETYPE								
FLUTETYPE	Straight	LH Spiral	Straight	LH Spiral	LH Spiral (Quick Spiral)	Straight	LH Spiral	LH Spiral
SIZE MIN	D2.0	D2.0	D2.0	D2.0	D4.0	D10.0	D10.0	D2.0
SIZE MAX	D60.0	D60.0	D20.0	D20.0	D20.0	D50.0	D50.0	D20.0
PAGE	A386	A388	A390	A392	A394	A395	A397	A399

SURFACE TREATMENT Bright



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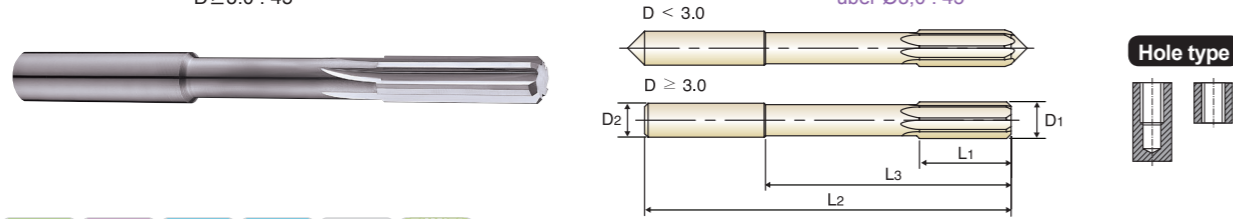
K4101 SERIES

CARBIDE, NC MACHINE REAMERS - STRAIGHT FLUTES

- ▶ VHM, NC-MASCHINENREIBAHLEN - GERADEGENUTET
- ▶ ALÉSOIRS CARBURE MACHINE CN - ENTRÉE DROITE
- ▶ ALESATORI A MACCHINA IN MD - ELICA DRIITA

- ▶ Material - Up to Ø12.0 : Solid Carbide
- Over Ø12.0 : Carbide Head Brazed
- ▶ Straight Flutes, Right Hand Cut
- ▶ Unequal Flute Spacing
- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Shank : DIN 6535-HA
- ▶ Chamfer Angle - D<3.0 : 15°
- D≥3.0 : 45°

- ▶ Material - bis Ø12,0 : VHM
- über Ø12,0 : gelötete VHM-Köpfe
- ▶ geradegenutet, rechtsschneidend
- ▶ Ungleichteilung
- ▶ Ø Toleranzen : DIN 1420 für H7
- ▶ Schaft : DIN 6535-HA
- ▶ Anschnittwinkel - bis Ø3,0 : 15°
- über Ø3,0 : 45°



CARBIDE H7 15° 45° Bright p.A405

Plain Shank Recommended ToolHolder ER COLLET CHUCK

D<3.0 D≥3.0

Unit : mm

EDP No.	Reamer Diameter		Shank Diameter	Cutting Length		Neck Length		Overall Length		No. of Flute
	D1	D2		L1	L3	L2				
K410100200	2.0	4	4	11	20	50		4		
K410100250	2.5	4	4	14	26	57		4		
K410100300	3.0	4	4	15	31	61		6		
K410100350	3.5	4	4	18	36	70		6		
K410100400	4.0	4	4	19	42	75		6		
K410100450	4.5	6	6	21	46	80		6		
K410100500	5.0	6	6	23	51	86		6		
K410100550	5.5	6	6	26	56	93		6		
K410100600	6.0	6	6	26	56	93		6		
K410100650	6.5	8	8	28	62	101		6		
K410100700	7.0	8	8	31	68	109		6		
K410100750	7.5	8	8	31	68	109		6		
K410100800	8.0	8	8	33	74	117		6		
K410100850	8.5	10	10	33	74	117		6		
K410100900	9.0	10	10	36	80	125		6		
K410100950	9.5	10	10	36	80	125		6		
K410101000	10.0	10	10	38	86	133		6		
K410101050	10.5	12	12	38	86	133		6		
K410101100	11.0	12	12	41	95	142		6		
K410101200	12.0	12	12	44	104	151		6		
K410101300	13.0	16	16	44	104	151		6		
K410101400	14.0	16	16	47	108	160		8		
K410101500	15.0	16	16	50	110	162		8		
K410101600	16.0	16	16	52	118	170		8		
K410101700	17.0	20	20	54	121	175		8		
K410101800	18.0	20	20	56	128	182		8		
K410101900	19.0	20	20	58	129	189		8		
K410102000	20.0	20	20	60	135	195		8		

◎ : 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																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRC																																									
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230																					
Recommended	◎	◎	◎	○	○	◎	◎	○	○	○	○	○	○	○	◎	○	◎	○	○	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎



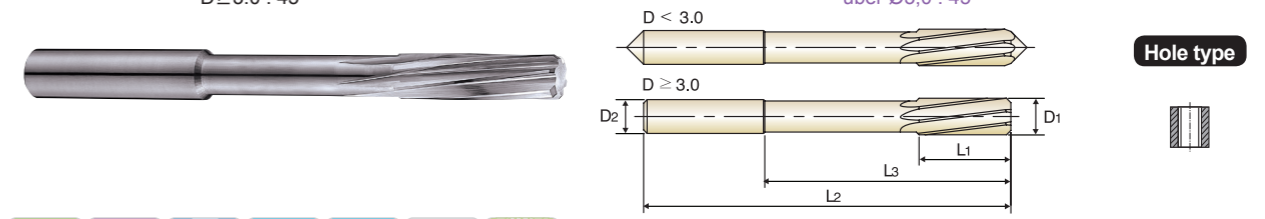
K4111 SERIES

CARBIDE, NC MACHINE REAMERS - LH SPIRAL FLUTES

- ▶ VHM, NC-MASCHINENREIBAHLEN - SPIRALGENUTET mit LINKSDRALL
- ▶ ALÉSOIRS CARBURE MACHINE CN - HÉLICE À GAUCHE
- ▶ ALESATORI A MACCHINA IN MD - ELICA SINISTRA

- ▶ Material - Up to Ø12.0 : Solid Carbide
- Over Ø12.0 : Carbide Head Brazed
- ▶ Left Spiral Flutes, Right Hand Cut
- ▶ Unequal Flute Spacing
- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Shank : DIN 6535-HA
- ▶ Chamfer Angle - D<3.0 : 15°
- D≥3.0 : 45°

- ▶ Material - bis Ø12,0 : VHM
- über Ø12,0 : gelötete VHM-Köpfe
- ▶ linksspiralig, rechtsschneidend
- ▶ Ungleichteilung
- ▶ Ø Toleranzen : DIN 1420 für H7
- ▶ Schaft : DIN 6535-HA
- ▶ Anschnittwinkel - bis Ø3,0 : 15°
- über Ø3,0 : 45°



CARBIDE H7 LH7° 15° 45° Bright p.A405

Plain Shank Recommended ToolHolder ER COLLET CHUCK

D<3.0 D≥3.0

Unit : mm

EDP No.	Reamer Diameter		Shank Diameter	Cutting Length		Neck Length		Overall Length		No. of Flute
	D1	D2		L1	L3	L2				
K411100200	2.0	4	4	11	20	50		4		
K411100250	2.5	4	4	14	26	57		4		
K411100300	3.0	4	4	15	31	61		6		
K411100350	3.5	4	4	18	36	70		6		
K411100400	4.0	4	4	19	42	75		6		
K411100450	4.5	6	6	21	46	80		6		
K411100500	5.0	6	6	23	51	86		6		
K411100550	5.5	6	6	26	56	93		6		
K411100600	6.0	6	6	26	56	93		6		
K411100650	6.5	8	8	28	62	101		6		
K411100700	7.0	8	8	31	68	109		6		
K411100750	7.5	8	8	31	68	109		6		
K411100800	8.0	8	8	33	74	117		6		
K411100850	8.5	10	10	33	74	117		6		
K411100900	9.0	10	10	36	80	125		6		
K411100950	9.5	10	10	36	80	125		6		
K411101000	10.0	10	10	38	86	133		6		
K411101050	10.5	12	12	38	86	133		6		
K411101100	11.0	12	12	41	95	142		6		
K411101200	12.0	12	12	44	104	151		6		
K411101300	13.0	16	16	44	104	151		6		
K411101400	14.0	16	16	47	108	160		8		
K411101500	15.0	16	16	50	110	162		8		
K411101600	16.0	16	16	52	118	170		8		
K411101700	17.0	20	20	54	121	175		8		
K411101800	18.0	20	20	56	128	182		8		
K411101900	19.0	20	20	58	129	189		8		
K411102000	20.0	20	20	60	135	195		8		

◎ : 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																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>																
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRC																																									
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230																					
Recommended	◎	◎	◎	○	○	◎	◎	○	○	○	○	○	○	○	◎	○	◎	○	○	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎



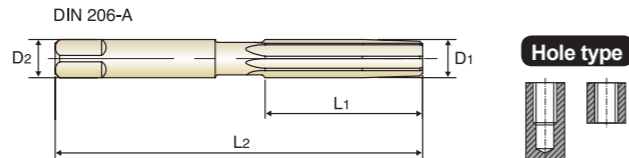
K1143 SERIES

HSS, HAND REAMERS - STRAIGHT FLUTES

- HSS, HANDREIBAHLEN - GERADEGENUTET
ALÉSROIRS HSS À MAIN - HÉLICE À GAUCHE
ALESATORI A MANO IN HSS - ELICA SINISTRA

- O.D. Tolerances : DIN 1420 for H7
Shank Diameter ≈ Nominal Reamer Diameter
Straight Flutes / Right Hand Cut
Chamfer Angle- tapered
Type of center - Up to Ø3.75 : external centers
Over Ø3.75 : internal centers

- Schneiden-Ø Toleranzen : DIN 1420 für H7
Schaft-Ø = Nomineller Reibahlen-Ø
Geradegenutet / Rechtsschneidend
Anschnittwinkel - Konisch
Zentrierungsart - bis Ø3,75 mm : Zentrierungszapfen
über Ø3,75 mm : Zentrierung



Hole type

D1=D2

HSS DIN 206 H7 Bright



Unit : mm

Table with 5 columns: EDP No., Reamer Diameter (D), Flute Length (L1), Overall Length (L2), No. of Flute. Lists various reamer models and their specifications.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO material compatibility chart for reamers, categorized by P (Non-alloy steel), M (Stainless steel), K (Cast iron), N (Aluminum), S (Heat Resistant Super Alloys), and H (Titanium Alloys).



