



*A member of the THIELE-Group*



# LIFTING TECHNOLOGY MADE IN GERMANY

Grade 80  
**GK8**



**TM**  
Hoists

THIELE  
lifting  
evolution

superior XL®  
**Grade 100**

**TLP**  
Hoist Rings



EDITION 1

The **Name**  
for **Safety.**

## Company Profile



### Our parent Company

The company was founded in 1935 by August Thiele. Chains were even welded in forge with only 8 employees. Later on automatic bending and welding machines facilitated the hard physical strain. In the fifties THIELE began the production of chains for the mining industry. The stainless steel (23 MnNiMoCr 54) generally used for high-performance chains was invented by THIELE engineers. All heavy mining-chains have been designed and introduced by THIELE. The development of rated sizes of 22 to currently 48 mm for mining-chains has also been carried out by THIELE.

### Quality Philosophy

We are one of the first companies in the industry to comply worldwide with the quality assurance criteria outlined by DIN EN ISO 9001. Based on the traditions of our company, we are steadily propelling our product process and organization development forward. Our quality target is “zero defects” – anything less is unacceptable. Consistently and thoroughly applied quality inspections during all production phases and indepth final product inspections guarantee that we come as close to this goal as humanly possible.

At the end of the sixties Schlieper and Nordland were taken over. As a result, the product range was extended by heavy anchor chains and snow chains. In addition to aforementioned companies, the following also belong to the THIELE group: Reilloc Chain (UK), THIELE Asia (SIN)

Today the THIELE group produces 5000 different chains and accessories. Our target to be innovative leaders in chain technology has been proved several times in company history. We built the longest (915 m) and heaviest (100 t) anchor chains in the world.



### KWS –

### A member of the THIELE-Group

In 1995 Mr. Ulrich Thiele established operations in the United States specifically focused on the sales of the THIELE brand of overhead lifting chain and components. Since then, Conveying Chain, Fishing Chain, Hoists and Hoist Chains have been added to the product line. New products are continually being added, most recently Magnet Chain Assemblies.

Still today the company is family-owned. In close cooperation with our customers we always search for better and more innovative solutions. We are also supported by renowned universities and leading research institutes. We are continuously researching new knowledge in material technique and shaping in order to develop lighter, more solid and safer products.





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9. Conveyor Chains for Poultry Industry

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## General Information

### Sales-Service

Our Sales- and Technical staff is available for you during work hours and can be reached under the following contact information.

### Address:

KWS Inc.  
P.O. Box 470487  
Tulsa  
OK 74147  
Toll Free 1-800-872-9313  
Phone (918) 665-4114  
Fax (918) 665-4118  
email: [sales@kwschain.com](mailto:sales@kwschain.com)

### Working hours

Mo. – Fr.: 8:00 am – 5:00 pm central time  
Closed for lunch from noon - 1:00 pm central time








A member of the THIELE-Group










## KWS, Inc. Conditions of Sale & Limited Warranty

- Payment Terms:** 1% 10 days, net 30 days from date of invoice
- Delivery Terms:** F.O.B. shipping point  
Freight prepaid at lowest tariff rate on shipments of 1000+ lbs.
- Cut Chain:** A minimum charge of 20% per foot will be applied to each length of chain cut from stock
- Special Items:** All orders for non-stock items will be accepted based on the understanding that the delivered quantity can vary plus or minus 10% from the original quantity and invoice will be issued accordingly.
- Returns:** Return requests will only be honored on standard items in NEW condition and within 90 days from original invoice date. Customer is responsible for return freight. If returned item is part of original prepaid shipment, a portion of original freight will also be assessed against the returned item. Minimum standard restocking charge is 20% or \$25.00 whichever is greater. If item is not in new condition, credit will not be issued and item will be discarded.
- WARNINGS:** To prevent accidents, proper selection, application, and loading of chains and accessories is absolutely necessary.
- NEVER exceed the published working load limits of chains and accessories.
- Accessories must always have equal or higher working load limits than the chain.
- THIELE Plant Standard (TWN)** THIELE Plant Standards fulfill the requirements of the EG Directive  for Machines, particularly for the safety relevant components. The Working Load Limits and the test requirements are more strict than the European Standards.

## Product Overview **XL / Grade 100**

|   |   |  |
|---|---|--|
| Page<br>15                                    | TWN 1805  | TWN 0072A  |
|   |  |  |
| <b>XL / Grade 100-Round Steel Link Chains</b> |   |  |

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|---|--|--|--|---|---|
| Page<br>16 – 18                             | TWN 1807A<br>   | TWN 1808A<br> | TWN 1809A<br> | TWN 1810/1<br> | TWN 1810/2<br> |
|   | TWN 1810/4<br> |  |  |   |   |
| <b>XL / Grade 100-Suspension Components</b> |  |  |  |   |   |




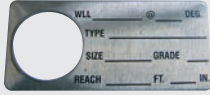
|            |   |  |  |
|------------|---|--|--|
| Page<br>19 | TWN 1820<br> |  |  |
|            | <b>XL / Grade 100-LOK® Connector</b>  |  |  |

|                 |   |   |   |   |
|-----------------|---|---|---|---|
| Page<br>19 – 21 | TWN 1836<br> | TWN 1837<br> | TWN 1840/1<br> | TWN 1841/1<br> |
|                 | <b>XL / Grade 100-Hooks</b>   |   |   |   |



|  |   |   |   |   |  |
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| <p>Page<br/>21 – 23</p>                            | <p>TWN 1827/1</p>  | <p>TWN 1851</p>  | <p>TWN 1852</p>  | <p>TWN 1853</p>  |  |
| <p><b>XL / Grade 100-Shortening Components</b></p> |   |   |   |   |  |

|                                       |   |   |  |  |
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| <p>Page<br/>23 – 24</p>               | <p>TWN 1812</p>  | <p>TWN 1871</p>  |  |  |
| <p><b>XL / Grade 100-Shackles</b></p> |   |   |  |  |

|  |   |  |   |  |  |
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| <p>Page<br/>24 – 26</p>                                  | <p>TWN 0945</p>  | <p>Grade 100 Spare Parts</p>  | <p>TWN 1946</p>  | <p>Stainless Steel Tags</p>  |  |
| <p><b>XL / Grade 100-Spare Parts and Accessories</b></p> |   |  |   |  |  |












## Product Overview **GK8** / Grade 80

TWN 0805A



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**GK8 / Grade 80-Round Steel Link Chains**

|   |   |   |   |   |
|---|---|---|---|---|
| TWN 0807A   | TWN 0796  | TWN 0808A   | TWN 0809A   | TWN 0810/1  |
|    |    |    |    |    |
| TWN 0810/2  | TWN 0810/4  | TWN 0815  | TWN 0816  | TWN 0817  |
|  |  |  |  |  |
| TWN 0820  |   |   |   |   |
|  |   |   |   |   |

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**GK8 / Grade 80-Suspension Components**

|   |   |   |  |  |
|---|---|---|--|--|
| TWN 1320  | KWS   | TWN 0829  |  |  |
|  |  |  |  |  |




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**GK8 / Grade 80- Connecting Links**



|   |   |   |   |  |
|---|---|---|---|--|
| TWN 0798<br>   | TWN 0799<br>   | TWN 1340/1<br> | TWN 0835/1<br> | TWN 0854<br>  |
| TWN 0855/1<br> | TWN 0856<br>   | TWN 0856H<br>  | TWN 0858/1<br> |  |
| TWN 0859<br>   | TWN 0850/1<br> | OCTA-STAR<br>  | OCTA-STAR<br>  | OCTA-STAR<br> |

**GK8 / Grade 80-Hooks**

|   |   |  |  |  |
|---|---|--|--|--|
| TWN 0827<br> | TWN 0827/1<br> | OCTA-STAR<br> | OCTA-STAR<br> | OCTA-STAR<br> |
| TWN 0851<br> |   |  |  |  |

**GK8 / Grade 80-Shortening Components**

|   |   |   |   |  |
|---|---|---|---|--|
| TWN 0861<br> | TWN 0862<br> | TWN 0870<br> | TWN 0871<br> |  |
|---|---|---|---|--|

**GK8 / Grade 80-Shackles**

Magnet Chain Slings



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**GK8 / Grade 80-Magnet Chain Slings**

TWN 1400



TWN 1401



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**GK8 / Grade 80-Tensioning and Lashing Chains**

Stainless Steel tag



TWN 0945



TWN 0946



TWN 01402



Spare Parts



TWN 1908/5

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**GK8 / Grade 80-Spare Parts**




Chain and Wire  
Rope Cutter



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**GK8 / Grade 80-Spare Parts**

|   |   |   |  |  |
|---|---|---|--|--|
| <p>TWN 0449</p>  | <p>TWN 0536</p>  | <p>TWN 0710/1</p>  |  |  |
| <p>Page 49 <b>GK8 / Grade 80-Chain Slings</b></p>   |   |   |  |  |

|  |  |  |  |  |
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| <p>Form K 11</p>  | <p>Form K 12</p>  | <p>Form K 22</p>  |  |  |
| <p>Page 49 <b>GK8 / Grade 80-Endless Chains</b></p>  |  |  |  |  |

|  |   |   |   |   |
|--|---|---|---|---|
| <p>TWN 0119A</p>  | <p>TWN 0121/1</p>  | <p>TWN 0122</p>  | <p>TWN 0123</p>  | <p>TWN 0124</p>  |
| <p>TWN 0127</p>   | <p>TWN 1120</p>    | <p>TWN 1830</p>  | <p>TWN 1880</p>  | <p>TWN 1890</p>  |
| <p>TWN 1470</p>   |   |   |   |   |
| <p>Page 51-57 <b>GK8 / Grade 80- / XL / Grade 100-Hoist Rings</b></p>                                |   |   |   |   |



**Marine and Offshore**



**Calibrated Chains for Hoists**









TWN 1000  
TM-Chain Hoist  
TWN 1001  
TM-Lever Hoist

**TM-Girder Clamp**




**Spare Parts TM-Series**

**Rust & Acid Resistant Round Steel Chains**




**Chains for Fishing Industry**



**Chains and Accessories for Poultry Industry**





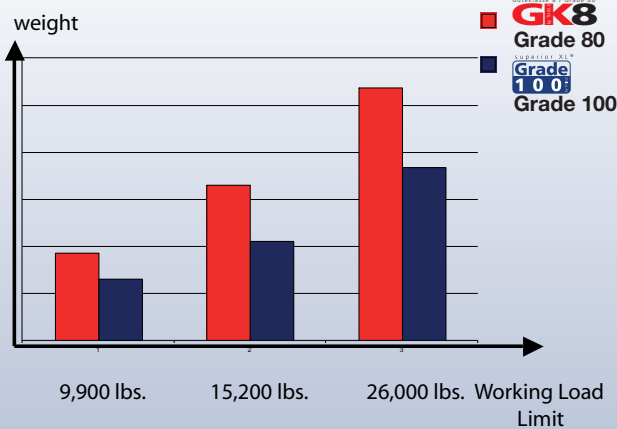
## XL-Program



### Comparison between Grade 80 and Grade 100



Save up to 30% weight on a 2-leg chain sling.

for Example:

| Part-No.                   | THIELE Plant Standard | Pieces |
|----------------------------|-----------------------|--------|
| Master Link                | TWN 1808A             | 1      |
| XL-LOK®                    | TWN 1820              | 2      |
| 2 m Round Steel Link Chain | TWN 1805A             | 2      |
| Clevis Sling Hook          | TWN 1840/1            | 2      |



| Working Load Limit [lbs.] |  Grade 80 Weight [lbs.] |  Grade 100 Weight [lbs.] | Saving |
|---------------------------|---|---|--------|
| 9,900                     | 20.5  | 14.5  | 30 %   |
| 19,200                    | 36.4  | 23.3  | 35 %   |
| 26,000                    | 59.0  | 40.6  | 31 %   |

| Properties                              |  Grade 80 |  Grade 100 |
|---|--|---|
| <b>Weight</b>                           |  | abt. 30 % less  |
| <b>Breaking Stress</b>                  | 800 N/mm <sup>2</sup>  | 1,000 N/mm <sup>2</sup>   |
| <b>Application Temperature</b>          | - 40 to 400 °F   | - 20 to 400 °F US ASTM<br>- 20 to 700 °F US PAS*  |
| <b>Acids and Lyes</b>                   | not allowed  | not allowed   |
| <b>Compatibility with other systems</b> | yes  | restricted  |
| <b>Color Round Steel Link Chains</b>    | black painted (RAL 9005)   | 7/32-5/8" = grey painted (RAL 7011)<br>3/4-1" = blue painted (RAL 5002)                         |
| <b>Color Forgings</b>                   | powder coated red (RAL 3003)   | blue powder coated (RAL 5002)   |
| <b>Standards</b>                        | European EN and International ANSI and ASTM  | European PAS and International ANSI and ASTM  |

\* Reduction starting at 400 ° F

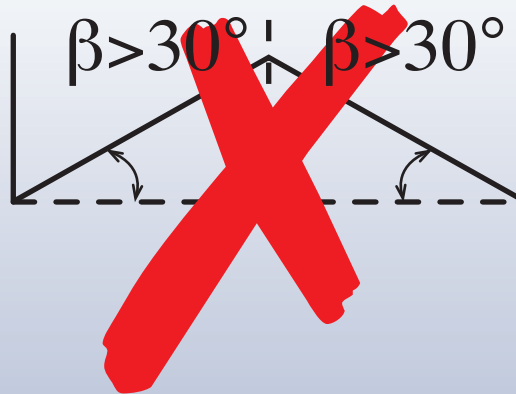
## XL-Working Load Limit Tables

### Working Load Limit in lbs. – direct sling

| Table 1         |                   | Single Sling (lbs.)<br>90° Angle of Lift | Double Sling (lbs.) |           |           | Triple and Quad Sling (lbs.) |           |           |
|-----------------|-------------------|--|---------------------|-----------|-----------|------------------------------|-----------|-----------|
| Chain Size [mm] | Chain Size [inch] |  | 60° Angle           | 45° Angle | 30° Angle | 60° Angle                    | 45° Angle | 30° Angle |
|                 |                   |  |                     |           |           |                              |           |           |
| 6               | 7/32              | 2,700                                    | 4,700               | 3,800     | 2,700     | 7,000                        | 5,700     | 4,000     |
| 7               | 9/32              | 4,300                                    | 7,400               | 6,100     | 4,300     | 11,200                       | 9,100     | 6,400     |
| 8               | 5/16              | 5,700                                    | 9,900               | 8,100     | 5,700     | 14,800                       | 12,100    | 8,500     |
| 10              | 3/8               | 8,800                                    | 15,200              | 12,400    | 8,800     | 22,900                       | 18,700    | 13,200    |
| 13              | 1/2               | 15,000                                   | 26,000              | 21,200    | 15,000    | 39,000                       | 31,800    | 22,500    |
| 16              | 5/8               | 22,600                                   | 39,100              | 32,000    | 22,600    | 58,700                       | 47,900    | 33,900    |
| 20              | 3/4               | 35,300                                   | 61,100              | 49,900    | 35,300    | 91,700                       | 74,900    | 53,000    |
| 22              | 7/8               | 42,700                                   | 74,000              | 60,400    | 42,700    | 110,900                      | 90,600    | 64,000    |
| 26              | 1                 | 58,300                                   | 101,900             | 82,900    | 58,300    | 153,500                      | 125,100   | 88,000    |

\*WLL acc. to ASTM

Inclination Angles  $\beta$  over 30° are prohibited



### Endless chain

K11



K12



K22



**XL-200 Grade 100 Round Steel Link Chains TWN 0072A according to ASTM 973**  
**XL-400 Grade 100 Round Steel Link Chains TWN 1805 according to PAS 1061**



| Trade Size<br>mm                           | TWN 0072A XL-200 |              |              |              |               |               | TWN 1805 XL-400 |               |               |
|--|------------------|--------------|--------------|--------------|---------------|---------------|-----------------|---------------|---------------|
|  | 6 - XL           | 7 - XL       | 8 - XL       | 10 - XL      | 13 - XL       | 16 - XL       | 20 - XL         | 22 - XL       | 26 - XL       |
| Part. No.                                  | F01616A          | F01621A      | F01617A      | F01618A      | F01619A       | F01620A       | F01638B         | F01650B       | F01660B       |
| Nominal Size (d)                           | 7/32             | 9/32         | 5/16         | 3/8          | 1/2           | 5/8           | 3/4             | 7/8           | 1             |
| Pitch (p)<br>(inch)                        | 0.71             | 0.83         | 0.95         | 1.18         | 1.54          | 1.89          | 2.36            | 2.60          | 3.07          |
| Pitch Tolerance (±)<br>(inch)              | 0.02             | 0.03         | 0.03         | 0.04         | 0.05          | 0.06          | 0.07            | 0.08          | 0.09          |
| Inside Width w <sub>1</sub> min.<br>(inch) | 0.38             | 0.38         | 0.43         | 0.51         | 0.61          | 0.81          | 1.02            | 1.13          | 1.33          |
| Outside Width w <sub>2</sub><br>(inch)     | 0.81             | 1.02         | 1.17         | 1.46         | 1.90          | 2.33          | 2.92            | 3.21          | 3.79          |
| <b>Working Load Limit<br/>(lbs)</b>        | <b>3,200</b>     | <b>4,300</b> | <b>5,700</b> | <b>8,800</b> | <b>15,000</b> | <b>22,600</b> | <b>35,300</b>   | <b>42,700</b> | <b>58,330</b> |
| Weight approx<br>(lbs/ft)                  | 1.98             | 2.64         | 3.53         | 5.51         | 9.04          | 13.66         | 22.26           | 27.11         | 37.69         |

**TWN 0072A / XL 200 acc. to ASTM 973**

Elongation at break, self colored, min. 25%; other surface finishes min 20%.  
 Factor: Load- to Proof- to Breaking Stress 1 : 2 : 4 Finish: Iron grey, RAL 7011

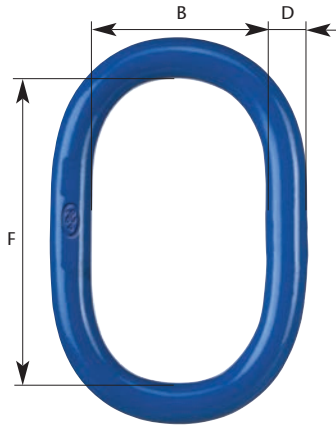
**TWN 1805 / XL 400 acc. to PAS 1061**

Elongation at break, self colored, min. 25%; other surface finishes min 20%.  
 Factor: Load- to Proof- to Breaking Stress 1 : 2.5 : 4  
 Finish: Blue RAL 5002



We provide high working load chains needed for today's new energy sources.

## XL-Suspension Components



### The Master Link Form A TWN 1807A

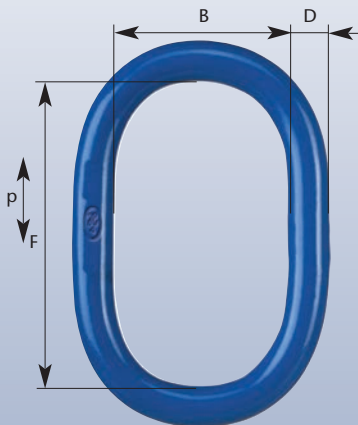
according to DIN 5688 for 1-leg chain slings enables an easy assembly of an **XL-LOK**® TWN 1820. This Suspension component's coupling offers a higher flexibility in sling assembly with the advantage of less inventory.

The Master Link Form A TWN 1807 is suitable for Crane Hooks according to DIN 15401:

| Trade Size | Crane Hook No | Trade Size | Crane Hook No. |
|------------|---------------|------------|----------------|
| 6 - XL     | No. 2.5       | 13 - XL    | No. 6          |
| 8 - XL     | No. 2.5       | 16 - XL    | No. 8          |
| 10 - XL    | No. 5         |            |                |

Finish: RAL 5002

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs.] | Dimensions<br>[inch] |      |      | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|------------------------------|----------------------|------|------|--------------------------|
|            |           |                        |                              | D                    | F    | B    |                          |
| 6-XL       | F180706   | 7/32                   | 3,200                        | 0.51                 | 3.55 | 1.97 | 0.64                     |
| 8-XL       | F180708   | 5/16                   | 5,700                        | 0.63                 | 4.33 | 2.36 | 1.17                     |
| 10-XL      | F180710   | 3/8                    | 8,800                        | 0.71                 | 5.12 | 2.76 | 1.74                     |
| 13-XL      | F180713   | 1/2                    | 15,000                       | 0.87                 | 6.30 | 3.55 | 3.31                     |
| 16-XL      | F180716   | 5/8                    | 22,600                       | 1.02                 | 7.09 | 3.94 | 5.07                     |
| 22-XL      | F180722   | 7/8                    | 42,700                       | 1.42                 | 9.84 | 5.51 | 13.67                    |



### The Master Link Form A TWN 1808A

according to DIN 5688 for 2-leg chain slings enables an easy assembly of an **XL-LOK**® TWN 1820. This Suspension Components coupling offers a higher flexibility in sling assembly with the advantage of less inventory.

