

MOUNTING INSTRUCTIONS
 SELF-LOCKING HOOKS
 GRADES 80 AND 100



Eye type
 TWN 0798
 TWN 1836



Clevis type
 TWN 0799
 TWN 1837

DEFINITIONS

Clevis

A U-shaped fitting with pin.

Working Load Limit (WLL)

The maximum load, which a self-locking hook is designed to support.

WARNING

The following mounting instructions must always be followed to avoid the risk of personal injury or property damage.
Do not use a self-locking hook before reading these mounting instructions.

NOTICE

Read ASME B30.10 „Hooks“.
Read ASME B30.26 “Rigging Hardware”, Chapters 26-0, 26-1, 26-4.

1. ABOUT THIS INSTRUCTION

These mounting instructions describes in particular how self-locking hooks according to TWN 0798 grade 80, TWN 0799 grade 80, TWN 1836 grade 100 and TWN 1837 grade 100 (TWN = THIELE works 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 self-locking hook.

2. BASIC SAFETY REQUIREMENTS

WARNING

To prevent the risk of injury never walk or stay under lifted loads!
The working load limit must not be exceeded!
Self-locking hooks 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!



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.



- Operators, fitters and maintenance personnel must in particular observe the mounting and 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), ISO 1837 Lifting hooks - Nomenclature.
- 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 mounting instructions and specified documentations relating to safety, assembly, operation, inspection, and maintenance must be made available to persons operating and using the self-locking hooks.

Chains and accessories marked with the American nominal size 7/32" already corresponded to European nominal size 6 mm. In order to achieve a better match, the previous nominal size 7/32" is now converted to the new nominal size 1/6". The working load limits have now also been adjusted.

MOUNTING INSTRUCTIONS

SELF-LOCKING HOOKS

GRADES 80 AND 100



SAFETY INSTRUCTIONS

- 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. Also see chapter 12.
- 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 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 self-locking hooks.
- Only lift loads that do not exceed the working load limit of the sling chain assembly.
- Never expose self-locking hooks to loads exceeding the specified working load limit.
- Make sure the load can take the forces to be applied without suffering deformation.
- Do not use force when mounting/positioning the self-locking hooks.
- Self-locking hooks must only be loaded at their base, never at their tips. Clamping of the load at the tip of the hook between the upper and lower part is not permitted.
- Do not tip-load a hook.
- Avoid bending loads to act on chain links and self-locking hooks.
- Always monitor a suspended load.
- Only lift loads that are freely movable and not attached or fastened.
- Safety elements must not be stressed or strained operationally.
- Use only shortening/grab hooks or claws for chain shortening purposes.
- Do not start lifting before you have made sure the load has been correctly attached and balanced.
- **No one including you (operator) must be 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 a hook in slack condition.
- Never move a suspended load over persons.
- Never cause suspended loads to swing.

- Self-locking hooks must only be loaded at their base, never at their nose. Clamping of the load at the tip of the hook between the upper and lower part is not permitted.
- Avoid impacts, e.g. due to abruptly lifting loads with chain in slack condition.
- Do not operate the system without fully functioning safety devices (cotters, dowel pins, catch).
- Loads must only be lifted when the hooks are in a locked position.
- Self-locking hooks must be allowed to move freely in all tensile directions.
- Put the load only down in flat places/sites where it can be safely deposited.
- 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, self-locking hooks are not permitted for the transportation of persons.

3. DESCRIPTION AND INTENDED USE

Self-locking hooks are exclusively intended for the usage in chain sling assemblies according to ASTM A 906/A 906M.

The connection to the sling chain is made directly by the clevis or indirectly by using connecting links which are assembled to the eye.



Self-locking hooks must exclusively be used

- within the limits of their permissible working load limits,
- within the temperature limits prescribed,
- for permissible attachment methods and sling angles,
- by trained and authorized personnel,
- with original connecting bolts and pins of the specified size.

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

Self-locking hooks 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.

THIELE self-locking hooks are designed to withstand 20 000 dynamic load cycles under maximum load conditions.

In the event of higher loads (e.g. multi-shift/automatic operation) the working load limit must be reduced.

MOUNTING INSTRUCTIONS

SELF-LOCKING HOOKS

GRADES 80 AND 100



Self-locking hooks can also be used within lashing chain assemblies. When used within a lashing system the maximum lashing capacity (LC) is obtained by doubling the working load limit.

Any alternating use for lifting and lashing purposes is impermissible!

4. COMMISSIONING

Prior to using the components for the first time assure that

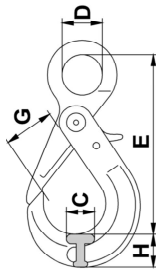
- the components comply with the order and have not been damaged,
- test certificates and mounting instructions are at hand,
- markings correspond with what is specified in the documentation,
- inspection deadlines and the qualified persons for examinations are determined,
- visibility and functional 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

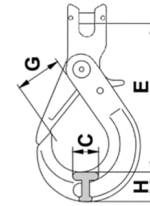
Tables include only article numbers of standard and not customized parts.

