

Merkel Guide Ring KB

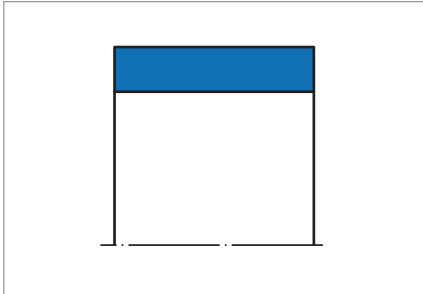


Fig. 1 Merkel Guide Ring KB

Product description

Non-metallic Merkel Guide Ring KB.

Product advantages

Non-metallic guide element for pistons, also for standardised housings according to ISO 10766

- Metal/fabric-base laminate materials combination prevents “seizing”
- High load-bearing capacity, elastic (not plastic) behaviour up to break point
- Chamfered profile edges prevent pressing of edge into the corner radii of the housing groove
- Simple snap-in fitting ($d \leq 300$).

Application

Earth moving equipment, agricultural machinery, injection moulding machines, loading platforms, support cylinders, industrial vehicles, cranes, presses, steel hydraulics engineering.

Material

Slotted Ring ≤ 300

Material	Code
Fabric-base laminate	HGW HG517

Ready to fit strip cut to size >300

Material	Code
Fabric-base laminate	HGW HG600

Operating conditions

Material	HGW HG517/HGW HG600
Temperature range in °C	
Hydraulic oils HL, HLP	-40 ... +120
HFA fluids	+5 ... +60
HFB fluids	+5 ... +60
HFC fluids	-40 ... +60
HFD fluids	-40 ... +120
Water	+5 ... +60
HETG (rapeseed oil)	-40 ... +80
HEES (synthetic ester)	-40 ... +100
HEPG (glycol)	-40 ... +80
Mineral greases	-40 ... +120

Surface quality

Surface roughness	R_a	R_{max}
Sliding surface	0,05 ... 0,3 μm	$\leq 2,5 \mu\text{m}$
Groove base	$\leq 2 \mu\text{m}$	$\leq 10,0 \mu\text{m}$
Groove flanks	$\leq 3 \mu\text{m}$	$\leq 15,0 \mu\text{m}$

Percentage contact area $M_v >50\%$ up to max. 90% at cutting depth $c = Rz/2$ and reference line $C_{ref} = 0\%$.

Design notes

Please observe our general design notes in → Technical Manual.

Tolerance recommendation

d_1
H8

The tolerance definition for the dimensions D and d_1 must be viewed in relation to the seal used. The diameter D_1 specified in the table of dimensions is to be viewed exclusively in connection with the guide ring. The corresponding diameter of an adjacent seal housing should match the sealing component.

Manufacturing tolerance

Profile thickness S
-0,02 ... -0,08

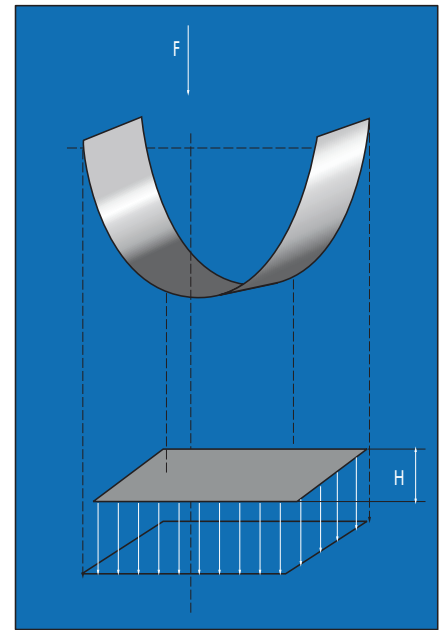
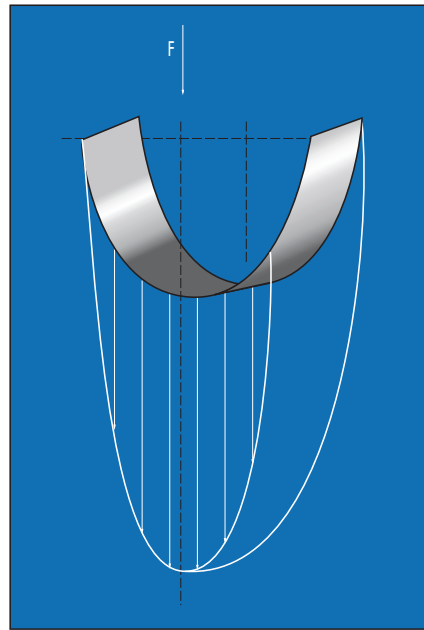
Surface load