The Master Link Form A TWN 1808 is suitable for Crane Hooks according to DIN 15401:

| Trade Size | Crane Hook No | Trade Size | Crane Hook No. |
|------------|---------------|------------|----------------|
| 6 - XL     | No. 2.5       | 13 - XL    | No. 8          |
| 8 - XL     | No. 5         | 16 - XL    | No. 10         |
| 10 - XL    | No. 6         |            |                |

Finish: RAL 5002

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs.] | Dimensions<br>[inch] |       |      | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|------------------------------|----------------------|-------|------|--------------------------|
|            |           |                        |                              | D                    | F     | B    |                          |
| 6-XL       | F180806   | 7/32                   | 5,500                        | 0.51                 | 3.55  | 1.97 | 0.64                     |
| 8-XL       | F180808   | 5/16                   | 9,900                        | 0.71                 | 5.12  | 2.76 | 1.74                     |
| 10-XL      | F180810   | 3/8                    | 15,200                       | 0.79                 | 5.52  | 3.15 | 2.42                     |
| 13-XL      | F180813   | 1/2                    | 26,000                       | 1.02                 | 7.09  | 3.94 | 5.07                     |
| 16-XL      | F180816   | 5/8                    | 39,100                       | 1.26                 | 9.06  | 4.93 | 9.70                     |
| 22-XL      | F180822   | 7/8                    | 74,000                       | 1.77                 | 12.60 | 6.89 | 26.46                    |



### The Master Link Assembly TWN1809A

according to DIN 5688 for 3/4-leg chain slings enables easy assembling of an XL-LOK® TWN 1820.

The Master Link Assembly TWN 1809 is suitable for Crane Hooks according to DIN 15401:

|            |               |            |                |
|------------|---------------|------------|----------------|
| Trade Size | Crane Hook No | Trade Size | Crane Hook No. |
| 6 – XL     | No. 5         | 13 – XL    | No. 10         |
| 8 – XL     | No. 6         | 16 – XL    | No. 16         |
| 10 – XL    | No. 8         |            |                |



Finish: RAL 5002



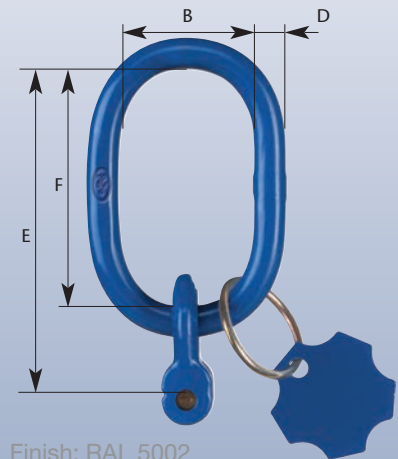
| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs.] | Dimensions<br>[inch] |      |       |      |      |      |      | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|------------------------------|----------------------|------|-------|------|------|------|------|--------------------------|
|            |           |                        |                              | E                    | D    | F     | B    | D'   | F'   | B'   |                          |
| 6-XL       | F180906   | 7/32                   | 6,720                        | 6.70                 | 0.63 | 4.33  | 2.36 | 0.51 | 2.36 | 1.18 | 2.07                     |
| 8-XL       | F180908   | 5/16                   | 11,812                       | 8.27                 | 0.79 | 5.52  | 3.15 | 0.63 | 2.76 | 1.38 | 3.97                     |
| 10-XL      | F180910   | 3/8                    | 17,920                       | 10.64                | 1.02 | 7.09  | 3.94 | 0.79 | 3.55 | 1.77 | 8.38                     |
| 13-XL      | F180913   | 1/2                    | 31,360                       | 13.79                | 1.26 | 9.06  | 4.93 | 1.02 | 4.13 | 2.36 | 16.97                    |
| 16-XL      | F180916   | 5/8                    | 41,488                       | 16.55                | 1.58 | 11.43 | 6.30 | 1.10 | 5.12 | 2.56 | 28.65                    |
| 22-XL      | F180922   | 7/8                    | 111,000                      | 20.47                | 1.97 | 13.39 | 7.48 | 1.58 | 7.09 | 3.54 | 61.73                    |

### The Fixed Size Master Link Assembly TWN 1810/1

Type TAA1 for 1- leg chain slings is automatically determined to the nominal size by the Ringshackle · The Ringshackle moves freely · A welded identification tag contains all the data required · The dimensions are in accordance with DIN 5688, form A · The Fixed Size Master Link Assembly Type TAA 1 can also be delivered without the Ringshackle as a Master Link TWN 1807.

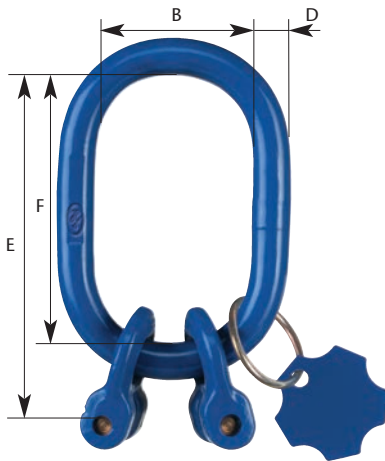
The Fixed Size Master Link Assembly TWN 1810/1 is suitable for Crane Hooks according to DIN 15401:

|            |               |            |                |
|------------|---------------|------------|----------------|
| Trade Size | Crane Hook No | Trade Size | Crane Hook No. |
| 6 – XL     | No. 2.5       | 13 – XL    | No. 6          |
| 8 – XL     | No. 2.5       | 16 – XL    | No. 8          |
| 10 – XL    | No. 5         |            |                |



Finish: RAL 5002

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs.] | Dimensions<br>[inch] |      |      |      | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|------------------------------|----------------------|------|------|------|--------------------------|
|            |           |                        |                              | E                    | D    | F    | B    |                          |
| 6-XL       | F1810106  | 7/32                   | 3,200                        | 5.56                 | 0.51 | 4.33 | 2.36 | 0.99                     |
| 8-XL       | F1810108  | 5/16                   | 5,700                        | 5.79                 | 0.63 | 4.33 | 2.36 | 1.63                     |
| 10-XL      | F1810110  | 3/8                    | 8,800                        | 7.13                 | 0.71 | 5.32 | 2.96 | 2.64                     |
| 13-XL      | F1810113  | 1/2                    | 15,000                       | 8.63                 | 0.87 | 6.30 | 3.55 | 5.29                     |
| 16-XL      | F1810116  | 5/8                    | 22,600                       | 9.69                 | 1.02 | 7.09 | 3.94 | 8.60                     |



### The Fixed Size Master Link Assembly TWN 1810/2

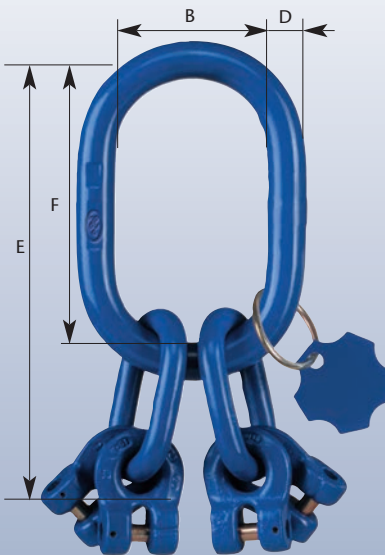
Type TAA2 for 2- leg chain slings is automatically determined to the nominal size by the Ringshackle · The Ringshackle moves freely · A welded identification tag contains all the data required · The dimensions are in accordance with DIN 5688, form A · The Fixed Size Master Link Assembly Type TAA2 can also be delivered without the Ringshackle as a Master Link TWN 1808.

The Fixed Size Master Link Assembly TWN 1810/2 is suitable for Crane Hooks according to DIN 15401:

| Trade Size | Crane Hook No | Trade Size | Crane Hook No. |
|------------|---------------|------------|----------------|
| 6 – XL     | No. 2.5       | 13 – XL    | No. 8          |
| 8 – XL     | No. 5         | 16 – XL    | No. 10         |
| 10 – XL    | No. 6         |            |                |

Finish: RAL 5002

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs.] | Dimensions<br>[inch] |      |      |      | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|------------------------------|----------------------|------|------|------|--------------------------|
|            |           |                        |                              | E                    | D    | F    | B    |                          |
| 6-XL       | F1810206  | 7/32                   | 5,500                        | 5.56                 | 0.51 | 4.33 | 2.36 | 1.19                     |
| 8-XL       | F1810208  | 5/16                   | 9,900                        | 6.78                 | 0.71 | 5.32 | 2.96 | 2.64                     |
| 10-XL      | F1810210  | 3/8                    | 15,200                       | 8.12                 | 0.87 | 6.30 | 3.55 | 5.07                     |
| 13-XL      | F1810213  | 1/2                    | 26,000                       | 9.42                 | 1.02 | 7.09 | 3.94 | 8.82                     |
| 16-XL      | F1810216  | 5/8                    | 39,100                       | 10.48                | 1.26 | 7.88 | 4.33 | 15.65                    |



### The Fixed Size Master Link Assembly TWN 1810/4

Type TAA4 for 3/4- leg chain slings is automatically determined to the nominal size by the Ringshackle · The Ringshackle moves freely · A welded identification tag contains all the data required · The dimensions are in accordance with DIN 5688, form A · The Fixed Size Master Link Assembly Type TAA4 can also be delivered without the Ringshackle as a Master Link TWN 1809.

The Fixed Size Master Link Assembly TWN 1810/4 is suitable for Crane Hooks according to DIN 15401:

| Trade Size | Crane Hook No | Trade Size | Crane Hook No. |
|------------|---------------|------------|----------------|
| 6 – XL     | No. 5         | 13 – XL    | No. 10         |
| 8 – XL     | No. 6         | 16 – XL    | No. 16         |
| 10 – XL    | No. 8         |            |                |

Finish: RAL 5002

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs.] | Dimensions<br>[inch] |      |       |      |      | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|------------------------------|----------------------|------|-------|------|------|--------------------------|
|            |           |                        |                              | E                    | D    | F     | B    | D    |                          |
| 6-XL       | F1810406  | 7/32                   | 6,720                        | 8.67                 | 0.91 | 5.32  | 2.96 | 0.51 | 3.53                     |
| 8-XL       | F1810408  | 5/16                   | 11,812                       | 10.52                | 0.87 | 6.30  | 3.55 | 0.63 | 6.83                     |
| 10-XL      | F1810410  | 3/8                    | 17,920                       | 12.25                | 1.02 | 7.09  | 3.94 | 0.71 | 11.02                    |
| 13-XL      | F1810413  | 1/2                    | 31,360                       | 14.74                | 1.26 | 2.88  | 4.33 | 0.87 | 20.94                    |
| 16-XL      | F1810416  | 5/8                    | 41,488                       | 18.36                | 1.42 | 10.24 | 5.52 | 1.02 | 36.15                    |

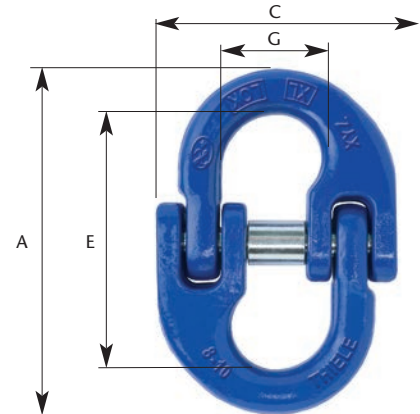
## XL-LOK® Connector

### The XL-LOK®-Connector TWN 1820

consists of two lok halves, which enables the assembly of Round Steel Link Chains or various components and lifting points to each other.

- The lok halves are interchangeable.
- The assembly does not require an expensive bushing.
- The assembly will be completed with two locking spiral pins according to the assembly instructions as shown below.
- 100% Magnetic Crack Tested. BG - approved.

Finish: Blue powder coated



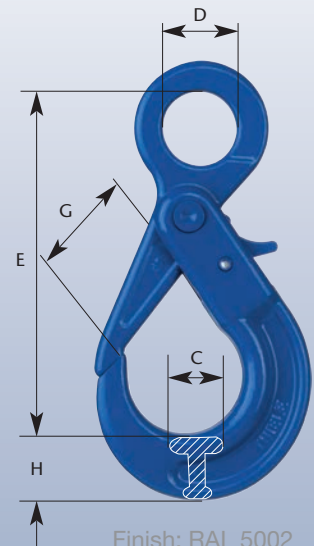
| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs.] | Dimensions<br>[inch] |      |      |      | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|------------------------------|----------------------|------|------|------|--------------------------|
|            |           |                        |                              | E                    | G    | A    | C    |                          |
| 6-XL       | F30807    | 7/32                   | 3,200                        | 1.77                 | 0.55 | 2.40 | 1.52 | 0.15                     |
| 8-XL       | F30817    | 5/16                   | 5,700                        | 2.44                 | 0.75 | 2.79 | 2.17 | 0.44                     |
| 10-XL      | F30827    | 3/8                    | 8,800                        | 2.84                 | 0.94 | 3.35 | 2.58 | 0.77                     |
| 13-XL      | F30837    | 1/2                    | 15,000                       | 3.43                 | 1.10 | 2.83 | 3.25 | 1.63                     |
| 16-XL      | F30847    | 5/8                    | 22,600                       | 4.13                 | 1.35 | 5.76 | 4.29 | 2.56                     |
| 22-XL      | F30861    | 7/8                    | 42,700                       | 5.51                 | 1.86 | 7.87 | 6.50 | 7.76                     |

## XL-Hooks

### The Eye Self Locking Hook TWN 1836

automatically locks under load.

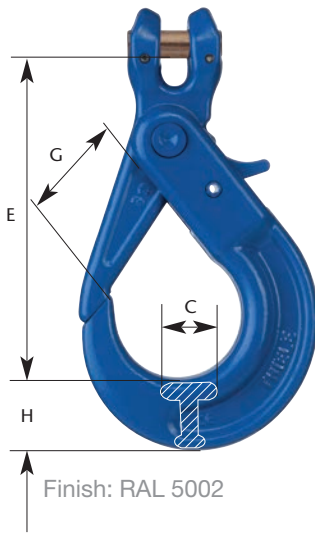
- The flattened extra large eye offers universal coupling options. A robust trigger at the back side of the hook can be easily hand-operated.
- Despite an extra wide hook opening, the Eye Self Locking Hooks offer a slim shape and enable a versatile use.
- The available Trigger Sets are universal for hooks type TWN1836 and 1837.



Finish: RAL 5002

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs.] | Dimensions<br>[inch] |      |      |      |      | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|------------------------------|----------------------|------|------|------|------|--------------------------|
|            |           |                        |                              | E                    | D    | G    | H    | C    |                          |
| 6-XL       | F092203   | 7/32                   | 3,200                        | 4.33                 | 0.83 | 1.10 | 0.79 | 1.34 | 1.01                     |
| 8-XL       | F092213   | 5/16                   | 5,700                        | 5.39                 | 1.06 | 1.41 | 1.02 | 1.81 | 1.85                     |
| 10-XL      | F092223   | 3/8                    | 8,800                        | 6.65                 | 1.36 | 1.77 | 1.22 | 2.28 | 3.28                     |
| 13-XL      | F092233   | 1/2                    | 15,000                       | 8.23                 | 1.58 | 2.11 | 1.61 | 2.72 | 6.45                     |
| 16-XL      | F092243   | 5/8                    | 22,600                       | 10                   | 1.97 | 2.46 | 1.97 | 3.39 | 12.84                    |
| 22-XL      | F092273   | 7/8                    | 42,700                       | 12.57                | 2.76 | 3.15 | 2.56 | 3.86 | 25.86                    |

### The **Clevis Self Locking Hook TWN 1837** automatically locks under load.

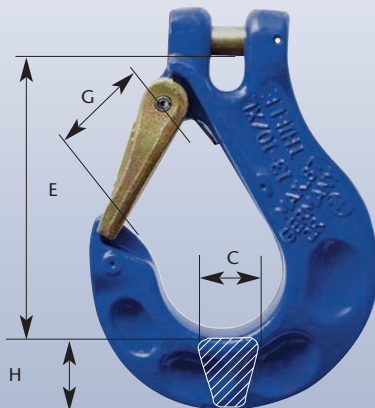


Finish: RAL 5002

- A robust trigger at the back side of the hook can be easily hand-operated.
- Despite an extra wide hook opening, the Clevis Self Locking Hooks offer a slim shape and enable a versatile use.
- The available Trigger Sets are universal for hooks type TWN1836 and 1837.

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs.] | Dimensions<br>[inch] |      |      |      | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|------------------------------|----------------------|------|------|------|--------------------------|
|            |           |                        |                              | E                    | G    | H    | C    |                          |
| 6-XL       | F092002   | 7/32                   | 3,200                        | 3.78                 | 1.10 | 0.79 | 1.34 | 1.04                     |
| 8-XL       | F092012   | 5/16                   | 5,700                        | 4.84                 | 1.41 | 1.02 | 1.81 | 1.95                     |
| 10-XL      | F092022   | 3/8                    | 8,800                        | 5.67                 | 1.77 | 1.22 | 2.28 | 3.38                     |
| 13-XL      | F092032   | 1/2                    | 15,000                       | 7.17                 | 2.11 | 1.61 | 2.72 | 6.62                     |
| 16-XL      | F092042   | 5/8                    | 22,600                       | 8.54                 | 2.46 | 1.97 | 3.39 | 13.05                    |
| 22-XL      | F092072   | 7/8                    | 42,700                       | 10.89                | 3.15 | 2.53 | 3.86 | 27.14                    |

### The new **Sling Hook TWN1840/1**. Complete Performance: Great Strength, Stability and Value



Finish: RAL 5002

#### Simply Better:

- The new design of the TWN 1840/1 Sling Hook offers an ergonomic design for easier and more comfortable use.
- The TWN 1840/1 is designed with a wide throat opening and fitted wear edges ensuring easily handled loads.
- The TWN 1840/1 also comes standard with a forged safety latch designed for tough service and long life.

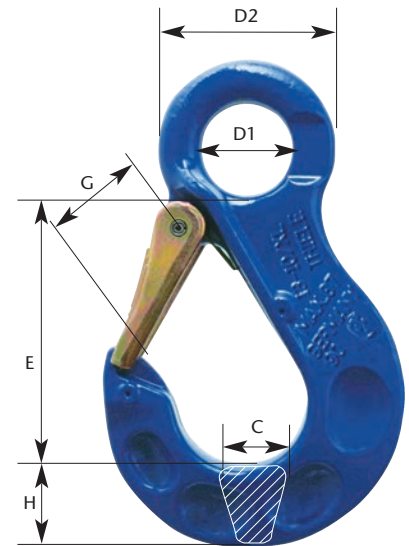
| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs.] | Dimensions<br>[inch] |      |      |      | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|------------------------------|----------------------|------|------|------|--------------------------|
|            |           |                        |                              | E                    | G    | H    | C    |                          |
| 6-XL       | F336050   | 9/32                   | 3,200                        | 3.00                 | 1.00 | 0.87 | 0.62 | 0.75                     |
| 8-XL       | F336150   | 5/16                   | 5,700                        | 3.63                 | 1.18 | 1.00 | 0.87 | 1.66                     |
| 10-XL      | F336250   | 3/8                    | 8,800                        | 4.50                 | 1.50 | 1.25 | 1.06 | 3.10                     |
| 13-XL      | F336350   | 1/2                    | 14,800                       | 5.25                 | 1.63 | 1.63 | 1.37 | 5.50                     |
| 16-XL      | F336450   | 5/8                    | 22,000                       | 6.37                 | 2.00 | 2.00 | 1.63 | 9.70                     |



The new **Eye Slip Hook TWN1841/1**.  
Complete Performance: Great Strength, Stability and Value

**Simply Better:**

- The new design of the TWN 1841/1 Sling Hook offers an ergonomic design for easier and more comfortable use.
- The TWN 1841/1 is designed with a wide throat opening and fitted wear edges ensuring easily handled loads.
- The TWN 1841/1 also comes standard with a forged safety latch designed for tough service and long life.



