

# THIELE LASHING PRODUCTS

Lifting Products, Lashing Points  
and Lashing Chains



# Product Overview of Lashing Products

Pages  
150-156

## Grade 100 Lashing Chains and Components

TWN 1410 / TWN 1411		TWN 0072		TWN 1805	
TWN 1454	TWN 1455	TWN 1460	TWN 1473	TWN 1474	
TWN 1880	TWN 1890	TWN 1820	TWN 1851/1	TWN 1852	
TWN 1827/1	TWN 1869	TWN 1840/1	TWN 1899		

Pages  
157-162

## Grade 80 Lashing Chains and Components

TWN 1400 / TWN 1401			TWN 0805	
TWN 1479	TWN 1450	TWN 1451	TWN 1452	TWN 0119
TWN 0124	TWN 1477	TWN 1471	TWN 1320	TWN 0827/1
TWN 0851/1	TWN 0869	TWN 1340/1	TWN 1399	

Page  
163

## Tensioning Components

TWN 1001				

## General Information

Load securing protects the load against the physical forces of movement that occur during transport.

Vehicles that are carrying insufficiently secured loads are encountered in traffic every day. Changes in speed or direction produce forces causing the cargo to no longer stay in position and to move on the vehicle.

To avoid this risk, every load has to be secured properly on the carrier regardless of whether it is light or heavy and even when the vehicle runs at low speed. The conditions for load securing are derived from "normal" driving operations. At "normal" driving operation, however, is not only to be understood as a foresighted and quiet driving. Normal traffic conditions also include, e.g. emergency braking, uneven road surfaces, extreme evasive maneuvers, etc.

When securing loads, all these influences must be taken into consideration. If securing proves ineffective, insurance coverage may be lost partly or even entirely. In such a case, the responsible person and company must bear the costs which may then often lead to economic ruin.

Many dedicated persons are not aware that the responsibility for load securing does not only lie on driver of a vehicle but also with all other parties involved (e.g. vehicle owner, sender, carrier, hauler, etc.).

## Physical Basics

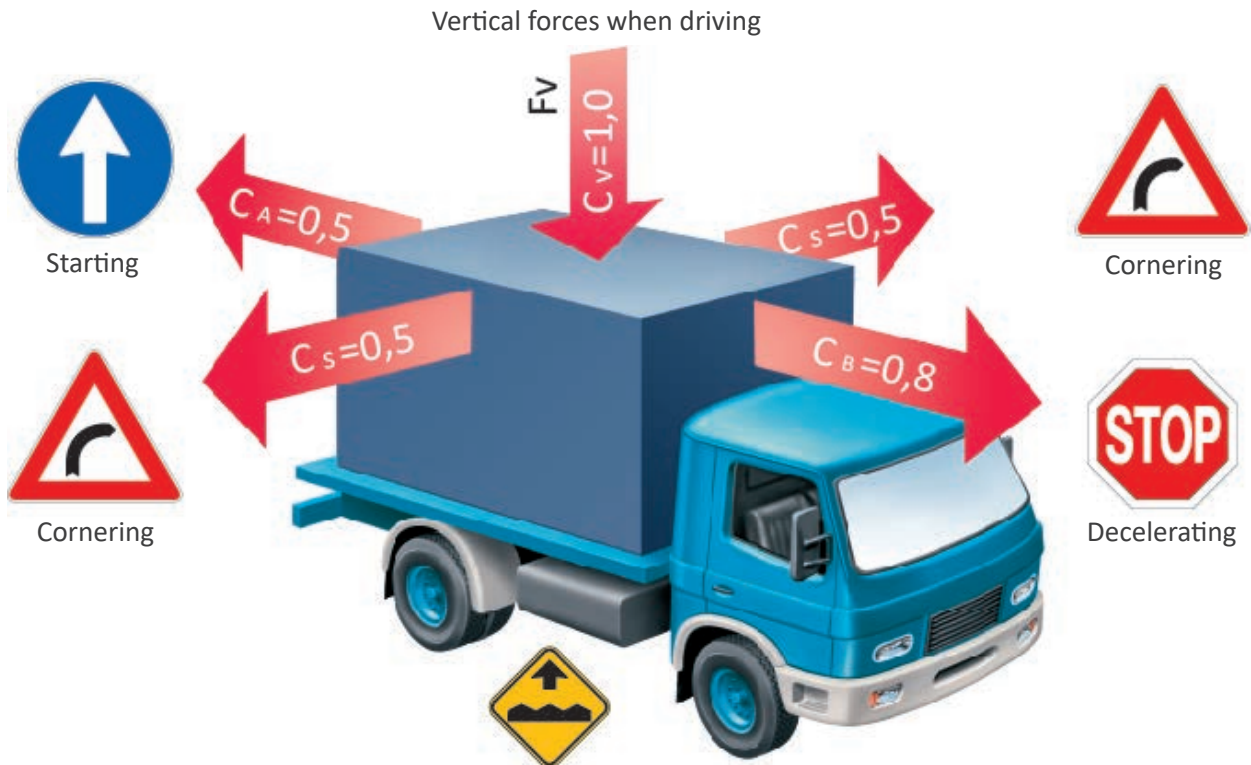
In the event of an emergency braking operation of the vehicle down to zero speed, deceleration rates of up to  $8 \text{ m/s}^2$  may arise which means that 80 % of the weight of a given cargo component has to be absorbed by load securing to prevent the load from shifting.

The centrifugal forces acting transversely to the direction of travel must be taken into consideration. The design of commercial vehicles permits building acceleration rates up to  $5 \text{ m/s}^2$ . This means that 50 % of the cargo weight has to be secured transversely to the direction of travel.





## Arising Forces in Driving Operation



### Starting

Weight forces (acceleration forces) to the rear  
 $F_A = 0.5 \times F_V = 50\%$  of the cargo weight

### Decelerating

Weight forces (deceleration forces / negative accelerations) to the front  
 $F_B = 0.8 \times F_V = 80\%$  of the cargo weight

### Cornering

Weight forces (centrifugal forces) acting sideways  
 $F_S = 0.5 \times F_V = 50\%$  of the cargo weight

## Forces of Cargo

Assuming a cargo weight of  $m = 15.000$  kgs then the vertical force of cargo  $F_V$  is 15,000 daN.  
 All these forces must be retained by means of load securing and lashing devices.

Cargo Weight	Forces of Cargo	Force
[%]		[daN] min.
100	Vertical force of cargo	$F_V = 15.000$
80	Longitudinal forward force	$F_B = 12.000$
50	Transverse force of cargo (right/left)	$F_S = 7.500$
50	Longitudinal rearward force	$F_A = 7.500$

## General Information

### Methods of Load Securing

In general a distinction between force- and form-closed cargo securing is to be made:



### Tie-down Lashing

The most common type of load securing is the tie-down lashing (pictures 1 and 2 on pages 142 and 143). The load securing devices are put over the cargo, attached to lashing points and tightened by using maximum hand force.

The pre-tensioning force presses the cargo onto the load area and thereby applies frictional forces. The sum of the weight itself and the pressing forces take effect in all directions. This is the major advantage of the tie-down lashing method.

The vertical angle  $\alpha$  primarily determines the effectiveness of the tie-down lashing method. When using a 90° angle, 100 % of the force is introduced into the lashing system. At 30° it is only 50 %. Therefore the lashing angle  $\beta$  should not exceed 30°.

#### Following points should be considered for tie-down lashing operations:

- A high degree of friction must exist between the cargo and the loading surface as well as amongst the individual loading units.
- The sliding friction coefficient must be known or estimated.
- The cargo must be able to withstand the pre-tensioning force.
- The lashing points on the vehicle must be designed to take the arising loads.
- Due to the so called settling processes, the pre-tension of the load securing devices must be regularly checked during transit in order to rule out that pre-tensioning forces will decrease and no longer be adequate.

The magnitude of the frictional force depends on the characteristics of the materials that come into contact with each other. It is clearly evident that a piece of metal will easier slide on a metal surface than on a surface consisting of rubber.

In practical tests on load surfaces as well as in laboratory tests a multitude of so called sliding friction coefficients have been determined which serve as calculation basis for cargo securing purposes.

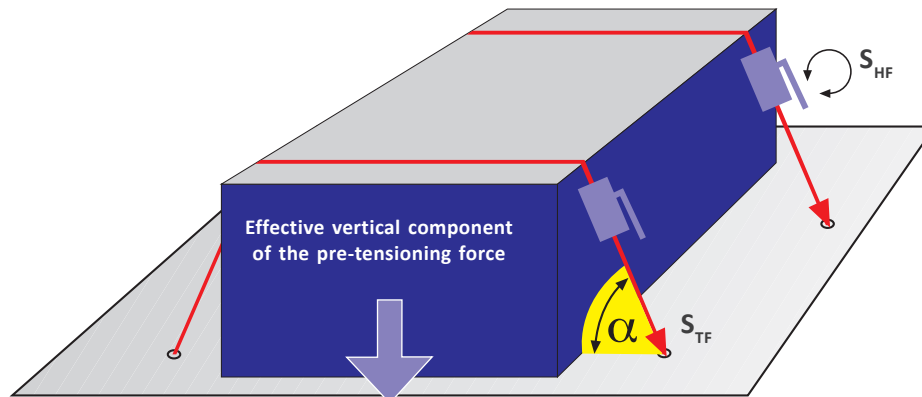
These coefficients are identified by the symbol  $\mu_D$ .

### Dynamic friction coefficients of common cargo

Material pairing	Sliding friction coefficient ( $\mu_D$ )
Steel on steel, oiled	0,10
Timber on steel plates	0,30
Steel on wood	0,40
Pre-cast concrete components with wood interlayer on wood (concrete/wood/wood)	0,40
Concrete on lattice beams	0,60



## Force introduction via the tensioning element



Picture 1

When lashing down, different pre-tensioning forces are required depending on the lashing angle.

