

ICE-CONSTRUCTION KIT.





OVERVIEW
ICE-CONSTRUCTION KIT PART 1.

			4:1		-XX° XXX° C	XXX° C max.	BLUE-ID 	DGUV TEST	DNVGL TEST
			Safety factor 4:1	100% electromagnetically crack-tested	Application temperature range without WLL reduction	Max. application temperature with WLL reduction	RUD BLUE-ID SYSTEM	DGUV approval	Certified according to the DNVGL guideline
CHAINS									
p. 40		ICE-Lifting means 0.8t–12.5t	■	■	■	■		■	
p. 41		ICE-KZA Identification tag							
MASTER LINKS									
p. 42		IAK-RG-1 / -RG-2 / -RG-4 1.8t–12.5t / 2.5t–17.5t / 3.75t–26.5t	■	■	■	■	■	■	■
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p. 44		ISAK-RG-1 / -RG-2 / -RG-4 1.8t–12.5t / 2.5t–17.0t / 3.75t–26.5t	■	■	■	■	■	■	■
CONNECTING AND SHORTENING ELEMENTS									
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p. 47		IVH 1.8t–12.5t	■	■	■	■	■	■	■
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p. 49		IMVK 1.8t–12.5t	■	■	■	■	■	■	■
p. 50		IW 3.75t–35.0t	■	■	■	■	■	■	■
p. 52		ICE-CURT-K 1.8t–12.5t	■	■	■	■	■	■	■

ICE-CONSTRUCTION KIT.





OVERVIEW
ICE-CONSTRUCTION KIT PART 2.

			4:1		-XX° XXX° C	XXX° C max.	BLUE-ID 	DGUV TEST	DNVGL TEST
			Safety factor 4:1	100% electromagnetically crack-tested	Application temperature range without WLL reduction	Max. application temperature with WLL reduction	RUD BLUE-ID SYSTEM	DGUV approval	Certified according to the DNVGL guideline
END COMPONENTS									
p. 53		ISH 0.8t–12.5t	■	■	■	■	■	■	
p. 54		IWH 1.8t–12.5t	■	■	■	■	■	■	
p. 55		IMEG 5.0t–8.0t	■	■	■	■	■	■	
p. 56		IAGH 1.8t–12.5t	■	■	■	■	■	■	
p. 57		IMAGH 5.0t–8.0t	■	■	■	■	■	■	
p. 58		IRG 1.8t–12.5t	■	■	■	■	■	■	
ICE-MINI CONSTRUCTION KIT, p. 60–61									
ICE-SPARE PARTS, p. 62–63									

OPTIMAL COMBINATIONS.

ICE-Master links: non-mix-up with ICE-Welded connectors.

	IAK-RG 1 / IBK-RG 1	IAK-RG 2 / IBK-RG 2	IAK-RG 4	ISAK-RG (1- / 2- / 4-strand)
1-strand				Suspension not shortened.
				Suspension shortened with ICE-shortening hook IVH.
				Suspension shortened with ICE-multi-shortening claw IMVK.

END COMPONENTS								
IB-RG	IA-RG	ISH	IAGH / IM-AGH	IWH	IMEG	IVH	IVS	IRG

ICE-DESIGN OR DESIGNATION EXAMPLE – COMPLETE SUSPENSION.

	Grade	Number of strands	Master link	Shortening / strands	Shortening / component	End component	Chains	Required usable length (mm) – not shortened
	ICE	G1	(IBK)	1	IMVK	ISH	13	2,000
ICE-G1 (IBK)-IMVK-ISH / 13 x 2,000								

OPTIMAL COMBINATIONS.

ICE-Combination options | Endless chain.

	IAK-RG 2 / IBK-RG 2	IAK-RG 4		ISAK-RG (2- / 4-strand)
				 140 190 250
Single			Endless	Endless chain with ICE-H-Connector IH.
				Endless chain shortened with ICE-shortening hook IVH.
Double			Endless	Endless chain shortened with ICE-multi-shortening claw IMVK.

Excellent ergonomics.

Thanks to their reduced weight, measured against the comparatively high WLL, the products of the RUD ICE-Modular system offer clear advantages in terms of ergonomics.

Handling:

RUD ICE-Chains and components (grade 12) may not be combined with chains and components of other manufacturers or other grades. Attention: Incorrect handling and use of these lifting chains can lead to material and / or personal damage!

Important safety information must be observed:

DIN-EN 818, DIN-EN 1677, DGUV rule 100-500 (BGR 500) EU Machinery Directive 2006 / 42 / EC, manufacturer usage information, BGI 556 / DGUV information 209-013.

We assume no responsibility for damages caused by disregarding these standards and safety information.

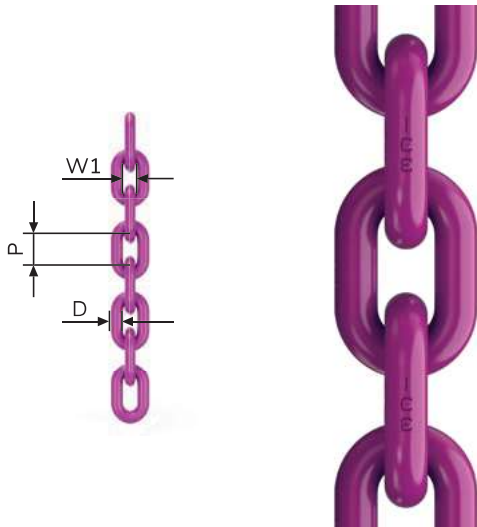
ICE-DESIGN OR DESIGNATION EXAMPLE – COMPLETE SUSPENSION.

	Grade	Endless chain	Single (E) / double (D)	Number of shortenings	Shortening / component	Chains	Required usable length (mm) – not shortened
	ICE	KR	(E)	1	(IVH)	8	2,000
ICE-KRE (IVH)-8 x 2,000							

ICE-LIFTING MEANS



ICE-Lifting means in grade 12.

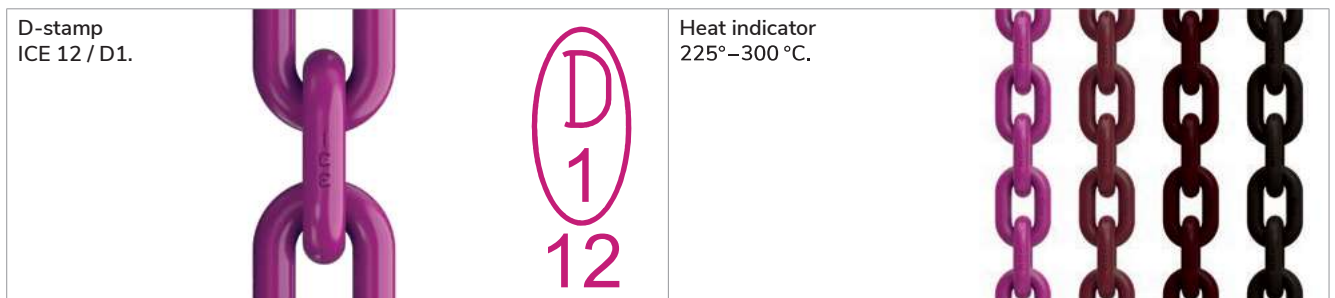


PRODUCT FEATURES

- ICE-Round steel chains are made from a patented material and they are specially hardened. They are high strength and toughness. They are designed according to DIN EN 818 and 1677 for a dynamic load of 20,000 load cycles (tested at 50 % overload).
- The approval of RUD grade 12 by the responsible DGVU is documented at short intervals with the embossed identification stamp "D1-12".
D = "Degree of Quality".
1 means manufacturer number 1 = RUD.
12 means grade 12 accordingly.

D = nominal thickness [mm Ø]	4	6	8	10	13	16
P = division [mm]	12.0	18.0	24.0	30.0	39.0	48.0
W1 = inner width [bi min. mm]	5.2	7.8	10.4	13.0	17.0	21.0
WLL [t]	0.8	1.8	3.0	5.0	8.0	12.5
Test force MPF min. kN	19.6	44.1	73.5	123.0	196.0	314.0
Test force BF min. kN	31.4	71.0	118.0	196.0	314.0	503.0
Weight [kg/pc.]	0.44	0.98	1.66	2.62	4.25	6.72
Order no. ICE-Pink	7904694	7998048	7996116	7996117	7996118	7998735
Order no. phosphated natural black	7905283	7905284	7905285	7905286	7905287	7905288

Subject to technical changes!



More information on page 24.

- Elongation at break:
A min.: natural black $\geq 25\%$, ICE-Pink $\geq 20\%$
- Stamping: ICE-Marking on the back of each chain link, production number and DGVU approval stamp < 0.5 m

ICE-KZA

Identification tag.



ICE-IDENTIFICATION TAG AS CHAIN GAUGE ¹.