Finish: RAL 5002

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs.] | Dimensions |                |                          |      |      |      | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|------------------------------|------------|----------------|--------------------------|------|------|------|--------------------------|
|            |           |                        |                              | E          | D <sup>1</sup> | [inch]<br>D <sup>2</sup> | G    | H    | C    |                          |
| 6-XL       | F32905    | 9/32                   | 3,200                        | 3.50       | 0.44           | 0.81                     | 1.00 | 0.75 | 0.83 | 0.75                     |
| 8-XL       | F32915    | 5/16                   | 5,700                        | 4.63       | 0.50           | 1.09                     | 1.19 | 1.00 | 0.88 | 1.75                     |
| 10-XL      | F32925    | 3/8                    | 8,800                        | 5.75       | 0.69           | 0.50                     | 1.50 | 1.75 | 1.11 | 3.25                     |
| 13-XL      | F32935    | 1/2                    | 14,800                       | 6.63       | 0.81           | 0.62                     | 1.62 | 1.62 | 1.37 | 5.63                     |
| 16-XL      | F32945    | 5/8                    | 22,000                       | 8.75       | 1.00           | 2.12                     | 2.00 | 2.00 | 1.62 | 10.25                    |
| 22-XL      | F32975    | 7/8                    | 42,700                       | 10.67      | 2.56           | 4.92                     | 4.16 | 2.44 | 2.13 | 21.55                    |

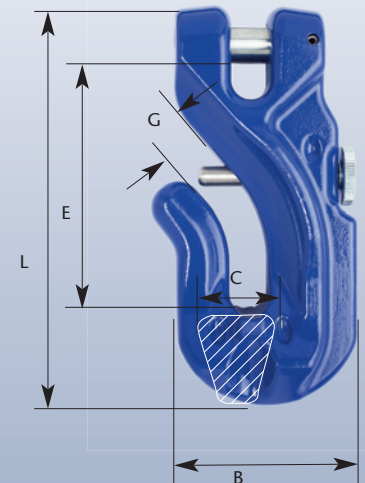
**XL-Shortening Components**

The **Shortening Hook TWN 1827/1**

The Shortening Hook TWN1827/1 according to DIN 5692 makes the lifting of loads safer. The new shape of the shortening Hooks TWN 1827/1 offer you much more safety than with conventional shortening hooks. The extra wide chain attachment enables us to guarantee you an especially firm seating of the inserted chain link and it is also protected from damage at the same time. The locking pin prevents an accidental loosening of the sling chain.

With our new TWN 1827/1 shortening hook, we are offering you grade 10 perfection together with a long shelf life of your slinging equipment.

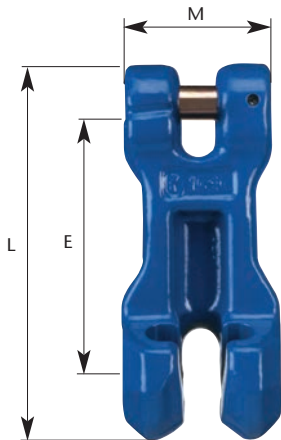
100% Magnetic Crack Tested. BG-approved.



Finish: RAL 5002

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs.] | Dimensions |      |             |      |      | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|------------------------------|------------|------|-------------|------|------|--------------------------|
|            |           |                        |                              | E          | G    | [inch]<br>L | B    | C    |                          |
| 6-XL*      | F33195    | 7/32                   | 3,200                        | -          | -    | -           | -    | -    | -                        |
| 8-XL*      | F33205    | 5/16                   | 5,700                        | -          | -    | -           | -    | -    | -                        |
| 10-XL      | F33215    | 3/8                    | 8,800                        | 3.27       | 0.49 | 5.20        | 2.68 | 1.58 | 2.09                     |
| 13-XL*     | F33225    | 1/2                    | 15,000                       | -          | -    | -           | -    | -    | -                        |
| 16-XL*     | F33235    | 5/8                    | 22,600                       | -          | -    | -           | -    | -    | -                        |

\*In development



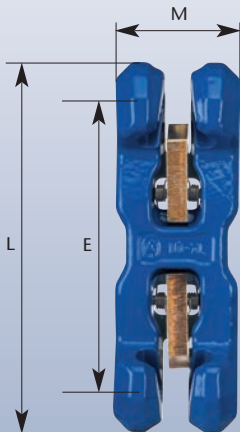
### The **Clevis Shortening Claw TWN 1851**

proven over many decades, has been further developed into the Grade **XL** and clevis is designed to the corresponding nominal size.

- The chain has a safe seat in the claw pocket so that premature release is avoided.
- Proven design

Finish: RAL 5002

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs.] | Dimensions<br>[inch] |      |      | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|------------------------------|----------------------|------|------|--------------------------|
|            |           |                        |                              | E                    | L    | M    |                          |
| 6-XL       | F34904    | 7/32                   | 3,200                        | 2.13                 | 3.19 | 1.26 | 0.46                     |
| 8-XL       | F34924    | 5/16                   | 5,700                        | 3.15                 | 4.53 | 1.80 | 1.34                     |
| 10-XL      | F34934    | 3/8                    | 8,800                        | 3.55                 | 5.28 | 2.21 | 2.12                     |
| 13-XL      | F34944    | 1/2                    | 15,000                       | 4.61                 | 6.90 | 2.84 | 4.41                     |
| 16-XL      | F34954    | 5/8                    | 22,600                       | 5.67                 | 8.43 | 3.39 | 7.87                     |



### The **RAPID-Shortening Claw TWN1852**

can be assembled and disassembled fast and easily with no additional tools. The ergonomic and compact design enables its positioning at any place on the chain. Two robust locking devices avoid the unsafe release of the chain in a loaded or unloaded condition. The locking device is equipped with a robust spring system.

100% Magnetic Crack Tested. BG-approved.

Finish: RAL 5002

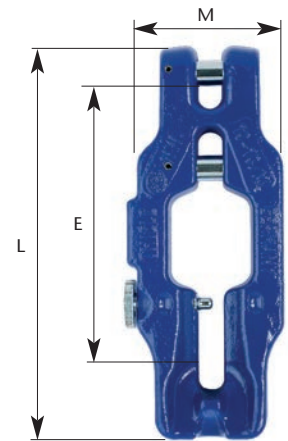
| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs] | Dimensions<br>[inch] |       |      | Weight approx.<br>[lbs] |
|------------|-----------|------------------------|-----------------------------|----------------------|-------|------|-------------------------|
|            |           |                        |                             | E                    | L     | M    |                         |
| 6-XL*      | F34765    | 7/32                   | 3,200                       | -                    | -     | -    | -                       |
| 8-XL       | F34775    | 5/16                   | 5,700                       | 4.37                 | 5.83  | 1.89 | 1.74                    |
| 10-XL      | F34780    | 3/8                    | 8,800                       | 5.28                 | 7.09  | 2.36 | 3.31                    |
| 13-XL      | F34785    | 1/2                    | 15,000                      | 7.05                 | 9.45  | 3.07 | 5.95                    |
| 16-XL      | F34790    | 5/8                    | 22,600                      | 8.74                 | 11.65 | 3.78 | 10.58                   |

\*In development

## The Combi Quick Fastener TWN 1853

according to DIN 5692 makes for fast and extremely easy handling. The flat design and easy handling make it safe and convenient for the operator. It offers an integrated Clevis connection for the chain to be shortened, and allows for only one ring shackle per chain leg. Thanks to the locking pin, there is no unintended unlocking of the chain.

100 % Working Load Limit of the chain, 100 % Crack Tested, and BG - approved.



Finish: RAL 5002



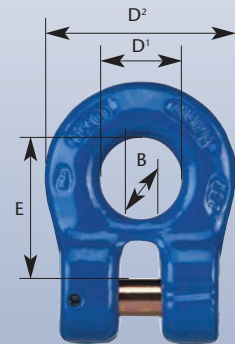
| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs.] | Dimensions<br>[inch] |       |      | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|------------------------------|----------------------|-------|------|--------------------------|
|            |           |                        |                              | E                    | L     | M    |                          |
| 6-XL *     |           | 7/32                   | 3,200                        | 4.21                 | 4.65  | 1.85 | 0.88                     |
| 8-XL *     |           | 5/16                   | 5,700                        | 5.63                 | 6.22  | 2.48 | 1.87                     |
| 10-XL      | F349355   | 3/8                    | 8,800                        | 6.97                 | 7.64  | 3.07 | 3.53                     |
| 13-XL *    |           | 1/2                    | 15,000                       | 9.10                 | 9.92  | 3.94 | 7.50                     |
| 16-XL *    |           | 5/8                    | 22,600                       | 9.76                 | 11.46 | 6.18 | 11.46                    |
| 22-XL      | F349845   | 7/8                    | 42,700                       | 14.37                | 15.59 | 6.38 | 29.98                    |

\*In development

## XL-Special Sling Component

The forged **Ringshackle TWN1812** is automatically determined to the nominal size.

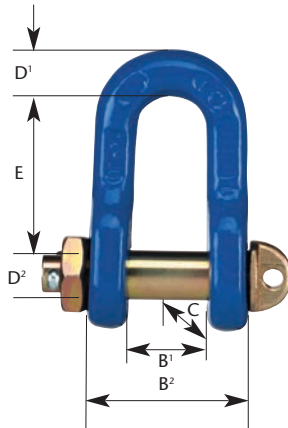
- It is used as a lower terminal in the chain sling to be connected to a clevis lashing point.
- Coupling with a **XL-LOK**® is possible.
- 100 % Magnetic Crack Tested. BG - approved.



Finish: RAL 5002

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs.] | Dimensions<br>[inch] |      |                |      | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|------------------------------|----------------------|------|----------------|------|--------------------------|
|            |           |                        |                              | E                    | D    | D <sup>2</sup> | B    |                          |
| 6-XL       | F31704    | 7/32                   | 3,200                        | 1.22                 | 0.67 | 1.54           | 0.32 | 0.22                     |
| 8-XL       | F31714    | 5/16                   | 5,700                        | 1.46                 | 0.83 | 1.97           | 0.43 | 0.44                     |
| 10-XL      | F31724    | 3/8                    | 8,800                        | 1.81                 | 1.02 | 2.44           | 0.55 | 0.86                     |
| 13-XL      | F31734    | 1/2                    | 15,000                       | 2.32                 | 1.30 | 3.11           | 0.71 | 2.83                     |
| 16-XL      | F31744    | 5/8                    | 22,600                       | 2.96                 | 1.65 | 3.94           | 0.91 | 3.50                     |

## XL-Shackles



Finish: RAL 5002

### Bolt Shackle Type C, TWN 1871

dimensionally in accordance with DIN 82101. Supplied with galvanized bolt, nut and split pin.

- 100% Magnetic crack tested. BG-approved.

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Working Load Limit<br>[lbs.] | Dimensions<br>[inch] |                |                |      |                |                | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|------------------------------|----------------------|----------------|----------------|------|----------------|----------------|--------------------------|
|            |           |                        |                              | E                    | D <sup>1</sup> | D <sup>2</sup> | C    | B <sup>1</sup> | B <sup>2</sup> |                          |
| 10-XL      | F303100   | 3/8                    | 8,800                        | 1.93                 | 0.59           | 0.63           | 1.26 | 0.83           | 1.85           | 0.99                     |
| 13-XL      | F303200   | 1/2                    | 15,000                       | 2.40                 | 0.75           | 0.79           | 1.58 | 1.06           | 2.40           | 1.85                     |
| 16-XL      | F303300   | 5/8                    | 22,600                       | 2.88                 | 0.91           | 0.95           | 1.89 | 1.30           | 2.96           | 3.11                     |

## XL-Spare Parts an Accessories

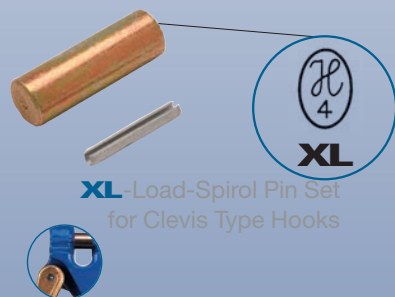
Spare Parts are only available as sets!



### XL-Assembly Set TWN 0945

Consisting of 6 punches in a plastic holder to disassemble chains from components. The complete set covers all nominal sizes for use with the THIELE-Sling-Assembly-System.

Part.-No. Z03303



XL-Load-Spirol Pin Set  
for Clevis Type Hooks

### XL-Spare Parts TWN 1904/0

for Clevis Type Hooks (Load and Spirol Pin)

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Packing Units | Weight approx. |
|------------|-----------|------------------------|---------------|----------------|
|            |           |                        |               | [lbs.]         |
| 6-XL       | F48686    | 7/32                   | 1 set         | 0.02           |
| 8-XL       | F48687    | 5/16                   | 1 set         | 0.02           |
| 10-XL      | F48688    | 3/8                    | 1 set         | 0.07           |
| 13-XL      | F48689    | 1/2                    | 1 set         | 0.15           |
| 16-XL      | F48690    | 5/8                    | 1 set         | 0.24           |

Spare Parts are only available as sets!

### XL-Spare Parts TWN 1908/0

for Sling Hooks (Safety Latch, spring and Spirol Pin)

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Packing Units | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|---------------|--------------------------|
| 6-XL       | F48731    | 7/32                   | 1 set         | 0.07                     |
| 8-XL       | F48733    | 5/16                   | 1 set         | 0.13                     |
| 10-XL      | F48735    | 3/8                    | 1 set         | 0.24                     |
| 13-XL      | F48737    | 1/2                    | 1 set         | 0.42                     |
| 16-XL      | F48739    | 5/8                    | 1 set         | 0.71                     |



XL-Spare Parts for Sling Hooks ('TWN 1835/1)

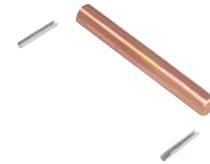


(TWN 1835/1) (TWN 1840/1) (TWN 1841/1)

### Spare Parts TWN 1921

for XL-LOK® (Load pin and 2 Spirol Pins)

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Packing Units | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|---------------|--------------------------|
| 6-XL       | F486013   | 7/32                   | 1 set         | 0.02                     |
| 8-XL       | F486043   | 5/16                   | 1 set         | 0.04                     |
| 10-XL      | F486073   | 3/8                    | 1 set         | 0.08                     |
| 13-XL      | F486103   | 1/2                    | 1 set         | 0.10                     |
| 16-XL      | F486133   | 5/8                    | 1 set         | 0.26                     |
| 22-XL      | F486191   | 7/8                    | 1 set         | 1.01                     |



Pin Set for XL-LOK® TWN 1820



(XL-LOK®, TWN 1820)

### Spare Parts TWN 1930/0

for C-Shackle, TWN 1871 (Bolt, Nut and Cotter Pin)

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Packing Units | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|---------------|--------------------------|
| 10-XL      | F304510   | 3/8                    | 1 set         | 0.29                     |
| 13-XL      | F304610   | 1/2                    | 1 set         | 0.55                     |
| 16-XL      | F304710   | 5/8                    | 1 set         | 0.79                     |

Pin Set for C-Shackle ('TWN 1871)

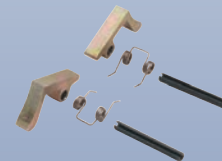


(TWN 1871)

### Spare Parts TWN 1931/0

for RAPID® Shortening Claw, TWN 1852 (2 Retainers, 2 Springs and 2 Spirol Pins)

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Packing Units | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|---------------|--------------------------|
| 8-XL       | F347750   | 5/16                   | 1 set         | 0.09                     |
| 10-XL      | F347800   | 3/8                    | 1 set         | 0.22                     |
| 13-XL      | F347850   | 1/2                    | 1 set         | 0.37                     |
| 16-XL      | F347900   | 5/8                    | 1 set         | 0.73                     |



Pin Set for RAPID® Shortening Claw (TWN 1852)



RAPID® Shortening Claw (TWN 1852)

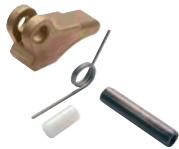




Pin Set for  
Clevis Self Locking Hook  
(TWN 1837)



Self Locking Clevis Hook  
(TWN 1837)



Trigger Set for Self Locking Hooks  
(TWN 1836 and TWN 1837)



(TWN 1836) (TWN 1837)

## Spare Parts TWN 1933/0

for Clevis Self Locking Hook, TWN 1837 (Load Pin, 2 Spirol Pins)

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Packing Units | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|---------------|--------------------------|
| 6-XL       | F092001   | 7/32                   | 1 set         | 0.02                     |
| 8-XL       | F092011   | 5/16                   | 1 set         | 0.04                     |
| 10-XL      | F092021   | 3/8                    | 1 set         | 0.09                     |
| 13-XL      | F092031   | 1/2                    | 1 set         | 0.18                     |
| 16-XL      | F092041   | 5/8                    | 1 set         | 0.35                     |

## Trigger Set TWN 1935

for Self Locking Hooks (TWN 1836 and TWN 1837)  
(Retainer, Spring, Assembly Plastic Bush and Spirol Pin)

| Trade Size | Part.-No. | Nominal Size<br>[inch] | Packing Units | Weight approx.<br>[lbs.] |
|------------|-----------|------------------------|---------------|--------------------------|
| 6-XL       | F092202   | 7/32                   | 1 set         | 0.04                     |
| 8-XL       | F092212   | 5/16                   | 1 set         | 0.09                     |
| 10-XL      | F092222   | 3/8                    | 1 set         | 0.11                     |
| 13-XL      | F092232   | 1/2                    | 1 set         | 0.40                     |
| 16-XL      | F092242   | 5/8                    | 1 set         | 0.42                     |

Spare Parts are only available in Sets!



Pic.: TWN 1946  
Front- and Backside

## XL-Chain Gauge TWN 1946

for XL-Round Steel Link Chains

| Trade Size | Part.-No. | Weight approx.<br>[ lbs.] |
|------------|-----------|---------------------------|
| 6-XL       | F01690    | 0.22                      |
| 8-XL       | F01691    | 0.33                      |
| 10-XL      | F01692    | 0.44                      |
| 13-XL      | F01693    | 0.55                      |
| 16-XL      | F01694    | 0.66                      |

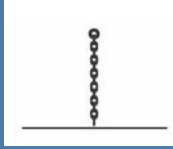
## Our Performances and Services

- Bending and welding up to a diameter of 160 mm
- The Forging up to 60 kgs weight
- Machining works of complex pieces with modern CNC equipment
- Laser cutting up to 20 mm material thickness
- Cutting presses for material thickness up to 20 mm
- Turning of tooth flanks up to 1050 mm and hubs up to a diameter of 500 mm
- Heat treatments like hardening, case hardening, nitriding, inductive hardening and tempering
- Mounting of slings
- Corrosion protective processes like coloring, zinc galvanizing, hot dip galvanizing, chromating
- Pull testing up to 500 metric tons
- Laboratory research like tensile tests, bending tests, hardness profiles, chemical analysis etc.
- Construction and design of new high complex pieces

# GK8 / Grade 80

## Product Features

### Working Load Limit in lbs. – direct sling

| KWS Grade 80       |                      | Single Sling (lbs.)<br>90° Angle of Lift  | Double Sling (lbs.) |           |           | Triple and Quad Sling (lbs.) |           |           |
|--------------------|----------------------|---|---------------------|-----------|-----------|------------------------------|-----------|-----------|
| Chain Size<br>[mm] | Chain Size<br>[inch] |  | 60° Angle           | 45° Angle | 30° Angle | 60° Angle                    | 45° Angle | 30° Angle |
|                    |                      |   | 6-8                 | 7/32      | 2,100     | 3,600                        | 3,000     | 2,100     |
| 7-8                | 1/4 (9/32)           | 3,500   | 6,100               | 4,900     | 3,500     | 9,100                        | 7,400     | 5,200     |
| 8-8                | 5/16                 | 4,500   | 7,800               | 6,400     | 4,500     | 11,700                       | 9,500     | 6,800     |
| 10-8               | 3/8                  | 7,100   | 12,300              | 10,000    | 7,100     | 18,400                       | 15,100    | 10,600    |
| 13-8               | 1/2                  | 12,000  | 20,800              | 17,000    | 12,000    | 31,200                       | 25,500    | 18,000    |
| 16-8               | 5/8                  | 18,100  | 31,300              | 25,600    | 18,100    | 47,000                       | 38,400    | 27,100    |
| 20-8               | 3/4                  | 28,300  | 49,000              | 40,000    | 28,300    | 73,500                       | 60,000    | 42,400    |
| 22-8               | 7/8                  | 34,200  | 59,200              | 48,400    | 34,200    | 88,900                       | 72,500    | 51,300    |
| 26-8               | 1                    | 47,700  | 82,600              | 67,400    | 47,700    | 123,900                      | 101,200   | 71,500    |
| 32-8               | 1 1/4                | 72,300  | 125,200             | 102,200   | 72,300    | 187,800                      | 153,400   | 108,400   |
| 36-8               | 1.42                 | 88,000  | 152,400             | 124,500   | 88,000    | 228,600                      | 186,700   | 132,000   |
| 40-8               | 1.58                 | 110,200   | 190,900             | 155,800   | 110,200   | 286,300                      | 233,800   | 165,300   |
| 45-8               | 1.77                 | 138,900   | 240,600             | 196,400   | 138,900   | 360,900                      | 294,600   | 208,400   |
| 50-8               | 1.97                 | 176,300   | 305,400             | 249,300   | 176,300   | 458,000                      | 375,000   | 264,500   |
| 56-8               | 2.21                 | 220,400   | 381,700             | 311,700   | 220,400   | 572,600                      | 467,500   | 330,600   |
| 63-8               | 2.50                 | 275,577   | 477,300             | 389,700   | 275,600   | 715,900                      | 584,600   | 413,400   |

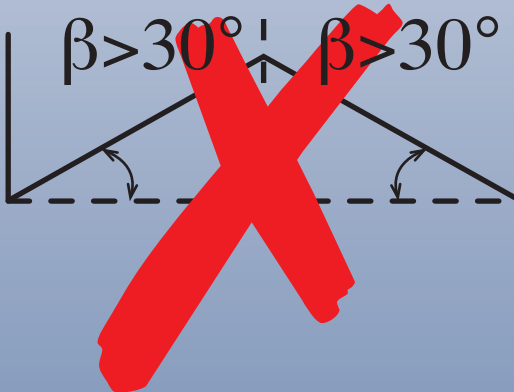


Above working load limits apply only to normal conditions of use in straight configuration and equally loaded legs. For endless slings we recommend a W.L.L. of 75% of the above W.L.L. for the corresponding double leg sling. Design factor 4:1

Additional nominal sizes are also available in welded finish on request. Additional finishes: Electrogalvanized, hot dipped galvanized and corrotherm coated. Also available priced upon application.

