

Mounting Instructions

Original in compliance with 2006/42/EG



Master Links for 1-2-Leg Slings, Intermediate Links



Grades 8 and 10/XL



Master link
Type A



Intermediate
link
Type B



Special master
link assembly



Fixed size
master link
TAA / TAB

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1 Description and Intended Use

Master links and master link assemblies are intended to be built in sling chain assemblies for lifting of loads according to EN 818-4.

They are prevalently used as upper end fittings to connect the sling chain assemblies to the crane hooks or are used as bottom end fittings to be assembled together with shackles to carry the load.

Fixed size master links have integrated ringshacksles for easy attachments of sling chain and therefore they are predestinated for mounted sling chain assemblies.

A usage for lashing chain assemblies according to EN 12195-3 is possible.

These Mounting Instructions apply to following products:

- TWN 0803, TWN 0807, TWN 0808, TWN 1807, TWN 1808: Master links type A
- TWN 0795, TWN 0804, TWN 1795: Intermediate links type B
- TWN 0815, TWN 0816: Special master link assemblies for 1- and 2-leg slings chain assemblies used for crane hooks DIN15401
- TWN 0810/1, TWN 0810/2, TWN 0811/1, TWN 0811/2, TWN 1810/1, TWN 1810/2: Fixed size master link assemblies type TAA and TAB

The master links and master link assemblies meet EG Machinery Directive 2006/42/EG requirements and feature a safety factor of at least 4 based on Working Load Limit (WLL).

THIELE master links and master link assemblies are designed to withstand 20 000 dynamic load changes under maximum load conditions. In the event of higher loads (e.g. multi-shift/automatic operation, magnets) the WLL must be reduced.

Master link assemblies must exclusively be used

- within the limits of their permissible Working Load Limit,
- within the temperature limits prescribed,
- for permissible attachment methods and inclination angles,
- by trained and authorized persons.

Master link assemblies are as a rule not permitted for the transportation of persons. Any alternating use for lifting and lashing purposes is impermissible!

2 Safety Notes

Risk of Injury!
Never walk or stay under lifted loads!
Make sure to use hoisting/
attachment means free from defects.

- Operators, fitters and maintenance personnel must in particular observe the Operating Instructions of the sling chain assembly into which the master links are to be installed, documentations DGUV V 1, DGUV R 100-500 Chapter 2.8, DGUV R 109-004, DGUV I 209-013 and DGUV I 209-021 issued by the German Employers' Liability Insurance Association as well as standard specifications DIN 685-5, DIN 5688-3, EN 818-4 and EN 818-6.
- Outside the Federal Republic of Germany the specific provisions issued locally in the country where the items are used must also be observed.
- The directions given in these Mounting Instructions and specified documentations relating to safety, assembly, operation, inspection and maintenance must be made available to the respective persons.
- Make sure these Mounting Instructions are available in a place near the product during the time the equipment is used.
- When performing work make sure to wear your personal protective equipment!
- **Improper assembly and use may cause personal injury and/or damage to property.**
- Assembly and removal as well as inspection and maintenance must exclusively be carried out by skilled and authorized persons.
- Structural changes are impermissible (e.g. welding, bending).

- Visually inspect the equipment prior to each use.
- Never put to use worn-out, bent or damaged master links.
- Never expose master links and master link assemblies to loads exceeding the specified Working Load Limit.
- Do not use force when mounting/positioning the master links.
- Master links must be allowed to move freely in all tensile directions.
- Avoid bending loads to act on master links and master link assemblies.
- During lifting/hoisting make sure your hands or other body parts do not come into contact with hoisting means. Only remove hoisting means manually (use your hands).
- Avoid impacts, e.g. due to abruptly lifting loads with chain in slack condition.
- Usage of fixed size master link assemblies without working safety elements (dowel pins) is not permissible.
- In the event of doubts about the use, inspection, maintenance or similar things contact your safety officer or the manufacturer!

THIELE will not be responsible for damage caused through non-observance of the instructions, rules, standards and notes indicated!

