

HEKO system DIN, S and TS
Round link chains and accessories for bucket elevators





The company

HEKO manufacture:

- Highly wear resistant chains
- Central Chains
- Forged Link Chains
- Heat Resistant Kiln Chains
- Chain Wheels
- Attachments
- Steel Bushed Chains

HEKO is one of the leading manufacturers for chains and other wear resistant components for the bulk handling industry. Innovation, customer satisfaction and high demands for quality has been the aim of our family-run company for over 90 years. We manufacture in three locations in North Rhine Westfalia, with a works area of approximately 40,000 m², producing a very wide range of chains, chain wheels, attachments and assemblies for conveyors.

HEKO are market leaders for the manufacture of heat resistant kiln chains. Our extensive knowhow in hardening technology, coupled with the most up-to-date heat treatment technology is also offered as a service.

We serve the whole bulk handling industry.

Cement manufacture, power industry, wood, waste and other renewable energy plants, forming our core customers. In addition we supply to the waste incineration, ore preparation and fertiliser industry.

HEKO has a sales organisation in India and a sales office in China and has agents in over 50 countries. The efficiency of HEKO's chains is confirmed daily in over 80 countries around the world.

All HEKO employees fully accept their responsibility for the quality of their work. HEKO's quality management is actively pursued by all and HEKO is certified to ISO 9001. HEKO also hold the environmental certificates to ISO 14001, health and safety certificates to OHSAS 18001, custom certificate AEO-F and LBA certificate.

HEKO – Your partner for conveying



Chain welding machine



Chain calibration



Vacuum carburisation plant
with helium quenching



Universal lathe with CNC control

Chain manufacture

Modern welding machines are employed for the manufacture of HEKO chains. Chains are manufactured from a range of materials including manganese steel, chrome-nickel steels as well as fine grained chrome-nickel-molybdenum alloy steels. Our own, modern, computer-controlled heat treatment process produces tempered and quenched or case hardened chains.

HEKO chains distinguish themselves through:

- High quality heat treatment tailored to particular applications
- High fatigue strength
- Close length tolererance
- HEKO bespoke qualities

Mechanical workshop

HEKO manufacture chain wheels in all sizes and arrangements. Each wheel, due to its many options, is unique and HEKO's flexible manufacturing systems enable bespoke manufacture to suit clients' individual requirements.

Up-to-date machining centres and automated lathes are employed in the manufacture of chains, chain wheels, rollers and shafts.

Heat treatment

Hardening, the key technology for the manufacture of high quality components for the conveying industry has, since the 1930s, taken a special place at HEKO. Different heat treatment processes, depending on components and material, are employed to achieve optimum wear resistance:

- Case Hardening
- Inductive hardening
- Temper and quench
- Nitriding

Case hardening in our new vacuum chamber ovens with helium quenching is the leading technology in chain manufacture. The capacity of our heat treatment facilities allows simultaneous treatment of chain strands up to 800 kg. Through these excellent heat treatment facilities, special product characteristics of HEKO chains are achieved:

- Highly wear resistant case layers with 800 HV min. surface hardness for conveyor chains
- High fatigue strength
- High breaking strength through use of fine grained, tough steel
- Excellent dimensional tolererance



HEKO shackles DIN 745 and 5699, S, TS, TS-N and TS-L

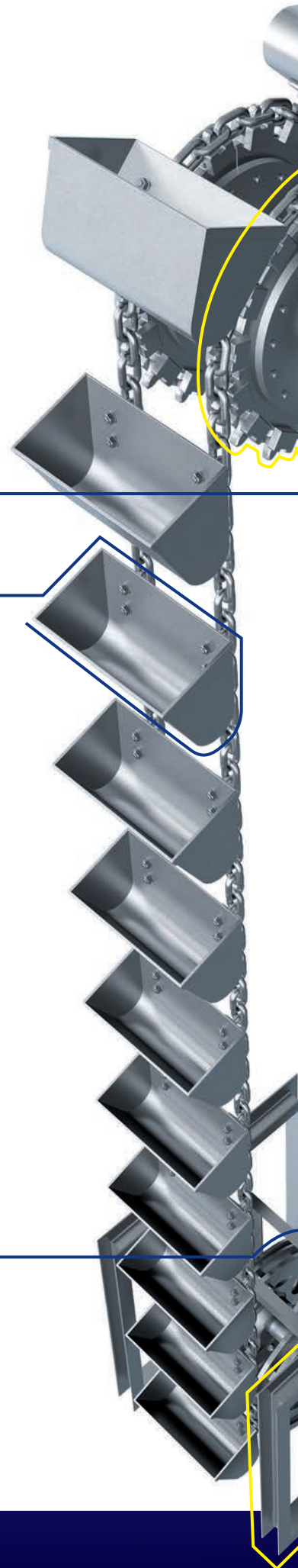
See page 12 for technical information

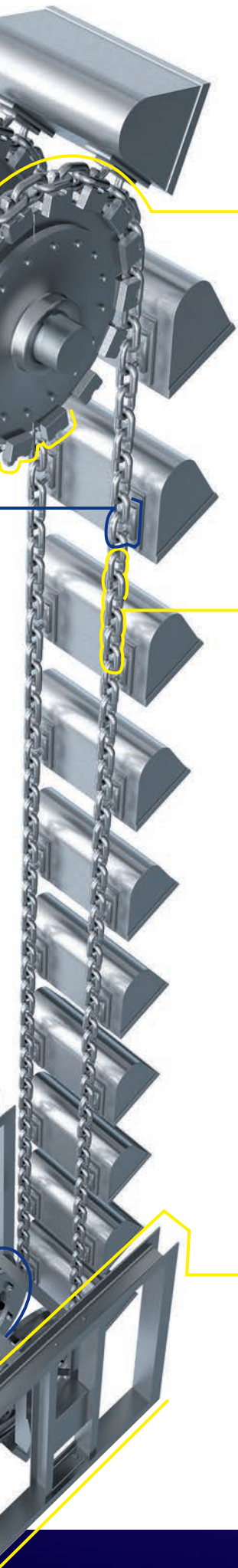
HEKO elevator buckets with rear and side attachment

See page 30 for technical information

HEKO chain wheels toothless

See page 20 for technical information





HEKO chain wheels toothed

See page 18 for technical information

HEKO round link chains DIN 764, 766 and works standard

See page 10 for technical information

HEKO idling- and tensioning Unit

See page 28 for technical information

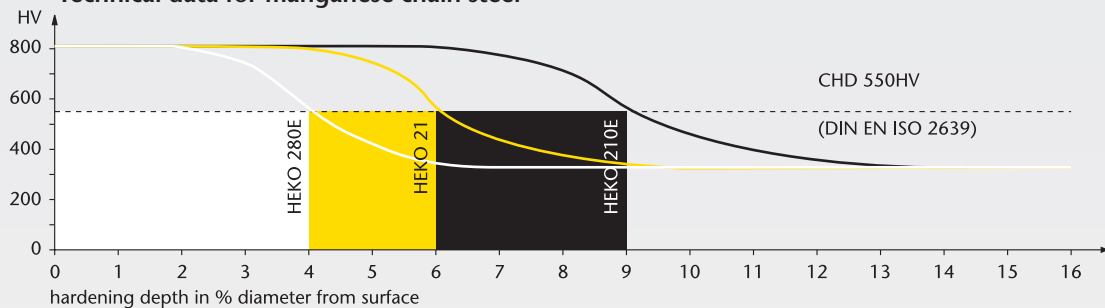


Cross section through case hardened chain link

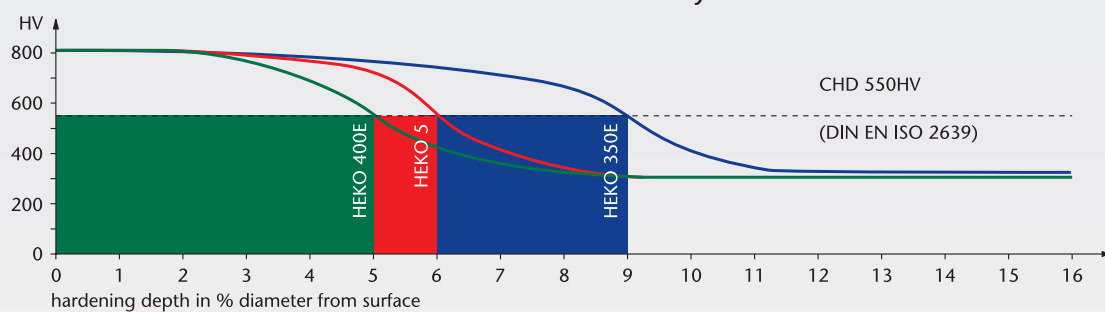


Cross section through link of inductive hardened shackle

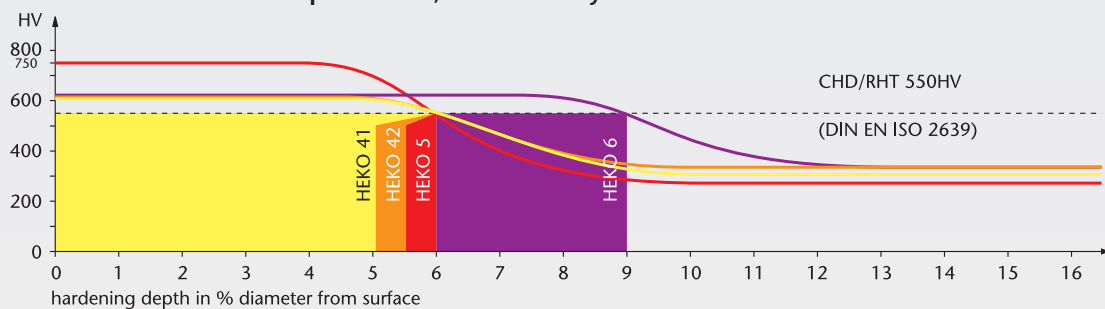
Technical data for manganese chain steel



Technical data for Chrome-Nickel or Chrome-Nickel-Molybdenum chain steel



Technical data for tempered steel, Chrome-Molybdenum or Chrome-Nickel steel for shackles



Technical data for round link chains and attachments

HEKO Case Hardening represents:

- Highly wear resistant hardened case, min. surface hardness 800HV
- High fatigue strength
- High breaking strength through fine grained, tough core
- Excellent dimensional tolerance

HEKO has utilised a special case hardening process for decades and has been at the forefront in the further development of hardening technology. Modern technology employed nowadays results in excellent wear resistance of the chains. The quality of case hardening achieved in our vacuum ovens with Helium quenching is currently leading this technology worldwide.

