

OTHER TOOLS

CARBIDE & HSS REAMERS

HSS COUNTERSINKS

HSS-E COUNTERBORES

CARBIDE ROTARY BURRS

330mm(LENGTH) GROUND CARBIDE BARS

Contents

OTHER TOOLS

REAMERS

COUNTERSINKS

COUNTERBORES

ROTARY BURRS

GROUND CARBIDE BARS

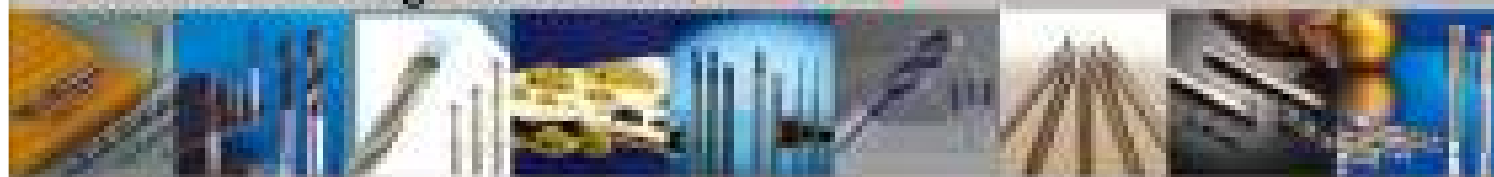
Contents / OTHER TOOLS

CARBIDE & HSS REAMERS Carbide NC Machine Reamers HSS Hand Reamers HSS-E Chucking Reamers	REAMERS
HSS COUNTERSINKS Deburring, Chamfering, Countersinking (HSS & HSS-E & 8% Cobalt)	COUNTER SINKS
HSS-E COUNTERBORES For General Purpose	COUNTER BORES
CARBIDE ROTARY BURRS For General Steels and Non-ferrous Metals etc. (3mm & 6mm Shank Diameter)	ROTARY BURRS
330mm(LENGTH) GROUND CARBIDE BARS h6(Diameter Tolerance), +6.0mm(Length Tolerance)	GROUND CARBIDE BARS





Global Cutting Tool Leader **YG-1**



CARBIDE / HSS



Leading Through Innovation



REAMERS

REIBAHLEN

- Carbide NC Machine Reamers, HSS Hand Reamers, HSS-E Chucking Reamers
- VHM, NC-maschinenreibahlen, HSS Handreibahlen, HSS-E Maschinenreibahlen

SELECTION GUIDE

ITEM	MODEL	DESCRIPTION	SIZE		PAGE
			MIN	MAX	

CARBIDE

K4101		CARBIDE, NC MACHINE REAMERS - STRAIGHT FLUTES VHM, NC-MASCHINENREIBAHLEN - GERADEGENUTET	D2.0	D20.0	1517
K4111		CARBIDE, NC MACHINE REAMERS - LH SPIRAL FLUTES VHM, NC-MASCHINENREIBAHLEN - SPIRALGENUTET mit LINKSDRALL	D2.0	D20.0	1518

HSS

K1143		HSS, HAND REAMERS - STRAIGHT FLUTES HSS, HANDREIBAHLEN - GERADEGENUTET	D2.0	D60.0	1519
K1153		HSS, HAND REAMERS - LH SPIRAL FLUTES HSS, HANDREIBAHLEN - SPIRALGENUTET mit LINKSDRALL	D2.0	D60.0	1521
K2101		HSS-E, STRAIGHT SHANK CHUCKING REAMERS - STRAIGHT FLUTES HSS-E, MASCHINENREIBAHLE mit ZYLINDERSCHAFT - GERADEGENUTET	D2.0	D20.0	1523
K2111		HSS-E, STRAIGHT SHANK CHUCKING REAMERS - LH SPIRAL FLUTES HSS-E, MASCHINENREIBAHLE mit ZYLINDERSCHAFT - SPIRALGENUTET mit LINKSDRALL	D2.0	D20.0	1524
K2121		HSS-E, STRAIGHT SHANK CHUCKING REAMERS - LH SPIRAL FLUTES(QUICK SPIRAL) HSS-E, MASCHINEN - SCHÄLREIBAHLE mit ZYLINDERSCHAFT - SPIRALGENUTET mit LINKSDRALL	D4.0	D20.0	1525
K2102		HSS-E, MORSE TAPER SHANK CHUCKING REAMERS - STRAIGHT FLUTES HSS-E, MASCHINENREIBAHLE mit MK - GERADEGENUTET	D10.0	D50.0	1526
K2112		HSS-E, MORSE TAPER SHANK CHUCKING REAMERS - LH SPIRAL FLUTES HSS-E, MASCHINENREIBAHLE mit MK - SPIRALGENUTET mit LINKSDRALL	D10.0	D50.0	1527
K21B1		HSS-E, NC MACHINE REAMERS WITH WHOLE-NUMBER SHANK Ø HSS-E, NC-MASCHINENREIBAHLEN mit GERADZÄHLIGEN SCHAFT Ø	D2.0	D20.0	1528
RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN					1532

CARBIDE, NC MACHINE REAMERS - STRAIGHT FLUTES

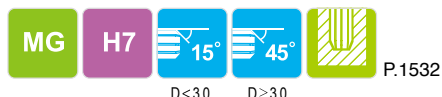
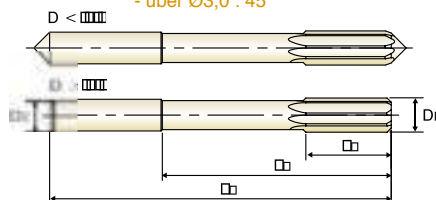
 **VHM, NC-MASCHINENREIBAHLEN - GERADEGENUTET**

 **ALÉSOIRS CARBURE MACHINE CN - ENTRÉE DROITE**

 **ALESATORI A MACCHINA IN MD - ELICA DRITTA**

- ▶ 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°



P.1532

Hole type



Unit : mm

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

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

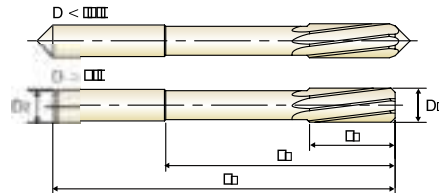
► linksspiralig, rechtsschneidend

► Ungleichteilung

► Ø Toleranzen : DIN 1420 für H7

► Schaft : DIN 6535-HA

► Anschnittwinkel - bis Ø3,0 : 15°
- über Ø3,0 : 45°



MG

H7

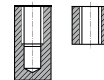


P.1532

D<3.0

D≥3.0

Hole type



Unit : mm

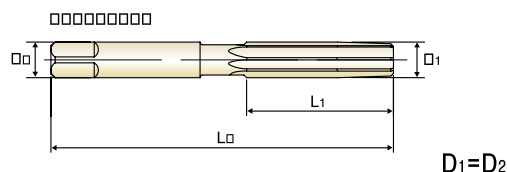
EDP No.	Nominal SIZE	Shank Diameter	Cutting Length	Neck Length	Overall Length	No.of Flutes
	D1	D2	L1	L3	L2	
K411100200	2.0	4	11	20	50	4
K411100250	2.5	4	14	26	57	4
K411100300	3.0	4	15	31	61	6
K411100350	3.5	4	18	36	70	6
K411100400	4.0	4	19	42	75	6
K411100450	4.5	6	21	46	80	6
K411100500	5.0	6	23	51	86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

HSS, HAND REAMERS - LH SPIRAL FLUTES

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

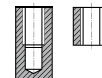
- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Shank Diameter $\approx$ Nominal Reamer Diameter
- ▶ Straight Flutes / Right Hand Cut
- ▶ Chamfer Angle - tapered
- ▶ Type of center - Up to $\varnothing 3.75$: external centers
- Over $\varnothing 3.75$: internal centers

- ▶ Schneiden- $\varnothing$ Toleranzen : DIN 1420 für H7
- ▶ Schaft- $\varnothing$ = Nomineller Reibahlen- $\varnothing$
- ▶ Geradegenutet / Rechtsschneidend
- ▶ Anschnittwinkel - Konisch
- ▶ Zentrierungsart - bis $\varnothing 3,75$ mm : Zentrierungszapfen
- über $\varnothing 3,75$ mm : Zentrierung



HSS **DIN 206** **H7**

Hole type



Unit : mm

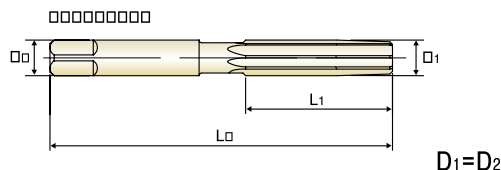
EDP No.	Nominal SIZE	Flute Length	Overall Length	No. of Flutes
	D	L1	L2	
K114300200	2.0	25	50	4
K114300220	2.2	27	54	4
K114300250	2.5	29	58	4
K114300280	2.8	31	62	4
K114300300	3.0	31	62	6
K114300320	3.2	33	66	6
K114300350	3.5	35	71	6
K114300400	4.0	38	76	6
K114300450	4.5	41	81	6
K114300500	5.0	44	87	6
K114300550	5.5	47	93	6
K114300600	6.0	47	93	6
K114300700	7.0	54	107	6
K114300800	8.0	58	115	6
K114300900	9.0	62	124	6
K114301000	10.0	66	133	6
K114301100	11.0	71	142	6
K114301200	12.0	76	152	6
K114301300	13.0	76	152	6
K114301400	14.0	81	163	8
K114301500	15.0	81	163	8
K114301600	16.0	87	175	8
K114301700	17.0	87	175	8
K114301800	18.0	93	188	8
K114301900	19.0	93	188	8
K114302000	20.0	100	201	8
K114302200	22.0	107	215	8
K114302400	24.0	115	231	8

▶ NEXT PAGE

HSS, HAND REAMERS - STRAIGHT FLUTES
 **HSS, HANDREIBAHLEN - GERADEGENUTET**
 **ALÉSOIRS HSS À MAIN - ENTRÉE DROITE**
 **ALESATORI A MANO IN HSS - ELICA DRITTA**

- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Shank Diameter $\approx$ Nominal Reamer Diameter
- ▶ Straight Flutes / Right Hand Cut
- ▶ Chamfer Angle - tapered
- ▶ Type of center - Up to $\varnothing 3.75$: external centers
- Over $\varnothing 3.75$: internal centers

- ▶ Schneiden- $\varnothing$ Toleranzen : DIN 1420 für H7
- ▶ Schaft- $\varnothing$ = Nomineller Reibahlen- $\varnothing$
- ▶ Geradegenutet / Rechtsschneidend
- ▶ Anschnittwinkel - Konisch
- ▶ Zentrierungsart - bis $\varnothing 3,75$ mm : Zentrierungszapfen
- über $\varnothing 3,75$ mm : Zentrierung

**HSS****DIN
206****H7****Hole type**

Unit : mm

EDP No.	Nominal SIZE	Flute Length	Overall Length	No. of Flutes
	D	L1	L2	
K114302500	25.0	115	231	8
K114302600	26.0	115	231	8
K114302700	27.0	124	247	10
K114302800	28.0	124	247	10
K114302900	29.0	124	247	10
K114303000	30.0	124	247	10
K114303100	31.0	133	265	10
K114303200	32.0	133	265	10
K114303300	33.0	133	265	10
K114303400	34.0	142	284	10
K114303500	35.0	142	284	10
K114303600	36.0	142	284	10
K114303700	37.0	142	284	10
K114303800	38.0	152	305	10
K114303810	38.1	152	305	10
K114303900	39.0	152	305	10
K114304000	40.0	152	305	10
K114304100	41.0	152	305	12
K114304200	42.0	152	305	12
K114304300	43.0	163	326	12
K114304400	44.0	163	326	12
K114304500	45.0	163	326	12
K114304600	46.0	163	326	12
K114304700	47.0	163	326	12
K114304800	48.0	174	347	12
K114304900	49.0	174	347	12
K114305200	52.0	174	347	12
K114306000	60.0	184	367	12

HSS, HAND REAMERS - LH SPIRAL FLUTES

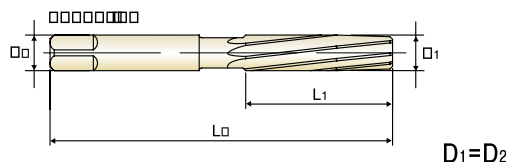
 **HSS, HAND REAMERS - LH SPIRAL FLUTES**

 **ALÉSOIRS HSS À MAIN - HÉLICE À GAUCHE**

 **ALESATORI A MANO IN HSS - ELICA SINISTRA**

- ▶ O.D. Tolerances : DIN 1420, H7
- ▶ Shank Diameter $\approx$ Nominal Reamer Diameter
- ▶ LH Spiral Flutes / Right Hand Cut
- ▶ Chamfer Angle - tapered
- ▶ Type of center - Up to $\varnothing 3.75$: external centers
- Over $\varnothing 3.75$: internal centers

- ▶ Schneiden- $\varnothing$ Toleranzen : DIN 1420 für H7
- ▶ Schaft- $\varnothing$ = Nomineller Reibahlen- $\varnothing$
- ▶ Spiralgenutet mit Linksdrill / Rechtsschneidend
- ▶ Anschnittwinkel - Konisch
- ▶ Zentrierungsart - bis $\varnothing 3,75$ mm : Zentrierungszapfen
- über $\varnothing 3,75$ mm : Zentrierung



