

**Sling Hooks
with Clevis**
TWN 1340/1
TWN 1840/1



**Sling Hooks
with Eye**
TWN 0855/1
TWN 0858/1
TWN 1841/1



**Foundry
Hooks**
TWN 0859
TWN 0856
TWN 1856



**Swivel
Hooks**
TWN 0854
TWN 0887



**Lifting Hook
for Engines**
TWN 0889



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

Do not use a hook before reading these Mounting Instructions.

1. ABOUT THIS INSTRUCTION

This Mounting Instructions describes in particular how sling hooks according to TWN 1340/1, TWN 1840/1, TWN 0855/1, TWN 0858/1, TWN1841/1, TWN 0859, TWN 0856, TWN 1856, TWN 0854, TWN 0887, TWN 0889 (TWN = THIELE Shop Standard) are to be safely used for lifting purposes.

The instruction applies 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 hooks.



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.

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 15/64". The Working Load Limits have now also been adjusted.

Definitions

Clevis

A U-shaped fitting with pin.

Working Load Limit (WLL)

The maximum load which a hook is designed to support without shock-loading.



NOTICE

Read ASME B30.10 „Hooks“.

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!

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!

SAFETY INSTRUCTIONS

- 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.
- During operation work, wear your personal protective equipment!

**SAFETY
INSTRUCTIONS**

- 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 hooks.
- These Mounting 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.
- **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, 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 hooks.
- Only lift loads that do not exceed the Working Load Limit of the corresponding sling chain assembly.
- Never expose hooks to loads exceeding the specified Working Load Limit.
- Do not use force when mounting/positioning the hooks.
- **No one including you (operator) must be in the way of the moving load (hazard area).**
- Do not tip-load a hook.
- Hooks shall have well-functioning safety latches.
- Avoid bending loads to act on chain links and hooks.
- Only lift loads that are freely movable and not attached or fastened.
- Always monitor a suspended load.
- During lifting your hands or other body parts must 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.
- Usage without working safety elements (cotter pins, dowel pins) is not permissible.
- Make sure the load can take the forces to be applied without suffering deformation.
- 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 regards grade 100, THIELE does not give its approval to the assembly of components sourced from different manufacturers!

As a rule, hooks and chain slings are not permitted for the transportation of persons.

3. DESCRIPTION AND INTENDED USE

THIELE Hooks are exclusively intended as end fittings 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.

Hooks with Eye can also be used within welded chain sling assemblies.



Hooks must exclusively be used

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

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

THIELE Hooks 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 must be reduced.

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

Hooks with safety device 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 components for the first time assure that

- the hooks 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.

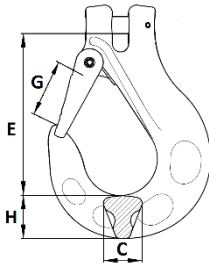
Dispose of the packing in an environmentally compatible way according to local rule.

5. TECHNICAL DATA

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

5.1 Sling Hooks with Clevis, TWN 1340/1, Grade 80

Executions according to TWN 1340 without safety latch.

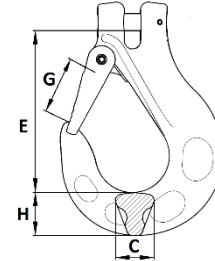


Nominal Size	Article No.	WLL [lbs.]	Dimensions [mm]				Mass [lbs.]
			E	G	H	C	
15/64	F336010	2,500	75	24	20	17	0.79
5/16	F336110	4,500	92	30	25	22	1.65
3/8	F336210	7,100	113	37	32	28	3.09
1/2	F336310	12,000	133	42	41	35	5.51
5/8	F336410	18,100	162	51	50	41	9.70
3/4	F33656 ¹⁾	28,300	220	65	58	55	21.3
7/8	F33661 ¹⁾	34,200	244	75	64	61	23.4

1) TWN 0835/1

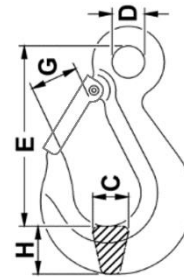
5.2 Sling Hooks with Clevis, TWN 1840/1, Grade 100

Executions according to TWN 1840 without safety latch.



