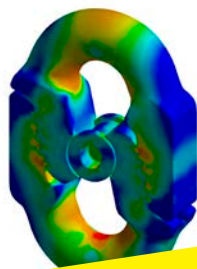


## Special coupling GZ for chain LH and MH

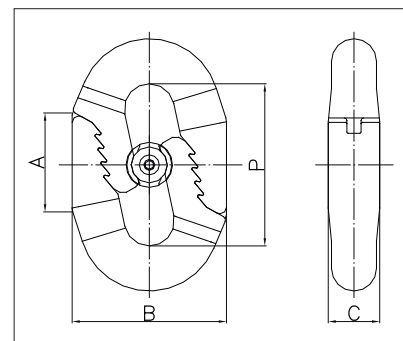
Designed for chain conveyors with chain LH and MH, it runs vertically into toothed or pocket wheels. Made of special NiCrMo alloy steel. Thanks to the special heat treatment C-Hard® patented, it features extremely high wear resistance in the interlink, together with top tensional stress resistance. Easy assembly without any special tools. Available with sizes and mechanical features compatible with chain LH or MH.



- PATENTED -



Code	Chain type	Dimensions mm				Proof force kN	Min. breaking force kN*	Mass kg ≅
		A	B	C	P			
GZ 22x86	LH 22x86	53	83	26	86	183	365	1.3
GZ 26x92	MH 26x92	57	92	30	92	255	510	1.9
GZ 26x100	LH 26x100	57	92	30	100	255	510	2.0
GZ 30x108	MH 30x108	60	108	36	108	340	680	2.9
GZ 30x120	LH 30x120	70	108	36	120	340	680	3.2
GZ 34x126	MH 34x126	72	120	40	126	425	850	4.3
GZ 34x136	LH 34x136	77	120	40	136	425	850	4.6
GZ 38x144	LH 38x144	95	135	45	144	530	1090	6.1



\* Tolerance: -10%.

Quality			C-Hard®
Surface hardness	HV30 min. <sup>(1)</sup>		800
Total hardening depth	xd min <sup>(2)</sup>	GZ 22x86, GZ 26x92, GZ 26x100	0.14
		Other sizes	0.12
Effective hardening depth	CHD 550 HV1 EN ISO 2639 <sup>(2,3)</sup> xd min.	GZ 22x86, GZ 26x92, GZ 26x100	0.09
		Other sizes	0.08
Minimum breaking load	N/mm <sup>2</sup> <sup>(4)</sup>		480
Test stress	N/mm <sup>2</sup> <sup>(4)</sup>		240
Material	CrNi / NiCrMo alloy		

(1) Measured at the point of contact with chain links; tolerance ±5%

(2) d= diameter of the chain that can be coupled

(3) corresponding to Eht 550 HV1 according to DIN 50190/1

(4) With reference to the section of the chain that can be coupled; tolerance on breaking stress: -10%

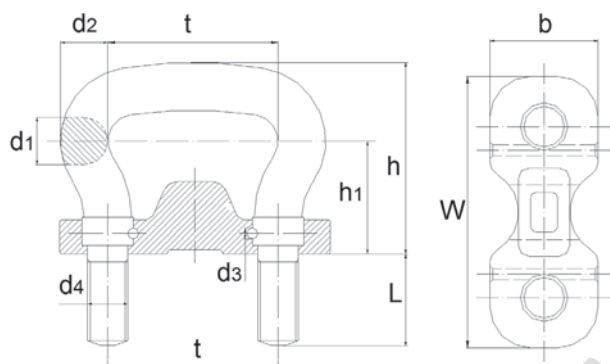
## Shackles type TD

They are suitable for chain conveyors with chain type DIN 764 and in some sizes for chain MH. They work as chain couplings and may be used as scraper or bucket attachments. They run horizontally over toothed and plain wheels or vertically over pocket wheels.

Forged with CrMo/NiCrMo alloy steels, quenched and hardened in the area of contact with the chain for type 3HS (induction hardening). Highly wear resistant. Also available with patented C-Hard® treatment for maximum resistance to wear and tear.

The special locking plate and the robust and highly precise construction lead to maximum tensile strength and to a very high resistance to fatigue.

Easy assembly: the closing plate is fixed by means of two spring pins. The shackle is then closed with self-locking nuts.



Code	Chain type	Dimensions mm										Minimum breaking force	Mass per shackle
		t	d1	d2	d3	d4	h1	h	b	w	L	kN	kg =
TD 45	13x45	45	14	14	5	M12	40	65	37	75	26	120	0.6
TD 56	16x56	56	16	16	5	M14	40	68	45	95	28	180	0.7
TD 63	18x63	63	18	18	5	M16	43	74	50	110	34	228	1
TD 70	20x70	70	20	20	5	M20	48	83	55	120	37	280	1.5
TD 80	23x80	80	23	23	5	M20	53	92	60	130	37	360	1.9
TD 91	26x91	91	26	26	6	M24	60	104	70	155	42	478	2.7
TD 105	30x105	105	30	30	6	M24	68	118	80	165	42	635	3.9
TD 126	34x126 36x126	126	35	35	8	M30	81	139	85	200	66	915	6.1
TD 136	39x136	136	39	39	8	M36	88	152	90	220	79	1075	7.6
TD 147	42x147	147	40	40	8	M36	93	162	95	230	79	1189	9

Quality		3HS	C-Hard®
Surface hardness	HV30 min. <sup>(1)</sup>	730	800
Total hardening depth	HTÄ xd min. <sup>(2)</sup>	0.14 <sup>(4)</sup>	0.15 <sup>(4)</sup>
Effective hardening depth	CHD 550 HV1 EN ISO 2639 <sup>(2,3)</sup>	0.09 <sup>(5)</sup>	0.10 <sup>(5)</sup>
Minimum breaking load	N/mm <sup>2</sup> <sup>(6)</sup>	450	450
Test stress	N/mm <sup>2</sup> <sup>(6)</sup>	240	240
Material		CrNi or NiCrMo alloy	

(1) Measured at the point of contact with the chain links; tolerance on surface hardness  $\pm 4\%$ .