Chains	Designation	Order no.
4	IKPL-4	7904970
6	IKPL-6	7998167
8	IKPL-8	7995525
10	IKPL-10	7995521
13 ¹	IKPL-13	7995530
16 ¹	IKPL-16	7998949

¹ Universal from size 13. Included separately with each master link. More information on pages 120–121.

Subject to technical changes!

ICE-IDENTIFICATION TAG WITH INTEGRATED CHAIN GAUGE.

Chains	Designation	Single strand	Double strand	3-/4-strand	Without WLL stamp
4	IKZA-...strand-4	7905223	7905223	7906302	-
6	IKZA-...strand-6	7998743	7998744	7998745	7998736
8	IKZA-...strand-8	7996286	7996287	7996288	7995552
10	IKZA-...strand-10	7996289	7996290	7996291	7995553

Subject to technical changes!



ICE-IDENTIFICATION TAG IKZA (UNIVERSAL SIZE).

Chains	Designation	Single strand	Double strand	3-/4-strand	Universal KZA without WLL stamp
13	IKZA-...Strg-13	7902488	7902489	7902490	7901059
16	IKZA-...Strg-16	7902491	7902492	7902493	7901059

Subject to technical changes!



Inspecting Ø wear occurrence.

Inspecting plastic elongation due to overload.

Inspecting the division extension by nominal thickness wear occurrence.

More information on pages 120–121.

IAK-RG-1 / -RG-2 / -RG-4



ICE-Standard master links with welded-in connectors.

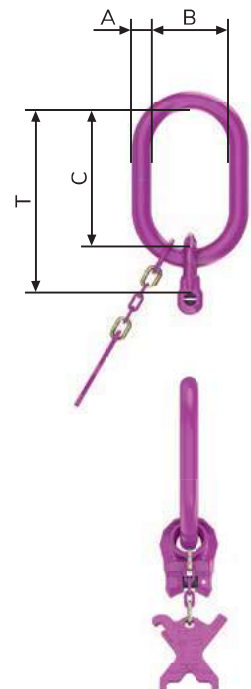


PRODUCT FEATURES

- All master links on this page are equipped with welded-in connectors that can be moved on all sides.
- This results in a non-mix-up connection to chain diameter and number of strands.
- The master link is supplemented with an identification tag (KZA) with integrated chain test gauge.
- IAK-RG master links: The dimensions correspond with suspension link shape A according to DIN 5688 but one nominal thickness larger.
- IBK-RG master links: The inner width is adequate for hanging on high-strength load hooks on lifting gear.

IAK-RG-1 AND IBK-RG-1 MASTER LINK / END LINK WITH WELDED-IN CONNECTIONS.

Chains	WLL [t]	Designation	Ø A	B	C	T	Weight [kg/pc.]	Order no.
4	0.8	IAK-1 / 2-4	13	34	38	58	0.2	7905031
6	1.8	IAK-RG-1-6 (IA-RG-1-6)	13	60	110	144	0.57 (0.5)	7903009 (7903090)
8	3.0	IAK-RG-1-8 (IA-RG-1-8)	16	75	135	178	1.04 (0.9)	7903010 (7903091)
10	5.0	IAK-RG-1-10 (IA-RG-1-10)	22	90	160	213	2.19 (2.0)	7903011 (7903092)
13	8.0	IAK-RG-1-13 (IA-RG-1-13)	26	100	180	247	3.58 (3.4)	7903012 (7903093)
16	12.5	IAK-RG-1-16 (IA-RG-1-16)	32	140	260	343	7.2 (7.0)	7903013 (7903094)
6	1.8	IBK-RG-1-6 (IB-RG-1-6)	13	34	70	105	0.43 (0.35)	7903041 (7903095)
8	3.0	IBK-RG-1-8 (IB-RG-1-8)	18	40	85	129	0.92 (0.8)	7903042 (7903096)
10	5.0	IBK-RG-1-10 (IB-RG-1-10)	22	50	115	169	1.76 (1.5)	7903043 (7903097)
13	8.0	IBK-RG-1-13 (IB-RG-1-13)	26	65	140	207	3.0 (2.8)	7903044 (7903098)
16	12.5	IBK-RG-1-16 (IB-RG-1-16)	32	75	170	253	5.5 (5.3)	7903045 (7903099)



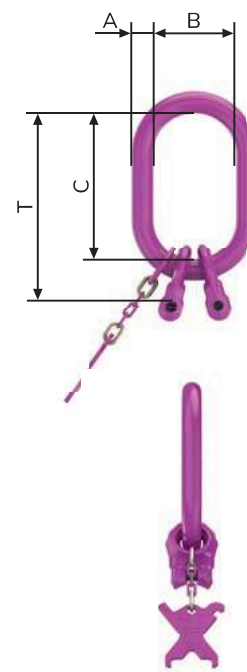
Subject to technical changes!

- ICE-Connection bolts and safety pin are pre-assembled.
- Also available as end link IA-RG-1 without identification tag.
- For detailed information on ICE-MINI 4 mm see page 60–61.

IAK-RG-2- AND IBK-RG-2-STRAND MASTER LINK
WITH TWO WELDED-IN CONNECTORS.

Chains	WLL [t]	Designation	Ø A	B	C	T	Weight [kg/pc.]	Order no.
4	1.12 / 0.8	IAK-1 / 2-4	13	34	38	58	0.2	7905031
6	2.5 / 1.8	IAK-RG-2-6	16	75	135	171	1.0	7903051
8	4.25 / 3.0	IAK-RG-2-8	22	90	160	203	2.1	7903052
10	7.1 / 5.0	IAK-RG-2-10	26	100	180	233	3.5	7903053
13	11.2 / 8.0	IAK-RG-2-13	32	110	200	267	6.3	7903054
16	17.0 / 12.5	IAK-RG-2-16	36	180	340	423	11.3	7903055
6	2.5 / 1.8	IBK-RG-2-6	13	34	70	105	0.65	7903075
8	4.25 / 3.0	IBK-RG-2-8	18	40	85	129	1.5	7903076
10	7.1 / 5.0	IBK-RG-2-10	22	50	115	169	2.14	7903077
13	11.2 / 8.0	IBK-RG-2-13	26	65	140	207	5.1	7903078
16	17.0 / 12.5	IBK-RG-2-16	32	75	170	253	9.0	7903079

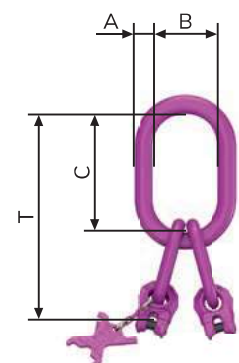
Subject to technical changes!



IAK-RG-4-STRAND MASTER LINK
WITH 4 WELDED CONNECTOR WELDED INTO 2 INTERMEDIATE LINKS.

Chains	WLL [t]	Designation	Ø A	B	C	Ø D	E	F	T	Weight [kg/pc.]	Order no.
4	1.7 / 1.18	IAK-3 / 4-4	10	35	60	-	-	-	120	0.53	7905033
6	3.75 / 2.7	IAK-RG-4-6	18	90	160	13	34	70	265	2.04	7903085
8	6.3 / 4.5	IAK-RG-4-8	26	100	180	18	40	85	309	4.59	7903086
10	10.6 / 7.5	IAK-RG-4-10	32	110	200	22	50	115	369	8.37	7903087
13	17.0 / 11.8	IAK-RG-4-13	36	140	260	26	65	140	467	14.44	7903088
16	26.5 / 19.0	IAK-RG-4-16	46	190	350	32	75	170	603	28.87	7903089

Subject to technical changes!

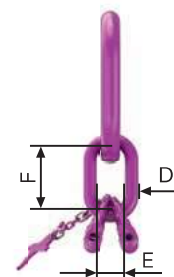


SELECTION TABLE FOR CRANE HOOK SIZES ¹.

Size	6	8	10	13	16
IAK-RG 1	No. 2.5	No. 5	No. 6	No. 8	No. 16
IAK-RG 2	No. 5	No. 6	No. 8	No. 10	No. 25
IAK-RG 4	No. 6	No. 8	No. 10	No. 16	No. 32

¹ For single crane hooks DIN 15401.

Subject to technical changes!



ISAK-RG-1 / -RG-2 / -RG-4



ICE-Special master links with welded-in connectors.