Nominal Size	Article No.	WLL [lbs.]	Dimensions [mm]				Mass [lbs.]
			E	G	H	C	
15/64	F336050	3,100	75	24	20	17	0.79
5/16	F336150	5,700	92	30	25	22	1.65
3/8	F336250	8,800	113	37	32	28	3.09
1/2	F336350	15,000	133	42	41	35	5.51
5/8	F336450	22,600	162	51	50	41	9.70

5.3 Sling Hooks with Eye, TWN 0855/1, Grade 80



Nominal Size	Article No.	WLL [lbs.]	Dimensions [mm]					Mass [lbs.]
			E	D	G	H	C	
1 ²⁷ / ₆₄	Z06159	88,200	388	72	109	103	78	71.21
1 ³⁷ / ₆₄	Z06160	110,200	442	84	124	116	89	103.6
1 ²⁵ / ₃₂	Z06161	138,900	494	90	138	130	99	142.0
1 ³¹ / ₃₂	Z06162	176,400	610	102	155	145	110	180.6

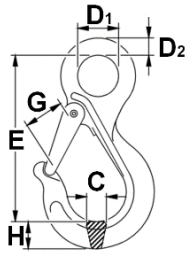
5.4 Sling Hooks with Eye, TWN 0855, Grade 80

Without safety latch.

Nominal Size	Article No.	WLL [lbs.]	Dimensions [mm]					Mass [lbs.]
			E	D	G	H	C	
1 ²⁷ / ₆₄	Z04079	88,200	388	72	109	103	78	69.45
1 ³⁷ / ₆₄	Z04083	110,200	442	84	124	116	89	101.4
1 ²⁵ / ₃₂	Z04080	138,900	494	90	138	130	99	138.9
1 ³¹ / ₃₂	Z04081	176,400	610	102	155	145	110	176.4

5.5 Sling Hooks with Eye, TWN 0858/1, Grade 80

Executions according to TWN 0858 without safety latch.

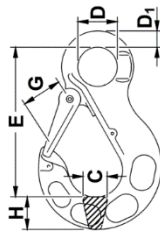


Nom. Size	Article No.	WLL [lbs.]	Dimensions [mm]						Mass [lbs.]
			E	D	D ₁	G	H	C	
15/64	F32901	2,500	91	21	11	23	17	16	0.66
5/16	F32911	4,500	120	28	14	30	24	22	1.76
3/8	F32921	7,100	152	36	18	38	29	28	3.75
1/2	F32931	12,000	180	42	21	42	41	36	5.51
5/8	F32941	18,100	221	54	27	52	45	43	11.24
3/4	F32951	28,300	270	62	30	65	58	55	19.1
7/8	F329710 ¹⁾	34,200	271	65	30	70	62	54	21.4
1	F329810 ¹⁾	47,700	302	70	33	75	71	59	30.9
1 1/4	F329910 ¹⁾	72,300	352	80	38	90	86	67	55.1

1) New design similar to TWN 1340/1

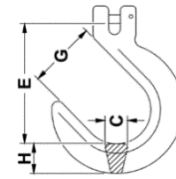
5.6 Sling Hooks with Eye, TWN 1841/1, Grade 100

Executions according to TWN 1841/1 without safety latch.



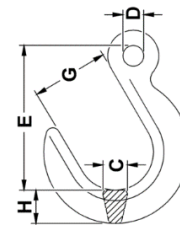
Nominal Size	Article No.	WLL [lbs.]	Dimensions [mm]						Mass [lbs.]
			E	D	D ₁	G	H	C	
15/64	F32905	3,100	91	21	11	24	20	17	0.75
5/16	F32915	5,700	118	28	14	30	25	22	1.75
3/8	F32925	8,800	145	36	18	37	32	28	3.25
1/2	F32935	15,000	168	42	21	42	41	35	5.63
5/8	F32945	22,600	210	54	25	51	50	41	10.25
7/8	F32975	42,700	271	65	30	70	62	54	21.55
1	F32985	59,700	302	70	33	75	71	59	31.30