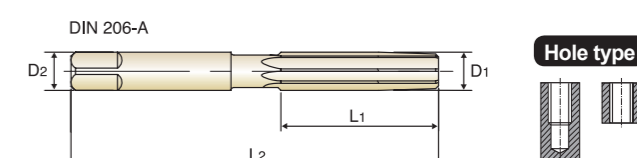
K1143 SERIES

HSS, HAND REAMERS - STRAIGHT FLUTES

- HSS, HANDREIBAHLEN - GERADEGENUTET
ALÉSROIRS HSS À MAIN - ENTRÉE DROITE
ALESATORI A MANO IN HSS - ELICA DRITTA

- O.D. Tolerances : DIN 1420 for H7
Shank Diameter ≈ Nominal Reamer Diameter
Straight Flutes / Right Hand Cut
Chamfer Angle- tapered
Type of center - Up to Ø3.75 : external centers
Over Ø3.75 : internal centers

- Schneiden-Ø Toleranzen : DIN 1420 für H7
Schaft-Ø = Nomineller Reibahlen-Ø
Geradegenutet / Rechtsschneidend
Anschnittwinkel - Konisch
Zentrierungsart - bis Ø3,75 mm : Zentrierungszapfen
über Ø3,75 mm : Zentrierung



Hole type

D1=D2

HSS DIN 206 H7 Bright



Unit : mm

Table with 5 columns: EDP No., Reamer Diameter (D), Flute Length (L1), Overall Length (L2), No. of Flute. Lists various reamer models and their specifications.

◎ : Excellent ○ : Good

ISO material compatibility chart for reamers, categorized by P (Non-alloy steel), M (Stainless steel), K (Cast iron), N (Aluminum), S (Heat Resistant Super Alloys), and H (Titanium Alloys).



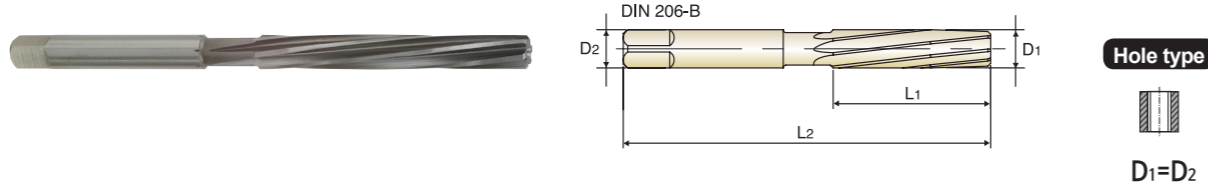
K1153 SERIES

HSS, HAND REAMERS - LH SPIRAL FLUTES

- HSS, HAND REAMERS - LH SPIRAL FLUTES
ALÉSOIRS HSS À MAIN - HÉLICE À GAUCHE
ALESATORI A MANO IN HSS - ELICA SINISTRA

- O.D. Tolerances : DIN 1420, H7
Shank Diameter ≈ Nominal Reamer Diameter
LH Spiral Flutes / Right Hand Cut
Chamfer Angle - tapered
Type of center - Up to Ø3.75 : external centers
- Over Ø3.75 : internal centers

- Schneiden-Ø Toleranzen : DIN 1420 für H7
Schaft-Ø = Nomineller Reibahlen-Ø
Spiralgenutet mit Linksdraht / Rechtsschneidend
Anschnittwinkel - Konisch
Zentrierungsart - bis Ø3,75 mm : Zentrierungszapfen
- über Ø3,75 mm : Zentrierung



Unit : mm

Table with 5 columns: EDP No., Reamer Diameter (D), Flute Length (L1), Overall Length (L2), No. of Flute. Lists various reamer models like K115300200 to K115302400.

Next page arrow

◎: Excellent ○: Good

ISO compatibility table with columns P (Non-alloy steel, Low alloy steel, High alloyed steel, Stainless steel, Grey cast iron, Nodular cast iron, Malleable cast iron), N (Aluminum, Copper, Non Metallic, Heat Resistant Super Alloys, Titanium Alloys), and H (Hardened steel, Chilled Cast Iron, Hardened Cast Iron).



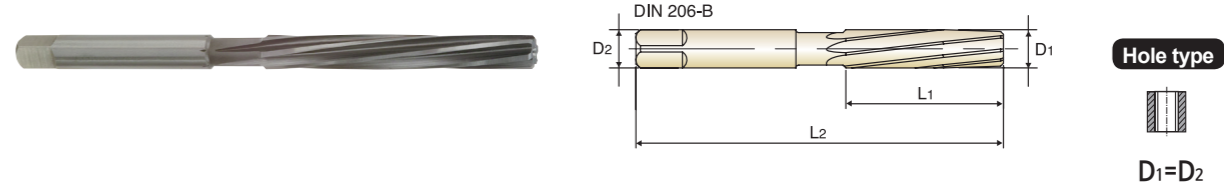
K1153 SERIES

HSS, HAND REAMERS - LH SPIRAL FLUTES

- HSS, HAND REAMERS - LH SPIRAL FLUTES
ALÉSOIRS HSS À MAIN - HÉLICE À GAUCHE
ALESATORI A MANO IN HSS - ELICA SINISTRA

- O.D. Tolerances : DIN 1420, H7
Shank Diameter ≈ Nominal Reamer Diameter
LH Spiral Flutes / Right Hand Cut
Chamfer Angle - tapered
Type of center - Up to Ø3.75 : external centers
- Over Ø3.75 : internal centers

- Schneiden-Ø Toleranzen : DIN 1420 für H7
Schaft-Ø = Nomineller Reibahlen-Ø
Geradegenutet / Rechtsschneidend
Anschnittwinkel - Konisch
Zentrierungsart - bis Ø3,75 mm : Zentrierungszapfen
- über Ø3,75 mm : Zentrierung



Unit : mm

Table with 5 columns: EDP No., Reamer Diameter (D), Flute Length (L1), Overall Length (L2), No. of Flute. Lists various reamer models like K115302500 to K115306000.

◎: Excellent ○: Good

ISO compatibility table with columns P (Non-alloy steel, Low alloy steel, High alloyed steel, Stainless steel, Grey cast iron, Nodular cast iron, Malleable cast iron), N (Aluminum, Copper, Non Metallic, Heat Resistant Super Alloys, Titanium Alloys), and H (Hardened steel, Chilled Cast Iron, Hardened Cast Iron).

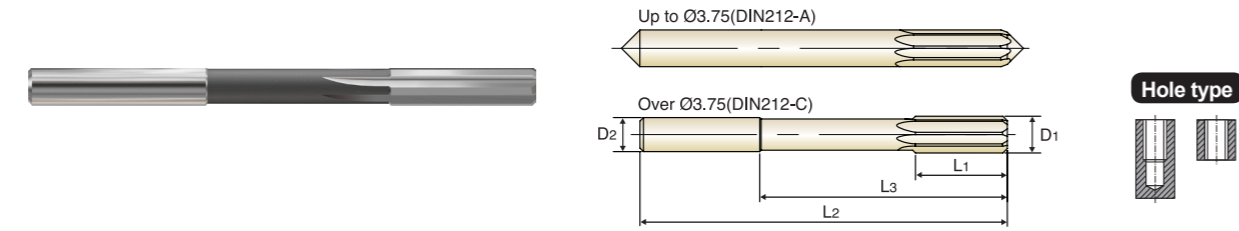


HSS-E, STRAIGHT SHANK CHUCKING REAMERS - STRAIGHT FLUTES

HSS-E, MASCHINENREIBAHLE mit ZYLINDERSCHAFT - GERADEGENUTET
ALÉSOIRS HSS-E MACHINE DROIT- ENTRÉE DROITE
ALESATORI IN HSS-E, ATTACCO CILINDRICO - ELICA DRITTA

- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Shank Diameter Tolerances : h8
- ▶ Straight Flute / Right Hand Cut
- ▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

- ▶ Schneiden-Ø Toleranzen : DIN 1420 für H7
- ▶ Schaft-Ø Toleranzen : h8
- ▶ Geradegenutet / Rechtsschneidend
- ▶ Anschnittwinkel - bis Ø3,75 mm : 15°
- über Ø3,75 mm : 45°



p.A406
 Recommended ToolHolder ER COLLET CHUCK Plain Shank
 up to Ø3.75 over Ø3.75 Unit : mm

EDP No.	Reamer Diameter		Shank Diameter	Cutting Length		Neck Length	Overall Length	No. of Flute
	D1	D2	D2	L1	L3	L2		
K210100200	2.0	2	2	11	-	49	4	
K210100220	2.2	2.2	2.2	12	-	53	4	
K210100250	2.5	2.5	2.5	14	-	57	4	
K210100260	2.6	2.6	2.6	14	-	57	4	
K210100280	2.8	2.8	2.8	15	-	61	4	
K210100300	3.0	3	3	15	-	61	6	
K210100310	3.1	3.1	3.1	16	-	65	6	
K210100320	3.2	3.2	3.2	16	-	65	6	
K210100350	3.5	3.5	3.5	18	-	70	6	
K210100360	3.6	3.6	3.6	18	-	70	6	
K210100370	3.7	3.7	3.7	18	-	70	6	
K210100400	4.0	4	4	19	42	75	6	
K210100430	4.3	4.5	4.5	21	46	80	6	
K210100450	4.5	4.5	4.5	21	46	80	6	
K210100460	4.6	4.5	4.5	21	46	80	6	
K210100500	5.0	5	5	23	51	86	6	
K210100550	5.5	5.6	5.6	26	56	93	6	
K210100560	5.6	5.6	5.6	26	56	93	6	
K210100600	6.0	5.6	5.6	26	56	93	6	
K210100650	6.5	6.3	6.3	28	62	101	6	
K210100700	7.0	7.1	7.1	31	68	109	6	
K210100720	7.2	7.1	7.1	31	68	109	6	
K210100800	8.0	8	8	33	74	117	6	
K210100830	8.3	8	8	33	74	117	6	
K210100850	8.5	8	8	33	74	117	6	
K210100900	9.0	9	9	36	80	125	6	

