

# Mounting Instructions

Original in compliance with 2006/42/EG



## Chain Coupling Shackles

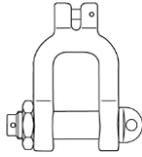
Grade 8



TWN 0861



TWN 0862



TWN 0897

Manufacturer:

THIELE GmbH & Co. KG

Tel: +49 (0) 2371 / 947 - 0

58640 Iserlohn

www.thiele.de

### 1 Description and Intended Use

THIELE-Chain coupling shackles are intended as end fittings of chain sling assemblies. The chain strands are to be fitted directly to the clevis.

Shackles of TWN 0861 are intended to be mounted once to be left on the load permanently.

Shackles must exclusively be used

- within the limits of their permissible Working Load Limit,
- within the temperature limits prescribed,
- with their original bolts and dowel pins of appropriate size.

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

Mostly they are certified by the German Employers' Liability Insurance Association and signed by H4 symbol.

Generally they are signed with the associated chain size and grade, manufacturer's mark and traceability code.

Shackles must only be used with a single loaded chain leg.

THIELE-shackles 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, magnetic spreaders) the WLL must be reduced.

Generally they are not intended to be used for passenger transportation.

An alternating use for lifting and lashing is not allowed.

If shackles are employed for lashing applications the maximum lashing capacity results from a doubling the Working Load Limit.

### 2 Safety Notes



- Operators, fitters, and maintenance personnel must in particular observe the Operating Instructions also from the used sling chain assemblies, 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 EN 818-6, and DIN EN 13889 Appendix A.

- 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.

Please contact the manufacturer if replacements are needed.

- 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).  
Never attempt to make the shackle opening smaller by bending or welding in intermediate elements.
- Visually inspect shackles and equipment prior to each use.
- Usage without safety devices (nuts, dowels pins) is not permitted.
- Never put to use worn-out, bent or damaged shackles.
- Never expose shackles to loads exceeding the specified Working Load Limits.
- Do not use force when mounting/positioning shackles.
- Make sure the load can take the forces to be applied without suffering deformation.
- Lateral loads bending the shackles are not permissible. Shackles must be capable of aligning themselves in loading direction.
- Do not start lifting before you have made sure the load has been correctly attached.
- Make sure no one including you (operator) is in the way of the moving load (hazard area).
- 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 hoisting means in slack condition.
- Applications where the bolt may become threaded out, e.g. by a rope or load, shall be avoided. If such applications can not be avoided bolts with safety pins shall be used.
- If shackles are expected to perform under continuous service conditions (multi-shift, automatic operations or the like) contact the manufacturer first to reduce the WLL as necessary.
- Avoid shackles to get caught under the load.

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

In the event of doubts about the use, inspection, maintenance or similar things contact your safety officer or the manufacturer.

### 3 Commissioning

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

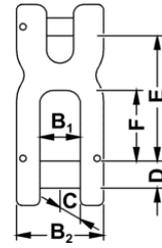
- the shackles comply with the order and have not been damaged,
- test certificate, statement of compliance and Mounting Instructions are at hand,
- markings correspond with what is specified in the documentation,
- the documentation is safely kept in an orderly manner.

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

#### 4 Technical Data

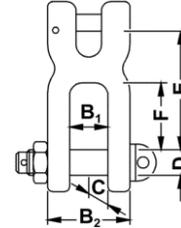
##### TWN 0861 Special Chain Coupling Shackles, Grade 8

Size	Article-no.	Working Load Limit [t]	Weight [kg]	Spare sets	Spare sets	Dimensions [mm]					
				Load pin + Dowel pin	Bolt + Dowel pin	E	D	C	F	B <sub>1</sub>	B <sub>2</sub>
10-8	F30601	3,15	0,61	F48355	F48036	64	16	32	36	21	47
13-8	F30611	5,3	1,24	F48358	F48039	82,5	20	40	49	27	61
16-8	F30621	8,0	2,1	F48361	F48042	99	24	48	56	33	75
18-8	F30631	10	3,93	F48364	F48045	115	30	60	63	42	100



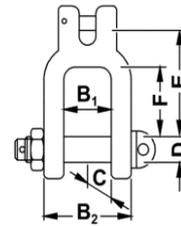
##### TWN 0862 Chain Coupling Shackles, Grade 8

Size	Article-no.	Working Load Limit [t]	Weight [kg]	Spare sets	Spare sets	Dimensions [mm]					
				Load pin + Dowel pin	Bolt + Nut + Cotter pin	E	D	C	F	B <sub>1</sub>	B <sub>2</sub>
10-8	F30600	3,15	0,67	F48355	F30451	64	16	32	36	21	47
13-8	F30610	5,3	1,37	F48358	F30461	82,5	20	40	49	27	61
16-8	F30620	8,0	2,28	F48361	F30471	99	24	48	56	33	75
18-8	F30630	10	4,37	F48364	F30481	115	30	60	63	42	100