Unit : mm

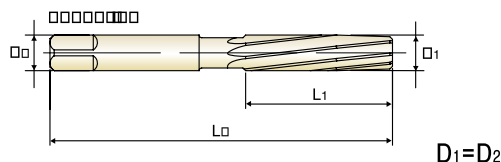
EDP No.	Nominal SIZE	Flute Length	Overall Length	No. of Flutes
	D	L1	L2	
K115300200	2.0	25	50	4
K115300220	2.2	27	54	4
K115300250	2.5	29	58	4
K115300280	2.8	31	62	4
K115300300	3.0	31	62	6
K115300320	3.2	33	66	6
K115300350	3.5	35	71	6
K115300400	4.0	38	76	6
K115300450	4.5	41	81	6
K115300500	5.0	44	87	6
K115300550	5.5	47	93	6
K115300600	6.0	47	93	6
K115300700	7.0	54	107	6
K115300800	8.0	58	115	6
K115300900	9.0	62	124	6
K115301000	10.0	66	133	6
K115301100	11.0	71	142	6
K115301200	12.0	76	152	6
K115301300	13.0	76	152	6
K115301400	14.0	81	163	8
K115301500	15.0	81	163	8
K115301600	16.0	87	175	8
K115301700	17.0	87	175	8
K115301800	18.0	93	188	8
K115301900	19.0	93	188	8
K115302000	20.0	100	201	8
K115302200	22.0	107	215	8
K115302400	24.0	115	231	8

▶ NEXT PAGE

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 $\approx$ Nominal Reamer Diameter
- ▶ LH Spiral Flutes / Right Hand Cut
- ▶ Chamfer Angle - tapered
- ▶ Type of center - Up to $\varnothing 3.75$: external centers
- Over $\varnothing 3.75$: internal centers

- ▶ Schneiden- $\varnothing$ Toleranzen : DIN 1420 für H7
- ▶ Schaft- $\varnothing$ = Nomineller Reibahlen- $\varnothing$
- ▶ Geradenutet / Rechtsschneidend
- ▶ Anschnittwinkel - Konisch
- ▶ Zentrierungsart - bis $\varnothing 3,75$ mm : Zentrierungszapfen
- über $\varnothing 3,75$ mm : Zentrierung

**HSS****DIN
206****H7****Hole type**

Unit : mm

EDP No.	Nominal SIZE	Flute Length	Overall Length	No. of Flutes
	D	L1	L2	
K115302500	25.0	115	231	8
K115302600	26.0	115	231	8
K115302700	27.0	124	247	10
K115302800	28.0	124	247	10
K115302900	29.0	124	247	10
K115303000	30.0	124	247	10
K115303100	31.0	133	265	10
K115303200	32.0	133	265	10
K115303300	33.0	133	265	10
K115303400	34.0	142	284	10
K115303500	35.0	142	284	10
K115303600	36.0	142	284	10
K115303700	37.0	142	284	10
K115303800	38.0	152	305	10
K115303810	38.1	152	305	10
K115303900	39.0	152	305	10
K115304000	40.0	152	305	10
K115304100	41.0	152	305	12
K115304200	42.0	152	305	12
K115304300	43.0	163	326	12
K115304400	44.0	163	326	12
K115304500	45.0	163	326	12
K115304600	46.0	163	326	12
K115304700	47.0	163	326	12
K115304800	48.0	174	347	12
K115304900	49.0	174	347	12
K115305200	52.0	174	347	12
K115306000	60.0	184	367	12

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

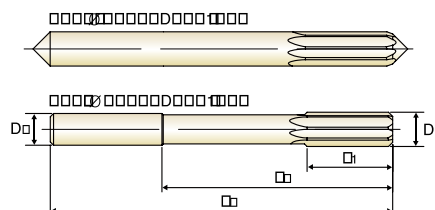
▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

▶ Schneiden-Ø Toleranzen : DIN 1420 für H7

▶ Schaft-Ø Toleranzen : h8

▶ Geradegenutet / Rechtsschneidend

▶ Anschnittwinkel - bis Ø3,75 mm : 15°
- über Ø3,75 mm : 45°



Hole type



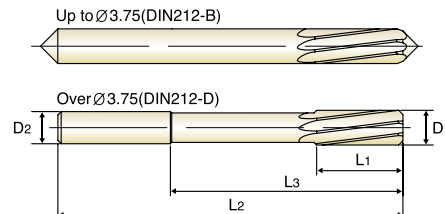
Unit : mm

EDP No.	Nominal SIZE	Shank Diameter	Cutting Length	Neck Length	Overall Length	No. of Flutes
	D1	D2	L1	L3	L2	
K210100200	2.0	2	11	-	49	4
K210100220	2.2	2.2	12	-	53	4
K210100250	2.5	2.5	14	-	57	4
K210100260	2.6	2.6	14	-	57	4
K210100280	2.8	2.8	15	-	61	4
K210100300	3.0	3	15	-	61	6
K210100310	3.1	3.1	16	-	65	6
K210100320	3.2	3.2	16	-	65	6
K210100350	3.5	3.5	18	-	70	6
K210100360	3.6	3.6	18	-	70	6
K210100370	3.7	3.7	18	-	70	6
K210100400	4.0	4	19	42	75	6
K210100430	4.3	4.5	21	46	80	6
K210100450	4.5	4.5	21	46	80	6
K210100460	4.6	4.5	21	46	80	6
K210100500	5.0	5	23	51	86	6
K210100550	5.5	5.6	26	56	93	6
K210100560	5.6	5.6	26	56	93	6
K210100600	6.0	5.6	26	56	93	6
K210100650	6.5	6.3	28	62	101	6
K210100700	7.0	7.1	31	68	109	6
K210100720	7.2	7.1	31	68	109	6
K210100800	8.0	8	33	74	117	6
K210100830	8.3	8	33	74	117	6
K210100850	8.5	8	33	74	117	6
K210100900	9.0	9	36	80	125	6
K210100950	9.5	9	36	80	125	6
K210101000	10.0	10	38	86	133	6
K210101050	10.5	10	38	86	133	6
K210101100	11.0	10	41	95	142	6
K210101200	12.0	10	44	104	151	6
K210101300	13.0	10	44	104	151	6
K210101400	14.0	12.5	47	108	160	8
K210101500	15.0	12.5	50	110	162	8
K210101600	16.0	12.5	52	118	170	8
K210101700	17.0	14	54	121	175	8
K210101800	18.0	14	56	128	182	8
K210101900	19.0	16	58	129	189	8
K210102000	20.0	16	60	135	195	8

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°**

P.1533

Hole type

up to Ø3.75 over Ø3.75

Unit : mm

EDP No.	Nominal SIZE	Shank Diameter	Cutting Length	Neck Length	Overall Length	No.of Flutes
	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
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

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 Linksdrill / Rechtsschneidend



HSS-E DIN 212 H7 LH45° FORM E P.1533

Hole type 

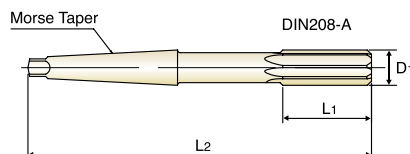
Unit : mm

EDP No.	Nominal SIZE	Shank Diameter	Cutting Length	Neck Length	Overall Length	No. of Flutes
	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

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°

**HSS-E****DIN 208****H7**

P.1533

Hole type

Unit : mm

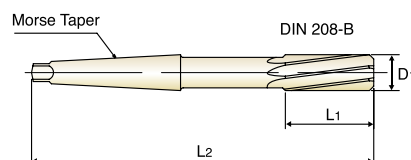
EDP No.	Nominal SIZE	No. of Morse Taper	Cutting Length	Overall Length	No. of Flutes
	D ₁		L ₁	L ₂	
K210201000	10.0	1	38	168	6
K210201100	11.0	1	41	175	6
K210201200	12.0	1	44	182	6
K210201300	13.0	1	44	182	6
K210201400	14.0	1	47	189	8
K210201500	15.0	2	50	204	8
K210201600	16.0	2	52	210	8
K210201700	17.0	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
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

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 Linksdrall / Rechtsschneidend
- ▶ Anschnittwinkel : 45°



P.1533

Hole type



Unit : mm

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

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 Tolerances:

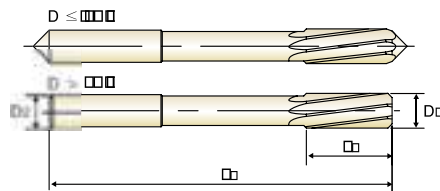
ganzzahlige Ø und 1/10 Größen : DIN 1420 für H7

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
► Anschnittwinkel - bis Ø3,75 : 15°

- über Ø3,75 : 45°


Hole type


up to Ø3.75 over Ø3.75

Unit : mm

EDP No.	Nominal SIZE	Shank Diameter	Flute Length	Overall Length
	D1	D2	L1	L2
K21B100200	2.0	2	11	49
K21B100201	2.01	2	11	49
K21B100202	2.02	2	11	49
K21B100203	2.03	2	11	49
K21B100210	2.1	2	11	49
K21B100220	2.2	3	12	53
K21B100230	2.3	3	12	53
K21B100240	2.4	3	14	57
K21B100247	2.47	3	14	57
K21B100248	2.48	3	14	57
K21B100249	2.49	3	14	57
K21B100250	2.5	3	14	57
K21B100251	2.51	3	14	57
K21B100252	2.52	3	14	57
K21B100253	2.53	3	14	57
K21B100260	2.6	3	14	57
K21B100270	2.7	3	15	61
K21B100280	2.8	3	15	61
K21B100290	2.9	3	15	61
K21B100297	2.97	3	15	61
K21B100298	2.98	3	15	61
K21B100299	2.99	3	15	61
K21B100300	3.0	3	15	61
K21B100301	3.01	4	16	65
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

► NEXT PAGE

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°

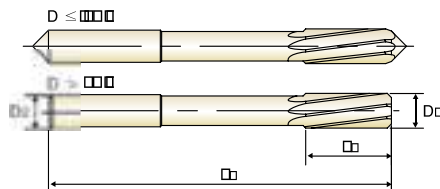
► Ø Toleranzen:

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

► Anschnittwinkel - bis Ø3,75 : 15°
- über Ø3,75 : 45°



up to Ø3.75 over Ø3.75

Unit : mm

EDP No.	Nominal SIZE	Shank Diameter	Flute Length	Overall Length
	D1	D2	L1	L2
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
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
K21B100602	6.02	6	28	101
K21B100603	6.03	6	28	101

► NEXT PAGE

HSS-E, NC MACHINE REAMERS WITH WHOLE-NUMBER SHANK Ø
GERMANY HSS-E, NC-MASCHINENREIBAHLEN mit GERADZÄHLIGEN SCHAFT Ø
FRANCE ALÉSOIRS HSS-E MACHINE CN AVEC DIFFÉRENTES TOLÉRANCES DE QUEUE
ITALY 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 Tolerances:

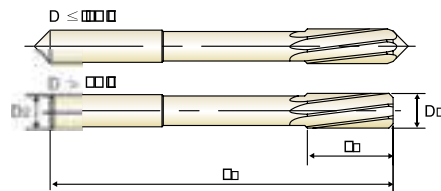
ganzzahlige Ø und 1/10 Größen : DIN 1420 für H7

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
► Anschnittwinkel - bis Ø3,75 : 15°

- über Ø3,75 : 45°



up to Ø3.75 over Ø3.75

Hole type



Unit : mm

EDP No.	Nominal SIZE	Shank Diameter	Flute Length	Overall Length
	D1	D2	L1	L2
K21B100610	6.1	6	28	101
K21B100620	6.2	6	28	101
K21B100630	6.3	6	28	101
K21B100640	6.4	6	28	101
K21B100650	6.5	6	28	101
K21B100660	6.6	6	28	101
K21B100670	6.7	6	28	101
K21B100680	6.8	8	31	109
K21B100690	6.9	8	31	109
K21B100700	7.0	8	31	109
K21B100710	7.1	8	31	109
K21B100720	7.2	8	31	109
K21B100730	7.3	8	31	109
K21B100740	7.4	8	31	109
K21B100750	7.5	8	31	109
K21B100760	7.6	8	33	117
K21B100770	7.7	8	33	117
K21B100780	7.8	8	33	117
K21B100790	7.9	8	33	117
K21B100797	7.97	8	33	117
K21B100798	7.98	8	33	117
K21B100799	7.99	8	33	117
K21B100800	8.0	8	33	117
K21B100801	8.01	8	33	117
K21B100802	8.02	8	33	117
K21B100803	8.03	8	33	117
K21B100810	8.1	8	33	117
K21B100820	8.2	8	33	117
K21B100830	8.3	8	33	117
K21B100840	8.4	8	33	117
K21B100850	8.5	8	33	117
K21B100860	8.6	10	36	125
K21B100870	8.7	10	36	125
K21B100880	8.8	10	36	125
K21B100890	8.9	10	36	125
K21B100900	9.0	10	36	125

► NEXT PAGE

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°

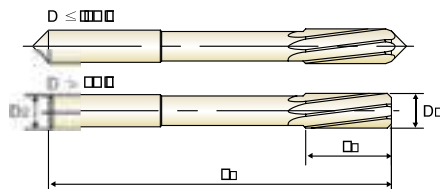
► Ø Toleranzen:

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

► Anschnittwinkel - bis Ø3,75 : 15°
- über Ø3,75 : 45°



Unit : mm

EDP No.	Nominal SIZE	Shank Diameter	Flute Length	Overall Length
	D1	D2	L1	L2
K21B100901	9.01	10	36	125
K21B100902	9.02	10	36	125
K21B100903	9.03	10	36	125
K21B100910	9.1	10	36	125
K21B100920	9.2	10	36	125
K21B100930	9.3	10	36	125
K21B100940	9.4	10	36	125
K21B100950	9.5	10	36	125
K21B100960	9.6	10	38	133
K21B100970	9.7	10	38	133
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