PRODUCT FEATURES

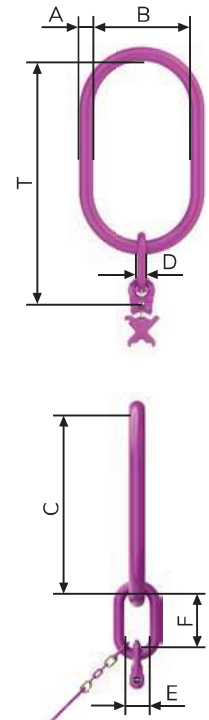
- All special master links on this page are equipped with welded-in connectors that can be moved on all sides.
- This results in a non-mix-up connection to chain diameter and number of strands.
- The master link is supplemented with an identification tag (KZA) with integrated chain test gauge.
- The larger gradation of the inner width "B" prevents an unauthorised application (BGR 500 / DGUV rule 100-500 section 2.8) and reduces wear occurrence on the crane hook.
- **Attention:** Master links size 13 and 16 have special identification tags. A test tag is additionally enclosed for master links 13 and 16!

ISAK-RG-1-STRAND MASTER LINK

WITH WELDED CONNECTOR WELDED INTO THE INTERMEDIATE LINK.

Chains	WLL [t]	Designation	Ø A	B	C	Ø D	E	F	T	Weight [kg/pc.]	Order no.
6	1.8	ISAK-RG-1-6 / 140	18	140	260	13	34	70	365	2.29	7903182
8	3.0	ISAK-RG-1-8 / 140	22	140	260	18	40	85	389	3.94	7903183
10	5.0	ISAK-RG-1-10 / 140	26	140	260	22	50	115	429	6.34	7903184
13	8.0	ISAK-RG-1-13 / 140	32	140	260	26	65	140	467	9.44	7903185
6	1.8	ISAK-RG-1-6 / 190	22	190	350	13	34	70	455	3.82	7903186
8	3.0	ISAK-RG-1-8 / 190	26	190	350	18	40	85	479	6.03	7903187
10	5.0	ISAK-RG-1-10 / 190	32	190	350	22	50	115	519	10.02	7903188
13	8.0	ISAK-RG-1-13 / 190	36	190	350	26	65	140	557	13.90	7903189
8	3.0	ISAK-RG-1-8 / 250	36	250	460	18	40	85	589	12.86	7903190
10	5.0	ISAK-RG-1-10 / 250	36	250	460	22	50	115	629	14.32	7903191
13	8.0	ISAK-RG-1-13 / 250	36	250	460	26	65	140	667	16.33	7903192
16	12.5	ISAK-RG-1-16 / 250	40	250	460	32	75	170	713	23.14	7903193

Subject to technical changes!

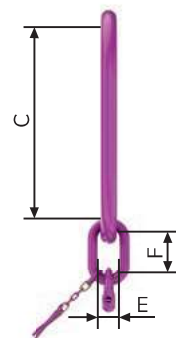
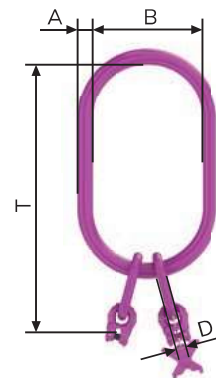


- ICE-Connection bolts and safety latch are pre-assembled.

**ISAK-RG-2-STRAND MASTER LINK
WITH 2 WELDED CONNECTORS WELDED INTO 1 INTERMEDIATE LINK.**

Chains	WLL [t]	Designation	Ø A	B	C	Ø D	E	F	T	Weight [kg/pc.]	Order no.
6	2.5/1.8	ISAK-RG-2-6/140	18	140	260	13	34	70	365	2.36	7903194
8	4.25/3.0	ISAK-RG-2-8/140	22	140	260	18	40	85	389	4.03	7903195
10	7.1/5.0	ISAK-RG-2-10/140	26	140	260	22	50	115	429	6.63	7903196
13	11.2/8.0	ISAK-RG-2-13/140	32	140	260	26	65	140	467	10.47	7903197
6	2.5/1.8	ISAK-RG-2-6/190	22	190	350	13	34	70	455	3.89	7903198
8	4.25/3.0	ISAK-RG-2-8/190	26	190	350	18	40	85	479	6.13	7903199
10	7.1/5.0	ISAK-RG-2-10/190	32	190	350	22	50	115	519	10.30	7903200
13	11.2/8.0	ISAK-RG-2-13/190	36	190	350	26	65	140	557	14.93	7903201
8	4.25/3.0	ISAK-RG-2-8/250	36	250	460	18	40	85	589	12.95	7903202
10	7.1/5.0	ISAK-RG-2-10/250	36	250	460	22	50	115	629	14.61	7903203
13	11.2/8.0	ISAK-RG-2-13/250	36	250	460	26	65	140	667	17.37	7903204
16	17.0/12.5	ISAK-RG-2-16/250	40	250	460	32	75	170	713	25.16	7903205

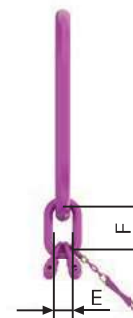
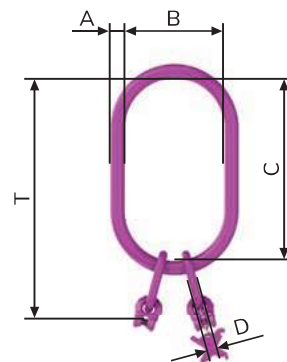
Subject to technical changes!



**ISAK-RG-4-STRAND MASTER LINK
WITH 4 WELDED CONNECTOR WELDED INTO 2 INTERMEDIATE LINKS.**

Chains	WLL [t]	Designation	Ø A	B	C	Ø D	E	F	T	Weight [kg/pc.]	Order no.
6	3.75/2.7	ISAK-RG-4-6/140	22	140	260	13	34	70	365	3.24	7903206
8	6.3/4.5	ISAK-RG-4-8/140	26	140	260	18	40	85	389	5.47	7903207
10	10.6/7.5	ISAK-RG-4-10/140	32	140	260	22	50	115	429	9.7	7903208
6	3.75/2.7	ISAK-RG-4-6/190	26	190	350	13	34	70	455	5.34	7903209
8	6.3/4.5	ISAK-RG-4-8/190	32	190	350	18	40	85	479	9.14	7903210
10	10.6/7.5	ISAK-RG-4-10/190	36	190	350	22	50	115	519	13.16	7903211
13	17.0/11.8	ISAK-RG-4-13/190	40	190	350	26	65	140	557	19.14	7903212
8	6.3/4.5	ISAK-RG-4-8/250	36	250	460	18	40	85	589	13.45	7903213
10	10.6/7.5	ISAK-RG-4-10/250	36	250	460	22	50	115	629	15.6	7903214
13	17.0/11.8	ISAK-RG-4-13/250	40	250	460	26	65	140	667	22.12	7903215
16	26.5/19.0	ISAK-RG-4-16/250	47	250	460	32	75	170	713	32.98	7903216

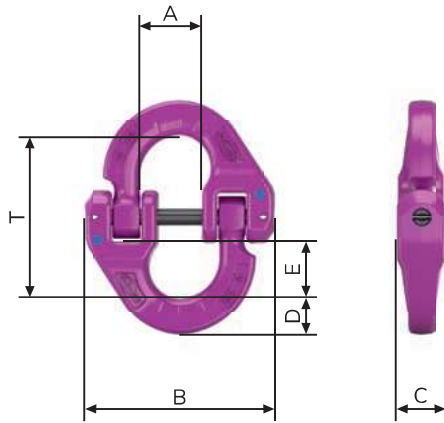
Subject to technical changes!



SELECTION TABLE FOR CRANE HOOK SIZES ¹.

ISAK-RG dimension B = 140	No. 16
ISAK-RG dimension B = 190	No. 32
ISAK-RG dimension B = 250	No. 50

¹ For single crane hooks DIN 15401.



PRODUCT FEATURES

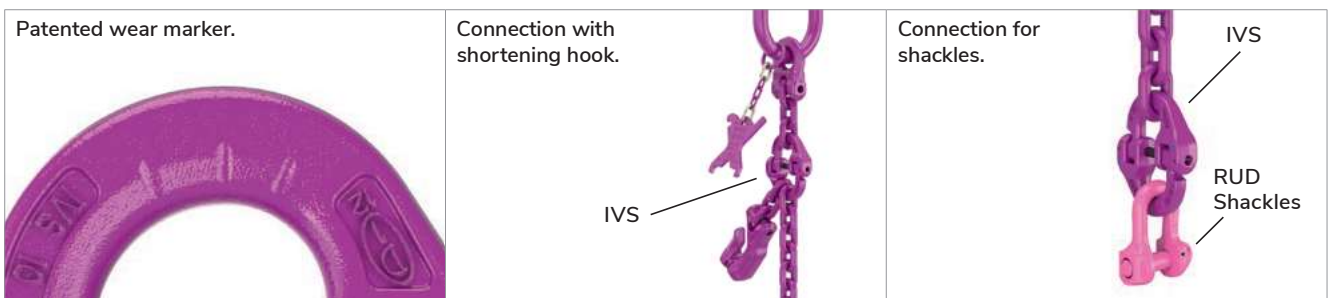
- External connections, e.g. lifting points, shackles, lifting clamps and the chains can be fitted in the lock bracket halves.
- Shape and function registered for patent.
- No kinking of the assembled chain possible.
- The bracket halves can be combined with each other in any way.
- No wandering, no damage to the otherwise usual safety spring or the sleeves of the retaining bolt.
- Patented wear occurrence marks.

