



Shortening Claws
 TWN 1852

Definitions



Working Load Limit (WLL)

The maximum load, which a RAPID shortening claw is designed to support.



The following Operating Instructions must always be followed to avoid the risk of personal injury or property damage.

Do not use a shortening claw before reading these Operating Instructions.

Read ASME B30.9 „Slings“, Chapters 9-0 and 9-1.

2. BASIC SAFETY REQUIREMENTS

To prevent the risk of injury never walk or stay under lifted loads!

The Working Load Limit must not be exceeded!

RAPID shortening claws as well as lifting and attachment means to be used must be free from defects!


Working under the influence of drugs, medications impairing the sense and/or alcohol is strictly forbidden!


1. ABOUT THIS INSTRUCTION


This Operating Instructions describes in particular how RAPID shortening claws according to TWN 1852 grade 100, (TWN = THIELE Shop Standard) are to be safely used for lifting purposes.


The instructions apply analogously to components of identical design.


To comply with these instructions is essential to help avoid hazards and increases the reliability and service life of the shortening claws.

 **DANGER!** Indicates a hazardous situation, which, if not avoided, will result in death or serious injury.

 **WARNING!** Indicates a hazardous situation, which, if not avoided, could result in death or serious injury.

 **CAUTION!** Indicates a hazardous situation, which, if not avoided, could result in minor or moderate injury.

 **NOTICE!** Is used to address practices not related to physical injury.

 **Safety Instructions** signs indicate specific safety-related instructions or procedures.

SAFETY INSTRUCTIONS

- Operators, fitters and maintenance personnel must in particular observe the Operating Instructions as well as standards ASTM A 906/A 906 M (Standard Specification for Grade 80 and Grade 100 Alloy Steel Chain Slings for Overhead Lifting), ASTM A 952/A 952 M (Standard Specification for Forged Grade 80 and Grade 100 Steel Lifting Components and Welded Attachment Links), ISO 3056 (Non-calibrated round steel link lifting chain and chain slings; Use and maintenance), ISO 7593 (Chain slings assembled by methods other than welding; Grade T(8)) and ISO 4778 (Round steel short link chains for lifting purposes – Chains slings of welded construction – Grade 8).
- The specific safety and operating regulations and standards issued locally in the country where the items are used must be observed.
- The directions given in these Operating Instructions and specified documentations relating to safety, assembly, operation, inspection, and maintenance must be made available to persons operating and using the RAPID shortening claw.

**SAFETY
INSTRUCTIONS**

- These Operating Instructions must be available in a place near the product during the time the equipment is used. Please contact the manufacturer if replacements are needed. Also see chapter 11.
- During operation work, wear your personal protective equipment!
- **Improper assembly and use may cause personal injury and/or damage to property.**
- Assembly and removal as well as inspections and maintenance must exclusively be carried out by skilled, qualified, trained and authorized persons only.
- 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.**
- Never use worn-out, bent or damaged shortening claws.
- Only lift loads that do not exceed the Working Load Limit of the sling chain assembly.
- Never expose chains and claws to loads exceeding the specified Working Load Limits.
- Do not use force when mounting/positioning the attachment components.
- Do not twist or knot the chains together.
- Never guide shortening claws over edges or load them sideways.
- Avoid sharp edges. Use edge protectors or reduce the WLL by 20 %.
- In case of multi-leg sling chain assemblies never allow for sling angles of less than 30 ° and in excess of 75 °.
- Avoid bending loads to act on shortening claws.
- 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 make sure your hands or other body parts do not come into contact with lifting means. Only remove lifting means manually (use your hands).
- Avoid impacts, e.g. due to abruptly lifting loads with chain in slack condition.
- Never move a suspended load over persons.
- Never cause suspended loads to swing.
- Always monitor a suspended load.
- Put the load only down in flat places/sites where it can be safely deposited.
- Avoid parts of the sling chain assembly to get caught under the load.
- Operation without functioning safety devices (dowel pins, springs, safety latches) is not permitted.

- The shortened part of the chain legs must not be loaded and not used as an endless chain.
- Shortening claws must be able to align themselves freely in the loading direction.
- Take care for sufficient place for the personnel to move when choosing the route of transportation and storage location. Danger to life and risk of injury by crushing hazards!
- In the event of doubts or concerns about the proper and safe use, inspection, maintenance or similar things contact your safety officer or the manufacturer.

THIELE is not responsible for damage caused by non-observance of the instructions, rules, standards and notes indicated!