REAMERS

COUNTER
SINKSCOUNTER
BORESROTARY
BURRSGROUND
CARBIDE
BARS
CARBIDE, NC MACHINE REAMER
VHM, NC-MASCHINENREIBAHLEN

Material	Cutting Speed (m/min.)	Feed(mm/rev.)				
		Up to Ø4	Ø4 ~ Ø8	Ø8 ~ Ø12	Ø12 ~ Ø16	Ø16 ~ Ø20
Structural and Low carbon steel	15~18	0.10~0.12	0.12~0.20	0.20~0.25	0.25~0.30	0.30~0.40
Carbon Steels < 500N/mm ²	15~18	0.10~0.12	0.12~0.20	0.20~0.25	0.25~0.30	0.30~0.40
Alloy Steels 500-1000N/mm ²	12~14	0.08~0.10	0.10~0.16	0.16~0.20	0.20~0.25	0.25~0.30
Hardened Steels ~ HRC40	10~12	0.08~0.10	0.10~0.16	0.16~0.20	0.20~0.25	0.25~0.30
Cast Iron < 200HB	15~20	0.10~0.12	0.12~0.20	0.20~0.25	0.25~0.30	0.30~0.40
> 200HB	12~15	0.10~0.12	0.12~0.20	0.20~0.25	0.25~0.30	0.30~0.40
Aluminium and Al-alloys	20~30	0.12~0.16	0.16~0.25	0.25~0.30	0.30~0.40	0.40~0.50
Magnesium alloys	20~30	0.10~0.12	0.12~0.20	0.20~0.25	0.25~0.30	0.30~0.40
Copper, Brass	20~25	0.10~0.12	0.12~0.20	0.20~0.25	0.25~0.30	0.30~0.40
Stainless Steels	6~8	0.08~0.10	0.10~0.16	0.16~0.20	0.20~0.25	0.25~0.30
Plastics	15~20	0.12~0.16	0.16~0.25	0.25~0.30	0.30~0.40	0.40~0.50

REAMING ALLOWANCE
REIB-ZUGABE

Size Range	Up to Ø6	Ø6 ~ Ø10	Ø10 ~ Ø16	Ø16 ~ Ø25	Over Ø25
Removal Amount	0.1 ~ 0.2	0.2 ~ 0.3	0.2 ~ 0.4	0.3 ~ 0.5	0.3 ~ 0.6

* For machine reaming
 * Unit : mm

HSS-E, STRAIGHT & LH SPIRAL FLUTE CHUCKING REAMER, NC MACHINE REAMER
HSS-E, GERADEGENUTETE MASCHINENREIBAHLEN, SPIRALGENUTETE MASCHINENREIBAHLEN

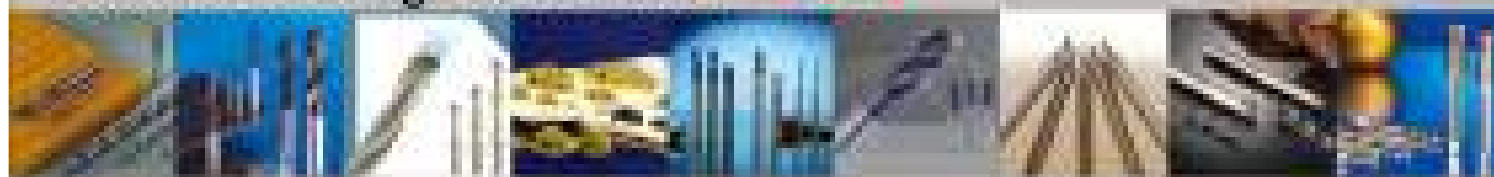
Material	Cutting Speed	Feed(mm/rev.)					
	(m/min.)	Ø2 ~ Ø4	Ø4 ~ Ø8	Ø8 ~ Ø13	Ø13 ~ Ø20	Ø20 ~ Ø30	> Ø30
Steels < 500N/mm ²	12 ~ 16	0.05~0.15	0.10~0.20	0.15~0.25	0.20~0.30	0.25~0.40	0.35~0.50
Steels 500-700N/mm ²	10 ~ 12	0.05~0.15	0.10~0.20	0.15~0.25	0.20~0.30	0.25~0.40	0.35~0.50
Steels 700-800N/mm ²	6 ~ 8	0.05~0.10	0.08~0.16	0.10~0.20	0.15~0.25	0.20~0.30	0.30~0.40
Alloy Steel or Carbon Steel castings < 500N/mm ²	6 ~ 10	0.05~0.10	0.08~0.16	0.10~0.20	0.15~0.25	0.20~0.30	0.30~0.40
Alloy Steel or Carbon Steel castings > 500N/mm ²	4 ~ 6	0.05~0.10	0.08~0.16	0.10~0.20	0.15~0.25	0.20~0.30	0.30~0.40
Alloy Steel or Carbon Steel forgings	4 ~ 6	0.03~0.08	0.06~0.10	0.08~0.15	0.10~0.20	0.15~0.25	0.20~0.30
Cast Iron < 200HB	12 ~ 14	0.05~0.15	0.10~0.20	0.15~0.25	0.20~0.30	0.25~0.40	0.35~0.50
Cast Iron > 200HB	10 ~ 12	0.05~0.10	0.08~0.16	0.10~0.20	0.15~0.25	0.20~0.30	0.30~0.40
Aluminum or Aluminum Alloy	16 ~ 20	0.10~0.20	0.15~0.25	0.20~0.30	0.25~0.40	0.35~0.50	0.40~0.60
Magnesium or Magnesium Alloy	10 ~ 16	0.10~0.20	0.15~0.25	0.20~0.30	0.25~0.40	0.35~0.50	0.40~0.60
Copper, Brass	16 ~ 18	0.10~0.20	0.15~0.25	0.20~0.30	0.25~0.40	0.35~0.50	0.40~0.60
Stainless Steels	4 ~ 6	0.03~0.08	0.06~0.10	0.08~0.15	0.10~0.20	0.15~0.25	0.20~0.30
Plastics	8 ~ 12	0.10~0.20	0.20~0.30	0.30~0.40	0.40~0.50	0.50~0.60	0.60~0.80

HSS-E, CHUCKING REAMER-QUICK SPIRAL
HSS-E, MASCHINEN - SCHÄLREIBAHLEN

Material	Cutting Speed	Feed(mm/rev.)			
	(m/min.)	Ø2 ~ Ø4	Ø4 ~ Ø8	Ø8 ~ Ø13	Ø13 ~ Ø20
Steels < 500N/mm ²	16 ~ 18	0.08~0.16	0.16~0.25	0.20~0.30	0.30~0.40
Steels 500-700N/mm ²	14 ~ 16	0.08~0.16	0.16~0.25	0.20~0.30	0.30~0.40
Aluminum or Aluminum Alloy	18 ~ 22	0.10~0.20	0.20~0.30	0.30~0.40	0.40~0.60
Magnesium or Magnesium Alloy	10 ~ 16	0.08~0.16	0.16~0.25	0.20~0.30	0.30~0.40
Copper, Brass	16 ~ 20	0.08~0.16	0.16~0.25	0.20~0.30	0.30~0.40
Plastics	12 ~ 14	0.10~0.20	0.20~0.30	0.30~0.40	0.40~0.60



Global Cutting Tool Leader **YG-1**



HSS



Leading Through Innovation



COUNTERSINK SENKER

- Deburring, Chamfering, Countersinking, HSS & 8% Cobalt
- Entgraten und anfasen. HSS und HSSE-Co8

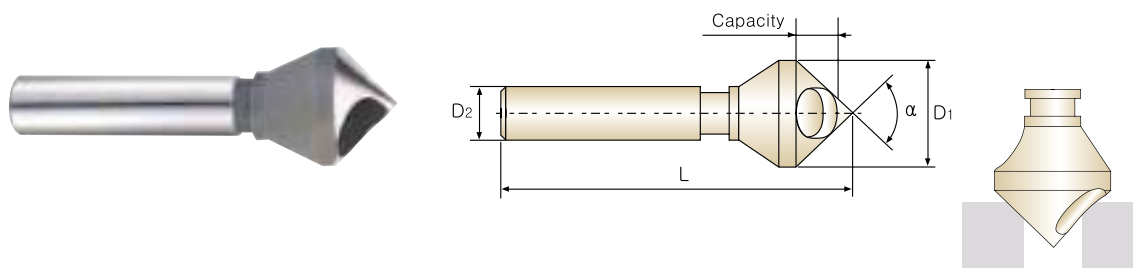
SELECTION GUIDE

ITEM	MODEL	DESCRIPTION	SIZE		PAGE
			MIN	MAX	
C1109 C3109		HSS, DEBURRING TOOL with HOLE HSS, QUERLOCHSENKER	D10.0	D50.0	1537
C1119 C3119		HSS, SINGLE FLUTE CHAMFERING CUTTERS HSS, EINSCHNEIDEN KEGELSENKER	D10.0	D50.0	1538
C1136 C3136		HSS, THREE FLUTE COUNTERSINKS (60°) HSS, DREISCHNEIDEN KEGELSENKER (60°)	D6.3	D25.0	1539
C1139 C3139		HSS, THREE FLUTE COUNTERSINKS (90°) HSS, DREISCHNEIDEN KEGELSENKER (90°)	D4.3	D31.0	1540
C1132 C3132		HSS, THREE FLUTE COUNTERSINKS (120°) HSS, DREISCHNEIDEN KEGELSENKER (120°)	D8.0	D25.0	1541
RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN					1542

HSS, DEBURRING TOOL with HOLE
HSS, QUERLOCHSENKER
FRAISE HSS À ÉBAVURER À TROU
SVASATORI CON FORO - HSS

- ▶ For light metals and plastics.
- ▶ For deburring and small chamfers.
- ▶ Best surface finish.
- ▶ Works without vibrations.

- ▶ Für Leichtmetall und Plastik
- ▶ Zum Entgraten und Abfasen
- ▶ Bestes Oberflächenfinish
- ▶ Arbeitet ohne Vibration



REAMERS

 COUNTER
SINKS

 COUNTER
BORES

 ROTARY
BURRS

 GROUND
CARBIDE
BARS

Unit : mm

EDP No. (uncoating)		Angle	Nominal Diameter	Shank Diameter	Overall Length	Capacity
HSSCo8	HSS	α (-1°)	D1	D2	L(±1)	min/max
C1109100	C3109100	90°	10.0	6	45	2 - 5
C1109150	C3109150	90°	15.0	8	55	6 - 14
C1109200	C3109200	90°	20.0	10	65	8 - 18
C1109250	C3109250	90°	25.0	12	78	10 - 23
C1109300	C3109300	90°	30.0	12	88	12 - 28
C1109350	C3109350	90°	35.0	16	110	14 - 33
C1109400	C3109400	90°	40.0	16	115	16 - 38
C1109450	C3109450	90°	45.0	16	120	18 - 43
C1109500	C3109500	90°	50.0	16	130	20 - 48

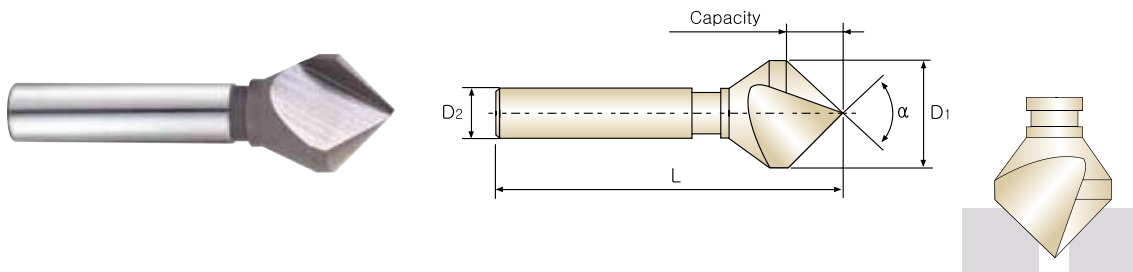
▶ TiN & TiCN coating are available on your request.

Nominal Dia. Tolerance(mm)	Shank Dia. Tolerance(mm)
+0.3	h9

HSS, SINGLE FLUTE CHAMFERING CUTTERS
 **HSS, EINSCHNEIDEN KEGELSENKER**
 **FRAISE HSS À CHANFREINER 1 DENT**
 **SVASATORI MONOTAGLIANTE - HSS**

- ▶ For wood and hard plastics.
- ▶ Can drill in sheet materials.
- ▶ Easy to resharpen.
- ▶ Works without vibrations.

- ▶ Für Holz und Hartplastik
- ▶ Kann in Bleche bohren
- ▶ Leicht nachzuschärfen
- ▶ Arbeitet ohne Vibration



Unit : mm

EDP No. (uncoating)		Angle	Nominal Diameter	Shank Diameter	Overall Length	Capacity
HSSCo8	HSS	α (-1°)	D1	D2	L (±1)	min/max
C1119100	C3119100	90°	10.0	6	45	1 - 10
C1119150	C3119150	90°	15.0	8	55	2 - 15
C1119200	C3119200	90°	20.0	10	65	2 - 20
C1119250	C3119250	90°	25.0	12	78	3 - 25
C1119300	C3119300	90°	30.0	12	88	3 - 30
C1119350	C3119350	90°	35.0	16	110	4 - 35
C1119400	C3119400	90°	40.0	16	115	5 - 40
C1119450	C3119450	90°	45.0	16	120	10 - 45
C1119500	C3119500	90°	50.0	16	130	12 - 50

▶ TiN & TiCN coating are available on your request.