(2) d= diameter of the largest chain that can be coupled;

(3) Corresponding to Eht 550 HV1 according to DIN 50190/1

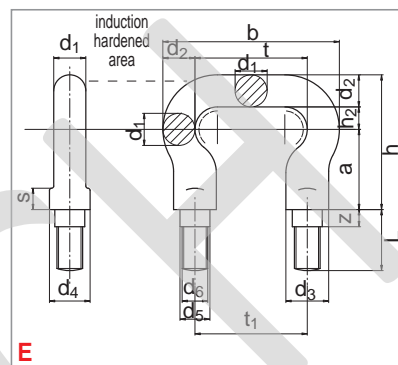
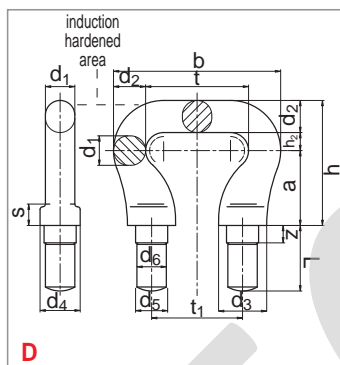
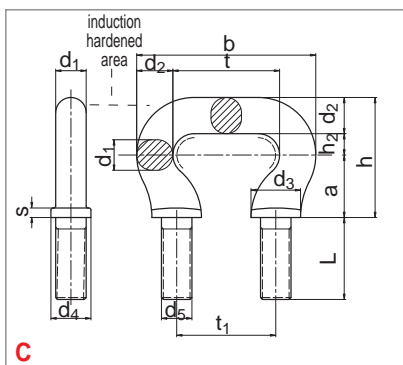
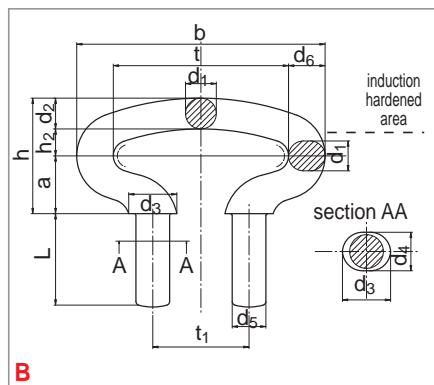
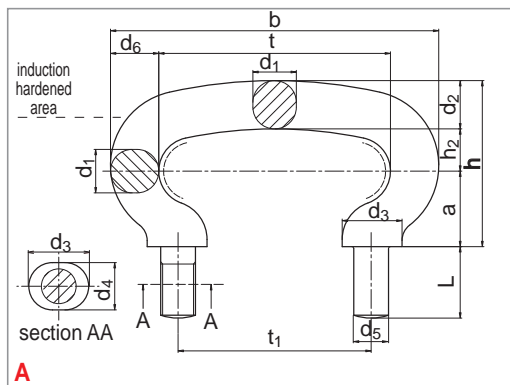
(4)  $d \geq 30$  mm:  $0.12 \times d$

(5)  $d \geq 30$  mm:  $0.08 \times d$

(6)  $d \geq 30$  mm:  $0.08 \times d$

(7) With reference to the section of coupling with the chain. Tolerance:  $-10\%$ .

## Special chain shackles

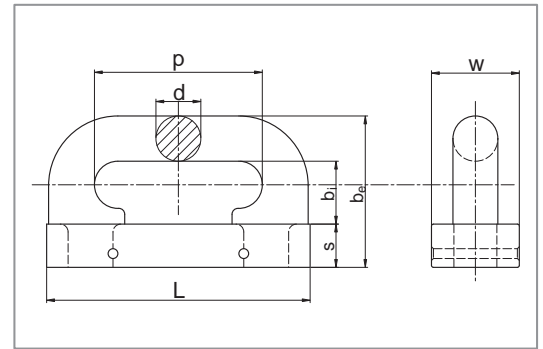
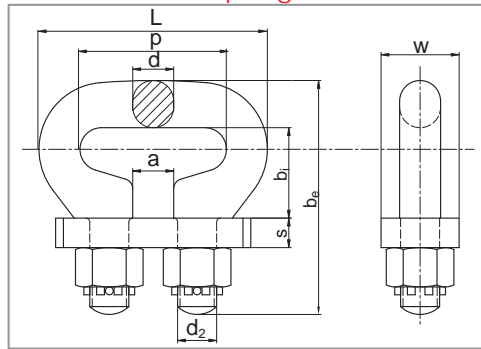
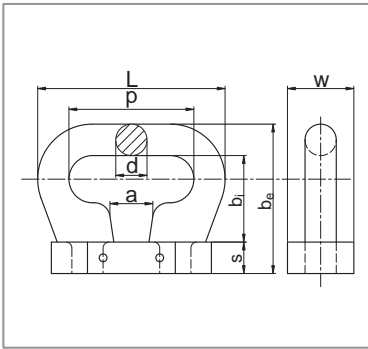


Code	Shape	Dimensions mm														Minimum breaking force kN		Corresponding chain ends DIN 764/766 d (mm)	Mass kg ≈	
		t	t <sub>1</sub>	a	b	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	d <sub>6</sub>	h	h <sub>2</sub>	L	s	z	2H			3H 3HS 3HX C-Hard®
T54-50S	A	54	50	27	98	19	19	27	20	M16	22	58	12	42	-	-	168	215	16-18	0.4
T140-120S	A	140	120	45	196	25	25	36	30	M24	28	88	18	50	-	-	270	355	23	1.64
T125S	A	125	125	48	209	39	39	46	40	M30	42	108	21	86	-	-	630	756	36	3.9
T150-130S	A	150	130	50	212	28	28	40	32	M24	32	98	20	55	-	-	340	430	26	2.11
T180-150S	A	180	150	63	255	34	34	44	38	M30	37.5	122	25	78	-	-	630	756	30	4.6
T220-180S	A	220	180	68	312	41	42	55	41	M30	46	136	26	70	-	-	800	890	36	6.0
T240-200S	A	240	200	78	340	45	50	62	49	M36	50	172	44	74	-	-	890	1030	42	9.5
T125-80S	B	125	80	45	185	28	28	40	33	M24	30	95	22	70	-	-	340	430	26	2.3
T140-80S	B	140	80	45	204	28	28	40	30	M24	32	90	17	75	-	-	340	430	26	2.45
T120-100S	B	120	100	39	170	23	23	31	24	M20	25	78	16	61	-	-	210	265	20-23	1.2
T182-100S	B	182	100	63	258	32	32	50	40	M30	38	120	25	90	-	-	630	756	30	4.35
T14	C	49	40	28.2	83	14	17	22	18	M14	-	55	9.8	40	5	-	130	165	13	0.35
T16	C	56	52	32.8	94	16	19	26	21	M16	-	63	11.2	43	5	-	168	215	16	0.52
T18	C	63	55	34.4	107	18	22	29	24	M18	-	69	12.6	50	6	-	190	240	18	0.75
T20	C	70	58	38	118	20	24	32	26	M20	-	76	16	54	6	-	210	265	20	1.0
T22	C	77	68	39	129	22	26	35	29	M22	-	80	15	56	7	-	270	335	23	1.3
T30	C	105	105	59.5	173	30	34	42	31	M24	-	111	17.5	66	-	-	460	575	30	2.5
C22.5	D	77	68	56	125	22	24	36	30	M22	24	93.5	13.5	49	16	13	270	335	23	1.3
C30.5	E	105	105	75	165	30	30	40	38	M24	28	126	21	57	20	16	460	575	30	2.6