As regard grade 100, THIELE does not give its approval to the assembly of components sourced from different manufacturers!

As a rule, RAPID shortening claws are not permitted for the transportation of persons.

3. DESCRIPTION AND INTENDED USE

RAPID shortening claws according to TWN 1852 are exclusively intended for shortening individual chain legs of sling chain assemblies of grade 100 according to ASTM A 906/A 906M.

They can be used anywhere in the chain leg as a permanent or non-permanent connection.

They are constructed symmetrically in terms of safe handling and have safety latches against unintentional release of the chain.

RAPID shortening claws should only be used within one loaded chain leg and only together with chains according to the marked nominal size and grade 100.

They are not intended for connecting different chain legs.



RAPID shortening claws must exclusively be used:

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

Failure to do so may cause serious injury or property damage.

When using RAPID shortening claws within sling chain assemblies observe their Operating Instructions. In particular, the Working Load Limits as a function of the number of chain legs and angle of inclination are documented here.

RAPID shortening claws meet EG Machinery Directive 2006/42/EC requirements and feature a safety factor of at least 4 based on the Working Load Limit.

They are signed with the corresponding chain size, grade, manufacturer's symbol and traceability code.

RAPID shortening claws are designed to withstand 20,000 dynamic load changes under maximum load conditions. In the event of higher loads (e.g. multi-shift operation), the Working Load Limit must be reduced.

RAPID shortening claws can also be used within lashing chain assemblies. When used within a lashing system the maximum lashing capacity is obtained by doubling the Working Load Limit.

Any alternating use for lifting and lashing purposes is impermissible!

4. COMMISSIONING

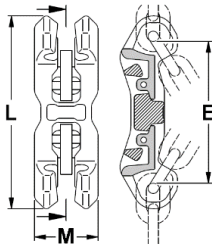
Prior to using the RAPID shortening claws for the first time assure that

- the components comply with the order and have not been damaged,
- test certificates and Operating Instructions are at hand,
- markings correspond with what is specified in the documentation,
- inspection deadlines and the qualified persons for examinations are determined,
- visibility and functional testings are carried out and documented,
- documentation is safely kept in an orderly manner.

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

5. TECHNICAL DATA

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



Nominal Size	Article No.	WLL [lbs.]	Dimensions [mm]			Mass [lbs.]
			E	L	M	
5/16	F34775	5,700	111	148	48	1.74
3/8	F34780	8,800	134	180	60	3.31
1/2	F34785	15,000	179	240	78	5.95
5/8	F34790	22,600	222	296	96	10.58

6. ASSEMBLY AND REMOVAL

6.1 General

All components to be installed or used must be in perfect condition and the relevant Working Load Limits of all parts must accommodate the respective load to be handled.



Allways assemble/remove components in load-free condition.

6.2 Assembly

The assembly is carried out on the chain leg to be shortened first with the upper side of the shortening claw.

A) Unload the sling chain assembly totally!

B) Take the shortening claw in one hand and open the upper safety latch with your forefinger (1).

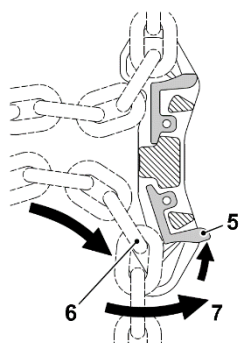
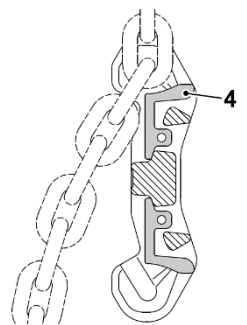
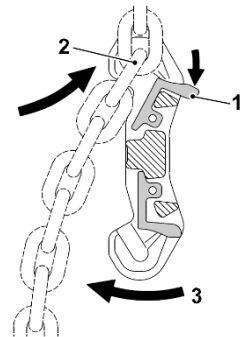
Take the chain slightly below the desired position in the other hand and insert a chain link (2) from below into the upper pocket. Slightly tilt the RAPID shortening claw (3) so that the shortening claw easily fits into the chain leg.

C) Push the chain link (2) into the pocket until it stops. Release the safety latch (4) so that it returns to its basic position (securing position).

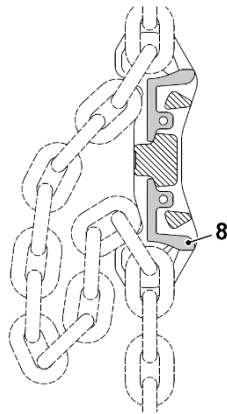
D) Check the correct fit of the chain.