- $S_{HF}$  = Standard Hand Force (max. 50 daN) applied to the lever of the ratchet or screw tensioner. Only if the tensioning element is tightened by hand ( $S_{HF}$ ) at 50 daN, the pretensioning force ( $S_{TF}$ ) indicated on the identification tag may be reached.
- $S_{TF}$  = Standard Tension Force is the remaining force after the lever of the tensioning device has been released; i.e. the real remaining force exerted by the load securing device.

The pre-tensioning force  $F_T$  is determined according to the following formular:

$$F_T \geq \frac{C_{A,S} - \mu_D}{\mu_D \times \sin \alpha} \times \frac{F_V}{k \times n} \quad [\text{daN}]$$

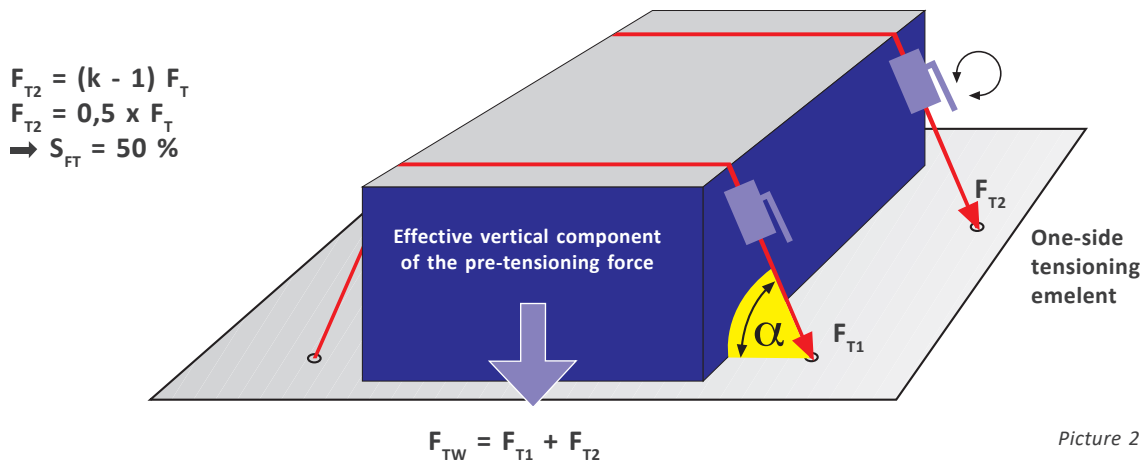
### The meaning of formula symbols:

- $C_{A,S}^*$  = Acceleration coefficient (in travel direction  $C_A = 0.8$ ; transversely and counter to the drive direction  $C_S = 0,5$ )
- $C_V^*$  = Acceleration coefficient, vertical
- $\mu_D$  = Dynamic friction coefficient (sliding friction coefficient)
- $\sin \alpha$  = Sine function of the lashing angle
- $F_V$  = Vertical force of the cargo (cargo weight); ( $F_V = m \times g \times C_V$ )
- $k$  = Transfer coefficient (loss of pre-tensioning force due to friction between the cargo and the load securing device)  
1,5 times if the load securing device is tightened by means of a tensioning device
- $n$  = Number of lashing devices

\*Assumption: Cargo on road trucks and trailers

## General Information

### Over-the-top lashing



#### Pretensioning forces

Table 3 provides estimated pre-tensioning forces that are required to safely secured cargos.

The data shown is based on material pairings listed in table 2.

As shown in table 3, the sliding friction coefficients and lashing angles are decisive!

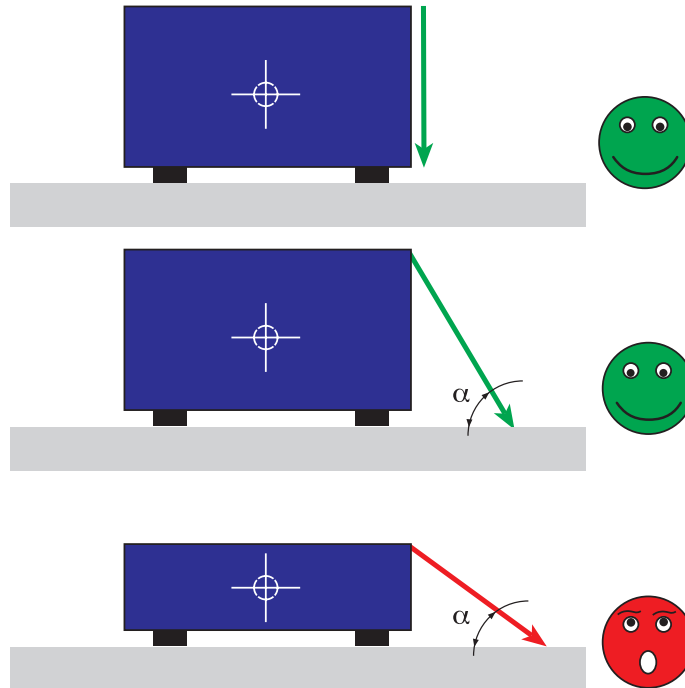
Cargo-weight ( $F_v$ ) [daN] max.	Sliding-friction coefficient ( $\mu_D$ )	Lashing Angle ( $\alpha$ )	Total pre-tensioning force ( $F_T$ ) [daN] max.	Lashing Angle ( $\alpha$ )	Total pre-tensioning force ( $F_T$ ) [daN] max.
2.000	0,10	50°	12.185	80°	9.485
	0,40	50°	1.745	80°	1.355
	0,60	50°	580	80°	455
10.000	0,10	50°	60.925	80°	47.425
	0,40	50°	8.725	80°	6.775
	0,60	50°	2.900	80°	2.275
30.000	0,10	50°	182.775	80°	142.275
	0,40	50°	26.175	80°	20.325
	0,60	50°	8.700	80°	6.825

Table 3



TZM

## Pretensioning forces



Significantly high pre-tensioning forces are sometimes needed and it is obvious that such forces may only be applied with appropriately sized load securing devices.

The most important parameters of load securing devices are as follows:

➔ **Lashing Capacity (LC)**

➔ **Standard Tension Force ( $S_{TF}$ )**

$S_{TF, \text{min.}} = 0,25 \times LC$  for chains with diameter from 6 to 10 mm

min. =  $0,15 \times LC$  for chains with diameter from 13 and 16 mm

$S_{TF, \text{max.}} = 0,50 \times LC$

Both characteristics may be found on the identification tags of the lashing chains. The lashing force is the largest force in straight pull, for which a lashing device is designed to use. The Standard Tension Force ( $S_{TF}$ ) is the force that remains in the load securing device when the tensioning lever has been released, i.e. the actual remaining force exerted by the system.

To determine how many lashing elements are needed, the calculated total pre-tensioning force must be divided by the standard tension force of the selected load securing devices. When using belt systems, a double-digit number of belts may be necessary for common loads which is unsuitable for practical purposes.

However, by using THIELE-lashing chains, you may reduce the required number of tensioning devices by a factor eight. It is generally recommended to use anti-slip mats for tie-down lashing and direct lashing to increase the coefficient of friction.



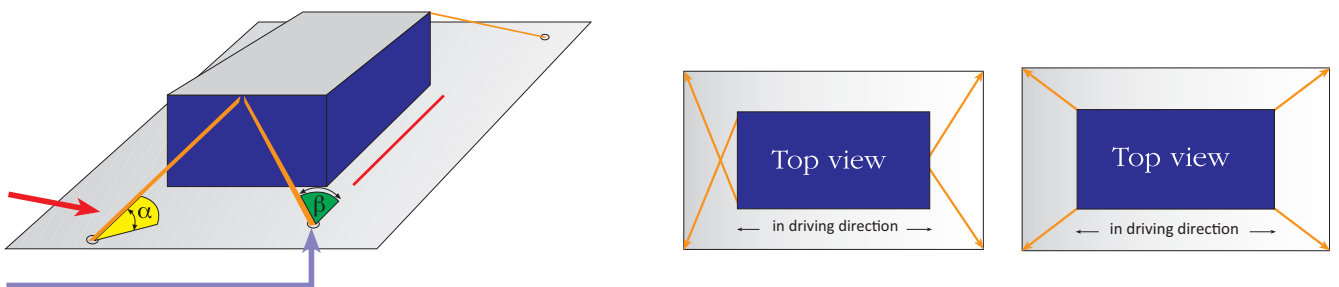
## General Information

### Direct Lashing

Direct lashing is a highly effective cargo securing method, as it makes use of the lashing capacity of the lashing device. Since the load securing device is not pretensioned, only little manual force is needed for tightening. The lashing device must be fixed to a lashing point at the load area and then at the cargo itself. It shall only be pretensioned by hand power in order to avoid sagging or swinging of the chain.

The measure for the design of a chain to be used as a securing device is calculated as the lashing capacity (LC). The lashing capacity is the decisive parameter for the chain size as well as for the related tensioning and connecting elements.

### Diagonal Lashing



For diagonal lashing, physical laws prescribe the limits according to which the lashing angles should be selected. Calculations show that it is recommended to keep horizontal angles in line between 20° and 45°. If the angle is smaller than 20° and the friction coefficient is smaller than 0.5, an additional dimensioning of the average lashing force against slipping during vehicle cornering is required. If the angle is larger than 60°, then the lashing capacity will increase disproportionately. Theoretically, they would even be infinitely larger with a 90° angle. Based on these considerations, it can be stated that a diagonal/cross-wise lashing method is not favorable for securing of loads in driving direction, at least in an extreme configuration (horizontal angle). There are also recommendable limits at the vertical angles to avoid disproportional increase of the forces in the tensioning device. The best use of the average lashing capacities is at a vertical angle between 0° and 20°.