Type 2H/3H/3HS/3HX and C-Hard® according to the technical data of DIN 745/DIN 5699 chain shackles (see page 9).



## Couplings GV, GN, GX



**GX type**

**GN type**

**GV type**



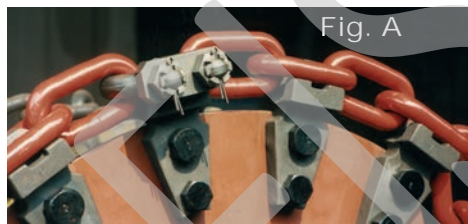
**GV**



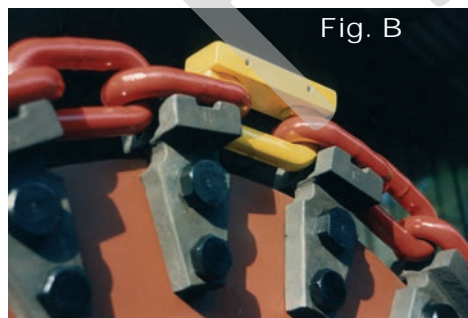
**GN**



**GX**



**Fig. A**

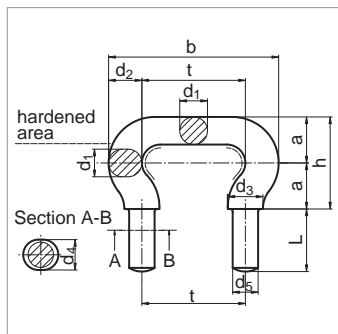


**Fig. B**

Coupling code	Chain type	Dimensions mm									Mass/ pcs. kg =
		p	d	L	w	b <sub>i</sub>	b <sub>e</sub>	s	a	d <sub>2</sub>	
GX14	LH14	50	14	80	30	37	67	15	24	-	0.45
GX16	LH16	64	16	98	34	44	77	16	18	-	0.75
GN19	LH 19	75	21	115	50	46	118	15	22	M20	1.1
GN22	LH 22	86	25	132	50	56	131	15	24	M20	1.9
GN26	LH 26	100	30	153	50	64	157	20	29	M24	3.0
GN30	LH 30	120	35	185	60	78	179	25	33	M30	5.2
GV16	LH 16	64	17	98	34	23	56	16	-	-	0.9
GV19	LH 19	75	20	118	40	27	65	18	-	-	1.4
GV22	LH 22	86	23	150	45	31	76	22	-	-	1.65
GV26	LH 26	100	27	161	50	38	91	26	-	-	2.55
GV30	LH 30	120	32	192	60	46	108	30	-	-	4.3
GV34	LH 34	136	36	214	70	49	117	32	-	-	6.25
GV38	LH38	144	40	224	80	56	130	34	-	-	8.1

Chain couplings for chain type LH are made of NiCrMo alloy steel. Their breaking loads are higher than those of the corresponding chain strands and thanks to a special machining and advanced heat treatments they are high fatigue stress resistant. Assembly: in order to guarantee correct operation and satisfactory lifetime, the couplings must be set up in the correct position. The shackles type GN have to be set up as shown in Fig. A, so that they surround the wheel teeth, whereas the type GV have to be set up as shown in fig. B and lie vertically on the wheel between two teeth. The nuts of the couplings GN have to be locked by means of a dynamometrical wrench, with the locking torque provided in the assembly instructions, depending on the size of the coupling. The couplings GV are simply assembled by fixing their locking plate in the correct position by means of two roll pins.

## Chain shackles DIN 745/5699



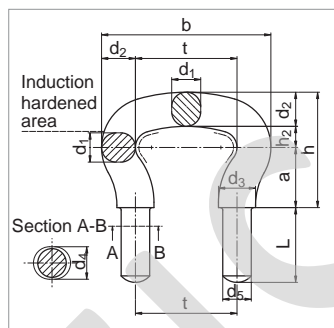
Easy to assemble with calibrated distance plates (page 10) and nuts. The nuts must be tightened with a suitable blocking system.



### DIN 745

Dimensions mm										Minimum breaking force kN			Mass	Corresponding chain ends for wheels	
t	a	b	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	h	L	2H	3H 3HS 3HX	S3 S4 C-Hard®	kg ≅	smooth DIN 764/766 d mm	toothed DIN 764 d mm
45*	20	73	11.5	14	15	12.5	M10	40	25	90	110	110	0.17	10	13
56	25	92	15	18	19	16.5	M12	50	32	130	165	170	0.30	13	16
63	30	105	18	21	23	20	M16	60	40	168	215	221	0.55	16	18
70	34	116	20	23	28	23	M20	68	45	210	265	275	0.80	18	20
80	37	132	23	26	31	25	M20	74	45	270	335	345	1.10	20	23
91	43	149	26	29	34	29	M24	86	55	340	430	445	1.60	23	26
105	50	173	30	34	38	31	M24	100	55	460	575	595	2.10	26	30
126	59	206	36	40	44	37	M30	118	70	630	756	780	3.80	30	36
147	68	239	42	46	50	42	M30	136	70	800	890	1030	5.55	36	42

General characteristics and tolerances according to the table on page 9. (\*) Shackles t45 type 2H are made of alloy steel and entirely quenched.



Easy to assemble with calibrated distance plates (page 10) and nuts. The nuts must be tightened with a suitable blocking system.



