

# Mounting Instructions

Original in compliance with 2006/42/EG



## Shortening Elements

Grades 8 and 10



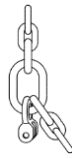
Shortening Hook  
TWN 0827/1  
TWN 0827



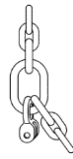
Shortening Hook  
TWN 1827/1  
TWN 1827



Shortening Claw  
TWN 0851  
TWN 1851



Shortening Device  
TWN 0896



Shortening Device  
TWN 1896

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### 1 Description and Intended Use

THIELE-Shortening elements (Shortening hooks, Shortening claws, Shortening devices) are exclusively intended to shorten individual chain legs within several sling chain assemblies according to EN 818-6.

Shortening elements must only be used within a single loaded chain leg.

Shortening elements must exclusively be used

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

Shortening hooks with safety device can also be used within lashing chain assemblies according to EN 12195.

Any alternating use for lifting and lashing purposes is impermissible!

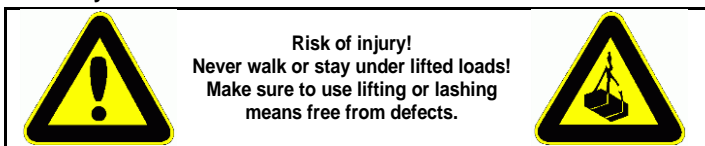
Shortening elements are as a rule not permitted for the transportation of persons.

THIELE-Shortening elements meet EG Machinery Directive 2006/42/EG requirements and feature a safety factor of at least 4 based on Working Load Limit (WLL).

The shortening elements 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) the Working Load Limit (WLL) must be reduced before the parts are put to use.

Shortening elements are marked with nominal chain size and quality grade, manufacturer's symbol and traceability code.

### 2 Safety Notes



- Operators, fitters, and maintenance personnel must in particular observe the Operating Instructions of the sling chain assembly into which the shortening elements are to be installed, documentations DGUV V 1, DGUV R 100-500 Chapter 2.8, 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 and DIN 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).
- **Operators must carry out a visual inspection and, if necessary, a functional test of the safety equipment before each use.**<sup>#</sup>
- Never put to use worn-out, bent or damaged shortening elements.
- Never expose shortening elements to loads exceeding the specified Working Load Limit.

- When using shortening elements without additional safety elements (e.g. TWN 0827, TWN 1827 or TWN 0851), special care must be taken and the correct position of the chain in the shortening element is to be verified for each individual hoisting operation.
- Shortening hooks must not be attached directly to loads, e.g. metal sheets.<sup>#</sup>
- Only chain legs and shortening elements of the same nominal size and grade may be connected.<sup>#</sup>
- Safety elements must not be excessively stressed or strained operationally.
- Do not use force when mounting/positioning the shortening elements.
- Do not twist or knot the chains together.
- In case of multi-leg sling chain assemblies never allow for inclination angles of less than 15 ° and in excess of 60 °.
- Avoid bending loads to act on chain links and shortening elements.
- Make sure to use shortening/grab hooks or claws for chain shortening purposes.
- In case of shortening claws only put loads on the chain exiting the claw pocket bottom.
- 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 without working safety elements (cotter pins, dowel pins) is not permissible.
- Shortening elements must be allowed to move freely in all tensile directions.
- 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 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

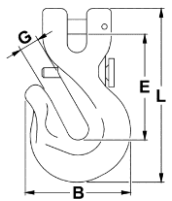
Table include only article numbers of standard and not customized parts.

WLL = Working Load Limit

#### 4.1 Shortening Hook TWN 0827/1, Grade 8

Execution TWN 0827 without safety pin

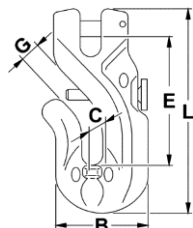
Nominal size	Article-no.	WLL [t]	Dimensions [mm]				Mass app. [kg]
			E	G	L	B	
7/8-8	F33201	2,0	61	9	101	61	0,6
10-8	F33211	3,15	73	12	125	75	1,0
13-8	F33221	5,3	95	15	160	95	2,2
16-8	F33231	8,0	112	18	188	120	3,5
20-8	F33246	12,5	148	22,5	242	141	7,4