Chains	WLL [t]	Designation	A	B	C	D	E	T	Weight [kg/pc.]	Order no.
6	1.8	IVS-6	18	56	13	11	17	46	0.12	7901471
8	3.0	IVS-8	24	70	17.5	14	23	61	0.29	7901472
10	5.0	IVS-10	28	88	22	17	27	74	0.6	7901473
13	8.0	IVS-13	34	111	28	23	33	93	1.2	7901474
16	12.5	IVS-16	39	130	33	27	37	108	2.0	7901475

Subject to technical changes!

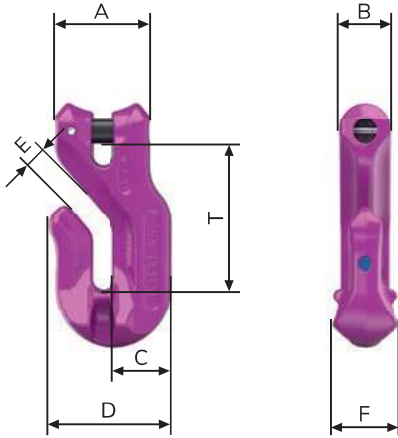
Designation	IVS connection to suit VIP-Shackles
IVS-6	VV-SCH 8 – 2.5 t to VV-SCH 13 – 6.7 t
IVS-8	VV-SCH 10 – 4 t to VV-SCH 16 – 10 t
IVS-10	VV-SCH 13 – 6.7 t to VC-SCH 4.0 – 16 t
IVS-13	VV-SCH 16 – 10 t to VC-SCH 5.0 – 25 t
IVS-16	VC-SCH 4 – 14 t to VC-SCH 6.0 – 28.0 t

Subject to technical changes!



IVH

ICE-shortening hook.



PRODUCT FEATURES

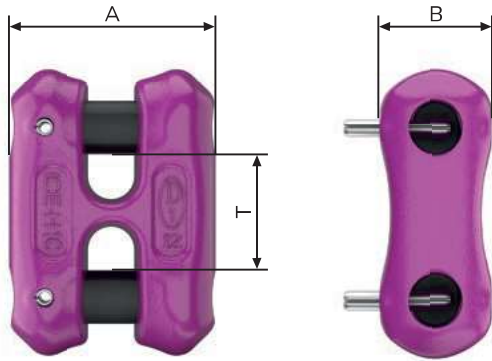
- No reduction of ICE-WLL.
- High dynamic strength.
- Angled insertion opening makes it difficult for the loose chain to slide out.
- Widened hook tip to prevent improper use, e.g. incorrect attachment of the chain.
- Corresponding with norm DIN 5692. Chains groove depth > 5 x nominal thickness of chain.
- Complete with connection bolts and clamp pin pre-assembled.

Chains	WLL [t]	Designation	A	B	C	D	E	F	T	Weight [kg/pc.]	Order no.
6	1.8	IVH-6	34	18	20	44	7.5	22	53	0.27	7900129
8	3.0	IVH-8	43	24	26	55	9.5	29	67	0.56	7900133
10	5.0	IVH-10	55	30	34	71	12	38	86	1.2	7900134
13	8.0	IVH-13	70	38	43	90	15	48	105	2.5	7900136
16	12.5	IVH-16	86	47	53	110	18.5	66	128	4.6	7900138

Subject to technical changes!



ICE-H Connector.



PRODUCT FEATURES

- Fast simple and economical way to make a chain endless.
- H-Connectors and chain have the same pitch.
- Suitable for repair of multiple-strand chains.
- More compact and easier to handle than conventional chain connectors.
- Tempered main body, making it more wear resistant.
- Ergonomically shaped.
- Improved sliding over the edges.
- Very flexible: Fits shape of chain and component.

20 % REDUCTION FOR ENDLESS CHAINS (SHARP EDGES) AND CHOKING IS TAKEN INTO ACCOUNT.

	IKR-H	Ø 4 mm	Ø 6 mm	Ø 8 mm	Ø 10 mm	Ø 13 mm	Ø 16 mm
	Endless chain with choke hitch	1.25	2.88	4.8	8.0	12.8	20.0
	0-45°	0.88	2.0	3.3	5.5	8.8	14.0
	45-60°	0.64	1.44	2.4	4.0	6.4	10.0

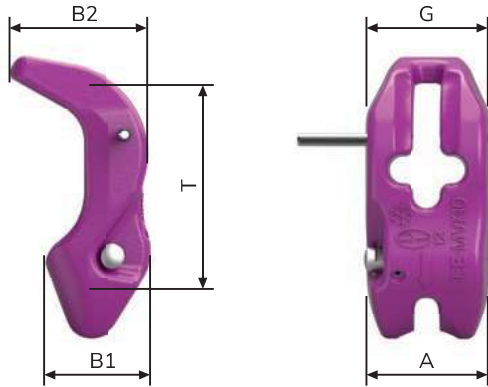
Subject to technical changes!

Chains	WLL [t]	Designation	A	B	T	Weight [kg/pc.]	Order no.
4	0.8	IH-4	24	12	12	0.04	7906659
6	1.8	IH-6	34	19.6	18	0.14	7901922
8	3.0	IH-8	45	25.5	24	0.26	7901453
10	5.0	IH-10	56	31.5	30	0.55	7901454
13	8.0	IH-13	73	40	39	1.16	7901455
16	12.5	IH-16	89	49	48	2.16	7901924

Subject to technical changes!



ICE-multi-shortening claw.



PRODUCT FEATURES

- Further development of the VMVK with adaptation to the ICE-Requirements.
- Captive installed in the continuous chain strand.
- Can be mounted at any position on the chain strand, or moved on the chain.
- No additional chain and coupling part required.
- Ideal support of the chain by the link-shaped bag support – meaning no reduction of WLL.
- The robust, spring-mounted safety bolt prevents the suspended chains from loosening automatically when unloaded or when load is attached.
- Complies with DIN 5692.

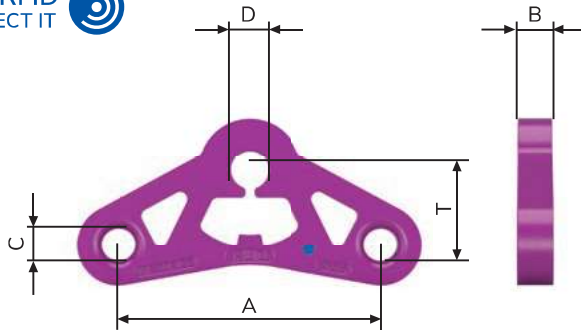
Chains	WLL [t]	Designation	A	B1	B2	G	T	Weight [kg/pc.]	Order no.
6	1.8	IMVK-6	38	32	41	37	66	0.28	7900985
8	3.0	IMVK-8	47	40	54	47	88	0.61	7900981
10	5.0	IMVK-10	60	51	67	60	110	1.6	7900983
13	8.0	IMVK-13	77	65	87	77	143	2.6	7900984
16	12.5	IMVK-16	95	81	110	95	176	4.8	7900986

Subject to technical changes!

<p>1. Pull the loose chain strand through the cross slot of the IMVK and drive safety pin A into place.</p>	<p>2. Without any strain on the chains, insert the required chain link of the strand to be loaded into seat pocket 1, press safety bolt 3 and pull in the chain strand downwards.</p>	<p>3. Release safety bolt 3 and check the lock.</p>	<p>4. Release in the reverse order (pressed safety bolt 3).</p>

Attention:
When using the IMVK without **safety pin A**, the chains must always be fully clipped into **locking slot B**. When pulling or lifting the shortened chains, the chains must always be fully clipped into **locking slot B**.

ICE-Balancer.



PRODUCT FEATURES

- Balancer connection at top: Connection by shackles.
- Balancer connection at bottom: ICE-Connection links.
- Easy recognition of the limit tilt angle of 10° due to special shaping on the bottom of the balancer.
- Powder coated in ICE-Pink.
- Detailed information on the ICE-Balancer can be found in the operating manual.

Chains	Designation	WLL balancer [t] 0-45°	A	B	C	D	T	Weight [kg]	Order no.
6	IW-6	2.5	110	15	14	21	46	0.49	7904367
8	IW-8	4.25	150	20	18	26	59	1.15	7904370
10	IW-10	7.1	180	25	23	32	76	2.4	7904372
13	IW-13	11.2	240	30	28	38	91	4.37	7904375
16	IW-16	17.0	300	35	32	41	120	8.8	7904255

Subject to technical changes!