Nominal Dia Tolerance(mm)	Shank Dia. Tolerance(mm)
+0.3	h9

HSS, THREE FLUTE COUNTERSINKS (60°)

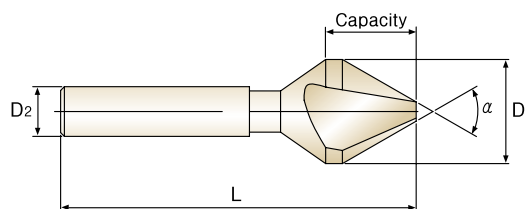
 **HSS, DREISCHNEIDEN KEGELSENKER (60°)**

 **FRAISE HSS À CHANFREINER 3 DENTS (60°)**

 **SVASATORI A TRE TAGLIENTI - HSS (60°)**

- ▶ Self-centering(3 flutes)
- ▶ For deburring, chamfering and countersinking
- ▶ Hand using
- ▶ Longitudinal chamfers and contouring
- ▶ Works without vibrations

- ▶ Selbstzentrierend
- ▶ Zum Entgraten, Abfasen und Senkkopfschrauben
- ▶ Manueller Einsatz möglich
- ▶ Zum Entgraten von Längs- und Profilkanten
- ▶ Arbeitet ohne Vibration



**DIN
334 C**

Unit : mm

EDP No. (uncoating)		Angle	Nominal Diameter	Shank Diameter	Overall Length	Capacity
HSSCo8	HSS	α (-1°)	D1	D2	L(±1)	min/max
C1136063	C3136063	60°	6.3	5	45	1.6~6.3
C1136080	C3136080	60°	8	6	50	2.0~8.0
C1136100	C3136100	60°	10	6	50	2.5~10.0
C1136125	C3136125	60°	12.5	8	56	3.2~12.5
C1136160	C3136160	60°	16	10	63	4.0~16.0
C1136200	C3136200	60°	20	10	67	5.0~20.0
C1136250	C3136250	60°	25	10	71	6.3~25.0

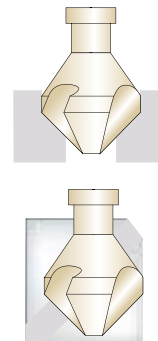
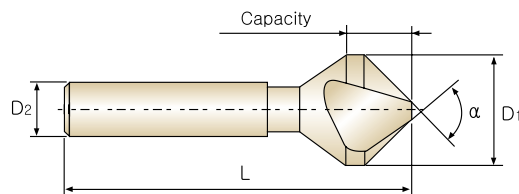
▶ TiN & TiCN coating are available on your request.

Nominal Dia Tolerance(mm)	Shank Dia. Tolerance(mm)
±0.05	h9

HSS, THREE FLUTE COUNTERSINKS (90°)
 **HSS, DREISCHNEIDEN KEGELSENKER (90°)**
 **FRAISE HSS À CHANFREINER 3 DENTS (90°)**
 **SVASATORI A TRE TAGLIENTI - HSS (90°)**

- ▶ Self-centering(3 flutes).
- ▶ Designed for 90° capscrews countersinking.
- ▶ Hand using.
- ▶ Longitudinal chamfers and contouring.
- ▶ Works without vibrations

- ▶ Selbstzentrierend
- ▶ Besonders geeignet zum 90° Ansenken für Senkkopfschrauben
- ▶ Manueller Einsatz möglich
- ▶ Zum Entgraten von Längs- und Profilkanten
- ▶ Arbeitet ohne Vibration

**DIN
335 C**

Unit : mm

EDP No. (uncoating)		Angle	Nominal Diameter	Shank Diameter	Overall Length	Capacity
HSSCo8	HSS	α (-1°)	D1	D2	L (±1)	min/max
C1139043	C3139043	90°	4.3	4	40	1.3 - 4.3
C1139050	C3139050	90°	5.0	4	40	1.5 - 5
C1139060	C3139060	90°	6.0	5	45	1.5 - 6
C1139063	C3139063	90°	6.3	5	45	1.5 - 6.3
C1139070	C3139070	90°	7.0	6	50	1.8 - 7
C1139080	C3139080	90°	8.0	6	50	2 - 8
C1139083	C3139083	90°	8.3	6	50	2 - 8.3
C1139100	C3139100	90°	10.0	6	50	2.5 - 10
C1139104	C3139104	90°	10.4	6	50	2.5 - 10.4
C1139115	C3139115	90°	11.5	8	56	2.8 - 11.5
C1139124	C3139124	90°	12.4	8	56	2.8 - 12.4
C1139150	C3139150	90°	15.0	10	60	3.2 - 15
C1139165	C3139165	90°	16.5	10	60	3.2 - 16.5
C1139190	C3139190	90°	19.0	10	63	3.5 - 19
C1139205	C3139205	90°	20.5	10	63	3.5 - 20.5
C1139230	C3139230	90°	23.0	10	67	3.8 - 23
C1139250	C3139250	90°	25.0	10	67	3.8 - 25
C1139300	C3139300	90°	30.0	12	71	4.2 - 30
C1139310	C3139310	90°	31.0	12	71	4.2 - 31

▶ TiN & TiCN coating are available on your request.

Nominal Dia. Tolerance(mm)	Shank Dia. Tolerance(mm)
±0.05	h9

HSS, THREE FLUTE COUNTERSINKS (120°)

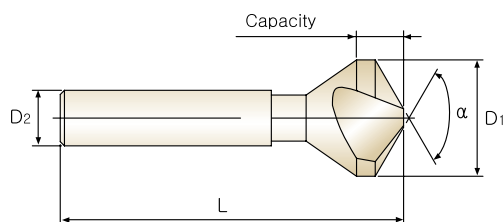
 **HSS, DREISCHNEIDEN KEGELSENKER (120°)**

 **FRAISE HSS À CHANFREINER 3 DENTS (120°)**

 **SVASATORI A TRE TAGLIENTI - HSS (120°)**

- ▶ Self-centering (3 flutes)
- ▶ For deburring, chamfering and countersinking
- ▶ Hand using
- ▶ Longitudinal chamfers and contouring
- ▶ Works without vibrations

- ▶ Selbstzentrierend
- ▶ Zum Entgraten, Abfasen und Senkkopfschrauben
- ▶ Manueller Einsatz möglich
- ▶ Zum Entgraten von Längs- und Profilkanten
- ▶ Arbeitet ohne Vibration



REAMERS

 COUNTER
SINKS

 COUNTER
BORES

 ROTARY
BURRS

 GROUND
CARBIDE
BARS

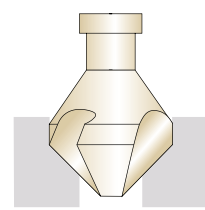
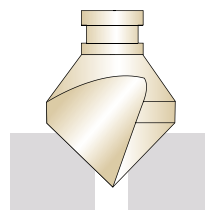
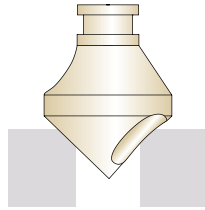
Unit : mm

EDP No. (uncoating)		Angle	Nominal Diameter	Shank Diameter	Overall Length	Capacity
HSSCo8	HSS	α (-1°)	D ₁	D ₂	L (±1)	min/max
C1132080	C3132080	120°	8	6	49	2.0~8.0
C1132125	C3132125	120°	12.5	8	54	2.8~12.5
C1132160	C3132160	120°	16	10	57	3.2~16.0
C1132200	C3132200	120°	20	10	59	3.5~20.0
C1132250	C3132250	120°	25	10	65	3.8~25.0

▶ TiN & TiCN coating are available on your request.

Nominal Dia. Tolerance(mm)	Shank Dia. Tolerance(mm)
±0.05	h9

REAMERS

COUNTER
SINKSCOUNTER
BORESROTARY
BURRSGROUND
CARBIDE
BARS

Material	V	S			V	S			V	S		
		Ø ≤ 10	Ø ≤ 20	Ø ≤ 30		Ø ≤ 10	Ø ≤ 20	Ø ≤ 30		Ø ≤ 10	Ø ≤ 20	Ø ≤ 30
STEELS ≤ 500N/mm ²	35-45	0.20	0.22	0.24	35-45	0.20	0.22	0.24	17-22	0.30	0.32	0.36
STEELS 500~800N/mm ²	20-30	0.14	0.17	0.20	20-30	0.14	0.17	0.20	10-15	0.28	0.30	0.31
STEELS 800~1000N/mm ²	15-20	0.11	0.12	0.14	15-20	0.11	0.12	0.14	8-12	0.24	0.26	0.28
STEELS-STAINLESS STEEL 1000~1300N/mm ²	12-15	0.10	0.12	0.15	12-15	0.10	0.12	0.15	6-8	0.20	0.20	0.22
STAINLESS STEELS	6-8	0.07	0.08	0.09	6-8	0.07	0.08	0.09	4-6	0.08	0.09	0.10
CAST IRON	20-40	0.15	0.24	0.28	20-40	0.15	0.24	0.28	15-25	0.13	0.19	0.24
ALUMINUM	50-60	0.22	0.25	0.27	50-60	0.22	0.25	0.27	35-45	0.27	0.30	0.35
BRASS-BRONZE	30-40	0.23	0.25	0.28	30-40	0.23	0.25	0.28	20-30	0.30	0.30	0.31
COPPER	20-30	0.22	0.25	0.27	20-30	0.22	0.25	0.27	10-15	0.29	0.30	0.31
PLASTICS	50-100	0.50	0.60	0.65	50-100	0.50	0.60	0.65	35-70	0.40	0.45	0.50

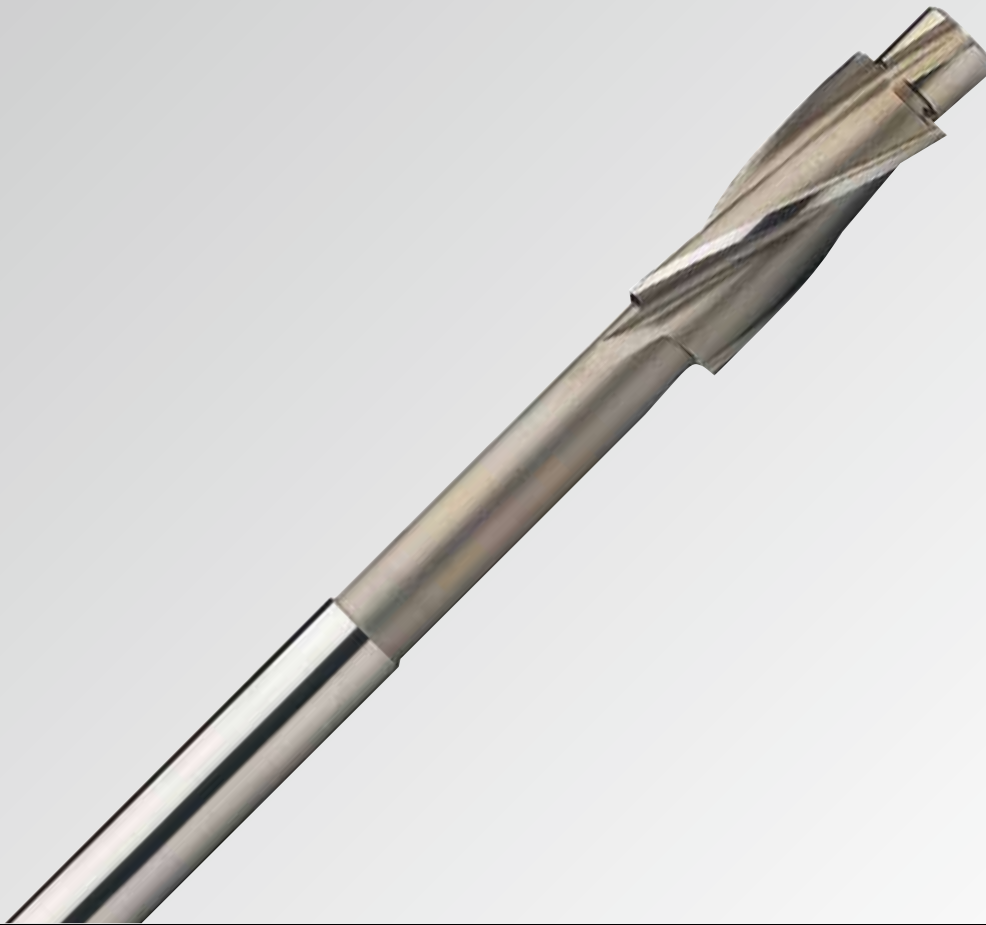
V : Cutting Speed(mm/min)

S : Feed per Revolution(mm/rev)

HSS



Leading Through Innovation



COUNTERBORES

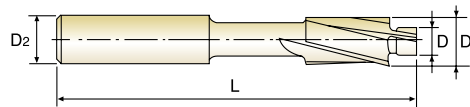
FLACHSENKER

- General Purpose
- Für allgemeinen Einsatz

CARBIDE

HSS

REAMERS

COUNTER
SINKSCOUNTER
BORESROTARY
BURRSGROUND
CARBIDE
BARS**YG COUNTERBORES****EL950 SERIES****PLAIN SHANK**
GLATTER ZYLINDERSCHAFT**HSS-E, 3 FLUTE COUNTERBORES for 180° CAPSCREW****■ HSS-E, 3 SCHNEIDEN FLACHSENKER MIT FESTEM FÜHRUNGSZAPFEN****■ FRAISES À LAMER HSS-E 3 DENTS TÊTE DE VIS À 180°****■ LAMATORI A TRE TAGLIENTI IN HSS-E per sedi di viti a testa cilindrica a 180°**► The counterbores with solid pilot are designed for machining as
fillister screw caps or ejector caps in molds.► Die Flachsenker mit festem Führungszapfen dienen dem 180°
Ansenken für Zylinderkopfschrauben und Auswerferstiften in
Formen

P.1545

MEDIUM

Unit : mm

EDP No.	ITEM No.	Screw Size	Pilot Diameter	Cutter Diameter	Shank Diameter	Overall Length
PLAIN	PLAIN		D(e8)	D1(z9)	D2(h9)	L
EL950003	YG54M3-M	M3	3.4	6.0	5	71
EL950035	YG54M3.5-M	M3.5	3.9	6.5	5	71
EL950004	YG54M4-M	M4	4.5	8.0	5	71
EL950005	YG54M5-M	M5	5.5	10.0	8	80
EL950006	YG54M6-M	M6	6.6	11.0	8	80
EL950008	YG54M8-M	M8	9.0	15.0	12.5	100
EL950010	YG54M10-M	M10	11.0	18.0	12.5	100
EL950012	YG54M12-M	M12	14.0	20.0	12.5	100