▶ 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	
Recommended	◎	◎	○	○	◎	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
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	400Rm	1050Rm	550	630	400	550
Recommended	○	○	○	○	○	○	○	○													

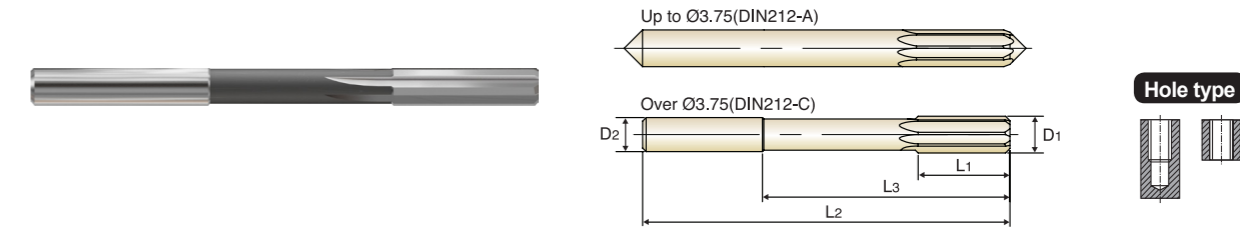


HSS-E, STRAIGHT SHANK CHUCKING REAMERS - STRAIGHT FLUTES

HSS-E, MASCHINENREIBAHLE mit ZYLINDERSCHAFT - GERADEGENUTET
ALÉSOIRS HSS-E MACHINE DROIT- ENTRÉE DROITE
ALESATORI IN HSS-E, ATTACCO CILINDRICO - ELICA DRITTA

- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Shank Diameter Tolerances : h8
- ▶ Straight Flute / Right Hand Cut
- ▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

- ▶ Schneiden-Ø Toleranzen : DIN 1420 für H7
- ▶ Schaft-Ø Toleranzen : h8
- ▶ Geradegenutet / Rechtsschneidend
- ▶ Anschnittwinkel - bis Ø3,75 mm : 15°
- über Ø3,75 mm : 45°



p.A406
 Recommended ToolHolder ER COLLET CHUCK Plain Shank
 up to Ø3.75 over Ø3.75 Unit : mm

EDP No.	Reamer Diameter		Shank Diameter	Cutting Length		Neck Length	Overall Length	No. of Flute
	D1	D2	D2	L1	L3	L2		
K210100950	9.5	9	9	36	80	125	6	
K210101000	10.0	10	10	38	86	133	6	
K210101050	10.5	10	10	38	86	133	6	
K210101100	11.0	10	10	41	95	142	6	
K210101200	12.0	10	10	44	104	151	6	
K210101300	13.0	10	10	44	104	151	6	
K210101400	14.0	12.5	12.5	47	108	160	8	
K210101500	15.0	12.5	12.5	50	110	162	8	
K210101600	16.0	12.5	12.5	52	118	170	8	
K210101700	17.0	14	14	54	121	175	8	
K210101800	18.0	14	14	56	128	182	8	
K210101900	19.0	16	16	58	129	189	8	
K210102000	20.0	16	16	60	135	195	8	

◎ : Excellent ○ : Good

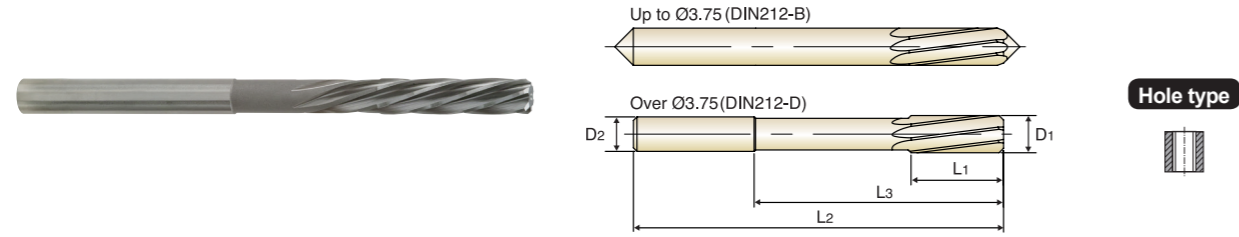
ISO Material Description	P								M						K						
	Non-alloy steel				Low alloy steel				High alloyed steel, and tool steel		Stainless steel				Grey cast iron		Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	32	10	29	32	38	15	35	15	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	
Recommended	◎	◎	○	○	◎	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
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	400Rm	1050Rm	550	630	400	550
Recommended	○	○	○	○	○	○	○	○													

HSS-E, STRAIGHT SHANK CHUCKING REAMERS - LH SPIRAL FLUTES

HSS-E, MASCHINENREIBAHLE mit ZYLINDERSCHAFT - SPIRALGENUTET mit LINKSDRALL
 ALÉSOIRS HSS-E MACHINE DROIT- HÉLICE À GAUCHE
 ALESATORI IN HSS-E, ATTACCO CILINDRICO - ELICA SINISTRA

- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Shank Diameter Tolerances : h8
- ▶ LH Spiral Flutes / Right Hand Cut
- ▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

- ▶ Schneiden-Ø Toleranzen : DIN 1420 für H7
- ▶ Schaft-Ø Toleranzen : h8
- ▶ Spiralgenutet mit Linksdraht / Rechtsschneidend
- ▶ Anschnittwinkel - bis Ø3,75 mm : 15°
- über Ø3,75 mm : 45°



HSS-E DIN 212 H7 LH7° 15° 45° Bright p.A406
 Recommended ToolHolder ER COLLET CHUCK Plain Shank

Unit : mm

EDP No.	Reamer Diameter	Shank Diameter	Cutting Length	Neck Length	Overall Length	No. of Flute
	D1	D2	L1	L3	L2	
K211100200	2.0	2	11	-	49	4
K211100220	2.2	2.2	12	-	53	4
K211100250	2.5	2.5	14	-	57	4
K211100260	2.6	2.6	14	-	57	4
K211100280	2.8	2.8	15	-	61	4
K211100300	3.0	3	15	-	61	6
K211100310	3.1	3.1	16	-	65	6
K211100320	3.2	3.2	16	-	65	6
K211100350	3.5	3.5	18	-	70	6
K211100360	3.6	3.6	18	-	70	6
K211100370	3.7	3.7	18	-	70	6
K211100400	4.0	4	19	42	75	6
K211100430	4.3	4.5	21	46	80	6
K211100450	4.5	4.5	21	46	80	6
K211100460	4.6	4.5	21	46	80	6
K211100500	5.0	5	23	51	86	6
K211100550	5.5	5.6	26	56	93	6
K211100560	5.6	5.6	26	56	93	6
K211100600	6.0	5.6	26	56	93	6
K211100650	6.5	6.3	28	62	101	6
K211100700	7.0	7.1	31	68	109	6
K211100720	7.2	7.1	31	68	109	6
K211100800	8.0	8	33	74	117	6
K211100830	8.3	8	33	74	117	6

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◎ : Excellent ○ : Good

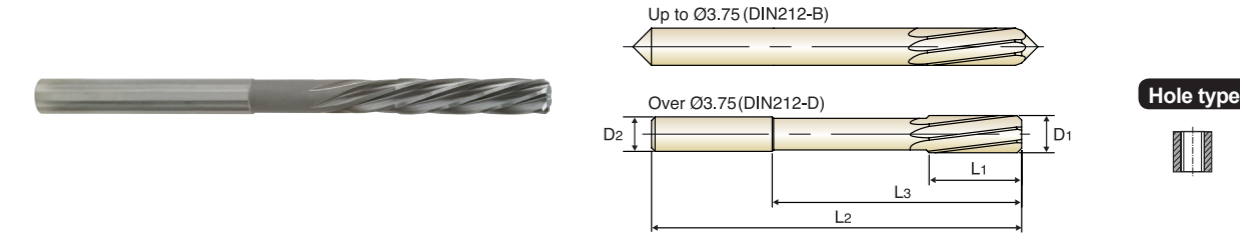
ISO Material Description	P								M				K							
	Non-alloy steel				Low alloy steel				High alloyed steel, and tool steel				Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	29	32	38	35	35	15	23	10	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
Recommended	◎	◎	○	○	○	◎	○	○	○	○	○	○	○	○	○	○	○	○	○	○

HSS-E, STRAIGHT SHANK CHUCKING REAMERS - LH SPIRAL FLUTES

HSS-E, MASCHINENREIBAHLE mit ZYLINDERSCHAFT - SPIRALGENUTET mit LINKSDRALL
 ALÉSOIRS HSS-E MACHINE DROIT- HÉLICE À GAUCHE
 ALESATORI IN HSS-E, ATTACCO CILINDRICO - ELICA SINISTRA

- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Shank Diameter Tolerances : h8
- ▶ LH Spiral Flutes / Right Hand Cut
- ▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

- ▶ Schneiden-Ø Toleranzen : DIN 1420 für H7
- ▶ Schaft-Ø Toleranzen : h8
- ▶ Spiralgenutet mit Linksdraht / Rechtsschneidend
- ▶ Anschnittwinkel - bis Ø3,75 mm : 15°
- über Ø3,75 mm : 45°



HSS-E DIN 212 H7 LH7° 15° 45° Bright p.A406
 Recommended ToolHolder ER COLLET CHUCK Plain Shank

Unit : mm

EDP No.	Reamer Diameter	Shank Diameter	Cutting Length	Neck Length	Overall Length	No. of Flute
	D1	D2	L1	L3	L2	
K211100850	8.5	8	33	74	117	6
K211100900	9.0	9	36	80	125	6
K211100950	9.5	9	36	80	125	6
K211101000	10.0	10	38	86	133	6
K211101050	10.5	10	38	86	133	6
K211101100	11.0	10	41	95	142	6
K211101200	12.0	10	44	104	151	6
K211101300	13.0	10	44	104	151	6
K211101400	14.0	12.5	47	108	160	8
K211101500	15.0	12.5	50	110	162	8
K211101600	16.0	12.5	52	118	170	8
K211101700	17.0	14	54	121	175	8
K211101800	18.0	14	56	128	182	8
K211101900	19.0	16	58	129	189	8
K211102000	20.0	16	60	135	195	8