COMPARISON OF ICE-4-STRAND SUSPENSION / ICE 2 x 2-STRAND BALANCER SUSPENSION.

Chains	WLL [t] ICE-4-Strand suspension 0-45°	WLL [t] ICE-2 x 2-Strand balancer suspension up to $\beta = 45^\circ$
6	3.75	5.1
8	6.3	8.4
10	10.6	14.1
13	17.0	22.4
16	26.5	35.0

Subject to technical changes!

DESIGN OF ICE-BALANCER HEAD IWK-2S.

Chains [mm]	Designation ICE-Balancer head (A)	Dimensions of IAK and IA link	Connection at top	Connection at bottom	Division of balancer head L1 [mm]	Weight of balancer head [kg/pc.]	Order no. ICE-Balancer head
6	IWK-2S-6	18 x 90 x 160	VV-SCH10 (4.0 t)	IVS 6	301	2.33	7904654
8	IWK-2S-8	26 x 100 x 180	VV-SCH13 (6.7 t)	IVS 8	363	5.39	7904655
10	IWK-2S-10	32 x 110 x 200	VV-SCH16 (10.0 t)	IVS 10	423	9.99	7904656
13	IWK-2S-13	36 x 140 x 260	VV-SCH5.0 (25.0 t)	IVS 13	555	17.5	7904657
16	IWK-2S-16	46 x 190 x 350	VV-SCH6.0 (31.5 t)	IVS 16	698	37.54	7904658

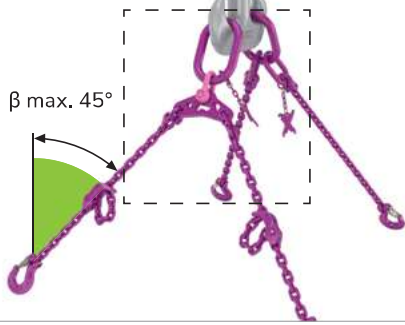
Subject to technical changes!

DESIGN OF ICE-MASTER LINK IAK-2S FOR BALANCER SUSPENSION.

Chains [mm]	Designation ICE-2-Strand master link for balancer suspension (B)	Dimensions of IAK and IA link	Division 2-strand IAK L2 [mm]	Weight 2-strand IAK [kg/pc.]	Order no. ICE-Balancer head
6	IAK 2S-6	18 x 90 x 160	265	1.8	7904659
8	IAK 2S-8	26 x 100 x 180	309	4.09	7904660
10	IAK 2S-10	32 x 110 x 200	369	7.37	7904661
13	IAK 2S-13	36 x 140 x 260	467	12.44	7904662
16	IAK 2S-16	46 x 190 x 350	603	24.87	7904663

Subject to technical changes!

Maximum inclination angle $\beta = 45^\circ$.



1

PLEASE NOTE THE FOLLOWING WHEN USING THE ICE-BALANCER SUSPENSION:

- The load must be symmetrical.
- The inclination angle β must not be greater than 45° (see diagrams 1 and 2).
- The inclination of the balancer must not be greater than 10° (see diagrams 3, 4 and 5).
- Detailed information on the ICE-Balancer can be found in the operating manual.
- Higher WLL at $\beta = 15^\circ$ or $\beta = 30^\circ$ see operating manual.

With a 4-strand suspension, a maximum of only 3 strands can be assumed to be load-bearing. In unfavourable cases only 2 strands are used.

Our TIP:

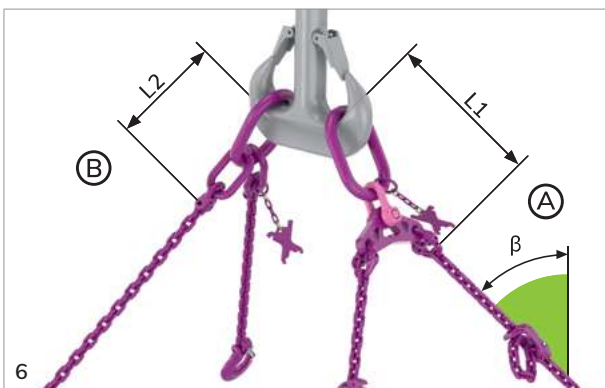
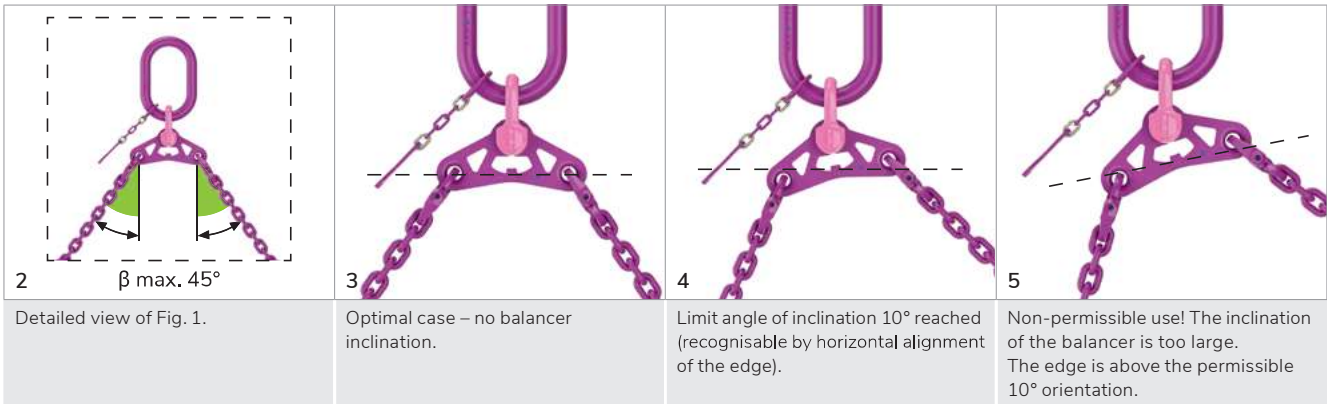
When using a 2 x 2-strand suspension in the configuration shown, an **even load distribution** to all 4 strands and a **33 % higher WLL** than a standard 4-strand suspension.

Higher WLL at $\beta = 15^\circ$ or $\beta = 30^\circ$ see operating manual.

Attention:

The 2-strand suspension with balancer may not be used by itself as a 2-strand suspension. Work equipment for lifting loads must prevent the unintentional dangerous movement of the load (compare BetrSichV, Annex 1 (3.2.3)).

Ask the manufacturer about asymmetric load cases. We are pleased to advise you!



6

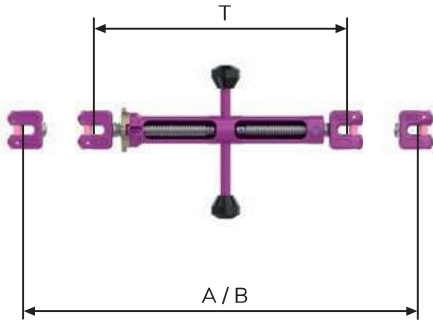
DESIGN OF ICE-BALANCER HEAD IWK-2S (A) CONSISTING OF:

- IA link with KZA.
- VIP-Shackles.
- ICE-Balancer.
- 2 ICE-Connecting links.

ICE-CURT-K



ICE-Bar spindle tensioner with locking handle for lifting – light and robust.



T = length closed
A = length open
B = lift

PRODUCT FEATURES

- With easy to handle, space-saving toggle.
- Practical loosening of lock, with preparation for padlock (e.g. type ABUS 85/40 HB), 100 % crack-tested, all load-bearing parts drop-forged.
- Easy to clean and lubricate, innovative forging form – light and robust, patent pending, Made in Germany, easy to handle – also with gloves.

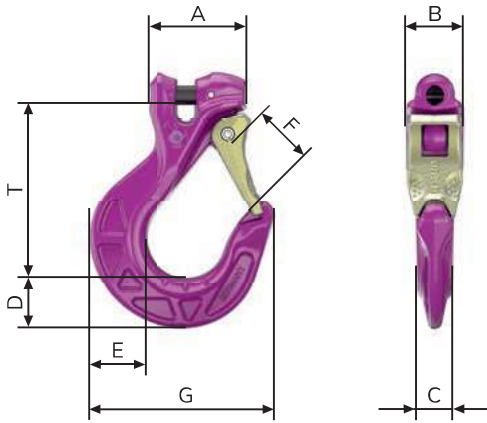
Chains Ø	Designation	Lifting WLL [t]	L-open	L-closed	Lift	Weight [kg/pc.]	Order no.
6	ICE-CURT-K-6-GAKO	1.8	400	260	140	1.8	7904448
8	ICE-CURT-K-8-GAKO	3.0	520	350	170	3.2	7904449
10	ICE-CURT-K-10-GAKO	5.0	532	362	170	3.6	7904450
13	ICE-CURT-K-13-GAKO	8.0	830	530	300	6.9	7904451
16	ICE-CURT-K-16-GAKO	12.5	962	612	350	12.2	7904452

Subject to technical changes!