The requested lashing capacity (LC) is calculated according to the following formula, considering the described factors:

$$LC \geq \frac{F_V \text{ [daN]} \times (C_{A,S} - \mu_D)}{(\sin \alpha \times \mu_D + \cos \alpha \times \cos \beta) \times n}$$

Based on the equation a lashing device that has at least the same admissible lashing capacity must be selected.

#### Symbols used in the equation:

- LC = Lashing Capacity
- $F_V$  = Vertical force of the cargo (cargo weight); ( $F_V = m \times g \times C_V$ )
- $\mu_D$  = Dynamic friction coefficient (sliding friction coefficient)
- $C_{A,S}^*$  = Acceleration coefficient (in driving direction  $C_A = 0,8$ ;  
transversely and counter to driving direction  $C_S = 0,5$ )
- $C_V^*$  = Acceleration coefficient, vertical
- $\alpha$  = Vertical angle of the lashing
- $\beta$  = Horizontal angle of the lashing chain strands
- n = Number of lashing chains in the respective direction

\*Assumption: Cargo on road trucks and trailers



## General Information

Lashing chains are the best way to secure loads. They offer major advantages as their working capacity is known. This allows an exact calculation to secure the loads.

For standard lashing chains exclusively short link round steel chains acc. to DIN EN 818-2 or PAS1061/ ASTM973 must be used.

In your own interest as well as public safety, only shortening elements according to DIN EN 1677-1 that are approved by the manufacturer may be used. When using self-made shorteners, the capacity of the lashing devices can no longer be granted.

When using lashing hooks, all safety requirements of the DIN EN 1677-2 must be observed (hooks with safety latches) and taken into consideration.

Connecting and shortening components must have devices that are preventing the chain from unintentional release.

Screw tensioners must have a safety device (securing of screw removal) against unintentional release.

Multi purpose lever blocks must meet the DIN EN 13157 requirements.

**A complete Lashing Chain according to the DIN EN 12195-3 consists of:**

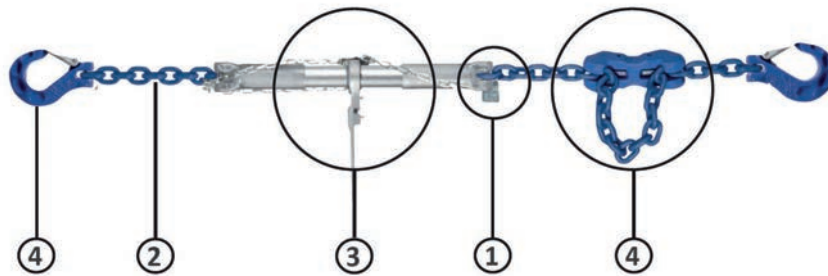
Load Securing Devices	Tensioning Elements	Connecting Elements	Identification Tags
Lashing chains	Tighteners, Tensioners, Multi purpose ratchet hoists	Hooks, Shackles, Chain shorteners, End-links	Metal tags



## General Information

### Inspection of Lashing Chains

Load securing devices are subject to wear and can be damaged by improper use. It is strictly required to inspect round steel chains and components by a qualified person in regular intervals in order to make sure that they are taken out of service or repaired without delay if damaged or worn out.



### Criteria for rejection from operation:

Component	Indicators
<b>1. Identification Tag</b> - Tag conforming to standard	> Missing or illegible tags
<b>2. Load Securing Device</b> - Lashing Chain	> Elongation of a single link at the outer length of more than 3 % > Elongation of a single link in the pitch of more than 5 % > Wear exceeding 10 % of the nominal diameter > Deformation > Surface cracks
<b>3. Tensioning Element</b> - Tensioner - Tightener - Multi purpose ratchet hoist	> Deformation > Cracks > Severe signs of wear > Severe corrosion
<b>4. Component</b> - End link - Chain connector - Shackle - Shortening claw - Shortening hook - Lashing hook	> Deformation > Cracks > Severe signs of wear > Severe corrosion > Hook widening by more than 10 %



## Inspection of Lashing Chains

### Do NOT use...

#### ... round steel chains:

- with working load limit or lashing capacity lower than specified standards DIN EN 818-2/ PAS 1061/ ASTM 973
- without manufacturer identification

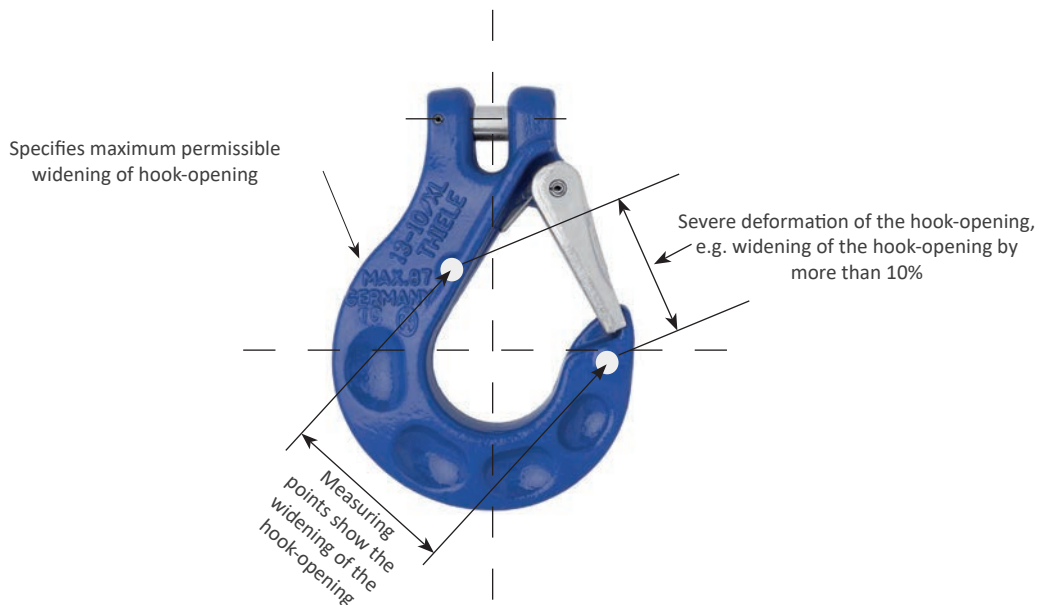
#### ... tensioning elements:

- without screw removal mechanism
- without manufacturer identification
- with long extended handles that are capable of producing a pre-tensioning force over  $0.5 \times LC$

#### ... shortening components or lashing hooks:

- that may reduce the breaking force of the chain
- without safety latches or locking pins

## Lashing Hooks / Sling Hooks with Safety Latch



The embossed maximum permissible limit with measuring points enables an easy check of the hook-opening.

Repair work must exclusively be performed by qualified personnel. Only clearly identifiable lashing chains are allowed to be repaired.

THIELE offers regular in-house and on-site competence trainings.

More detailed information about the inspection of lashing chains are provided in the THIELE operating instructions.

All operating manuals are available in the THIELE download-center on our website [www.THIELE.de](http://www.THIELE.de).



## General Information

### Identification Tags

THIELE lashing chains are equipped with an identification tag that specifies the characteristics of the chain. A clear identification of the chain is given and mix-ups are avoided. The information on the tags according to the DIN EN 12195-3 is required.

#### Identification Tag according to the DIN EN 12195-3:



Tags as per DIN EN 12195-3 show on their front the number of the standard specification, the name of the chain manufacturer, the inspection number, as well as a warning that the chain must not be used for lifting. On the back side of the tag the maximum permissible lashing capacity (LC) in kN and standard tensioning force ( $S_{TF}$ ) in daN is hard-stamped.

### How to use Lashing Chains

To ensure that lashing chains have a long service life, there are some aspects to be observed during operation:

- Do not overload lashing chains.
- The maximum hand force of 50 daN must only be applied manually. The use of bars, levers or similar is prohibited.
- Make sure the lashing chain cannot damage the cargo and vice versa.
- Make use of e.g. edge protectors to prevent damage to the cargo and wear to the chain.
- Never use chains with knots or chains connected by screws, bolts or similar.
- To shorten chains, only use the shortening components offered and approved by the chain manufacturer, otherwise the safety of the chain cannot be granted.

#### TWN 1402



#### Identification Tags for Lashing Chains

The identification tags TWN 1402 are used to identify lashing chains and provide important information for safe operation. Lashing chains and chain slings may not be operated without identification tags.

Article-No.	Packaging Unit	Weight app. [kgs]
Z07264	1 piece	0,05





# Grade 100 Lashing Chains and Components



When using the sling chains as a lashing chain, the maximum lashing force LC (Lashing Capacity) results by doubling the load capacity WLL (Working Load Limit):  $LC = 2 \times WLL$ .

If the products are initially used for lifting, e.g. internal transport, up to the load capacity, they can still be used as lashing products. If lifting products are used for lashing, they may no longer be used for lifting anymore!

## TWN 1410



### Lashing Chains with Tensioner

The grade 100 lashing chains with toggle and adjustable lashing chain TWN 1410 have a standard length of 3,5 m and are used for heavy-duty lashing applications. The chain tensioners with toggles and trapezoidal threads achieve a high pre-tensioning force with little force impact. This property is of fundamental importance when lashing down, as the level of the pretensioning force contributes to load securing. The manufacturing and testing requirements are based on the DIN EN 12195-3, under consideration of grade 100 lashing forces.