FINE

Unit : mm

EDP No.	ITEM No.	Screw Size	Pilot Diameter	Cutter Diameter	Shank Diameter	Overall Length
PLAIN	PLAIN		D(e8)	D1(z9)	D2(h9)	L
EL950901	YG54M3-F	M3	3.2	6.0	5	71
EL950902	YG54M3.5-F	M3.5	3.7	6.5	5	71
EL950903	YG54M4-F	M4	4.3	8.0	5	71
EL950904	YG54M5-F	M5	5.3	10.0	8	80
EL950905	YG54M6-F	M6	6.4	11.0	8	80
EL950906	YG54M8-F	M8	8.4	15.0	12.5	100
EL950907	YG54M10-F	M10	10.5	18.0	12.5	100
EL950908	YG54M12-F	M12	13.0	20.0	12.5	100

BEFORE THREADING

Unit : mm

EDP No.	ITEM No.	Screw Size	Pilot Diameter	Cutter Diameter	Shank Diameter	Overall Length
PLAIN	PLAIN		D(e8)	D1(z9)	D2(h9)	L
EL950909	YG54M3-T	M3	2.5	6.0	5	71
EL950910	YG54M3.5-T	M3.5	2.9	6.5	5	71
EL950911	YG54M4-T	M4	3.3	8.0	5	71
EL950912	YG54M5-T	M5	4.2	10.0	8	80
EL950913	YG54M6-T	M6	5.0	11.0	8	80
EL950914	YG54M8-T	M8	6.8	15.0	12.5	100
EL950915	YG54M10-T	M10	8.5	18.0	12.5	100
EL950916	YG54M12-T	M12	10.2	20.0	12.5	100

Tolerances according to DIN 7160 & 7161**Toleranzen nach DIN 7160 & 7161**

Nominal-Diameter in mm / Nennmaßbereich in mm				
	from 1 to 3 von 1 bis 3	over 3 to 6 über 3 bis 6	over 6 to 10 über 6 bis 10	over 10 to 18 über 10 bis 18
Tolerance range in μ m / Toleranzwerte in μ m				
e8	- 14 - 28	- 20 - 38	- 25 - 47	- 32 - 59
h9	0 - 25	0 - 30	0 - 36	0 - 43

Nominal-Diameter in mm / Nennmaßbereich in mm				
	from 6 to 10 von 6 bis 10	over 10 to 14 über 10 bis 14	over 14 to 18 über 14 bis 18	over 18 to 24 über 18 bis 24
Tolerance range in μ m / Toleranzwerte in μ m				
z9	+ 78 + 42	+ 93 + 50	+ 103 + 60	+ 125 + 73

HSS-E, 3 FLUTE COUNTERBORES for 180° CAPSCREW
HSS-E, 3 SCHNEIDEN FLACHSENKER mit FESTEM FÜHRUNGSAUFEN
EL950 SERIES

MATERIAL	P				N
	CARBON STEELS ALLOY STEELS	CARBON STEELS ALLOY STEELS TOOL STEELS	CARBON STEELS ALLOY STEELS TOOL STEELS	CARBON STEELS ALLOY STEELS TOOL STEELS	ALUMINUM & ALUMINUM ALLOYS
HARDNESS		~ HRC20	HRC20 ~ HRC35	HRC35 ~ HRC40	
STRENGTH	~ 500N/mm ²	500 ~ 800N/mm ²	800 ~ 1100N/mm ²	1100 ~ 1300N/mm ²	
CUTTER DIAMETER	RPM	RPM	RPM	RPM	RPM
6.0	590	480	380	320	2100
6.5	590	480	380	320	2100
8.0	470	380	300	250	1700
10.0	380	320	260	170	1200
11.0	300	240	190	160	1100
15.0	240	195	155	130	840
18.0	190	160	120	80	670
20.0	160	125	95	70	550

RPM = rev./min.

REAMERS

COUNTER
SINKS

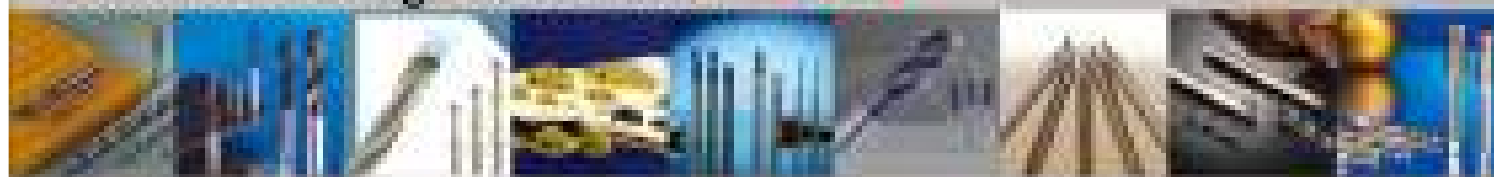
COUNTER
BORES

ROTARY
BURRS

GROUND
CARBIDE
BARS



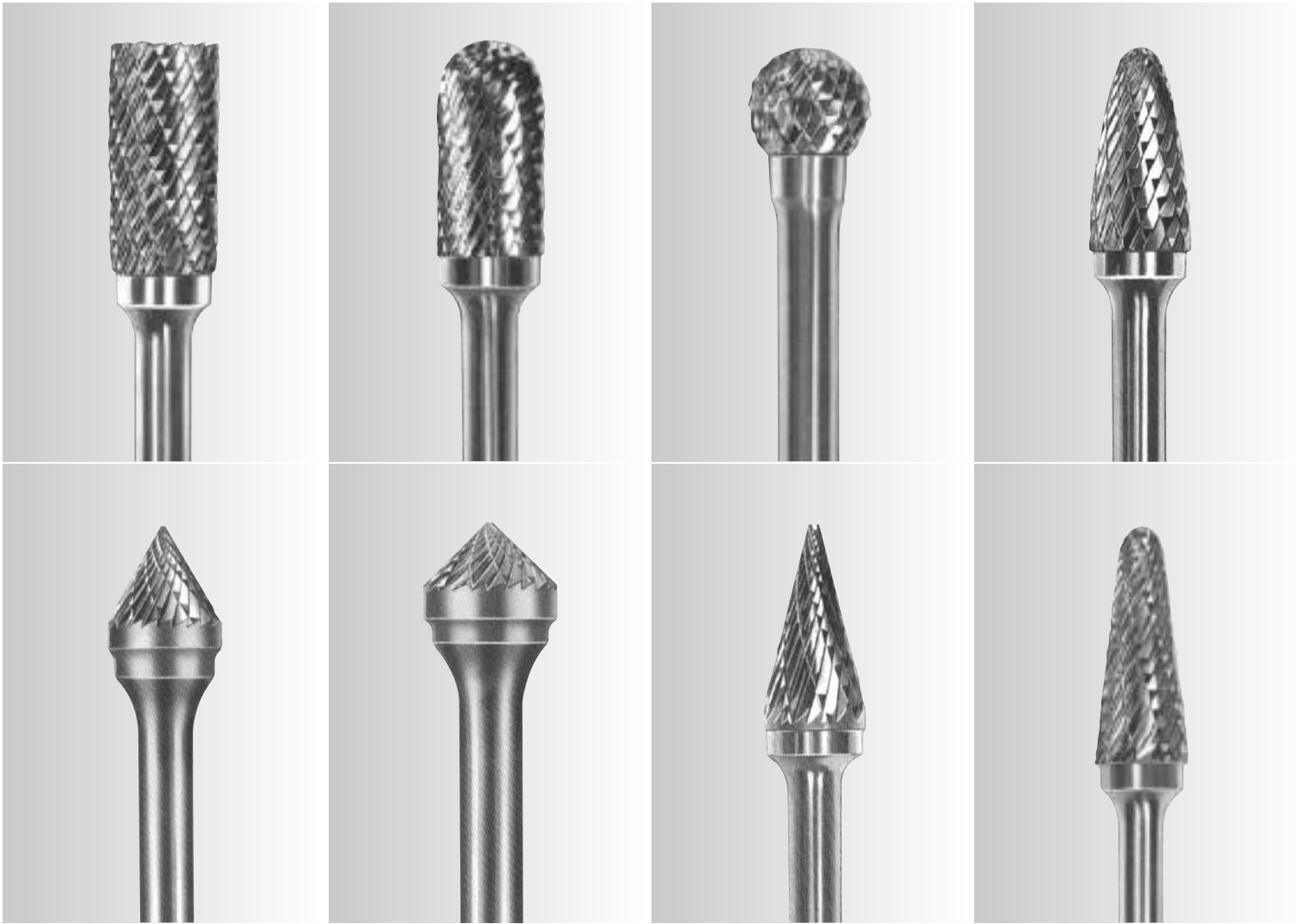
Global Cutting Tool Leader **YG-1**





CARBIDE

Leading Through Innovation



CARBIDE ROTARY BURRS

FRÄSSTIFTE AUS HARTMETALL

- For General Steels and Non-ferrous Metals etc.
(3mm & 6mm Shank Diameter)
- Für normale Stähle und Nichteisenmetalle usw. (3 u. 6mm Schaft-Ø)

SELECTION GUIDE

CARBIDE ROTARY BURRS

ITEM	MODEL	DESCRIPTION	SIZE		PAGE
			MIN	MAX	
SA R1101 R1201 R1301		CYLINDER SHAPE TYPE SA(Form A) ZYLINDER – FORM TYP SA (Form A)	D1.5	D25.0	1549
SB R1102 R1202 R1302		CYLINDER SHAPE WITH END CUT TYPE SB(Form B) ZYLINDER – FORM MIT STIRNVERZÄHNUNG TYP SB (Form B)	D1.5	D25.0	1550
SC R1103 R1203 R1303		CYLINDER SHAPE WITH RADIUS END TYPE SC(Form C) WALZENRUND – FORM TYP SC (Form C)	D2.5	D25.0	1551
SD R1104 R1204 R1304		BALL SHAPE TYPE SD(Form D) KUGEL – FORM TYP SD (Form D)	D2.5	D25.0	1552
SE R1105 R1205 R1305		OVAL SHAPE TYPE SE(Form E) TROPFEN – FORM TYP SE (Form E)	D3.0	D19.0	1553
SF R1106 R1206 R1306		TREE SHAPE WITH RADIUS END TYPE SF(Form F) RUNDBOGEN – FORM TYP SF (Form F)	D3.0	D19.0	1554
SG R1107 R1207		TREE SHAPE WITH POINTED END TYPE SG(Form G) SPITZBOGEN – FORM TYP SG (Form G)	D3.0	D19.0	1555
SH R1108 R1208		FLAME SHAPE TYPE SH(Form H) FLAMMEN – FORM TYP SH (Form H)	D3.0	D19.0	1556
SJ R1109 R1209		60° CONE SHAPE TYPE SJ(Form J) 60° KEGELSENK – FORM TYP SJ (Form J)	D3.0	D25.0	1557
SK R1110 R1210		90° CONE SHAPE TYPE SK(Form K) 90° KEGELSENK – FORM TYP SK (Form K)	D3.0	D25.0	1558
SL R1111 R1211 R1311		TAPER WITH RADIUS END TYPE SL(Form L) RUNDKEGEL – FORM TYP SL (Form L)	D3.0	D19.0	1559
SM R1112 R1212		CONE SHAPE TYPE SM(Form M) SPITZKEGEL – FORM TYP SM (Form M)	D3.0	D16.0	1560
SN R1113 R1213		INVERTED CONE SHAPE TYPE SN(Form N) WINKEL – FORM TYP SN (Form N)	D2.5	D19.0	1561
TECHNICAL INFORMATION FOR CARBIDE BURRS TECHNISCHE INFORMATION ZU HARTMETALL FRÄSSTIFTEN					1562
BURR APPLICATION INFORMATION & SPEED RECOMMENDATION EINSATZ EMPFEHLUNGEN & SCHNITTGESCHWINDIGKEITS EMPFEHLUNGEN					1563

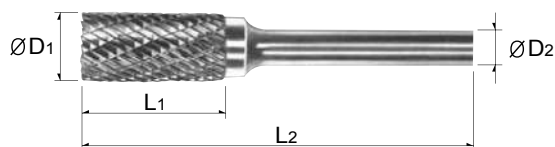


CYLINDER SHAPE TYPE SA(FORM A)

ZYLINDER – FORM TYP SA(FORM A)

FORME CYLINDRIQUE TYPE SA (FORME A)

CILINDRICA TIPO SA (FORMA A)

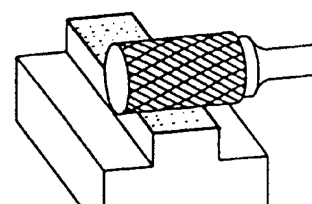


Unit : mm

DOUBLE CUT		D1	D2	L1	L2	PLAIN CUT	
EDP No.	ITEM No.					EDP No.	ITEM No.
R1101001	SA-41M	1.5	3	6	38	R1201001	SA-41MP
R1101002	SA-41ML2	1.5	3	6	50	R1201002	SA-41ML2P
R1101003	SA-41ML3	1.5	3	6	75	R1201003	SA-41ML3P
R1101004	SA-42M	2.5	3	11	38	R1201004	SA-42MP
R1101005	SA-42ML2	2.5	3	11	50	R1201005	SA-42ML2P
R1101006	SA-42ML3	2.5	3	11	75	R1201006	SA-42ML3P
R1101007	SA-43M	3.0	3	14	38	R1201007	SA-43MP
R1101008	SA-43ML2	3.0	3	14	50	R1201008	SA-43ML2P
R1101009	SA-43ML3	3.0	3	14	75	R1201009	SA-43ML3P
R1101010	SA-11M	3.0	6	12	56	R1201010	SA-11MP
R1101011	SA-12M	3.0	6	12.7	60	R1201011	SA-12MP
R1101012	SA-52M	4.0	3	12.7	38	R1201012	SA-52MP
R1101013	SA-13M	4.0	6	16	50	R1201013	SA-13MP
R1101014	SA-53M	5.0	3	12.7	38	R1201014	SA-53MP
R1101015	SA-14M	5.0	6	16	50	R1201015	SA-14MP
R1101017	SA-1ML	6.0	6	25	50	R1201017	SA-1MLP
R1101019	SA-1M	6.0	6	16	50	R1201019	SA-1MP
R1101020	SA-51M	6.3	3	12.7	50	R1201020	SA-51MP
R1101021	SA-2M	8.0	6	19	63	R1201021	SA-2MP
R1101022	SA-3M	9.5	6	19	63	R1201022	SA-3MP
R1101025	SA-3ML	9.5	6	25	69	R1201025	SA-3MLP
R1101027	SA-4M	11.0	6	25	69	R1201027	SA-4MP
R1101029	SA-5M	12.7	6	25	69	R1201029	SA-5MP
R1101032	SA-6M	16.0	6	25	69	R1201032	SA-6MP
R1101034	SA-7M	19.0	6	25	69	R1201034	SA-7MP
R1101037	SA-9M	25.0	6	25	69	R1201037	SA-9MP



ALUMA CUT		D1	D2	L1	L2
EDP No.	ITEM No.				
R1301018	SA-1MNF	6.0	6	19	50
R1301024	SA-3MNF	9.5	6	19	63
R1301030	SA-5MNF	12.7	6	25	69
R1301033	SA-6MNF	16.0	6	25	69
R1301035	SA-7MNF	19.0	6	25	69



► Chip Breaker Type or Diamond Cut Type is available on your request.