Note: German Regulations state that 3 / 4 -leg chain slings have the same working load limits.

Inclination Angles  $\beta$  over 30° are prohibited



Never exceed published Working Load Limits.



## Advice for safe use and maintenance.

### Using your chain sling

1. Keep a record of all slings in stock (Record sheets are available at no charge to distributors.)
2. Never lift with knotted or twisted chains.
3. If shortening a chain sling is required, ALWAYS use a shortening hook or claw.
4. ALWAYS pad sharp edges of a lift to protect your chains
5. The load should ALWAYS be secured in the bowl of the hook - NEVER on the tip of the hook.
6. ALWAYS verify that the capacity of the chain sling will accommodate the load considering the possibility of unequal loading and the sling angle. (If in doubt on the angle of lift, consult KWS' new pocket capacity card.)
7. The sling master link should be of sufficient width to seat properly in the bowl of the crane hook.
8. Avoid shock loading of chain slings as the result may be the same as overloading.
9. Don't leave slings on the floor. When not in use, hang them on a rack.
10. Make sure the object being lifted is not lagged, clamped or bolted to the floor.
11. Make sure crane is directly over the load.
12. When lifting a load in confined spaces, attach a rope or "Tag line" to one or both ends of the load to control rotational movement.
13. Never permit anyone to ride the lifting hook or the load
14. Make sure that all personnel stand clear while the lift is being made.
15. Never work under a suspended load unless the load has been adequately supported from the floor and all conditions have been approved by the supervisor in charge of the operation.

*Never exceed published Working Load Limits.*



## Inspection

- Chain slings shall be inspected at least annually and more often depending on the frequency and severity of use. A record **MUST** be kept of all physical inspections and maintained until the next inspection.

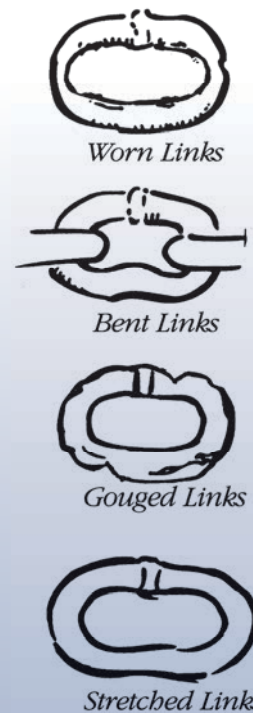
- Measure the overall reach and compare with the reach shown on the ID tag. Reach = from bearing point of the top master link of the sling to bearing point of the bottom attachment. If the reach has lengthened, **Remove the sling from service** and determine the cause of the increase. Increase is normally due to overload or wear.

- Regular wear inspection is required. (KWS wear gauges are available for this purpose.) If extreme wear is found, check the stock diameter to see if the sling should be removed from service.

- Chain links that are bent, have cracks, scratches, corrosion pits, lifted fins, flashing or traverse markings can cause a sling to break or severely reduce the working load limit of the sling.

- Inspect all sling attachments for gouges, distortion or elongated throat openings. See Chart (page 30) for extreme temperatures and how this affects the working load limit.

Grade 80 alloy chain and fittings **MUST NOT** be used under acidic conditions.



### Danger Indicators

Inspect chain slings link by link. Remove sling from service if you find any of these conditons.



| Chain size in inches | Removal from Service Dimensions |
|----------------------|---------------------------------|
| 7/32                 | 13/64                           |
| 9/32                 | 1/4                             |
| 3/8                  | 11/32                           |
| 1/2                  | 15/32                           |
| 5/8                  | 37/64                           |
| 3/4                  | 23/32                           |
| 7/8                  | 25/32                           |
| 1                    | 59/64                           |
| 1 1/4                | 1 1/8                           |

Never exceed published Working Load Limits.



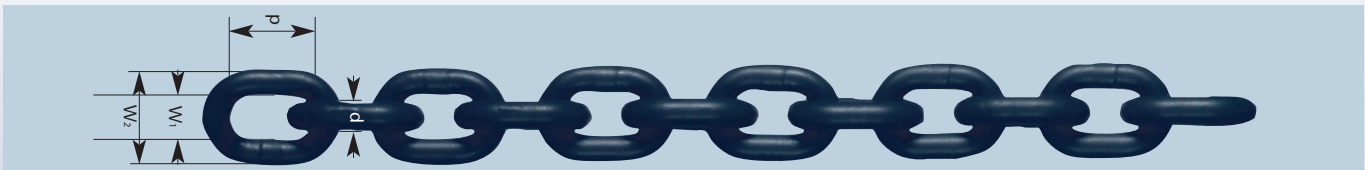
## Product Features

### Reduced Working Load of Alloy Steel Chains in Service at Extreme Temperature Conditions

| Temperature of sling | Extreme Temperature Effects Reduction in Load Limit* / While Heated | Permanent Reduction in Working Load Limit |
|----------------------|---|---|
| 500° F               | 15%   | None                                      |
| 600° F               | 20%   | 5%  |
| 700° F               | 30%   | 10%                                       |
| 800° F               | 40%   | 15%                                       |
| 900° F               | 50%   | 20%                                       |
| *1000° F             | 60%   | 25%                                       |

\* Chains shall not be heated above 1000° F or cooled below – 40° F  
 THIELE Alloy Slings are not recommended for use in acid.

### Grade 80 Round Steel Link Chains TWN0805A according to ASTM 391

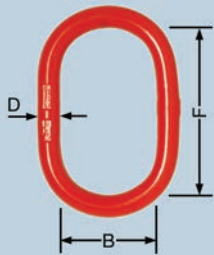


| Trade Size |        | Part-No.<br>[Black Finish] | Chain dia.<br>[inch] |       | Pitch<br>[inch] |       | inside width<br>[inch] |                | outside width<br>[inch] |         | Working Load Limit<br>[lbs.] | Weight approx.<br>[lbs./ft] |
|------------|--------|----------------------------|----------------------|-------|-----------------|-------|------------------------|----------------|-------------------------|---------|------------------------------|-----------------------------|
| [mm]       | [inch] |                            | α                    | tol.± | p               | tol.± | w <sub>1</sub> min.    | w <sub>2</sub> | w <sub>2</sub> max.     |         |                              |                             |
| 6-8        | 7/32   | F01453A                    | 0.24                 | 0.007 | 0.71            | 0.020 | 0.315                  | 0.827          | 0.851                   | 2,100   | 0.53                         |                             |
| 7-8        | 9/32   | F01459A                    | 0.28                 | 0.007 | 0.86            | 0.024 | 0.372                  | 0.965          | 0.993                   | 3,500   | 0.73                         |                             |
| 8-8        | 5/16   | F01465A                    | 0.32                 | 0.110 | 0.95            | 0.028 | 0.426                  | 1.103          | 1.135                   | 4,500   | 0.94                         |                             |
| 10-8       | 3/8    | F01470A                    | 0.39                 | 0.016 | 1.18            | 0.035 | 0.532                  | 1.379          | 1.418                   | 7,100   | 1.46                         |                             |
| 13-8       | 1/2    | F01475A                    | 0.51                 | 0.020 | 1.54            | 0.039 | 0.690                  | 1.793          | 1.844                   | 12,000  | 2.52                         |                             |
| 16-8       | 5/8    | F01480A                    | 0.63                 | 0.024 | 1.89            | 0.055 | 0.847                  | 2.230          | 2.269                   | 18,100  | 3.71                         |                             |
| 20-8       | 3/4    | F01495A                    | 0.79                 | 0.039 | 2.36            | 0.071 | 1.064                  | 2.758          | 2.837                   | 28,300  | 5.95                         |                             |
| 22-8       | 7/8    | F01500A                    | 0.87                 | 0.043 | 2.60            | 0.079 | 1.162                  | 3.034          | 3.120                   | 34,200  | 7.21                         |                             |
| 26-8       | 1      | F01515A                    | 1.02                 | 0.051 | 3.07            | 0.091 | 1.379                  | 3.585          | 3.688                   | 47,700  | 10.06                        |                             |
| 32-8       | 1 1/4  | F01525A                    | 1.26                 | 0.063 | 3.78            | 0.114 | 1.702                  | 4.413          | 4.531                   | 72,300  | 15.20                        |                             |
| 36-8       | 1.42   | F01530                     | 1.42                 | 0.071 | 4.26            | 0.126 | 1.911                  | 4.964          | 5.122                   | 88,000  | 19.49                        |                             |
| 40-8       | 1.58   | F01535                     | 1.58                 | 0.079 | 4.73            | 0.142 | 2.128                  | 5.516          | 5.674                   | 110,200 | 24.19                        |                             |
| 45-8       | 1.77   | F01540                     | 1.77                 | 0.091 | 5.32            | 0.162 | 2.403                  | 6.206          | 6.383                   | 138,900 | 30.57                        |                             |
| 50-8       | 1.97   | F01546                     | 1.97                 | 0.099 | 5.91            | 0.177 | 2.656                  | 6.805          | 7.092                   | 176,300 | 37.63                        |                             |
| 56-8       | 2.21   | F01556                     | 2.21                 | 0.110 | 6.62            | 0.200 | 2.980                  | 7.72           | 7.940                   | 220,400 | 48.72                        |                             |
| 63-8       | 2.50   | F01566                     | 2.50                 | 0.125 | 7.50            | 0.250 | 3.438                  | 8.688          | 9.063                   | 275,577 | 59.82                        |                             |

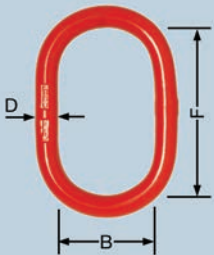
Additional finishes: Electro galvanized, hot dipped galvanized, corrotherm coated and mangan phosphated.  
 Also available priced upon application.

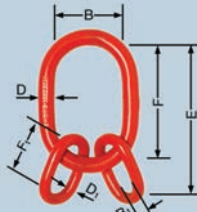


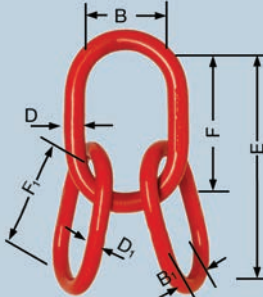
## GK8-Suspension Components

| TWN 807A  | Trade Size |          | Part-No.  | WLL<br>DF= 4:1<br>[lbs.] | Dimensions<br>[inch] |       |        | Weight<br>approx<br>[lbs.] |
|---|------------|----------|-----------|--------------------------|----------------------|-------|--------|----------------------------|
|   | [mm]       | [inch]   |           |                          | D                    | F     | B      |                            |
|  <p><b>Oblong Master Link Type A<br/>for Single Leg Slings</b></p> | 6-8        | 7/32     | F0807A068 | 2,100                    | 0.51                 | 3.54  | 1.97   | 0.64                       |
|   | 7-8        | 1/4      | F0807A078 | 3,500                    | 0.63                 | 4.33  | 2.36   | 1.17                       |
|   | 8-8        | 5/16     | F0807A088 | 4,500                    | 0.63                 | 4.33  | 2.36   | 1.17                       |
|   | 10-8       | 3/8      | F0807A108 | 7,100                    | 0.71                 | 5.12  | 2.76   | 1.75                       |
|   | 13-8       | 1/2      | F0807A138 | 12,000                   | 0.79                 | 5.51  | 3.15   | 2.36                       |
|   | 16-8       | 5/8      | F0807A168 | 18,100                   | 1.02                 | 7.09  | 3.94   | 5.11                       |
|   | 20-8       | 3/4      | F0807A208 | 28,300                   | 1.26                 | 9.06  | 4.92   | 9.79                       |
|   | 22-8       | 1/8      | F0807A228 | 34,200                   | 1.26                 | 9.06  | 4.92   | 13.67                      |
|   | 26-8       | 1        | F0807A268 | 47,700                   | 1.57                 | 11.42 | 6.30   | 24.46                      |
|   | 32-8       | 1 1/4    | F0807A328 | 72,300                   | 1.97                 | 13.39 | 7.48   | 35.82                      |
|   | 36-8       | 1.42     | F0807368  | 88,000                   | 2.21                 | 14.97 | 8.27   | 50.69                      |
|   | 40-8       | 1.58     | F0807408  | 110,200                  | 2.48                 | 16.94 | 9.46   | 72.73                      |
|   | 45-8       | 1.77     | F0807458  | 138,900                  | 2.76                 | 18.52 | 10.24  | 96.98                      |
|   | 50-8       | 1.97     | F0807508  | 176,300                  | 3.15                 | 20.49 | 11.43  | 141.06                     |
|   | 56-8       | 2.21     | F0807568  | 220,400                  | 3.35                 | 20.49 | 11.43  | 160.89                     |
|   | 63-8       | 2.50     | F0807638  | 275,577                  | 3.74                 | 22.85 | 12.61  | 220.40                     |
|   | 71-8       | 2.80     | F0807718  | 352,640                  | 4.33                 | 26.79 | 14.97  | 352.64                     |
| 80-8  | 3.15       | F0807808 | 440,800   | 4.93                     | 28.37                | 15.76 | 484.88 |                            |




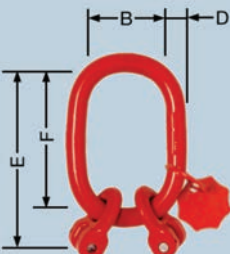
| TWN 0808A  | Trade Size |          | Part-No.  | WLL<br>DF= 4:1<br>[lbs.] | Dimensions<br>[inch] |       |        | Weight<br>approx<br>[lbs.] |
|--|------------|----------|-----------|--------------------------|----------------------|-------|--------|----------------------------|
|  | [mm]       | [inch]   |           |                          | D                    | F     | B      |                            |
|  <p><b>Oblong Master Link<br/>for Double Leg Slings</b></p> | 6-8        | 7/32     | F0808A068 | 3,600                    | 0.51                 | 3.54  | 1.97   | 0.64                       |
|  | 7-8        | 1/4      | F0808A078 | 6,100                    | 0.63                 | 4.33  | 2.36   | 1.18                       |
|  | 8-8        | 5/16     | F0808A088 | 7,800                    | 0.71                 | 5.12  | 2.76   | 1.75                       |
|  | 10-8       | 3/8      | F0808A108 | 12,300                   | 0.67                 | 6.30  | 3.54   | 3.24                       |
|  | 13-8       | 1/2      | F0808A138 | 20,800                   | 1.02                 | 7.09  | 3.94   | 5.11                       |
|  | 16-8       | 5/8      | F0808A168 | 31,300                   | 1.26                 | 9.06  | 4.92   | 9.79                       |
|  | 20-8       | 3/4      | F0808A208 | 49,000                   | 1.77                 | 12.60 | 6.89   | 27.01                      |
|  | 22-8       | 7/8      | F0808A228 | 59,200                   | 1.77                 | 12.60 | 6.89   | 27.01                      |
|  | 26-8       | 1        | F0808A268 | 82,600                   | 2.20                 | 14.95 | 8.27   | 50.11                      |
|  | 32-8       | 1 1/4    | F0808A328 | 12,5200                  | 2.76                 | 18.50 | 10.24  | 72.75                      |
|  | 36-8       | 1.42     | F0808368  | 152,400                  | 2.76                 | 18.50 | 10.24  | 97.02                      |
|  | 40-8       | 1.58     | F0808408  | 190,870                  | 3.15                 | 20.49 | 11.43  | 141.10                     |
|  | 45-8       | 1.77     | F0808458  | 240,600                  | 3.34                 | 20.48 | 11.43  | 160.44                     |
|  | 50-8       | 1.97     | F0808508  | 305,350                  | 3.74                 | 22.73 | 12.60  | 220.46                     |
| 56-8   | 2.21       | F0808568 | 381,700   | 4.53                     | 26.77                | 14.96 | 352.74 |                            |

| TWN 0809A  | Trade Size |        | Part-No.  | WLL<br>DF= 4:1<br>[lbs.] | Dimensions<br>[inch] |      |       |       |                |                |                | Weight<br>approx<br>[lbs.] |
|--|------------|--------|-----------|--------------------------|----------------------|------|-------|-------|----------------|----------------|----------------|----------------------------|
|  | [mm]       | [inch] |           |                          | E                    | D    | F     | B     | D <sub>1</sub> | F <sub>1</sub> | B <sub>1</sub> |                            |
|  |            |        |           |                          |                      |      |       |       |                |                |                |                            |
|  <p>Master Link Assembly<br/>for 3 and 4-Leg Slings</p> | 6-8        | 7/32   | F0809A068 | 5,500                    | 6.70                 | 0.63 | 4.33  | 2.36  | 0.39           | 1.81           | 0.91           | 2.07                       |
|  | 7-8        | 1/4    | F0809A078 | 9,100                    | 7.49                 | 0.71 | 5.12  | 2.76  | 0.51           | 2.36           | 1.18           | 2.45                       |
|  | 8-8        | 5/16   | F0809A088 | 11,700                   | 7.87                 | 0.79 | 5.51  | 3.15  | 0.51           | 2.36           | 1.18           | 3.47                       |
|  | 10-8       | 3/8    | F0809A108 | 18,400                   | 10.44                | 1.02 | 7.09  | 3.94  | 0.71           | 3.35           | 1.57           | 8.38                       |
|  | 13-8       | 1/2    | F0809A138 | 31,200                   | 13.00                | 1.26 | 9.06  | 4.92  | 0.87           | 3.94           | 1.97           | 16.98                      |
|  | 16-8       | 5/8    | F0809A168 | 47,000                   | 16.14                | 1.57 | 11.42 | 6.30  | 1.02           | 4.72           | 2.36           | 28.46                      |
|  | 20-8       | 3/4    | F0809A208 | 73,500                   | 19.69                | 1.97 | 13.39 | 7.48  | 1.42           | 6.30           | 3.15           | 55.12                      |
|  | 22-8       | 7/8    | F0809A228 | 88,900                   | 21.28                | 2.20 | 14.96 | 8.27  | 1.42           | 6.30           | 3.15           | 61.73                      |
|  | 26-8       | 1      | F0809A268 | 123,900                  | 24.03                | 2.48 | 16.93 | 9.45  | 1.57           | 7.09           | 3.54           | 108.09                     |
|  | 32-8       | 1 1/4  | F0809A328 | 187,800                  | 29.16                | 3.15 | 20.47 | 11.42 | 1.97           | 8.66           | 4.33           | 189.60                     |


| TWN 0796  | Part-No. | WLL<br>DF= 4:1<br>[lbs.] | Dimensions<br>[inch] |      |       |       |                |                |                | Weight<br>approx<br>[lbs.] | Categorization of the<br>wire rope diameter* |                      |
|---|----------|--------------------------|----------------------|------|-------|-------|----------------|----------------|----------------|----------------------------|--|----------------------|
|   |          |                          | E                    | D    | F     | B     | D <sub>1</sub> | F <sub>1</sub> | B <sub>1</sub> |                            | Fiber Rope<br>[inch]                         | Steel Rope<br>[inch] |
|   |          |                          |                      |      |       |       |                |                |                |                            |  |                      |
|  <p>Master Link Assembly<br/>for 3 and 4-Leg<br/>Wire Rope EN 13414-1</p> | F0796016 | 6,171                    | 7.88                 | 0.63 | 4.33  | 2.36  | 0.51           | 3.55           | 1.97           | 2.64                       | 0.43   | 0.39                 |
|   | F0796018 | 8,816                    | 9.46                 | 0.75 | 5.12  | 2.76  | 0.63           | 4.33           | 2.36           | 4.19                       | 0.51   | 0.47                 |
|   | F0796022 | 11,691                   | 11.43                | 0.87 | 6.30  | 3.55  | 0.71           | 5.12           | 2.76           | 6.83                       | 0.63   | 0.55                 |
|   | F0796026 | 16,530                   | 13.40                | 1.00 | 7.09  | 3.94  | 0.87           | 6.30           | 3.55           | 11.90                      | 0.71   | 0.63                 |
|   | F0796032 | 24,464                   | 16.15                | 1.26 | 9.06  | 4.93  | 1.00           | 7.09           | 3.94           | 20.06                      | 0.87   | 0.79                 |
|   | F0796036 | 35,264                   | 18.91                | 1.42 | 9.85  | 5.52  | 1.26           | 9.06           | 4.93           | 33.28                      | 1.00   | 0.95                 |
|   | F0796045 | 46,284                   | 22.46                | 1.77 | 12.61 | 6.90  | 1.42           | 9.85           | 5.52           | 55.10                      | 1.10   | 1.10                 |
|   | F0796050 | 69,646                   | 26.00                | 1.97 | 13.40 | 7.49  | 1.77           | 12.61          | 6.90           | 92.57                      | 1.42   | 1.42                 |
|   | F0796056 | 88,600                   | 28.37                | 2.21 | 14.97 | 8.27  | 1.97           | 13.40          | 7.49           | 125.63                     | 1.58   | 1.58                 |
|   | F0796063 | 110,420                  | 31.91                | 2.48 | 16.94 | 9.46  | 2.21           | 14.97          | 8.27           | 174.12                     | 1.73   | 1.73                 |
|   | F0796085 | 224,367                  | 40.98                | 3.35 | 20.49 | 11.42 | 3.15           | 20.49          | 11.43          | 445.21                     | 2.36   | 2.36                 |