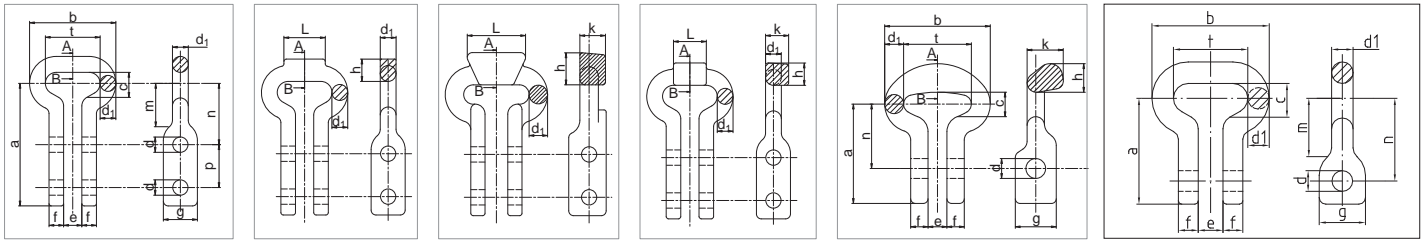
### DIN 5699

Dimensions mm												Minimum breaking force kN			Mass	Corresponding chain strands for wheels		
t		a	b	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	h	h <sub>2</sub>	L	z	2H	3H 3HS 3HX	S3 S4 C-Hard®	kg ≅	smooth DIN 764/766 d mm	toothed DIN 764 d mm
35*	±0.3	23	59	10	12	13	11	M10	43	8	28	2.5	55	70	70	0.125	-	10
45*	±0.3	28	75	13	15	17	13	M12	53	10	33	3	90	110	110	0.24	10	13
56	±0.5	35	92	16	18	19	17	M14	64	12	38	3	130	165	170	0.38	13	16
63	±0.5	37	105	18	21	23	20	M16	71	13	46	4	168	215	221	0.62	16	18
70	±0.5	42	116	20	23	28	23	M20	80	15	60	4.5	210	265	275	0.92	18	20
80	±0.8	47	132	23	26	31	25	M20	89	16	60	4.5	270	335	345	1.20	20	23
91	±0.8	52	149	26	29	34	29	M24	99	18	66	6	340	430	445	1.78	23	26
105	±1	60	173	30	34	38	31	M24	114	20	66	6	460	575	595	2.50	26	30
126	±1	71	206	36	40	44	37	M30	134	23	78	8	650	780	810	4.15	30	36
147	±1	81	241	42	47	50	42	M36	157	29	75	8	890	1030	1110	6.50	36 / 39	42

General characteristics and tolerances according to the table on page 9. (\*) All types of t35 shackles and shackles t45 type 2H are made of alloy steel and entirely quenched.



## Flat leg attachments MGP



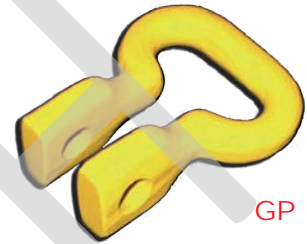
Code	Chain type	Shape	Dimensions mm																min. breaking force kN*	Mass kg ≈
			t	a	(GP) a	b	c	d	d <sub>1</sub>	e	f	g	h	i	k	m	n	p		
MGP 10 <sup>(1)</sup>	10X35 DIN 764	A	35	82	51	55	14	8.5	10	12	10	22	-	-	-	25	40	30	63	0.255
MGP 13	13X45 DIN 764	A	45	100	64	71	18	12.5	13	15	12	27	-	-	-	30	50	35	98	0.45
MGP 16	16X56 DIN 764	A	56	130	86	88	22	17	16	20	16	32	-	-	-	45	70	40	148	0.85
MGP 18 A	18X63 DIN 764	A	63	140	95	99	25	17	18	20	18	35	-	-	-	50	75	40	188	1.4
MGP 18 A2	18X63 DIN 764	A	63	125	95	99	25	17	18	20	20	36	-	-	-	42	65	40	188	1.3
MGP 18 C	18X63 DIN 764	C	63	140	95	99	25	17	18	20	18	35	29	54	27	15/40 <sup>(2)</sup>	75	40	188	1.4
MGP 20	20X70 DIN 764	B	70	145	103	110	27	17	20	22	20	35	36	54	-	64	85	40	251	1.7
MGP 22	22x86 LH / MH / DIN 22252	E	86	119	-	134	-	25	22	24	22	52	36	-	46	-	75	-	305	2.6
MGP 23	23X80 DIN 764	D	80	164	109	126	31	21	23	25	20	40	29	54	32	65	89	50	332	2.1
MGP 26 A	26X91 DIN 764	A	91	170	118	143	34	21	26	33	22	45	-	-	-	<sup>66</sup>	95	50	425	2.6
MGP 26 C	26X92 MH / DIN 22252	C	92	163	104	144	28	21	26	33	20	48	45	84	37	15/40 <sup>(2)</sup>	80	55	425	3.2
MGP 30	30X108 MH / DIN 22252	C	108	196	130	168	32	26	30	36	24	54	50	100	40	15/40 <sup>(2)</sup>	103	60	565	5.5
MGP 34	34X126 MH / DIN 22252	C	126	222	152	194	38	32	34	41	27	60	57	88	-	82	122	70	710	8.5

(\*) Tolerance -10% depending on batches;

(1) The MGP10 shackle is made of alloy steel and entirely quenched in all classes. (2) dimensions on the front/rear side;

MGP flat leg attachments are used for scraping conveyors for applications with bulk materials (e.g. dust, ashes from incinerators). They are manufactured with the same pitch as the chain links with which they can be coupled and can work on suitable pocket wheels of spheroidal cast iron and on toothed wheels made of alloy steel. They are made of CrMo/NiCrMo alloy steel and integrally quenched in the type 2H; additionally the other types use a special hardening process in the area of contact with the chain link (induction hardening). Depending on the type of MGP, they are suitable for DIN 764, LH or MH chains. The attachments with shapes B, C, D and E are reinforced in the sliding areas (more subject to wear). The connecting shackles type GP have a single fixing hole and reduced length (dimension a) as shown in the table.