Profile thickness S
p < 50 N/mm ² up to 60 °C
p < 25 N/mm ² up to 100 °C

For running speed, see sealing system.

Surface force

The pressure distribution on the guide rings is non-linear. The non-linear pressure curve over the contact range was taken into account when calculating the permissible specific surface pressure. The permissible load on the guide strip is calculated by multiplying the projected area with the permissible specific surface pressure. However, the figure for the permissible specific surface pressure takes into account the possible angular offset of the piston when using the recommended guide elements.



$$F = P \times A$$

$$H = F / (d \times P)$$

H = guide strip width [mm]

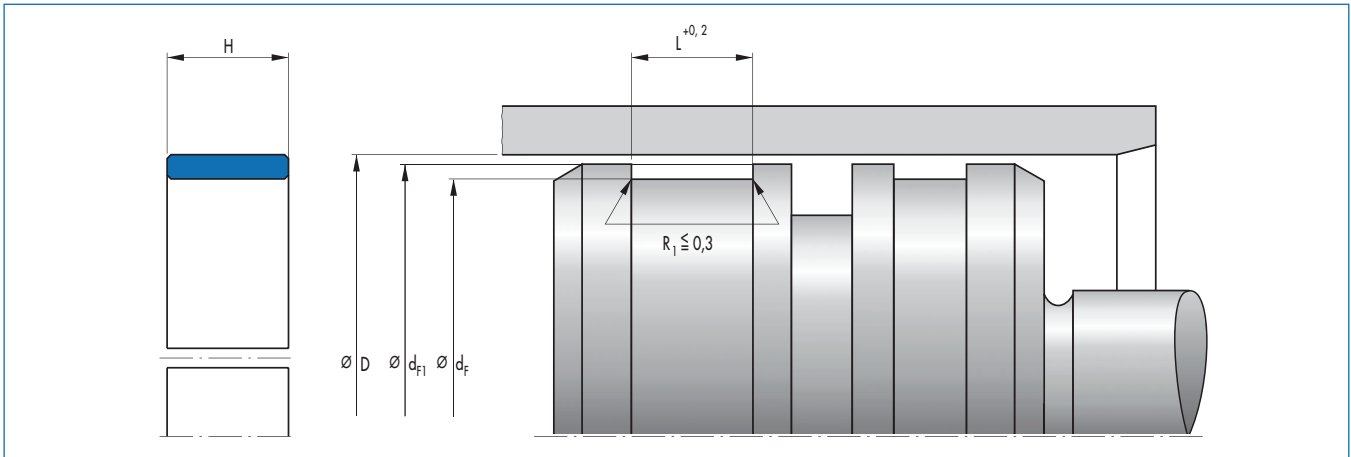
F = radial load [N]

A = projected area [mm²]

P = perm. compression per unit area [N/mm²]

d = rod diameter
with rod guidance;
piston diameter with
piston guidance [mm].