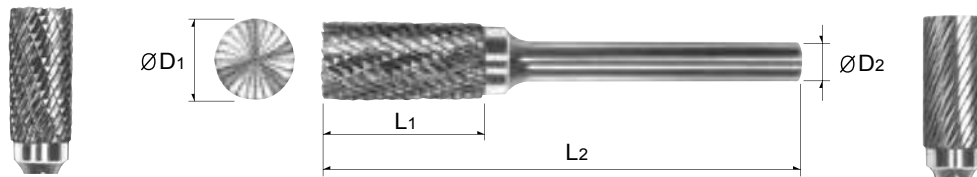


ROTARY BURRS

SB R1102, R1202, R1302

CYLINDER SHAPE WITH END CUT TYPE SB(FORM B)

ZYLINDER – FORM MIT STIRNVERZÄHNUNG TYP SB(FORM B)
 FORME CYLINDRIQUE AVEC COUPE EN BOUT TYPE SB (FORME B)
 CILINDRICA CON TAGLIO FRONTALE, TIPO SB (FORMA B)



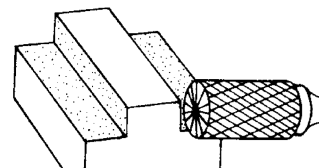
Unit : mm

DOUBLE CUT		D1	D2	L1	L2	PLAIN CUT	
EDP No.	ITEM No.					EDP No.	ITEM No.
R1102001	SB-41M	1.5	3	6	38	R1202001	SB-41MP
R1102002	SB-41ML2	1.5	3	6	50	R1202002	SB-41ML2P
R1102003	SB-41ML3	1.5	3	6	75	R1202003	SB-41ML3P
R1102004	SB-42M	2.5	3	11	38	R1202004	SB-42MP
R1102005	SB-42ML2	2.5	3	11	50	R1202005	SB-42ML2P
R1102006	SB-42ML3	2.5	3	11	75	R1202006	SB-42ML3P
R1102007	SB-ECOM	3.0	3	-	38	-	-
R1102008	SB-43M	3.0	3	14	38	R1202008	SB-43MP
R1102026	SB-43ML2	3.0	3	14	50	R1202026	SB-43ML2P
R1102027	SB-43ML3	3.0	3	14	75	R1202027	SB-43ML3P
R1102009	SB-11M	3.0	6	12	56	R1202009	SB-11MP
R1102010	SB-12M	3.0	6	12.7	60	R1202010	SB-12MP
R1102011	SB-13M	4.0	6	16	50	R1202011	SB-13MP
R1102012	SB-14M	5.0	6	16	50	R1202012	SB-14MP
R1102013	SB-1M	6.0	6	16	50	R1202013	SB-1MP
R1102014	SB-1ML	6.0	6	25	50	R1202014	SB-1MLP
R1102015	SB-51M	6.3	3	4.7	43	R1202015	SB-51MP
R1102016	SB-2M	8.0	6	19	63	R1202016	SB-2MP
R1102017	SB-3M	9.5	6	19	63	R1202017	SB-3MP
R1102018	SB-3ML	9.5	6	25	69	R1202018	SB-3MLP
R1102020	SB-4M	11.0	6	25	69	R1202020	SB-4MP
R1102022	SB-5M	12.7	6	25	69	R1202022	SB-5MP
R1102023	SB-6M	16.0	6	25	69	R1202023	SB-6MP
R1102024	SB-7M	19.0	6	25	69	R1202024	SB-7MP
R1102025	SB-9M	25.0	6	25	69	R1202025	SB-9MP



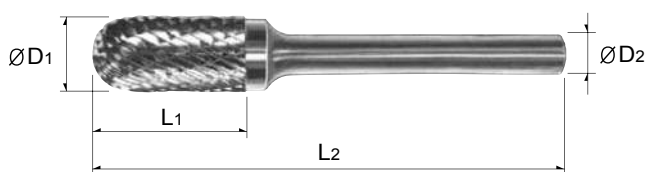
ALUMA CUT		D1	D2	L1	L2
EDP No.	ITEM No.				
R1302018	SB-1MNF	6.0	6	19	50
R1302024	SB-3MNF	9.5	6	19	63
R1302030	SB-5MNF	12.7	6	25	69
R1302033	SB-6MNF	16.0	6	25	69
R1302035	SB-7MNF	19.0	6	25	69

▶ Chip Breaker Type or Diamond Cut Type is available on your request.



**ROTARY BURRS****SC R1103, R1203, R1303****CARBIDE****HSS**

REAMERS

COUNTER
SINKSCOUNTER
BORES**ROTARY
BURRS**GROUND
CARBIDE
BARS**CYLINDER SHAPE WITH RADIUS END TYPE SC(FORM C)** **WALZENRUND – FORM TYP SC(FORM C)** **FORME CYLINDRIQUE AVEC RAYON EN BOUT TYPE SC (FORME C)** **CILINDRICA A TESTA SEMISFERICA, TIPO SC (FORMA C)**

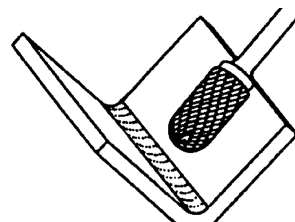
Unit : mm

DOUBLE CUT		D1	D2	L1	L2	PLAIN CUT	
EDP No.	ITEM No.					EDP No.	ITEM No.
R1103001	SC-41M	2.5	3	11	38	R1203001	SC-41MP
R1103002	SC-42M	3.0	3	14	38	R1203002	SC-42MP
R1103003	SC-42ML2	3.0	3	14	50	R1203003	SC-42ML2P
R1103004	SC-42ML3	3.0	3	14	75	R1203004	SC-42ML3P
R1103005	SC-11M	3.0	6	12	56	R1203005	SC-11MP
R1103006	SC-12M	3.0	6	16	60	R1203006	SC-12MP
R1103007	SC-52M	4.0	3	12.7	38	R1203007	SC-52MP
R1103008	SC-13M	4.0	6	16	50	R1203008	SC-13MP
R1103009	SC-53M	5.0	3	12.7	38	R1203009	SC-53MP
R1103010	SC-14M	5.0	6	16	50	R1203010	SC-14MP
R1103011	SC-1M	6.0	6	16	50	R1203011	SC-1MP
R1103014	SC-1ML	6.0	6	25	50	R1203014	SC-1MLP
R1103015	SC-51M	6.3	3	12.7	50	R1203015	SC-51MP
R1103016	SC-2M	8.0	6	19	63	R1203016	SC-2MP
R1103017	SC-3M	9.5	6	19	63	R1203017	SC-3MP
R1103020	SC-3ML	9.5	6	25	69	R1203020	SC-3MLP
R1103022	SC-4M	11.0	6	25	69	R1203022	SC-4MP
R1103024	SC-5M	12.7	6	25	69	R1203024	SC-5MP
R1103027	SC-6M	16.0	6	25	69	R1203027	SC-6MP
R1103028	SC-7M	19.0	6	25	69	R1203028	SC-7MP
R1103031	SC-9M	25.0	6	25	69	R1203031	SC-9MP



ALUMA CUT		D1	D2	L1	L2
EDP No.	ITEM No.				
R1303013	SC-1MNF	6.0	6	19	50
R1303019	SC-3MNF	9.5	6	19	63
R1303026	SC-5MNF	12.7	6	25	69
R1303029	SC-7MNF	19.0	6	25	69

► Chip Breaker Type or Diamond Cut Type is available on your request.



CARBIDE

HSS

REAMERS

COUNTER
SINKSCOUNTER
BORESROTARY
BURRSGROUND
CARBIDE
BARS

ROTARY BURRS

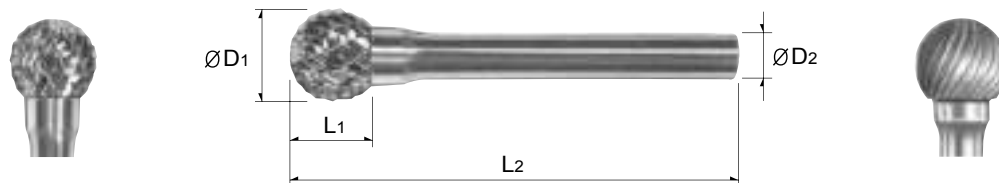
SD R1104, R1204, R1304

BALL SHAPE TYPE SD(FORM D)

KUGEL – FORM TYP SD(FORM D)

FORME SPHÉRIQUE TYPE SD (FORME D)

SFERICA, TIPO SD (FORMA D)



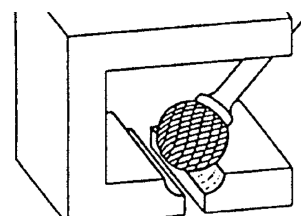
Unit : mm

DOUBLE CUT		D1	D2	L1	L2	PLAIN CUT	
EDP No.	ITEM No.					EDP No.	ITEM No.
R1104001	SD-41M	2.5	3	2.3	38	R1204001	SD-41MP
R1104002	SD-42M	3.0	3	2.8	38	R1204002	SD-42MP
R1104003	SD-42ML2	3.0	3	2.8	50	R1204003	SD-42ML2P
R1104004	SD-42ML3	3.0	3	2.8	75	R1204004	SD-42ML3P
R1104005	SD-11M	3.0	6	2.8	50	R1204005	SD-11MP
R1104007	SD-53M	5.0	3	4	38	R1204007	SD-53MP
R1104008	SD-14M	5.0	6	4	50	R1204008	SD-14MP
R1104010	SD-1M	6.0	6	5	50	R1204010	SD-1MP
R1104012	SD-51M	6.3	3	5	44	R1204012	SD-51MP
R1104013	SD-2M	8.0	6	6.4	50	R1204013	SD-2MP
R1104014	SD-3M	9.5	6	8	52	R1204014	SD-3MP
R1104018	SD-4M	11.0	6	9.5	54	R1204018	SD-4MP
R1104020	SD-5M	12.7	6	11	55	R1204020	SD-5MP
R1104023	SD-6M	16.0	6	14	58	R1204023	SD-6MP
R1104025	SD-7M	19.0	6	16	62	R1204025	SD-7MP
R1104028	SD-9M	25.0	6	23	68	R1204028	SD-9MP



ALUMA CUT		D1	D2	L1	L2
EDP No.	ITEM No.				
R1304011	SD-1MNF	6.0	6	5	50
R1304015	SD-3MNF	9.5	6	8	52
R1304021	SD-5MNF	12.7	6	11	55
R1304024	SD-6MNF	16.0	6	14	58
R1304026	SD-7MNF	19.0	6	16	62

► Chip Breaker Type or Diamond Cut Type is available on your request.



**ROTARY BURRS****SE R1105, R1205, R1305****CARBIDE****HSS**

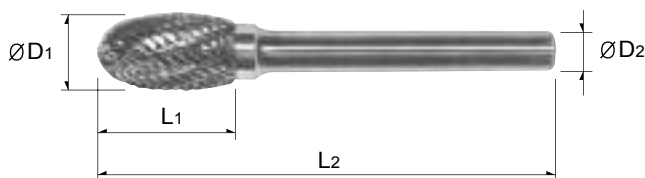
REAMERS

COUNTER
SINKSCOUNTER
BORES**ROTARY
BURRS**GROUND
CARBIDE
BARS**OVAL SHAPE TYPE SE(FORM E)**

TROPFEN – FORM TYP SE(FORM E)

FORME OVALE TYPE SE (FORME E)

OVALE, TIPO SE (FORMA E)

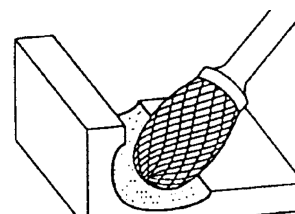


Unit : mm

DOUBLE CUT		D1	D2	L1	L2	PLAIN CUT	
EDP No.	ITEM No.					EDP No.	ITEM No.
R1105001	SE-41M	3.0	3	5.5	38	R1205001	SE-41MP
R1105002	SE-41ML2	3.0	3	5.5	50	R1205002	SE-41ML2P
R1105003	SE-41ML3	3.0	3	5.5	75	R1205003	SE-41ML3P
R1105004	SE-53M	5.0	3	7.1	38	R1205004	SE-53MP
R1105005	SE-1M	6.0	6	9.5	50	R1205005	SE-1MP
R1105007	SE-51M	6.3	3	9.5	47	R1205007	SE-51MP
R1105008	SE-3M	9.5	6	16	60	R1205008	SE-3MP
R1105011	SE-5M	12.7	6	22	66	R1205011	SE-5MP
R1105014	SE-6M	16.0	6	25	69	R1205014	SE-6MP
R1105016	SE-7M	19.0	6	25	69	R1205016	SE-7MP



ALUMA CUT		D1	D2	L1	L2
EDP No.	ITEM No.				
R1305010	SE-3MNF	9.5	6	16	60
R1305013	SE-5MNF	12.7	6	22	66
R1305015	SE-6MNF	16.0	6	25	69
R1305017	SE-7MNF	19.0	6	25	69



► Chip Breaker Type or Diamond Cut Type is available on your request.