5.7 Foundry Hooks with Clevis, TWN 0859, Grade 80



Size	Article No.	WLL [lbs.]	Dimensions [mm]				Mass [lbs.]
			E	G	H	C	
5/16	F33310	4,500	110	66	33	27	2.20
3/8	F33320	7,100	133	76	35	32	3.53
1/2	F33330	12,000	159	89	41	38	7.5
5/8	F33340	18,100	189	102	48	45	12.13
7/8	F33660	34,200	244	124	60	56	26.45

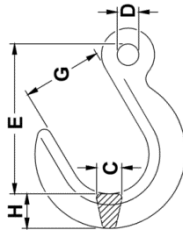
5.8 Foundry Hooks with Eye, TWN 0856, Grade 80



Nom. Size	Article No.	WLL [lbs.]	Dimensions [mm]					Mass [lbs.]
			E	D	G	H	C	
15/64	Z00456	2,500	95	13	50	24	20	1.17
5/16	F32360	4,500	125	18	66	33	27	2.05
3/8	F32370	7,100	146	20	76	35	32	3.75
1/2	F32380	12,000	175	26	89	41	38	7.05
5/8	F32390	18,100	205	32	102	48	45	11.9
3/4	F32400	28,300	235	40	114	54	51	16.5
7/8	Z00457 ²⁾	34,200	265	47	127	70	65	25.1
1	Z00458 ²⁾	47,700	305	52	136	80	72	30
1 1/4	Z00459 ²⁾	72,300	327	60	152	93	83	61.7

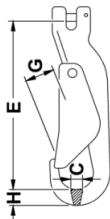
2) Hand forged

5.9 Foundry Hooks with Eye, TWN 1856, Grade 100



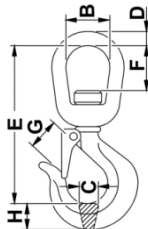
Nominal Size	Article No.	WLL [lbs.]	Dimensions [mm]						Mass [lbs.]
E	D	G	H	C					
15/64	F32355	3,100	108	21	50	24	20	0,97	
5/16	F32365	5,700	150	28	66	33	26	2,14	
3/8	F32375	8,800	161	32	76	35	32	3,44	
1/2	F32385	15,000	196	42	89	42	38	6,53	
5/8	F32395	22,600	229	54	102	48	45	10,38	
7/8	F32413	42,700	288	65	127	70	65	24,03	

5.10 Lifting Hook for Engines, TWN 0889, Grade 80



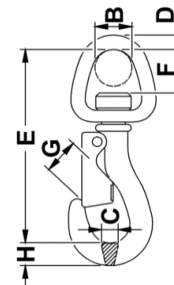
Nominal Size	Article No.	Nominal Diameter [mm]	WLL [lbs.]	Dimensions [mm]				Mass [lbs.]
E	G	H	C					
15/64	F33439	6	1,100	137	19	13	12	1.21

5.11 Swivel Hooks, TWN 0854, Grade 80



Nominal Size	Article No.	WLL [lbs.]	Dimensions [mm]								Mass [lbs.]
E	G	H	C	F	B	D					
15/64	F32103	2,500	114	18	20	14	25	30	10	0.84	
5/16	F32103	4,500	155	21	25	19	42	44	16	2.20	
13/8	F32103	7,100	162	23	30	21	42	44	16	2.65	
1/2	F32103	12,000	190	32	33	28	43	51	19	4.63	
5/8	F32103	18,100	247	40	43	35	61	64	25	9.92	

5.12 Swivel Hooks, TWN 0887, Grade 80



Nominal Size	Article No.	WLL [lbs.]	Dimensions [mm]							Mass [lbs.]
E	G	H	C	D	F	B				
0.35	F32160	770	98.5	14	14	14	9	20	16	0.53

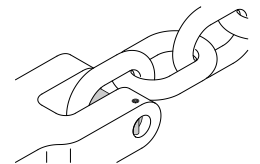
6. ASSEMBLY AND REMOVAL

6.1 Preparations

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.

