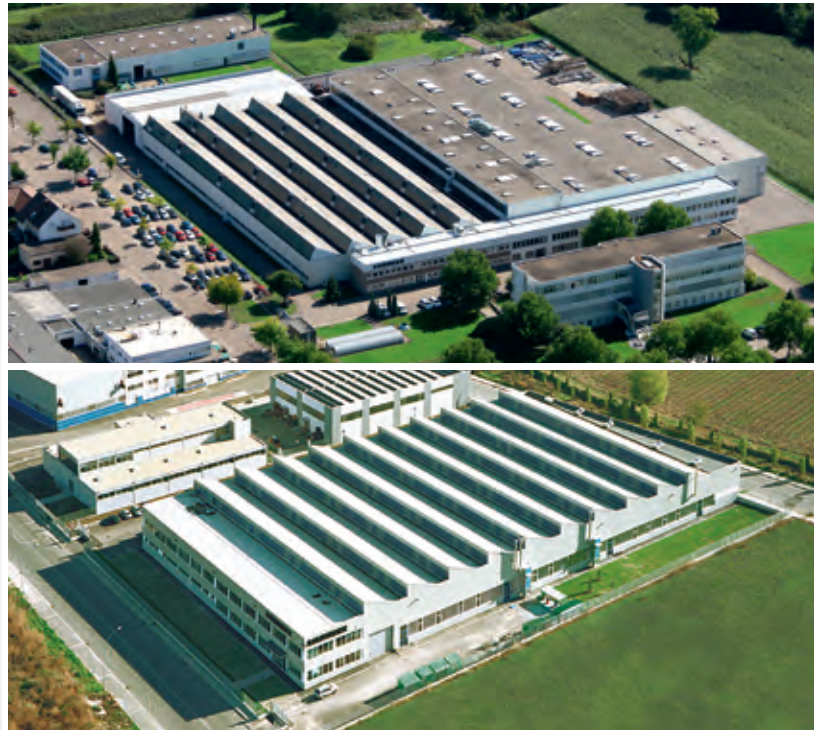


Stock Tools



LIEBHERR

High-Grade Stock Tools from Liebherr



Up: Production site Ettlingen, down: Production site Collegno

As a system supplier of machine tools, gear cutting tools, clamping fixtures and automation solutions, Liebherr-Verzahntechnik GmbH offers products and services that are perfectly matched to each other. Customers benefit from more than six decades of experience, the high degree of process reliability offered by the products and a first-class service throughout the entire lifecycle of all machines and tools.

At its centers of expertise in Ettlingen (Germany) and Collegno (Italy), Liebherr develops and constructs a comprehensive portfolio of high-grade gear cutting tools. The experts at Liebherr are on hand with their extensive knowledge, experience and expertise to offer customers support and advice on all issues in and around the topic of gearing. They also develop, in particular, solutions and special designs for all types of gearing that can be manufactured using shaping processes in involute or non-involute profiles.

You can use the order form in this brochure to very easily order new cutters in disc, shaft or hub form and as pre-cutters and finishing cutters. Tools in stock can generally be delivered within 24 hours.

In addition to this, Liebherr offers high-quality reconditioning of tools from all manufacturers. Cutters are sharpened, coated and then subjected to quality control in a fast yet precise procedure.

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Technical Information



Areas of Application Covered by Liebherr Stock Tools

- Spur gears with external and internal toothing
- Rack and pinions with straight toothing
- Tooth segments
- Wheel blocks
- Gear shafts and gear hubs for multi-speed gearboxes
- Sprockets for roller chains

Quality Grade of Shaper Cutters in Stock

Liebherr cutters are available in standard DIN 1829 Grade A form, with the exception of the sprocket cutters, which are supplied in DIN 1829 Grade B. Shaper cutters with higher accuracy (Grade AA) are available in stock only in limited numbers.

Cutter Materials

Material-No.			Workpiece tensile strength
S 6-5-3-8	(PM)	not in stock	$\leq 1.200 \text{ N/mm}^2$
S 11-2-5-8	(PM) Standard	in stock	1.200 - 1.400 N/mm ²
S 6-7-6-10	(PM)	not in stock	1.400 - 1.700 N/mm ²

Alcrona Pro Coating

Liebherr tools are supplied with Alcrona Pro coating. On request, other coatings can also be provided within five working days and with surcharge.



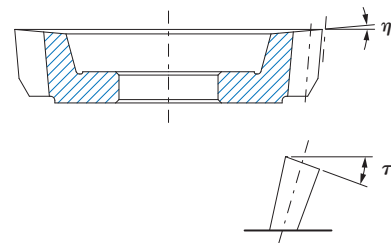
General Notes on Sharpening of Cutters

As a general rule, shaper cutters should be sharpened free of burrs, and this is achieved through several pass spark-outs. Damage to the cutting edges should always be avoided so as not to compromise the gear cutting quality or tool life.

Only an optimally prepared cutting edge guarantees maximum tool performance. For very high precision gears, Liebherr recommends subjecting the tools to a pitch and profile measurement after each tool reconditioning procedure.