#### 4.2 Shortening Hook TWN 1827/1, Grade 10

Execution TWN 1827 without safety pin

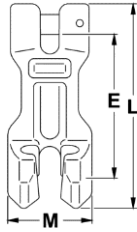
Nominal size	Article-no.	WLL [t]	Dimensions [mm]					Mass app. [kg]
			E	G	L	B	C	
6-10 <sup>1)</sup>	F33195	1,4	-	-	-	-	-	
8-10	F33205	2,5	71	9,5	110	55	34	
10-10	F33215	4,0	83	12,5	132	67	42	
13-10	F33225	6,7	109	15,5	168	79	54	
16-10	F33235	10,0	137 <sup>#</sup>	18,5 <sup>#</sup>	208 <sup>#</sup>	91 <sup>#</sup>	66 <sup>#</sup>	



1) in preparation

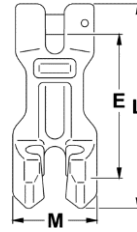
### 4.3 Shortening Claw TWN 0851, Grade 8

Nominal size	Article-no.	WLL [t]	Dimensions [mm]			Mass app. [kg]
			E	L	M	
6-8	F34910	1,12	54	81	32	0,21
7-8	F34920	1,5	74	108	43	0,42
8-8	F34925	2,0	80	115	46	0,56
10-8	F34930	3,15	90	134	56	0,94
13-8	F34940	5,3	117	175	72	2,1
16-8	F34950	8,0	144	214	86	3,6
18-8	F34960	10,0	162	241	98	5,4
20-8	F34970	12,5	158	241	98	5,4
22-8	F34980	15,0	198	295	118	9,0
26-8	F34985	21,2	195	309	130	12,0
32-8	F34990	31,5	240	381	160	19,0

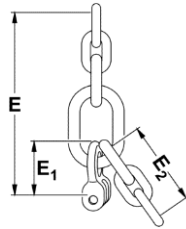


### 4.4 Shortening Claw TWN 1851, Grade 10

Nominal size	Article-no.	WLL [t]	Dimensions [mm]			Mass app. [kg]
			E	L	M	
6-10	F34904	1,4	54	81	32	0,21
8-10	F34924	2,5	80	115	46	0,6
10-10	F34934	4,0	90	134	56	0,96
13-10	F34944	6,7	117	175	72	2,10
16-10	F34954	10,0	144	214	86	3,6

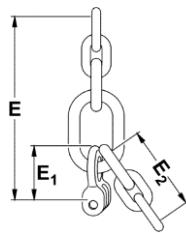


### 4.5 Shortening Device TWN 0896, Grade 8



Nominal size	Article-no.	WLL [t]	Dimensions [mm]				Mass app. [kg]
			E	E <sub>1</sub>	E <sub>2</sub>	Intermediate link	
6-8	F0896068	1,12	137	31	60	Ø10x46x23	0,32
8-8	F0896088	2,0	176	38	78	Ø13x60x30	0,7
10-8	F0896108	3,15	215	46	99	Ø16x70x35	1,4
13-8	F0896138	5,3	270	59	126	Ø18x85x40	2,6
16-8	F0896168	8,0	326	76	150	Ø22x100x50	4,5
18-8	F0896188	10,0	347	79	168	Ø22x100x50	6,2
22-8	F0896228	15,0	450	100	210	Ø32x140x70	12,0

### 4.6 Shortening Device TWN 1896, Grade 10



Nominal size	Article-no.	WLL [t]	Dimensions [mm]				Mass app. [kg]
			E	E <sub>1</sub>	E <sub>2</sub>	Intermediate link	
6-10	F189606	1,4	137	31	60	Ø10x46x23	0,32
8-10	F189608	2,5	175	38	78	Ø13x60x30	0,7
10-10	F189610	4,0	215	46	99	Ø16x70x35	1,4
13-10	F189613	6,7	270	59	126	Ø18x85x40	2,6
16-10	F189616	10,0	326	76	150	Ø22x100x50	5,0

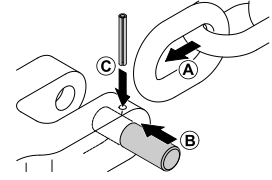
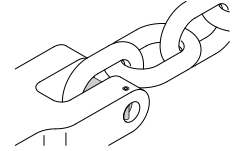
## 5 Assembly and Disassembly

### 5.1 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!

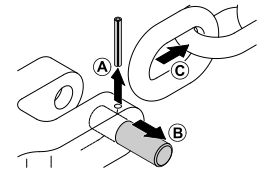


Only connect pins and attachment components of identical quality grades (starting with Ø 13 mm the pins are marked on the front end).

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.