CARBIDE

HSS

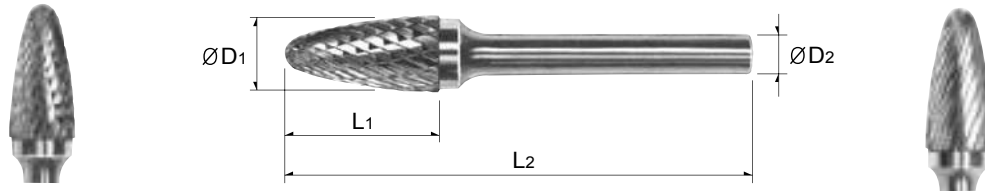
REAMERS

COUNTER
SINKSCOUNTER
BORESROTARY
BURRSGROUND
CARBIDE
BARS

ROTARY BURRS

SF R1106, R1206, R1306

TREE SHAPE WITH RADIUS END TYPE SF(FORM F)

RUNDBOGEN – FORM TYP SF(FORM F)
FORME ARBRE AVEC RAYON EN BOUT TYPE SF (FORME F)
OGIVA RAGGIATA, TIPO SF (FORMA F)


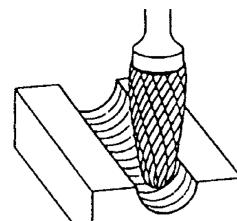
Unit : mm

DOUBLE CUT		D1	D2	L1	L2	PLAIN CUT	
EDP No.	ITEM No.					EDP No.	ITEM No.
R1106001	SF-41M	3.0	3	6	38	R1206001	SF-41MP
R1106002	SF-42M	3.0	3	12.7	38	R1206002	SF-42MP
R1106003	SF-11M	3.0	6	12.7	56	R1206003	SF-11MP
R1106004	SF-42ML2	3.0	3	12.7	50	R1206004	SF-42ML2P
R1106005	SF-42ML3	3.0	3	12.7	75	R1206005	SF-42ML3P
R1106006	SF-53M	5.0	3	12.7	38	R1206006	SF-53MP
R1106008	SF-1M	6.0	6	16	50	R1206008	SF-1MP
R1106010	SF-51M	6.3	3	12.7	50	R1206010	SF-51MP
R1106011	SF-3M	9.5	6	19	63	R1206011	SF-3MP
R1106014	SF-4M	11.0	6	25	69	R1206014	SF-4MP
R1106016	SF-13M	12.7	6	19	63	R1206016	SF-13MP
R1106017	SF-5M	12.7	6	25	69	R1206017	SF-5MP
R1106020	SF-6M	16.0	6	25	69	R1206020	SF-6MP
R1106022	SF-7M	19.0	6	25	69	R1206022	SF-7MP
R1106023	SF-14M	19.0	6	32	76	R1206023	SF-14MP
R1106026	SF-15M	19.0	6	38	82	R1206026	SF-15MP



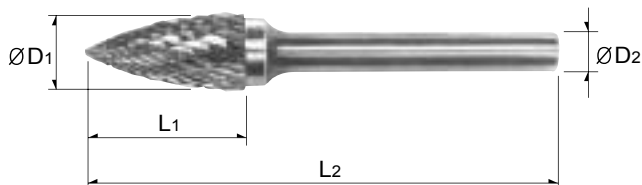
ALUMA CUT		D1	D2	L1	L2
EDP No.	ITEM No.				
R1306009	SF-1MNF	6.0	6	19	50
R1306013	SF-3MNF	9.5	6	19	63
R1306019	SF-5MNF	12.7	6	25	69
R1306021	SF-6MNF	16.0	6	25	69
R1306024	SF-14MNF	19.0	6	32	76

► Chip Breaker Type or Diamond Cut Type is available on your request.



**ROTARY BURRS****SG R1107, R1207****CARBIDE****HSS**

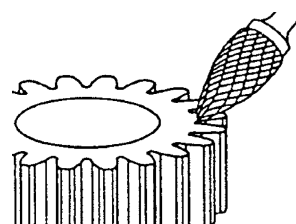
REAMERS

COUNTER
SINKSCOUNTER
BORES**ROTARY
BURRS**GROUND
CARBIDE
BARS**TREE SHAPE WITH POINTED END TYPE SG(FORM G)** **SPITZBOGEN – FORM TYP SG(FORM G)** **FORME ARBRE AVEC POINTE EN BOUT TYPE SG (FORME G)** **TESTA A PUNTA, TIPO SG (FORMA G)**

Unit : mm

DOUBLE CUT		D1	D2	L1	L2	PLAIN CUT	
EDP No.	ITEM No.					EDP No.	ITEM No.
R1107001	SG-41M	3.0	3	6	38	R1207001	SG-41MP
R1107002	SG-43M	3.0	3	9.5	38	R1207002	SG-43MP
R1107003	SG-44M	3.0	3	12.7	38	R1207003	SG-44MP
R1107004	SG-44ML2	3.0	3	12.7	50	R1207004	SG-44ML2P
R1107005	SG-44ML3	3.0	3	12.7	75	R1207005	SG-44ML3P
R1107006	SG-53M	5.0	3	12.7	38	R1207006	SG-53MP
R1107008	SG-1M	6.0	6	16	50	R1207008	SG-1MP
R1107009	SG-51M	6.3	3	12.7	50	R1207009	SG-51MP
R1107010	SG-2M	8.0	6	19	63	R1207010	SG-2MP
R1107011	SG-3M	9.5	6	19	63	R1207011	SG-3MP
R1107015	SG-13M	12.7	6	19	63	R1207015	SG-13MP
R1107016	SG-5M	12.7	6	25	69	R1207016	SG-5MP
R1107018	SG-6M	16.0	6	25	69	R1207018	SG-6MP
R1107019	SG-7M	19.0	6	25	69	R1207019	SG-7MP
R1107020	SG-15M	19.0	6	38	82	R1207020	SG-15MP

► Chip Breaker Type or Diamond Cut Type is available on your request.



CARBIDE

HSS



ROTARY BURRS

SH R1108, R1208

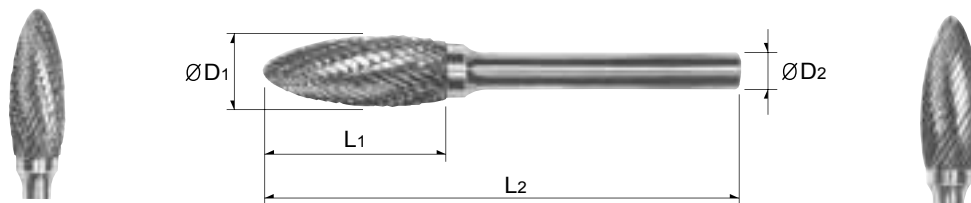
FLAME SHAPE TYPE SH(FORM H)

FLAMMEN – FORM TYP SH(FORM H)

FORME FLAMME TYPE SH (FORME H)

A FIAMMA, TIPO SH (FORMA H)

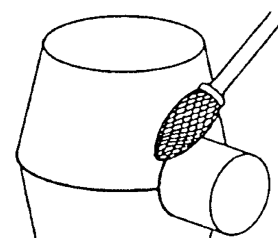
REAMERS

COUNTER
SINKSCOUNTER
BORESROTARY
BURRSGROUND
CARBIDE
BARS

Unit : mm

DOUBLE CUT		D1	D2	L1	L2	PLAIN CUT	
EDP No.	ITEM No.					EDP No.	ITEM No.
R1108001	SH-41M	3.0	3	6.3	38	R1208001	SH-41MP
R1108002	SH-41ML2	3.0	3	6.3	50	R1208002	SH-41ML2P
R1108003	SH-41ML3	3.0	3	6.3	75	R1208003	SH-41ML3P
R1108004	SH-53M	5.0	3	9.5	38	R1208004	SH-53MP
R1108005	SH-2M	8.0	6	19	63	R1208005	SH-2MP
R1108007	SH-5M	12.7	6	32	76	R1208007	SH-5MP
R1108009	SH-6M	16.0	6	36	80	R1208009	SH-6MP
R1108010	SH-7M	19.0	6	41	85	R1208010	SH-7MP

► Chip Breaker Type or Diamond Cut Type is available on your request.

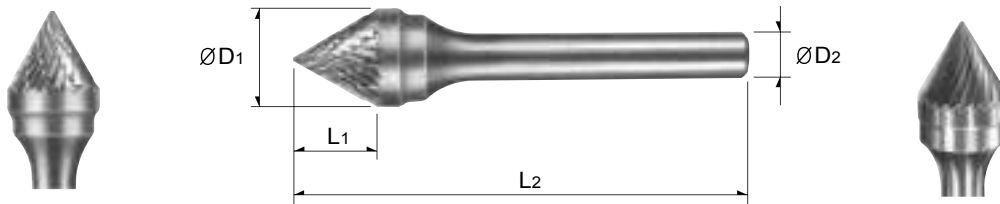


60° CONE SHAPE TYPE SJ(FORM J)

 60° KEGELSENK – FORM TYP SJ(FORM J)

 FORME CONIQUE 60° TYPE SJ (FORME J)

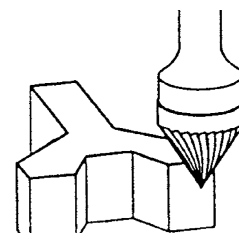
 CONICA A 60°, TIPO SJ (FORMA J)



Unit : mm

DOUBLE CUT		D1	D2	L1	L2	PLAIN CUT	
EDP No.	ITEM No.					EDP No.	ITEM No.
R1109001	SJ-42M	3.0	3	2.5	38	R1209001	SJ-42MP
R1109002	SJ-1M	6.0	6	4	50	R1209002	SJ-1MP
R1109003	SJ-3M	9.5	6	8	55	R1209003	SJ-3MP
R1109004	SJ-5M	12.7	6	11	58	R1209004	SJ-5MP
R1109005	SJ-6M	16.0	6	13.5	61	R1209005	SJ-6MP
R1109006	SJ-7M	19.0	6	16.5	65	R1209006	SJ-7MP
R1109007	SJ-9M	25.0	6	21.5	68	R1209007	SJ-9MP

► Chip Breaker Type or Diamond Cut Type is available on your request.



CARBIDE

HSS



ROTARY BURRS

SK R1110, R1210

REAMERS

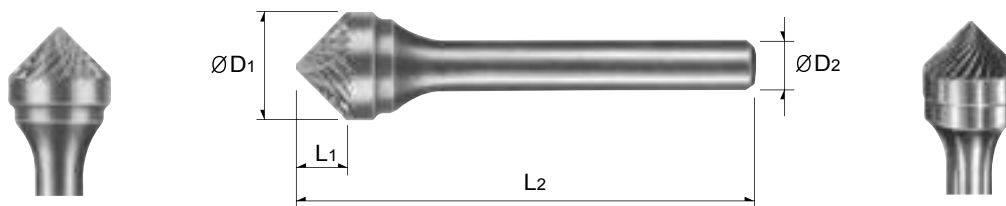
COUNTER
SINKSCOUNTER
BORESROTARY
BURRSGROUND
CARBIDE
BARS

90° CONE SHAPE TYPE SK(FORM K)

90° KEGELSENK – FORM TYP SK(FORM K)

FORME CONIQUE 90° TYPE SK (FORME K)

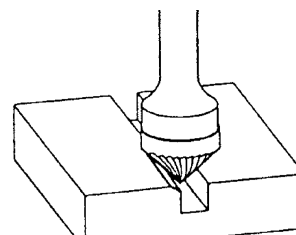
CONICA A 90°, TIPO SK (FORMA K)



Unit : mm

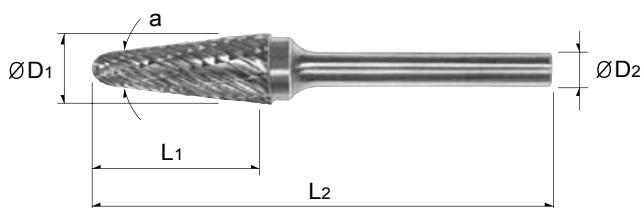
DOUBLE CUT		D1	D2	L1	L2	PLAIN CUT	
EDP No.	ITEM No.					EDP No.	ITEM No.
R1110001	SK-42M	3.0	3	1.5	38	R1210001	SK-42MP
R1110002	SK-1M	6.0	6	3	50	R1210002	SK-1MP
R1110003	SK-3M	9.5	6	4.7	52	R1210003	SK-3MP
R1110004	SK-5M	12.7	6	6.3	54	R1210004	SK-5MP
R1110005	SK-6M	16.0	6	8	57	R1210005	SK-6MP
R1110006	SK-7M	19.0	6	9.5	58	R1210006	SK-7MP
R1110007	SK-9M	25.0	6	12.7	60	R1210007	SK-9MP

► Chip Breaker Type or Diamond Cut Type is available on your request.