With ICE-CURT-K-...-GAKO for precise compensation of chain suspensions.

- With clevis connection for exact length compensation of chain suspensions.
- Length can be adjusted to the exact mm by means of right and left-hand threads via toggle.
- **Attention:** May only be adjusted without a load applied.



PRODUCT FEATURES

- Innovative structured design, finite elements up to 25 % lighter than hooks of grade 8 with the same WLL, i.e. the next largest nominal chain thickness.
- Large jaw opening as with the granite super hook, proven a million times over – the next largest nominal thickness – no skimping!
- Protective edges – on the sides and on top for folding protection.
- Wear occurrence ribs – to protect the first chain link.
- No protruding hook tip (no hooking).
- Thickened hook tip – prevents dangerous hook tip WLL.
- Drop-forged, tempered, ergonomically designed folding safety device and protected, stainless, triple-wound long-term double leg spring. Here the standard values for lateral load capacity are exceeded many times over.

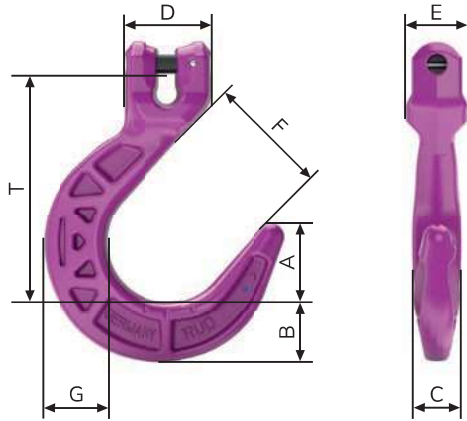
Chains	WLL [t]	Designation	A	B	C	D	E	F	Fmax.	G	T	Weight [kg/pc.]	Order no.
4	0.8	ISH-4	22	15	13	14.5	16.5	20	–	53	55	0.16	7904693
6	1.8	ISH-6	48	28	18	27	30	30	51	97	97	0.69	7998179
8	3.0	ISH-8	58	36	20	29	35	36	57	112	110	1.1	7995254
10	5.0	ISH-10	71	43	26	37	42	41	66	135	127	1.9	7995255
13	8.0	ISH-13	85	52	31	50	56	50	80	166	153	3.6	7995256
16	12.5	ISH-16	94	58	41	61	74	58	96	202	184	6.0	7995257

Subject to technical changes!



Patented wear occurrence marks.

- Folding safety devices of the RUD hook families GSH, SH, COBRA and the ICE-STAR hook can be mounted one below the other (note the difference in nominal thickness) – easy spare parts procurement.
- Fmax. = Distance of marking points for quick detection of unacceptable deformation.



PRODUCT FEATURES

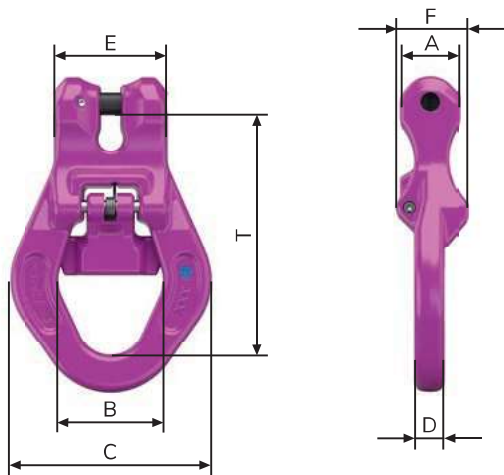
- Also referred to as foundry or container hook.
- Weight optimised by Skeletto design.
- With non-mix-up clevis connection.
- Robust cross-section (dimension C and G) against higher bending forces.
- Protection and wear occurrence edges (dimension E).
- Patented wear occurrence marks in the hook base.
- Only use where unintentional removal is not possible (risk assessment)!

Designation	WLL [t]	A	B	C	D	E	F	Fmax.	G	T	Weight [kg/pc.]	Order no.
IWH-6	1.8	41	31	24	42	29	64	91	32	121	1.0	7904360
IWH-8	3.0	49	37	29	50	36	76	108	40	143	1.76	7904361
IWH-10	5.0	58	44	31	64	46	90	127	47	169	3.0	7903847
IWH-13	8.0	66	50	39	75	56	102	145	55	193	4.7	7904362
IWH-16	12.5	75	56	43	90	58	114	177	61	208	6.9	7904363

Subject to technical changes!



- Fmax. = Distance of marking points for quick detection of unacceptable deformation.



PRODUCT FEATURES

- Fast, robust and user-friendly.
- Quick attachment, without separate unlatching.
- Simplified mounting and dismounting of the recess link through ergonomically designed locking latch.
- Locking latch with anti-slip shaping.
- Protective ribs protect the locking latch from damage and impact.
- To suit shaped recess pins according to DIN/EN 30720.

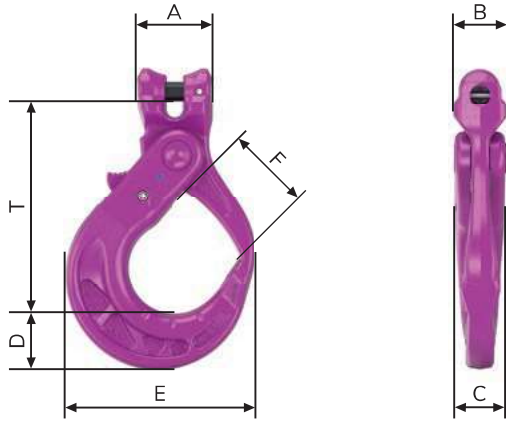
Chains	WLL [t]	Designation	A	B	C	D	E	F	T	Weight [kg/pc.]	Order no.
10	5.0	IMEG-10	37	66	128	20	64	46	153	1.6	7901607
13	8.0	IMEG-13	38	66	128	19	73	46	147	2.2	8504471

Subject to technical changes!



IAGH

ICE-Clevis self locking hook.



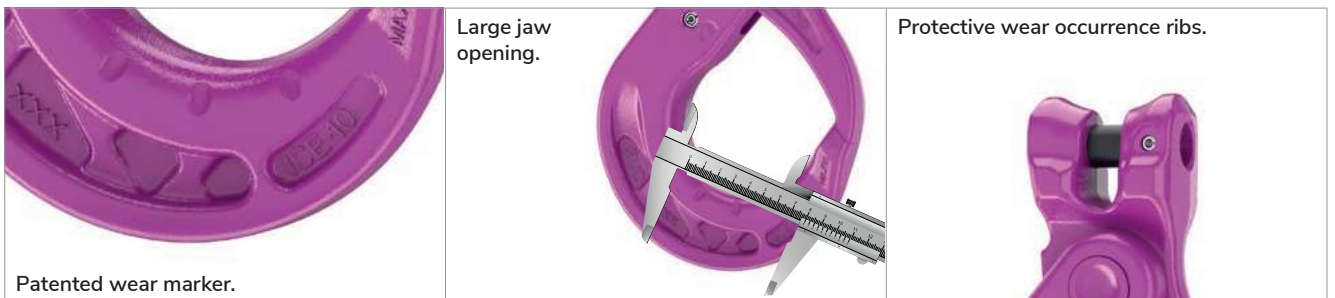
PRODUCT FEATURES

- Innovative lightweight construction, thus up to 30 % lighter than automatic hooks of grade 8 with the same WLL, i.e. the next largest nominal chain thickness.
- Large jaw opening as with grade 80 hooks of the next larger nominal chain size – no skimping!
- Ergonomically designed locking lever, user-friendly and with non-slip surface – no danger of crushing.
- Wear occurrence ribs – to protect the first chain link.
- Thickened hook tip – prevents dangerous hook tip WLL.
- Marking points to check the size of the jaw width!
- Patented wear occurrence marks which indicate the legally required discard criteria without measuring.

Chains Ø	WLL [t]	Designation	A	B	C	D	E	F	Fmax.	T	Weight [kg/pc.]	Order no.
6	1.8	IAGH-6	34	24	27	28	97	44	60	113	0.9	7900085
8	3.0	IAGH-8	45	31	30	31	106	48	66	124	1.27	7997691
10	5.0	IAGH-10 ¹	50	38	36	40	133	61	81	154	2.45	7997692
13	8.0	IAGH-13 ¹	73	50	44	51	173	78	107	200	4.9	7997693
16	12.5	IAGH-16	90	61	49	53	192	85	121	232	7.4	7900086

¹ For use on recesses, see page 57 IMAGH-10 and -13.

Subject to technical changes!