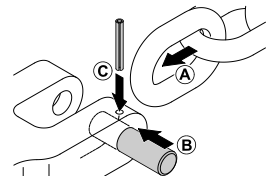
6.2 Clevis Fastening System

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



6.2.1 ASSEMBLY

- 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.



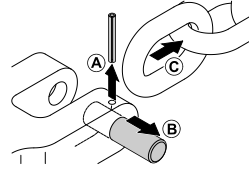
Check whether the chain runs smoothly.

The dowel pins must only be installed once.

Only connect pins and attachment components of identical grades. Starting with $\varnothing \frac{1}{2}$ " the pins are marked on the front end.

6.2.2 DISASSEMBLY

- Slacken the respective chain leg.
- (A) Drive dowel pin out using hammer and drift punch ¹⁾.
- (B) Push pin out using a drift punch.
- (C) Remove the chain.



Suitable drift punches are available by Article No. Z03303.

6.3 Safety Latch

Disassembly by driving the dowel pins out.

Assembling by correct positioning of safety latch together with spring and driving in the thicker dowel pin by a hammer. Afterwards the thinner dowel pin has to be driven in, taking care that the slots positioned adverse. Check the correct operability of the safety latch.

7. CONDITIONS OF USE

7.1 Normal Use



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

When using hooks without safety latch, e.g. due to operational necessities, special care is to be taken, and a separate risk analysis must be prepared.

7.2 Influence of Temperature



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

	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	-30 °C ≤ t ≤ 205 °C # -22 °F ≤ t ≤ 400 °F	100 %



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

7.3 Environmental Influence



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. Hooks with clevis are not intended to be used for abrasive blasting environments.

8. SPARE PARTS



Use only original spare parts.

8.1 Spare Parts Sets for Clevis Fastening System

Sets consist of pins and dowel pins.

Grade 80		Grade 100	
Nominal Size	Article No.	Nominal Size	Article No.
15/64	F48694	15/64	F48686
5/16	F48352	5/16	F48687
3/8	F48355	3/8	F48688
1/2	F48358	1/2	F48689
5/8	F48361	5/8	F48690
3/4	F48369		
7/8	F48367		

8.2 Spare Part Sets Safety Latches

Sets consist of safety latch, spring and dowel pins.

Grade 80 TWN 0835/1 TWN 0858/1 TWN 1340/1		Grade 100 TWN 1835/1 TWN 1840/1 TWN 1841/1	
Nominal Size	Article No.	Nominal Size	Article No.
7/32	F48730	7/32	F48731
5/16	F48732	5/16	F48733
3/8	F48734	3/8	F48735
1/2	F48736	1/2	F48737
5/8	F48738	5/8	F48739
3/4	F48742	7/8	F48745
7/8	F48744	1	on request
1	F48746	-	-
1 ¼	F48747	-	-

9. INSPECTION, MAINTENANCE, DISPOSAL



Inspections and maintenance must be arranged by the Owner!

Inspection intervals must be determined by the Owner!

Visual inspections must be regularly carried out and documented by competent and trained persons, at least once a year or more frequently if the 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 in a file that has to be set up for each sling chain before first use. The register shall show characteristic data of the sling chains and components as well as identity details.

Immediately stop using hooks that show the following defects:

- missing or illegible identification/markings,
- deformation, elongation or fractures,
- cuts, notches, cracks, incipient cracks, pinching,
- heating beyond permissible limits,
- severe corrosion,
- broken springs,
- not sufficient working safety devices,
- wear in excess of 10 %, e.g. in the receiving area of the pin diameter,
- missing or damaged pin locks or removal preventing guards.



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



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

Minor notches and cracks may be eliminated by careful grinding observing the maximum cross section reduction requirement of max. 10 % and avoid making more severe cuts or scores.

All maintenance and repair activities must be documented properly.

9.3 Disposal

NOTICE

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

10. STORAGE

NOTICE

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.

11. THIELE OPERATING AND MOUNTING INSTRUCTIONS

NOTICE

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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