Manufacturer Tolerances and Deviations for Resharpener

Angular deviation	Angle h	f_{η}	+/- 15'
	Angle t	f_{τ}	+/- 30'
Roughnesses	Spur cutters	Ra	< 0,25
	Helical cutters	Ra	< 0,35

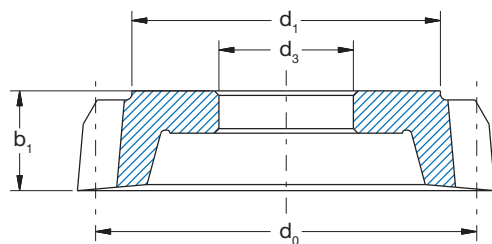
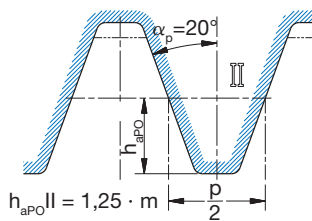


Tolerances

Quality grade of standard cutters in stock										AA DIN 1829 A DIN 1829									
m	< 1,0				1 - 2				> 2 - 3,55				> 3,55 - 6				> 6 - 10		
	10 - 50		> 50 - 125		10 - 50		> 50 - 125		10 - 50		> 50 - 125		10 - 50		> 50 - 125		> 50 - 125		
d0	AA	A	AA	A	AA	A	AA	A	AA	A	AA	A	AA	A	AA	A	AA	A	
ff	2	2,5	2	2,5	2	3	2	3	3	4	3	4	4	5	4	5	5	7	
fHa	2	2,5	2	2,5	2	3	2	3	2	3	2	3	3	4	3	4	3,5	5	
Ff	2,5	3,5	2,5	3,5	3	4	3	4	4	5	4	5	5	7	5	7	6	8	
fp fpe	2,5	3,5	2,5	3,5	2,5	3,5	2,5	4	2,5	3,5	2,5	3,5	3	4	3	4	3,5	5	
f0	3	4,5	3,5	4,5	3	4,5	3	5	3	4,5	3	4,5	4	5	4	5	4,5	6	
Fp	6,5	9	9	12	7	10	9	14	8	11	10	14	8	12	10	16	11	16	
Ff Fra	6	9	7	10	7	10	8	10	8	10	9	11	9	11	10	12	11	15	
RS	2,5	4	3,5	4,5	3	4,5	3,5	5	3,5	5	4,5	6	4	6	5	7	5,5	8	

Basic Rack Profile DIN 3972/II

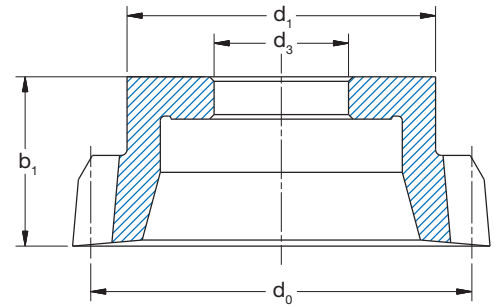
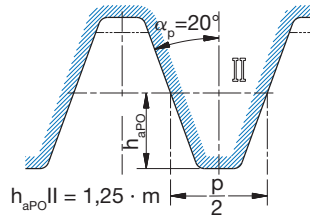
Disc type finishing cutters DIN 1825, pressure angle 20°



Module	z_0	d_0	d_3	d_1	b_1	Stock-No.
0,5	152	76	31,745	70	15	W 105 001 02
0,6	160	96	44,45	90	14	W 206 011 02
0,7	100	70	31,745	62	16	W 107 001 02
0,75	100	75		68	16	W 107 501 02
0,8	90	72	44,45	65	16	W 108 001 02
1,0	100	100		90	16	W 210 011 02
1,0	124	124	44,45	115	20	W 310 011 02
1,25	80	100		90	16	W 212 511 02
1,25	100	125	44,45	115	20	W 312 511 02
1,5	68	102		90	18	W 215 011 02
1,5	84	126	44,45	115	20	W 315 011 02
1,75	58	102		90	20	W 217 511 02
1,75	72	126	44,45	115	22	W 317 511 02
2,0	50	100		85	20	W 220 011 02
2,0	64	128	44,45	115	24	W 320 011 02
2,25	45	101		90	20	W 222 511 02
2,25	56	126	44,45	110	24	W 322 511 02
2,5	40	100		85	20	W 225 011 02
2,5	50	125	44,45	110	24	W 325 011 02
2,75	36	99		85	24	W 227 511 02
2,75	46	127	44,45	110	24	W 327 511 02
3,0	33	99		85	24	W 230 011 02
3,0	42	126	44,45	110	24	W 330 011 02
3,25	31	101		85	24	W 232 511 02
3,5	29	102	44,45	85	24	W 235 011 02
3,5	36	126		110	24	W 335 011 02
3,75	27	101	44,45	85	24	W 237 511 02
4,0	25	100		80	24	W 240 011 02
4,0	32	128	44,45	110	24	W 340 011 02
4,5	22	99		80	24	W 245 011 02
4,5	28	126	44,45	105	24	W 345 011 02
5,0	20	100		80	24	W 250 011 02
5,0	26	130	44,45	110	26	W 350 011 02
5,5	24	132		110	26	W 355 011 02
6,0	17	102	44,45	82	24	W 260 011 02
6,0	22	132		110	26	W 360 011 02
6,5	16	104	44,45	82	24	W 265 011 02
6,5	20	130		105	26	W 365 011 02
7,0	18	126	44,45	100	26	W 370 011 02
8,0	16	128		100	31	W 380 011 02
10,0	14	140	44,45	105	31	W 300 011 02