**ROTARY BURRS****SL R1111, R1211, R1311****CARBIDE****HSS**

REAMERS

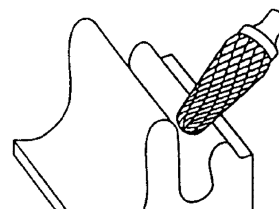
COUNTER
SINKSCOUNTER
BORES**ROTARY
BURRS**GROUND
CARBIDE
BARS**TAPER WITH RADIUS END TYPE SL(FORM L)** **RUNDKEGEL – FORM TYP SL(FORM L)** **FORME CONIQUE AVEC RAYON EN BOUT TYPE SL (FORME L)** **CONICA A TESTA RAGGIATA, TIPO SL (FORMA L)**

Unit : mm

DOUBLE CUT		D1	D2	L1	L2	a	PLAIN CUT	
EDP No.	ITEM No.						EDP No.	ITEM No.
R1111001	SL-41M	3.0	3	9.5	38	8°	R1211001	SL-41MP
R1111002	SL-42M	3.0	3	12.7	38	8°	R1211002	SL-42MP
R1111003	SL-42ML2	3.0	3	12.7	50	8°	R1211003	SL-42ML2P
R1111004	SL-42ML3	3.0	3	12.7	75	8°	R1211004	SL-42ML3P
R1111005	SL-53M	5.0	3	12.7	38	14°	R1211005	SL-53MP
R1111006	SL-1M	6.0	6	16	50	14°	R1211006	SL-1MP
R1111008	SL-2M	8.0	6	22	69	14°	R1211008	SL-2MP
R1111009	SL-3M	9.5	6	27	74	14°	R1211009	SL-3MP
R1111012	SL-4M	12.7	6	28	76	14°	R1211012	SL-4MP
R1111015	SL-5M	16.0	6	30	77	14°	R1211015	SL-5MP
R1111017	SL-7M	19.0	6	38	85	14°	R1211017	SL-7MP



ALUMA CUT		D1	D2	L1	L2	a
EDP No.	ITEM No.					
R1311010	SL-3MNF	9.5	6	27	74	14°
R1311013	SL-4MNF	12.7	6	28	76	14°
R1311016	SL-5MNF	16.0	6	30	77	14°
R1311018	SL-7MNF	19.0	6	38	85	14°



► Chip Breaker Type or Diamond Cut Type is available on your request.

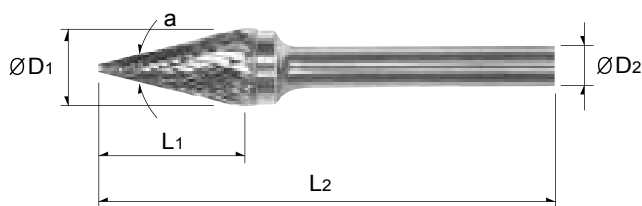


CONE SHAPE TYPE SM(FORM M)

SPITZKEGEL – FORM TYP SM(FORM M)

FORME CONIQUE TYPE SM (FORME M)

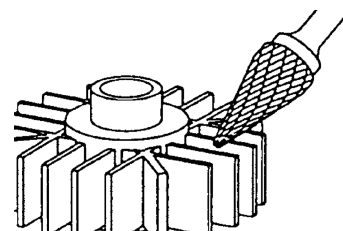
CONICA A PUNTA TIPO SM (FORMA M)



Unit : mm

DOUBLE CUT		D1	D2	L1	L2	a	PLAIN CUT	
EDP No.	ITEM No.						EDP No.	ITEM No.
R1112001	SM-41M	3.0	3	8.9	38	12°	R1212001	SM-41MP
R1112002	SM-42M	3.0	3	11	38	14°	R1212002	SM-42MP
R1112003	SM-42ML2	3.0	3	11	50	14°	R1212003	SM-42ML2P
R1112004	SM-42ML3	3.0	3	11	75	14°	R1212004	SM-42ML3P
R1112005	SM-43M	3.0	3	16	38	7°	R1212005	SM-43MP
R1112006	SM-53M	5.0	3	12.7	38	16°	R1212006	SM-53MP
R1112007	SM-1M	6.0	6	12.7	50	22°	R1212007	SM-1MP
R1112008	SM-2M	6.0	6	19	50	14°	R1212008	SM-2MP
R1112009	SM-3M	6.0	6	25	50	10°	R1212009	SM-3MP
R1112010	SM-51M	6.3	3	12.7	53	22°	R1212010	SM-51MP
R1112011	SM-4M	9.5	6	16	63	28°	R1212011	SM-4MP
R1112012	SM-5M	12.7	6	22	69	28°	R1212012	SM-5MP
R1112013	SM-6M	16.0	6	25	73	31°	R1212013	SM-6MP

► Chip Breaker Type or Diamond Cut Type is available on your request.



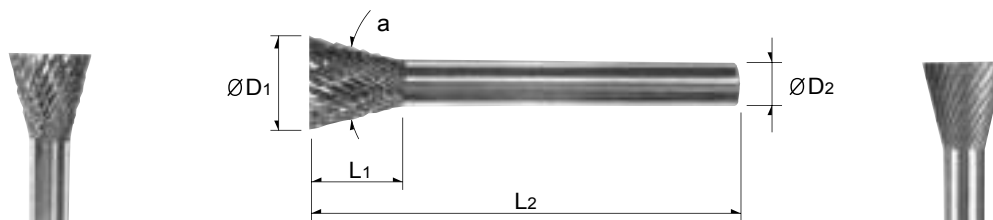


INVERTED CONE SHAPE TYPE SN(FORM N)

WINKEL – FORM TYP SN(FORM N)

FORME CONIQUE INVERSÉ TYPE SN (FORME N)

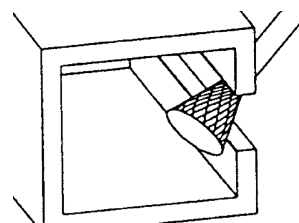
CONICO INVERSO, TIPO SN (FORMA N)



Unit : mm

DOUBLE CUT		D1	D2	L1	L2	a	PLAIN CUT	
EDP No.	ITEM No.						EDP No.	ITEM No.
R1113001	SN-41M	2.5	3	3	38	10°	R1213001	SN-41MP
R1113002	SN-42M	3.0	3	4	38	10°	R1213002	SN-42MP
R1113003	SN-53M	5.0	3	6.3	38	10°	R1213003	SN-53MP
R1113004	SN-1M	6.0	6	8	50	10°	R1213004	SN-1MP
R1113005	SN-51M	6.3	3	6	44	10°	R1213005	SN-51MP
R1113006	SN-2M	9.5	6	9.5	53	13°	R1213006	SN-2MP
R1113007	SN-4M	12.7	6	12.7	57	28°	R1213007	SN-4MP
R1113008	SN-6M	16.0	6	19	63	18°	R1213008	SN-6MP
R1113009	SN-7M	19.0	6	16	60	30°	R1213009	SN-7MP

► Chip Breaker Type or Diamond Cut Type is available on your request.



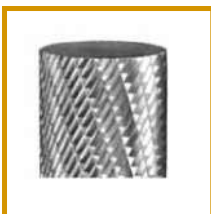


TECHNICAL INFORMATION FOR CARBIDE BURRS TECHNISCHE INFORMATION ZU HARTMETALL FRÄSSTIFTEN



Plain Cut Schlichtzahnung

- The general use of "Plain Cut" is on steels, steel alloys, cast iron, copper and brass.
- Designed for rapid stock removal and good workpiece finishes.
- Produces long chips.
- Zum gewöhnlichen Einsatz in Stahl, legiertem Stahl, Guss, Kupfer und Messing.
- Entwickelt für schnellen Spanabtrag und gute Oberflächenqualität.
- Macht lange Späne



Double Cut Spanbrecher

- The double cut burr allows rapid stock removal in the harder materials.
- Designed for creating a small chip and excellent workpiece finishes.
- The small chip helps to eliminate loading of the flutes.
- Exceedingly convenient application by user.
- Erlaubt schnellen Spanabtrag von härteren Werkstoffen.
- Macht kurze Späne und ausgezeichnete Oberflächengüte.
- Der kurze Span hilft, das Zusetzen der Nuten zu verhindern.
- Meistverwendete Zahnform.



Aluma Cut Alu-Zahnung

- Designed to have wider chip space with relief angle.
- More suitable application to non-ferrous metals.
- Größerer Spanraum und mit Spanwinkel.
- Überwiegend für Nichteisen-Metalle entwickelt



Diamond Cut Diamant-Zahnung

- Designed for creating extremely small chips as powder-like chip.
- Excellent operator control on heat treated and tough alloy steels.
- Excellent finishes.
- Macht extrem kleine Späne, pulverähnliche Späne.
- Gute Führungskontrolle bei gehärteten und zähen legierten Stählen.
- Ausgezeichnete Oberfläche.

BURR APPLICATION INFORMATION

EINSATZ EMPFEHLUNGEN

MATERIALS	PLAIN CUT	DOUBLE CUT	ALUMA CUT	DIAMOND CUT	CHIP BREAKER
ALUMINUM			●		
BRASS, BRONZE, COPPER	●	●			●
FIBER GLASS				●	
CAST IRON	●	●			●
PLASTICS			●		
STEEL, HRc 40~55	●	●		●	●
STEEL, HRc 55~60	●	●		●	●
STEEL, CARBON	●	●			●
STEEL, NICKEL CHROME	●	●		●	●
STEEL, WELDMENTS	●	●			●
TITANIUM	●	●			●
ZINC			●		

REAMERS

COUNTER SINKS

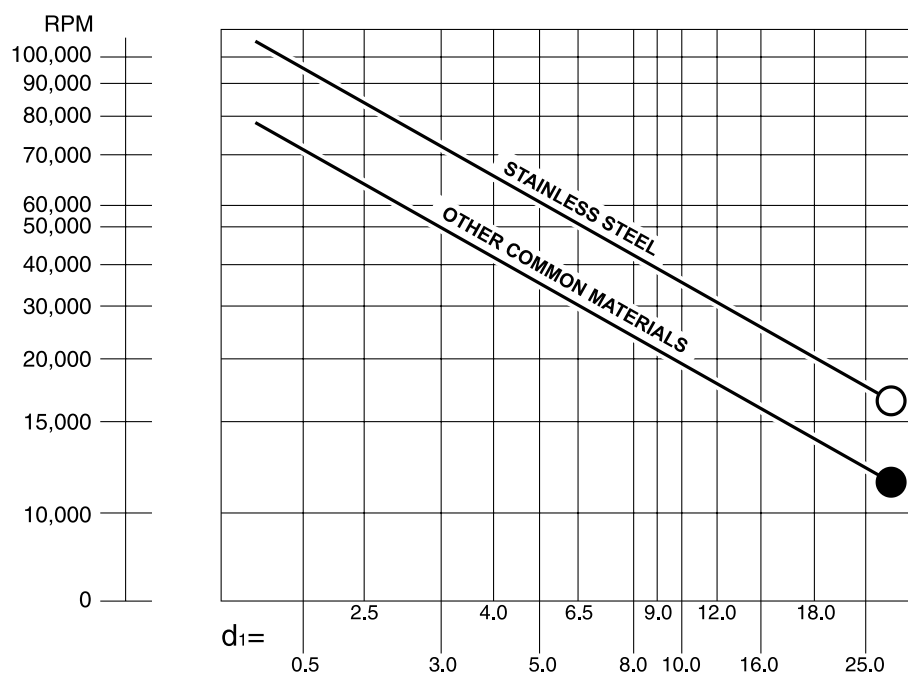
COUNTER BORES

ROTARY BURRS

GROUND CARBIDE BARS

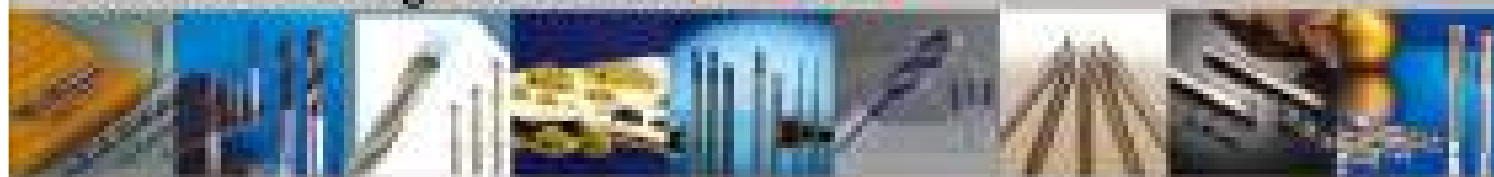
BURR SPEED RECOMMENDATIONS

SCHNITTGESCHWINDIGKEITS EMPFEHLUNGEN





Global Cutting Tool Leader **YG-1**



CARBIDE



Leading Through Innovation



GROUND CARBIDE BARS

GESCHLIFFENE VHM - RUNDSTÄBE

- 330mm(LENGTH) GROUND CARBIDE BARS
h6(Diameter Tolerance), +6.0mm(Length Tolerance)
- GESCHLIFFENE VHM - RUNDSTÄBE (330mm Gesamtlänge)
h6 Ø-Tol. +6.0mm GL-Tol.

CARBIDE

HSS


**GROUND
CARBIDE BARS**
B6321 SERIES

GROUND CARBIDE BARS
GESCHLIFFENE VHM - RUNDSTÄBE
BARREAUX CARBURE
BARRETTE CILINDRICHE IN MD
◆ Call for Availability


Unit : mm

EDP No.	Diameter	Length
	D(h6)	L
B6321030	3.0	330
B6321040	4.0	330
B6321050	5.0	330
B6321060	6.0	330
B6321070	7.0	330
B6321080	8.0	330
B6321090	9.0	330
B6321100	10.0	330
B6321110	11.0	330
B6321120	12.0	330
B6321130	13.0	330
B6321140	14.0	330
B6321150	15.0	330
B6321160	16.0	330
B6321170	17.0	330
B6321180	18.0	330
B6321190	19.0	330
B6321200	20.0	330

Diameter Tolerance(mm)	Length Tolerance(mm)
h6	0~6.0