Article list

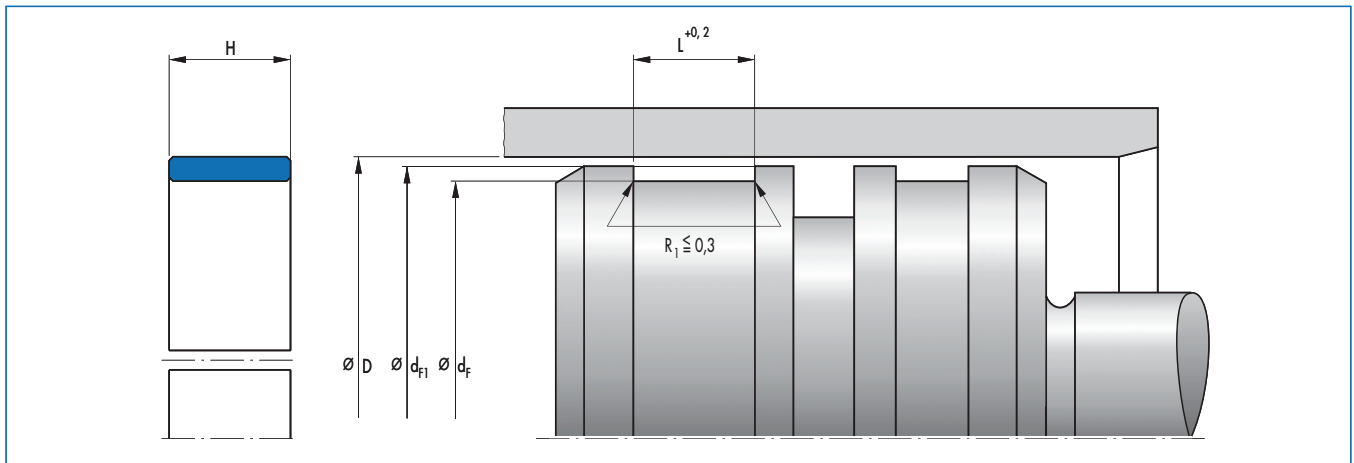


D	d _F	d ₁	L	H	Profile	Material	Article No.	
30	27	29	5,6	5,5	1,5	HGW HG517	24300231	●
32	29	31	5,6	5,5	1,5	HGW HG517	24300232	○
36	33	35	5,6	5,5	1,5	HGW HG517	24300234	○
40	35	38,4	5,6	5,5	2,5	HGW HG517	24130923	○
40	37	39	5,6	5,5	1,5	HGW HG517	24300235	○
42	37	40,4	5,6	5,5	2,5	HGW HG517	24130926	○
45	40	43,4	5,6	5,5	2,5	HGW HG517	24130929	○
50	45	48,4	5,6	5,5	2,5	HGW HG517	24130932	○
50	45	48,4	9,7	9,6	2,5	HGW HG517	24130933	●
55	50	53,4	5,6	5,5	2,5	HGW HG517	24130935	●
56	51	54,4	5,6	5,5	2,5	HGW HG517	24130938	○
60	55	58,4	5,6	5,5	2,5	HGW HG517	24130941	○
60	55	58,4	9,7	9,6	2,5	HGW HG517	24130942	○
60	55	58,4	10	9,9	2,5	HGW HG517	24375278	●
63	58	61,4	5,6	5,5	2,5	HGW HG517	24130944	●
63	58	61,4	9,7	9,6	2,5	HGW HG517	24130945	○
65	60	63,4	9,7	9,6	2,5	HGW HG517	24133632	●
70	62	67,5	25	24,5	4	HGW HG517	24298678	○
70	65	68,4	9,7	9,6	2,5	HGW HG517	24130948	○
70	65	68,4	15	14,8	2,5	HGW HG517	24345783	○
75	70	73,4	9,7	9,6	2,5	HGW HG517	24220353	●
80	75	78,4	9,7	9,6	2,5	HGW HG517	24130950	●
80	75	78,4	15	14,8	2,5	HGW HG517	24128202	●
85	80	83,4	9,7	9,6	2,5	HGW HG517	24135787	●
85	80	83,4	15	14,8	2,5	HGW HG517	24351574	○
90	85	88,4	9,7	9,6	2,5	HGW HG517	24130952	●
90	85	88,4	15	14,8	2,5	HGW HG517	24269687	○
95	90	93,4	9,7	9,6	2,5	HGW HG517	24300241	●
95	90	93,4	15	14,8	2,5	HGW HG517	24337625	○
100	95	98,4	9,7	9,6	2,5	HGW HG517	24130954	●
100	95	98,4	15	14,8	2,5	HGW HG517	24132237	●
105	100	103,4	9,7	9,6	2,5	HGW HG517	24209853	○
110	102	107,5	25	24,5	4	HGW HG517	24146909	○
110	105	108,4	9,7	9,6	2,5	HGW HG517	24130956	●
110	105	108,4	15	14,8	2,5	HGW HG517	24245043	●
115	110	113,4	15	14,8	2,5	HGW HG517	24245178	○