Basic Rack Profile DIN 3972/II

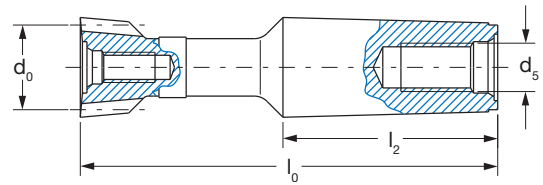
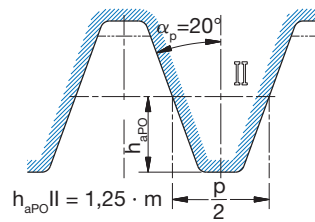
Hub type finishing cutters DIN 1826, pressure angle 20°



Module	z_0	d_0	d_3	d_1	b_1	Stock-No.
1,0	76	76	31,745	65	41	W 610 001 02
1,25	61	76	31,745	65	41	W 612 501 02
1,5	34	51	19	42	32	W 615 021 02
1,5	51	76,5	31,745	65	41	W 615 001 02
1,5	68	102	44,45	90	46	W 615 011 02
1,75	43	75	31,745	65	41	W 617 501 02
2,0	26	52	19	43	32	W 620 021 02
2,0	38	76	31,745	65	41	W 620 001 02
2,0	50	100	44,45	85	46	W 620 011 02
2,25	34	76,5	31,745	65	41	W 622 501 02
2,5	22	55	19	44	32	W 625 021 02
2,5	32	80	31,745	68	41	W 625 001 02
2,5	40	100	44,45	85	46	W 625 011 02
2,75	28	77	31,745	60	41	W 627 501 02
3,0	20	60	19	46	35	W 630 021 02
3,0	25	75	31,745	60	43	W 630 001 02
3,0	33	99	44,45	85	46	W 630 011 02
3,5	22	77	31,745	60	43	W 635 001 02
3,5	29	101,5	44,45	85	46	W 635 011 02
4,0	19	76	31,745	60	46	W 640 001 02
4,0	25	100	44,45	82	46	W 640 011 02
5,0	16	80	31,745	60	46	W 650 001 02
5,0	20	100	44,45	80	46	W 650 011 02
6,0	17	102	44,45	80	46	W 660 011 02

Basic Rack Profile DIN 3972/II

Shank type finishing cutters DIN 1828, pressure angle 20°

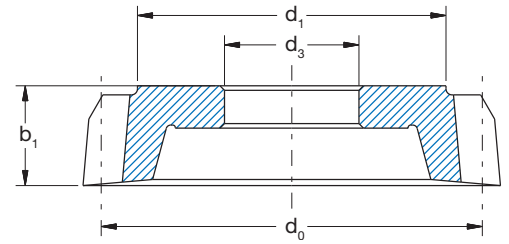
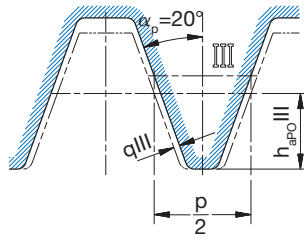


Module	z_0	d_0	Taper	l_0	z_2 min	Stock-No.
1,0	16	16	MK2	100	36	W 510 011 02
1,0	24	24	MK2	100	50	W 510 021 02
1,25	16	20	MK2	100	36	W 512 521 02
1,5	10	15	MK2	100	24	W 515 011 02
1,5	16	24	MK2	100	36	W 515 021 02
2,0	10	20	MK2	100	24	W 520 011 02
2,0	14	28	MK2	100	36	W 520 021 02
2,5	10	25	MK2	100	24	W 525 011 02
2,5	14	35	MK4	150	34	W 525 021 02
3,0	10	30	MK2	100	24	W 530 011 02
3,0	14	42	MK4	150	34	W 530 021 02
4,0	12	48	MK4	150	28	W 540 011 02
5,0	12	60	MK4	150	28	W 550 011 02

MK 2 = Morse taper 2, $l_2=40$ mm, $d_5=M6$
 MK 4 = Morse taper 4, $l_2=71$ mm, $d_5=M16$

Basic Rack Profile DIN 3972/III

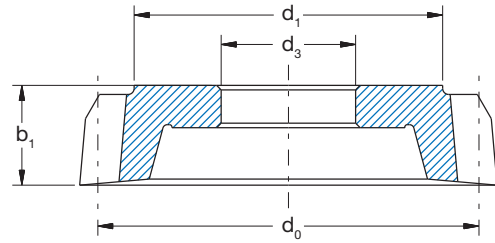
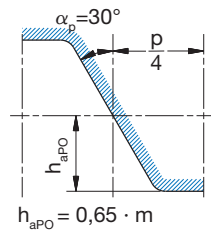
Disc type roughing cutters DIN 1825, pressure angle 20°