Trade Size	Article-No.	Lashing Capacity [daN]	Weight app. [kgs]
13-10	F34183	13.000	28,39
16-10	F34184	20.000	46,43

Other lengths available on request.

## TWN 1411



### Lashing Chains with Ratchet

The grade 100 lashing chains with ratchet and shortenable lashing chain TWN 1411 have a standard length of 3,5 m are used in the heavy-duty area for lashing loads in road traffic. The chain tensioner with ratchet and trapezoidal thread achieves a high pre-tensioning force with little force impact. This property is of fundamental importance when lashing down, as the level of the pre-tensioning force contributes to load securing. The manufacturing and testing requirements are based on the DIN EN 12195-3, under consideration of grade 100 lashing forces.



Trade Size	Article-No.	Lashing Capacity [daN]	Weight app. [kgs]
13-10	F34183R	13.000	21,00
16-10	F34184R	20.000	48,13

Other lengths available on request.

## TWN 0072



### Lifting Chains XL200

Grade 100 lifting chains XL200 are made from CrNiMo alloy steel and are used to assemble chain slings or lifting/ lashing chains. The max. application temperature is 205°C. The testing requirements for these high-quality lashing chains are based on the DIN EN 818 and ASTM 973.



Trade Size	Article-No.	Working Load Limit [t]	Nominal Size $d_n$ [mm]	Pitch $p_n$ [mm]	Inside Width $w_3$ [mm] min.	Outside Width $w_2$ [mm] max.	Weight app. [kgs/m]
6-10	F01616	1,40	6	18	8,40	22,20	0,90
7-10	F01621	1,95	7	21	9,53	25,90	1,10
8-10	F01617	2,60	8	24	11,30	29,60	1,60
10-10	F01618	4,00	10	30	13,40	37,00	2,44
13-10	F01619	6,80	13	39	18,00	48,10	4,07
16-10	F01620	10,30	16	48	21,40	59,20	6,20

# Grade 100 Lashing Chains and Components

## Lifting Chains XL400

The grade 100 lifting chains XL400 are made from CrNiMo alloy steel and are used to assemble chain slings or lifting chains. The max. application temperature is 380°C. The lifting chains are especially characterized by their certified fatigue strength and corrosion resistance. The testing requirements for these high-quality lashing chains are based on the DIN EN 818, PAS 1061 and on the German Statutory Accident Insurance test principle GS-HM 37.



Trade Size	Article-No.	Working Load Limit [t]	Nominal Size $d_n$ [mm]	Pitch $p_n$ [mm]	Inside Width $w_3$ [mm] min.	Outside Width $w_2$ [mm] max.	Weight app. [kgs/m]
6-10	F01610B	1,40	6	18	8,40	22,20	0,89
8-10	F01615B	2,50	8	24	11,30	29,60	1,59
10-10	F01622B	4,00	10	30	13,40	37,00	2,48
13-10	F01629B	6,70	13	39	18,00	48,10	4,18
16-10	F01635B	10,00	16	48	21,40	59,20	6,34

Lashing chains are identical in construction to sling chains of the same grade and trade size.

## TWN 1805



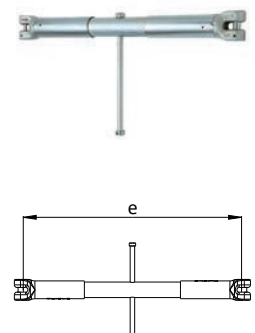
## Chain Tensioners with Toggle (Large Lift)

The grade 100 chain tensioners with toggle TWN 1454 are used as tensioning elements in lashing chains. The chain tensioners can also be used in chain slings for stepless adjustment of the strand length when lifting loads. These chain tensioners have a particularly large lift. The chain tensioners with toggles and trapezoidal thread achieve a high pre-tensioning force with little force impact. This property is of fundamental importance when lashing down, as the level of the pretensioning force contributes to load securing. The manufacturing and testing requirements are based on DIN EN 1677-1, under consideration of the grade 100 forces.



Trade Size	Article-No.	Working Load Limit [t]	Normal straight load [daN]	Lashing Capacity (LC) [daN]	Dimensions [inch]			Weight app. [kgs]
					$e_{max}$	$e_{min}$	lift	
13-10	F341877	6,70	2.600	13.000	675	445	230	7,19
16-10	F341977	10,00	3.100	20.000	830	550	280	11,80

## TWN 1454



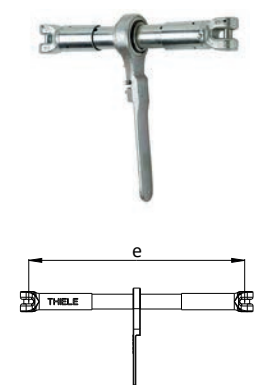
## Chain Tensioners with Ratchet (Large Lift)

The grade 100 chain tensioners with ratchet TWN 1455 are used as tensioning elements in lashing chains. The chain tensioners can also be used in chain slings for stepless adjustment of strand lengths when lifting loads. The chain tensioners have a particularly large lift. The chain tensioners with ratchet and trapezoidal thread achieve a high pre-tensioning force with little force impact. This property is of fundamental importance when lashing down, as the level of the pre-tensioning force contributes to load securing. The manufacturing and testing requirements are based on DIN EN 1677-1, under consideration of the grade 100 forces.



Trade Size	Article-No.	Working Load Limit [t]	Normal straight load [daN]	Lashing Capacity (LC) [daN]	Dimensions [mm]			Weight app. [kgs]
					$e_{max}$	$e_{min}$	lift	
13-10	F341878	6,70	2.600	13.000	675	445	230	8,40

## TWN 1455

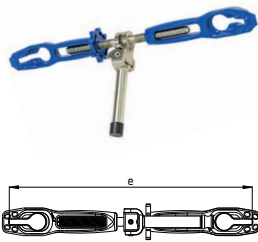




# Grade 100 Lashing Chains and Components

## TWN 1460

## Lashing Chain Tensioners NEW



The grade 100 lashing chain tensioners with shortening claws on both sides TWN 1460 are used as tensioning elements in lashing chains. The chain tensioners can be positioned anywhere in the lashing chain and have a large clamping range. All functions (clamping, locking, unclamping) are carried out by the handy designed folding lever. Due to the folding lever, the chain tensioner is compact and requires little storage space. The chain tensioners enable a high pretensioning force with little effort due to the trapezoidal thread and comply with the DIN EN 12195-3. The manufacturing and testing requirements are based on DIN EN 1677-1, under consideration of grade 100 lashing forces.



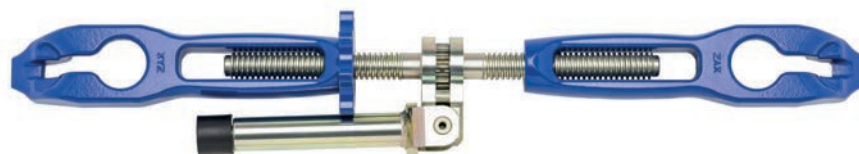
Trade Size	Article-No.	Normal straight load [daN]	Lashing Capacity (LC) [daN]	Dimensions [mm]			Weight app. [kgs]
				e <sub>max</sub>	e <sub>min</sub>	lift	
8-10*	F34209	2.000	5.000	-	-	-	-
10-10	F34210	2.600	8.000	684	490	194	4,72
13-10*	F34211	3.000	13.400	-	-	-	-
16-10*	F34212	3.000	20.000	-	-	-	-

\*On request

### Patented anti-rotation safety device



### Compact due foldable handle (small storage room)



# Grade 100 Lashing Chains and Components

## Lashing Points with two weld-on Brackets

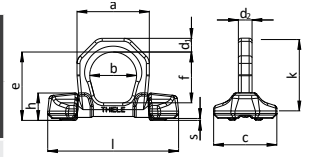
The grade 100 weld-on lashing points with two weld-on brackets TWN 1473 have and are used for lashing of loads. The lashing points are predominantly welded to the vehicle frame (semi-trailers, trailers). The manufacturing and testing requirements are based on the DIN EN 1677-1, under consideration of the Grade 100 lashing forces.



Trade Size	Article-No.	Article-No. (Ring only)	Lashing Capacity (LC) [daN]	Dimensions [mm]										Weight app. [kgs]	
				d <sub>1</sub>	d <sub>2</sub>	b	a	l	e*	k	h	c	s		f
10-10	F352001	F352002	8.000	14	14	48	74	134	74	74	28	65	2	57	0,79
13-10	F352011	F352012	13.500	20	20	60	100	170	85	93	37	80	2	61	1,73

\*Upright standing ring

TWN 1473



## Pluggable Lashing Points

Pluggable lashing points according to TWN 1474 are used to secure loads on trucks. They are intended for temporary installation at the loading area. The lashing points consist of a forged pivot with welded B-link and a safety system consisting of a bolt and spring pin.

Installation for use is carried out by inserting the pin into the bearing bush from the loading area and securing it with the plug pin underneath the loading area.

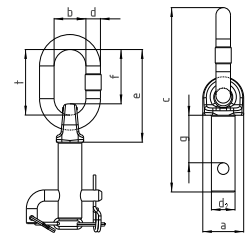
When not in use, the lashing points are installed from underneath at the loading area, with the loading area being closed flush. The pin is marked with information of the maximum lashing capacity LC in daN, manufacturer's identification and traceability code.