\*according to DIN EN 13414-1 for 3/4 leg slings

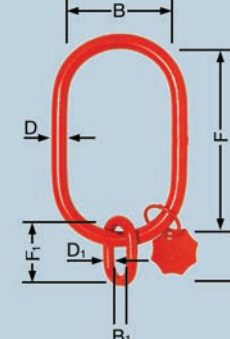
| TWN 0810/1  | Trade Size |        | Part-No. | WLL<br>DF= 4:1<br>[lbs.] | Dimensions<br>[inch] |       |       |      | Weight<br>approx<br>[lbs.] |
|---|------------|--------|----------|--------------------------|----------------------|-------|-------|------|----------------------------|
|   | [mm]       | [inch] |          |                          | E                    | D     | F     | B    |                            |
|   |            |        |          |                          |                      |       |       |      |                            |
|  <p>Fixed Size Master Link<br/>Assembly Type TAA 1</p> | 6-8        | 7/32   | F31770   | 2,100                    | 5.55                 | 5.12  | 4.33  | 2.36 | 1.32                       |
|   | 8-8        | 9/32   | F31780   | 3,500                    | 5.79                 | 6.30  | 4.33  | 2.36 | 2.20                       |
|   | 10-8       | 5/16   | F31790   | 4,500                    | 7.13                 | 7.09  | 5.31  | 2.95 | 3.31                       |
|   | 13-8       | 1/2    | F31800   | 7,100                    | 8.62                 | 8.67  | 6.30  | 3.54 | 5.07                       |
|   | 16-8       | 5/8    | F31810   | 12,000                   | 10.04                | 10.29 | 7.09  | 3.94 | 8.71                       |
|   | 22-8       | 7/8    | F31830   | 34,200                   | 14.18                | 14.80 | 10.24 | 5.51 | 23.14                      |

| <b>TWN 0810/2</b><br> | Trade Size |        | Part-No. | WLL<br>SF= 4:1<br>[lbs.] | Dimensions<br>[inch] |       |      |       | Weight<br>approx<br>[lbs.] |
|--|------------|--------|----------|--------------------------|----------------------|-------|------|-------|----------------------------|
|  | [mm]       | [inch] |          |                          | E                    | D     | F    | B     |                            |
|  | 6-8        | 7/32   |          |                          | F31772               | 3,600 | 5.55 | 0.51  |                            |
| 8-8  | 9/32       | F31782 | 7,800    | 6.77                     | 0.70                 | 5.31  | 2.95 | 2.64  |                            |
| 10-8   | 5/16       | F31792 | 12,300   | 8.11                     | 0.86                 | 6.30  | 3.44 | 5.07  |                            |
| 13-8   | 1/2        | F31802 | 20,800   | 9.41                     | 1.02                 | 7.09  | 3.94 | 9.04  |                            |
| 16-8   | 5/8        | F31812 | 31,300   | 10.83                    | 1.26                 | 7.88  | 4.33 | 15.87 |                            |
| 22-8   | 7/8        | F31832 | 59,200   | 17.33                    | 1.77                 | 13.39 | 7.09 | 44.08 |                            |

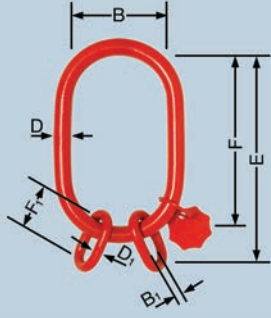
**Fixed Size Master Link Assembly Type TAA 2**

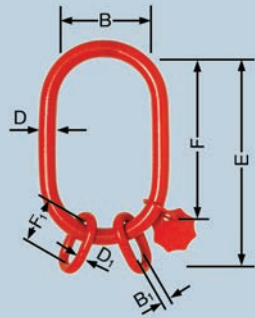
| <b>TWN 0810/4</b><br> | Trade Size |        | Part-No. | WLL<br>DF= 4:1<br>[lbs.] | Dimensions<br>[inch] |       |      |      |                | Weight<br>approx<br>[lbs.] |
|---|------------|--------|----------|--------------------------|----------------------|-------|------|------|----------------|----------------------------|
|   | [mm]       | [inch] |          |                          | E                    | D     | F    | B    | D <sub>1</sub> |                            |
|   | 6-8        | 7/32   |          |                          | F31776               | 5,450 | 8.66 | 0.70 | 5.31           |                            |
| 8-8   | 9/32       | F31786 | 11,700   | 10.52                    | 0.86                 | 6.30  | 3.54 | 0.63 | 6.61           |                            |
| 10-8  | 5/16       | F31796 | 18,400   | 12.25                    | 1.02                 | 7.09  | 3.94 | 0.70 | 11.02          |                            |
| 13-8  | 1/2        | F31806 | 31,200   | 14.73                    | 1.26                 | 7.88  | 4.33 | 0.86 | 21.16          |                            |
| 16-8  | 5/8        | F31816 | 47,000   | 18.71                    | 1.41                 | 10.24 | 5.51 | 1.02 | 35.26          |                            |
| 22-8  | 7/8        | F31836 | 88,900   | 24.42                    | 1.97                 | 13.79 | 7.48 | 1.41 | 88.16          |                            |


**Fixed Size Master Link Assembly Type TAA 4**

| <b>TWN 0815</b><br> | Trade Size |        | DIN-<br>Crane<br>Hook<br>No. | Part-No. | WLL<br>DF= 4:1<br>[lbs.] | Dimensions<br>[inch] |           |       |       |                |                |                | Weight<br>approx<br>[lbs.] |
|--|------------|--------|------------------------------|----------|--------------------------|----------------------|-----------|-------|-------|----------------|----------------|----------------|----------------------------|
|  | [mm]       | [inch] |                              |          |                          | E                    | D         | F     | B     | D <sub>1</sub> | F <sub>1</sub> | B <sub>1</sub> |                            |
|  | 6-8        | 7/32   |                              |          |                          | 16                   | F08150616 | 2,100 | 12.37 | 0.71           | 10.24          | 5.51           |                            |
| 6-8  | 7/32       | 25     | F08150625                    | 2,100    | 15.52                    | 0.79                 | 13.40     | 7.09  | 0.51  | 2.13           | 0.99           | 5.55           |                            |
| 6-8  | 7/32       | 40     | F08150640                    | 2,100    | 19.07                    | 0.87                 | 16.94     | 8.67  | 0.51  | 2.13           | 0.99           | 8.15           |                            |
| 8-8  | 5/16       | 16     | F08150816                    | 4,500    | 13.00                    | 0.87                 | 10.24     | 5.51  | 0.63  | 2.76           | 1.34           | 5.71           |                            |
| 8-8  | 5/16       | 25     | F08150825                    | 4,500    | 15.52                    | 0.79                 | 13.40     | 7.09  | 0.51  | 2.13           | 0.99           | 5.55           |                            |
| 8-8  | 5/16       | 40     | F08150840                    | 4,500    | 19.07                    | 0.87                 | 16.94     | 8.67  | 0.51  | 2.13           | 0.99           | 8.15           |                            |
| 10-8   | 3/8        | 16     | F08151016                    | 7,100    | 13.00                    | 0.87                 | 10.24     | 5.51  | 0.63  | 2.76           | 1.34           | 5.71           |                            |
| 10-8   | 3/8        | 25     | F08151025                    | 7,100    | 16.15                    | 0.95                 | 13.40     | 7.09  | 0.63  | 2.76           | 1.34           | 8.31           |                            |
| 10-8   | 3/8        | 40     | F08151040                    | 7,100    | 19.70                    | 1.00                 | 16.94     | 8.67  | 0.63  | 2.76           | 1.34           | 11.75          |                            |
| 13-8   | 1/2        | 16     | F08151316                    | 12,000   | 1.00                     | 10.24                | 5.51      |       |       |                |                | 6.39           |                            |
| 13-8   | 1/2        | 25     | F08151325                    | 12,000   | 16.15                    | 1.10                 | 13.40     | 7.09  | 0.63  | 2.76           | 1.34           | 11.17          |                            |
| 13-8   | 1/2        | 40     | F08151340                    | 12,000   | 19.70                    | 1.18                 | 16.94     | 8.67  | 0.63  | 2.76           | 1.34           | 15.54          |                            |
| 16-8   | 5/8        | 16     | F08151616                    | 18,100   | 1.18                     | 10.24                | 5.51      |       |       |                |                | 9.48           |                            |
| 16-8   | 5/8        | 25     | F08151625                    | 18,100   | 16.75                    | 1.26                 | 13.40     | 7.09  | 0.79  | 3.35           | 1.58           | 15.23          |                            |
| 16-8   | 5/8        | 40     | F08151640                    | 18,100   | 20.29                    | 1.34                 | 16.94     | 8.67  | 0.79  | 3.35           | 1.58           | 21.62          |                            |
| 20-8   | 3/4        | 25     | F08152025                    | 28,300   | 1.58                     | 13.40                | 7.09      |       |       |                |                | 21.97          |                            |
| 20-8   | 3/4        | 40     | F08152040                    | 28,300   | 1.65                     | 16.94                | 8.67      |       |       |                |                | 29.80          |                            |
| 22-8   | 7/8        | 25     | F08152225                    | 34,200   | 1.58                     | 13.40                | 7.09      |       |       |                |                | 21.97          |                            |
| 22-8   | 7/8        | 40     | F08152240                    | 34,200   | 1.65                     | 16.94                | 8.67      |       |       |                |                | 29.80          |                            |


**Oversize master link assembly for single leg slings suitable for crane hooks DIN 15401 (16 to, 25 to, 40 to)**

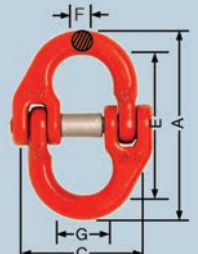
| TWN 0816  | Trade Size |        | Part-No.  | DIN-Crane Hook No. | WLL 60° Angle [lbs.] | Dimensions [inch] |      |       |      |                |                |                | Weight approx [lbs.] |
|---|------------|--------|-----------|--------------------|----------------------|-------------------|------|-------|------|----------------|----------------|----------------|----------------------|
|   | [mm]       | [inch] |           |                    |                      | E                 | D    | F     | B    | D <sub>1</sub> | F <sub>1</sub> | B <sub>1</sub> |                      |
|   |            |        |           |                    |                      |                   |      |       |      |                |                |                |                      |
|  <p>Oversize master link assy for double leg slings suitable for crane hooks DIN 15401 (16 to, 25 to, 40 to)</p> | 6-8        | 7/32   | F08160616 | 16                 | 3,600                | 12.37             | 0.71 | 10.24 | 5.51 | 0.51           | 2.13           | 0.99           | 4.03                 |
|   | 6-8        | 7/32   | F08160625 | 25                 | 3,600                | 15.57             | 0.87 | 13.40 | 7.09 | 0.51           | 2.13           | 0.99           | 5.95                 |
|   | 6-8        | 7/32   | F08160640 | 40                 | 3,600                | 19.70             | 1.00 | 16.94 | 8.67 | 0.63           | 2.76           | 1.34           | 12.54                |
|   | 8-8        | 5/16   | F08160816 | 16                 | 7,800                | 13.00             | 0.87 | 10.24 | 5.51 | 0.63           | 2.76           | 1.34           | 6.50                 |
|   | 8-8        | 5/16   | F08160825 | 25                 | 7,800                | 16.15             | 0.95 | 13.40 | 7.09 | 0.63           | 2.76           | 1.34           | 9.10                 |
|   | 8-8        | 5/16   | F08160840 | 40                 | 7,800                | 19.70             | 1.00 | 16.94 | 8.67 | 0.63           | 2.76           | 1.34           | 12.54                |
|   | 10-8       | 3/8    | F08161016 | 16                 | 12,300               | 13.00             | 1.00 | 10.24 | 5.51 | 0.63           | 2.76           | 1.34           | 8.57                 |
|   | 10-8       | 3/8    | F08161025 | 25                 | 12,300               | 16.15             | 1.10 | 13.40 | 7.09 | 0.63           | 2.76           | 1.34           | 11.97                |
|   | 10-8       | 3/8    | F08161040 | 40                 | 12,300               | 19.70             | 1.18 | 16.94 | 8.67 | 0.63           | 2.76           | 1.34           | 16.33                |
|   | 13-8       | 3/8    | F08161316 | 16                 | 20,800               | 13.59             | 1.18 | 10.24 | 5.51 | 0.79           | 3.35           | 1.58           | 12.47                |
|   | 13-8       | 3/8    | F08161325 | 25                 | 20,800               | 16.75             | 1.26 | 13.40 | 7.09 | 0.79           | 3.35           | 1.58           | 16.73                |
|   | 13-8       | 3/8    | F08161340 | 40                 | 20,800               | 20.29             | 1.34 | 16.94 | 8.67 | 0.79           | 3.35           | 1.58           | 23.12                |
|   | 16-8       | 5/8    | F08161616 | 16                 | 31,300               | 15.76             | 1.42 | 10.24 | 5.51 | 1.00           | 5.52           | 2.56           | 22.00                |
|   | 16-8       | 5/8    | F08161625 | 25                 | 31,300               | 17.93             | 1.58 | 13.40 | 7.09 | 0.87           | 4.53           | 1.97           | 26.65                |
|   | 16-8       | 5/8    | F08161640 | 40                 | 31,300               | 21.47             | 1.65 | 16.94 | 8.67 | 0.87           | 4.53           | 1.97           | 34.47                |
|   | 20-8       | 3/4    | F08162025 | 25                 | 49,500               | 19.30             | 1.77 | 13.40 | 7.09 | 1.26           | 5.91           | 2.76           | 41.70                |
|   | 22-8       | 7/8    | F08162240 | 40                 | 59,200               | 22.46             | 1.89 | 16.94 | 8.67 | 1.00           | 5.52           | 2.56           | 47.54                |


| TWN 0817   | Trade Size |        | Part-No.  | DIN-Crane Hook No. | WLL 60° Angle [lbs.] | Dimensions [inch] |      |       |      |                |                |                | Weight approx [lbs.] |
|--|------------|--------|-----------|--------------------|----------------------|-------------------|------|-------|------|----------------|----------------|----------------|----------------------|
|  | [mm]       | [inch] |           |                    |                      | E                 | D    | F     | B    | D <sub>1</sub> | F <sub>1</sub> | B <sub>1</sub> |                      |
|  |            |        |           |                    |                      |                   |      |       |      |                |                |                |                      |
|  <p>Oversize master link assy for 3 and 4-leg slings suitable for crane hooks DIN 15401 (16 to, 25 to, 40 to)</p> | 6-8        | 7/32   | F08170616 | 16                 | 5,450                | 13.00             | 0.87 | 10.24 | 5.52 | 0.63           | 2.76           | 1.34           | 6.50                 |
|  | 6-8        | 7/32   | F08170625 | 25                 | 5,450                | 16.15             | 0.95 | 13.40 | 7.09 | 0.63           | 2.76           | 1.34           | 9.10                 |
|  | 6-8        | 7/32   | F08170640 | 40                 | 5,450                | 19.70             | 1.00 | 16.94 | 8.67 | 0.63           | 2.76           | 1.34           | 12.54                |
|  | 8-8        | 5/16   | F08170816 | 16                 | 11,700               | 13.00             | 1.00 | 10.24 | 5.52 | 0.63           | 2.76           | 1.34           | 8.57                 |
|  | 8-8        | 5/16   | F08170825 | 25                 | 11,700               | 16.15             | 1.10 | 13.40 | 7.09 | 0.63           | 2.76           | 1.34           | 11.97                |
|  | 8-8        | 5/16   | F08170840 | 40                 | 11,700               | 19.70             | 1.18 | 16.94 | 8.67 | 0.63           | 2.76           | 1.34           | 16.33                |
|  | 10-8       | 3/8    | F08171016 | 16                 | 18,400               | 13.59             | 1.18 | 10.24 | 5.52 | 0.79           | 3.35           | 1.58           | 12.47                |
|  | 10-8       | 3/8    | F08171025 | 25                 | 18,400               | 16.75             | 1.26 | 13.40 | 7.09 | 0.79           | 3.35           | 1.58           | 16.73                |
|  | 10-8       | 3/8    | F08171040 | 40                 | 18,400               | 20.29             | 1.34 | 16.94 | 8.67 | 0.79           | 3.35           | 1.58           | 23.12                |
|  | 13-8       | 1/2    | F08171316 | 16                 | 31,200               | 15.76             | 1.42 | 10.24 | 5.52 | 1.00           | 5.52           | 2.56           | 22.90                |
|  | 13-8       | 1/2    | F08171325 | 25                 | 31,200               | 17.93             | 1.58 | 13.40 | 7.09 | 0.87           | 4.53           | 1.97           | 26.65                |
|  | 13-8       | 1/2    | F08171340 | 40                 | 31,200               | 21.47             | 1.65 | 16.94 | 8.67 | 0.87           | 4.53           | 1.97           | 34.47                |
|  | 16-8       | 5/8    | F08171616 | 16                 | 47,000               | 15.76             | 1.42 | 10.24 | 5.52 | 1.00           | 5.52           | 2.56           | 22.00                |
|  | 16-8       | 5/8    | F08171625 | 25                 | 47,000               | 18.91             | 1.53 | 13.40 | 7.09 | 1.00           | 5.52           | 2.56           | 30.00                |
|  | 16-8       | 5/8    | F08171640 | 40                 | 47,000               | 22.46             | 1.65 | 16.94 | 8.67 | 1.00           | 5.52           | 2.56           | 37.82                |
|  | 20-8       | 3/4    | F08172040 | 40                 | 73,500               | 23.64             | 2.17 | 16.94 | 8.67 | 1.42           | 6.70           | 2.96           | 71.81                |
|  | 22-8       | 7/8    | F08172240 | 40                 | 88,900               | 23.64             | 2.17 | 16.94 | 8.67 | 1.42           | 6.70           | 2.96           | 71.81                |

| TWN 0820  | Trade Size |        | Part-No. | WLL [lbs.] | Dimensions [inch] |      |      | Weight approx [lbs.] |
|---|------------|--------|----------|------------|-------------------|------|------|----------------------|
|   | [mm]       | [inch] |          |            | E                 | F    | B    |                      |
|   |            |        |          |            |                   |      |      |                      |
|  <p>Clevis Master Link</p> | 8-8        | 5/16   | F31000   | 4,500      | 3.68              | 2.68 | 1.50 | 0.79                 |
|   | 10-8       | 3/8    | F31010   | 7,100      | 4.96              | 3.74 | 1.93 | 1.90                 |
|   | 13-8       | 1/2    | F31020   | 12,000     | 6.24              | 4.73 | 2.36 | 3.53                 |
|   | 16-8       | 5/8    | F31030   | 18,100     | 7.31              | 5.52 | 3.15 | 6.61                 |
|   | 19-8       | 3/4    | Z05828   | 34,200     | 10.28             | 8.00 | 3.86 | 12.30                |
|   |            |        |          |            |                   |      |      |                      |