As regards quality grade 10/XL THIELE does not give its general approval to the assembly of components stemming from different manufacturers!

Working under the influence of drugs or alcohol is strictly forbidden!

3 Commissioning

Prior to using the parts for the first time make sure that

- the parts comply with the order and have not been damaged,
- test certificate, statement of compliance and Mounting Instructions are at hand,
- markings correspond with what is specified in the documentation,
- documentations are safely kept in an orderly manner.

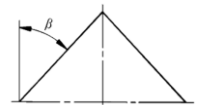
Dispose of the packing in an environmentally compatible way according to local rules.

4 Technical Data

Tables include only article numbers of standard and not customized parts.

WLL = Working Load Limit

For 2-leg sling chains the data for WLL are depending on the inclination angle β :



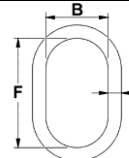
4.1 Master Links Type A, TWN 0803, Grade 8 for Offshore Sling Chains

TWN 0803 (Offshore)	Article-no.	WLL [t]	Dimensions [mm]			Mass app. [kg]
			D	F	B	
	F0803208	4,75	20	140	80	1,1
	F0803228	5,6	22	160	90	1,5
	F0803268	8,0	26	180	100	2,3
	F0803328	12,5	32	230	125	4,4
	F0803368	16	36	250	140	6,2
	F0803408	19	40	290	160	8,8
	F0803458	25	45	320	175	12
	F0803508	31,5	50	340	190	16
	F0803568	40	56	380	210	23
	F0803638	50	63	430	240	33
	F0803708	63	70	470	260	44
	F0803808	80	80	520	290	64

4.2 Master Links Type A, TWN 0807, Grade 8 for 1-Leg Sling Chains

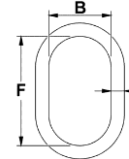
TWN 0807	Nominal size	Article-no.	WLL [t]	Dimensions [mm]			Mass app. [kg]
				D	F	B	
	6-8	F0807068	1,12	13	90	50	0,3
	8-8	F0807088	2,0	16	110	60	0,5
	10-8	F0807108	3,15	18	130	70	0,8
	13-8	F0807138	5,3	22	160	90	1,5
	16-8	F0807168	8,0	26	180	100	2,3
	18-8	F0807188	10	32	230	125	4,4
	20-8	F0807208	12,5	32	230	125	4,4
	22-8	F0807228	15	36	250	140	6,2
	26-8	F0807268	21,2	45	320	175	12
	28-8	F0807288	25,0	45	320	175	12
	32-8	F0807328	31,5	50	340	190	16
	36-8	F0807368	40	56	380	210	23
	40-8	F0807408	50	63	430	240	33
	45-8	F0807458	63	70	470	260	44
	50-8	F0807508	80	80	520	290	64
	56-8	F0807568	100	85	520	290	73
	63-8	F0807638	125	95	580	320	100
	71-8	F0807718	160	110	680	380	160
	80-8	F0807808	200	125	720	400	220

4.3 Master Links Type A, TWN 1807, Grade 10/XL for 1-Leg Sling Chains



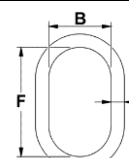
TWN 1807	Nominal size	Article-no.	WLL [t]	Dimensions [mm]			Mass app. [kg]
				D	F	B	
	6-10/XL	F180706	1,4	13	90	50	0,3
	8-10/XL	F180708	2,5	16	110	60	0,5
	10-10/XL	F180710	4,0	18	130	70	0,8
	13-10/XL	F180713	6,7	22	160	90	1,5
	16-10/XL	F180716	10	26	180	100	2,3
	22-10/XL	F180722	19	36	250	140	6,2