E) Take the shortening claw in one hand and grab the chain leg to be shortened with the other.

Fix the chain link (6) to be positioned in the lower pocket between thumb and forefinger.



F) Slide this chain link (6) into the pocket. Press the lower next chain link against the safety latch (5). Tilt the shortening claw a bit (7) so that it easily fits into the chain leg. Push the chain link (6) into the pocket until it stops.



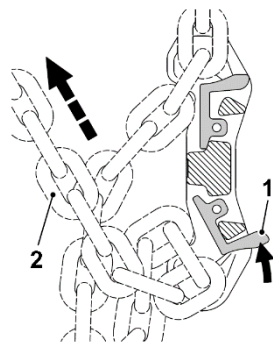
G) Make sure that the safety latch (8) returns to its basic position (securing position). Check that the chain links are in the correct position within the pockets.

6.3 Disassembly

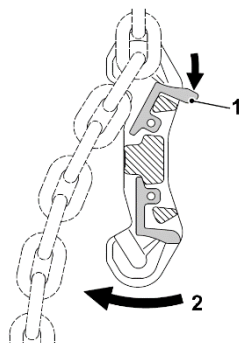
The disassembly is carried out first with the lower side of the shortening claw.

A) Unload the sling chain assembly totally!

B) Unlock the lower safety latch with one hand. With the other hand grab the chain leg below the shortening claw and lift it up so that the chain moves out of the pocket. Be quite energetic. As a result, the chain dissolves better out of the pocket. But do not tear so hard that the flinging chain will hurt you or others!



C) Take the shortening claw in one hand and open the upper safety latch with your forefinger (1). Tilt the shortening claw slightly (2). Lift the shortening claw and thread the chain from the top of the shortening claw.



7. CONDITIONS OF USE

7.1 Normal Use

The shortening of individual chain legs in a multi-leg sling chain assembly indicates a non-symmetrical load distribution. In this case, pay attention to the necessary reduction of the Working Load Limit.



Note that safety elements must not be loaded during operation.

7.2 Influence of Temperature



The respective temperature range limits must be considered for all components used.

Temperature Range
-30 °C ≤ t ≤ 205 °C
-22 °F ≤ t ≤ 400 °F



If shortening claws have been exposed to temperatures exceeding the maximum values specified they must not be used furthermore.

7.3 Environmental Influences



RAPID shortening claws 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.

RAPID shortening claws should not be used in blasting plants.



RAPID shortening claws should not be used on construction sites because pockets and safety systems may be contaminated by beton.

7.4 Especially Hazardous Conditions



The degree of danger when used for the lifting of hazardous loads, risk potentials must 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. INSPECTION, MAINTENANCE, DISPOSAL



Inspections and maintenance must be arranged by the Owner!

Inspection intervals shall be determined by the Owner!

Inspections must be regularly carried out and documented by competent persons, at least once a year or more frequently if the shortening claws are in heavy-duty service. After three years at the latest shortening claws 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 kept in a file that has to be set up for each shortening claw before first use. The register will show characteristic data as well as identity details.

Immediately stop using shortening claws that show the following defects:

- missing or illegible identification/markings,
- deformation, cuts, notches, cracks, incipient cracks,
- pocket wear by more than 10 % of the associated chain diameter,
- missing or damaged dowel pins, springs or safety latches,
- heating beyond permissible limits,
- severe corrosion.



Cleaning (e.g. prior to inspections) must not take place by using flames or methods that might cause hydrogen embrittlement (e.g. pickling or immersion in acidic solutions).

8.1 Inspection Service

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

8.2 Maintenance



Maintenance and repair work must only be performed by competent and trained persons.

All maintenance and repair activities must be documented properly.

8.3 Disposal



All steel components and accessories taken out of service must be scrapped in accordance with local regulations and provisions.

9. SPARE PARTS



Use only original spare parts.

Sets consist of 2 retainers, 2 springs and 2 spirll pins.

Nominal Size	Article No.
5/16	F347750
3/8	F347800
1/2	F347850
5/8	F347900

10. STORAGE



Special sling components must be stored properly sorted and in dry conditions at temperatures between 32 °F and 104 °F.

Do not store in a manner that cause mechanical damage.

11. THIELE OPERATING AND MOUNTING INSTRUCTIONS



Current mounting and operating instructions are available as a PDF download on the THIELE-website www.thiele.de.



12. PUBLISHING INFORMATION

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