The manufacturing and testing requirements are based on the DIN EN 1677-1



Article-No.	Lashing Capacity (LC) [daN]	Dimensions [mm]									Weight app. [kgs]
		d	f	t	b	e	d <sub>2</sub>	g	a	c	
F352255	8.000	16	58	70	35	99	26	51	45	197	0,99

TWN 1474



## COMPACT Lashing Points with Spring

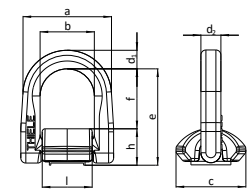
The grade 100 weld-on COMPACT lashing points with fixing spring TWN 1880 are used for securing of loads. The lashing points are predominantly welded in recessed skip fittings and on vehicle frames (semi-trailers, trailers). The compact design allows a small installation space. The manufacturing and testing requirements are based on the DIN EN 1677-1, under consideration of higher lashing forces.



Trade Size	Article-No.	Lashing Capacity (LC) [daN]	Dimensions [mm]									Weight app. [kgs]
			d <sub>1</sub>	d <sub>2</sub>	b	a	l	e*	h	c	f	
6-10	F35204	3.000	13	14	38	65	35	68	26	50	42	0,41
8-10	F35205	5.000	15	15	45	76	42	73	27	50	46	0,57
10-10	F35206	8.000	17	17	50	85	46	87	31	55	56	0,84
13-10	F35207	13.500	23	23	68	116	63	122	44	77	78	2,19
16-10	F35208	20.000	27	27	69	130	63	126	54	92	72	3,35

\*Upright standing ring

TWN 1880



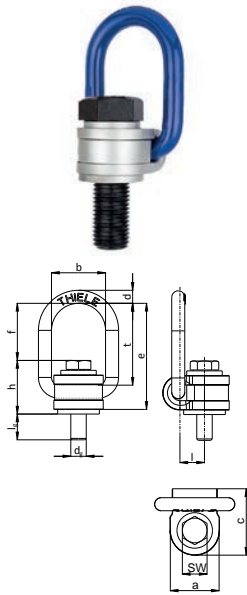


# Grade 100 Lashing Chains and Components

## TWN 1890

### XS-Points

The grade 100 screw-type XS-Points TWN 1890 are predominantly used in mold making, tool making and vehicle construction. The extra large D-links enable an easy assembling to other lashing components. The design of the XS-Points allows the use of variable screw lengths. The manufacturing and testing requirements are based on the DIN EN 1677-1. The bracket can be easily aligned in direction of force.

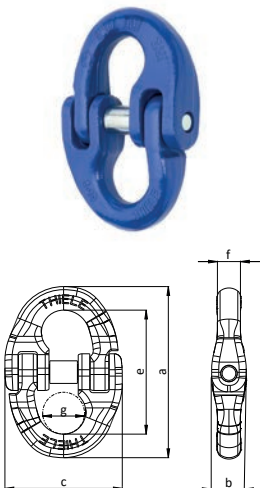


Screw Size d <sub>g</sub> [mm]	Article- No.	Working Load Limit [t]	Thread Length l <sub>g</sub> [mm]	Dimensions [mm]										Weight app. [kgs]
				e	f	c	l	t	b	h	d	SW	a	
M8 <b>NEW</b>	F352398	0,30	17	71	38	43	17	53	35	35	9	-	32	0,29
M10	F35243	0,63	17	71	37	43	17	53	35	35	9	16	32	0,29
M12	F35244	1,00	22	71	36	43	17	53	35	36	9	18	32	0,31
M16	F35245	1,70	28	98	46	64	25	70	50	52	13	24	48	0,96
M20	F35246	2,50	38	98	44	64	26	70	50	54	13	30	48	1,05
M24	F35247	4,00	40	135	70	71	28	102	58	65	16	36	50	1,69
M30	F35249	6,00	44	149	73	88	35	110	70	75	20	46	65	3,07
M36	F35250	8,00	64	149	70	88	35	110	70	79	20	55	67	3,55
M42	F35251	10,00	74	191	98	106	43	145	84	93	24	65	81	6,10

## TWN 1820

### XL-LOK Connecting Links

The grade 100 XL-LOK connecting links TWN 1820 are used to connect lifting chains with sling components to assemble chain slings and lashing chains. The manufacturing and testing requirements are based on the DIN EN 1677-1, under consideration of grade 100 load capacities.

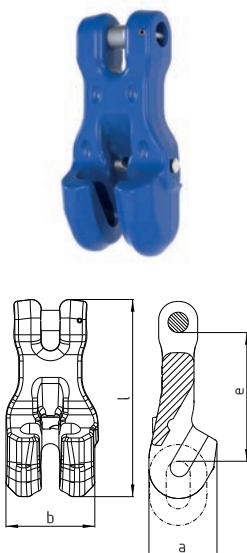


Trade Size	Article-No.	Working Load Limit [t]	Dimensions [mm]						Weight app. [kgs]
			a	b	c	e	f	g	
6-10	F30807	1,40	61	12	38,5	45	8	14	0,07
7-10	F308090	1,90	71	14,1	47	50,5	9	16	0,36
8-10	F30817	2,50	85	16	55	62	10	19	0,20
10-10	F30827	4,00	97,2	18	65,5	72	13	23,8	0,35
13-10	F30837	6,70	125,3	23	82,5	87,3	16,7	28	0,74
16-10	F30847	10,00	146,2	32	109	105	21	34,3	1,16

## TWN 1851/1

### Clevis Shortening Claws with Safety Pin **NEW**

The grade 100 clevis shortening claws with safety pin TWN 1851/1 are used to adjust the strand lengths of chain slings and lashing chains. The clevis design enables the direct attachment to the lifting chain. The safety pin prevents the chain strand from accidental release. The shortening claws have been tested in interaction with the lifting chain. The chain pockets ensure a particularly tight fit for the inserted chain link. The safety bolt enables the use in lifting chains according to DIN EN 12195-3. The manufacturing and testing requirements comply with the DIN EN 1677-1 and DIN 5692, under consideration of grade 100 load capacities.



Trade Size	Article-No.	Working Load Limit [t]	Dimensions [mm]				Weight app. [kgs]
			e	a	b	l	
6-10	F349141	1,40	51	27	37	78	0,25
8-10	F349241	2,50	65	34	46	100	0,50
10-10	F349341	4,00	81	43	56	124	0,94
13-10	F349441	6,70	106	56	73	162	2,03
16-10	F349551	10,00	130	68	88	198	3,61



# Grade 100 Lashing Chains and Components

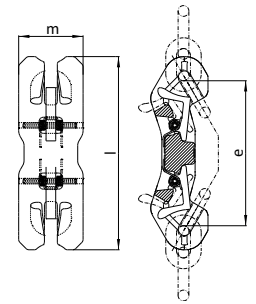
## RAPID® Shortening Claws

The grade 100 RAPID® shortening claws TWN 1852 are used to adjust the strand lengths of chain slings and lashing chains. Due to the double claws, the RAPID® shortening claws can be universally integrated to existing chain strands without permanently mounting them into the chain. The shortening claws have been tested in interaction with the sling chains. The chain pockets ensure a tight fit of the inserted chain link. The safety bolt enables the use in lashing chains according to the DIN EN 12195-3. RAPID® shortening claws can be installed quickly and subsequently in lifting and lashing chains without tools. The manufacturing and testing requirements comply with the DIN EN 1677-1 and DIN 5692, under consideration of grade 100 load capacities.



Trade Size	Article-No.	Working Load Limit [t]	Dimensions [mm]			Weight app. [kgs]
			e	l	m	
8-10	F34775	2,50	111	148	48	1,11
10-10	F34780	4,00	134	180	60	3,09
13-10	F34785	6,70	179	240	78	4,76
16-10	F34790	10,00	222	296	96	9,07

TWN 1852



## Clevis Shortening Hooks with Safety Pin

The grade 100 clevis shortening hooks with safety pin TWN 1827/1 are used to adjust the strand lengths of chain slings and lashing chains. The clevis design enables the direct attachment to the lifting chain. The safety pin prevents the chain strand from accidental release. The manufacturing and testing requirements comply with the DIN EN 1677-1 and DIN 5692, under consideration of grade 100 load capacities. The shortening hook has been tested in combination with the lifting chain. The extra wide chain support ensures a particularly firm fit for the inserted chain link. At the same time the link is protected from getting damaged. The safety bolt enables the use in lashing chains according to the DIN EN 12195-3.

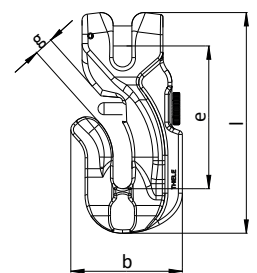


**NEW:**  
Application and assembly video for the shortening hook with safety pin on YouTube!

Trade Size	Article-No.	Working Load Limit [t]	Dimensions [mm]				Weight app. [kgs]
			e	g	l	b	
7-10*	<b>NEW</b> F332022	1,90	68,3	8,5	102,5	54	0,50
8-10	F33205	2,50	71	9,5	110	56	0,54
10-10	F33215	4,00	82,7	12,5	132	67	0,94
13-10	F33225	6,70	109	15,5	168	83	2,00
16-10	F33235	10,00	137	18,5	208	101	3,64

\*on request

TWN 1827/1



TZM



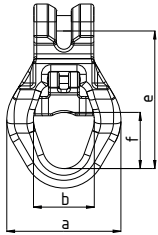
# Grade 100 Lashing Chains and Components

## TWN 1869

### Clevis Skip Suspension Links for One-Hand Operation and Forged Safety Latch



The grade 100 skip suspension links TWN 1869 connect chain slings with the pivots on containers, e.g. containers according to the DIN EN 30720. The shape of the eyelet is designed to fit container suspension pivots. The clevis design enables the direct attachment to the chain. The forged safety latch enables a one-hand operation. The manufacturing and testing requirements are based on DIN EN 1677-1, under consideration of grade 100 load capacities.