HEKO Chain shackles are matched with the chains employed, both with regard to material quality and hardening depth. Different wear requirements are accommodated by a range of hardening qualities. Conveyor chains can be supplied as individual components as well as complete chain strands, by pre-assembly of the chain links and shackles. A range of attachments are available and we will be pleased to advise the optimum solution for your requirements.

Technical data for HEKO chain qualities

	case hardened qualities Mn-Stahl			case hardened qualities CrNi-Stahl/CrNiMo-Stahl		
	HEKO 280E	HEKO 21	HEKO 210E	HEKO 400E	HEKO 5	HEKO 350E
proof stress N/mm ²	140	125	105	240	150	210
breaking stress N/mm ²	280 ₁₎	250	210 ₁₎	400 ₁₎	370 ₆₎	350 ₁₎
contact surface hardness min. joint HV 1	800	800	800	800	800	800
case hardening depth d +/- 0,01 d after etching	0,07	0,10	0,14 ₂₎	0,09	0,10	0,14 ₂₎
case hardening depth d min. CHD 550 ₅₎	0,04	0,06 ₃₎	0,09 ₄₎	0,05	0,06 ₃₎	0,09 ₄₎

1) tolerance 10 %

2) 30 mm Ø = 0,12 d, 36 – 42 mm Ø = 0,11 d

3) ≥ 30 mm Ø = 0,05 d

4) 30 mm Ø = 0,08 d, 36 – 42 mm Ø = 0,07 d

5) CHD = case hardening depth

6) ≥ 30 mm Ø = tolerance 20 %

Technical data for HEKO chain shackle qualities

	Hardened contact area qualities			Case hardened qualities
	Heat treatable steel	CrMo-steel	CrMo-steel	CrNi-steel
	HEKO 41	HEKO 42	HEKO 6	HEKO 5
proof stress N/mm ²	125	240	240	150
breaking stress N/mm ²	280	400	400	370 ₄₎
contact surface hardness min. joint HV 1	600	600	600	750
hardening depth d min. after etching	0,1 ₁₎	0,1 ₁₎	0,14 ₁₎	0,1 ₁₎
hardening depth d min. CHD ₂₎ Rht ₃₎ 550 HV 1	0,06	0,06	0,09	0,06

1) tolerance d -0,01d

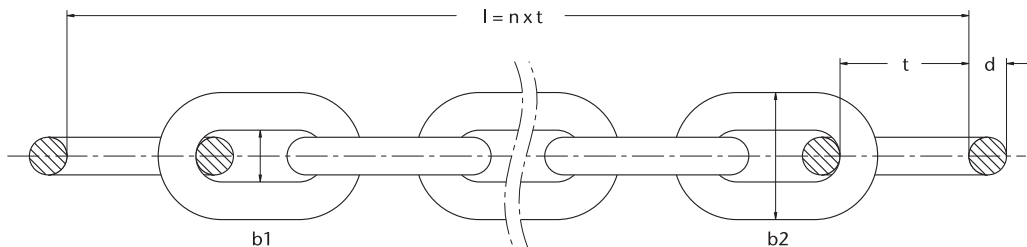
2) CHD = case hardened depth

3) Rht = case hardened depth

4) tolerance -10 % ≥ T = 105 = -20 %



Dimensions and technical characteristics of HEKO round link chains



Dimensions and quality of HEKO chains

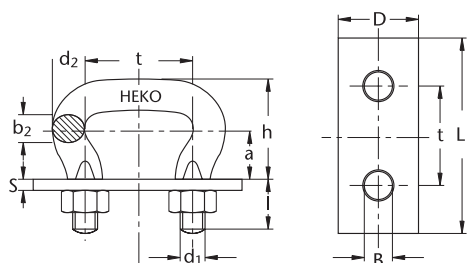
dimensions/mm					case hardened HEKO qualities					
nominal diameter x pitch d x t (mm)	DIN chain	weight kg/m	b1 inside width min.	b2 outside width max.	280 E MBK kN	21 MBK kN	210 E MBK kN	400 E MBK kN	5 MBK kN	350 E MBK kN
10 x 35	764	2,0	14,0	36,0	44	39	33	63	58	55
13 x 45	764	3,5	18,0	47,0	74	66	56	106	98	93
16 x 45	766	5,8	19,2	58,0	112	100	84	160	148	140
16 x 56	764	5,2	22,0	58,0	112	100	84	160	148	140
18 x 50	766	7,4	21,6	65,0	142	127	107	204	188	178
18 x 63	764	6,5	24,0	65,0	142	127	107	204	188	178
20 x 56	766	9,0	24,0	72,0	175	157	132	251	232	220
20 x 70	764	8,2	27,0	72,0	175	157	132	251	232	220
23 x 64	766	12,0	27,6	83,0	232	207	174	332	307	290
23 x 80	764	11,0	31,0	83,0	232	207	174	332	307	290
26 x 73	766	15,0	31,2	94,0	298	265	223	425	392	371
26 x 91	764	14,0	35,0	94,0	298	265	223	425	392	371
28 x 78	766	18,0	33,6	101,0	344	308	258	492	455	431
28 x 98	WN	16,5	36,0	101,0	344	308	258	492	455	431
30 x 84	766	20,0	36,0	108,0	395	353	296	565	523	494
30 x 105	764	19,0	39,0	108,0	395	353	296	565	523	494
33 x 115	764	22,5	43,0	119,0	478	427	359	684	633	598
36 x 101	766	29,0	43,2	130,0	570	508	428	814	753	712
36 x 126	764	26,5	47,0	130,0	570	508	428	814	753	712
39 x 109	WN	34,0	51,0	140,0	669	597	502	956	884	836
39 x 136	764	31,0	51,0	140,0	669	597	502	956	884	836
42 x 118	766	40,0	50,0	151,0	776	692	582	1108	1025	970
42 x 147	764	36,0	55,0	151,0	776	692	582	1108	1025	970

MBK = min. breaking load, d = diameter, t = pitch, WN = works standard. Additional dimensions and qualities on request, including stainless steel. Trouble free operation is only achieved by matching chains and attachments with the chain wheels.

Tolerance of chains bundled in pairs < 1 mm

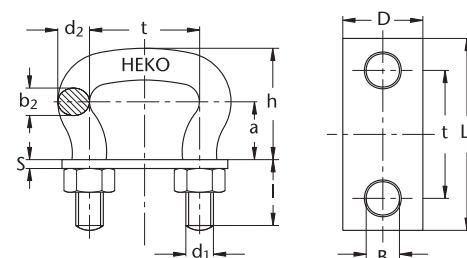


Chain shackles DIN 745, DIN 5699 and type S



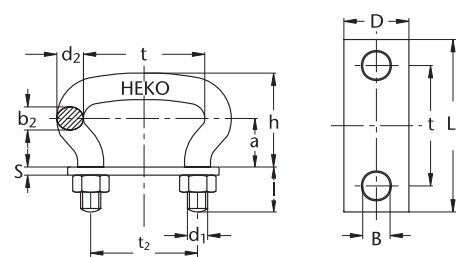
Dimensions and qualities of HEKO chain shackle to DIN 745

pitch	weight shackle with 2 nuts	weight plate	chain shackle dimensions mm							plate dimensions mm				HEKO quality hardened contact area		
														HEKO41	HEKO42	HEKO5
t/mm	kg/each	kg/each	b ₂	d ₂	d ₁	h	a	l		L	D	S	B	MBK (kN)		
45	0,19	0,08	11,5	14	M 10	40	20	25		75	30	5	10,5	76	106	98
56	0,39	0,17	15	18	M 12	50	25	32		95	40	6	13	115	161	149
63	0,67	0,20	18	21	M 16	60	30	40		110	40	6	17	145	203	188
70	1,03	0,25	20	23	M 20	68	34	45		120	50	6	21	179	251	232
80	1,26	0,28	23	26	M 20	74	37	45		130	50	6	21	237	331	307
91	2,03	0,50	26	29	M 24	86	43	55		150	60	8	25	303	425	393
105	2,60	0,56	30	34	M 24	100	50	55		165	60	8	25	403	565	523
126	4,42	1,00	36	40	M 30	118	59	70		200	70	10	31	580	814	753
147	6,07	1,10	42	46	M 30	136	68	70		220	70	10	31	790	1108	1025
147	7,33	1,53	42	46	M 36	136	68	85		230	80	12	37	790	1108	1025