◎ : 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	29	32	38	35	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
Recommended	◎	◎	○	○	○	◎	○	○	○	○	○	○	○	○	○	○	○	○	○	○



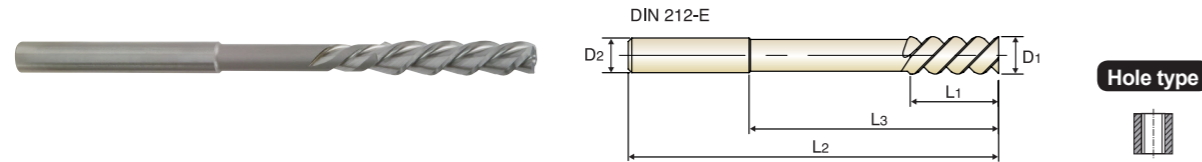
K2121 SERIES

HSS-E, STRAIGHT SHANK CHUCKING REAMERS - LH SPIRAL FLUTES (QUICK SPIRAL)

- HSS-E, MASCHINEN - SCHÄLREIBAHLE mit ZYLINDERSCHAFT - SPIRALGENUTET mit LINKSDRAL
- ALÉSOIRS HSS-E MACHINE DROIT- HÉLICE À GAUCHE (HÉLICE RAPIDE)
- ALESATORI IN HSS-E, ATTACCO CILINDRICO - ELICA RAPIDA, SINISTRA

- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Shank Diameter Tolerances : h8
- ▶ Chamfer Angle - tapered
- ▶ LH High Spiral Flutes / Right Hand Cut

- ▶ Schneiden-Ø Toleranzen : DIN 1420 für H7
- ▶ Schaft-Ø Toleranzen : h8
- ▶ Anschnittwinkel - Konisch
- ▶ Spiralgenutet mit Linksdraht / Rechtsschneidend



HSS-E DIN 212 H7 LH45° FORM E Bright p.A406

Plain Shank Recommended ToolHolder ER COLLET CHUCK

Unit : mm

EDP No.	Reamer Diameter	Shank Diameter	Cutting Length	Neck Length	Overall Length	No. of Flute
	D1	D2	L1	L3	L2	
K212100400	4.0	4	19	42	75	3
K212100450	4.5	4.5	21	46	80	3
K212100500	5.0	5	23	51	86	3
K212100550	5.5	5.6	26	56	93	3
K212100600	6.0	5.6	26	56	93	3
K212100650	6.5	6.3	28	62	101	3
K212100700	7.0	7.1	31	68	109	3
K212100800	8.0	8	33	74	117	3
K212100850	8.5	8	33	74	117	3
K212100900	9.0	9	36	80	125	3
K212100950	9.5	9	36	80	125	3
K212101000	10.0	10	38	86	133	3
K212101100	11.0	10	41	95	142	3
K212101200	12.0	10	44	104	151	3
K212101300	13.0	10	44	104	151	3
K212101400	14.0	12.5	47	108	160	4
K212101500	15.0	12.5	50	110	162	4
K212101600	16.0	12.5	52	118	170	4
K212101700	17.0	14	54	121	175	4
K212101800	18.0	14	56	128	182	4
K212101900	19.0	16	58	129	189	4
K212102000	20.0	16	60	135	195	4

◎ : 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	35	38	40	42	45	48	50	52	55	58	60	62	65	68	70	72
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎



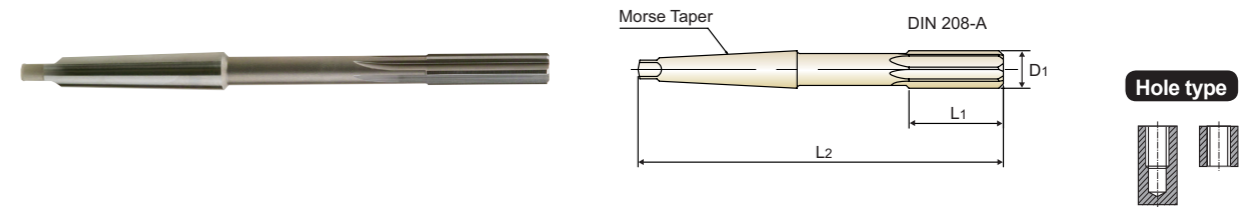
K2102 SERIES

HSS-E, MORSE TAPER SHANK CHUCKING REAMERS - STRAIGHT FLUTES

- HSS-E, MASCHINENREIBAHLE mit MK - GERADEGENUTET
- ALÉSOIRS HSS-E MACHINE QUEUE CONIQUE - ENTRÉE DROITE
- ALESATORI IN HSS-E, ATTACCO CONICO - TAGLIANTI DRITTI

- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Straight Flute / Right Hand Cut
- ▶ Chamfer Angle : 45°

- ▶ Schneiden-Ø Toleranzen : DIN 1420 für H7
- ▶ Geradegenutet / Rechtsschneidend
- ▶ Anschnittwinkel : 45°



HSS-E DIN 208 H7 45° FORM A Bright p.A406

Plain Shank Recommended ToolHolder ER COLLET CHUCK

Unit : mm

EDP No.	Reamer Diameter	No. of Morse Taper	Cutting Length	Overall Length	No. of Flute
	D1		L1	L2	
K210201000	10.0	1	38	168	6
K210201100	11.0	1	41	175	6
K210201200	12.0	1	44	182	6
K210201300	13.0	1	44	182	6
K210201400	14.0	1	47	189	8
K210201500	15.0	2	50	204	8
K210201600	16.0	2	52	210	8
K210201700	17.0	2	54	214	8
K210201800	18.0	2	56	219	8
K210201900	19.0	2	58	223	8
K210202000	20.0	2	60	228	8
K210202100	21.0	2	62	232	8
K210202200	22.0	2	64	237	8
K210202300	23.0	2	66	241	8
K210202400	24.0	3	68	268	8
K210202500	25.0	3	68	268	8
K210202600	26.0	3	70	273	8
K210202700	27.0	3	71	277	10
K210202800	28.0	3	71	277	10
K210202900	29.0	3	73	281	10
K210203000	30.0	3	73	281	10
K210203100	31.0	3	75	285	10
K210203200	32.0	4	77	317	10
K210203400	34.0	4	78	321	10
K210203500	35.0	4	78	321	10
K210203600	36.0	4	79	325	10

▶ 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	35	38	40	42	45	48	50	52	55	58	60	62	65	68	70	72
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

YG REAMERS

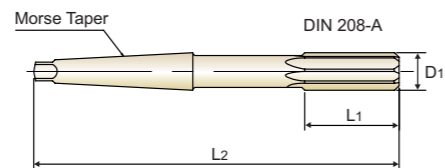
K2102 SERIES

HSS-E, MORSE TAPER SHANK CHUCKING REAMERS - STRAIGHT FLUTES

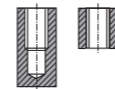
● HSS-E, MASCHINENREIBAHLE mit MK - GERADEGENUTET
● ALÉSOIRS HSS-E MACHINE QUEUE CONIQUE - ENTRÉE DROITE
● ALESATORI IN HSS-E, ATTACCO CONICO - TAGLIENTI DRITTI

▶ O.D. Tolerances : DIN 1420 for H7
 ▶ Straight Flute / Right Hand Cut
 ▶ Chamfer Angle : 45°

▶ Schneiden-Ø Toleranzen : DIN 1420 für H7
 ▶ Geradegenutet / Rechtsschneidend
 ▶ Anschnittwinkel : 45°



Hole type



HSS-E
DIN 208
H7
 45°
FORM A
Bright

 p.A406

Plain Shank
 ER COLLET CHUCK
 Recommended ToolHolder

Unit : mm

EDP No.	Reamer Diameter	No. of Morse Taper	Cutting Length	Overall Length	No. of Flute
	D1		L1	L2	
K210203800	38.0	4	81	329	10
K210204000	40.0	4	81	329	10
K210204100	41.0	4	82	333	12
K210204200	42.0	4	82	333	12
K210204300	43.0	4	83	336	12
K210204400	44.0	4	83	336	12
K210204500	45.0	4	83	336	12
K210204600	46.0	4	84	340	12
K210204700	47.0	4	84	340	12
K210204800	48.0	4	86	344	12
K210205000	50.0	4	86	344	12

YG REAMERS

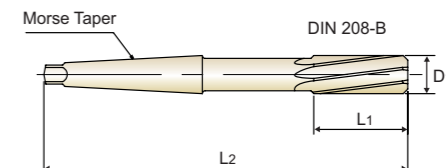
K2112 SERIES

HSS-E, MORSE TAPER SHANK CHUCKING REAMERS - LH SPIRAL FLUTES

● HSS-E, MASCHINENREIBAHLE mit MK - SPIRALGENUTET mit LINKSDRALL
● ALÉSOIRS HSS-E MACHINE QUEUE CONIQUE - HÉLICE À GAUCHE
● ALESATORI IN HSS-E, ATTACCO CONICO - ELICA SINISTRA

▶ O.D. Tolerances : DIN 1420 for H7
 ▶ LH Spiral Flutes / Right Hand Cut
 ▶ Chamfer Angle : 45°

▶ Schneiden-Ø Toleranzen : DIN 1420 für H7
 ▶ Spiralgenutet mit Linksdraht / Rechtsschneidend
 ▶ Anschnittwinkel : 45°