## Connecting Links

| TWN 1320  | Trade Size |            | Part-No. | WLL    | Dimensions [inch] |      |      |      |      | Weight approx |
|---|------------|------------|----------|--------|-------------------|------|------|------|------|---------------|
|   | [mm]       | [inch]     |          |        | [lbs.]            | E    | G    | A    | C    |               |
|  | 6-8        | 7/32       | F30806   | 2,100  | 1.81              | 0.59 | 2.44 | 1.65 | 0.24 | 0.15          |
|   | 7/8-8      | 1/4 / 5/16 | F30816   | 4,500  | 2.21              | 0.79 | 3.07 | 2.13 | 0.34 | 0.35          |
|   | 10-8       | 3/8        | F30826   | 7,100  | 2.72              | 0.98 | 3.66 | 2.68 | 0.45 | 0.66          |
|   | 13-8       | 1/2        | F30836   | 12,000 | 3.31              | 1.18 | 4.57 | 2.95 | 0.59 | 1.32          |
|   | 16-8       | 5/8        | F30846   | 18,100 | 1.02              | 1.38 | 5.75 | 3.50 | 0.75 | 2.65          |
| <b>THI-LOK® (new design)</b>  |            |            |          |        |                   |      |      |      |      |               |


| KWS  | Trade Size |            | Part-No. | WLL    | Dimensions [inch] |      |      |      |      | Weight approx |
|--|------------|------------|----------|--------|-------------------|------|------|------|------|---------------|
|  | [mm]       | [inch]     |          |        | [lbs.]            | E    | G    | A    | C    |               |
|  | 6-8        | 7/32       | Z07400   | 2,100  | 1.73              | 0.55 | 2.36 | 1.62 | 0.32 | 0.15          |
|  | 7/8-8      | 1/4 / 5/16 | Z07401   | 4,500  | 2.21              | 0.75 | 2.99 | 2.05 | 0.39 | 0.35          |
|  | 10-8       | 3/8        | Z07402   | 7,100  | 2.68              | 0.95 | 3.66 | 2.68 | 0.49 | 0.71          |
|  | 13-8       | 1/2        | Z07403   | 12,000 | 3.39              | 1.02 | 4.65 | 3.03 | 0.63 | 1.45          |
|  | 16-8       | 5/8        | Z07404   | 18,100 | 4.45              | 1.42 | 6.15 | 3.86 | 0.85 | 2.91          |
| <b>KWS-Connector</b>   |            |            |          |        |                   |      |      |      |      |               |


| TWN 0829  | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |     |      |     |      | Weight approx |
|---|------------|--------|----------|--------|-------------------|-----|------|-----|------|---------------|
|   | [mm]       | [inch] |          |        | [lbs.]            | E   | G    | A   | C    |               |
|  | 20-8       | 3/4    | F30855   | 28,300 | 5.3               | 1.8 | 7.3  | 4.8 | 1.02 | 5.20          |
|   | 22-8       | 7/8    | F30860A  | 34,200 | 5.7               | 1.8 | 7.8  | 5.2 | 1.02 | 7.00          |
|   | 26-8       | 1      | F30870A  | 47,700 | 6.5               | 2.2 | 8.9  | 6.1 | 1.18 | 11.00         |
|   | 32-8       | 1 1/4  | F30880   | 72,300 | 7.6               | 2.6 | 10.6 | 7.6 | 1.46 | 20.60         |
| <b>THI-LOK®</b>   |            |        |          |        |                   |     |      |     |      |               |

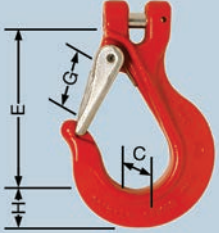
## GK8-Hooks


| TWN 0798  | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |      |      |      |      | Weight approx |
|---|------------|--------|----------|--------|-------------------|------|------|------|------|---------------|
|   | [mm]       | [inch] |          |        | [lbs.]            | E    | D    | G    | H    |               |
|  | 6-8        | 7/32   | Z07274   | 2,100  | 4.33              | 0.95 | 1.10 | 0.91 | 0.55 | 1.10          |
|   | 8-8        | 1/4    | Z07275   | 3,500  | 5.28              | 1.18 | 1.38 | 1.10 | 0.79 | 1.76          |
|   | 10-8       | 3/8    | Z07276   | 7,100  | 6.58              | 1.42 | 1.77 | 1.34 | 1.02 | 3.31          |
|   | 13-8       | 1/2    | Z07277   | 12,000 | 7.84              | 1.85 | 2.13 | 1.69 | 1.34 | 7.16          |
|   | 16-8       | 5/8    | Z07278   | 18,100 | 9.97              | 2.36 | 2.64 | 1.97 | 1.38 | 13.00         |
|   | 18/20-8*   | 3/4    | Z03344   | 28,300 | 10.84             | 2.60 | 3.07 | 2.09 | 1.81 | 17.19         |
|   | 22-8*      | 7/8    | Z03329   | 34,200 | 12.48             | 2.80 | 3.70 | 2.84 | 2.28 | 33.07         |
| <b>Self-Locking Eye Hook</b>  |            |        |          |        |                   |      |      |      |      |               |
| *TWN 0836   |            |        |          |        |                   |      |      |      |      |               |

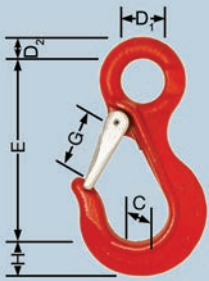


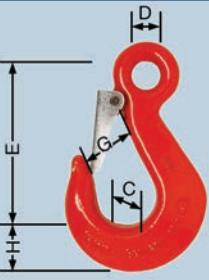
| TWN 0799  | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |      |      |      | Weight approx |
|---|------------|--------|----------|--------|-------------------|------|------|------|---------------|
|   | [mm]       | [inch] |          |        | E                 | G    | H    | C    |               |
|  | 6-8        | 7/32   | Z07279   | 2,100  | 3.86              | 1.10 | 0.87 | 0.59 | 1.26          |
|   | 8-8        | 1/4    | Z07280   | 3,500  | 4.81              | 1.30 | 0.99 | 0.79 | 2.05          |
|   | 10-8       | 3/8    | Z07281   | 7,100  | 5.91              | 1.77 | 1.38 | 1.06 | 3.86          |
|   | 13-8       | 1/2    | Z07282   | 12,000 | 7.33              | 2.13 | 1.62 | 1.30 | 7.16          |
|   | 16-8       | 5/8    | Z07296   | 18,100 | 8.41              | 2.64 | 2.13 | 1.54 | 13.66         |
|   | 18/20-8    | 3/4    | Z00503   | 28,300 | 9.38              | 3.07 | 2.13 | 1.89 | 17.63         |
| <b>Self-locking Clevis Hook</b>   |            |        |          |        |                   |      |      |      |               |

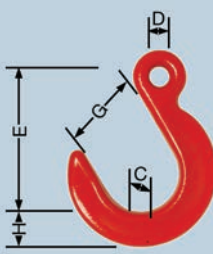
| TWN 1340/1  | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |      |      |      | Weight approx |
|---|------------|--------|----------|--------|-------------------|------|------|------|---------------|
|   | [mm]       | [inch] |          |        | E                 | G    | H    | C    |               |
|  | 6-8        | 7/32   | F336010  | 2,100  | 2.96              | 0.91 | 0.67 | 0.63 | 0.66          |
|   | 8-8        | 1/4    | F336110  | 3,500  | 3.90              | 1.18 | 0.87 | 0.87 | 1.50          |
|   | 10-8       | 3/8    | F336210  | 7,100  | 4.77              | 1.50 | 1.14 | 1.10 | 3.02          |
|   | 13-8       | 1/2    | F336310  | 12,000 | 5.63              | 1.73 | 1.46 | 1.42 | 5.69          |
|   | 16-8       | 5/8    | F336410  | 18,100 | 6.90              | 2.13 | 1.77 | 1.69 | 9.61          |
| <b>Clevis Sling Hook with Latch</b>   |            |        |          |        |                   |      |      |      |               |


| TWN 835/1   | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |      |      |      | Weight approx |
|---|------------|--------|----------|--------|-------------------|------|------|------|---------------|
|   | [mm]       | [inch] |          |        | E                 | G    | H    | C    |               |
|  | 18/20-8    | 3/4    | F33656   | 28,300 | 8.67              | 2.56 | 2.29 | 2.17 | 21.33         |
|   | 22-8       | 7/8    | F33661   | 34,200 | 9.61              | 2.96 | 2.52 | 2.40 | 23.41         |
| <b>Clevis Sling Hook with Latch</b>   |            |        |          |        |                   |      |      |      |               |

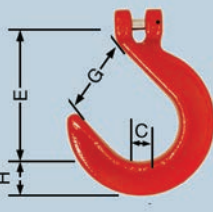
| <br>Swivel Hook<br>with Latch | Trade Size |        | Part-No. | WLL  | Dimensions [inch] |       |      |      |      |      | Weight approx |      |
|--|------------|--------|----------|------|-------------------|-------|------|------|------|------|---------------|------|
|  | [mm]       | [inch] |          |      | [lbs.]            | E     | G    | H    | C    | F    |               | B    |
|  | 6-8        | 7/32   |          |      | F32100            | 2,100 | 4.45 | 0.71 | 0.79 | 0.55 |               | 0.99 |
| 8-8  | 1/4        | F32110 | 3,500    | 6.11 | 0.83              | 0.99  | 0.75 | 1.65 | 1.73 | 2.20 |               |      |
| 10-8   | 3/8        | F32120 | 7,100    | 6.38 | 0.91              | 1.18  | 0.83 | 1.65 | 1.73 | 2.64 |               |      |
| 13-8   | 1/2        | F32130 | 12,000   | 7.49 | 1.26              | 1.30  | 1.10 | 1.69 | 2.01 | 4.58 |               |      |
| 16-8   | 5/8        | F32140 | 18,100   | 9.73 | 1.58              | 1.69  | 1.38 | 2.40 | 2.52 | 9.81 |               |      |

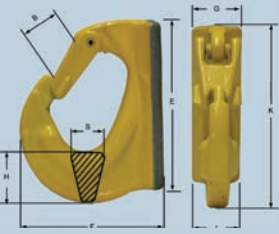
| <br>Large<br>Eye Hook with Latch | Trade Size |        | Part -No. | WLL   | Dimensions [inch] |       |                |                |      |       | Weight approx |      |
|---|------------|--------|-----------|-------|-------------------|-------|----------------|----------------|------|-------|---------------|------|
|   | [mm]       | [inch] |           |       | [lbs.]            | E     | D <sub>1</sub> | D <sub>2</sub> | G    | H     |               | C    |
|   | 6-8        | 7/32   |           |       | F32901            | 2,100 | 3.59           | 0.83           | 0.43 | 0.91  |               | 0.67 |
| 8-8   | 1/4        | F32911 | 3,500     | 4.73  | 1.10              | 0.55  | 1.18           | 0.95           | 0.87 | 1.76  |               |      |
| 10-8  | 3/8        | F32921 | 7,100     | 5.99  | 1.42              | 0.71  | 1.50           | 1.14           | 1.10 | 3.75  |               |      |
| 13-8  | 1/2        | F32931 | 12,000    | 7.09  | 1.65              | 0.83  | 1.65           | 1.62           | 1.42 | 6.17  |               |      |
| 16-8  | 5/8        | F32941 | 18,100    | 8.71  | 2.13              | 1.06  | 2.05           | 1.77           | 1.69 | 11.24 |               |      |
| 18/20-8   | 3/4        | F32951 | 28,300    | 10.64 | 2.44              | 1.18  | 2.56           | 2.29           | 2.17 | 19.17 |               |      |
| 22-8  | 7/8        | F32971 | 34,200    | 11.82 | 2.76              | 1.26  | 2.96           | 2.52           | 2.40 | 25.35 |               |      |
| 26-8  | 1          | F32981 | 47,700    | 13.20 | 3.07              | 1.54  | 3.07           | 2.76           | 2.68 | 37.91 |               |      |
| 32-8  | 1 1/4      | F32991 | 72,300    | 16.15 | 3.78              | 1.89  | 3.74           | 3.27           | 3.15 | 66.56 |               |      |

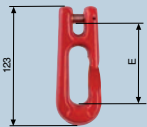
| <br>Eye Hook<br>with Latch | Trade Size |        | Part-No. | WLL   | Dimensions [inch] |        |       |      |        | Weight approx |      |
|---|------------|--------|----------|-------|-------------------|--------|-------|------|--------|---------------|------|
|   | [mm]       | [inch] |          |       | [lbs.]            | E      | D     | G    | H      |               | C    |
|   | 36-8       | 1.42   |          |       | Z06159            | 88,000 | 15.28 | 2.84 | 4.29   |               | 4.06 |
| 40-8  | 1.58       | Z06160 | 110,200  | 17.44 | 3.31              | 4.89   | 4.57  | 3.51 | 103.59 |               |      |
| 45-8  | 1.77       | Z06161 | 138,900  | 19.46 | 3.55              | 5.44   | 5.12  | 3.90 | 141.94 |               |      |
| 50-8  | 1.97       | Z06162 | 176,300  | 24.03 | 4.02              | 6.11   | 5.71  | 4.33 | 180.51 |               |      |

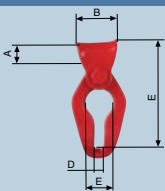
| TWN 0856  | Trade Size       |        | Part-No. | WLL    | Dimensions [inch] |      |      |      |      | Weight approx |
|---|------------------|--------|----------|--------|-------------------|------|------|------|------|---------------|
|   | [mm]             | [inch] |          |        | [lbs.]            | E    | D    | G    | H    |               |
|  | 6-8              | 7/32   | Z00456   | 2,100  | 3.74              | 0.51 | 1.97 | 0.95 | 0.79 | 1.17          |
|   | 8-8              | 1/4    | F32360   | 3,500  | 4.93              | 0.71 | 2.60 | 1.30 | 1.06 | 2.05          |
|   | 10-8             | 3/8    | F32370   | 7,100  | 5.75              | 0.79 | 2.99 | 1.38 | 1.26 | 3.66          |
|   | 13-8             | 1/2    | F32380   | 12,000 | 6.90              | 1.02 | 3.51 | 1.62 | 1.50 | 6.94          |
|   | 16-8             | 5/8    | F32390   | 18,100 | 8.08              | 1.26 | 4.02 | 1.89 | 1.77 | 11.92         |
|   | 18/20-8          | 3/4    | F32400   | 28,300 | 9.26              | 1.58 | 4.49 | 2.13 | 2.01 | 16.53         |
|   | 22-8             | 7/8    | Z00457   | 34,200 | 10.44             | 1.85 | 5.00 | 2.76 | 2.56 | 25.13         |
|   | 26-8             | 1      | Z00458   | 47,700 | 12.02             | 2.05 | 5.36 | 3.15 | 2.84 | 47.61         |
|   | 32-8             | 1 1/4  | Z00459   | 72,300 | 12.88             | 2.36 | 5.99 | 3.66 | 3.27 | 61.71         |
|   | Eye Foundry Hook |        |          |        |                   |      |      |      |      |               |


| TWN 0856H   | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |      |      |      |      | Weight approx |
|---|------------|--------|----------|--------|-------------------|------|------|------|------|---------------|
|   | [mm]       | [inch] |          |        | [lbs.]            | E    | D    | G    | H    |               |
|  | 16-8       | 5/8    | F32393   | 18,100 | 8.08              | 1.26 | 4.02 | 1.89 | 1.77 | 12.35         |
|   | 18/20-8    | 3/4    | F32403   | 28,300 | 9.24              | 1.58 | 4.49 | 2.13 | 2.01 | 17.61         |
| Eye Foundry Hook with handle  |            |        |          |        |                   |      |      |      |      |               |

| TWN 0859  | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |      |      |      | Weight approx |   |
|---|------------|--------|----------|--------|-------------------|------|------|------|---------------|---|
|   | [mm]       | [inch] |          |        | [lbs.]            | E    | G    | H    |               | C |
|  | 8-8        | 1/4    | F33310   | 3,500  | 4.33              | 2.60 | 1.30 | 1.06 | 2.20          |   |
|   | 10-8       | 3/8    | F33320   | 7,100  | 5.24              | 2.99 | 1.38 | 1.26 | 3.55          |   |
|   | 13-8       | 1/2    | F33330   | 12,000 | 6.26              | 3.51 | 1.62 | 1.50 | 7.49          |   |
|   | 16-8       | 5/8    | F33340   | 18,100 | 7.45              | 4.02 | 1.89 | 1.77 | 12.12         |   |
|   | 20-8       | 3/4    | F33655   | 28,300 | 8.59              | 4.49 | 2.13 | 2.01 | 19.84         |   |
|   | 22-8       | 7/8    | F33660   | 34,200 | 9.61              | 4.89 | 2.36 | 2.21 | 26.45         |   |
| Clevis Foundry Hook   |            |        |          |        |                   |      |      |      |               |   |


| TWN 0850/1   | Trade Size | Part-No. | WLL           | Dimensions [inch] |      |      |      |      |      |      |      | Weight approx |
|--|------------|----------|---------------|-------------------|------|------|------|------|------|------|------|---------------|
|  | [mm]       | yellow   | metric tonnes | B                 | E    | F    | G    | H    | J    | K    | S    | [lbs.]        |
|  <p><b>Excavator Hook with forged Safety Latch</b></p>  | GH1        | Z07271   | 1.12          | 1.02              | 3.35 | 3.03 | 0.95 | 0.95 | 0.95 | 3.90 | 0.39 | 1.50          |
|  | GH3        | Z05449   | 3.00          | 1.14              | 4.61 | 4.74 | 1.42 | 1.22 | 1.42 | 5.16 | 0.95 | 2.45          |
|  | GH5        | Z05836   | 5.00          | 1.34              | 6.34 | 5.14 | 1.85 | 1.77 | 1.73 | 6.82 | 1.74 | 5.40          |
|  | GH8        | Z05630   | 8.00          | 1.38              | 6.54 | 5.32 | 1.85 | 2.85 | 2.05 | 7.01 | 1.54 | 7.35          |
|  | GH10       | Z05837   | 10.00         | 3.07              | 7.72 | 7.09 | 2.60 | 2.94 | 1.18 | 9.02 | 1.58 | 13.30         |
| <p>1) W.L.L. values as per standard EN 1677-1. Test requirements according to test principle of Excavator Hooks for earthmoving equipment at lifting application (GS-MO 15-03) of the safety association.</p> <p><b>NOTE:</b><br/>The component must approve a strength introduction at the chosen place! Welding works are to be carried out in accordance with the delivered welding instructions! Further operating instruction and the standard DIN 15429 is to be considered!</p> |            |          |               |                   |      |      |      |      |      |      |      |               |


| OCTA-STAR   | Trade Size                   | Part-No. | Wire [Ø inch] | Inside length [E/inch] | Lashing Capacity [da N] | weight [lbs.] |
|---|------------------------------|----------|---------------|------------------------|-------------------------|---------------|
|  <p><b>OCTA STAR Clevis Choker Hook</b></p> | 8-8                          | Z08385   | up to 5/8     | 3.15                   | 4,000                   | 1.30          |
|   | Only for tensioning purposes |          |               |                        |                         |               |

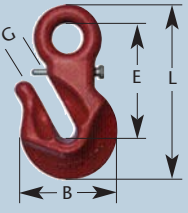
| OCTA-STAR  | Trade Size                   | Part-No. | D / E [inch] | Wire [Ø inch] / B / A | Inside length [E/inch] | Lashing Capacity [da N] | weight [lbs.] |
|--|------------------------------|----------|--------------|-----------------------|------------------------|-------------------------|---------------|
|  <p><b>OCTA STAR Cable Sliding Bow for Chains and Wire Rope</b></p> | 8-8                          | Z08388   | 0.45 / 1.32  | 1/2 / 5/8 / 3/4       | 2.95                   | 4,000                   | 1.21          |
|  | Only for tensioning purposes |          |              |                       |                        |                         |               |

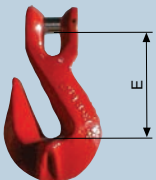
| OCTA-STAR   | Wire Diameter |           | Part-No. | Lashing Capacity [lbs.] | WLL [lbs.] | Dimensions [inch] |      |      | Weight approx [lbs.] |
|---|---------------|-----------|----------|-------------------------|------------|-------------------|------|------|----------------------|
|   | [mm]          | [inch]    |          |                         |            | B                 | L    | E    |                      |
|  <p><b>OCTA STAR Wire gliding Hook with Safety Snapper</b></p> | 9-13          | 0.35-0.51 | Z08386   | 7,052                   | 3,800      | 1.97              | 5.20 | 3.15 | 1.56                 |
|   | 14-16         | 0.55-0.63 | Z08387   | 8,816                   | 5,800      | 2.50              | 5.95 | 3.74 | 2.89                 |
| Only for tensioning purposes  |               |           |          |                         |            |                   |      |      |                      |