4.4 Master Links Type A, TWN 0808, Grade 8 for 2-Leg Sling Chains



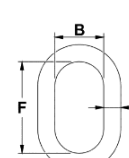
TWN 0808	Nominal size	Article-no.	WLL [t]		Dimensions [mm]			Mass app. [kg]
			β 0°≤45°	β 45°≤60°	D	F	B	
	6-8	F0808068	1,6	1,12	13	90	50	0,3
	8-8	F0808088	2,8	2,0	18	130	70	0,8
	10-8	F0808108	4,25	3,15	20	140	80	1,1
	13-8	F0808138	7,5	5,3	26	180	100	2,3
	16-8	F0808168	11,2	8,0	32	230	125	4,4
	18-8	F0808188	14	10	36	250	140	6,2
	20-8	F0808208	17	12,5	40	290	160	8,8
	22-8	F0808228	21,2	15	45	320	175	12
	26-8	F0808268	30	21,2	50	340	190	16
	28-8	F0808288	33,5	25	56	380	210	23
	32-8	F0808328	45	31,5	63	430	240	33
	36-8	F0808368	56	40	70	470	260	44
	40-8	F0808408	71	50	80	520	290	64
	45-8	F0808458	90	63	85	520	290	73
	50-8	F0808508	112	80	95	580	320	100
	56-8	F0808568	140	100	110	680	380	160

4.5 Master Links Type A, TWN 1808, Grade 10/XL for 2-Leg Sling Chains



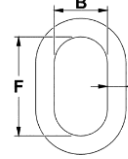
TWN 1808	Nominal size	Article-no.	WLL [t]		Dimensions [mm]			Mass app. [kg]
			β 0°≤45°	β 45°≤60°	D	F	B	
	6-10/XL	F180806	2,0	1,4	13	90	50	0,3
	8-10/XL	F180808	3,55	2,5	18	130	70	0,8
	10-10/XL	F180810	5,6	4,0	20	140	80	1,1
	13-10/XL	F180813	9,0	6,7	26	180	10	2,3
	16-10/XL	F180816	14	10	32	230	125	4,4
	22-10/XL	F180822	26,5	19	45	320	17	12

4.6 Intermediate Links Type B, TWN 0795, Grade 8



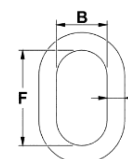
TWN 0795	Nominal size	Article-no.	WLL [t]	Dimensions [mm]			Mass app. [kg]
				D	F	B	
	B8	F122880	1,12	8	36	18	0,1
	B10	F122890	2,0	10	46	23	0,1
	B13	F122930	3,15	13	60	30	0,2
	B16	F122970	5,3	16	70	35	0,3
	B18	F123010	6,7	18	85	40	0,5
	B20	F123030	8,0	20	90	45	0,7
	B22	F123070	10	22	100	50	1,0
	B26	F123090	12,5	26	120	60	1,6
	B28	F123190	15	28	130	65	1,9
	B32	F123110	21,2	32	140	70	2,9
	B36	F123130	25	36	160	80	4,2
	B40	F123150	31,5	40	180	90	5,8
	B45	F123170	40	45	200	100	8,2
	B50	F123210	50	50	220	110	11
	B56	F123230	63	56	260	130	16
	B63	F123270	80	63	280	140	22
	B70	F123290	100	70	320	160	31
	B80	F123300	125	80	360	180	46
	B90	F123320	160	90	400	200	65

4.7 Intermediate Links Type B, TWN 1795, Grade 10/XL



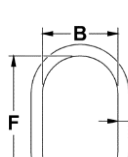
TWN 1795	Nominal size	Article-no.	WLL [t]	Dimensions [mm]			Mass app. [kg]
				D	F	B	
	B8	F179508	1,4	8	36	18	0,1
	B10	F179510	2,5	10	46	23	0,1
	B13	F179513	4,0	13	60	30	0,2
	B16	F179516	6,7	16	70	35	0,3
	B20	F179520	10	20	90	45	0,7
	B22	F179522	12,5	22	100	50	1,0
	B26	F179526	16	26	120	60	1,6
	B28	F179528	19	28	130	65	1,9
	B32	F179532	26,5	32	140	70	2,9
	B36	F179536	31,3	36	160	80	4,2
	B40	F179540	40	40	180	90	5,8
	B45	F179545	50	45	200	100	8,2