Hole type



HSS-E
DIN 208
H7
 LH7°
 45°
FORM B
Bright

 p.A406

Plain Shank
 ER COLLET CHUCK
 Recommended ToolHolder

Unit : mm

EDP No.	Reamer Diameter	No. of Morse Taper	Cutting Length	Overall Length	No. of Flute
	D1		L1	L2	
K211201000	10.0	1	38	168	6
K211201100	11.0	1	41	175	6
K211201200	12.0	1	44	182	6
K211201300	13.0	1	44	182	6
K211201400	14.0	1	47	189	8
K211201500	15.0	2	50	204	8
K211201600	16.0	2	52	210	8
K211201700	17.0	2	54	214	8
K211201800	18.0	2	56	219	8
K211201900	19.0	2	58	223	8
K211202000	20.0	2	60	228	8
K211202100	21.0	2	62	232	8
K211202200	22.0	2	64	237	8
K211202300	23.0	2	66	241	8
K211202400	24.0	3	68	268	8
K211202500	25.0	3	68	268	8
K211202600	26.0	3	70	273	8
K211202700	27.0	3	71	277	10
K211202800	28.0	3	71	277	10
K211202900	29.0	3	73	281	10
K211203000	30.0	3	73	281	10
K211203100	31.0	3	75	285	10
K211203200	32.0	4	77	317	10
K211203400	34.0	4	78	321	10
K211203500	35.0	4	78	321	10
K211203600	36.0	4	79	325	10

▶ 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	35	38	40	42	45	48	50	52	54	56	58	60	62	64	66	68
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

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	31	32	33	34	35	36	37	38	39	40	41
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

HSS

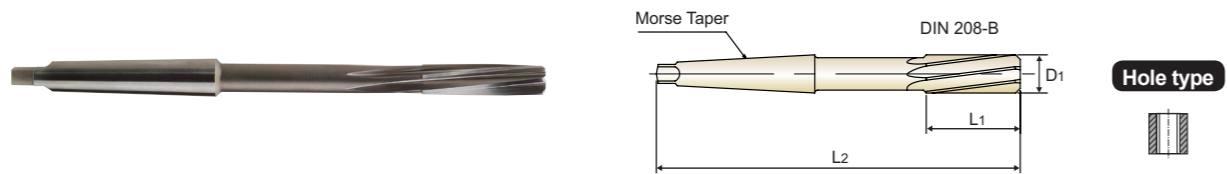


K2112 SERIES

HSS-E, MORSE TAPER SHANK CHUCKING REAMERS - LH SPIRAL FLUTES

- HSS-E, MASCHINENREIBAHLE mit MK - SPIRALGENUTET mit LINKSDRALL
- ALÉSUIRS HSS-E MACHINE QUEUE CONIQUE - HÉLICE À GAUCHE
- ALESATORI IN HSS-E, ATTACCO CONICO - ELICA SINISTRA

- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ LH Spiral Flutes / Right Hand Cut
- ▶ Chamfer Angle : 45°
- ▶ Schneiden-Ø Toleranzen : DIN 1420 für H7
- ▶ Spiralgenutet mit Linksdraht / Rechtsschneidend
- ▶ Anschnittwinkel : 45°



HSS-E DIN 208 H7 LH7° 45° FORM B Bright p.A406

Plain Shank
 ER COLLET CHUCK

Unit : mm

EDP No.	Reamer Diameter		No. of Morse Taper	Cutting Length					Overall Length		No. of Flute	
	D1	D2		L1					L2	L2		
K211203800	38.0	38.0	4							81	329	10
K211204000	40.0	40.0	4							81	329	10
K211204100	41.0	41.0	4							82	333	12
K211204200	42.0	42.0	4							82	333	12
K211204300	43.0	43.0	4							83	336	12
K211204400	44.0	44.0	4							83	336	12
K211204500	45.0	45.0	4							83	336	12
K211204600	46.0	46.0	4							84	340	12
K211204700	47.0	47.0	4							84	340	12
K211204800	48.0	48.0	4							86	344	12
K211205000	50.0	50.0	4							86	344	12



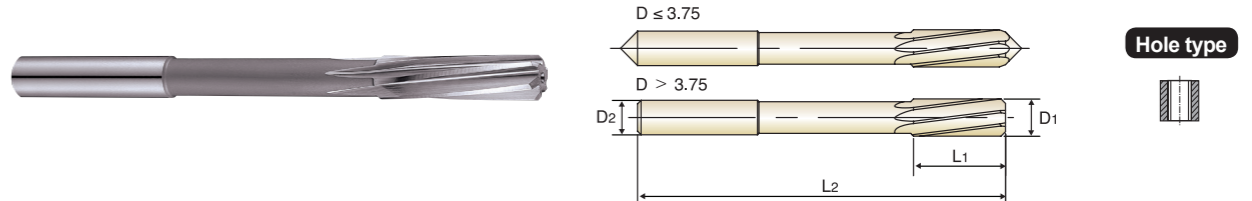
K21B1 SERIES

HSS-E, NC MACHINE REAMERS WITH WHOLE-NUMBER SHANK Ø

- HSS-E, NC-MASCHINENREIBAHLEN mit GERADZÄHLIGEN SCHAFT Ø
- ALÉSUIRS HSS-E MACHINE CN AVEC DIFFÉRENTES TOLÉRANCES DE QUEUE
- ALESATORI A MACCHINA IN HSS-E CON GAMMA Ø NOMINALI

- ▶ O.D. Tolerances
- Whole-number Ø and 1/10 size : DIN 1420 for H7
- 1/100 size : from Ø2.01 to Ø5.03 : +0.004/-0.000mm
- from Ø5.97 to Ø12.03 : +0.005/-0.000mm
- ▶ Shank Diameter Tolerances : h6
- ▶ LH Spiral Flutes / Right Hand Cut
- ▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

- ▶ Ø Toleranzen:
- ganzzahlige Ø und 1/10 Größen : DIN 1420 für H7
- 1/100 Größen : ab Ø2,01 bis Ø5,03 : +0.004/-0.000mm
- von Ø5,97 bis Ø12,03 : +0.005/-0.000mm
- ▶ Schaft-Durchmesser Toleranzen : h6
- ▶ linksspiralig/ rechtsschneidend
- ▶ Anschnittwinkel - bis Ø3,75 : 15°
- über Ø3,75 : 45°



HSS-E H7 LH7° 15° 45° Bright p.A406

Plain Shank
 ER COLLET CHUCK

up to Ø3.75 over Ø3.75

Unit : mm

EDP No.	Reamer Diameter		Shank Diameter	Flute Length	Overall Length
	D1	D2			
K21B100200	2.0	2.0	2	11	49
K21B100201	2.01	2.01	2	11	49
K21B100202	2.02	2.02	2	11	49
K21B100203	2.03	2.03	2	11	49
K21B100210	2.1	2.1	2	11	49
K21B100220	2.2	2.2	3	12	53
K21B100230	2.3	2.3	3	12	53
K21B100240	2.4	2.4	3	14	57
K21B100247	2.47	2.47	3	14	57
K21B100248	2.48	2.48	3	14	57
K21B100249	2.49	2.49	3	14	57
K21B100250	2.5	2.5	3	14	57
K21B100251	2.51	2.51	3	14	57
K21B100252	2.52	2.52	3	14	57
K21B100253	2.53	2.53	3	14	57
K21B100260	2.6	2.6	3	14	57
K21B100270	2.7	2.7	3	15	61
K21B100280	2.8	2.8	3	15	61
K21B100290	2.9	2.9	3	15	61
K21B100297	2.97	2.97	3	15	61
K21B100298	2.98	2.98	3	15	61
K21B100299	2.99	2.99	3	15	61
K21B100300	3.0	3.0	3	15	61
K21B100301	3.01	3.01	4	16	65

▶ 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	38	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
Recommended	◎	◎	○	○	○	◎	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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						15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	○	○	○	○	○	○	○	○			○	○	○	○	○	○	○	○	○	○	○

A398 phone:+82-32-526-0909, www.yg1.solutions, E-mail:yg1@yg1.solutions

YG-1 CO., LTD.

◎ : 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	38	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
Recommended	◎	◎	○	○	○	◎	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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						15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	○	○	○	○	○	○	○	○			○	○	○	○	○	○	○	○	○	○	○

YG-1 CO., LTD.

phone:+82-32-526-0909, www.yg1.solutions, E-mail:yg1@yg1.solutions

A399

HSS-E, NC MACHINE REAMERS WITH WHOLE-NUMBER SHANK Ø

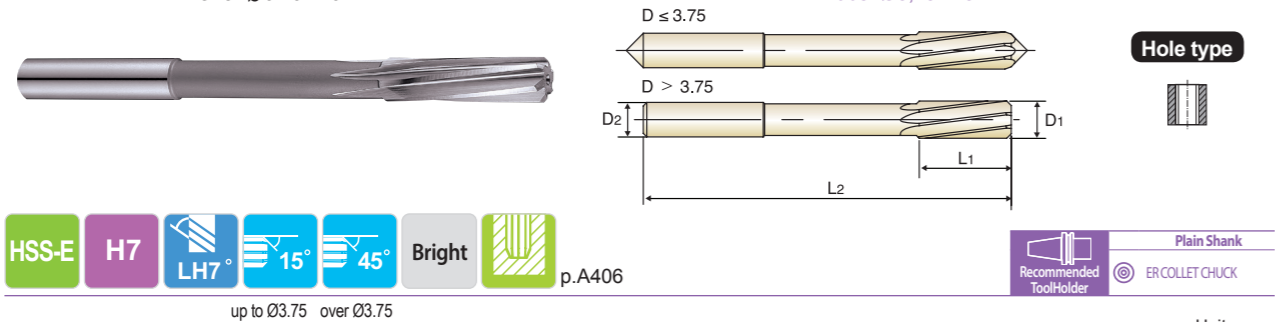
HSS-E, NC-MASCHINENREIBAHLEN mit GERADZÄHLIGEN SCHAFT Ø
ALÉSOIRS HSS-E MACHINE CN AVEC DIFFÉRENTES TOLÉRANCES DE QUEUE
ALESATORI A MACCHINA IN HSS-E CON GAMMA Ø NOMINALI

▶ O.D. Tolerances
Whole-number Ø and 1/10 size : DIN 1420 for H7
1/100 size : from Ø2.01 to Ø5.03 : +0.004/-0.000mm
from Ø5.97 to Ø12.03 : +0.005/-0.000mm

▶ Shank Diameter Tolerances : h6
▶ LH Spiral Flutes / Right Hand Cut
▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