5.1 Self-locking hooks with eye, TWN 0798, Grade 80



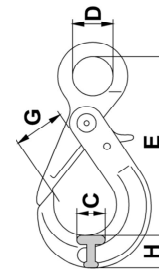
Nominal size	Article no.	WLL [lbs]	Dimensions [mm]					Mass [lbs]
			E	D	G	H	C	
1/4	Z07274	2 500	107	22	28	22	18	1.10
5/16	Z07275	3 500	133	24	33	25	23	1.76
3/8	Z07276	7 100	167	32	45	34	27	3.31
1/2	Z07277	12 000	208	39	52	40	34	7.16
5/8	Z07278	18 100	254	49	64	53	43	13.00
3/4	Z10187	28 300	272	59	77	64	48	16.16
7/8	Z10184	34 200	310	70	92	74	57	21.85

5.2 Self-locking hooks with clevis TWN 0799, Grade 80



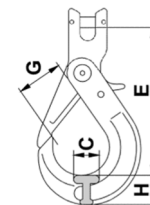
Nominal size	Article no.	WLL [lbs]	Dimensions [mm]				Mass [lbs]
			E	G	H	C	
1/4	Z07279	2 500	98	28	22	18	1.26
5/16	Z07280	3 500	120	33	25	23	2.05
3/8	Z07281	7 100	150	45	34	27	3.86
1/2	Z07282	12 000	185	52	40	34	7.16
5/8	Z07296	18 100	215	64	53	43	16.56
3/4	Z10192	28 300	235	77	64	48	16.05

5.3 Self-locking hooks with eye TWN 1836, Grade 100



Nominal size	Article no.	WLL [lbs]	Dimensions [mm]					Mass [lbs]
			E	D	G	H	C	
1/4	F092203	3 100	110	21	28	20	15	1.10
5/16	F092213	5 700	137	27	36	26	20	1.76
3/8	F092223	8 800	169	35	45	30	26	3.31
1/2	F092233	15 000	209	40	54	41	33	6.61
5/8	F092243	22 600	254	50	62	51	38	13.23
7/8	F092273	42 700	320	70	80	66	52	25.88

5.4 Self-locking hooks with clevis TWN 1837, Grade 100



Nominal Size	Article No.	WLL [lbs]	Dimensions [mm]				Mass [lbs]
			E	G	H	C	
1/4	F092002	3 100	96	28	20	15	1.10
5/16	F092012	5 700	123	36	26	20	1.98
3/8	F092022	8 800	144	45	30	26	3.31
1/2	F092032	15 000	182	54	41	33	6.61
5/8	F092042	22 600	217	62	51	38	13.01
7/8	F092072	42 700	277	80	66	52	27.14

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.

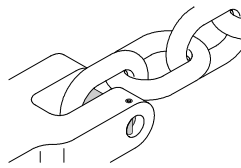


Allways assemble/remove components in load-free condition.

Self-locking hooks with eyes are usually attached to chain slings by means of connecting links. Always observe the mounting instructions for the connecting links.

6.2 Clevis fastening system

The clevis fastening system only permits attachment of the nominal chain size that suits the attachment component.

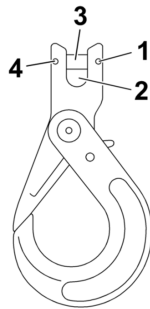


6.2.1 ASSEMBLY

The chain and clevis pin must be of the same rated size.

Bolts of hooks TWN 0799 are secured with one dowel pin, bolts of hooks TWN 1837 are secured with two dowel pins. #

- Remove the dowel pin or pins (1, 4) as well as clevis pin (3) if necessary.
- Introduce the end of the chain between the sides of the clevis (2).
- Insert the pin (3) sideways into the clevis and through the final link of the chain.
- Drive home the dowel pins (1, 4) so that they sit flush within their recesses.



The slot must face away from the clevis pin.

- Check that the chain is free to move.

6.2.2 DISASSEMBLY

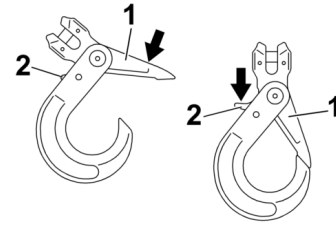
- Loosen the relevant chain sling.
- Use a mandrel to drive out the dowel pins (1/4).
- Remove the pin (3)
- Remove the chain link

Only connect together pins and sling parts of the same grade (pins $\varnothing 1/2''$ and over are marked on their face side).

Dowel pins are intended for one-off use only.

7. OPERATION

To lock the hook, push the top section (1) down towards the lower section.



Danger of jamming! #

When lifting loads do not grasp between the top and bottom sections as the hook automatically closes tight under load.

To open the hook, loosen the chain sling and press down on the locking lever (2).