● Available from stock ○ On request: Tool is available, delivery at short notice

D	d _F	d ₁	L	H	Profile	Material	Article No.	
120	112	117,5	25	24,5	4	HGW HG517	24302126	○
120	115	118,4	9,7	9,6	2,5	HGW HG517	24300246	○
120	115	118,4	15	14,8	2,5	HGW HG517	24144161	○
125	117	122,5	25	24,5	4	HGW HG517	24137311	○
125	120	123,4	9,7	9,6	2,5	HGW HG517	24130960	○
125	120	123,4	15	14,8	2,5	HGW HG517	24130961	○
125	120	123,4	25	24,5	2,5	HGW HG517	24174689	○
133,4	128,4	131,8	10	9,9	2,5	HGW HG517	24375988	○
140	132	137,5	20	19,8	4	HGW HG517	24335709	○
140	132	137,5	25	24,5	4	HGW HG517	24137312	●
140	135	138,4	9,7	9,6	2,5	HGW HG517	24130963	○
140	135	138,4	15	14,8	2,5	HGW HG517	24130964	●
140	135	138,4	20	19,8	2,5	HGW HG517	24349281	○
150	142	147,5	20	19,8	4	HGW HG517	24335710	○
150	142	147,5	25	24,5	4	HGW HG517	24146908	○
150	145	148,4	9,7	9,6	2,5	HGW HG517	24130966	○
150	145	148,4	15	14,8	2,5	HGW HG517	24130967	○
150	145	148,4	20	19,8	2,5	HGW HG517	24342275	●
150	145	148,4	25	24,5	2,5	HGW HG517	24245817	○
160	152	157,5	25	24,5	4	HGW HG517	24176821	○
160	155	158,4	9,7	9,6	2,5	HGW HG517	24130969	○
160	155	158,4	15	14,8	2,5	HGW HG517	24130970	●
160	155	158,4	20	19,8	2,5	HGW HG517	24351443	○
160	155	158,4	25	24,5	2,5	HGW HG517	24263520	○
170	165	168,4	15	14,8	2,5	HGW HG517	24130973	○
180	172	177,5	20	19,8	4	HGW HG517	24140088	○
180	172	177,5	25	24,5	4	HGW HG517	24290191	○
180	175	178,4	9,7	9,6	2,5	HGW HG517	24130975	○
180	175	178,4	15	14,8	2,5	HGW HG517	24130976	●
200	192	197,5	25	24,5	4	HGW HG517	24290195	○
200	195	198,4	9,7	9,6	2,5	HGW HG517	24130981	●
200	195	198,4	15	14,8	2,5	HGW HG517	24130982	●
200	195	198,4	20	19,8	2,5	HGW HG517	24350641	●
200	195	198,4	25	24,5	2,5	HGW HG517	24344891	○
210	205	208,4	15	14,8	2,5	HGW HG517	24334874	○
220	215	218,4	15	14,8	2,5	HGW HG517	24300249	●
220	215	218,4	25	24,5	2,5	HGW HG517	24143328	○
225	217	222,5	15	14,8	4	HGW HG517	24339297	○
225	217	222,5	25	24,5	4	HGW HG517	24330488	○
225	220	223,4	15	14,8	2,5	HGW HG517	24212963	○
225	220	223,4	25	24,5	2,5	HGW HG517	24142350	○
230	222	227,5	15	14,8	4	HGW HG517	24349607	○
230	225	228,4	15	14,8	2,5	HGW HG517	24334044	○
240	235	238,4	15	14,8	2,5	HGW HG517	24147696	○
240	235	238,4	20	19,8	2,5	HGW HG517	24342277	○
240	235	238,4	25	24,5	2,5	HGW HG517	24349511	○
250	242	247,5	25	24,5	4	HGW HG517	24299851	○
250	245	248,4	15	14,8	2,5	HGW HG517	24130988	○
250	245	248,4	25	24,5	2,5	HGW HG517	24144514	○
260	252	257,5	25	24,5	4	HGW HG517	24299314	○