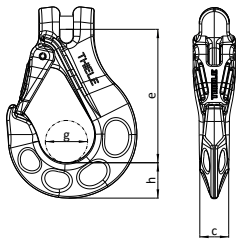
Trade Size	Article-No.	Working Load Limit [t]	Dimensions [mm]				Weight app. [kgs]
			e	f	b	a	
13-10	F313805	6,7	142	57,5	65	122	1,94

## TWN 1840/1

### Clevis Sling Hooks with Forged Safety Latch



The grade 100 clevis sling hooks with forged safety latch TWN 1840/1 are used to assemble standard chain slings and lashing chains. The clevis design enables the direct attachment to the lifting chain. The sling hooks comply with the DIN EN 1677-2, under consideration of grade 100 load capacities. Forged-in measuring points of the max. limit values of the hook opening enables easy control. The forged safety latch prevents an unintentional detachment from the load.



Trade Size	Article-No.	Working Load Limit [t]	Dimensions [mm]				Weight app. [kgs]
			e	g	h	c	
6-10	F336050	1,40	76	24	20	17	0,36
7-10*	<b>NEW</b> F336070	1,90	91	26,5	22	20	0,53
8-10	F336150	2,50	94	30	25	22	0,76
10-10	F336250	4,00	114	37	32	28	1,41
13-10	F336350	6,70	134	42	41	35	2,48
16-10	F336450	10,00	162	51	50	41	4,40

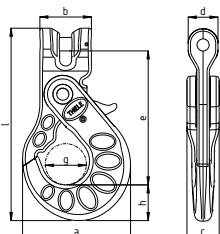
\*on request

## TWN 1899

### Clevis Skip Suspension Hooks **NEW**



The grade 100 skip suspension hooks TWN 1899 connect chain slings with the pivot of containers, e.g. containers according to the DIN 30720. The shape of the hook opening is designed to fit container lifting pivots. The clevis design enables the direct attachment to the chain. The hooks lock automatically when under load and may only be re-opened manually if not under load anymore. The skip suspension hooks comply with the DIN EN 1677-3, under consideration of grade 100 working load capacities.



Trade Size	Article-No.	Working Load Limit [t]	Dimensions [mm]								Weight app. [kgs]
			e	c	g	h	d	b	a	l	
13-10	F335100	6,70	166	40	51	42	37	64	135	239	3,34

# Grade 80 Lashing Chains and Components



When using the sling chains as a lashing chain, the maximum lashing force LC (Lashing Capacity) results by doubling the load capacity WLL (Working Load Limit):  $LC = 2 \times WLL$ .  
 If the products are initially used for lifting, e.g. internal transport, up to the load capacity, they can still be used as lashing products. If lifting products are used for lashing, they may no longer be used for lifting anymore!

## Lashing Chains with Tensioner

The grade 80 lashing chains with toggle and shortenable chain TWN 1400 have a standard length of 3,5 m and are used for heavy-duty lashing applications. The chain tensioners with toggle and trapezoidal thread achieve a high pre-tensioning force with little force impact. This property is of fundamental importance when lashing down, as the level of the pre-tensioning force contributes to load securing. The manufacturing and testing requirements are based on the DIN EN 12195-3.

Trade Size	Article-No.	Lashing Capacity (LC) [daN]	Weight app. [kgs]
8-8	F34171	4.000	8,50
10-8	F34172	6.300	12,50
13-8	F34173	10.600	21,00
16-8	F34174	16.000	37,70

Other lengths available on request.

## TWN 1400



## Lashing Chains with Ratchet

The grade 80 lashing chains with ratchet and shortenable lashing chain TWN 1401 have a standard length of 3,5 m and are used for heavy-duty lashing applications. The chain tensioners with ratchet and trapezoidal thread achieve a high pre-tensioning force with little force impact. This property is of fundamental importance when lashing down, as the level of the pre-tensioning force contributes to load securing. The manufacturing and testing requirements are based on the DIN EN 12195-3.

Trade Size	Article-No.	Lashing Capacity (LC) [daN]	Weight app. [kgs]
8-8	F34171R	4.000	8,50
10-8	F34172R	6.300	12,50
13-8	F34173R	10.600	21,00

Other lengths available on request.

## TWN 1401



TZM



# Grade 80 Lashing Chains and Components

## TWN 0805

### Lifting Chains

The grade 80 lashing chains TWN 0805 are made from CrNiMo alloy steel and are used to assemble chain slings and lashing chains. The max. application temperature is 400°C. The manufacturing and testing requirements of these high-quality lashing chains are based on the DIN EN 818-2 and comply with the German Statutory Accident Insurance test principle GS-HM 37

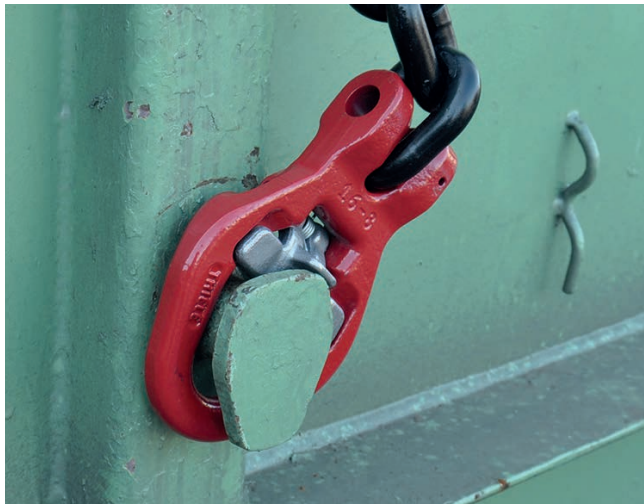


Trade Size	Article-No.				Working Load Limit [t]	Nom. Size $d_n$ [mm]	Pitch $p_n$ [mm]	Inside Width $w_3$ [mm] min.	Outside Width $w_2$ [mm] max.	Weight app. [kg/m]
	Self coloured	RAL 9005	Corrothiel	Electro galvanized						
6-8	F01452	F01453	F01454	F01448	1,12	6	18	7,80	22,20	0,82
7-8	F01458	F01459	F01457	F014601	1,50	7	21	9,50	25,90	1,10
8-8	F01464	F01465	F01429	F01433	2,00	8	24	10,90	29,60	1,46
10-8	F01469	F01470	F01450	F01445	3,15	10	30	13,00	37,00	2,26
13-8	F01474	F01475	F01476	F014781	5,30	13	39	17,40	48,10	3,76
16-8	F01479	F01480	F01487	F014821	8,00	16	48	20,80	59,20	5,70

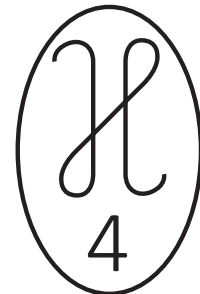
Lashing chains are identical in construction to sling chains of the same grade and trade size.

When using the sling chains as a lashing chain, the maximum lashing force LC (Lashing Capacity) results by doubling the load capacity WLL (Working Load Limit):  $LC = 2 \times WLL$ .

An alternative use of the chains as lashing and sling chains is not permitted!



THIELE manufacturer identification, also marked on THIELE-Chains



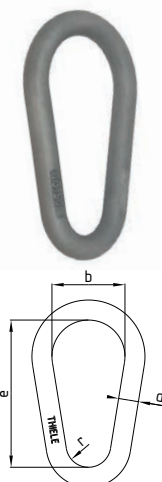
Approved Chain by the German Statutory Accident Insurance

## TWN 1479

### Lashing Links NEW

The Grade 80 lashing rings TWN 1479 are mainly fitted in brackets of C-shaped side frames on heavy-duty trailers. The crack tested lashing rings are used to secure loads in accordance with the DIN EN 12640 and DIN EN 12195-1 and enable the tie down of heavy loads of diverse shapes, such as construction equipment. The manufacturing and testing requirements are based on DIN EN 1677 Parts 1 and 4.

**SAFETY**  
2 : 1



Trade Size	Article-No.	Lashing Capacity (LC) [daN]	Dimensions [mm]				Weight app. [kgs]
			d	t	b	b <sub>2</sub>	
10	F352354	10.000	17	125	62	38	0,59

# Grade 80 Lashing Chains and Components

## Chain Tensioners with Toggle

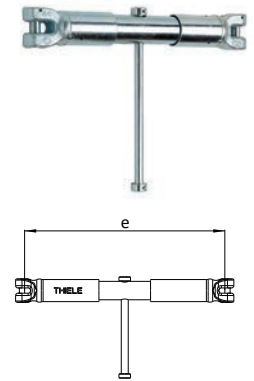
The grade 80 chain tensioners with toggle TWN 1450 are used as tensioning elements in lashing chains. The chain tensioners can also be used in chain slings for stepless adjustment of strand lengths when lifting loads. The manufacturing and testing requirements are based on the DIN EN 1677-1.



Trade Size	Article-No.	Working Load Limit [t]	Normal straight load [daN]	Lashing Capacity (LC) [daN]	Dimensions [mm]			Weight app. [kgs]
					e <sub>max</sub>	e <sub>min</sub>	lift	
8-8	F34179	2,00	1.800	4.000	345	270	75	2,10
10-8	F34199	3,15	2.200	6.300	375	275	100	2,70
13-8	F34189	5,30	2.600	10.600	460	330	130	4,00

If the products are initially used for lifting, e.g. internal transport, up to the load capacity, they can still be used as lashing products. If lifting products are used for lashing, they may no longer be used for lifting anymore!