Dimensions and qualities of HEKO chain shackle to DIN 5699

pitch	weight shackle with 2 nuts	weight plate	chain shackle dimensions mm							plate dimensions mm				HEKO quality hardened contact area		
														HEKO41	HEKO42	HEKO5
t/mm	kg/each	kg/each	b ₂	d ₂	d ₁	h	a	l		L	D	S	B	MBK (kN)		
35	0,14	0,07	10	12	M 10	43	23	25		65	30	5	10,5	54	74	68
45	0,26	0,08	13	15	M 12	53	28	30		75	30	5	13	88	119	110
56	0,43	0,17	16	18	M 14	64	34	35		95	40	6	15	129	175	162
63	0,63	0,20	18	21	M 16	71	37	40		110	40	6	17	170	230	213
70	0,97	0,25	20	23	M 20	80	42	45		120	50	6	21	207	280	259
80	1,26	0,28	23	26	M 20	89	47	45		130	50	6	21	269	364	337
91	1,85	0,50	26	29	M 24	99	52	55		150	60	8	25	339	458	424
105	2,50	0,56	30	34	M 24	114	60	55		165	60	8	25	458	620	574
126	4,25	1,00	36	40	M 30	134	71	65		200	70	10	31	646	875	810
136	6,48	1,46	39	44	M 36	146	76	75		220	80	12	37	771	1027	950
147	7,08	1,56	42	47	M 36	157	81	75		230	80	12	37	887	1200	1110



Dimensions and qualities of HEKO chain shackle type S

pitch	to suit chain		weight shackle with plate and nuts	chain shackle dimensions mm							plate dimensions mm				HEKO quality hardened contact area	
	DIN 764	DIN 766													HEKO41	HEKO5
t/mm	d x t/mm	d x t/mm	kg/Stück	t ₂	b ₂	d ₂	d ₁	h	a	l	L	D	S	B	MBK (kN)	
75	13 x 45	13 x 36	0,49	65	15	15	M 12	50	25	30	105	40	6	13	160	205
90	16 x 56	16 x 45	0,75	80	18	18	M 16	60	30	35	120	40	6	17	170	220
120	20 x 70	20 x 56	1,54	100	22	25	M 20	78	40	45	150	50	8	21	340	440
140	23 x 80	23 x 64	2,42	120	25	29	M 24	88	45	50	180	60	8	25	380	490
150	26 x 91	26 x 73	2,98	130	28	31	M 24	98	50	55	190	70	8	25	430	560
180	30 x 105	30 x 84	5,15	150	34	37	M 30	119	60	70	220	80	10	31	600	780
220	36 x 126	36 x 101	8,25	180	40	45	M 30	144	70	70	250	100	10	31	730	950
240	39 x 136	39 x 109	10,90	200	45	50	M 36	165	80	75	280	100	12	37	840	1100
250	42 x 147	42 x 118	13,60	210	48	54	M 36	176	85	80	310	120	12	37	930	1200

MBK = Min. Breaking Load, d = Diameter, t = Pitch. When employing toothed wheels both the chain pitch and shackle pitch must be the same; with toothless wheels a larger shackle pitch can be selected. Additional qualities on request. Securing elements and torque see page 35.



HEKO chain shackles type TS



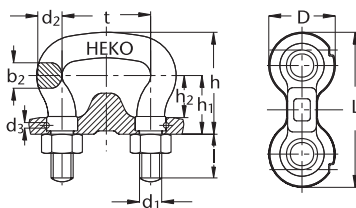
HEKO chain shackles type TS-N



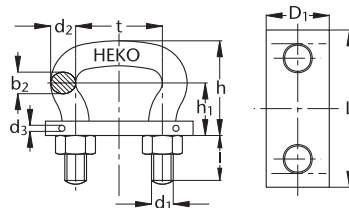
HEKO chain shackles type TS-L

HEKO chain shackles type TS, TS-N and TS-L

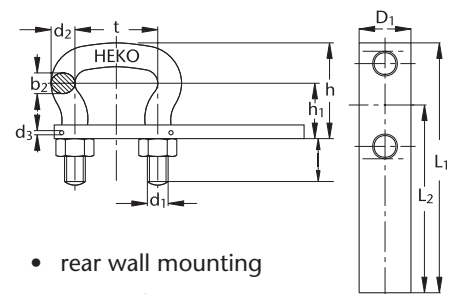
- Close-loop load transmission through secured distance plate
- Increased load capability
- Larger contact area and thus less wear
- Exchangeable with shackle to DIN 5699
- No transmission of chain load to buckets and other components
- Shoulder of shackle not subjected to cyclic bending moments
- Compatible with chain dimensions to DIN 764/766
- Supplied also pre-assembled as endless chain strands



- side wall mounting



- rear wall mounting



- rear wall mounting supporting centres over three chain pitches

Dimensions and qualities of HEKO shackles type TS, TS-N and TS-L for chains to DIN

pitch	to suit chain	DIN	weight complete		chain shackle								plate dimensions					HEKO quality hardened contact area (0,14 x d) HEKO 6 MBK (kN)
			TS/TS-N	TS-L	mm								mm					
t/mm	d/mm		kg/each		b ₂	d ₂	d ₃	d ₁	h	h ₁	h ₂	l	D	D ₁	L	L ₁	L ₂	
45	13	764/766	0,53	0,86	14	14	5	M 12	64,5	40,5	28	26	37	30	75	150	112,5	106
56	16	764/766	0,70	1,20	16	16	5	M 14	68	40	28	28	45	40	95	190	142,5	160
63	16	762/764	1,00	1,60	18	18	5	M 16	74	43	30	34	50	50	110	210	155	220
	18	764/766																
70	18	764	1,45	2,20	20	20	5	M 20	83	48	34	37	55	50	120	235	175	280
	20	764/766																
80	20	764	1,85	3,10	23	23	5	M 20	92	53	38	37	60	50	130	265	170	360
	23	764/766																
91	23	764	2,70	4,30	26	26	6	M 24	104	60	43	42	70	60	155	300	222,5	450
	26	764/766																
105	26	764	3,90	6,20	30	30	6	M 24	118	68	50	42	80	60	165	345	262,5	630
	30	764/766																
126	30	764	6,10	9,70	35	35	8	M 30	139	81	59	66	85	70	200	415	315	860
	36	764/766																
136	36	764	7,60	11,60	39	38	8	M 36	152	88	65	79	90	80	220	450	340	955
	39	764/766																
147	39	764/766	9,00	13,60	40	40	8	M 36	162	93	70	79	95	80	230	480	365	1160
	42	764/766																

MBK = Min. Breaking Load, d = Diameter, t = Pitch. When employing toothed wheels both the chain pitch and shackle pitch must be the same; with toothless wheels a larger shackle pitch can be selected. As the TS/TS-N/TS-L shackles can accept a greater breaking load and do not rely on a continuous force transmission, compared to the DIN shackles, the same pitch, even at more severe operating conditions, is usually selected for these shackles.



HEKO
chain wheels
toothless
type RUA

See page 20 for technical information



HEKO
chain wheels
toothless
type RUU

See page 20 for technical information



HEKO
chain wheels
toothless
type RUP

See page 22 for technical information



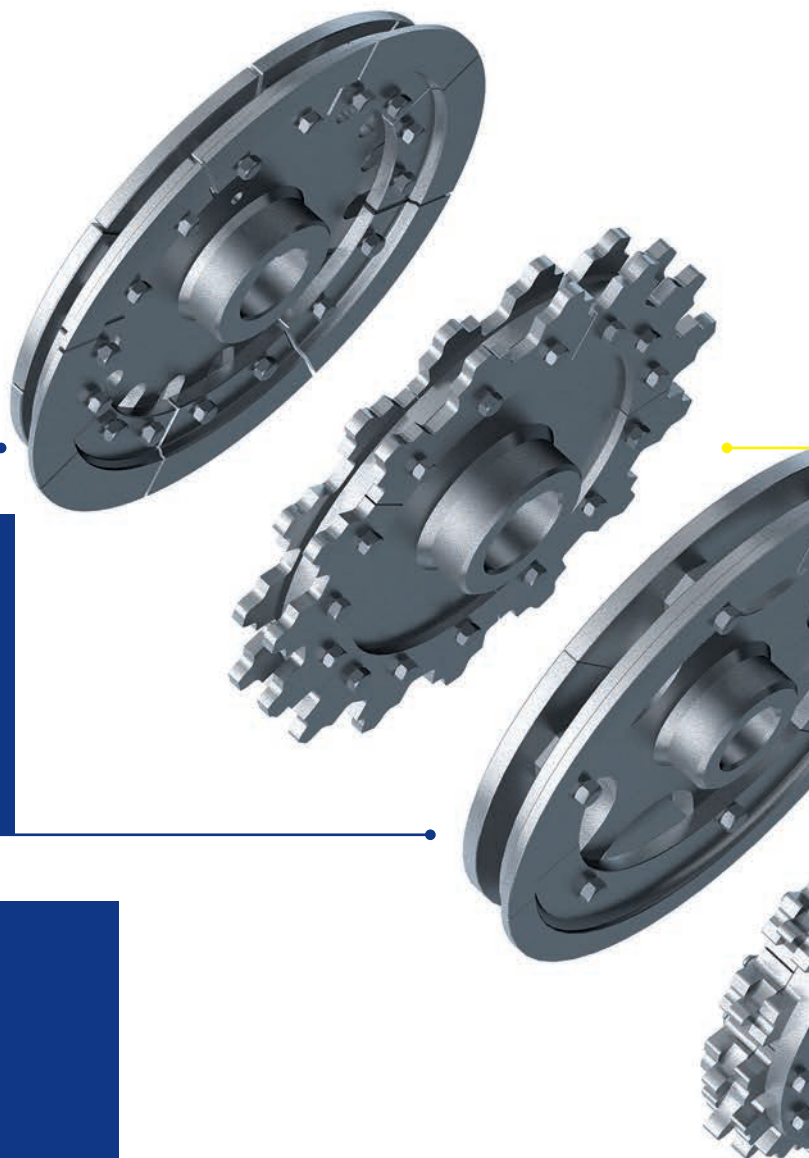
HEKO
chain wheels
toothless
type KS

See page 24 for technical information



HEKO
chain wheels
toothless
type GGB

See page 26 for technical information





HEKO chain wheels toothed type GTA



See page 18 for technical information

HEKO chain wheels toothed type GIA-3



See page 18 for technical information

HEKO chain wheels toothed type GIA



See page 18 for technical information





HEKO chain wheel GTA

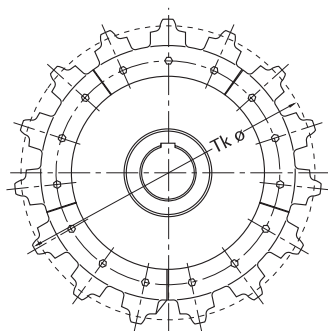


HEKO chain wheel GIA-3

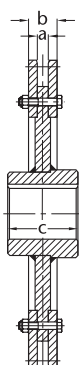


HEKO chain wheel GIA

HEKO chain wheels, toothed, in steel, replaceable type GTA, GIA-3 and GIA



HEKO chain wheel GTA



Excellent wear resistance achieved through hardened chain contact areas

HEKO chain wheels GTA

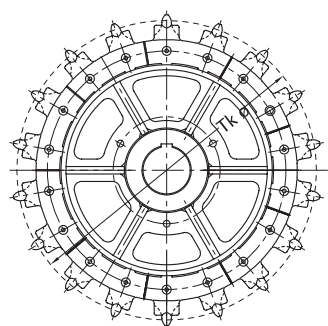
- Suitable as drive wheels
- For rear wall mounted buckets