● Available from stock ○ On request: Tool is available, delivery at short notice

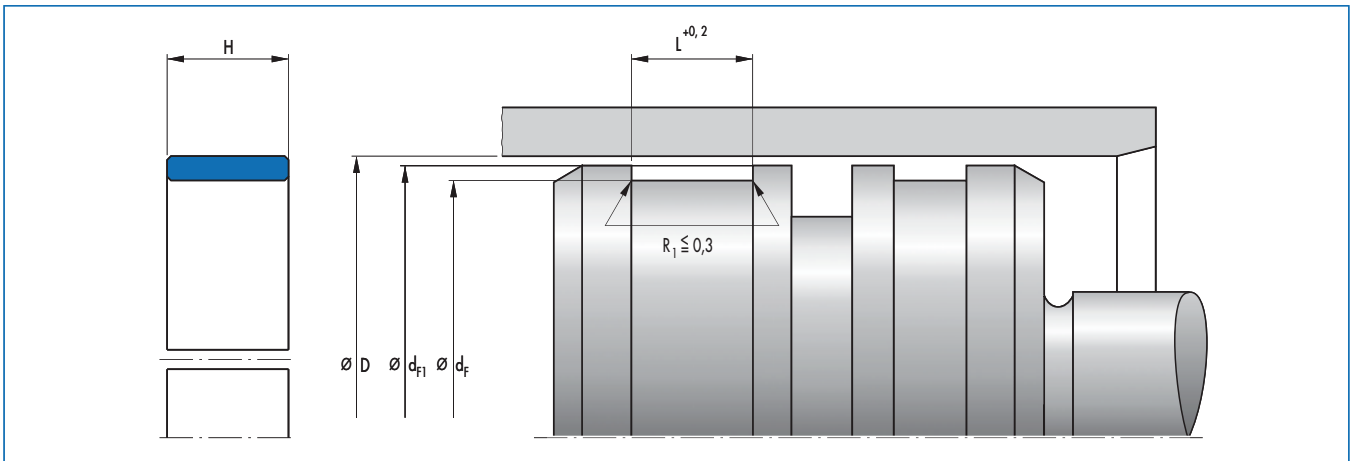


D	d _F	d ₁	L	H	Profile	Material	Article No.	
260	255	258,4	15	14,8	2,5	HGW HG517	24131488	○
280	275	278,4	15	14,8	2,5	HGW HG517	24130991	●
280	275	278,4	25	24,5	2,5	HGW HG517	24350273	○
300	295	298,4	15	14,8	2,5	HGW HG517	24137782	●
305	300	303,4	15	14,8	2,5	HGW HG600	24142162	○
310	305	308,4	25	24,5	2,5	HGW HG600	24353021	○
315	310	313,4	15	14,8	2,5	HGW HG600	24351270	○
320	315	318,4	15	14,8	2,5	HGW HG600	24130993	○
320	315	318,4	25	24,5	2,5	HGW HG600	24130994	○
330	325	328,4	15	14,5	2,5	HGW HG600	24311172	○
330	325	328,4	25	24,5	2,5	HGW HG600	24260227	○
340	335	338,4	15	14,8	2,5	HGW HG600	24300250	○
340	335	338,4	25	24,5	2,5	HGW HG600	24300251	○
350	342	347,5	25	24,5	4	HGW HG600	24300936	○
350	345	348,4	15	14,8	2,5	HGW HG600	24338667	○
350	345	348,4	25	24,5	2,5	HGW HG600	24330500	○
355	350	353,4	25	24,5	2,5	HGW HG600	24215447	○
360	352	357,5	25	24,5	4	HGW HG600	24331493	○
360	355	358,4	15	14,8	2,5	HGW HG600	24130996	○
360	355	358,4	25	24,5	2,5	HGW HG600	24130997	○
380	372	377,5	25	24,5	4	HGW HG600	24294294	○
380	375	378,4	15	14,8	2,5	HGW HG600	24333136	○
380	375	378,4	25	24,5	2,5	HGW HG600	24352259	○
390	382	387,5	25	24,5	4	HGW HG600	24344183	○
390	385	388,4	15	14,8	2,5	HGW HG600	24338260	○
390	385	388,4	25	24,5	2,5	HGW HG600	24256744	○
400	392	397,5	25	24,5	4	HGW HG600	24307328	○
400	395	398,4	15	14,8	2,5	HGW HG600	24300252	○
400	395	398,4	25	24,5	2,5	HGW HG600	24300253	○
410	402	407,5	25	24,5	4	HGW HG600	24263733	○
410	405	408,4	15	14,8	2,5	HGW HG600	24375939	○
420	415	418,4	15	14,8	2,5	HGW HG600	24259239	○
420	415	418,4	25	24,5	2,5	HGW HG600	24261300	○
430	425	428,4	15	14,8	2,5	HGW HG600	24296973	○
430	425	428,4	25	24,5	2,5	HGW HG600	24339689	○
440	432	437,5	25	24,5	4	HGW HG600	24289887	○
440	435	438,4	15	14,8	2,5	HGW HG600	24338261	○