Module	z_0	d_0	d_3	d_1	b_1	q III	h_{aPO} III	Stock-No.
1,0	124	124	44,45	115	20	0,09	1,50 · m	W 310 051 02
1,25	100	125		115	20	0,09	1,46 · m	W 312 551 02
1,5	84	126		115	20	0,10	1,44 · m	W 315 051 02
1,75	72	126		115	22	0,10	1,42 · m	W 317 551 02
2,0	50	100		85	20	0,11	1,41 · m	W 220 051 02
2,0	64	128		115	24	0,11	1,41 · m	W 320 051 02
2,5	40	100		85	20	0,12	1,38 · m	W 225 051 02
2,5	50	125		110	24	0,12	1,38 · m	W 325 051 02
3,0	33	99		85	24	0,12	1,37 · m	W 230 051 02
3,0	42	126		110	24	0,12	1,37 · m	W 330 051 02
3,5	36	126		110	24	0,13	1,36 · m	W 335 051 02
4,0	32	128		110	24	0,14	1,35 · m	W 340 051 02
5,0	20	100		80	24	0,15	1,34 · m	W 250 051 02
5,0	26	130		110	26	0,15	1,34 · m	W 350 051 02
6,0	22	132		110	26	0,16	1,33 · m	W 360 051 02

Basic Rack Profile DIN 5480

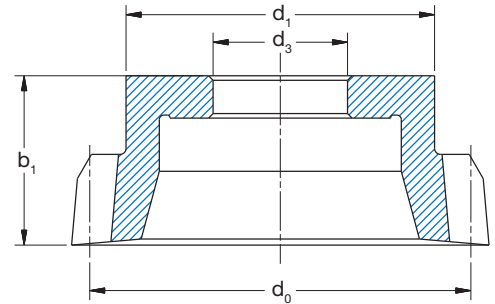
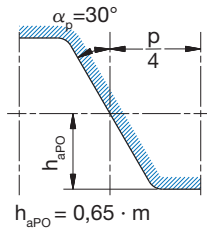
Disc type finishing cutters DIN 1825, pressure angle 30°



Module	z_0	d_0	d_3	d_1	b_1	Stock-No.
0,6	120	72	31,745	65	16	W 106 061 02
0,8	90	72		65	16	W 108 061 02
1,0	100	100		95	16	W 210 061 02
1,0	124	124		115	20	W 310 061 02
1,25	80	100		95	16	W 212 561 02
1,25	100	125		120	20	W 312 561 02
1,5	68	102		95	18	W 215 061 02
1,5	84	125		120	20	W 315 061 02
1,75	72	126		115	22	W 317 561 02
2,0	50	100		90	20	W 220 061 02
2,0	64	128	115	24	W 320 061 02	
2,5	40	100	90	20	W 225 061 02	
2,5	50	125	115	24	W 325 061 02	
3,0	34	102	44,45	90	24	W 230 061 02
3,0	42	126		115	24	W 330 061 02
4,0	26	104		90	24	W 240 061 02
4,0	32	128		115	24	W 340 071 02
5,0	20	100		85	24	W 250 061 02
5,0	26	130		115	26	W 350 071 02
6,0	18	108		95	24	W 260 061 02
6,0	22	132		115	26	W 360 071 02
8,0	14	112		95	24	W 280 061 02
8,0	16	128		115	31	W 380 071 02
10,0	12	128	100	31	W 200 061 02	
10,0	14	140	120	31	W 300 061 02	

Basic Rack Profile DIN 5480

Hub type finishing cutters DIN 1826, pressure angle 30°

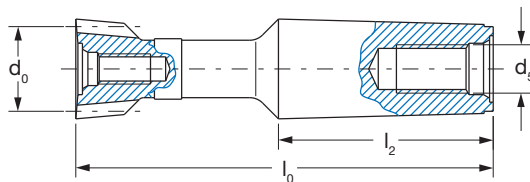
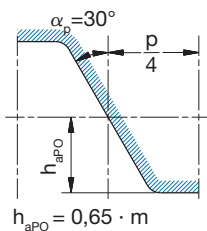


Module	z_0	d_0	d_3	d_1	b_1	z_2 min.	Stock-No.
1,5	30	45	19,0	40	36	42	W 615 081 02
1,75	30	52	19,0	45	41	42	W 617 581 02
1,75	58	101	44,45	90	46	78	W 617 571 02
2,0	26	52	19,0	45	41	36	W 620 081 02
2,0	38	76	31,745	70	41	53	W 620 061 02
2,0	50	100	44,45	90	46	70	W 620 071 02
2,5	30	75	31,745	68	41	42	W 625 061 02
2,5	40	100	44,45	90	46	56	W 625 071 02
3,0	18	54	19,0	45	43	25	W 630 081 02
3,0	26	78	31,745	70	43	36	W 630 061 02
3,0	34	102	44,45	92	46	48	W 630 071 02
4,0	14	56	19,0	46	46	20	W 640 081 02
4,0	20	80	31,745	70	46	28	W 640 061 02
4,0	26	104	44,45	90	46	36	W 640 071 02
5,0	12	60	19,0	48	46	18	W 650 081 02
5,0	16	80	31,745	68	46	22	W 650 061 02
5,0	20	100	44,45	88	46	28	W 650 071 02
6,0	12	72	31,745	60	46	18	W 660 061 02
6,0	18	108	44,45	95	46	25	W 660 071 02
8,0	10	80	31,745	65	46	16	W 680 061 02
8,0	14	112	44,45	95	46	20	W 680 071 02
10,0	10	100	44,45	82	46	16	W 600 061 02

The cutters with bore diameter $d_3=19$ mm have a transverse keyway 6 C11 wide x 3,5 deep.