8. CONDITIONS OF USE

8.1 Normal use



Self-locking hooks must always be freely movable when attached to the load and must not rest on or be supported by other structural parts.

8.2 Influence of temperature



Using self-locking hooks at elevated temperatures will cause the working load limit to be reduced as indicated below.

Grade	Temperature range	Remaining WLL
Grade 80	-40 °C ≤ t ≤ 205 °C -40 °F ≤ t ≤ 400 °F	100 %
	205 °C < t ≤ 300 °C 400 °F < t ≤ 572 °F	90 %
	300 °C < t ≤ 400 °C 572 °F < t ≤ 752 °F	75 %
Grade 100	-40 °C ≤ t ≤ 205 °C -40 °F ≤ t ≤ 400 °F	100 %



If a self-locking hook has been exposed to temperatures exceeding the maximum values specified, it must not be used furthermore.

8.3 Environmental influence



Self-locking hooks 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.

Self-locking hooks are not intended to be used for abrasive blasting environments.

8.4 Especially hazardous conditions

The degree of danger when used in offshore applications, the lifting of hazardous loads, such as for example liquid metal, or similar 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.

9. INSPECTION, MAINTENANCE, DISPOSAL



Inspections and maintenance must be arranged by the owner!

Inspection intervals shall be determined by the owner!

Visual inspections must be carried out and documented by competent and trained persons regularly, but at least once a year or more frequently if the self-locking hooks are in heavy duty service. After three years at the latest they must additionally be examined for cracks. A load test is not a substitute for this examination.

The results of the inspection shall be kept into a file that has to be set up for each sling chain before first use. The register shall show characteristic data of the chains and components as well as identity details.

Immediately stop using self-locking hooks that show the following defects:

- missing or illegible identification/markings,
- deformation, elongation or fractures of chains or components,
- cuts, notches, cracks, incipient cracks, pinching,
- heating beyond permissible limit,
- severe corrosion,
- broken spring,
- wear in excess of 10 %, e.g. hook attachment area and pin diameter,
- excessive play between the top and bottom sections,
- less than 50 % overlap between the top section and the nose.



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).

9.1 Inspection service

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

9.2 Maintenance



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.

10. SPARE PARTS



Use only original spare parts.

10.1 Spare part sets TWN 0967/0

for TWN 0799 #

Nominal size	Article no.	Contents
1/4	F333700	Clevis pin, Dowel pin
5/16	F333711	
3/8	F333721	
1/2	F333730	
5/8	F333741	
3/4	F0922057	

10.2 Spare part sets TWN 0967/1

for TWN 0798, TWN 0799

Nominal size	Article no.	Contents
1/4	F329090	Safety lever, Spring, Dowel pins
5/16	F329190	
3/8	F329290	
1/2	F329390	
5/8	F329490	
3/4	F0922056	
7/8		

10.3 Spare part sets TWN 1933/0

for TWN 1837

Nominal size	Article no.	Contents
1/4	Z10118	Clevis pin, Dowel pins
5/16	Z10119	
3/8	Z10120	
1/2	Z10121	
5/8	Z10122	
7/8	Z10125	

10.4 Spare part sets TWN 1935

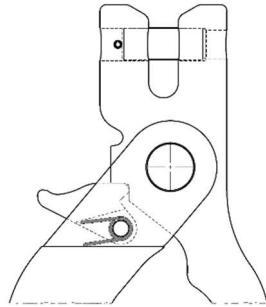
for TWN 1836, TWN 1837

Nominal size	Article no.	Contents
1/4	Z10110	Safety latch, Spring, Dowel pin
5/16	Z10111	
3/8	Z10112	
1/2	Z10113	
5/8	Z10114	
7/8	Z10117	

10.5 Assembly of safety system

(only for replacement)

1. Position the safety lever with the leg spring in the closed position of the hook and insert an auxiliary bolt laterally into the holes for the two dowel pins and the safety lever as well as through the spring coils.
2. First drive in the dowel pin (for two the thicker one) instead of the auxiliary bolt.
3. If the safety lever is then difficult to move, remove the dowel pin and knock it in again in the reversed position.
4. If present the drive in the thinner dowel pin into the already mounted one, making sure that the slots of the two dowel pins are opposite each other.
5. Check several times that the safety lever takes its locking position smoothly after opening and closing the hook and that the hook cannot be opened.



11. STORAGE

NOTICE

Self-locking hooks 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.

12. THIELE OPERATING AND MOUNTING INSTRUCTIONS

NOTICE

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



13. PUBLISHING INFORMATION

Company	KWS Inc. (Distributor)	THIELE GmbH & Co. KG (Manufacturer)
Postal address	P.O. Box 470487 Tulsa, OK 74147 USA	Werkstrasse 3 58640 Iserlohn Germany
Phone number	+1 (539) 367 2274	+49 2371/947-0
Fax number	+1 (539) 367 2278	+49 2371/947-241
Email	sales@kwschain.com	info@thiele.de