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D	d _F	d ₁	L	H	Profile	Material	Article No.	
440	435	438,4	25	24,5	2,5	HGW HG600	24368282	○
450	442	447,5	25	24,5	4	HGW HG600	24259181	○
450	445	448,4	15	14,5	2,5	HGW HG600	24345674	○
450	445	448,4	25	24,5	2,5	HGW HG600	24250199	○
460	455	458,4	15	14,8	2,5	HGW HG600	24341856	○
460	455	458,4	20	19,5	2,5	HGW HG600	24341855	○
460	455	458,4	25	24,5	2,5	HGW HG600	24339270	○
470	465	468,4	25	24,5	2,5	HGW HG600	24294215	○
480	472	477,5	25	24,5	4	HGW HG600	24331494	○
480	475	478,4	25	24,5	2,5	HGW HG600	24250198	○
490	482	487,5	25	24,5	4	HGW HG600	24262693	○
500	492	497,5	25	24,5	4	HGW HG600	24294986	○
500	495	498,4	25	24,5	2,5	HGW HG600	24302073	○
508	500	505,5	25	24,5	4	HGW HG600	24360120	○
510	505	508,4	25	24,5	2,5	HGW HG600	24359433	○
520	515	518,4	15	14,8	2,5	HGW HG600	24274934	○
530	522	527,5	25	24,5	4	HGW HG600	24290173	○
530	525	528,4	15	14,8	2,5	HGW HG600	24294259	○
540	532	537,5	25	24,5	4	HGW HG600	24299558	○
540	535	538,4	15	14,8	2,5	HGW HG600	24359735	○
540	535	538,4	25	24,5	2,5	HGW HG600	24359576	○
550	545	548,4	25	24,5	2,5	HGW HG600	24302134	○
560	552	557,5	25	24,5	4	HGW HG600	24332680	○
560	555	558,4	15	14,8	2,5	HGW HG600	24185838	○
560	555	558,4	25	24,5	2,5	HGW HG600	24336491	○
570	565	568,4	25	24,5	2,5	HGW HG600	24351059	○
575	570	573,4	25	24,5	2,5	HGW HG600	24289831	○
580	572	577,5	25	24,5	4	HGW HG600	24298400	○
580	575	578,4	25	24,5	2,5	HGW HG600	24345487	○
600	592	597,5	25	24,5	4	HGW HG600	24275141	○
600	595	598,4	15	14,8	2,5	HGW HG600	24274937	○
600	595	598,4	25	24,5	2,5	HGW HG600	24362837	○
610	602	607,5	25	24,5	4	HGW HG600	24344890	○
620	612	617,5	25	24,5	4	HGW HG600	24291804	○
620	615	618,4	25	24,5	2,5	HGW HG600	24309946	○
