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Datum / Date

Kontakt / Contact

07/2013

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LEUCO VHW Shank-type Cutters for NF-Metals: Good removal of chips & cutting quality

Inhalt / Content

These milling tools are versatile in use and are characterised by high machining quality, long tool life and suitability for high-performance machining.

Application

- I On CNC machines for the machining of NF-metals and plastics
- I Jointing, rabbeting, grooving in aluminium alloys, copper alloys and non-ferrous metals
- I Suitable for traveling plunge cut using Z- and X- or Y-axis

Design

- I Positive helix grooves
- I Polished chip flutes
- I Z=1: also available with radius
- I Z=2: with helix angle 45° and special grind
- I Z=3: cutting edges with unequal pitch, helix angle 42°-43° and special grind

Advantages

- I Optimal removal of chips and best cutting quality thanks to especially polished chip flutes and positive helix
- I Z=1 with radius: Especially suitable for grooving in aluminum and for machining hard aluminum with high silicon content. Reduction of cutting forces thanks to the radius
- I Z=3: Quiet running and low noise level thanks to unequal pitch of the cutting edges. High Performance Cutting (HPC)

Aluminum and NF-Metals

Material	Tensile strength (N/mm ²) Hardness HB	Cutting Speed V _c (m/min)	Feedrate per tooth f _z (mm)				
			Ø 2-4mm	Ø 4-6mm	Ø 6-8mm	Ø 10-12mm	Ø 16-20mm
Roughing							
Aluminum (Si-content 0,5 - 10 %)	<400 n/mm ²	350-500	0,03-0,06	0,06-0,09	0,09-0,12	0,15-0,18	0,24-0,30
Aluminum (Si-content 10 - 15 %)	<400 n/mm ²	300-400	0,03-0,06	0,06-0,09	0,09-0,12	0,15-0,18	0,24-0,30
Copper, brass, bronze	<300 HB	200-250	0,02-0,04	0,04-0,06	0,06-0,08	0,11-0,13	0,17-0,21
Finishing							
Aluminum (Si-content 0,5 - 10 %)	<400 n/mm ²	400-500	0,01-0,02	0,02-0,03	0,03-0,03	0,10-0,12	0,16-0,20
Aluminum (Si-content 10 - 15 %)	<400 n/mm ²	400-500	0,02-0,04	0,04-0,06	0,06-0,08	0,10-0,12	0,16-0,20
Copper, brass, bronze	<300 HB	230-300	0,01-0,03	0,03-0,04	0,04-0,06	0,07-0,08	0,11-0,14
HPC (High Performance Cutting)							
Aluminum (Si-content 0,5 - 10 %)	<400 n/mm ²	450-560	0,02-0,03	0,03-0,05	0,05-0,07	0,09-0,10	0,14-0,17
Aluminum (Si-content 10 - 15 %)	<400 n/mm ²	400-500	0,02-0,03	0,03-0,05	0,05-0,07	0,09-0,10	0,14-0,17
Copper, brass, bronze	<300 HB	300-350	0,01-0,02	0,02-0,04	0,04-0,05	0,06-0,07	0,10-0,12

The figures given are guidelines. The best values for the application in question should be determined by trials or during the machining process.

Bildmaterial / Imagery



Design Alu Z=1



Design Alu Z=1 with radius



Design Alu Z=2



Design Alu Z=3

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Dimensions

Solid Carbide Shank-type Cutters for machining NF-Metals Z=1

Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z	helix	Ident-No.
3	10	8	55	80	1	positiv	184709
4	10	8	55	80	1	positiv	184710
5	10	8	55	80	1	positiv	184711
6	10	8	55	80	1	positiv	184712
8	25	8	75	100	1	positiv	184713
10	25	10	75	100	1	positiv	184714

Solid Carbide Shank-type Cutters for Machining NF-Metals Z=1 with radius

Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z	helix	Radius R	Ident-No.
5	20	6	40	70	1	positiv	1	183972
6	20	8	45	80	1	positiv	1,5	183973
8	22	10	45	90	1	positiv	1,5	183974
10	25	10	50	100	1	positiv	2	183975
12	30	12	60	120	1	positiv	2,5	183976

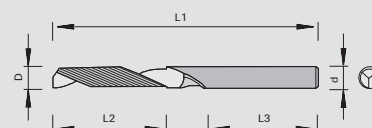
Solid Carbide Shank-type Cutters for Machining NF-Metals Z=2

Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z	helix	Ident-No.
3	8	6	36	57	2	positiv	183977
4	11	6	36	57	2	positiv	183978
5	13	6	36	57	2	positiv	183979
6	13	6	36	57	2	positiv	183980
8	19	8	36	63	2	positiv	183981
10	22	10	40	72	2	positiv	183982
12	26	12	45	83	2	positiv	183983
16	32	16	48	92	2	positiv	183984
20	38	20	50	104	2	positiv	183985

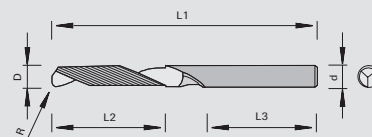
Solid Carbide Shank-type Cutters for Machining NF-Metals Z=3 (HPC)

Ø D [mm]	L2 [mm]	Ø d [mm]	L3 [mm]	L1 [mm]	Z	helix	Ident-No.
3	8	6	45	57	3	positiv	183986
4	11	6	39	57	3	positiv	183987
5	13	6	39	57	3	positiv	183988
6	13	6	39	57	3	positiv	183989
8	19	8	38	63	3	positiv	183990
10	22	10	42	72	3	positiv	183991
12	26	12	47	83	3	positiv	183992
16	36	16	50	92	3	positiv	183993
20	41	20	52	104	3	positiv	183994

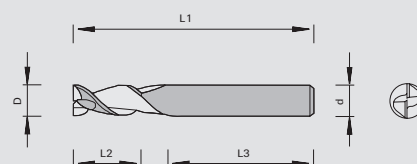
Bildmaterial / Imagery



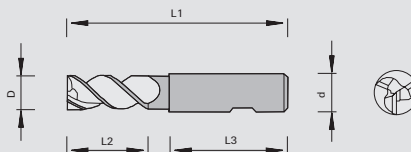
Drawing: Alu Z=1



Drawing: Alu Z=1 with radius



Drawing: Alu Z=2



Drawing: Alu Z=3