Basic Rack Profile DIN 5480

Shank type finishing cutters DIN 1828, pressure angle 30°



Module	z_0	d_0	Taper	l_0	z_2 min.	Stock-No.
0,6	16	10	MK1	70	23	W 506 051 02
0,8	16	13	MK2	85	23	W 508 051 02
1,0	10	10	MK2	85	16	W 510 051 02
1,0	16	16	MK2	100	23	W 510 061 02
1,25	10	12,5	MK2	85	16	W 512 551 02
1,25	16	20	MK2	100	23	W 512 561 02
1,5	10	15	MK2	100	16	W 515 051 02
1,5	16	24	MK4	150	23	W 515 061 02
1,75	10	17,5	MK2	100	16	W 517 551 02
1,75	16	28	MK4	150	23	W 517 561 02
2,0	10	20	MK2	100	16	W 520 051 02
2,0	10	20	MK4	180	16	W 520 081 02
2,0	16	32	MK4	150	23	W 520 061 02
2,0	16	32	MK4	180	23	W 520 071 02
2,5	10	25	MK2	100	16	W 525 051 02
2,5	16	40	MK4	150	23	W 525 061 02
3,0	10	30	MK4	150	16	W 530 051 02
3,0	10	30	MK4	200	16	W 530 071 02
3,0	16	48	MK4	150	23	W 530 061 02
3,0	16	48	MK4	200	23	W 530 081 02
4,0	12	48	MK4	150	18	W 540 051 02
4,0	12	48	MK4	200	18	W 540 061 02
5,0	12	60	MK4	150	18	W 550 051 02

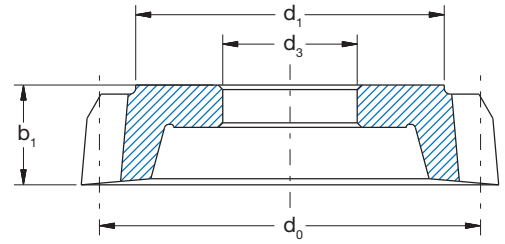
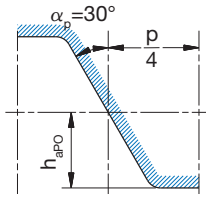
MK 1 = Morse taper 1, $l_2=32$ mm, $d_5=M5$

MK 2 = Morse taper 2, $l_2=40$ mm, $d_5=M6$

MK 4 = Morse taper 4, $l_2=71$ mm, $d_5=M16$

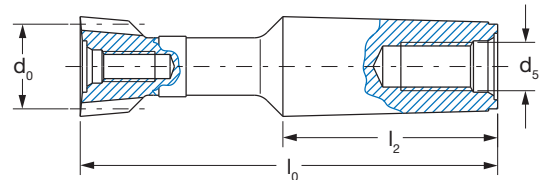
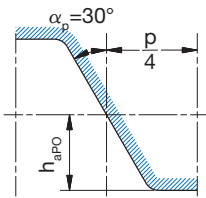
Basic Rack Profile DIN 5482

Disc type finishing cutters DIN 1825, pressure angle 30°



Module	z_0	d_0	d_3	d_1	b_1	h_{aPO}	Stock-No.
1,75	76	133	44,45	125	22	0,67 · m	W 317 591 02
1,9	68	129		120	24	0,68 · m	W 319 091 02
2,0	64	128		120	24	0,76 · m	W 320 091 02
2,1	60	126		115	24	0,84 · m	W 321 091 02
2,25	56	126		115	24	0,65 · m	W 322 591 02

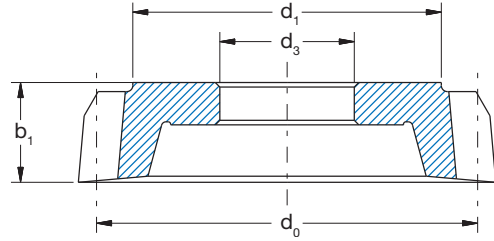
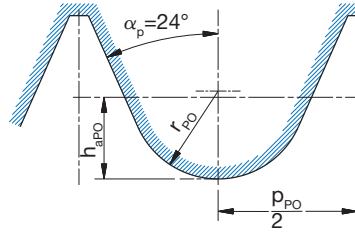
Shank type finishing cutters DIN 1828, pressure angle 30°



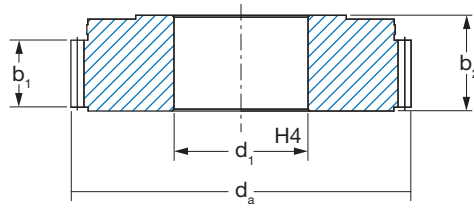
Module	z_0	d_0	Taper	l_0	z_2	h_{aPO}	Stock-No.
1,6	5	8,0	MK2	95	9 - 10	0,46 · m	W 516 071 02
1,6	7	11,2		95	12 - 13	0,48 · m	W 516 081 02
1,6	8	12,8		150	14	0,57 · m	W 516 091 02
1,75	9	15,8	MK4	150	15 - 16	0,48 · m	W 517 581 02
1,75	10	17,5		160	17 - 18	0,72 · m	W 517 591 02
1,9	12	22,8		160	19 - 21	0,60 · m	W 519 091 02
2,0	16	32,0		160	25 - 28	0,86 · m	W 520 091 02
2,0	16	32,		200	25 - 28	0,86 · m	W 520 191 02
2,1	16	33,6		180	31 - 36	0,82 · m	W 521 091 02
2,25	20	45,0		180	37 - 44	0,92 · m	W 522 591 02