625	620	623,4	9,7	9,6	2,5	HGW HG600	24351384	○
630	622	627,5	25	24,5	4	HGW HG600	24340041	○
640	632	637,5	25	24,5	4	HGW HG600	24275165	○
650	642	647,5	25	24,5	4	HGW HG600	24358966	○
660	652	657,5	25	24,5	4	HGW HG600	24315102	○
680	672	677,5	25	24,5	4	HGW HG600	24298436	○
680	675	678,5	25	24,5	2,5	HGW HG600	24344258	○
700	692	697,5	25	24,5	4	HGW HG600	24314495	○
700	695	698,4	15	14,8	2,5	HGW HG600	24275184	○
710	702	707,5	25	24,5	4	HGW HG600	24340042	○
710	705	708,4	15	14,8	2,5	HGW HG600	24287808	○
720	715	718,4	15	14,8	2,5	HGW HG600	24302590	○
720	715	718,4	25	24,5	2,5	HGW HG600	24250197	○
730	722	727,5	25	24,5	4	HGW HG600	24269481	○
740	732	737,5	25	24,5	4	HGW HG600	24263271	○

● Available from stock ○ On request: Tool is available, delivery at short notice



D	d _F	d ₁	L	H	Profile	Material	Article No.	
750	742	747,5	25	24,5	4	HGW HG600	24293965	○
770	765	768,4	25	24,5	2,5	HGW HG600	24344259	○
780	775	778,4	15	14,8	2,5	HGW HG600	24358669	○
800	792	797,5	25	24,5	4	HGW HG600	24243178	○
800	795	798,4	15	14,8	2,5	HGW HG600	24257374	○
813,3	805,3	810,8	25	24,5	4	HGW HG600	24346654	○
820	812	817,5	25	24,5	4	HGW HG600	24341040	○
830	822	827,5	25	24,5	4	HGW HG600	24295835	○
850	842	847,5	25	24,5	4	HGW HG600	24293544	○
870	862	867,5	25	24,5	4	HGW HG600	24359019	○
878	870	875,5	25	24,5	4	HGW HG600	24358857	○
880	872	877,5	25	24,5	4	HGW HG600	24339269	○
900	892	897,5	25	24,5	4	HGW HG600	24344382	○
914,4	906,4	911,9	25	24,5	4	HGW HG600	24358613	○
965	957	962,5	25	24,5	4	HGW HG600	24263886	○
965,2	957,2	962,7	25	24,5	4	HGW HG600	24331519	○
1050	1042	1047,5	25	24,4	4	HGW HG600	24257239	●

● Available from stock ○ On request: Tool is available, delivery at short notice