Quality		2H	3H / 3HS / 3HX / S3 / S4	C-Hard®	(1) Tolerance ±4%. (2) d= diameter of the chain that can be coupled
Surface hardness	HV30 min. <sup>(1)</sup>	370 <sup>(4)</sup>	720 <sup>(5)</sup>	800 <sup>(5)</sup>	(3) Corresponding to Eht 550 HV1 according to DIN 50190/1-2
Total hardening depth	HTÄ × d min. <sup>(2)</sup>	-	0.12 <sup>(6)</sup>	0.14 <sup>(8)</sup>	(4) Hardness from surface to core
Effective hardening depth	DC 1/550 × d min. <sup>(2,3)</sup> ISO 2639	-	0.08 <sup>(7)</sup>	0.10 <sup>(9)</sup>	(5) Measured at the interlink point of contact
Material		CrMo / NiCrMo alloy steel			(6) d≥30 mm : 0.11×d (7) d≥30 mm : 0.07×d
Minimum breaking force (kN): see table. Proof load (kN): 50% of min. breaking force.					(8) d≥30 mm : 0.12×d (9) d≥30 mm : 0.08×d



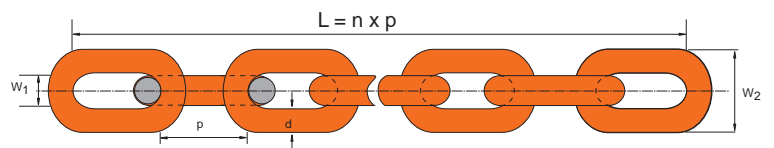
### Chains type CM for mining conveyors

The chain features are in compliance with DIN 22252-2 specifications. The material used is a special alloy steel, with heat treatment of quenching and tempering. The typical hardness profiles have an almost constant value from the surface to the core of the chain.

Code	Nominal diameter d mm	Allowed tolerances mm	Pitch p mm	max. W <sub>2</sub> mm	min. W <sub>1</sub> mm	Mass kg ≙	Proof force kN	Minimum breaking force kN*
CM 22	22	+0.7 -0.2	86 ± 0.9	75	26	9.5	456	608
CM 26	26	+0.8 -0.2	92 ± 1.0	87	31	13.6	637	850
CM 30	30	+1.0 -0.2	108 ± 1.2	101	36	18.0	848	1130
CM 34	34	+1.2 -0.4	126 ± 1.2	113	39	23.8	1090	1450
CM 38	38	+1.2 -0.4	137 ± 1.2	127	44	30.0	1360	1820

(\*) Tolerance -10%, depending on batches;

Quality		CM
Surface and core hardness	HV30 min. <sup>(1)</sup>	370
	HRC min. <sup>(1)</sup>	38
Break stress	N/mm <sup>2</sup>	800
Proof stress	N/mm <sup>2</sup>	600
Material		MnNiCrMo alloy
Breaking elongation: 2%;		

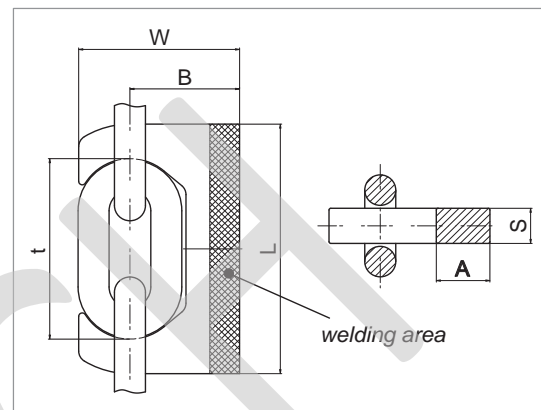


(1) Measured at the interlink (point of contact of two links); d= diameter.  
Tolerance on surface hardness: ±30 HV / ±3 HRC

## Lateral attachment for conveyors - type ALH

*Suitable for two-chain or multiple-chain conveyors, with welded scrapers. For chain type LH and toothed wheels. Made of a special CrMn alloy steel, quenched (or case hardened upon request) in the area of contact with the chain, with high wear resistance.*

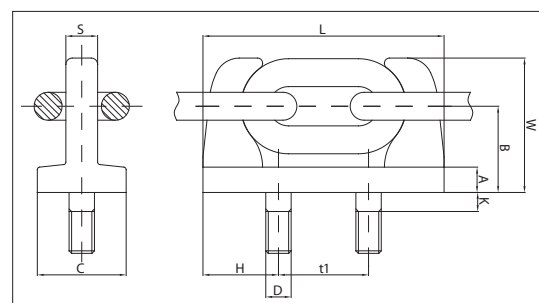
Code	Chain type	Dimensions mm						Mass kg ≈
		L	t	W	B	A	S	
ALH 16	16x64	135	97	83	59	30	19	1.0
ALH 19	19x75	156	114	100	69	36	21	1.3
ALH 22	22x86	182	131	116	80	37	25	2.2
ALH 26	26x100	213	153	135	92	45	30	3.6
ALH 30	30x120	252	182	160	110	56	35	6.2
ALH 34	34x136	282	206	177	122	60	38	8.0



## Lateral attachment for conveyors - type BLH

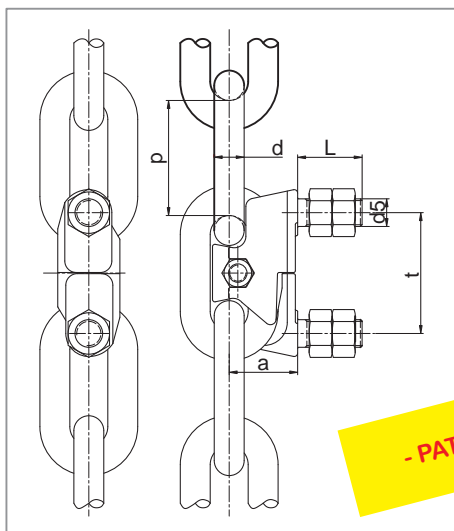
*Suitable for two-chain or multiple-chain conveyors, with bolted scrapers. For chain type LH and toothed wheels or plain wheels. Pins and main body made of a special CrMn alloy steel, case hardened or quenched in the area of contact with the chain, with high wear resistance.*

Code	Chain type	Dimensions mm										Mass kg ≈
		L	C	H	B	t1	D	W	K	A	S	
BLH 16	16x64	150	50	49	48	52	M16	76	15	15	19	1.2
BLH 19	19x75	175	60	55	58	65	M20	90	20	20	21	2.0
BLH 22	22x86	200	70	64.5	68	71	M20	106	20	20	25	3.0
BLH 26	26x100	235	80	75	72	85	M20	116	20	20	30	4.5
BLH 30	30x120	280	90	91	85	98	M24	136	24	25	35	6.7
BLH 34	34x136	320	100	105	98	110	M27	155	30	30	38	10.0





## Special attachments ATS



- PATENTED -



Special bucket attachments for chain LH, for smooth or toothed wheel elevators, made of quenched steel. They are not subject to chain load, so their operational safety is higher compared to chain shackles (DIN system). They can be easily assembled on vertical chain ends and they are subject to reduced wear and tear. Bucket hole dimensions are the same as for the DIN system to allow a simple conversion of the equipment.