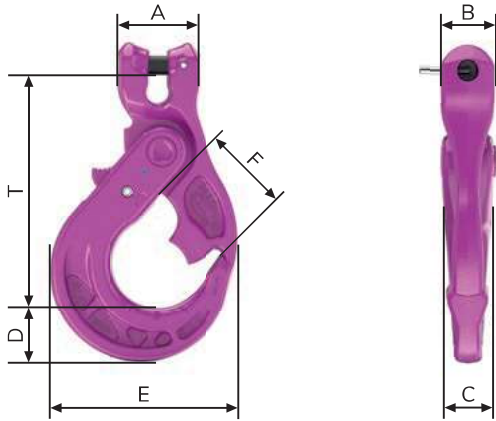


Spare parts only available as a complete set: Consisting of drop-forged locking lever, stainless long-term double jaw spring, safety pin and assembly sleeve. Simple assembly/removal with a hammer and driver.

Only use original RUD ICE-Spare parts!

IMAGH

ICE-Clevis self locking hook for dumper trucks.



PRODUCT FEATURES

- Innovative lightweight construction, thus up to 30 % lighter than automatic hooks of grade 8 with the same WLL, i.e. the next largest nominal chain size.
- Large jaw opening as with grade 80 hooks of the next larger nominal thickness – no skimping!
- Ergonomically designed locking lever, user-friendly and with non-slip surface – no danger of crushing.
- Wear occurrence ribs – to protect the first chain link.
- Thickened hook tip – prevents dangerous hook tip WLL.
- Patented wear occurrence marks which indicate the legally required discard criteria without measuring.

Chains	WLL [t]	Designation	A	B	C	D	E	F	Fmax.	T	Weight [kg/pc.]	Order no.
10	5.0	IMAGH-10	61	37	36	40	137	50	81	171	2.9	7902113
13	8.0	IMAGH-13	70	37	40	40	140	50	81	167	3.6	7906216

Subject to technical changes!



Weight optimised by Skeletto technology.

Patented wear marker.

Closes automatically with the effect of the load.

- Fmax. = Distance of marking points for quick detection of unacceptable deformation.

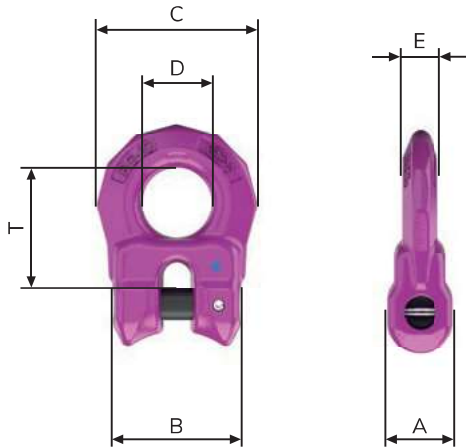
IRG

ICE-Clevis connector.



PRODUCT FEATURES

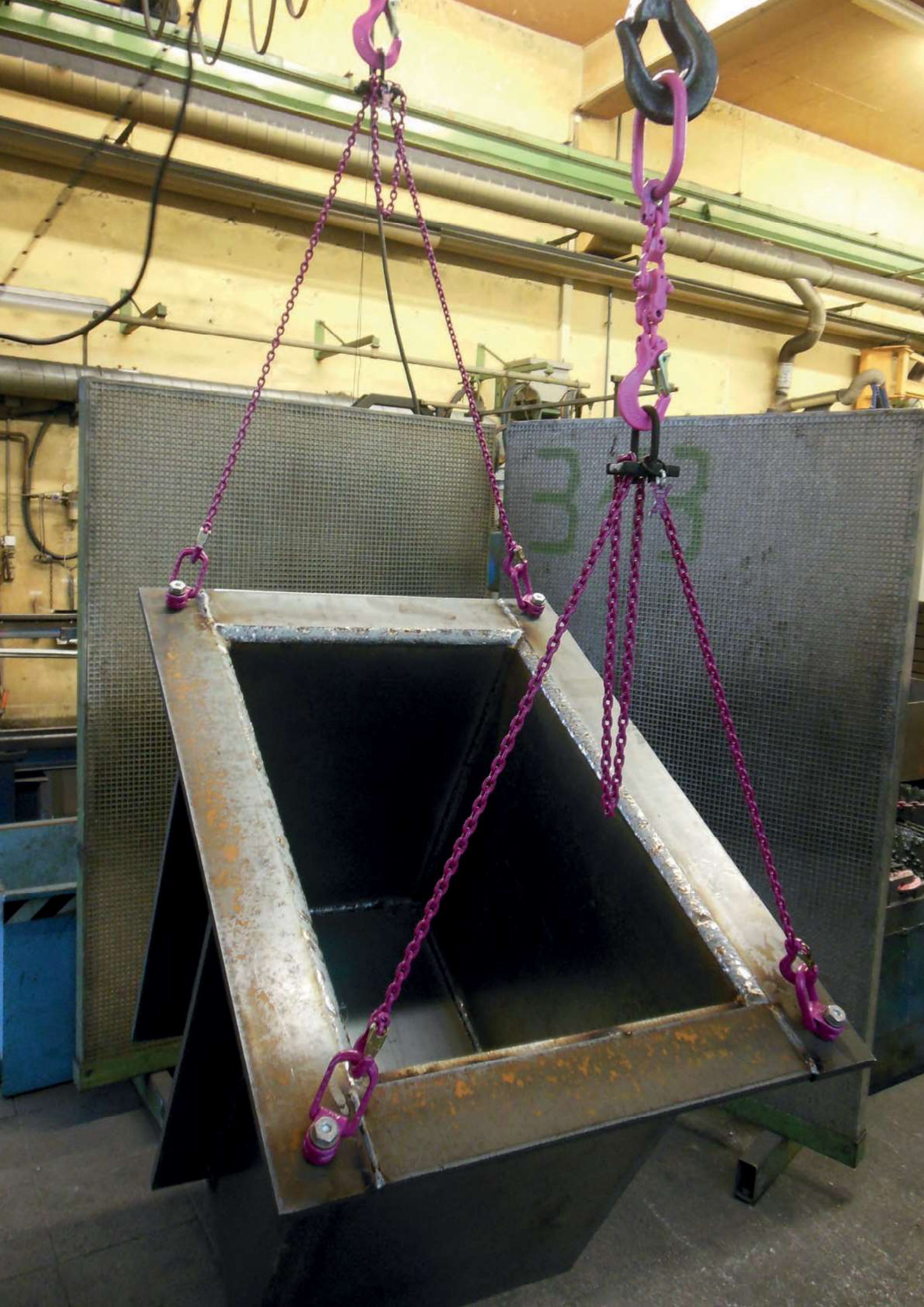
- As individual part for external connections to clevis connections, flanges, etc.
- Complete with ICE-Connecting bolts and clamping sleeve pre-assembled.



Chains	WLL [t]	Designation	A	B	C	D	E	T	Weight [kg/pc.]	Order no.
6	1.8	IRG-6	19	34	44	21	10	36	0.12	7902998
8	3.0	IRG-8	24	45	56	26	12.5	43	0.25	7902999
10	5.0	IRG-10	30	56	70	31	16	53	0.53	7903000
13	8.0	IRG-13	38	73	88	37	19	67	1.0	7903001
16	12.5	IRG-16	47	90	109	46	24	83	2.1	7903002

Subject to technical changes!



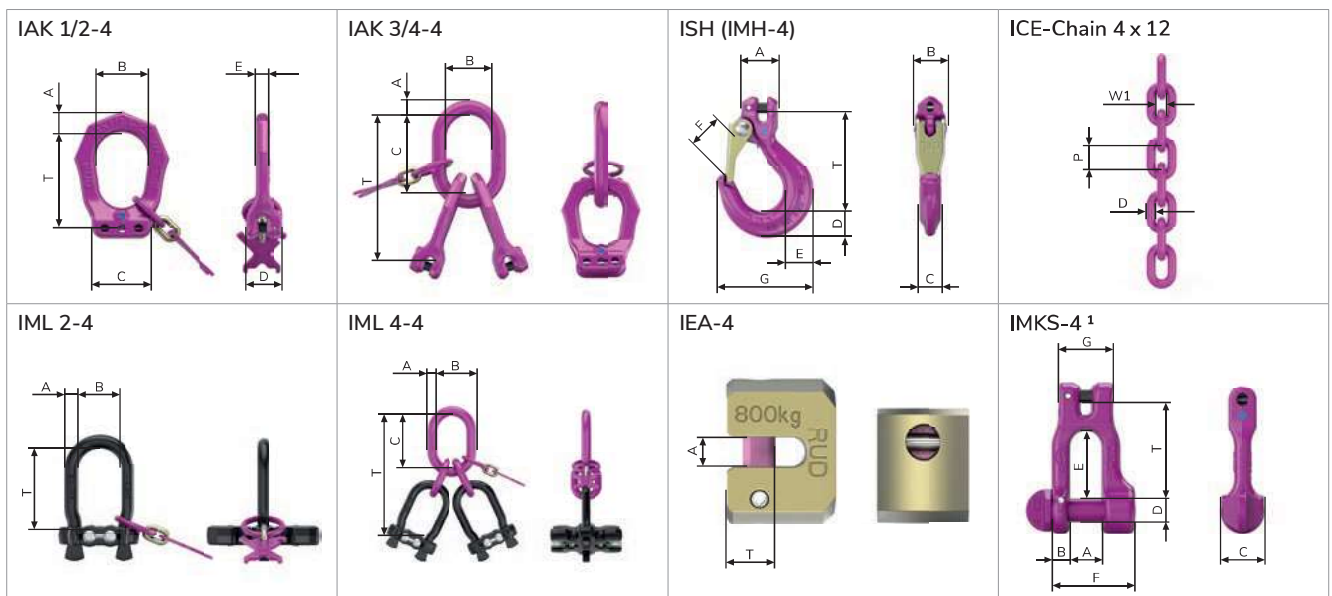


ICE-MINI CONSTRUCTION KIT

The ideal program for small loads.