4.8 Intermediate Links Type B, TWN 0804, Grade 8 for Offshore Sling Chains



TWN 0804 (Offshore)	Article-no.	WLL [t]	Dimensions [mm]			Mass app. [kg]
			D	F	B	
	F0804138	3,35	13	60	30	0,2
	F0804168	5,6	16	70	35	0,3
	F0804208	8,5	20	90	45	0,7
	F0804228	10	22	100	50	1,0
	F0804268	14	26	120	60	1,6
	F0804288	16	28	130	65	1,9
	F0804328	22,4	32	140	70	2,9
	F0804368	28	36	160	80	4,2
	F0804408	33,5	40	180	90	5,8
	F0804458	42,5	45	200	100	8,2
	F0804508	53	50	220	110	11

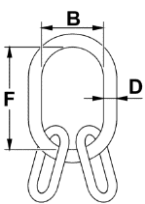
4.9 Special Master Link Assemblies, TWN 0815, Grade 8 for 1-Leg Sling Chains with Crane Hooks



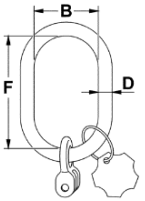
TWN 0815	Nominal size	Article-no.	Crane Hook No.	WLL [t]	Dimensions [mm]			Mass app. [kg]
					D	F	B	
	6-8	F08150616	16	1,12	18	260	140	1,7
	8-8	F08150816	16	2,0	22	260	140	2,6
	10-8	F08151016	16	3,15	22	260	140	2,6
	13-8 ¹⁾	F08151316	16	5,3	26	260	140	3,2
	16-8 ¹⁾	F08151616	16	8,0	30	260	140	4,3
	18-8	F08151816	16	10	36	250	140	7,8
	6-8	F08150625	25	1,12	20	340	180	2,5
	8-8	F08150825	25	2,0	20	340	180	2,5
	10-8 ¹⁾	F08151025	25	3,15	24	340	180	3,8
	13-8	F08151325	25	5,3	28	340	180	5,1
	16-8	F08151625	25	8,0	32	340	180	6,9
	18-8	F08151825	25	10	40	340	180	10,9
	20-8 ¹⁾	F08152025	25	12,5	40	340	180	10
	22-8 ¹⁾	F08152225	25	15	40	340	180	10
	6-8	F08150640	40	1,12	22	430	220	3,7
	8-8	F08150840	40	2,0	22	430	220	3,7
	10-8	F08151040	40	3,15	26	430	220	5,3
	13-8	F08151340	40	5,3	30	430	220	7
	16-8	F08151640	40	8,0	34	430	220	9,4
	18-8	F08150616	40	10	42	430	220	14,5
	20-8 ¹⁾	F08150816	40	12,5	42	430	220	13,5
	22-8 ¹⁾	F08151016	40	15	42	430	220	13,5

1) without intermediate links, directly assembly possible.

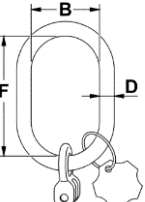
4.10 Special Master Link Assemblies, TWN 0816, Grade 8 for 2-Leg Sling Chains with Crane Hooks

TWN 0816	Nom. size	Article-no.	Crane Hook No.	WLL [t] 0° ≤ β ≤ 45°	Dimensions [mm]			Mass app. [kg]
					D	F	B	
	6-8	F08160616	16	1,6	18	260	140	1,9
	8-8	F08160816	16	2,8	22	260	140	2,9
	10-8	F08161016	16	4,25	26	260	140	3,9
	13-8	F08161316	16	7,5	30	260	140	5,8
	16-8	F08161616	16	11,2	36	250	140	9,4
	6-8	F08160625	25	1,6	22	340	180	3,3
	8-8	F08160825	25	2,8	24	340	180	4,1
	10-8	F08161025	25	4,25	28	340	180	5,4
	13-8	F08161325	25	7,5	32	340	180	7,7
	16-8	F08161625	25	11,2	40	340	180	11,9
	18-8	F08161825	25	14	40	340	180	11,9
	20-8	F08162025	25	17	45	340	180	18,6
	6-8	F08160640	40	1,6	26	430	220	5,7
	8-8	F08160840	40	2,8	26	430	220	5,7
	10-8	F08161040	40	4,25	30	430	220	7,4
	13-8	F08161340	40	7,5	34	430	220	9,9
	16-8	F08161640	40	11,2	42	430	220	15,5
	18-8	F08161840	40	14	42	430	220	15,5
	22-8	F08162240	40	21,2	48	430	220	23,7

