

# HSS



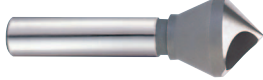


Being the best through innovation



# COUNTERSINK SENKER

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

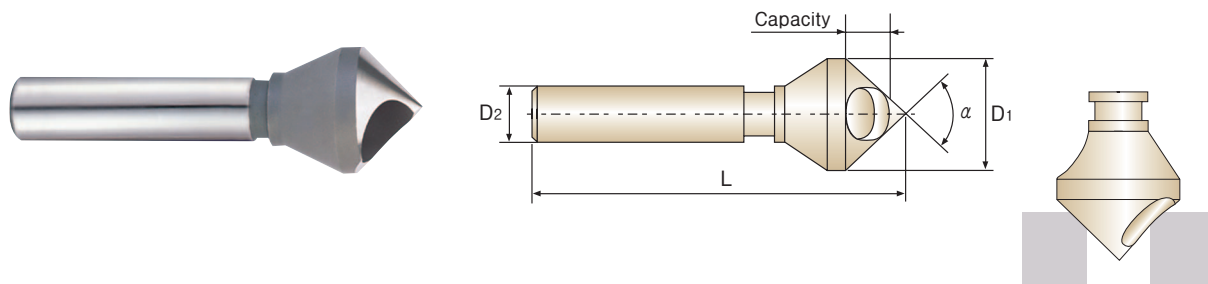
# SELECTION GUIDE

ITEM	MODEL	DESCRIPTION	SIZE		PAGE
			MIN	MAX	
<b>C1109</b> <b>C2109</b> <b>C3109</b>		HSS DEBURRING TOOL with HOLE HSS QUERLOCHSENKER	D10.0	D50.0	<b>1029</b>
<b>C1119</b> <b>C2119</b> <b>C3119</b>		HSS SINGLE FLUTE CHAMFERING CUTTERS HSS EINSCHNEIDEN KEGELSENKER	D10.0	D50.0	<b>1030</b>
<b>C1139</b> <b>C2139</b> <b>C3139</b>		HSS THREE FLUTE COUNTERSINKS HSS DREISCHNEIDEN KEGELSENKER	D4.3	D31.0	<b>1031</b>
		RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN			<b>1032</b>

**HSS DEBURRING TOOL with HOLE**  
**HSS QUERLOCHSENKER**

- ▶ 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



Unit : mm

EDP No. (uncoating)			Angle $\alpha$ (-1°)	Nominal Diameter D1	Shank Diameter D2	Overall Length L(±1)	Capacity min/max
HSSCo8	HSS-E	HSS					
<b>C1109100</b>	<b>C2109100</b>	<b>C3109100</b>	90°	<b>10.0</b>	6	45	2 - 5
<b>C1109150</b>	<b>C2109150</b>	<b>C3109150</b>	90°	<b>15.0</b>	8	55	6 - 14
<b>C1109200</b>	<b>C2109200</b>	<b>C3109200</b>	90°	<b>20.0</b>	10	65	8 - 18
<b>C1109250</b>	<b>C2109250</b>	<b>C3109250</b>	90°	<b>25.0</b>	12	78	10 - 23
<b>C1109300</b>	<b>C2109300</b>	<b>C3109300</b>	90°	<b>30.0</b>	12	88	12 - 28
<b>C1109350</b>	<b>C2109350</b>	<b>C3109350</b>	90°	<b>35.0</b>	16	110	14 - 33
<b>C1109400</b>	<b>C2109400</b>	<b>C3109400</b>	90°	<b>40.0</b>	16	115	16 - 38
<b>C1109450</b>	<b>C2109450</b>	<b>C3109450</b>	90°	<b>45.0</b>	16	120	18 - 43
<b>C1109500</b>	<b>C2109500</b>	<b>C3109500</b>	90°	<b>50.0</b>	16	130	20 - 48

▶ TiN &amp; TiCN coating are available on your request.

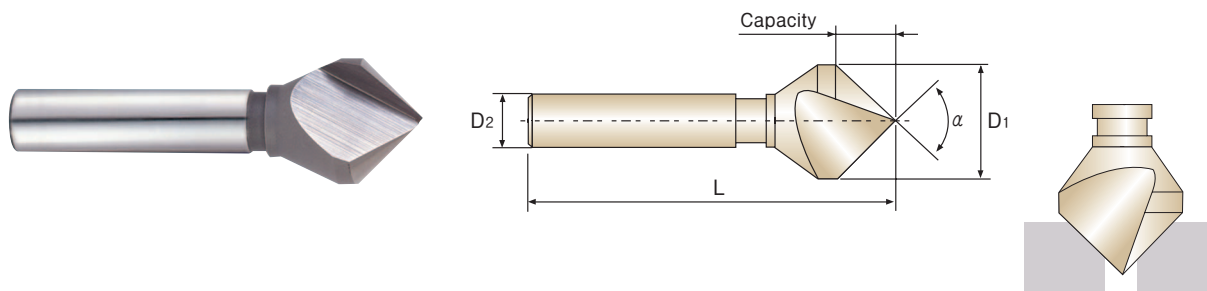
Nominal Dia. Tolerance(mm)	Shank Dia. Tolerance(mm)
+0.3	h9