HEKO chain wheels GIA-3 suitable for chain wire diameters from 18 mm

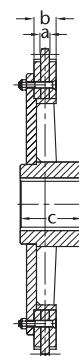
- Suitable for drive wheels with higher loads
- Suitable for side wall mounted buckets
- 3 part toothed segments

HEKO chain wheels GIA suitable for chain wire diameters up to 26 mm

- Suitable for medium loads
- Suitable for side wall mounted buckets



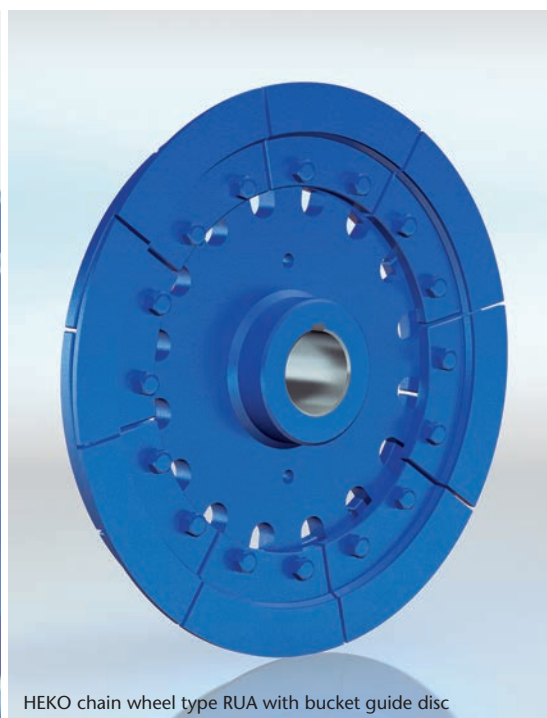
HEKO chain wheel GIA-3



HEKO chain wheels type GTA, GIA-3 and GIA

P. C. D. of chain wheel	to suit chain nominal diameter x pitch, d x t/mm	DIN	number of teeth	dimensions in mm						weight approx- imately kg/each	
				a			b				c
				GTA	GIA-3/ GIA	GTA	GIA-3/ GIA	GTA	GIA-3/ GIA		c
mm, Tk ø											
402	10 x 35	764	18	15		45		80	30		
446			20	15		45		80	33		
513			23	15		45		80	35		
402	13 x 45	764	14	18	15	48	45	100	40		
516			18	18	15	48	45	100	60		
631			22	18	15	48	45	100	70		
500	16 x 56	764	14	21	18	57	54	130	70		
643			18	21	18	57	54	130	105		
714			20	21	18	57	54	130	135		
523	18 x 63	764	13	23	20	63	56	140	75		
643			16	23	20	63	56	140	110		
723			18	23	20	63	56	140	140		
625	20 x 70	764	14	25	23	65	63	150	105		
714			16	25	23	65	63	150	150		
803			18	25	23	65	63	150	180		
715	23 x 80	764	14	28	27	78	73	150	175		
816			16	28	27	78	73	150	210		
918			18	28	27	78	73	150	255		
697	26 x 91	764	12	32	30	82	80	180	190		
813			14	32	30	82	80	180	230		
928			16	32	30	82	80	180	310		
804	30 x 105	764	12	36	35	96	95	200	240		
938			14	36	35	96	95	200	350		
1071			16	36	35	96	95	200	420		
965	36 x 126	764	12	42	40	112	110	220	380		
1125			14	42	40	112	110	220	520		
1285			16	42	40	112	110	220	690		
1042	39 x 136	764	12	46	45	116	115	240	520		
1215			14	46	45	116	115	240	630		
1388			16	46	45	116	115	240	780		
1126	42 x 147	764	12	50	50	130	120	250	620		
1313			14	50	50	130	120	250	820		
1406			15	50	50	130	120	250	950		

Chain wheels type GTA are also available for chains to DIN 766 and works standard. The pitch of the chain and shackle must be the same. Tk = P.C.D., d = diameter, c = hub length, t = pitch. Other types, dimensions or qualities on request.



HEKO chain wheel type RUA with bucket guide disc



HEKO chain wheel type RUU with bucket guide disc

HEKO toothless chain wheels with replaceable steel rims, type RUA and RUU

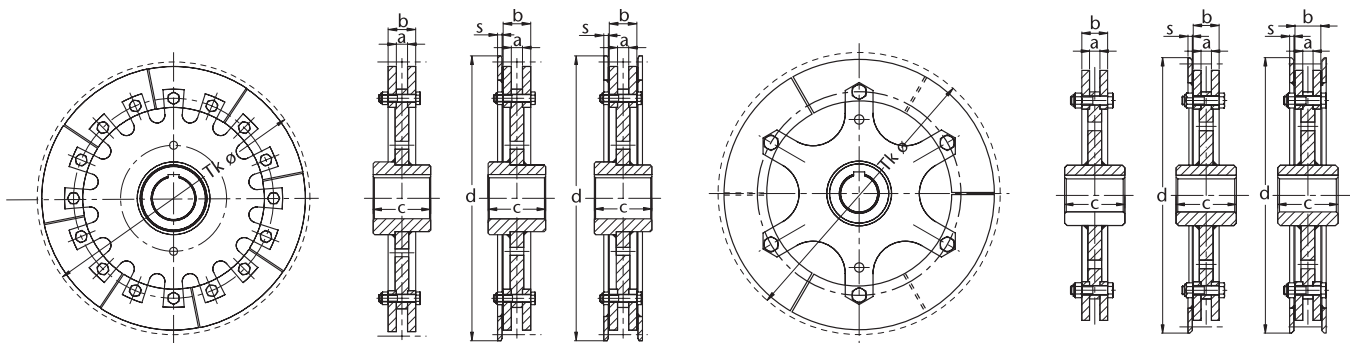
- For rear and side wall mounted buckets
- With openings to prevent product build-up
- Steel hubs
- Rims made from special CrMo alloy steel, tempered and quenched
- Can be supplied with chain guide both sides

HEKO chain wheels RUA

- Preferred as drive wheel
- Suitable for high loads

HEKO chain wheels RUU

- As drive wheel with medium loads
- As idling wheel and snub wheel due to large dropout openings



HEKO chain wheel RUA without chain guide, RUA I with guide one side and RUA II both sides

HEKO chain wheel RUU without chain guide, RUU I with guide one side and RUU II both sides

HEKO chain wheels type RUA and RUU

P. C. D. of chain wheel mm, Tk ø	to suit chain nominal diameter d/mm	chain shackle t/mm	dimension in mm					number of segments		weight without chain guide	
			a	b	c	d	s	each wheel RUA	each wheel RUU	kg/each RUA	kg/each RUU
400	10	35	15	35	80	420	12	12	6	40	30
	13	45	18	48	80	420	12	12	6	40	30
500	13	45	18	48	100	525	12	12	6	50	45
	16	56	21	51	100	525	12	12	6	62	45
630	16	56	21	51	160	650	12	12	6	81	80
	18	63	23	59	160	650	12	12	6	110	85
	20	70	25	65	160	650	12	12	6	115	85
710	20	70	25	65	160	750	12	12	6	165	115
800	23	80	28	68	160	850	15	12	6	220	155
	26	91	32	78	160	850	15	12	6	220	220
900	26	91	32	78	190	950	15	16	8	295	260
1000	30	105	36	96	200	1050	15	16	8	390	340
1250	30	105	36	96	220	1300	15	16	8	630	530
	36	126	42	112	220	1300	15	16	8	660	530
1400	39	136	45	125	240	1450	15	18	8	850	805
	42	147	48	128	260	1450	15	18	8	850	840
1500	42	147	48	128	260	1550	15	18	8	960	960

Tk ø = P.C.D., d = diameter, t = pitch, c = hub length. Other types, dimensions or qualities on request.