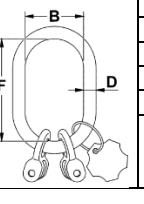
4.11 Fixed Size Master Link Assemblies Type TAA, TWN 0810/1, Grade 8 for 1-Leg Sling Chains

TWN 0810/1	Nominal size	Article-no.	WLL [t]	Dimensions [mm]			Mass app. [kg]
				D	F	B	
	6-8	F08101068	1,12	13	90	50	0,4
	8-8	F08101088	2,0	16	110	60	0,8
	10-8	F08101108	3,15	18	130	70	1,2
	13-8	F08101138	5,3	22	160	90	2,3
	16-8	F08101168	8	26	180	100	4
	22-8	F08101228	15	36	250	140	10

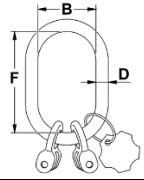
4.12 Fixed Size Master Link Assemblies Type TAA, TWN 1810/1, Grade 10/XL for 1-Leg Sling Chains

TWN 1810/1	Nominal size	Article-no.	WLL [t]	Dimensions [mm]			Mass app. [kg]
				D	F	B	
	6-10/XL	F1810106	1,4	13	90	50	0,4
	8-10/XL	F1810108	2,5	16	110	60	0,7
	10-10/XL	F1810110	4,0	18	130	70	1,2
	13-10/XL	F1810113	6,7	22	160	90	2,3
	16-10/XL	F1810116	10	26	180	100	3,9

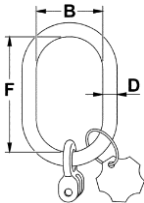
4.13 Fixed Size Master Link Assemblies Type TAA, TWN 0810/2, Grade 8 for 2-Leg Sling Chains

TWN 0810/2	Nom. size	Article-no.	WLL [t]		Dimensions [mm]			Mass app. [kg]
			β 0° ≤ 45°	β 45° ≤ 60°	D	F	B	
				6-8	F08102068	1,6	1,12	
8-8	F08102088	2,8		2,0	18	130	70	1,2
10-8	F08102108	4,25		3,15	22	160	90	2,3
13-8	F08102138	7,5		5,3	26	180	100	4,0
16-8	F08102168	11,2		8,0	32	230	125	7,6
22-8	F08102228	21,2		15	45	320	175	19,6

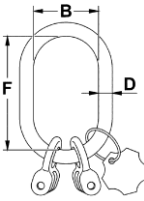
4.14 Fixed Size Master Link Assemblies Type TAA, TWN 1810/2, Grade 10/XL for 2-Leg Sling Chains

TWN 1810/2	Nominal size	Article-no.	WLL [t]		Dimensions [mm]			Mass app. [kg]
			β 0° ≤ 45°	β 45° ≤ 60°	D	F	B	
				6-10/XL	F1810206	2,0	1,4	
8-10/XL	F1810208	3,55		2,5	18	130	70	1,2
10-10/XL	F1810210	5,6		4,0	20	140	80	1,9
13-10/XL	F1810213	9,0		6,7	26	180	100	4,0
16-10/XL	F1810216	14		10	32	230	125	7,6