▶ Ø Toleranzen:
ganzahlige Ø und 1/10 Größen : DIN 1420 für H7
1/100 Größen : ab Ø2,01 bis Ø5,03 : +0.004/-0.000mm
von Ø5,97 bis Ø12,03 : +0.005/-0.000mm

▶ Schaft-Durchmesser Toleranzen : h6
▶ linksspiralig/ rechtsscheidend
▶ Anschnittwinkel - bis Ø3,75 : 15°
- über Ø3,75 : 45°



up to Ø3.75 over Ø3.75 Unit : mm

EDP No.	Reamer Diameter		Shank Diameter		Flute Length		Overall Length	
	D1		D2		L1		L2	
K21B100302	3.02		4		16		65	
K21B100303	3.03		4		16		65	
K21B100310	3.1		4		16		65	
K21B100320	3.2		4		16		65	
K21B100330	3.3		4		16		65	
K21B100340	3.4		4		18		70	
K21B100350	3.5		4		18		70	
K21B100360	3.6		4		18		70	
K21B100370	3.7		4		18		70	
K21B100380	3.8		4		19		75	
K21B100390	3.9		4		19		75	
K21B100397	3.97		4		19		75	
K21B100398	3.98		4		19		75	
K21B100399	3.99		4		19		75	
K21B100400	4.0		4		19		75	
K21B100401	4.01		4		19		75	
K21B100402	4.02		4		19		75	
K21B100403	4.03		4		19		75	
K21B100410	4.1		4		19		75	
K21B100420	4.2		4		19		75	
K21B100430	4.3		5		21		80	
K21B100440	4.4		5		21		80	
K21B100450	4.5		5		21		80	
K21B100460	4.6		5		21		80	

▶ 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	21	22		
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	19	21				
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230				
Recommended	◎	◎	○	○	○	◎	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
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	42	43	
HRc											15	30	25	38	34			55	60	42	55			
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550			
Recommended	○	○	○	○	○	○	○	○			○	○	○	○	○	○	○	○	○	○	○	○	○	

HSS-E, NC MACHINE REAMERS WITH WHOLE-NUMBER SHANK Ø

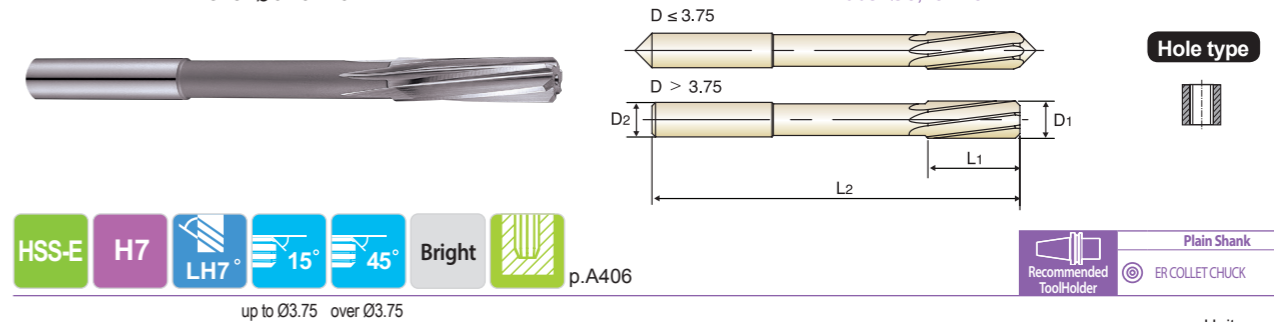
HSS-E, NC-MASCHINENREIBAHLEN mit GERADZÄHLIGEN SCHAFT Ø
ALÉSOIRS HSS-E MACHINE CN AVEC DIFFÉRENTES TOLÉRANCES DE QUEUE
ALESATORI A MACCHINA IN HSS-E CON GAMMA Ø NOMINALI

▶ O.D. Tolerances
Whole-number Ø and 1/10 size : DIN 1420 for H7
1/100 size : from Ø2.01 to Ø5.03 : +0.004/-0.000mm
from Ø5.97 to Ø12.03 : +0.005/-0.000mm

▶ Shank Diameter Tolerances : h6
▶ LH Spiral Flutes / Right Hand Cut
▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

▶ Ø Toleranzen:
ganzahlige Ø und 1/10 Größen : DIN 1420 für H7
1/100 Größen : ab Ø2,01 bis Ø5,03 : +0.004/-0.000mm
von Ø5,97 bis Ø12,03 : +0.005/-0.000mm

▶ Schaft-Durchmesser Toleranzen : h6
▶ linksspiralig/ rechtsscheidend
▶ Anschnittwinkel - bis Ø3,75 : 15°
- über Ø3,75 : 45°



up to Ø3.75 over Ø3.75 Unit : mm

EDP No.	Reamer Diameter		Shank Diameter		Flute Length		Overall Length	
	D1		D2		L1		L2	
K21B100470	4.7		5		21		80	
K21B100480	4.8		5		23		86	
K21B100490	4.9		5		23		86	
K21B100497	4.97		5		23		86	
K21B100498	4.98		5		23		86	
K21B100499	4.99		5		23		86	
K21B100500	5.0		5		23		86	
K21B100501	5.01		5		23		86	
K21B100502	5.02		5		23		86	
K21B100503	5.03		5		23		86	
K21B100510	5.1		5		23		86	
K21B100520	5.2		5		23		86	
K21B100530	5.3		5		23		86	
K21B100540	5.4		6		26		93	
K21B100550	5.5		6		26		93	
K21B100560	5.6		6		26		93	
K21B100570	5.7		6		26		93	
K21B100580	5.8		6		26		93	
K21B100590	5.9		6		26		93	
K21B100597	5.97		6		26		93	
K21B100598	5.98		6		26		93	
K21B100599	5.99		6		26		93	
K21B100600	6.0		6		26		93	
K21B100601	6.01		6		28		101	

▶ 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	21	22		
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	19	21				
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230				
Recommended	◎	◎	○	○	○	◎	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
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	42	43	
HRc											15	30	25	38	34			55	60	42	55			
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550			
Recommended	○	○	○	○	○	○	○	○			○	○	○	○	○	○	○	○	○	○	○	○	○	



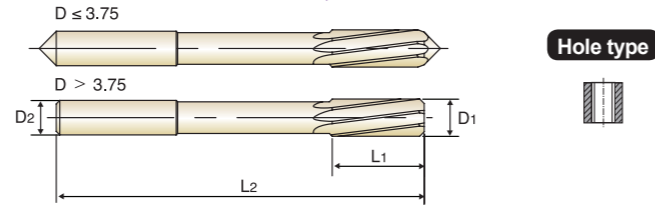
K21B1 SERIES

HSS-E, NC MACHINE REAMERS WITH WHOLE-NUMBER SHANK Ø

HSS-E, NC-MASCHINENREIBAHLEN mit GERADZÄHLIGEN SCHAFT Ø
ALÉSOIRS HSS-E MACHINE CN AVEC DIFFÉRENTES TOLÉRANCES DE QUEUE
ALESATORI A MACCHINA IN HSS-E CON GAMMA Ø NOMINALI

- O.D. Tolerances
Whole-number Ø and 1/10 size : DIN 1420 for H7
1/100 size : from Ø2.01 to Ø5.03 : +0.004/-0.000mm
Shank Diameter Tolerances : h6
LH Spiral Flutes / Right Hand Cut
Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

- Ø Toleranzen:
ganzahlige Ø und 1/10 Größen : DIN 1420 für H7
1/100 Größen : ab Ø2,01 bis Ø5,03 : +0.004/-0.000mm
Schaft-Durchmesser Toleranzen : h6
linksspiralig/ rechtsscheidend
Anschnittwinkel - bis Ø3,75 : 15°
- über Ø3,75 : 45°



Icons for HSS-E, H7, LH7°, 15°, 45°, Bright, and p.A406

Icons for Plain Shank and ER COLLET CHUCK

up to Ø3.75 over Ø3.75

Table with 5 columns: EDP No., Reamer Diameter (D1), Shank Diameter (D2), Flute Length (L1), Overall Length (L2). Lists various reamer models and their dimensions.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO material compatibility table with columns P, M, K, N, S, H and rows for Material Description, VDI 3323, HRc, HB, Recommended.



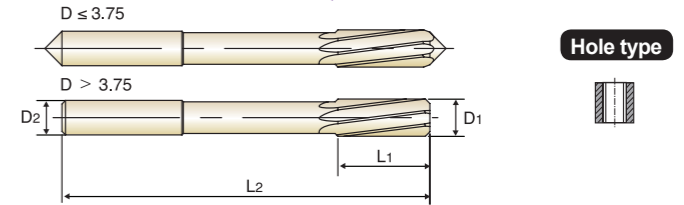
K21B1 SERIES

HSS-E, NC MACHINE REAMERS WITH WHOLE-NUMBER SHANK Ø

HSS-E, NC-MASCHINENREIBAHLEN mit GERADZÄHLIGEN SCHAFT Ø
ALÉSOIRS HSS-E MACHINE CN AVEC DIFFÉRENTES TOLÉRANCES DE QUEUE
ALESATORI A MACCHINA IN HSS-E CON GAMMA Ø NOMINALI

- O.D. Tolerances
Whole-number Ø and 1/10 size : DIN 1420 for H7
1/100 size : from Ø2.01 to Ø5.03 : +0.004/-0.000mm
Shank Diameter Tolerances : h6
LH Spiral Flutes / Right Hand Cut
Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

- Ø Toleranzen:
ganzahlige Ø und 1/10 Größen : DIN 1420 für H7
1/100 Größen : ab Ø2,01 bis Ø5,03 : +0.004/-0.000mm
Schaft-Durchmesser Toleranzen : h6
linksspiralig/ rechtsscheidend
Anschnittwinkel - bis Ø3,75 : 15°
- über Ø3,75 : 45°



Icons for HSS-E, H7, LH7°, 15°, 45°, Bright, and p.A406

Icons for Plain Shank and ER COLLET CHUCK

up to Ø3.75 over Ø3.75

Table with 5 columns: EDP No., Reamer Diameter (D1), Shank Diameter (D2), Flute Length (L1), Overall Length (L2). Lists various reamer models and their dimensions.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO material compatibility table with columns P, M, K, N, S, H and rows for Material Description, VDI 3323, HRc, HB, Recommended.