The MINI-Lifter, which was specially developed for this range, also offers special advantages for simple lifting or slinging tasks. Since the master link and shortening element are combined, the chain strand can be brought to the required length quickly and easily. And thanks to the low dead weight of the sling chain, even higher loads can in many cases be lifted with a slewing crane.

COMPONENTS.



¹ under preparation.

COMPONENTS – TECHNICAL DATA.


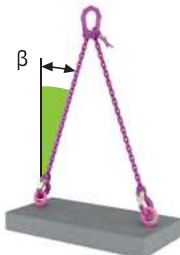
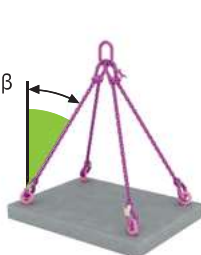
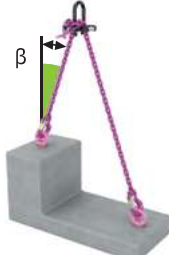
WLL [t]	Designation	Ø	A	B	C	D	E	F	T	Weight [kg/pc.]	Order no.
0.8	IAK 1 / 2	4	13	34	38	22.5	8	-	58	0.2	7905031
1.7 / 1.18	IAK 3 / 4	4	10	35	60	-	-	-	120	0.5	7905033
0.8	ISH-4 (IMH)	4	22	15	13	14.5	16.5	20	55	0.16	7904693
0.8	ICE-Chain	4	-	5.2 (W1)	-	4	-	-	12 (P)	0.44	7904694
1.12 / 0.8	IML-2	4	10	30	-	-	-	-	66	0.35	7905075
1.7 / 1.18	IML-4	4	11	35	60	-	-	-	156	0.85	7905076
-	IEA-4	4	4.8	-	-	-	-	-	8	0.04	7905039
-	IMKS-4 ¹	4	¹ under preparation.								




Subject to technical changes!

The smallest 4 mm round steel chains in grade 12.

WLL of up to 1,180 kilograms are fully sufficient for many lifting operations. The ICE-MINI construction kit is made for applications like these. The nominal thickness of only 4 millimetres makes the ICE-MINI chain extremely slim and light, which significantly improves ergonomics for the user. It is therefore an excellent solution for all lifting tasks that have to be carried out several times a day.

SUSPENSION – FIXED / VARIO (ADJUSTABLE).

			
1-strand fixed WLL max. 800 kg	2-leg fixed WLL max. 1,120 kg	3-/4-strand fixed WLL max. 1,700 kg	2-strand vario ² ICE-MINI standard suspension with MINI-lifter (usable length 1 m)

	<p>Larger crane hook?</p> <p>Simply use in addition to the MINI-Lifter the appropriate ICE-Master link IAK-RG-1.</p> <p>The ideal helper for small loads up to 1.7 t, in goods receipt and in toolmaking!</p>		
4-strand vario ²		2-strand with MINI-Lifter and IAK-RG-1-10 to suit crane hook no. 6 (DIN 15401)	4-strand with MINI-Lifter and IAK-RG-1-10 to suit crane hook no. 6 (DIN 15401)

Inclination angle- β	1-strand	2-strand		3-/4-strand	
	0°	0-45°	> 45-60°	0-45°	> 45-60°
Factor	1	1.4	1	2.1	1.5
WLL in (kg) ICE-MINI 4 mm	800	1,120	800	1,700	1,180

² According to DGUV rule 100-500 chapter 2.8, the single strand WLL applies in the event of asymmetrical loading of a multiple strand suspension.

Subject to technical changes!

RUD ICE-SPARE PARTS

ICE-SPARE LATCH FOR ISH

Subject to technical changes!

- Consisting of forged safety latch, triple coiled stainless steel double leg spring and safety pin.
- Only available as a complete set.
- Simple assembly/removal with a hammer and drift punch.

Chains	Designation	[kg/pc.]	Order no.
4	Si-Set ICE-SH-4	0.02	7987901
6	Si-Set ICE-SH-6	0.09	7100300
8	Si-Set ICE-SH-8	0.11	7100301
10	Si-Set ICE-SH-10	0.15	7100302
13	Si-Set ICE-SH-13	0.24	7100303
16	Si-Set ICE-SH-16	0.4	7900419



ICE-SECURING ELEMENTS FOR RECESS SUSPENSION LINK IMEG

Subject to technical changes!

- Consisting of:
 - 1 locking lever
 - 1 spring
 - 2 clamping sleeves

Chains	Designation	Order no.
10 / 13	Spare part set for IMEG-10 / IMEG-13 and VMEG-13	7902648
10 / 13	Spare bolt set IMEG10 / VMEG13 (contains 20 units)	7910986



ICE-SAFETY ELEMENTS AUTOMATIC HOOK

Subject to technical changes!

- Consisting of:
 - 1 locking lever
 - 1 spring
 - 2 clamping sleeves

Chains	Designation	Order no.
6	Spare part set for IAGH 6	8503759
8	Spare part set for IAGH 8	8503713
10	Spare part set for IAGH 10 and IMAGH 10 + 13	7998255
13	Spare part set for IAGH 13	8503714
16	Spare part set for IAGH 16	8503760
6	Assembly set without locking lever for IAGH 6	7910416
8	Assembly set without locking lever for IAGH 8	7910417
10	Assembly set without locking lever for IAGH 10 / IMAGH 10+13	7910418
13	Assembly set without locking lever for IAGH 13	7910419
16	Assembly set without locking lever for IAGH 16	7910420



ENDLESS CHAINS IDENTIFICATION TAG

Subject to technical changes!

- Grade-neutral identification tag for endless chains.

Designation	Order no.
Endless chains identification tag	7909698



ICE-PDA TEST DATA TAG

Subject to technical changes!

- Test data tag for permanent marking of the test intervals according to DGUV rule 100-500 (BGR 500).

Designation	Order no.
Test data tag PDA	60228



Only use original RUD ICE-Spare parts!

ICE-SAFETY ELEMENTS IVS

Subject to technical changes!

- Spare part set for VIP- and ICE-Connecting link consisting of:
 - 1 bolt
 - 2 clamping sleeves

Chains	Designation	Order no.
6	RUD spare part set for IVS-6 and VVS-6	7903886
8	RUD spare part set for IVS-8 and VVS-8	7903887
10	RUD spare part set for IVS-10 and VVS-10	7903888
13	RUD spare part set for IVS-13 and VVS-13	7903889
16	RUD spare part set for IVS-16 and VVS-16	7903890



ICE-SPARE PART SET FOR IMVK AND IML

Subject to technical changes!

- Spare part set for IMVK consisting of:
 - 1 safety bolt
 - 1 pressure spring
 - 1 clamping sleeve (for assembly of the safety bolt)
 - 1 clamping sleeve, long (for chains lock in the slot)

Chains	Designation	[kg/pc.]	Order no.
4	Si set for IML-4	0.05	7987159
6	Si set for IMVK-6	0.03	7995046
8	Si set for IMVK-8	0.04	7987081
10	Si set for IMVK-10	0.06	7987082
13	Si set for IMVK-13	0.14	7991182
16	Si set for IMVK-16	0.2	7991183



ICE-SPARE BOLTS WITH SAFETY PIN

Subject to technical changes!

- Only available as a pack of 10.
- Non-mix-up with RUD assembly bolts of other grades.
- Only available as a packing unit.

Chains	Designation	Order no.
4	IOG-4 / safety pin 4	7905626
6	IOG-6 / safety pin 6	7998740
8	IOG-8 / safety pin 8	7995739
10	IOG-10 / safety pin 10	7995740
13	IOG-13 / safety pin 13	7995741
16	IOG-16 / safety pin 16	7999102 ¹



¹ Only available as a packing unit with 4 units.