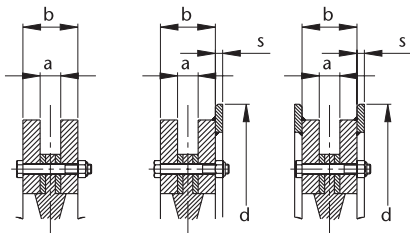
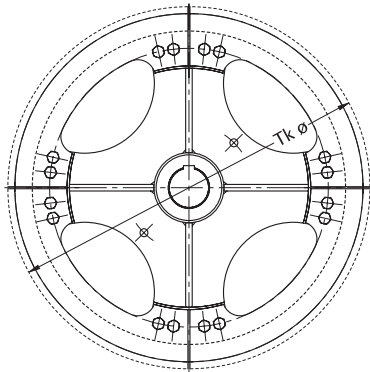
HEKO chain wheel type RUU with bucket guide disc



HEKO chain wheel type RUR



HEKO toothless chain wheels with replaceable steel rims type RUP and RUR



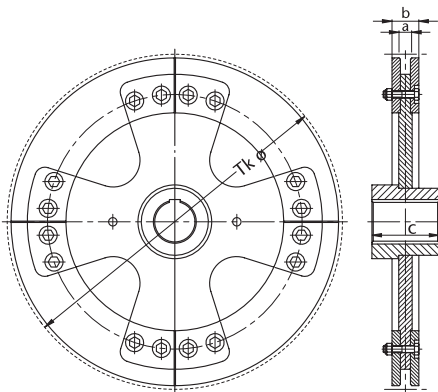
HEKO chain wheel RUP with 90° replaceable rims without chain guide, RUP I with guide one side and RUP II with guide both sides

- Suitable as drive and idling wheel
- For rear and side mounted buckets
- 90° rim segment for easier assembly
- 180° rim segment on request
- Segments manufactured from CrMo-alloy steel, tempered and quenched on request
- Can also be supplied with chain guides one or both sides

HEKO chain wheels type RUP

P. C. D. of chain wheel mm, Tk ø	to suit chain nominal diameter d/mm	chain shackle t/mm	bucket width	dimensions in mm					weight without chain guide kg/each
				a	b	c	d	s	
500	16	63	160	18	48	150	520	12	50
			200	18	48	150	520	12	55
630	18	70	250	23	57	150	650	12	85
			315	23	57	150	650	12	90
710	20	80	400	33	74	150	734	12	115
820	23	91	500	36	90	150	845	15	175
930	26	105	630	36	96	180	960	15	290
1000	30	126	800	42	112	200	1040	15	350
1130	30	126	1000	48	120	200	1164	15	410
1250	36	147	1250	62	150	250	1290	15	540
1340	36	147	1400	62	150	250	1385	15	760

Tk ø = P.C.D., d = diameter, t = pitch, c = hub length. Other types, dimensions or qualities on request.



HEKO chain wheel RUR with replaceable 90° rim segments

HEKO chain wheels type RUR

P. C. D. of chain wheel mm, Tk ø	to suit chain nominal diameter d/mm	dimensions in mm			number of segments each wheel 90° segments	weight without chain guide kg/each
		a	b	c		
500	13	19	55	120	8	70
	14	19	55	120	8	70
630	16	22	62	140	8	135
	19	27	71	160	8	170
710	20	27	71	160	8	170
	22	29	79	170	8	250
800	23	29	79	170	8	250
	26	33	93	200	8	350
1000	30	40	110	200	8	500
1250	34	44	114	220	8	640
	36	44	114	220	8	640

Tk ø = P.C.D., d = diameter, t = pitch, c = hub length. Other types, dimensions or qualities on request.



Segment type KSE



HEKO chain wheel type KS



HEKO chain wheel type KS with cast iron hub

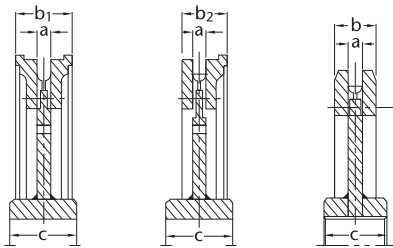
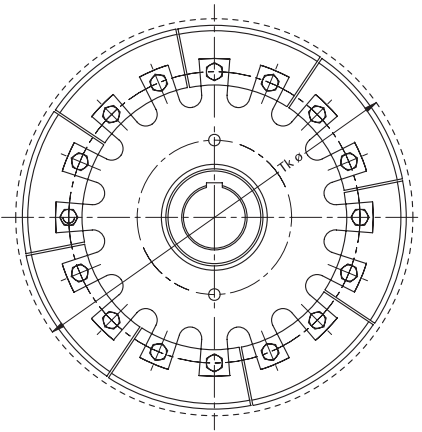


HEKO chain wheel type SUR



HEKO toothless chain wheels with replaceable rim segments in white cast iron, type KS, KSE and SUR

- Suitable for low to medium loads
- Segments made from white cast iron
- Segments type SUR without chain guide for rear and side wall mounted buckets
- Segments type KSE with chain guide one side suitable for side wall mounted buckets
- Segments type KS with chain guide both sides, suitable only for rear mounted buckets
- Hubs manufactured from cast iron or steel
- Alternatively fitted with rim segments manufactured from wear resistant CrMo alloy steel for more arduous operating conditions (Arrangement similar to chain wheels type RUA page 21)



HEKO chain wheel type KS, KSE and SUR

HEKO chain wheels type KS, KSE and SUR

P. C. D. of chain wheel mm, Tk ø	to suit chain d/mm	chain shackle t/mm	dimensions in mm				number of segments each wheel	weight kg/each		
			SUR a	KS b	KSE b1	c		SUR	KS	KSE
400	16	56	22	66		100	12	38		
500	13	45	18	60	90	65	(12 SUR)8	51	60	55
	16	56	22	66	100	75	(12 SUR)8	53	60	55
	20	70	28	80	118	91	(12 SUR)8	57	65	60
630	16	56	22	66	120	75	12	103	130	120
	20	70	28	80	130	97	12	105	135	125
	23	80	30		140	110	12		140	130
	26	91	32			125	12			135
710	16	56	22		130	97	12		185	175
	20	70	28	80	130	102	12	165	190	180
	23	80	30	90	140	110	12	180	190	180
	26	91	34		164	125	12		210	190
	30	105	36			130	12			195
800	16	56	22		132	160	12		250	
	23	80	30	90	140	110	12	221	255	235
	26	91	34	100	160		12	228	260	
	30	105	36			130	16			250
900	16	56	20			75	16			300
	20	70	26			102	16			310
	23	80	30		145		16		335	
	26	91	34	100	170	129	16	277	345	320
	30	105	40	120	176		16	318	355	
1000	20	70	26			100	16			340
	23	80	30		140	110	16		420	360
	26	91	36		180	133	16		440	380
	30	105	40	120	185	133	16	390	445	405
	36	126	46	135		200	16	420		
1250	26	91	32			138	16			625
	30	105	40	120	185	133	16	643	705	645
	36	126	46	135	200	161	16	658	735	680
	39/42	136/147	46	145		220	16		702	
1400	36	126	46	135		240	18		770	
	39/42	136/147	46	145		240	18	850		
1500	36	126	46	135		240	18		920	
	39/42	136/147	46	145		240	18		980	
1600	36	126	46	135		260	20	1080		
	39/42	136/147	46	145		260	20	1150		

Tk ø = P.C.D., d = diameter, t = pitch, c = hub length. Other types, dimensions or qualities on request.



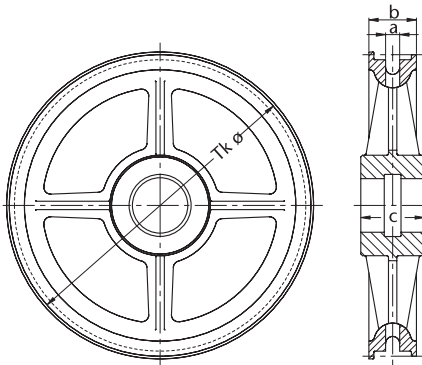
HEKO chain wheel type GGB



HEKO chain wheel type RUB



Toothless chain wheel in grey cast iron, type GGB



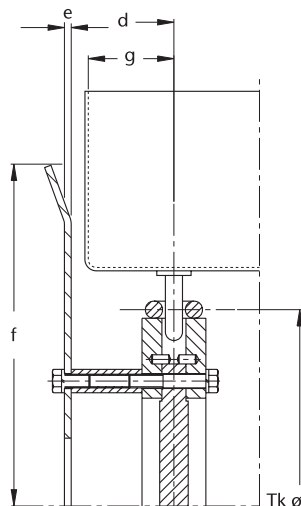
- Suitable as idling wheel with low loads
- Suitable for rear wall mounted buckets only

HEKO chain wheel type GGB

P. C. D. of chain wheel mm, Tk ø	to suit chain nominal diameter d/mm	chain shackle t/mm	dimensions in mm			weight kg/each
			a	b	c	
400	13	45	18	70	80	30
	16	56	22	90	100	32
500	13	45	17	90	100	48
	16	56	22	90	100	48
630	16	56	22	110	160	95
	20	70	28	130	160	115
710	20	70	28	130	160	150
800	23	80	30	140	160	200
	26	91	34	140	160	200
900	26	91	34	170	190	290
1000	30	105	40	180	200	370
1250	30	105	40	190	220	530
	36	126	46	190	220	530

Tk ø = P.C.D., d = diameter, t = pitch, c = hub length. Other types, dimensions or qualities on request.