4.15 Fixed Size Master Link Assemblies Type TAB, TWN 0811/1, Grade 8 for 1-Leg Sling Chains

TWN 0811/1	Nominal size	Article-no.	WLL [t]	Dimensions [mm]			Mass app. [kg]
				D	F	B	
	6-8	F08111068	1,12	13	60	30	0,3
	8-8	F08111088	2,0	16	70	35	0,6
	10-8	F08111108	3,15	20	90	45	1,1
	13-8	F08111138	5,3	22	100	50	1,8
	16-8	F08111168	8,0	26	120	60	3,2
	18-8	F08111188	10	32	140	70	5,4
	22-8	F08111228	15	36	160	80	8,0

4.16 Fixed Size Master Link Assemblies Type TAB, TWN 0811/2, Grade 8 for 2-Leg Sling Chains

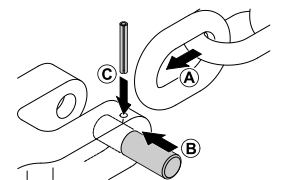
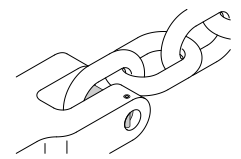
TWN 0811/2	Nominal size	Article-no.	WLL [t]		Dimensions [mm]			Mass app. [kg]
			β 0° ≤ 45°	β 45° ≤ 60°	D	F	B	
				6-8	F08112068	1,6	1,12	
8-8	F08112088	2,8		2	16	70	35	0,8
10-8	F08112108	4,25		3,15	20	90	45	1,6
13-8	F08112138	7,5		5,3	26	120	60	3,3
16-8	F08112168	11,2		8	28	130	65	5,1
18-8	F08112188	14,0		10	32	140	70	7,9
22-8	F08112228	21,2		15	40	180	90	13

5 Assembly and Disassembly Clevis-type Fastening System

Only chain and component of same nominal size and grade belong together!

Assembly

- If necessary, remove dowel pin and pin.
- (A) Place end of chain leg between the lateral clevis elements.
- (B) Push pin from the side fully into the clevis and through the last chain link of the leg.
- (C) Drive dowel pin fully in (must not project) to secure the pin. The slot must face away from the pin.
- Check the chain runs smoothly!

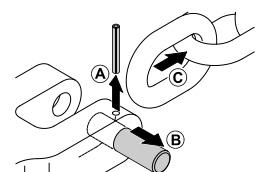


Only connect pins and attachment components of identical quality grades (starting with Ø 13 mm the pins are marked on the front end).

The dowel pins must only be installed once.

Disassembly

- Slacken the respective chain.
- (A) Drive dowel pin out using hammer and drift punch.
- (B) Push pin out.
- (C) Remove the chain.



Suitable drift punches are available by Article No. Z03303.

6 Operation

Master links and master link assemblies must not be guided by other parts during operation. They also must not be forced sideways to avoid bending stress.

Take care for reduction of Working Load Limits relating to inclination angles β .
Data see tables chapter 4.

7 Conditions of Use

7.1 Influence of Temperature

Using master link assemblies at elevated temperatures will cause the Working Load Limit to be reduced as indicated below.

Grade	Temperature range	Remaining WLL
8	-40 °C ≤ 200 °C	100 %
	200 °C ≤ 300 °C	90 %
	300 °C ≤ 400 °C	75 %
10/XL	-30 °C ≤ 200 °C	100 %
	200 °C ≤ 300 °C	90 %
	300 °C ≤ 380 °C	60 %

If the master link assemblies have been exposed to temperatures exceeding the maximum values specified they must no longer be used.

7.2 Environmental Influence

Master link assemblies must not be used in environments where acids, aggressive or corrosive chemicals or their fumes are present.
Hot-dip galvanizing or a galvanic treatment is prohibited as well.

7.3 Especially Hazardous Conditions

The degree of danger when used in offshore applications, the lifting of persons or hazardous loads, such as for example liquid metal, or similar risk potentials have to be assessed by a competent person in the form of a risk analysis.