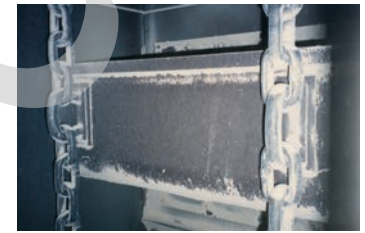
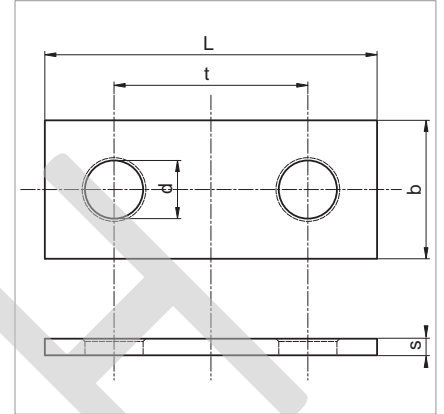
Attachment code	Chain	Dimensions mm						Mass kg ≈
		t	p	d	a	L	d <sub>5</sub>	
ATS14	LH14	56	50	14	34	35	M14	0.5
ATS16	LH16	63	64	16	37	40	M16	0.75
ATS19	LH 19	80	75	19	47	50	M20	1.3
ATS22	LH 22	91	86	22	52	55	M24	2.2
ATS26	LH 26	105	100	26	57	58	M24	2.6
ATS30	LH 30	126	120	30	71	65	M30	4.5
ATS34	LH 34	147	136	34	81	75	M36	7.1



## Distance plates

Made of C40 steel with calibrated, rounded holes whose dimensions correspond to those of the DIN 745/5699 chain shackles; by using such plates, in case of deformation of the bucket holes shackle breaking can be avoided. The 3H/3HS/3HX/S3/S4/C-Hard® type distance plates are drilled with higher precision tolerances.

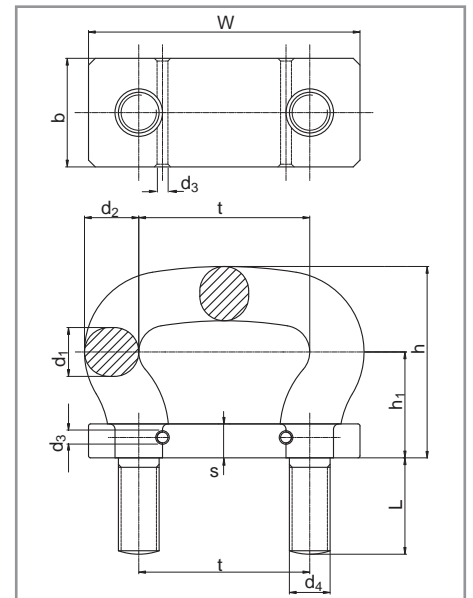
t	Dimensions										Mass per 100 pcs	
	mm											
	b		L		2H/3H d		3HS/3HX/S3/S4/ C-Hard® d		s		kg	
±0.1	DIN 745	DIN 5699	DIN 745	DIN 5699	DIN 745	DIN 5699	DIN 745	DIN 5699	DIN 745	DIN 5699	DIN 745	DIN 5699
35	30		65		10.5		10.5		5		7	
45	30		75		11	13	10.5	12.5	5		7.5	
56	40		95		13	15	12.5	14.5	6		16	
63	40		110		17		16.5		6		19	
70	50		120		21		20.5		6		25	
80	50		130		21		20.5		6		27	
91	60		150		25		24.5		8		50	
105	60		165		25		24.5		8		55	
126	70		200		31		30.5		10		98	
147	70	80	220	230	31	37	30.5	36.5	10	12	110	147



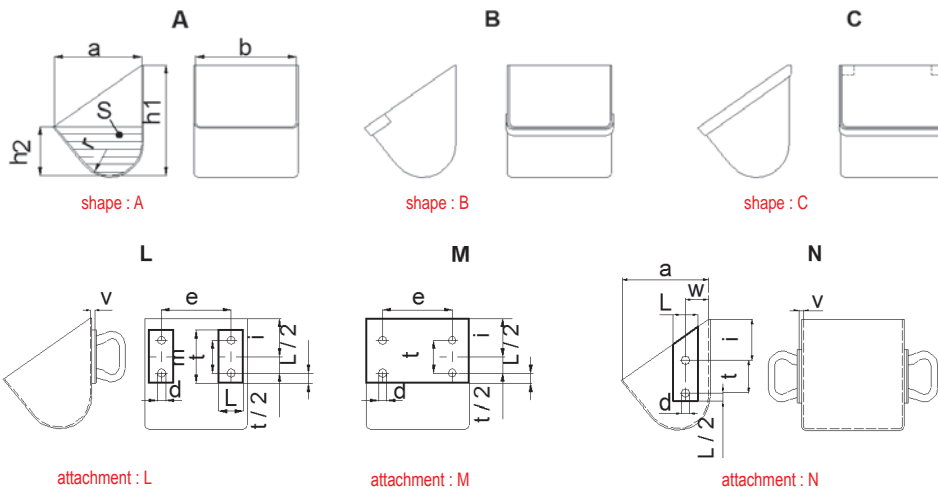
## Shackles type HFR

The shackles type HFR are forged with CrMo/ NiCrMo alloyed steel and quenched with induction hardening at the interlink point of contact with the chain. They are highly wear resistant, with material features corresponding to type 3HS or C-Hard® (see page 9). The special locking plate and the more robust, highly precise construction allow very high breaking force and extremely high resistance to fatigue.

t	Dimensions										Minimum breaking force kN	Mass per shackle kg	Corresponding chain ends for wheels		
	mm												3HS C-Hard®	smooth	toothed
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	h <sub>1</sub>	h	b	w	s	L				DIN 764/766 d mm	DIN 764 d mm
45	13	15	5	M12	33	58	30	75	12	28	110	0.60	10	13	
56	16	18	5	M14	41	70	45	95	15	32	165	0.80	13	16	
63	18	21	5	M16	43	77	50	110	15	40	220	1.10	16	18	
70	20	23	5	M20	48	86	55	120	15	54	280	1.60	18	20	
80	23	26	5	M20	53	95	60	130	20	54	360	1.90	20	23	
91	26	29	6	M24	60	107	70	155	20	58	450	2.90	23	26	
105	30	34	6	M24	68	122	80	165	20	58	630	4.10	26	30	
126	36	40	8	M30	81	144	85	200	25	68	860	6.40	30	36	
147	42	46	8	M36	93	169	95	230	25	68	1160	9.50	36	42	



## Buckets for bucket elevators according to DIN 15234



The standard buckets according to DIN 15234 (deep buckets with flat rear wall) are manufactured with welded steel sheet and are used for the transport of powder or bulk materials such as sand, cement, coal, gravel, etc. The following products are also available: A.P.I. buckets, extruded buckets with sheet thickness up to 2.5 mm, stainless steel buckets and buckets made of synthetic materials such as high density polyethylene (HDP) and Nylon.