## HSS SINGLE FLUTE CHAMFERING CUTTERS

### HSS EINSCHNEIDEN KEGELSENKER

- ▶ 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 $\alpha$ (-1°)	Nominal Diameter D1	Shank Diameter D2	Overall Length L(±1)	Capacity min/max
HSSCo8	HSS-E	HSS					
C1119100	C2119100	C3119100	90°	10.0	6	45	1 - 10
C1119150	C2119150	C3119150	90°	15.0	8	55	2 - 15
C1119200	C2119200	C3119200	90°	20.0	10	65	2 - 20
C1119250	C2119250	C3119250	90°	25.0	12	78	3 - 25
C1119300	C2119300	C3119300	90°	30.0	12	88	3 - 30
C1119350	C2119350	C3119350	90°	35.0	16	110	4 - 35
C1119400	C2119400	C3119400	90°	40.0	16	115	5 - 40
C1119450	C2119450	C3119450	90°	45.0	16	120	10 - 45
C1119500	C2119500	C3119500	90°	50.0	16	130	12 - 50

▶ TiN & TiCN coating are available on your request.

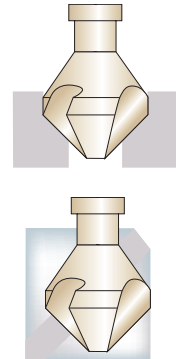
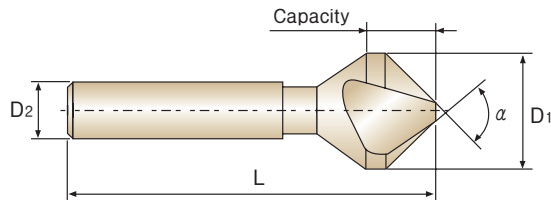
Nominal Dia Tolerance(mm)	Shank Dia. Tolerance(mm)
+0.3	h9

## HSS THREE FLUTE COUNTERSINKS

### HSS DREISCHNEIDEN KEGELSENKER

- ▶ 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

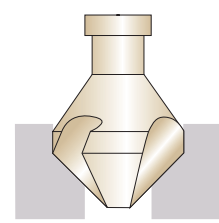
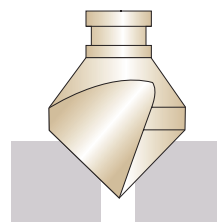
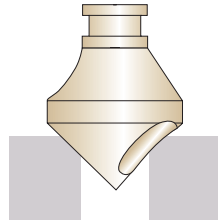

**DIN 335 C**

Unit : mm

EDP No. (uncoating)			Angle $\alpha$ (-1°)	Nominal Diameter D1	Shank Diameter D2	Overall Length L(±1)	Capacity min/max
HSSCo8	HSS-E	HSS					
C1139043	C2139043	C3139043	90°	4.3	4	40	1.3 - 4.3
C1139050	C2139050	C3139050	90°	5.0	4	40	1.5 - 5
C1139060	C2139060	C3139060	90°	6.0	5	45	1.5 - 6
C1139063	C2139063	C3139063	90°	6.3	5	45	1.5 - 6.3
C1139070	C2139070	C3139070	90°	7.0	6	50	1.8 - 7
C1139080	C2139080	C3139080	90°	8.0	6	50	2 - 8
C1139083	C2139083	C3139083	90°	8.3	6	50	2 - 8.3
C1139100	C2139100	C3139100	90°	10.0	6	50	2.5 - 10
C1139104	C2139104	C3139104	90°	10.4	6	50	2.5 - 10.4
C1139115	C2139115	C3139115	90°	11.5	8	56	2.8 - 11.5
C1139124	C2139124	C3139124	90°	12.4	8	56	2.8 - 12.4
C1139150	C2139150	C3139150	90°	15.0	10	60	3.2 - 15
C1139165	C2139165	C3139165	90°	16.5	10	60	3.2 - 16.5
C1139190	C2139190	C3139190	90°	19.0	10	63	3.5 - 19
C1139205	C2139205	C3139205	90°	20.5	10	63	3.5 - 20.5
C1139230	C2139230	C3139230	90°	23.0	10	67	3.8 - 23
C1139250	C2139250	C3139250	90°	25.0	10	67	3.8 - 25
C1139300	C2139300	C3139300	90°	30.0	12	71	4.2 - 30
C1139310	C2139310	C3139310	90°	31.0	12	71	4.2 - 31

▶ TiN &amp; TiCN coating are available on your request.

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



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 <sup>2</sup>	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 <sup>2</sup>	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 <sup>2</sup>	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 <sup>2</sup>	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)