Basic Rack Profile DIN 8197

Disc type finishing cutters for roller chain sprockets DIN 8196 and DIN ISO 606



Pitch p	Roller-Ø	z_0	d_0	d_3	d_1	b_1	Stock-No.
6	4	50	97	44,45	90	20	W 940 015 02
6	4	66	126		120	26	W 940 021 02
8	5	38	98,5		90	20	W 950 015 02
8	5	50	127		120	26	W 950 021 02
3/8"=9,525	6,35	30	93		85	20	W 963 515 02
3/8"=9,525	6,35	42	127		120	26	W 963 521 02
1/2"=12,7	7,75	24	98,5		85	20	W 977 515 02
1/2"=12,7	7,75	32	129		120	26	W 977 521 02
1/2"=12,7	8,51	24	98,5		85	20	W 985 115 02
1/2"=12,7	8,51	32	129		120	26	W 985 121 02
5/8"=15,875	10,16	20	103		85	21	W 910 115 02
5/8"=15,875	10,16	26	131		115	28	W 910 121 02
3/4"=19,05	12,07	16	99		85	24	W 912 015 02
3/4"=19,05	12,07	22	133		115	28	W 912 021 02
1"=25,4	15,88	14	116		90	24	W 915 815 02
1"=25,4	15,88	16	129		105	28	W 915 821 02



Pos.	m	z	x	d_a (-0,03)	d_1 (H4)	b_1	b_2	Quality DIN 3962	Stock-No.
1 1,1	1,0	48	0	50	22	12,5	30	3 4	WL 100 16 02 WL 100 16 02
2 2,1	1,25	64	0	82,5	32	17	33	3 4	WL 125 26 02 WL 125 26 02
3 3,1	1,5	54	0	84	32	17	33	3 4	WL 150 26 02 WL 150 26 02
4 4,1	1,75	46	0	84	32	17	33	3 4	WL 175 26 02 WL 175 26 02
5 5,1	2,0	40	0	84	32	17	33	3 4	WL 200 26 02 WL 200 26 02
6 6,1	2,5	48	0	125	32	23	36	3 4	WL 250 36 02 WL 250 36 02
7 7,1	3,0	38	0	120	32	23	36	3 4	WL 300 36 02 WL 300 36 02
8 8,1	3,5	32	0	119	32	23	36	3 4	WL 350 36 02 WL 350 36 02
9 9,1	4,0	40	0	168	45	30	43	3 4	WL 400 46 02 WL 400 46 02
10 10,1	5,0	30	0,15	161,5	45	30	43	3 4	WL 500 46 02 WL 500 46 02

Design

Tool steel or high-speed steel, which has been hardened and precision ground, with indicating band.

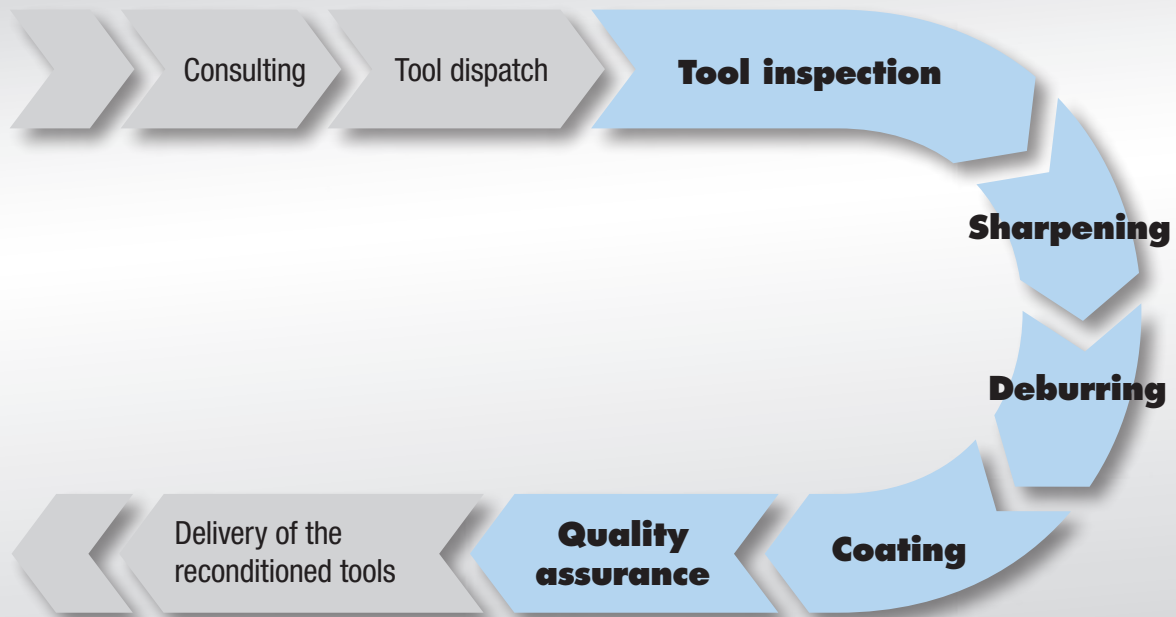
Grade of Accuracy

Quality 3 as per DIN 3962 - master gears for checking of cylindrical gears in qualities 5 to 7 as per DIN 3962.