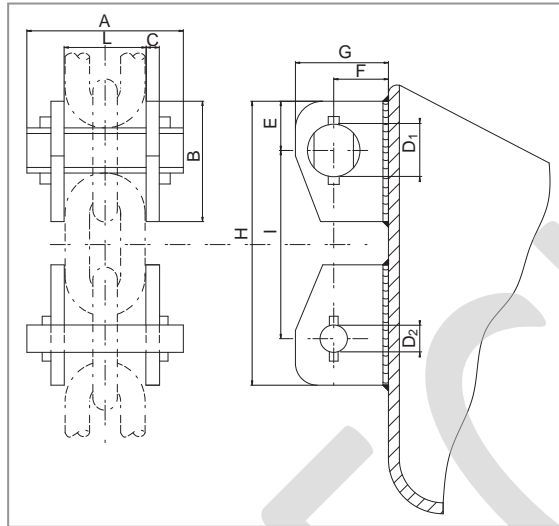
Code	Bucket dimensions													Bucket capacity	Weight of bucket shape A					
	mm														kg $\approx$ (7.85 kg/dm <sup>3</sup> )					
	DIN 15234														Sheet thickness					
	Width	Shackle					Bucket attachment dimension								mm					
b	a	h <sub>1</sub>	h <sub>2</sub>	r	t	d	e	i	m	L <sub>min</sub>	w	v	Sxb (dm <sup>3</sup> )	2	3	4	5	6	8	
TZ 160x140	160	140	180	95	45	56	15	100	67	95	40	36	6	1.5	1.38	2.08				
TZ 160x160	160	160	200	106	50	56	15	100	75	95	40	40	6	1.9	1.59	2.39	3.18			
TZ 200x160	200	160	200	106	50	63	17	125	75	110	40	40	6	2.4	1.85	2.8	3.76			
TZ 250x180	250	180	224	118	56	63	17	160	85	110	40	45	8	3.7	2.49	3.77	4.96			
TZ 250x200	250	200	250	132	63	63	17	160	95	110	40	50	8	4.6		4.36	5.82	7.27		
TZ 315x200	315	200	250	132	63	70	21	200	95	120	50	50	8	5.8		5.09	6.82	8.59		
TZ 400x224	400	224	280	150	71	80	21	250	106	130	50	56	10	9.4		7.03	9.40	11.8		
TZ 500x250	500	250	315	170	80	91	25	315	118	150	60	63	10	14.9			12.8	16.1	19.4	
TZ 630x280	630	280	355	190	90	105	25	400	132	165	60	70	10	23.5			17.6	22.1	26.6	
TZ 800x315	800	315	400	212	100	126	31	500	150	200	70	80	10	37.3				30.6	36.9	49.6
TZ 1000x355	1000	355	450	236	112	126	31	630	170	200	70	90	10	58.3				42.0	50.3	67.0
TZ 1250x400	1250	400	500	265	125	147	37	800	190	230	80	100	12	92.0					68.5	91.9



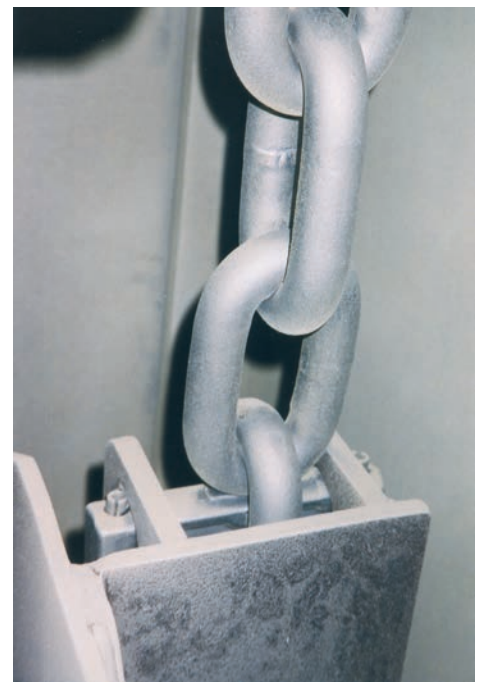
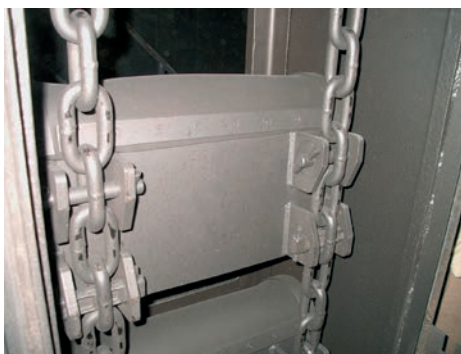


## Pins and sidewalls

*Pins and sidewalls allow the connection between bucket and chain by means of a two-link attachment also suitable for heavy duty operation and demanding applications. The holes of the sidewalls ST and SG are calibrated and induction hardened in order to obtain high resistance to wear and tear. Pins are made of case hardened alloy steel.*



Chain type	Code				Dimensions mm										Mass / unit kg ≡	
	Pins		Sidewalls		A	B	C	E	F	G	H	I	L	D <sub>1</sub>		D <sub>2</sub>
	flat	round	driving	guide												
16LH	PT16	PG16	ST16	SG16	110	80	10	31	40	65	190	128	58	32	18	1.85
19LH	PT19	PG19	ST19	SG19	131	95	12	40	45	75	230	150	68	36	21	3.4
22LH	PT22	PG22	ST22	SG22	158	110	15	44	50	85	260	172	80	42	25	4.7
26LH	PT26	PG26	ST26	SG26	172	120	15	45	61	100	290	200	94	48	32	6.7
30LH	PT30	PG30	ST30	SG30	190	140	15	50	75	125	340	240	109	60	36	10.2
34LH	PT34	PG34	ST34	SG34	210	155	18	54	80	130	380	272	122	67	40	13.4
38LH	PT38	PG38	ST38	SG38	240	170	18	60	90	145	408	288	136			18.5