##### TWN 0897 Special Coupling Shackles, Grade 8

Size	Article-no.	Working Load Limit [t]	Weight [kg]	Spare sets	Spare sets	Dimensions [mm]					
				Load pin + Dowel pin	Bolt + Nut + Cotter pin	E	D	C	F	B <sub>1</sub>	B <sub>2</sub>
6-8	F30586	1,12	0,47	F48694	F30461	70	20	39	46	35	65
8-8	F30596	2,0	0,54	F48352	F30461	70	20	40	46	35	65



## 5 Assembly and Removal

Allways assemble/remove shackles or parts in load-free condition.

To prevent unilateral loads and misalignment spacers may be arranged to center the load application point on the bolt.

Disassemble the parts in reverse order.

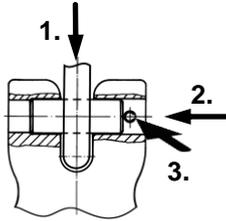
Use a suitable drift punch to drive the dowel pins out.

Suitable drift punches are available by Article No. Z03303.

Dowel pins and cotter pins must only be installed once.

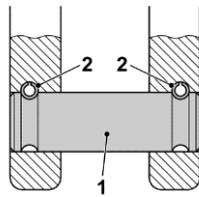
### Assembly of Clevis-type Hook System:

1. Remove load bolt and dowel pin.
2. Place end of chain leg between the lateral clevis elements.
3. Push pin from the side fully into the clevis and through the last chain link of the leg.
4. Drive dowel pin fully in (must not project) to secure the pin. The slot must face away from the pin.
5. Check the chain can move freely.



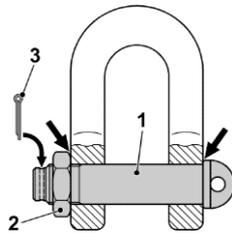
### Bolt Assembly TWN 0861

1. Move the bolt through both holes in the shackle ends and see to it that the two grooves in the bolt are positioned concentrically with the dowel pin holes in the shackle body.
2. Insert the dowel pins. Make sure the slot faces away from the bolt towards the shackle bow.



### Bolt Assembly TWN 0862 and TWN 0897

1. Fully insert the bolt through both shackle boreholes.
2. Retain the bolt with a suitable nut and tighten the nut so as to be hand-tight using an appropriate tool. Make sure bolt and nut are evenly seated against the shackle body.
3. Finally, insert the cotter pin in the respective hole in the bolt to secure the connection.



## 6 Conditions of Use

### 6.1 Normal Use

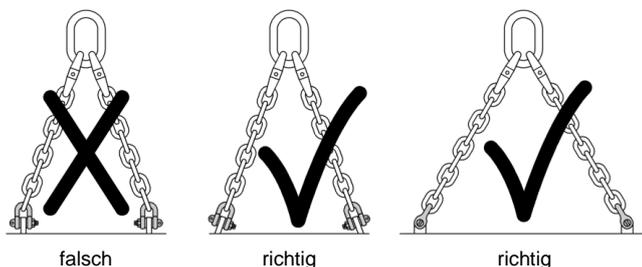
Shackles must not be exposed to bending loads; make sure excentric loads are avoided.

Shackles must be able to move freely. Supporting of shackles on other parts is not permitted.

Take care that

- incorrect arrangements are avoided, e.g. excentric loads,
- damage of lifting or lashing accessories, e.g. by sharp edges, is not possible,
- the shackles can be reached easily for fitting/unhinging lifting or lashing accessories.

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.



## 6.2 Influence of Temperature

Using shackles 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 shackles have been exposed to temperatures exceeding the maximum values specified they must no longer be used.

### 6.3 Environmental Influence

Shackles 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. See chapter 4.

## 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 if the shackles 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 at first use. The register will show characteristic data as well as identity details.

Immediately stop using shackles that show the following defects:

- missing or illegible identification/markings,
- deformation, elongation or fractures of shackles or components,
- cuts, notches, cracks, incipient cracks, pinching,
- damaged threads,
- shackles heated beyond permissible limits,
- severe corrosion,
- impaired or missing safety systems,
- wear in excess of 10 %, e.g. in the receiving area of the pin diameter,

### Inspection Service

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

### Maintenance and Repair

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

Shackles should be stored in dry locations at temperatures ranging between 0 °C and +40 °C.

## 10 Impressum

THIELE GmbH & Co. KG, Werkstraße 3, 58640 Iserlohn, germany  
Tel.: +49(0)2371/947-0 // Email: info@thiele.de

© THIELE GmbH & Co. KG, 2015. All rights reserved.

# Changes to previous edition.