TWN 1450



## Chain Tensioners with Ratchet

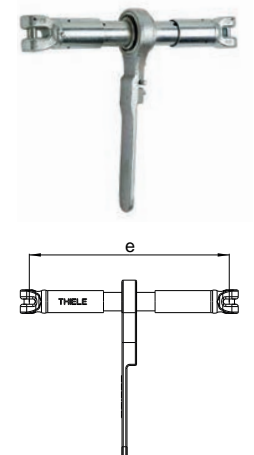
The grade 80 chain tensioners with ratchet TWN 1451 are used as tensioning elements in lashing chains. The chain tensioners can also be used in chain slings for stepless adjustment of strand lengths when lifting loads. The manufacturing and testing requirements are based on the DIN EN 1677-1.



Trade Size	Article-No.	Working Load Limit [t]	Normal straight load [daN]	Lashing Capacity (LC) [daN]	Dimensions [mm]			Weight app. [kgs]
					e <sub>max</sub>	e <sub>min</sub>	lift	
8-8	F34175	2,00	1.800	4.000	345	270	75	2,50
10-8	F34195	3,15	2.200	6.300	375	275	100	3,50
13-8	F34185	5,30	2.600	10.600	460	330	130	5,00

If the products are initially used for lifting, e.g. internal transport, up to the load capacity, they can still be used as lashing products. If lifting products are used for lashing, they may no longer be used for lifting anymore!

TWN 1451



## Chain Tensioners with Toggle (Large Lift)

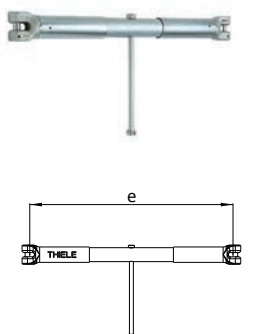
The grade 80 chain tensioners with toggle TWN 1452 are used as tensioning elements in lashing chains. The chain tensioners can also be used in chain slings for stepless adjustment of strand lengths when lifting loads. The chain tensioners have a particularly large lift. The chain tensioner with ratchet and trapezoidal thread achieve a high pre-tensioning force with little force impact. This property is of fundamental importance when lashing down, as the level of the pre-tensioning force contributes to load securing. The manufacturing and testing requirements are based on the DIN EN 1677-1.



Trade Size	Article-No.	Working Load Limit [t]	Normal straight load [daN]	Lashing Capacity (LC) [daN]	Dimensions [mm]			Weight app. [kgs]
					e <sub>max</sub>	e <sub>min</sub>	lift	
13-8	F341871	5,30	2.600	10.600	675	445	230	7,20
16-8	F34197	8,00	3.100	16.000	830	550	280	11,80

If the products are initially used for lifting, e.g. internal transport, up to the load capacity, they can still be used as lashing products. If lifting products are used for lashing, they may no longer be used for lifting anymore!

TWN 1452

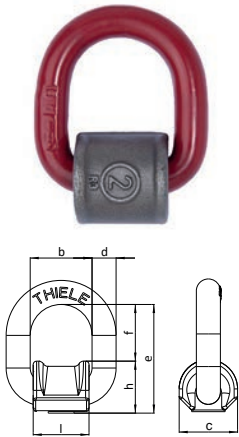




## TWN 0119

### Weld-on type Lifting Points

The weld-on lifting points TWN 0119 are used for universal lifting, moving and lashing of loads. The lifting points are often welded onto machine frames, steel constructions, lifting beams and housings. The manufacturing and testing requirements comply with the DIN EN 1677-1.



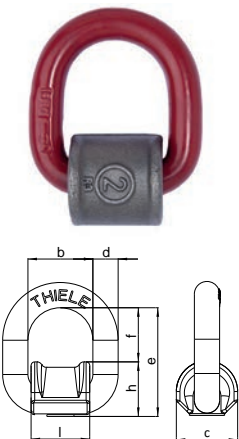
Trade Size	Article-No.	Working Load Limit [t]	Lashing Capacity (LC) [daN]	Dimensions [mm]							Weight app. [kgs]
				e*	f*	c	l	b	h	d	
6-8	F35103	1,12	2.200	59	31	32	32	36	28	12	0,24
8-8	F35113	2,00	4.000	69	36	38	38	42	33	14	0,46
10-8	F35123	3,15	6.300	85	46	45	44	48	38	18	0,72
13-8	F35133	5,30	10.600	120	69	60	60	66	51	24	1,93
16-8	F35143	8,00	16.000	127	66	68	65	72	61	28	2,67

\*e- and f-Dimension vertical to the welding level.

## TWN 0124

### Weld-on type Lifting Points with Spring

The weld-on lifting points with spring TWN 0124 are used for universal lifting, handling and lashing of loads. The lifting points are often welded onto machine frames, steel constructions, lifting beams and housings. The D-ring is being held in position by a spring. The manufacturing and testing requirements comply with the DIN EN 1677-1.



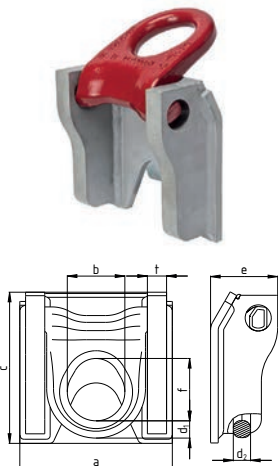
Trade Size	Article-No.	Working Load Limit [t]	Lashing Capacity (LC) [daN]	Dimensions [mm]							Weight app. [kgs]
				e*	f*	c	l	b	h	d	
6-8	F35107	1,12	2.200	57	29	32	32	36	28	12	0,24
8-8	F35110	2,00	4.000	67	34	38	38	42	33	14	0,46
10-8	F35124	3,15	6.300	81	43	45	44	48	38	18	0,72
13-8	F35139	5,30	10.600	117	66	60	60	66	54	24	1,61
16-8	F35144	8,00	16.000	122	61	68	65	72	61	28	2,67

\*e- and f-Dimension vertical to the welding level.

## TWN 1477

### ZKS-Modules NEW

The weld-on ZKS-Modules TWN 1477 are predominantly installed in side frames of low-loaders and trailers. The large swivel range also allows the securing of overhanging loads. The pivotable lashing eyelet built into the cassette enables a fixed mounting position for easy connection with the lashing equipment. The manufacturing and testing requirements are based on the DIN EN 1677-1.



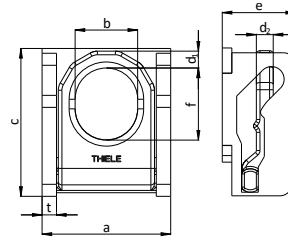
Trade Size	Article-No.	Lashing Capacity (LC) [daN]	Dimensions [mm]								Weight app. [kgs]
			d <sub>1</sub>	d <sub>2</sub>	b	a	t	e	c	f	
10	F352376	10.000	18	18	60	159	20	70	157,5	65	4,95

# Lashing Points, Weld-on Type

## TWN 1471

### ZK-Modules with Stressless Lashing® NEW

The weld-type ZK modules TWN 1471 are predominantly installed in C-shaped side frames of low-loaders and trailers. The large swivel range also allows the securing of overhanging loads. A newly developed, patented cassette design enables a fixed mounting position for easy connection to the lashing equipment. Stressless Lashing® in perfection. The manufacturing and testing requirements are based on DIN EN 1677-1.



Trade Size	Article-No.	Execution*	Lashing Capacity (LC) [daN] max.	Dimensions [mm]								Weight app. [kgs]
				d <sub>1</sub>	d <sub>2</sub>	b	a	t	e	c	f	
5	F352390	N	5.000	14	14	52	107	12	61	119	60	1,92
5	F352395	S	5.000	14	14	52	107	12	61	119	60	1,95
10	F352380	N	10.600	18	18	62	137	15	73	144	78	3,45
10	F352385	S	10.600	18	18	62	137	15	73	144	78	3,46

\* The sheets of the lashing cassette in the execution „N“ (=Normal) are produced in micro-alloyed steel. The execution „S“ (=Special) are produced from special steel and are therefore capable to get be hot dip galvanized (up to 500°C) with the vehicle frame.

### General information

The standard DIN EN 12640 specifies the minimum testing requirements for lashing points on road trucks and trailers with flatbed bodies and a permissible total weight of more than 3,5 t for mixed cargo transportation. Lashing points are devices to attach lashing gear. A lashing point can be an oval link, hook, lug or lashing rail. These types of lashing points may lead to safety issues when in operation.

A non-appropriate dimensioning and use of non-suitable lashing points, as well as the damage of the lashing points and frames of the vehicle, shows a high potential danger in traffic. In operation, oval links are often exposed to unforeseen torque which may cause a damage to the body-work of the vehicles. Very often required inclination angles are not properly considered. Further, oval links can cause unnecessary noise exposure in traffic. The developed THIELE ZK-Modules (lashing ring with cassette) may be easily fitted and adopted at the side frames of trailers.

The ZK-Modules are marked with permissible lashing capacity (LC), manufacturer name (THIELE) and standard number (DIN EN 12640). Official agencies may easily check the correct installation. The ZK-Modules made by THIELE provides highest safety for load securing in the heavy-duty road traffic.



ZK-module on YouTube

#### Positions:



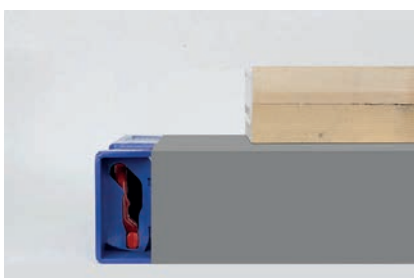
Rest Position



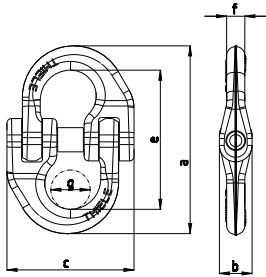
Hold Position



Position for oversized load



## TWN 1320

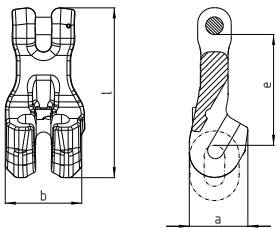


## THI-LOK® Connecting Links

The grade 80 THI-LOK® connecting links TWN 1320 are used to connect chains with sling components to assemble chain slings and lashing chains. The manufacturing and testing requirements are based on the DIN EN 1677-1.