HSS

YG REAMERS

K21B1 SERIES

YG REAMERS

RECOMMENDED CUTTING CONDITIONS EMFOHLENE SCHNEIDPARAMETER

K4101, K4111 SERIES CARBIDE, NC MACHINE REAMERS

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

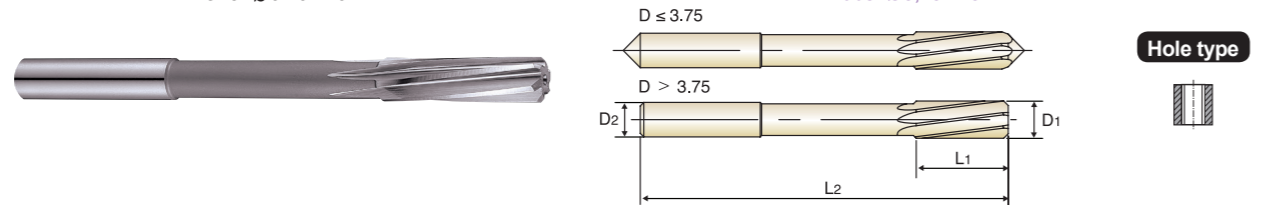
ISO	VDI 3323	Material Description	Vc	Feed									
				2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0	20.0	
P	1	Non-alloy steel	18	0.08-0.10	0.10-0.12	0.12-0.16	0.16-0.20	0.20-0.24	0.24-0.28	0.28-0.32	0.32-0.36	0.36-0.40	
	2		17	0.08-0.10	0.10-0.12	0.12-0.16	0.16-0.20	0.20-0.24	0.24-0.28	0.28-0.32	0.32-0.36	0.36-0.40	
	3		15	0.08-0.10	0.10-0.12	0.12-0.16	0.16-0.20	0.20-0.24	0.24-0.28	0.28-0.32	0.32-0.36	0.36-0.40	
	4		15	0.08-0.10	0.10-0.12	0.12-0.16	0.16-0.20	0.20-0.24	0.24-0.28	0.28-0.32	0.32-0.36	0.36-0.40	
	5		15	0.08-0.10	0.10-0.12	0.12-0.16	0.16-0.20	0.20-0.24	0.24-0.28	0.28-0.32	0.32-0.36	0.36-0.40	
	6	Low alloy steel	17	0.06-0.08	0.08-0.10	0.10-0.12	0.12-0.15	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.27	0.27-0.30	
	7		14	0.06-0.08	0.08-0.10	0.10-0.12	0.12-0.15	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.27	0.27-0.30	
	8		14	0.06-0.08	0.08-0.10	0.10-0.12	0.12-0.15	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.27	0.27-0.30	
	10		High alloyed steel, and tool steel	13	0.06-0.08	0.08-0.10	0.10-0.12	0.12-0.15	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.27	0.27-0.30
	12			8	0.06-0.08	0.08-0.10	0.10-0.12	0.12-0.15	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.27	0.27-0.30
M	13	Stainless steel	7	0.06-0.08	0.08-0.10	0.10-0.12	0.12-0.15	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.27	0.27-0.30	
	14		6	0.06-0.08	0.08-0.10	0.10-0.12	0.12-0.15	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.27	0.27-0.30	
	15		Grey cast iron	20	0.08-0.10	0.10-0.12	0.12-0.16	0.16-0.20	0.20-0.24	0.24-0.28	0.28-0.32	0.32-0.36	0.36-0.40
K	16	15		0.08-0.10	0.10-0.12	0.12-0.16	0.16-0.20	0.20-0.24	0.24-0.28	0.28-0.32	0.32-0.36	0.36-0.40	
	17	Nodular cast iron		18	0.08-0.10	0.10-0.12	0.12-0.16	0.16-0.20	0.20-0.24	0.24-0.28	0.28-0.32	0.32-0.36	0.36-0.40
18	13			0.08-0.10	0.10-0.12	0.12-0.16	0.16-0.20	0.20-0.24	0.24-0.28	0.28-0.32	0.32-0.36	0.36-0.40	
19	Malleable cast iron	18		0.08-0.10	0.10-0.12	0.12-0.16	0.16-0.20	0.20-0.24	0.24-0.28	0.28-0.32	0.32-0.36	0.36-0.40	
20		13		0.08-0.10	0.10-0.12	0.12-0.16	0.16-0.20	0.20-0.24	0.24-0.28	0.28-0.32	0.32-0.36	0.36-0.40	
N	21	Aluminum-wrought alloy	30	0.10-0.13	0.13-0.16	0.16-0.20	0.20-0.25	0.25-0.30	0.30-0.35	0.35-0.40	0.40-0.45	0.45-0.50	
	22		30	0.10-0.13	0.13-0.16	0.16-0.20	0.20-0.25	0.25-0.30	0.30-0.35	0.35-0.40	0.40-0.45	0.45-0.50	
	23	Aluminum-cast, alloyed	30	0.10-0.13	0.13-0.16	0.16-0.20	0.20-0.25	0.25-0.30	0.30-0.35	0.35-0.40	0.40-0.45	0.45-0.50	
	24		25	0.10-0.13	0.13-0.16	0.16-0.20	0.20-0.25	0.25-0.30	0.30-0.35	0.35-0.40	0.40-0.45	0.45-0.50	
	26	Copper and Copper Alloys (Bronze / Brass)	25	0.10-0.13	0.13-0.16	0.16-0.20	0.20-0.25	0.25-0.30	0.30-0.35	0.35-0.40	0.40-0.45	0.45-0.50	
	27		22	0.10-0.13	0.13-0.16	0.16-0.20	0.20-0.25	0.25-0.30	0.30-0.35	0.35-0.40	0.40-0.45	0.45-0.50	
	28		23	0.10-0.13	0.13-0.16	0.16-0.20	0.20-0.25	0.25-0.30	0.30-0.35	0.35-0.40	0.40-0.45	0.45-0.50	

HSS-E, NC MACHINE REAMERS WITH WHOLE-NUMBER SHANK Ø

HSS-E, NC-MASCHINENREIBAHLEN mit GERADZÄHLIGEN SCHAFT Ø
ALÉSUIRS HSS-E MACHINE CN AVEC DIFFÉRENTES TOLÉRANCES DE QUEUE
ALESATORI A MACCHINA IN HSS-E CON GAMMA Ø NOMINALI

- ▶ O.D. Tolerances
 Whole-number Ø and 1/10 size : DIN 1420 for H7
 1/100 size : from Ø2.01 to Ø5.03 : +0.004/-0.000mm
 from Ø5.97 to Ø12.03 : +0.005/-0.000mm
- ▶ Shank Diameter Tolerances : h6
- ▶ LH Spiral Flutes / Right Hand Cut
- ▶ Chamfer Angle - Up to Ø3.75 : 15°
 - Over Ø3.75 : 45°

- ▶ Ø Toleranzen:
 ganzzahlige Ø und 1/10 Größen : DIN 1420 für H7
 1/100 Größen : ab Ø2,01 bis Ø5,03 : +0.004/-0.000mm
 von Ø5,97 bis Ø12,03 : +0.005/-0.000mm
- ▶ Schaft-Durchmesser Toleranzen : h6
- ▶ linksspiralig/ rechtsscheidend
- ▶ Ansnittwinkel - bis Ø3,75 : 15°
 - über Ø3,75 : 45°



HSS-E H7 LH7° 15° 45° Bright p.A406

Plain Shank Recommended Toolholder ER COLLET CHUCK

up to Ø3.75 over Ø3.75 Unit : mm

EDP No.	Reamer Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
K21B100980	9.8	10	38	133
K21B100990	9.9	10	38	133
K21B100997	9.97	10	38	133
K21B100998	9.98	10	38	133
K21B100999	9.99	10	38	133
K21B101000	10.0	10	38	133
K21B101001	10.01	10	38	133
K21B101002	10.02	10	38	133
K21B101003	10.03	10	38	133
K21B101100	11.0	10	41	142
K21B101197	11.97	10	41	151
K21B101198	11.98	10	41	151
K21B101199	11.99	10	41	151
K21B101200	12.0	10	44	151
K21B101201	12.01	10	44	151
K21B101202	12.02	10	44	151
K21B101203	12.03	10	44	151
K21B101300	13.0	10	44	151
K21B101400	14.0	14	47	160
K21B101500	15.0	14	50	162
K21B101600	16.0	14	52	170
K21B101700	17.0	14	54	175
K21B101800	18.0	14	56	182
K21B101900	19.0	16	58	189
K21B102000	20.0	16	60	195

◎ : 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	30	29	32	38	35	20	35	23	10	10	10	26	3	25	130	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	○	○	○	◎	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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		
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	15	30	25	38	34	20	280	250	320	400Rm	1050Rm	550	630	400	550	550	630	400	550	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	○	○	○	○	○	○	○	○													