Quality 4 as per DIN 3962 - master gears for checking of cylindrical gears in quality 8 as per DIN 3962 or coarser.

Services

Tool Resharpener/Reconditioning



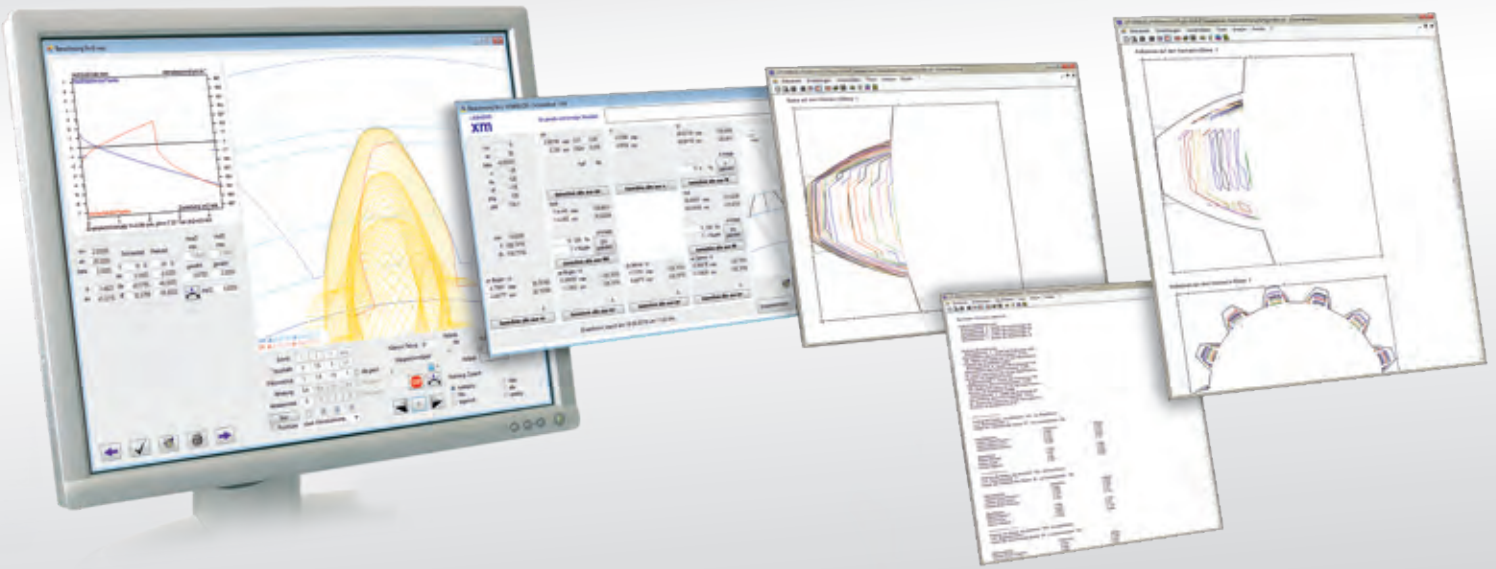
Sharpening and Coating of shaper cutters

Liebherr offers resharpener and coating of cutters from all manufacturers. Satisfied customers worldwide put their trust in this reliable service and appreciate the quality of the tools. Reconditioned tools are treated with same accuracy as new tools.



Various kind of coatings are professionally applied. Reconditioned shaper cutters are not dispatched to customers until they have undergone a meticulously quality control process. This guarantees consistent tool quality right up to the end of the usable width of the respective tool.

An inspection report can also be provided on request. In addition to this, Liebherr offers expert consulting on the topics of tool management and shaping process parameters.



WinKolli

The WinKolli program is used to check the suitability of the shaping cutters for specific gear applications. The features of this software include:

- Integrated database of Liebherr stock shaping cutters
- Free database for customer-specific gear workpieces and shaping cutters (for maintenance by customer)
- Pairing calculations of gear workpiece and shaping cutter
- Visualisation of gear workpiece and shaping cutter when engaged
- Rolling the shaping cutter with selectable immersion depth and feeds
- Calculation of the actual profile offset for gear workpiece and shaping cutter, optionally with the roll dimension, tooth width or tooth thickness
- Logical test routines for checking input errors
- User-friendly Windows interface

XM

The XM program calculates all values of the standard tooth thickness procedures, independently of the initial size. The number of teeth of the base tangent length and the ball diameter for the over balls dimension can be selected as desired. Therefore it is possible to adapt the requested tooth thickness to the available measurement devices.