Trade Size	Article-No.	Working Load Limit $\beta = 0^\circ - 45^\circ$ [t]	Dimensions [mm]						Weight app. [kgs]
			e	g	a	c	b	f	
6-8	F308061	1,12	39	13	53	38	11	7	0,08
7-8	<b>NEW</b> F308151	1,50	47	16	65	48	13	8	0,12
8-8	F308161	2,00	54	18	74	53	14	9	0,17
10-8	F308261	3,15	64	22	88	62	18	12	0,29
13-8	F308361	5,30	86	26	118	77	23	15	0,62
16-8	F308461	8,00	102	36	141	100	29	19	1,16

## TWN 0851/1

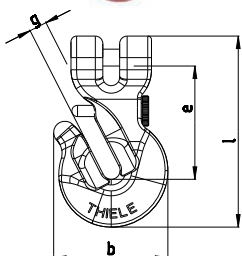


## Clevis Shortening Claws with Safety Pin **NEW**

The grade 80 clevis shortening claws with safety pin TWN 0851/1 are used to adjust the strand length of chain slings and lashing chains. The clevis design enables the direct attachment to the lifting chain. The safety pin prevents the chain strand from accidental release. The manufacturing and testing requirements comply with the DIN EN 1677-1 and DIN 5692, under consideration of grade 80 load capacities. The shortening claws have been tested in interaction with the lifting chain. The chain pockets ensure a particularly tight fit for the inserted chain link. The safety bolt enables the use in lashing chains according to DIN EN 12195-3.

Trade Size	Article-No.	Working Load Limit [t]	Dimensions [mm]				Weight app. [kgs]
			e	l	b	a	
6-8	F349101	1,12	51	78	37	27	0,25
8-8	F349201	2,00	65	100	46	34	0,50
10-8	F349301	3,15	81	124	56	43	0,93
13-8	F349401	5,30	106	162	73	56	2,03
16-8	F349501	8,00	130	193	88	68	3,60

## TWN 0827/1



## Clevis Shortening Hooks with Safety Pin

The grade 80 clevis shortening hooks with safety pin TWN 0827/1 are used to adjust the strand length of chain slings and lashing chains. The clevis design enables the direct attachment to the lifting chain. The safety pin prevents the chain from accidental release. The manufacturing and testing requirements correspond to the DIN EN 1677-1 and DIN 5692.

Trade Size	Article-No.	Working Load Limit [t]	Dimensions [mm]				Weight app. [kgs]
			e	g	l	b	
8-8	F33201	2,00	61	9,5	102	61	0,54
10-8	F33211	3,15	73	12	125	75	0,99
13-8	F33221	5,30	94	15	160	95	2,06
16-8	F33231	8,00	112	18	188	120	3,45

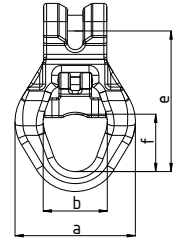
# Grade 80 Lashing Chains and Components

## Clevis Skip Suspension Links for One-Hand Operation and Forged Safety Latch

The grade 80 skip suspension links TWN 0869 connect chain slings with the pivot of containers, e.g. containers according to DIN 30720. The shape of the eyelet is designed to fit container suspension pivots. The clevis design enables the direct attachment to the lifting chain. The forged safety latch allows a safe one-hand operation. The manufacturing and testing requirements are based on DIN EN 1677 parts 1 and 4.

Trade Size	Article-No.	Working Load Limit [t]	Dimensions [mm]				Weight app. [kgs]
			e	a	f	b	
13-8	F313800	5,30	142	122	57,5	65	1,92
16-8	F313850	8,00	141	122	57,5	65	1,93

TWN 0869

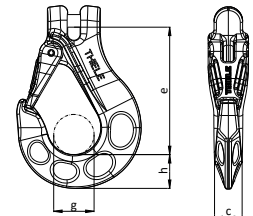


## Clevis Sling Hooks with Forged Safety Latch

The grade 80 clevis sling hooks TWN 1340/1 are used for the assembling of universal chain slings and lashing chains. The clevis design enables the direct attachment to the lifting chain. The forged safety latch prevents an unintentional detachment from the load. The sling hooks comply with the DIN EN 1677-2.

Trade Size	Article-No.	Working Load Limit [t]	Dimensions [mm]				Weight app. [kgs]
			e	g	h	c	
6-8	F336010	1,12	76	24	20	17	0,36
8-8	F336110	2,00	95	30	25	22	0,76
10-8	F336210	3,15	114	37	32	28	1,41
13-8	F336310	5,30	134	42	41	35	2,48
16-8	F336410	8,00	162,5	51	50	41	4,40

TWN 1340/1

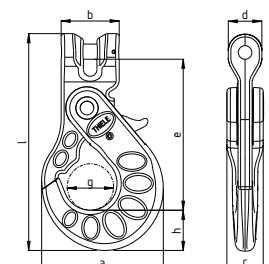


## Clevis Skip Suspension Hooks NEW

The grade 80 skip suspension hooks TWN 1399 connect chain slings with the pivot of containers, e.g. containers according to DIN 30720. The shape of the hook opening is designed to fit container lifting pivots. The clevis design enables the direct attachment to the lifting chain. The hooks lock automatically when under load and may only be reopened manually if not under load anymore. The skip suspension hooks comply with the DIN EN 1677-3.

Trade Size	Article-No.	Working Load Limit [t]	Dimensions [mm]								Weight app. [kgs]
			e	c	g	h	d	b	a	l	
13-8	F335000	5,30	167	40	51	42	37	64	135	239	3,33
16-8	F335300	8,00	165	40	51	42	37	64	135	239	3,34

TWN 1399





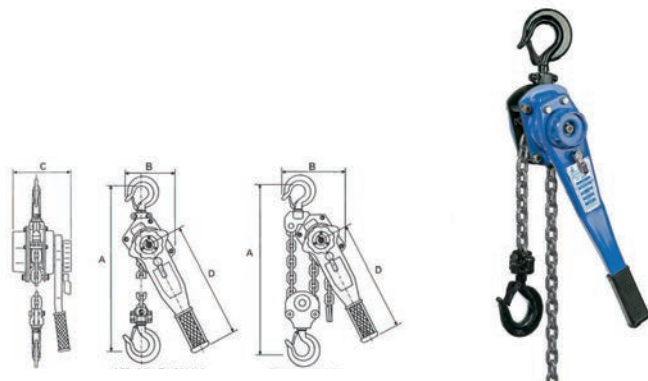
## TM Lever Blocks TWN 1001

### Properties:

- With overload protection \*
- Light weight robust steel construction
- THIELE alloy load chain according to the DIN EN 818-7-T
- Minimized headroom
- Minimum effort needed to raise maximum load
- Hooks with strong casted safety latches
- Approved for tensioning according to the DIN EN 12195
- Protected automatic weston brake with unique twin pawls
- Galvanized hand chains
- Corrosion protection of galvanized load chains
- Durable baked enamel paint protection
- Standard spare parts available
- TÜV-/ GS-certified
- Supplied with THIELE test certificates
- Manuals available in 6 languages



The TM Lever Blocks TWN 1001 are hand operated, portable devices for pulling, lifting and moving of loads. They can also be used as lashing devices in accordance to the DIN EN 12195-3. The integrated slipping clutch works as over-load protection. The galvanized THIELE-load chains TWN 0062 comply with the requirements of the DIN EN 818-7.



	Unit	TM-LB 025*	TM-LB-OP 075N	TM-LB-OP 150N	TM-LB-OP 300N	TM-LB-OP 600N
<b>Working Load Limit / Lashing Capacity</b>	[t]	0,25	0,75	1,5	3,0	6,0
<b>Lift app. 1,50 m (5 ft.)</b>	[Article-No.]	F061901	F062411	F062511	F062611	F062711
<b>Lift app. 3,00 m (10 ft.)</b>	[Article-No.]	F061902	F062412	F062512	F062612	F062712
<b>Lift app. 4,60 m (15 ft.)</b>	[Article-No.]	F061903	F062413	F062513	F062613	F062713
<b>Lift app. 6,10 m (20 ft.)</b>	[Article-No.]	F061904	F062414	F062514	F062614	F062714
<b>Falls of chain</b>	[pieces]	1	1	1	1	2
<b>Effort to lift for max. Working Load</b>	[kgs] max.	2,50	14,00	22,00	32,00	34,00
<b>Load chain diameter</b>	[mm]	4	6	8	10	10
<b>Length of lever handle (D)</b>	[mm]	160	280	410	410	410
<b>Headroom (A)</b>	[mm]	230	325	380	480	620
<b>Width (B)</b>	[mm]	85	136	160	180	235
<b>Depth (C)</b>	[mm]	92	148	172	200	200
<b>Hook-opening (upper)</b>	[mm]	25	42	46	54	62
<b>Hook-opening (lower)</b>	[mm]	25	42	46	54	62
<b>Net weight (Lift app. 1,50 m)</b>	[kgs]	2,37	7,10	13,20	21,75	32,97
<b>Lever block only</b>	[Article-No.]	F06192	F06243	F06253	F06263	F06273

\*TM-LB 025 without overload protection