YG REAMERS

RECOMMENDED CUTTING CONDITIONS EMPFODLENE SCHNEIDPARAMETER



Leading Through Innovation

K2101, K2111, K21B1, K2102, K2112 SERIES

HSS-E, STRAIGHT & LH SPIRAL FLUTE CHUCKING REAMERS HSS-E, NC MACHINE REAMERS

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

ISO	VDI 3323	Material Description	Vc	Feed															
				2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0	20.0	24.0	28.0	32.0	36.0	40.0	45.0	50.0
P	1	Non-alloy steel	14	0.05-0.07	0.07-0.09	0.09-0.11	0.11-0.14	0.14-0.17	0.17-0.20	0.20-0.23	0.23-0.26	0.26-0.29	0.29-0.32	0.32-0.35	0.35-0.38	0.38-0.41	0.41-0.44	0.44-0.47	0.47-0.50
			14	0.05-0.07	0.07-0.09	0.09-0.11	0.11-0.14	0.14-0.17	0.17-0.20	0.20-0.23	0.23-0.26	0.26-0.29	0.29-0.32	0.32-0.35	0.35-0.38	0.38-0.41	0.41-0.44	0.44-0.47	0.47-0.50
			10	0.05-0.07	0.07-0.09	0.09-0.11	0.11-0.13	0.13-0.15	0.15-0.17	0.17-0.19	0.19-0.21	0.21-0.23	0.23-0.25	0.25-0.27	0.27-0.29	0.29-0.31	0.31-0.34	0.34-0.37	0.37-0.40
			8	0.05-0.07	0.07-0.09	0.09-0.11	0.11-0.13	0.13-0.15	0.15-0.17	0.17-0.19	0.19-0.21	0.21-0.23	0.23-0.25	0.25-0.27	0.27-0.29	0.29-0.31	0.31-0.34	0.34-0.37	0.37-0.40
	6	Low alloy steel	12	0.05-0.07	0.07-0.09	0.09-0.11	0.11-0.13	0.13-0.15	0.15-0.17	0.17-0.19	0.19-0.21	0.21-0.23	0.23-0.25	0.25-0.27	0.27-0.29	0.29-0.31	0.31-0.34	0.34-0.37	0.37-0.40
			8	0.05-0.07	0.07-0.09	0.09-0.11	0.11-0.13	0.13-0.15	0.15-0.17	0.17-0.19	0.19-0.21	0.21-0.23	0.23-0.25	0.25-0.27	0.27-0.29	0.29-0.31	0.31-0.34	0.34-0.37	0.37-0.40
			6	0.05-0.07	0.07-0.09	0.09-0.11	0.11-0.13	0.13-0.15	0.15-0.17	0.17-0.19	0.19-0.21	0.21-0.23	0.23-0.25	0.25-0.27	0.27-0.29	0.29-0.31	0.31-0.34	0.34-0.37	0.37-0.40
M	10	High alloyed steel, and tool steel	6	0.03-0.04	0.04-0.05	0.05-0.06	0.06-0.07	0.07-0.08	0.08-0.10	0.10-0.12	0.12-0.14	0.14-0.16	0.16-0.18	0.18-0.20	0.20-0.22	0.22-0.24	0.24-0.26	0.26-0.28	0.28-0.30
			5	0.03-0.04	0.04-0.05	0.05-0.06	0.06-0.07	0.07-0.08	0.08-0.10	0.10-0.12	0.12-0.14	0.14-0.16	0.16-0.18	0.18-0.20	0.20-0.22	0.22-0.24	0.24-0.26	0.26-0.28	0.28-0.30
			4	0.03-0.04	0.04-0.05	0.05-0.06	0.06-0.07	0.07-0.08	0.08-0.10	0.10-0.12	0.12-0.14	0.14-0.16	0.16-0.18	0.18-0.20	0.20-0.22	0.22-0.24	0.24-0.26	0.26-0.28	0.28-0.30
			12	0.03-0.04	0.04-0.05	0.05-0.06	0.06-0.07	0.07-0.08	0.08-0.10	0.10-0.12	0.12-0.14	0.14-0.16	0.16-0.18	0.18-0.20	0.20-0.22	0.22-0.24	0.24-0.26	0.26-0.28	0.28-0.30
K	15	Grey cast iron	14	0.05-0.07	0.07-0.09	0.09-0.11	0.11-0.14	0.14-0.17	0.17-0.20	0.20-0.23	0.23-0.26	0.26-0.29	0.29-0.32	0.32-0.35	0.35-0.38	0.38-0.41	0.41-0.44	0.44-0.47	0.47-0.50
			11	0.05-0.07	0.07-0.09	0.09-0.11	0.11-0.13	0.13-0.15	0.15-0.17	0.17-0.19	0.19-0.21	0.21-0.23	0.23-0.25	0.25-0.27	0.27-0.29	0.29-0.31	0.31-0.34	0.34-0.37	0.37-0.40
	17	Nodular cast iron	12	0.05-0.07	0.07-0.09	0.09-0.11	0.11-0.14	0.14-0.17	0.17-0.20	0.20-0.23	0.23-0.26	0.26-0.29	0.29-0.32	0.32-0.35	0.35-0.38	0.38-0.41	0.41-0.44	0.44-0.47	0.47-0.50
			10	0.05-0.07	0.07-0.09	0.09-0.11	0.11-0.13	0.13-0.15	0.15-0.17	0.17-0.19	0.19-0.21	0.21-0.23	0.23-0.25	0.25-0.27	0.27-0.29	0.29-0.31	0.31-0.34	0.34-0.37	0.37-0.40
			12	0.05-0.07	0.07-0.09	0.09-0.11	0.11-0.14	0.14-0.17	0.17-0.20	0.20-0.23	0.23-0.26	0.26-0.29	0.29-0.32	0.32-0.35	0.35-0.38	0.38-0.41	0.41-0.44	0.44-0.47	0.47-0.50
19	Malleable cast iron	12	0.05-0.07	0.07-0.09	0.09-0.11	0.11-0.14	0.14-0.17	0.17-0.20	0.20-0.23	0.23-0.26	0.26-0.29	0.29-0.32	0.32-0.35	0.35-0.38	0.38-0.41	0.41-0.44	0.44-0.47	0.47-0.50	
20	Malleable cast iron	10	0.05-0.07	0.07-0.09	0.09-0.11	0.11-0.13	0.13-0.15	0.15-0.17	0.17-0.19	0.19-0.21	0.21-0.23	0.23-0.25	0.25-0.27	0.27-0.29	0.29-0.31	0.31-0.34	0.34-0.37	0.37-0.40	
N	21	Aluminum-wrought alloy	18	0.10-0.13	0.13-0.16	0.16-0.19	0.19-0.22	0.22-0.25	0.25-0.28	0.28-0.31	0.31-0.34	0.34-0.37	0.37-0.40	0.40-0.43	0.43-0.46	0.46-0.49	0.49-0.52	0.52-0.56	0.56-0.60
			18	0.10-0.13	0.13-0.16	0.16-0.19	0.19-0.22	0.22-0.25	0.25-0.28	0.28-0.31	0.31-0.34	0.34-0.37	0.37-0.40	0.40-0.43	0.43-0.46	0.46-0.49	0.49-0.52	0.52-0.56	0.56-0.60
	23	Aluminum-cast, alloyed	18	0.10-0.13	0.13-0.16	0.16-0.19	0.19-0.22	0.22-0.25	0.25-0.28	0.28-0.31	0.31-0.34	0.34-0.37	0.37-0.40	0.40-0.43	0.43-0.46	0.46-0.49	0.49-0.52	0.52-0.56	0.56-0.60
			17	0.10-0.13	0.13-0.16	0.16-0.19	0.19-0.22	0.22-0.25	0.25-0.28	0.28-0.31	0.31-0.34	0.34-0.37	0.37-0.40	0.40-0.43	0.43-0.46	0.46-0.49	0.49-0.52	0.52-0.56	0.56-0.60
	26	Copper and Copper Alloys (Bronze / Brass)	18	0.10-0.13	0.13-0.16	0.16-0.19	0.19-0.22	0.22-0.25	0.25-0.28	0.28-0.31	0.31-0.34	0.34-0.37	0.37-0.40	0.40-0.43	0.43-0.46	0.46-0.49	0.49-0.52	0.52-0.56	0.56-0.60
			16	0.10-0.13	0.13-0.16	0.16-0.19	0.19-0.22	0.22-0.25	0.25-0.28	0.28-0.31	0.31-0.34	0.34-0.37	0.37-0.40	0.40-0.43	0.43-0.46	0.46-0.49	0.49-0.52	0.52-0.56	0.56-0.60
			20	0.10-0.13	0.13-0.16	0.16-0.19	0.19-0.22	0.22-0.25	0.25-0.28	0.28-0.31	0.31-0.34	0.34-0.37	0.37-0.40	0.40-0.43	0.43-0.46	0.46-0.49	0.49-0.52	0.52-0.56	0.56-0.60

K2121 SERIES

HSS-E, CHUCKING REAMERS - QUICK SPIRAL

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

ISO	VDI 3323	Material Description	Vc	Feed							
				2.0	4.0	8.0	10.0	12.0	14.0	16.0	20.0
P	1	Non-alloy steel	18	0.13-0.16	0.16-0.19	0.19-0.22	0.22-0.25	0.25-0.28	0.28-0.32	0.32-0.36	0.36-0.40
			16	0.13-0.16	0.16-0.19	0.19-0.22	0.22-0.25	0.25-0.28	0.28-0.32	0.32-0.36	0.36-0.40
	6	Low alloy steel	14	0.10-0.12	0.12-0.14	0.14-0.16	0.16-0.18	0.18-0.21	0.21-0.24	0.24-0.27	0.27-0.30
N	21	Aluminum-wrought alloy	20	0.15-0.20	0.20-0.25	0.25-0.30	0.30-0.36	0.36-0.42	0.42-0.48	0.48-0.54	0.54-0.60
			20	0.15-0.20	0.20-0.25	0.25-0.30	0.30-0.36	0.36-0.42	0.42-0.48	0.48-0.54	0.54-0.60
	23	Aluminum-cast, alloyed	20	0.15-0.20	0.20-0.25	0.25-0.30	0.30-0.36	0.36-0.42	0.42-0.48	0.48-0.54	0.54-0.60
			18	0.15-0.20	0.20-0.25	0.25-0.30	0.30-0.36	0.36-0.42	0.42-0.48	0.48-0.54	0.54-0.60
	26	Copper and Copper Alloys (Bronze / Brass)	19	0.15-0.20	0.20-0.25	0.25-0.30	0.30-0.36	0.36-0.42	0.42-0.48	0.48-0.54	0.54-0.60
			18	0.15-0.20	0.20-0.25	0.25-0.30	0.30-0.36	0.36-0.42	0.42-0.48	0.48-0.54	0.54-0.60
28	20	0.15-0.20	0.20-0.25	0.25-0.30	0.30-0.36	0.36-0.42	0.42-0.48	0.48-0.54	0.54-0.60		

HSS & HSS Co8

COUNTERSINKS SENKER

- For Deburring, Chamfering and Countersinking
- Zum Entgraten, Anfasen und Senken