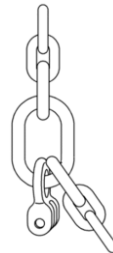
Suitable drift punches are available by Article No. Z03303.

### 5.2 Shortening Device

One of the short chain legs has to be connected to the master link, may by a ring shackle as part of a fixed sized master link assembly or by a connector.

The second short chain leg has to be connected to a shortening claw or shortening hook with clevis-type fastening system.

A longer chain leg with a hook or other device at its end to carry the load has to be mounted to the ringshackle. This chain leg can be shortened by the usage of the mounted shortening claw or shortening hook.



## 6 Conditions of Use

### 6.1 Normal Use

A shortening element is only used to shorten a single chain leg and never to transfer the load to additional chain legs. The shortened part of the chain leg must remain unloaded.<sup>#</sup>

Therefore t is not allowed to create a 4-leg chain sling assembly made of a 2-leg chain sling assembly by adding shortening devices.

Shortening individual chain legs is indicative of a non-symmetrical load distribution. In this case, attention is to be paid to WLL reductions.

### 6.2 Shortening hook<sup>#</sup>

Assembly and disassembly are only carried out in unloaded condition.

#### Assembly

Push the chain link of the chain leg to be shortened past the hook tip into the slot. If a safety bolt is present, push it back with the chain or pull it back by hand at the rear edge nut. Make sure that the lower leg of the chain link inserted into the slot is positioned near the bottom of the hook and, if present, that the safety pin above the upper leg of this chain link returns automatically to its extended safety position.

The chain leg to be loaded can be located either to the right or left of the central longitudinal plane of the hook.

#### Disassembly

If present, pull back the locking pin on the rear knurled nut and lift the shortened chain leg completely out of the slot of the shortening hook to remove it.

### 6.3 Shortening claw #

Assembly and disassembly are only carried out in unloaded condition.

#### Assembly

Push the piece of chain selected for shortening the chain leg to be shortened into the pocket of the shortening claw. Make sure that the lower curve lies firmly in the bottom of the pocket. The chain leg area to be loaded with the component located thereon for attachment to the load (e.g. hook) extends downwards when the chain is correctly inserted.

Check the correct positioning of the chain link in the pocket for each individual lifting operation!

#### Disassembly

Move the chain link in the claw completely out of the claw pocket by lifting the afore loaded chain leg and pulling it away from the shortening claw. If necessary, carry out a supporting tilting movement of the shortening claw.

### 6.4 Influence of Temperature

Using shortening elements at elevated temperatures will cause the Working Load Limit to be reduced as indicated below.

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

If the sling shortening elements have been exposed to temperatures exceeding the maximum values specified they must no longer be used.

### 6.5 Environmental Influence

Sling chain 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 Spare Parts

Only use original spare parts.

### 7.1 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	F48686
8-8	F48352	8-10	F48687
10-8	F48355	10-10	F48688
13-8	F48358	13-10	F48689
16-8	F48361	16-10	F48690
18-8	F48364		
20-8	F48369		
22-8	F48367		
26-8	F48373		
32-8	F48371		

### 7.2 Spare Parts Sets for Safety Elements TWN 0827/1, TWN 1827/1

Consisting of safety pin, spring and knurled screw

Shortening hook	Nominal size	Article-no. Set
TWN 0827/1	8-8	F48330
	10-8	F48328
	13-8	F48329
	16-8	F48339
	20-8	F48345
TWN 1827/1	6-10	F483310
	8-10	F48330
	10-10	F48328
	13-10	F483290
	16-10	F48339

#### Disassembly

Remove the safety parts by cutting of the knurled screw. Afterwards remove spring and safety pin.

#### Assembly

Before working on new assembly please clean the hole.

First put in the spring, afterwards take the safety pin with its thin end into the spring and push it until the thread is shown on the other side of the hook body.

Check pin and spring can move easily.

Assemble knurled screw and secure it by three punch marks on the thread against unintended opening.

## 8 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 in case of 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 shortening elements that show the following defects:

- missing or illegible identification/markings,
- deformation, elongation or fractures of chains or components,
- cuts, notches, cracks, incipient cracks, pinching,
- heatment beyond permissible limits,
- severe corrosion,
- reduction of the averaged pin diameter by more than 10 % as mean value of measurements taken perpendicularly towards each other,
- impaired or missing safety elements,
- 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.

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.

## 9 Storage

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

## 10 THIELE Operating and Mounting Instructions #

Current operating and installation instructions are available as a PDF download on the homepage.



## 11 Publishing Information

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# Changes to previous edition.