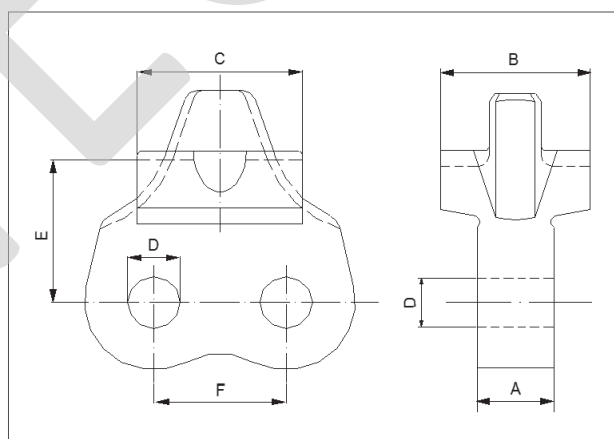


## Teeth for SSC conveyors

Teeth for manufacturing toothed wheels for chain conveyors with LH and MH chain and couplings type GZ and TD. They allow use of chain with couplings GZ or TD. Made of NiCrMo alloy steel, with carburized case hardening for best performance and high wear resistance. Easy assembly and disassembly on the wheels with bolts and nuts. The screw to be inserted in both holes is made of highly resistant alloy steel (at least quality 10.9 UNI EN ISO 898); it is specially manufactured with strict dimensional tolerances according to DIN 609. Contact for the tightening torque to be applied.

Teeth can be supplied with different hole positioning (size E). This allows the possibility to increase the wheel pitch line diameter of the wheel and to work with worn chains (for remarkably increased chain pitch over the nominal size), thus extending the useful life of the chain. The adjustment of the pitch is attained with radial shifting of the teeth up to 20 mm, depending on the size of the chain and on the number of the teeth of the wheel. Contact us for further information.

Code	Chain type	Dimensions mm						Mass kg
		A	B	C	D	E	F	
DB 22x86	22x86	32	65	60	23	60	50	02.05
DB 26x92	26x92	32	78	70	28	73	60	03.03
DB 30x108	30x108	32	98	90	32	82.5	70	05.07
DB 30x120	30x120	32	98	90	32	82.5	70	05.08
DB 34x126	34x126	34	105	100	32	94	80	06.07
DB 34x136	34x136	34	105	100	32	94	80	06.07
DB 36x126	36x126	34	115	100	32	94	80	07.00
DB 38x144	38x144	38	119	105	32	109	90	09.08



Surface hardness	HV30 min. <sup>(1)</sup>		800
Total carburizing depth	xd min. <sup>(2)</sup>	DB 22x86, DB 26x92	0.14
		Other sizes	0.12
Effective case hardening depth	CHD 550 HV1 EN ISO 2639 <sup>(2,3)</sup> xd min.	DB 22x86, DB 26x92	0.09
		Other sizes	0.08
Material	NiCrMo alloy		



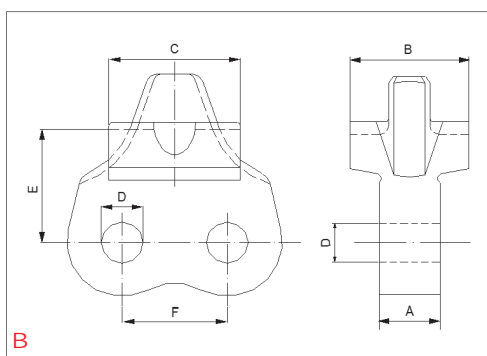
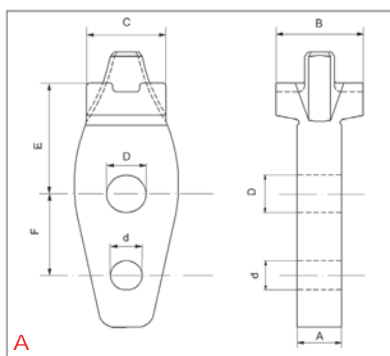
(1) Tolerance  $\pm 4\%$

(2) d = Diameter of the chain that can be coupled

(3) Corresponding to Eht 550 HV1 according to DIN 50190/1



## Teeth for elevators - SYSTEM LH



Code	Type	Chain	Dimensions mm							Mass kg $\approx$
			A	B	C	d	D	E <sup>(1)</sup>	F	
D14	B	LH 14	20	43	34	-	14	38	32	1.2
D16	A	LH 16	25	50	43	20	23	61.5	55	1.45
D19	A	LH 19	28	55	50	20	25	75	55	1.8
D22	A	LH 22	32	65	60	20	28	69	65	2.5
D26	A	LH 26	32	78	70	24	32	81	65	3.3
D30	A	LH 30	32	98	90	27	32	86	75	5.7
D34	B	LH 34	34	107	100	-	32 <sup>(2)</sup>	94	80 <sup>(2)</sup>	6.7
D38	B	LH 38	38	119	105	-	32 <sup>(2)</sup>	109	90 <sup>(2)</sup>	9.8

(1) Variable size for oversized teeth

Individual teeth for toothed wheels for chain LH, made of special case hardened NiCrMo alloy steel. Easy assembly on the wheel hub with two screws with nuts. The screw to be coupled with the larger hole of teeth type A, and with both holes of teeth type B, is made of highly resistant alloy steel (at least quality 10.9 UNI EN ISO 898); it is specially manufactured to match the bore with strict dimensional tolerances according to DIN 609. The smaller diameter screw of the teeth type A must be quality 8.8 or above. Contact us about the tightening torque to be applied. Teeth can be supplied with different hole positioning (size E). This allows the possibility to increase the wheel pitch line diameter of the wheel and to work with worn chains (for remarkably increased chain pitch over the nominal size), thus extending the useful life of the chain. The adjustment of the pitch is attained with radial shifting of the teeth up to 30 mm, depending on the size of the chain and on the number of the teeth of the wheel. Contact us for further information.