Tooth Analysis

This program can be used to detect collisions between the shaping cutter and gear workpiece before previously the machining process and to prevent collisions by varying the tooth parameters.

Component and Contract Manufacture

Liebherr-Verzahntechnik GmbH supplies complete components as well as a wide range of gears by contract manufacture. Practical solutions to problems, comprehensive knowledge and the experience of the competent teams are the basis for a long-term partnership.

The company manufactures using state-of-the-art CNC machines. Delivery times are very short as a result of a high in-house production depth and flexibility. Quality, on-time delivery and customer satisfaction are first priority.

Liebherr-Verzahntechnik GmbH is ISO 9001:2008 certified.



Order Form

Formular per Fax oder per E-mail an:

Liebherr-Verzahntechnik GmbH

Werk Ettlingen, Vertrieb Werkzeuge

Hertzstr. 9-15

76275 Ettlingen, Deutschland

Phone: +49 (0)7243 708-0, Fax: +49 (0)7243 708-685

E-Mail: tools.lvt@liebherr.com

Delivery schedule

Customers can expect next-day delivery for all tools that are in stock and available. In isolated cases, unanticipated delivery bottlenecks can sometimes lead to minor delays. Any items not immediately available will then be sent out as soon as they are in stock.

Order

Item	Designation	Stock-No.	Quantity
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

Company Address

Customer no.

Postal code, town/city, country

Customer no.

Telephone

Contact person

Fax

Address line 1

E-Mail

Further Information

Please send me further information on the following topics:

- Tool resharpening/reconditioning Gear cutting software Component and contract manufacture

Date

Signature

Order Form

Formular per Fax oder per E-mail an:

Liebherr-Verzahntechnik GmbH

Werk Ettlingen, Vertrieb Werkzeuge

Hertzstr. 9-15

76275 Ettlingen, Deutschland

Phone: +49 (0)7243 708-0, Fax: +49 (0)7243 708-685

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4			
5			
6			
7			
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9			
10			
11			
12			

Company Address

Customer no.

Postal code, town/city, country

Customer no.

Telephone

Contact person

Fax

Address line 1

E-Mail

Further Information

Please send me further information on the following topics:

- Tool resharpening/reconditioning Gear cutting software Component and contract manufacture

Date

Signature

Machine Tools and Automation Systems from Liebherr

Liebherr employs roughly 1200 staff in the area of machine tools and automation technology and has production facilities in Kempten and Ettlingen (Germany), Collegno (Italy), Saline (Michigan, USA) and Bangalore (India). They are supported by expert and reliable marketing and service specialists at a large number of locations worldwide.

With over sixty years of industrial experience, Liebherr is one of the world's leading manufacturers of CNC gear cutting machines, gear cutting tools and automation systems. The company's innovative products are the result of pioneering ideas, highly qualified staff and state-of-the-art manufacturing systems at each of their locations. They are characterised by economy, ease of use, quality and reliability in combination with a high degree of flexibility.



System Solutions in the Area of Machine Tools

Included in the production programme are gear hobbing machines, gear shaping machines and generating- and profile grinding-machines, all noted for their high degree of stability and availability. Particular importance is attached to the energy efficiency of the machines.

Gear cutting machines from Liebherr are supplied to renowned manufacturers of gears and gearboxes and large-scale slewing rings worldwide. They are in demand primarily from the automotive and construction machinery industries and also increasingly from the wind power industry for the manufacture of gears for wind turbines.

High Quality Gear Cutting Tools

Liebherr manufactures high quality, precision tools for the soft and hard machining of gears and all Liebherr gear cutting machines are fitted with Liebherr tools. The range also includes Lorenz shaping tools and products customised for specific customer applications.

Automation Systems for a Broad Range of Applications

Liebherr has a wide range of products for linear robots, pallet-handling systems, conveying systems and robot integration for projects in all areas of production and can provide above-average availability of systems.

www.liebherr.com

Liebherr-Verzahntechnik GmbH

Verzahntechnik und
Automationssysteme
Kaufbeurer Straße 141
D-87437 Kempten
☎ +49 (0)831 786-0
Fax +49 (0)831 786-1279
info.lvt@liebherr.com

Liebherr-Utensili S.r.l.

Verzahnwerkzeuge
Via Nazioni Unite 18
10093 Collegno TO, Italia
☎ +39 (0)114 248711
Fax +39 (0)114 559964
info.lut@liebherr.com

Liebherr-Gear Technology Inc.

Verzahntechnik
Liebherr Automation Systems Co.
Automationssysteme
1465 Woodland Drive
Saline, MI 48176-1259, USA
☎ +1 7344 297225
Fax +1 7344 292294
info.lgt@liebherr.com

Liebherr-Machine Tools India Pvt. Ltd

Verzahntechnik
353/354, 4th Main, 9th Cross, 4th Phase
Peenya Industrial Area
Bangalore - 560 058, India
☎ +91 (0)80 41 273033
Fax +91 (0)80 41 272625
info.mti@liebherr.com

Liebherr-Verzahntechnik GmbH

Werk Ettlingen
Verzahnwerkzeuge
Hertzstraße 9-15, D-76275 Ettlingen
☎ +49 (0)7243 708-0, Fax +49 (0)7243 708-685
www.liebherr.com, E-Mail: tools.lvt@liebherr.com