Bucket guide, replaceable, type RUB

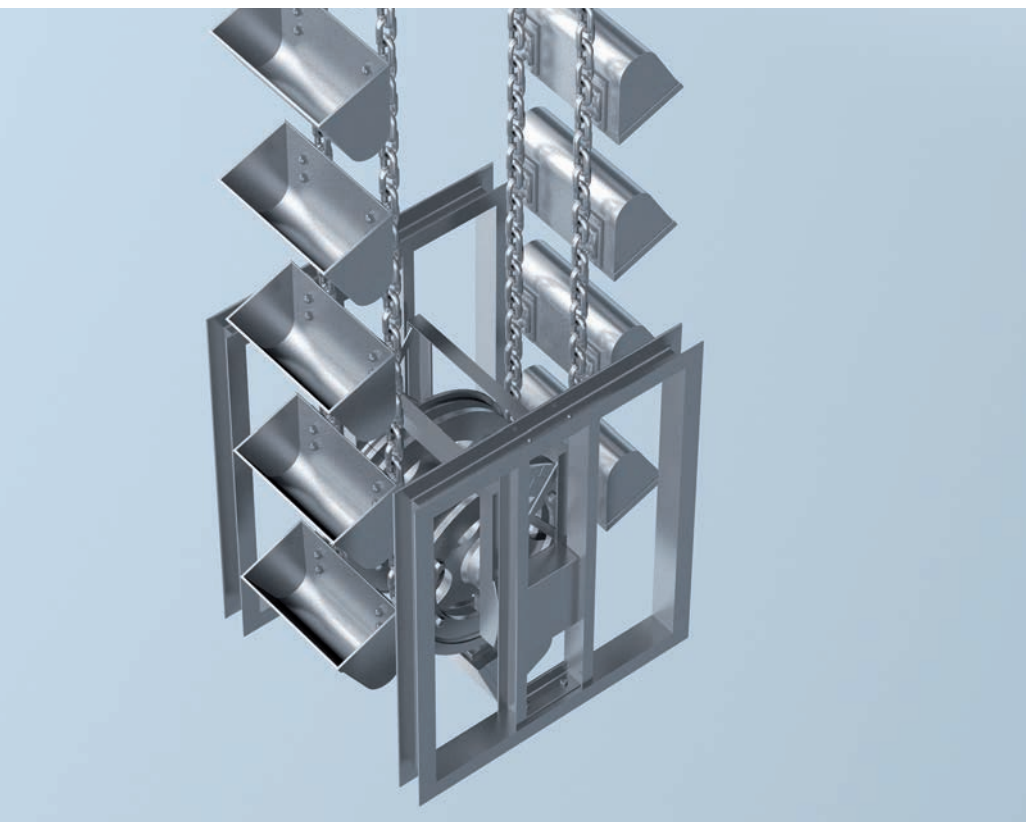


- For bucket guide around the idling wheel
- Available in bespoke design and dimensions
- Suitable for all chain wheels

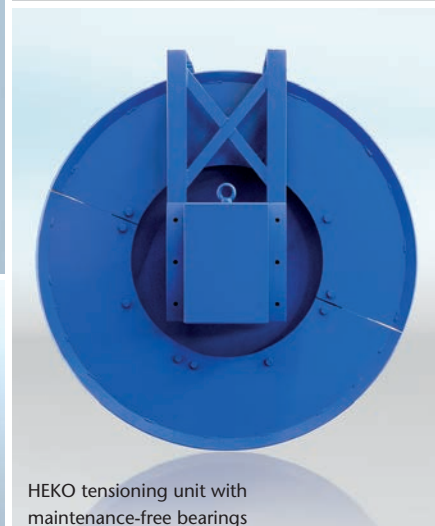
HEKO bucket guide type RUB

P. C. D. of chain wheel mm, Tk ø	to suit chain nominal diameter d/mm	chain shackle t/mm	bucket width	dimensions in mm				weight kg/each
				f	d	e	g	
500	10	45	160	650	46	6	30	12
	13	56	200	650	53	6	37,5	12
630	16	63	250	840	65	8	45	27
	18	70	315	840	77	8	57,5	27
710	20	80	400	980	95	8	75	39
800	23	91	500	1100	115	10	92,5	59
900	26	105	630	1250	140	12	115	100
1000	30	126	800	1380	180	12	150	119
1250	36	136	1000	1700	215	15	185	215

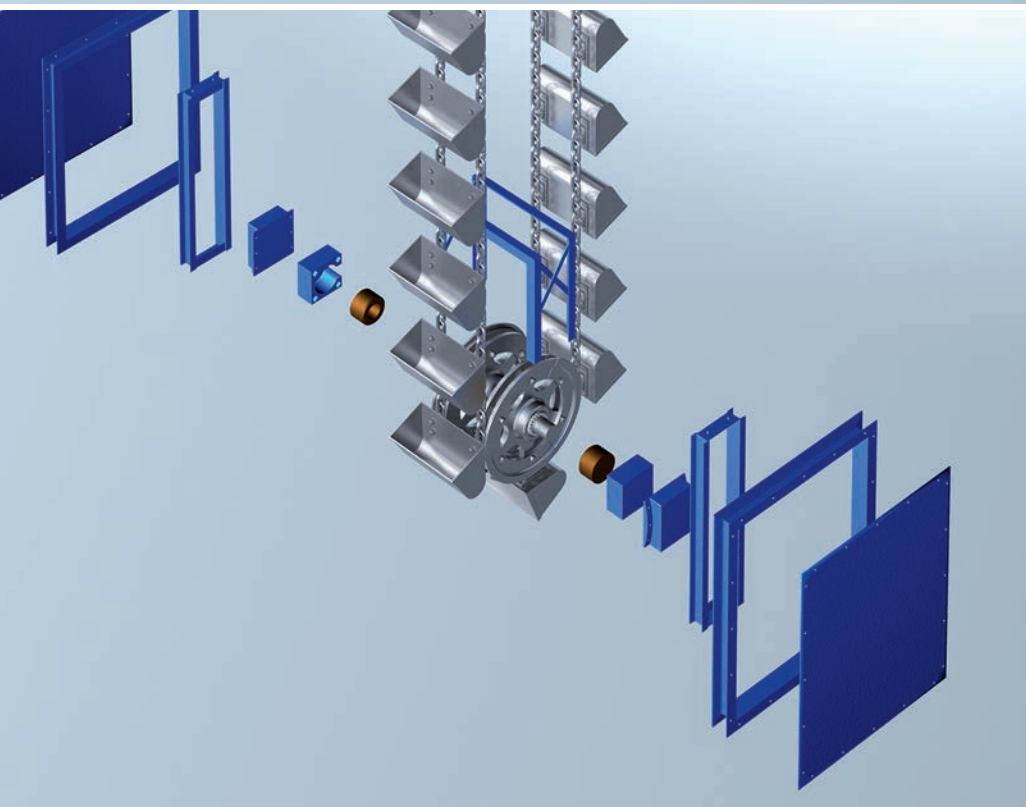
Tk ø = P.C.D., d = diameter, t = pitch, c = hub length. Other types, dimensions or qualities on request.



HEKO maintenance-free bearing blocks and shaft liners

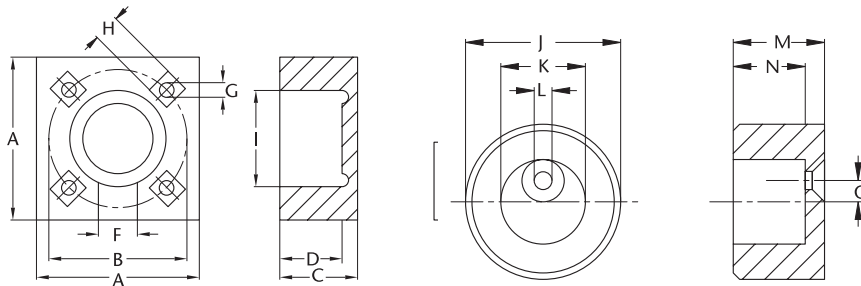


HEKO tensioning unit with maintenance-free bearings



Assembly of HEKO tensioning unit

HEKO return and tensioning unit with maintenance free bearings



Dimensions of HEKO bearing blocks

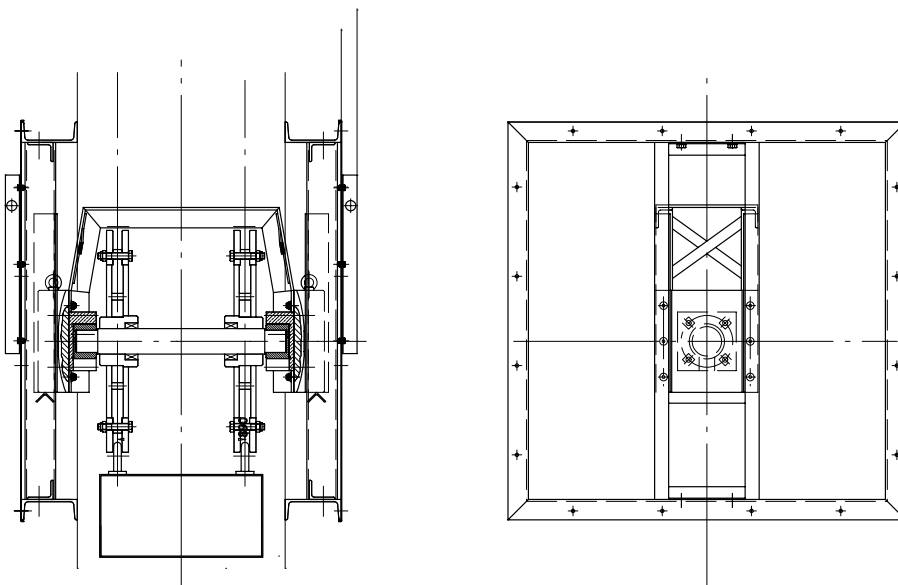
type	A	B	C	D	F	G	H	I
LGH 18-4	178	165	82	65	52	17	30	112
LGH 18-11	230	203	108	90	55	21	34	138