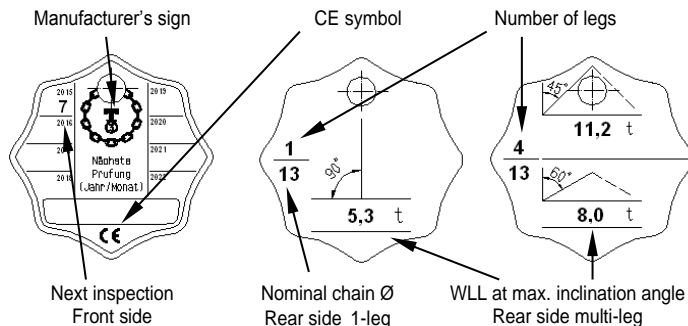
Any additional rules and directives must be followed in this case.

8 Identification/Marking

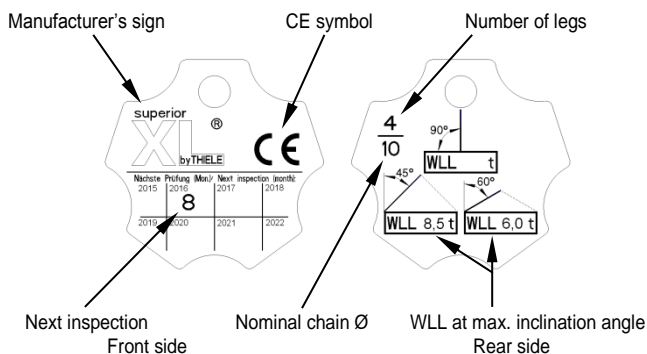
As a rule, an identification tag as prescribed in EN 818-4 is attached to the sling chain assembly adjacent to the master link.

Tags for Quality Grade 8, Example:

Form and color (red) of the tags correspond to requirements set forth in DIN EN 818-4.



Tags for Quality Grade 10/XL (Special Type, Blue Color), Example:



9 Inspections, Maintenance, Disposal

Inspections and maintenance must be arranged for by the Owner!

Inspection intervals shall be determined by the Owner!

Inspections must be carried out and documented by competent persons regularly but at least once a year, or more frequently if the master link assemblies are in heavy-duty service. After three years at the latest they must additionally be examined for cracks. A load test shall never be considered a substitute for this examination.

The results of the inspection shall be entered into a register (DGUV I 209-062 or DGUV I 209-063) to be prepared when the sling chain assembly is first used. The register will show characteristic data of the chains and components as well as identity details.

Immediately stop using sling chain assemblies that show the following defects:

- missing or illegible identification/markings,
- deformation, elongation or fractures of chains or components,
- cuts, notches, cracks, incipient cracks, pinching,
- parts heated beyond permissible limits,
- severe corrosion,
- reduction of the averaged link thickness by more than 10 % as mean value of measurements taken perpendicularly towards each other,
- missing or damaged dowel pins.

Inspection Service

THIELE offers inspection, maintenance and repair services by trained and competent personnel.

Maintenance and Repair

Maintenance and repair work must only be performed by competent persons.
Minor notches and cracks may be eliminated by careful grinding observing the maximum cross section reduction requirement of 10 % and avoid making more severe cuts or scores.

Welded sling chain assemblies must exclusively be repaired by the manufacturer.

All maintenance and repair activities are to be documented.

Disposal

All components and accessories of steel taken out of service are to be scrapped in line with local regulations and provisions.

10 Spare Parts

Only use original spare parts.

Spare Parts Sets for Clevis-type Fastening System

Consisting of pin and dowel pin

Nominal size	Article-no. Set	Nominal size	Article-no. Set
6-8	F48694	6-10/XL	F48686
8-8	F48352	8-10/XL	F48687
10-8	F48355	10-10/XL	F48688
13-8	F48358	13-10/XL	F48689
16-8	F48361	16-10/XL	F48690
18-8	F48364		
22-8	F48367		

Article Numbers for Tags

Grade	Article-no.	Execution
8	F08040	without welded ring
	F08042	with welded ring
10/XL	F08052	without welded ring
	F08053	with welded ring

11 Storage

Make sure sling chain components are stored in dry locations at temperatures ranging between 0 °C and +40 °C.

12 Publishing Information

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