## GK8-Shortening Components


| TWN 0827  | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |      |      |      | Weight approx |
|---|------------|--------|----------|--------|-------------------|------|------|------|---------------|
|   | [mm]       | [inch] |          |        | [lbs.]            | E    | G    | L    |               |
|  <p>Clevis Grab Hook</p> | 8-8        | 1/4    | F33200   | 3,500  | 2.40              | 0.35 | 3.98 | 2.40 | 1.17          |
|   | 10-8       | 3/8    | F33210   | 7,100  | 2.88              | 0.47 | 4.93 | 2.96 | 2.15          |
|   | 13-8       | 1/2    | F33220   | 12,000 | 3.74              | 0.59 | 6.30 | 3.74 | 4.80          |
|   | 16-8       | 5/8    | F33230   | 18,100 | 4.41              | 0.71 | 7.41 | 4.73 | 7.49          |
|   | 20-8       | 3/4    | F33245   | 28,300 | 5.83              | 0.89 | 9.53 | 5.56 | 16.09         |

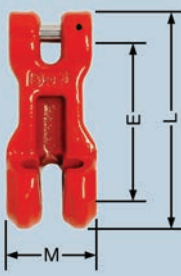
| TWN 0827/1   | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |      |      |      | Weight approx |
|--|------------|--------|----------|--------|-------------------|------|------|------|---------------|
|  | [mm]       | [inch] |          |        | [lbs.]            | E    | G    | L    |               |
|  <p>Lockable Grab Hook</p> | 8-8        | 1/4    | F33201   | 3,500  | 2.40              | 0.35 | 3.98 | 2.40 | 1.19          |
|  | 10-8       | 3/8    | F33211   | 7,100  | 2.88              | 0.47 | 4.93 | 2.96 | 2.18          |
|  | 13-8       | 1/2    | F33221   | 12,000 | 3.74              | 0.59 | 6.30 | 3.74 | 4.80          |
|  | 16-8       | 5/8    | F33231   | 18,100 | 4.41              | 0.71 | 7.41 | 4.73 | 7.60          |
|  | 20-8       | 3/4    | F33246   | 28,300 | 5.83              | 0.89 | 9.53 | 5.56 | 16.20         |

| OCTA-STAR   | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |      |      |      | Weight approx |
|---|------------|--------|----------|--------|-------------------|------|------|------|---------------|
|   | [mm]       | [inch] |          |        | [lbs.]            | E    | G    | L    |               |
|  <p>OCTA STAR Grab Hook with Pin</p> | 7/8-8      | 1/4    | Z09305   | 3,500  | 2.69              | 0.41 | 4.09 | 2.40 | 1.19          |
|   | 10-8       | 3/8    | Z09306   | 7,100  | 3.41              | 0.51 | 5.26 | 3.09 | 2.18          |
|   | 13-8       | 1/2    | Z09307   | 12,000 | 4.20              | 0.59 | 6.48 | 3.87 | 4.81          |
|   | 16-8       | 5/8    | Z09308   | 18,100 | 4.85              | 0.71 | 7.40 | 4.76 | 7.61          |

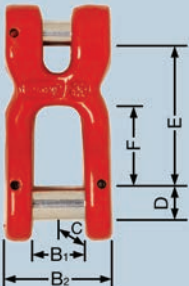
| OCTA-STAR   | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |      |        |  | Weight approx |
|---|------------|--------|----------|--------|-------------------|------|--------|--|---------------|
|   | [mm]       | [inch] |          |        | [lbs.]            | E    | [lbs.] |  |               |
|  <p>OCTA STAR Clevis Grab Hook (Small)</p> | 7/8-8      | 1/4    | Z06911   | 3,500  | 2.05              | 0.88 |        |  |               |
|   | 10-8       | 3/8    | Z06912   | 7,100  | 2.88              | 1.54 |        |  |               |
|   | 13-8       | 1/2    | Z06913   | 12,000 | 3.47              | 2.87 |        |  |               |
|   | 16-8       | 5/8    | Z06914   | 18,100 | 3.90              | 5.95 |        |  |               |

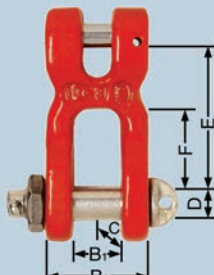



| OCTA-STAR  | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |        | Weight approx |
|--|------------|--------|----------|--------|-------------------|--------|---------------|
|  | [mm]       | [inch] |          |        | E                 | [lbs.] |               |
|  <p>OCTA STAR<br/>Eye Grab Hook</p> | 7/8-8      | 1/4    | Z08010   | 3,500  | 2.13              | 0.68   |               |
|  | 10-8       | 3/8    | Z08011   | 7,100  | 3.11              | 1.43   |               |
|  | 13-8       | 1/2    | Z08012   | 12,000 | 3.90              | 3.09   |               |
|  | 16-8       | 5/8    | Z08013   | 18,100 | 4.18              | 5.51   |               |
|  |            |        |          |        |                   |        |               |
|  |            |        |          |        |                   |        |               |
|  |            |        |          |        |                   |        |               |
|  |            |        |          |        |                   |        |               |
|  |            |        |          |        |                   |        |               |
|  |            |        |          |        |                   |        |               |

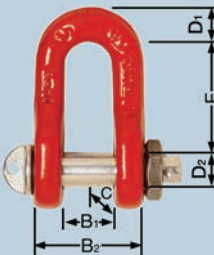
| TWN 0851   | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |       |      | Weight approx |
|--|------------|--------|----------|--------|-------------------|-------|------|---------------|
|  | [mm]       | [inch] |          |        | E                 | L     | M    |               |
|  <p>Clevis<br/>Shortening Claw</p> | 6-8        | 7/32   | F34910   | 2,100  | 2.13              | 3.19  | 1.26 | 0.46          |
|  | 7-8        | 1/4    | F34920   | 3,500  | 2.92              | 4.26  | 1.69 | 0.93          |
|  | 8-8        | 5/16   | F34925   | 4,500  | 3.15              | 4.53  | 1.81 | 1.23          |
|  | 10-8       | 3/8    | F34930   | 7,100  | 3.55              | 5.28  | 2.21 | 2.07          |
|  | 13-8       | 1/2    | F34940   | 12,000 | 4.61              | 6.90  | 2.84 | 4.63          |
|  | 16-8       | 5/8    | F34950   | 18,100 | 5.67              | 8.43  | 3.39 | 7.87          |
|  | 20-8       | 3/4    | F34970   | 28,300 | 6.23              | 9.50  | 3.86 | 11.90         |
|  | 22-8       | 7/8    | F34980   | 34,200 | 7.80              | 11.62 | 4.65 | 19.84         |
|  | 26-8       | 1      | F34985   | 47,700 | 7.68              | 12.17 | 5.12 | 26.45         |
|  | 32-8       | 1 1/4  | F34990   | 72,300 | 9.46              | 15.01 | 6.30 | 41.88         |
|  |            |        |          |        |                   |       |      |               |

### GK8-Shackles


| TWN 0861   | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |      |      |      |                |                | Weight approx |
|--|------------|--------|----------|--------|-------------------|------|------|------|----------------|----------------|---------------|
|  | [mm]       | [inch] |          |        | E                 | D    | C    | F    | B <sub>1</sub> | B <sub>2</sub> |               |
|  <p>Clevis Chain Coupling<br/>Shackle</p> | 10-8       | 3/8    | F30601   | 7,100  | 2.52              | 0.63 | 1.26 | 1.42 | 0.83           | 1.85           | 1.34          |
|  | 13-8       | 1/2    | F30611   | 12,000 | 3.25              | 0.79 | 1.58 | 1.93 | 1.06           | 2.40           | 2.73          |
|  | 16-8       | 5/8    | F30621   | 18,100 | 3.90              | 0.95 | 1.89 | 2.21 | 1.30           | 2.96           | 4.63          |
|  |            |        |          |        |                   |      |      |      |                |                |               |
|  |            |        |          |        |                   |      |      |      |                |                |               |
|  |            |        |          |        |                   |      |      |      |                |                |               |
|  |            |        |          |        |                   |      |      |      |                |                |               |
|  |            |        |          |        |                   |      |      |      |                |                |               |
|  |            |        |          |        |                   |      |      |      |                |                |               |

| <b>TWN 0862</b>  | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |      |      |      |      |                | Weight approx |
|--|------------|--------|----------|--------|-------------------|------|------|------|------|----------------|---------------|
|  | [mm]       | [inch] |          |        | [lbs.]            | E    | D    | C    | F    | B <sub>1</sub> |               |
|  <p><b>Clevis Chain Coupling Bolt Shackle</b></p> | 10-8       | 3/8    | F30600   | 7,100  | 2.52              | 0.63 | 1.26 | 1.42 | 0.83 | 1.85           | 1.48          |
|  | 13-8       | 1/2    | F30610   | 12,000 | 3.25              | 0.79 | 1.58 | 1.93 | 1.06 | 2.40           | 3.02          |
|  | 16-8       | 5/8    | F30620   | 18,100 | 3.90              | 0.95 | 1.89 | 2.21 | 1.30 | 2.96           | 5.03          |

| <b>TWN 0870</b>  | Trade Size |        | Part-No. | WLL     | Dimensions [inch] |      |                |                |      |                | Weight approx |
|--|------------|--------|----------|---------|-------------------|------|----------------|----------------|------|----------------|---------------|
|  | [mm]       | [inch] |          |         | [lbs.]            | E    | D <sub>1</sub> | D <sub>2</sub> | C    | B <sub>1</sub> |               |
|  <p><b>Special Shackle</b></p> | 10-8       | 3/8    | F30311   | 7,100   | 1.93              | 0.59 | 0.63           | 1.26           | 0.83 | 1.85           | 0.77          |
|  | 13-8       | 1/2    | F30321   | 12,000  | 2.40              | 0.75 | 0.79           | 1.58           | 1.06 | 2.40           | 1.63          |
|  | 16-8       | 5/8    | F30331   | 18,100  | 2.88              | 0.91 | 0.95           | 1.89           | 1.30 | 2.96           | 2.87          |
|  | 18/20-8    | 3/4    | F30341   | 28,300  | 3.59              | 1.14 | 1.18           | 2.36           | 1.65 | 3.78           | 5.73          |
|  | 22-8       | 7/8    | F30351   | 34,200  | 4.37              | 1.30 | 1.42           | 2.84           | 1.85 | 4.22           | 8.82          |
|  | 26-8       | 1      | F30361   | 47,700  | 4.73              | 1.46 | 1.54           | 3.07           | 2.09 | 4.71           | 12.56         |
|  | 28-8       | 1 1/8  | F30371   | 56,000  | 5.52              | 1.62 | 1.77           | 3.55           | 2.36 | 5.36           | 22.04         |
|  | 32-8       | 1 1/4  | F30381   | 72,300  | 5.79              | 1.71 | 1.89           | 3.78           | 2.60 | 5.91           | 23.14         |
|  | 36-8       | 1.42   | F30391   | 88,000  | 6.23              | 1.97 | 2.05           | 4.10           | 2.88 | 6.58           | 30.64         |
|  | 40-8       | 1.58   | F30401   | 110,200 | 7.29              | 2.17 | 2.36           | 4.73           | 3.19 | 7.29           | 45.18         |
|  | 45-8       | 1.77   | F30411   | 138,900 | 8.31              | 2.40 | 2.68           | 5.36           | 3.55 | 8.12           | 58.63         |

| <b>TWN 0871</b>   | Trade Size |        | Part-No. | WLL     | Dimensions [inch] |      |                |                |      |                | Weight approx |
|---|------------|--------|----------|---------|-------------------|------|----------------|----------------|------|----------------|---------------|
|   | [mm]       | [inch] |          |         | [lbs.]            | E    | D <sub>1</sub> | D <sub>2</sub> | C    | B <sub>1</sub> |               |
|  <p><b>Bolt Shackle Type C</b></p> | 6-8        | 7/32   | Z04147   | 2,100   | 1.18              | 0.32 | 0.39           | 0.79           | 0.55 | 1.18           | 0.22          |
|   | 8-8        | 5/16   | Z04145   | 4,500   | 1.42              | 0.39 | 0.47           | 0.95           | 0.67 | 1.46           | 0.44          |
|   | 10-8       | 3/8    | F30310   | 7,100   | 1.93              | 0.59 | 0.63           | 1.26           | 0.83 | 1.85           | 0.99          |
|   | 13-8       | 1/2    | F30320   | 12,000  | 2.40              | 0.75 | 0.79           | 1.58           | 1.06 | 2.40           | 1.85          |
|   | 16-8       | 5/8    | F30330   | 18,100  | 2.88              | 0.91 | 0.95           | 1.89           | 1.30 | 2.96           | 3.09          |
|   | 18/20-8    | 3/4    | F30340   | 28,300  | 3.59              | 1.14 | 1.18           | 2.36           | 1.65 | 3.78           | 6.83          |
|   | 22-8       | 7/8    | F30350   | 34,200  | 4.37              | 1.30 | 1.42           | 2.84           | 1.85 | 4.22           | 9.92          |
|   | 26-8       | 1      | F30360   | 47,700  | 4.73              | 1.46 | 1.54           | 3.07           | 2.09 | 4.77           | 13.89         |
|   | 28-8       | 1 1/8  | F30370   | 56,000  | 5.52              | 1.62 | 1.77           | 3.55           | 2.36 | 5.36           | 22.26         |
|   | 32-8       | 1 1/4  | F30380   | 72,300  | 5.79              | 1.77 | 1.89           | 3.78           | 2.60 | 5.91           | 27.11         |
|   | 36-8       | 1.42   | F30390   | 88,000  | 6.23              | 1.97 | 2.05           | 4.10           | 2.88 | 6.58           | 34.38         |
|   | 40-8       | 1.58   | F30400   | 110,200 | 7.29              | 2.17 | 2.36           | 4.73           | 3.19 | 7.29           | 48.93         |
| 45-8  | 1.77       | F30410 | 138,900  | 8.31    | 2.40              | 2.68 | 5.36           | 3.55           | 8.12 | 57.97          |               |

## GK8-Magnet Chain Slings

|   | Trade Size |        | Part-No. | WLL     | Reach | End Link |      |                | Master Link    |                |                | Weight approx |
|---|------------|--------|----------|---------|-------|----------|------|----------------|----------------|----------------|----------------|---------------|
|   | [mm]       | [inch] |          |         |       | [lbs.]   | E    | D <sub>2</sub> | F <sub>2</sub> | B <sub>2</sub> | D <sub>1</sub> |               |
|  | 16-8       | 5/8    | F08945-7 | 47,000  | 38.20 | 0.79     | 5.52 | 1.97           | 1.77           | 10.24          | 6.11           | 62            |
|   | 20-8       | 3/4    | F08946-7 | 73,500  | 41.20 | 0.87     | 5.52 | 1.97           | 2.01           | 10.24          | 6.11           | 85            |
|   | 22-8       | 7/8    | F08947-7 | 88,900  | 41.06 | 1.02     | 5.52 | 2.56           | 2.25           | 11.82          | 6.50           | 105           |
|   | 26-8       | 1      | F08948-7 | 123,900 | 46.52 | 1.26     | 6.50 | 2.76           | 2.25           | 11.82          | 6.50           | 149           |
|   | 32-8       | 1 1/4  | F08961-7 | 187,800 | 53.00 | 1.58     | 6.70 | 3.15           | 2.48           | 13.00          | 7.09           | 202           |

## GK8-Tensioning- and Lashing Chains

### Lashing chain (according to DIN EN 12195-3)

TWN 1400



Standard length L = 3,500 mm/10 ft with extended tensioner and unshortened chain. All lengths available upon request. The adjustment will be reached by the shortening device and the tensioner.

| Trade Size |        | WLL    | Article-No. | Admissible tensile strength under straight load | Weight approx |
|------------|--------|--------|-------------|---|---------------|
| [mm]       | [inch] | [lbs.] |             |   |               |
| 8-8        | 5/16   | 5,600  | F34171      | 40  | 18.73         |
| 10-8       | 3/8    | 8,800  | F34172      | 63  | 27.55         |
| 13-8       | 1/2    | 14,800 | F34173      | 100   | 46.28         |
| 16-8       | 5/8    | 22,500 | F34174      | 160   | 83.09         |

### Lashing chain with ratchet (according to DIN EN 12195-3)

TWN 1401



Standard length L = 3,500 mm/10 ft, with extended tensioner and unshortened chain. All lengths available upon request. The adjustment will be reached by the shortening device and the ratchet tensioner.

| Trade Size |        | WLL    | Article-No. | Admissible tensile strength under straight load | Weight approx |
|------------|--------|--------|-------------|---|---------------|
| [mm]       | [inch] | [lbs.] |             |   |               |
| 8-8        | 5/16   | 5,600  | F34171R     | 40  | 18.73         |
| 10-8       | 3/8    | 8,800  | F34172R     | 63  | 27.55         |
| 13-8       | 1/2    | 14,800 | F34173R     | 100   | 46.28         |

## GK8-Spare Parts and Accessories



### GK8-Stainless Steel Chain ID Tag

Tag for Single and Multi Leg Sling Chain



### GK8-Assembly Set TWN 0945

Consisting of 6 punches in a plastic holder to disassemble chains from components. The complete set covers all nominal sizes for the use with the THIELE-Sling-Assembly-System.

Part-No. Z03303





### GK8-Chain Gauge Set TWN 0946



For regular wear inspection of chain sizes 6-8 to 32-8 on site.



Part-No. F48856



| TWN 0904/0  | Trade Size |        | Article-No. | Packing Units | Weight approx<br>[lbs.] |
|---|------------|--------|-------------|---------------|-------------------------|
|   | [mm]       | [inch] |             |               |                         |
| <p>Load -Spirol Pin Set<br/>for Clevis Type Hooks</p> | 6-8        | 7/32   | F48694      | 1 set         | 0.02                    |
|   | 8-8        | 5/16   | F48352      | 1 set         | 0.02                    |
|   | 10-8       | 3/8    | F48355      | 1 set         | 0.07                    |
|   | 13-8       | 1/2    | F48358      | 1 set         | 0.15                    |
|   | 16-8       | 5/8    | F48361      | 1 set         | 0.24                    |
|   | 20-8       | 3/4    | F48369      | 1 set         | 0.57                    |
|   | 22-8       | 7/8    | F48367      | 1 set         | 0.68                    |
|   |            |        |             |               |                         |
|   |            |        |             |               |                         |
|   |            |        |             |               |                         |
|   |            |        |             |               |                         |
|   |            |        |             |               |                         |
|   |            |        |             |               |                         |



| TWN 0905 / 0906   | Trade Size |        | Part-No. | Packing Units | Weight approx<br>[lbs.] |
|---|------------|--------|----------|---------------|-------------------------|
|   | [mm]       | [inch] |          |               |                         |
| <p>Pin Set for Chain<br/>Coupling Shackles and<br/>Chain Shackles</p> <p>(TWN 0861, TWN 0870)</p> | 10-8       | 3/8    | F48036   | 1 set         | 0.15                    |
|   | 13-8       | 1/2    | F48039   | 1 set         | 0.31                    |
|   | 16-8       | 5/8    | F48042   | 1 set         | 0.55                    |
|   | 20-8       | 3/4    | F48045   | 1 set         | 1.72                    |
|   | 22-8       | 7/8    | F48048   | 1 set         | 2.31                    |
|   | 26-8       | 1      | F48051   | 1 set         | 3.53                    |
|   | 32-8       | 1 1/4  | F48057   | 1 set         | 4.45                    |
|   | 36-8       | 1.42   | F48060   | 1 set         | 5.73                    |
|   | 40-8       | 1.58   | F48063   | 1 set         | 8.57                    |
|   |            |        |          |               |                         |
|   |            |        |          |               |                         |
|   |            |        |          |               |                         |



| TWN 0920 - 0922  | Trade Size |        | Part-No. | Part-No. | Part-No. | Packing Units | Weight approx<br>[lbs.] |
|--|------------|--------|----------|----------|----------|---------------|-------------------------|
|  | [mm]       | [inch] | TWN 0853 | TWN 0854 | TWN 0855 |               |                         |
|  <p>Spare Parts for Swivel/<br/>Eye Hooks</p>  <p>( 0854 / 0855/1)</p> | 6-8        | 7/32   | F48420   | F48420   | -        | 1 set         | 0.04                    |
|  | 8-8        | 5/16   | F48423   | F48423   | F48460   | 1 set         | 0.07                    |
|  | 10-8       | 3/8    | F48426   | F48426   | F48463   | 1 set         | 0.09                    |
|  | 13-8       | 1/2    | F48429   | F48429   | F48466   | 1 set         | 0.24                    |
|  | 16-8       | 5/8    | F48432   | F48469   | F48469   | 1 set         | 0.41                    |
|  | 20-8       | 3/4    | F48435   |          | F48472   | 1 set         | 0.46                    |
|  | 22-8       | 7/8    |          |          | F48475   | 1 set         | 0.53                    |
|  | 26-8       | 1      | F48476   |          | F48476   | 1 set         | 0.53                    |
|  | 32-8       | 1 1/4  |          |          | F48478   | 1 set         | 0.57                    |
|  | 36-8       | 1.42   |          |          | Z06163   | 1 set         | 1.76                    |
|  | 40-8       | 1.58   |          |          | Z06164   | 1 set         | 2.20                    |
|  | 45-8       | 1.77   |          |          | Z06165   | 1 set         | 3.09                    |
|  | 50-8       | 1.97   |          |          | Z06166   | 1 set         | 4.19                    |