Dimensions of HEKO wear protection sleeves

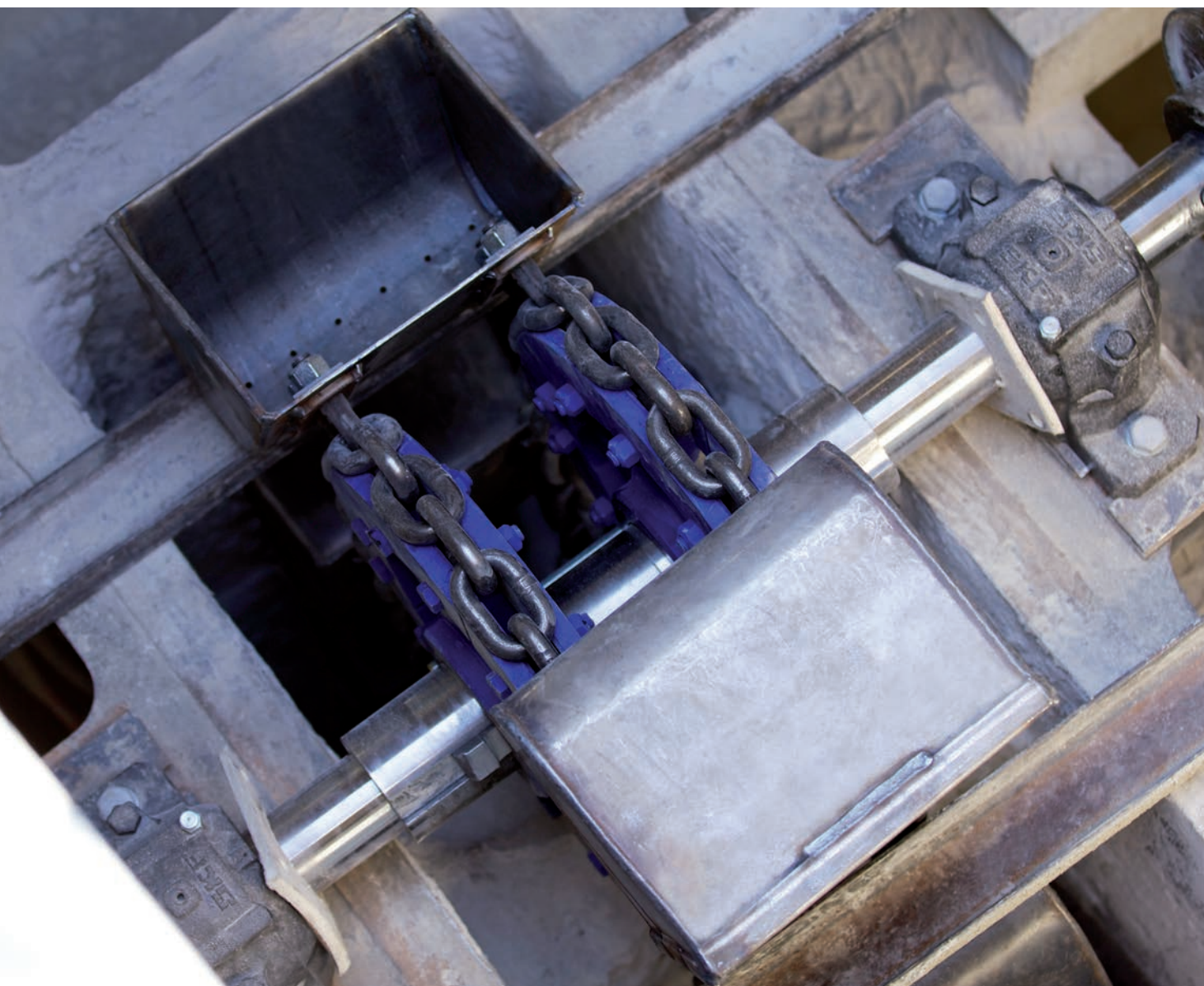
type	J	K	L	M	N	O
LGH 18-4	110,2	60,0	17	64,0	54	15
LGH 18-4	110,2	74,5	21	64,0	54	15
LGH 18-11	135,4	87,3	21	88,9	80	27
LGH 18-11	135,4	100,0	21	88,9	80	27

HEKO dry bearings have the advantage of being fitted inside the boot casing thus completely eliminating the need for shaft seals. Such bearings are especially advantageous when handling dry or abrasive products, but they can also be fitted below the water line.

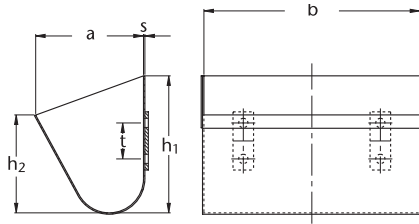
A wear protection sleeve, manufactured from CrNi steel, is fitted over the shaft ends, secured by a screw. The sleeves turn inside the cast bearing blocks, in hard alloy steel, without lubrication. Each bearing block is bolted to the frame work of the tensioning unit by 4 screws.



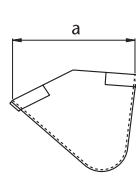
- Suitable for new and existing bucket elevators from 160 to 1600 mm
- Minimal attention required by use of gravity self-tensioning and maintenance free bearings
- Dust emission from the bearings is eliminated



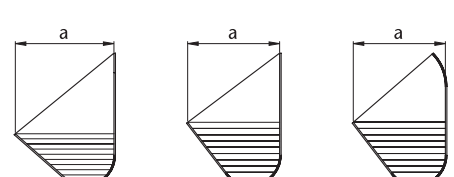
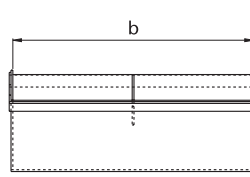
HEKO buckets for elevators with shackle type TS, S, DIN 5699 and DIN 745



High capacity buckets for rear wall mounting, form L



Central discharge buckets



Elevator buckets to DIN 15233, DIN 15234 and DIN 15235

- Supplied manufactured from many different materials and qualities, including stainless steel, lined, rubber liner, etc,
- Bucket with widths of 800 mm and larger should be fitted with internal re-enforcing ribs
- Supplied to suit all bucket attachment types
- With leading edge reinforcement if required

Dimensions and technical data for HEKO buckets

buckets	P. C. D.	chain speed		chain	chain		volume weight				performance DIN/TS			
		m/sec	min-max	d x t/mm	DIN/TS	DIN	h ₁	h ₂	3	5	7	9		
													shackle	Ltr.
b x a x s		calculated/												
160 x 140 x 3	500	1	0,95-1,2	10 x 35	45	45	15233	160	63	1	2,4	11/11	8/8	7/7
							15234	180	95	1,5	2,6	18/19	14/15	11/11
							15235	200	95	1,5	2,6	18/19	14/15	11/11
160 x 160 x 3	500	1	0,95-1,2	10 x 35	45	45	15233	180	71	1,2	2,7	14/14	11/11	9/9
							15234	200	106	1,9	2,9	23/24	18/18	14/15
							15235	224	106	1,9	2,9	23/24	18/18	14/15
200 x 160 x 3	500	1	0,95-1,2	13 x 45	56	45	15233	180	71	1,5	3,2	14/15	10/11	8/9
							15234	200	106	2,4	3,4	23/24	17/18	14/14
							15235	224	106	2,4	3,4	23/24	17/18	14/14
200 x 180 x 3							HL	224	159	4,1	4,6	39/41	30/31	24/25
250 x 180 x 3	630	1,05	0,95-1,2	16 x 56	63	56	15233	200	80	2,4	3,6	19/20	15/15	12/12
							15234	224	118	3,7	4,4	30/31	23/23	18/18
							15235	250	118	3,7	4,4	30/31	23/23	18/18
250 x 200 x 4	630	1,05	1,0-1,3	16 x 56	63	56	15233	224	90	3	6,2	24/25	18/19	15/15
							15234	250	132	4,6	6,8	38/39	28/29	23/24
							15235	280	132	4,6	6,8	38/39	28/29	23/24
250 x 200 x 4							HL	250	175	6,3	7,8	52/53	39/40	32/32
315 x 200 x 4	630	1,1	1,0-1,3	18 x 63	70	63	15233	224	90	3,8	7,2	28/29	21/22	17/17
							15234	250	132	5,8	8	44/45	33/34	27/28
							15235	280	132	5,8	8	44/45	33/34	27/28
315 x 224 x 4							HL	280	198	10	10,9	77/79	58/59	47/47
400 x 224 x 4	710	1,2	1,0-1,4	20 x 70	80	70	15233	250	100	5,9	9,7	44/45	33/34	26/27
							15234	280	150	9,4	10,9	70/72	53/54	42/43
							15235	315	150	9,4	10,9	70/72	53/54	42/43
400 x 250 x 4							HL	315	229	16,3	14,3	123/126	93/94	74/75
500 x 250 x 5	800	1,25	1,0-1,4	23 x 80	91	80	15233	280	112	9,3	16,4	63/65	48/49	38/39
							15234	315	170	14,9	18,1	102/105	76/78	62/63
							15235	355	170	14,9	18,1	102/105	76/78	62/63
500 x 280 x 5							HL	355	253	25,2	23,5	173/177	130/133	105/106
630 x 280 x 5	900	1,3	1,1-1,5	26 x 91	105	91	15233	315	125	14,6	23,4	91/94	69/70	55/56
							15234	355	190	23,5	25,3	147/151	111/113	89/90
							15235	400	190	23,5	25,3	147/151	111/113	89/90
630 x 315 x 5							HL	400	287	40,5	33,1	254/260	192/195	154/156
800 x 315 x 6	1000	1,35	1,2-1,5	30 x 105	126	105	15233	355	140	23,3	37,1	192/202	130/134	98/101
							15234	400	212	37,3	40,7	308/323	208/215	157/161
							15235	450	212	37,3	40,7	308/323	208/215	157/161
800 x 355 x 6							HL	450	320	64,8	57,4	535/562	363/375	274/281
1000 x 355 x 6	1250	1,45	1,2-1,5	36 x 126	147	126	15233	400	160	37,6	51,2	280/292	189/194	143/146
							15234	450	236	58,3	55,5	434/452	293/301	221/226
							15235	500	236	58,3	55,5	434/452	293/301	221/226
1000 x 400 x 6							HL	500	353	101,3	81,4	755/786	510/525	385/393
1250 x 400 x 6	1250/1400	1,5	1,2-1,6	39 x 136	147	136	15233	450	180	59,4	70,5	433/442	290/294	218/221
							15234	500	265	92	75,3	447/456	450/456	339/343
							15235	560	265	92	75,3	447/456	450/456	339/343
1250 x 450 x 6							HL	560	397	159,9	107	1166/1190	783/794	589/595
1400 x 425 x 8	1400/1500	1,5	1,2-1,6	42 x 147	147	147	15234	545	282	117	119,3	805	537	402
1600 x 450 x 8	1500	1,5	1,2-1,6	42 x 147	147	147	15234	575	300	150	137,8	1033	688	516
1600 x 500 x 6							HL	630	449	256,3	141	1756	1177	883

Degree of filling 75 %, density of material 1,0 t/m³, HL = high capacity bucket





General information

1.1 All chain ends for twin stranded conveyors supplied by HEKO are manufactured, selected with the same length and bundled in pairs, using a coloured wire; wire colour according to HEKO chain quality. This ensures that misalignment is avoided. Chain pairs must be assembled side by side to the chain strands. A label attached to each larger bundle acts as reminder. The colour codes are:

	HEKO 280E: white
	HEKO 21: yellow
	HEKO 210E: black
	HEKO 400E: green
	HEKO 5: red
	HEKO 350E: blue

1.2 The length tolerance between each chain end in a pair is 1 mm maximum.

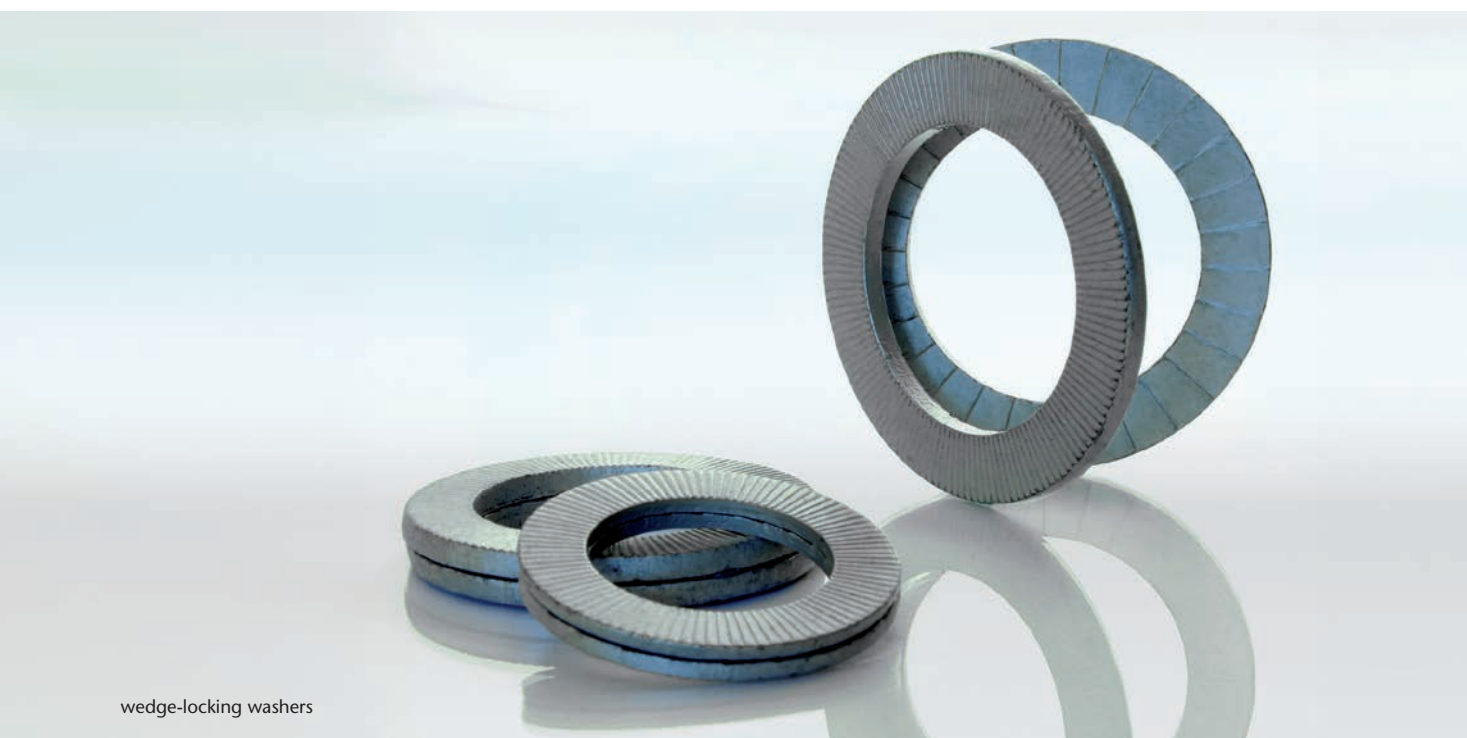
1.3 Chain ends with larger dimensional tolerances will cause bucket misalignment and result in increased wear of chains, shackles and chain wheels. Wires securing each pair of chain ends must therefore only be removed just prior to fitting, thus ensuring that only matching chain ends are fitted to either strand.

1.4 Chain tension has to be selected to ensure trouble free and quiet running of the chain. Excessive noise, e. g. squeaking from steel surfaces rubbing heavily against each other, or chain vibration, indicate excessive chain tension.

1.5 Lifting attachment selected for lifting the chain assembly must be allowed to move freely in the chain links. Hooks, etc. which are too large can result in chain fracture.

1.6 Shortening the chain: Should it be necessary to shorten the chains, equal links from either chain strand should be removed. This is best achieved by removing a pair of chain lengths. In the unlikely event that chain links have to be cut, no heat should be transmitted to the next link, i.e. by using an angle grinder or similar. Welding on the chain or shackles should be avoided. We are pleased to answer any query.

1.7 Connectors can in general be divided into those connecting individual chain ends, e. g. chain locks, and those which connect other parts, e. g. buckets, to the chain. HEKO will be pleased to advise the best solutions.



wedge-locking washers



Servicing and wear measurement

All components (wheel rims, chains, shackles, chain locks and other attachments) of the chain conveyor should be inspected regularly for wear or damage.

Chains are subjected to natural wear in the linkage, the extent of which being governed by chain quality, linkage movement, load, and the characteristic of the product handled. Wear in the linkage reduces the cross section of the link and thus the service life of the chain. Lubrication of the chain must be avoided as this increases wear. Air or water jets or scrapers to remove abrasive product from the chain and attachments can reduce wear. Chains and attachments should be checked for

hidden damage, cracks etc. following chain failure or damage to other internal components. New toothed chain wheels or toothed segments should be fitted when fitting new chains to ensure proper meshing.

We recommend replacing the chain and attachments at the latest when 75 % of the hardened case has been worn away. When using toothed wheels meshing problems may require earlier replacement. Damaged buckets causing a change to the chain strand centres, must be removed, otherwise excessive wear results in the wheel rims as well as chains and attachments.

Recommended torque for hexagon nuts

Plain hexagon nuts to DIN 934, Grade 8:		All steel self-locking nuts to DIN 980V	
M 10	51 Nm	M 10	55 Nm
M 12	89 Nm	M 12	95 Nm
M 14	140 Nm	M 14	149 Nm
M 16	213 Nm	M 16	225 Nm
M 20	420 Nm	M 20	439 Nm
M 24	725 Nm	M 24	752 Nm
M 30	1451 Nm	M 30	1487 Nm
M 36	2531 Nm	M 36	2575 Nm

Securing elements for bolted connections

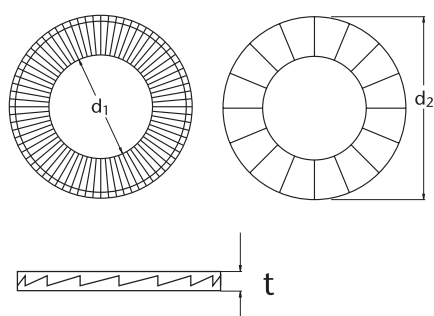
Advantageous of wedge-locking washers

- Especially advantages for dynamic load
- Simplicity in fitting – both parts glued together
- Reliable security for bolting to various materials, bolt nut grades and torques

Wedge-locking washer dimensions, parts glued together

Dimensions of washer	bolt size	d ₁ (mm)	d ₂ (mm)	thickness T (mm)	weight approx kg/100 pair
KSS 10	M10	10,7	16,6	2,5	0,23
KSS 10 SP	M10	10,7	21,0	2,5	0,44
KSS 12	M12	13,0	19,5	2,5	0,29
KSS 12 SP	M12	13,0	25,4	3,4	0,91
KSS 14	M14	15,2	23,0	3,4	0,63
KSS 14 SP	M14	15,2	30,7	3,4	1,46
KSS 16	M16	17,0	25,4	3,4	0,69
KSS 16 SP	M16	17,0	30,7	3,4	1,29
KSS 20	M20	21,4	30,7	3,4	0,95
KSS 20 SP	M20	21,4	39,0	3,4	2,03
KSS 24	M24	25,3	39,0	3,4	1,68
KSS 24 SP	M24	25,3	48,5	4,6	4,51
KSS 30	M30	31,4	47,0	6,6	4,40
KSS 30 SP	M30	31,4	58,5	6,6	8,86
KSS 36	M36	37,4	55,0	6,6	5,86
KSS 36 SP	M36	37,4	63,0	6,6	9,50

Tolerances for d₁ = inside diameter DNL10-DNL42 +/-0.2 mm;
Tolerances for d₂ = Outside diameter DNL10-DNL24 +/-0.2 mm, DNL27 – DNL42 +/-0.3 mm
Tolerances for T = Thickness DNL10 – DNL24 +/-0.25 mm, DNL27-DNL42 +/-0/0.5 mm.
Amendments reserved.





HEKO is represented through agents and business partners in over 50 countries around the world.

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