| TWN 1920   | Trade Size |        | Part-No. | Packing Units | Weight approx<br>[lbs.] |
|--|------------|--------|----------|---------------|-------------------------|
|  | [mm]       | [inch] |          |               |                         |
|  <p>Pin Set for:</p>  <p>(TWN 1320)</p> | 6-8        | 7/32   | F48601   | 1 set         | 0.02                    |
|  | 6-8        | 7/32   | F48602   | 1 set         | 0.02                    |
|  | 7-8        | 9/32   | F48501   | 1 set         | 0.02                    |
|  | 8-8        | 5/16   | F48604   | 1 set         | 0.04                    |
|  | 10-8       | 3/8    | F48607   | 1 set         | 0.15                    |
|  | 13-8       | 1/2    | F48610   | 1 set         | 0.30                    |
|  | 16-8       | 5/8    | F48613   | 1 set         | 0.42                    |
|  |            |        |          |               |                         |
|  |            |        |          |               |                         |
|  |            |        |          |               |                         |
|  |            |        |          |               |                         |

| TWN 0929/0   | Trade Size |        | Part-No. | Packing Units | Weight approx<br>[lbs.] |
|--|------------|--------|----------|---------------|-------------------------|
|  | [mm]       | [inch] |          |               |                         |
|  <p>Pin Set<br/>for THI-LOK`S</p>  <p>(TWN 0829)</p> | 20-8       | 3/4    | F48617   | 1 set         | 0.68                    |
|  | 22-8       | 7/8    | F48619   | 1 set         | 0.71                    |
|  | 26-8       | 1      | F48622   | 1 set         | 1.17                    |
|  | 32-8       | 1 1/4  | F48625   | 1 set         | 2.09                    |
|  |            |        |          |               |                         |
|  |            |        |          |               |                         |
|  |            |        |          |               |                         |
|  |            |        |          |               |                         |
|  |            |        |          |               |                         |


| TWN 0930-0932  | Trade Size |        | Part-No. | Packing Units | Weight approx |
|--|------------|--------|----------|---------------|---------------|
|  | [mm]       | [inch] |          |               |               |
|  <p><b>Pin set for chain coupling Bolt Shackle (TWN 0862) and C-Shackle (TWN 0871)</b></p>  <p><b>(TWN 0862, TWN 0871)</b></p> | 10-8       | 3/8    | F30451   | 1 set         | 0.29          |
|  | 13-8       | 1/2    | F30461   | 1 set         | 0.55          |
|  | 16-8       | 5/8    | F30471   | 1 set         | 0.79          |
|  | 20-8       | 3/4    | F30481   | 1 set         | 2.14          |
|  | 22-8       | 7/8    | F30491   | 1 set         | 2.89          |
|  | 26-8       | 1      | F30501   | 1 set         | 4.39          |
|  | 28-8       | 1 1/8  | F30511   | 1 set         | 6.37          |
|  | 32-8       | 1 1/4  | F30521   | 1 set         | 8.13          |
|  | 36-8       | 1.42   | F30531   | 1 set         | 9.87          |
|  | 40-8       | 1.58   | F30541   | 1 set         | 14.66         |
|  | 45-8       | 1.77   | F30551   | 1 set         | 18.07         |

| TWN 0950 - 0952   | Trade Size |        | Part-No. | Packing Units | Weight approx |
|---|------------|--------|----------|---------------|---------------|
|   | [mm]       | [inch] |          |               |               |
|  <p><b>Repair Kit for lockable Grab Hook</b></p>  <p><b>(TWN 0827/1)</b></p> | 8-8        | 5/16   | F48330   | 1 set         | 0.02          |
|   | 10-8       | 3/8    | F48328   | 1 set         | 0.04          |
|   | 13-8       | 1/2    | F48329   | 1 set         | 0.07          |
|   | 16-8       | 5/8    | F48339   | 1 set         | 0.11          |
|   | 20-8       | 3/4    | F48345   | 1 set         | 0.22          |
|   |            |        |          |               |               |





| TWN 0967/0   | Trade Size |        | Part-No. | Packing Units | Weight approx |
|--|------------|--------|----------|---------------|---------------|
|  | [mm]       | [inch] |          |               |               |
|  <p><b>Spare Pin for Clevis Self Locking Hooks</b></p>  <p><b>(TWN 0799)</b></p> | 6-8        | 7/32   | F333700  | 1 set         | 0.02          |
|  | 8-8        | 5/16   | F333711  | 1 set         | 0.04          |
|  | 10-8       | 3/8    | F333721  | 1 set         | 0.07          |
|  | 13-8       | 1/2    | F333730  | 1 set         | 0.14          |
|  | 16-8       | 5/8    | F333741  | 1 set         | 0.37          |
|  | 20-8       | 3/4    | Z03481*  | 1 set         | 0.47          |
|  |            |        |          |               |               |

\*TWN 0837



| <b>TWN 0967/1</b>   | Trade Size |        | Part-No.       | Packing Units | Weight approx<br>[lbs.] |
|---|------------|--------|----------------|---------------|-------------------------|
|   | [mm]       | [inch] |                |               |                         |
|  <p><b>Trigger Set for Self Locking Hooks</b><br/>(TWN 0798, TWN 0799)</p> | 6-8        | 7/32   | F329090        | 1 set         | 0.05                    |
|   | 8-8        | 5/16   | F329190        | 1 set         | 0.06                    |
|   | 10-8       | 3/8    | F329290        | 1 set         | 0.08                    |
|   | 13-8       | 1/2    | F329390        | 1 set         | 0.13                    |
|   | 16-8       | 5/8    | F329490        | 1 set         | 0.24                    |
|   | 20-8       | 3/4    | Z03451*        | 1 set         | 0.58                    |
|   | 22-8       | 7/8    | Z03452*        | 1 set         | 0.74                    |
|   |            |        |                |               |                         |
|   |            |        | *TWN 0836/0837 |               |                         |



| <b>TWN 1908/5</b><br>* TWN 0908/0   | Trade Size |        | Part-No. | Packing Units | Weight approx<br>[lbs.] |  |
|---|------------|--------|----------|---------------|-------------------------|--|
|   | [mm]       | [inch] |          |               |                         |  |
|  <p><b>Latch Kits for Sling Hooks</b><br/>(TWN 0835/1, TWN 0858/1)</p>    <p>(TWN 1340/1)</p> | 6-8        | 7/32   | F48730   | 1 set         | 0.04                    |  |
|   | 8-8        | 5/16   | F48732   | 1 set         | 0.07                    |  |
|   | 10-8       | 3/8    | F48734   | 1 set         | 0.29                    |  |
|   | 13-8       | 1/2    | F48736   | 1 set         | 0.57                    |  |
|   | 16-8       | 5/8    | F48738   | 1 set         | 0.63                    |  |
|   | 20-8       | 3/4    | F48742   | 1 set         | 1.65                    |  |
|   | 22-8*      | 7/8    | F48744   | 1 set         | 2.45                    |  |
|   | 26-8       | 1      | F48746   | 1 set         | 3.17                    |  |
|   | 32-8       | 1 1/4  | F48747   | 1 set         | 5.36                    |  |
|   |            |        |          |               |                         |  |
|   |            |        |          |               |                         |  |

## Chain and Wire Rope Cutter TWN 0941

### Function and Design

The THIELE Chain and Wire Rope Cutting Machine is a mobile unit, which allows easy cutting-mounting and servicing of chain and wire rope slings.

The THIELE Chain and Wire Rope Cutting Machine can be moved easily and safely due to light steerable wheels and in accordance with the latest Accident Prevention regulations. The compact hydraulic unit is controlled by a foot pedal, allowing the cutting of chain or wire rope with fast interchangeable blades. The cutting machine has a lockable tool compartment, holding clamp and a large work top.



|                        |  |
|------------------------|--|
| <b>Drive:</b>          | Electro-Hydraulic with 700 kN Shearing Force                             |
| <b>Part-No.:</b>       | F48950   |
| <b>Voltage:</b>        | 220/380 V 3 Ph. 50 Hz, 220 V 1 Ph. 50 Hz od. 440 V 3 Ph. – 60 Hz, Export |
| <b>Dimensions:</b>     | 47.28 x 21.58 x 51.22 inches   |
| (Approx.) L x W x H:   | 1200 x 700 x 1300 mm (with protection cover)                             |
| <b>Working Height:</b> | 900 mm / 35.46 inches  |
| <b>Weight::</b>        | 270 kg / 595 lbs.  |

### Cutting Range

Chains according to DIN 5684, 5687 – Grade 80 / 100 and DIN 22 252 up to 26 mm diameter, wire rope up to 30 mm diameter and with 1600 N/mm<sup>2</sup> - higher strengths and larger diameters upon request.

### Accessories

- 1. set of tools:** for changing the blades
- 2. sets of blades:** one for chains and one for wire rope
- 3. Holding Clamp:** The holding clamp keeps the chain and wire rope at a right angle to the cutting position. The holding clamp prevents the chain and wire rope from falling onto the ground after it has been cut for a safer more effective operation.
- 4. Stroke Adjustment:** With the stroke adjustment the cutting stroke may be adjusted from 0 mm to 50 mm.



## GK8-Slings

### GK8-THIELE key design for standard chain slings (mounted)<sup>1)</sup>



### GK8-THIELE key design for endless chains



# Marine- and Offshore Industry



In the marine and Offshore industry Sling Chains are exposed to rough environmental conditions under strong dynamic loads. For this special application THIELE, as authorized and certified manufacturer, supplies special calibrated welded Sling Chains as per D.N.V. 2.7-1.




A member of the THIELE-Group




## DNV 2.7-1 Type Approved Fittings for Offshore Container Lifting

### Offshore Quad Assemblies for Wire Rope Sling

| Part-No. | Working Load Limit [t]<br>$\beta = 0^\circ - 45^\circ$<br>SF=1.4 | Dimensions [in.] |                |       |       |      |       |      |   | Weight app. [lbs.] | New                |
|----------|--|------------------|----------------|-------|-------|------|-------|------|---|--------------------|--------------------|
|          |  | D                | D <sub>1</sub> | E     | F     | G    | H     | I    | J |                    |                    |
| F7097268 | 7.90   | 1.02             | .87            | 13.39 | 7.09  | 3.94 | 6.30  | 3.54 |   | 11.68              | TWN 0797<br>S-7304 |
| F7097238 | 11.30  | 1.26             | 1.02           | 16.14 | 9.06  | 4.92 | 7.09  | 3.94 |   | 19.84              |                    |
| F7097368 | 16.00  | 1.42             | 1.26           | 18.90 | 9.84  | 5.51 | 9.06  | 4.92 |   | 33.07              |                    |
| F079458  | 22.60  | 1.77             | 1.42           | 22.44 | 12.60 | 6.89 | 9.84  | 5.51 |   | 53.79              |                    |
| F0797508 | 26.80  | 1.97             | 1.77           | 25.98 | 13.39 | 7.48 | 12.60 | 6.89 |   | 88.19              |                    |
| F0797568 | 40.00  | 2.20             | 1.97           | 28.35 | 14.96 | 8.27 | 13.39 | 7.48 |   | 121.25             |                    |
| F0797638 | 50.00  | 2.48             | 2.20           | 31.89 | 16.93 | 9.48 | 14.96 | 8.27 |   | 174.17             |                    |



Offshore Master Link Assembly for 3 and 4 Leg Wire Rope

### Offshore Master Links A-Type


| Part-No. | Working Load Limit [t] | Dimensions [in.] |       |       |  |  |        | Weight app. [lbs.] | New |
|----------|------------------------|------------------|-------|-------|--|--|--------|--------------------|-----|
|          |                        | D                | F     | B     |  |  |        |                    |     |
| F0803208 | 4.75                   | .79              | 5.51  | 3.15  |  |  | 2.43   | TWN 0803<br>S-7303 |     |
| F0803228 | 5.60                   | .87              | 6.39  | 3.54  |  |  | 3.31   |                    |     |
| F0803628 | 8.00                   | 1.02             | 7.09  | 3.94  |  |  | 5.07   |                    |     |
| F0803238 | 12.50                  | 1.24             | 9.06  | 4.92  |  |  | 9.20   |                    |     |
| F0803368 | 16.00                  | 1.42             | 9.84  | 5.57  |  |  | 13.67  |                    |     |
| F0803408 | 19.00                  | 1.57             | 11.42 | 6.30  |  |  | 19.40  |                    |     |
| F0803548 | 25.00                  | 1.77             | 12.40 | 6.89  |  |  | 24.46  |                    |     |
| F0803658 | 31.50                  | 1.97             | 13.39 | 7.48  |  |  | 35.27  |                    |     |
| F0803658 | 40.00                  | 2.20             | 14.96 | 8.27  |  |  | 50.71  |                    |     |
| F0803368 | 50.00                  | 2.48             | 16.93 | 9.45  |  |  | 72.75  |                    |     |
| F0803078 | 63.00                  | 2.74             | 18.50 | 10.24 |  |  | 97.00  |                    |     |
| F0803088 | 80.00                  | 3.15             | 20.47 | 11.42 |  |  | 141.10 |                    |     |



Offshore Oblong Master Link Type A

### Offshore Shackles

| Part-No. | Nominal Size [in.] | Nominal Size [DIN 62101] | Working Load Limit [t] | Dimensions [in.] |                |      |      |                |                | Weight app. [lbs.] | New                |
|----------|--------------------|--------------------------|------------------------|------------------|----------------|------|------|----------------|----------------|--------------------|--------------------|
|          |                    |                          |                        | D <sub>1</sub>   | D <sub>2</sub> | E    | C    | B <sub>1</sub> | B <sub>2</sub> |                    |                    |
| F30310NV | 3/8                | 1                        | 3.15                   | .59              | .63            | 1.93 | 1.26 | .83            | 1.85           | 0.77               | TWN 0871<br>S-7302 |
| F30320NV | 1/2                | 1.6                      | 5.30                   | .75              | .79            | 2.40 | 1.58 | 1.06           | 2.40           | 1.63               |                    |
| F30330NV | 5/8                | 2.5                      | 8.00                   | .91              | .95            | 2.88 | 1.89 | 1.30           | 2.96           | 2.87               |                    |
| F30340NV | 3/4                | 4                        | 12.50                  | 1.14             | 1.18           | 3.59 | 2.36 | 1.65           | 3.78           | 5.73               |                    |
| F30350NV | 7/8                | 5                        | 15.00                  | 1.30             | 1.42           | 4.37 | 2.84 | 1.85           | 4.22           | 8.82               |                    |
| F30360NV | 1                  | 6                        | 21.20                  | 1.46             | 1.54           | 4.73 | 3.07 | 2.09           | 4.71           | 12.56              |                    |
| F30370NV | 1 1/8              | 8                        | 28.00                  | 1.62             | 1.77           | 5.52 | 3.55 | 2.36           | 5.35           | 22.04              |                    |
| F30380NV | 1 1/4              | 10                       | 31.50                  | 1.71             | 1.89           | 5.78 | 3.78 | 2.60           | 5.91           | 23.14              |                    |
| F30390NV | 1.42               | 12                       | 40.00                  | 1.97             | 2.05           | 6.23 | 4.10 | 2.88           | 6.58           | 30.64              |                    |
| F30400NV | 1.58               | 16                       | 50.00                  | 2.17             | 2.36           | 7.29 | 4.73 | 3.19           | 7.29           | 45.18              |                    |
| F30410NV | 1.77               | 20                       | 63.00                  | 2.40             | 2.68           | 8.31 | 5.36 | 3.55           | 8.12           | 58.63              |                    |



Bolt Shackle C



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## DNV 2.7-1 Welded type lifting sets for Offshore Containers



Welded type lifting sets for Offshore Containers with a max. rating of 25,000 kg available upon request.



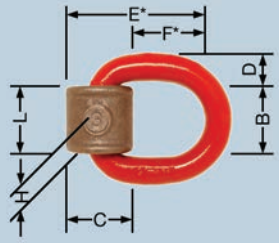

The Name for Safety.

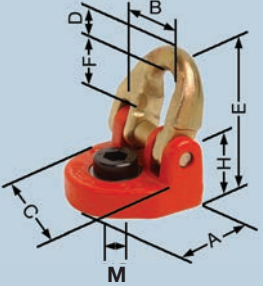



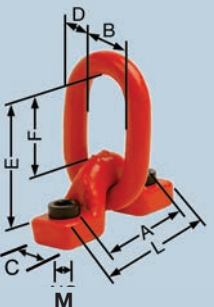

Toll Free  
Fax  
E-mail

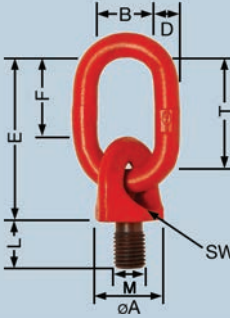
800-872-9313  
918-665-4118  
sales@kwschain.com

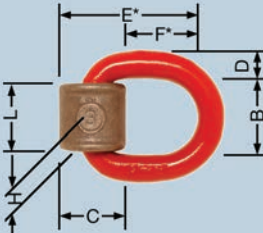
# Hoist Rings

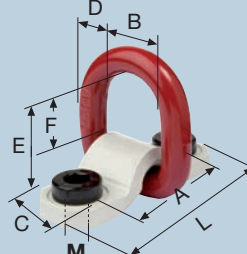
| TWN 0119A  | Trade Size |        | Part-No.   | WLL     | Dimensions [inch] |      |      |      |      |      |      | Weight approx |
|--|------------|--------|------------|---------|-------------------|------|------|------|------|------|------|---------------|
|  | [mm]       | [inch] |            |         | E                 | F    | C    | L    | H    | D    | B    |               |
|  |            |        |            |         |                   |      |      |      |      |      |      |               |
|  <p>Hoist Ring weld-on type</p>  | 6-8        | 7/32   | F35103A-1  | 2,100   | 2.32              | 1.22 | 1.26 | 1.26 | 1.10 | 0.47 | 1.42 | 0.53          |
|  | 8-8        | 1/4    | F35113A-2  | 3,500   | 2.72              | 1.46 | 1.50 | 1.50 | 1.30 | 0.55 | 1.65 | 1.01          |
|  | 10-8       | 3/8    | F35123A-3  | 7,100   | 3.31              | 1.81 | 1.77 | 1.73 | 1.50 | 0.71 | 1.89 | 1.39          |
|  | 13-8       | 1/2    | F35133A-5  | 12,000  | 4.73              | 2.72 | 2.36 | 2.36 | 2.01 | 0.95 | 2.60 | 4.19          |
|  | 16-8       | 5/8    | F35143A-8  | 18,100  | 5.00              | 2.60 | 2.68 | 2.56 | 2.40 | 1.10 | 2.84 | 5.88          |
|  | 22-8       | 7/8    | F35163A-15 | 34,200  | 7.01              | 3.86 | 3.78 | 4.29 | 3.15 | 1.54 | 4.73 | 17.83         |
|  | 32-8       | 1 1/4  | F35183A-32 | 72,300  | 11.50             | 6.86 | 5.71 | 6.50 | 4.65 | 2.21 | 7.09 | 60.17         |
|  | 40-8       | 1.58   | F35193A-50 | 112,000 | 14.62             | 8.98 | 7.33 | 8.27 | 5.71 | 2.84 | 9.06 | 132.24        |
|  |            |        |            |         |                   |      |      |      |      |      |      |               |

| TWN 0121/1  | M Metric Screw Size | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |      |      |      |      |      |     | Weight approx |
|---|---------------------|------------|--------|----------|--------|-------------------|------|------|------|------|------|-----|---------------|
|   |                     | [mm]       | [inch] |          |        | E                 | F    | A    | C    | H    | B    | D   |               |
|   |                     |            |        |          |        |                   |      |      |      |      |      |     |               |
|  <p>Hoist Ring swivel type, bolted base</p>  | M16                 | 6-8        | 7/32   | F35000   | 2,100  | 2.56              | 1.18 | 2.40 | 2.56 | 1.50 | .87  | .47 | 1.54          |
|   | M20                 | 8-8        | 1/4    | F35010   | 3,500  | 3.35              | 1.58 | 3.11 | 3.23 | 1.93 | 1.10 | .59 | 3.31          |
|   | M24                 | 10-8       | 3/8    | F35020   | 7,100  | 3.86              | 1.77 | 3.62 | 3.98 | 2.32 | 1.30 | .75 | 5.73          |
|   | M30                 | 13-8       | 1/2    | F35030   | 12,000 | 4.73              | 2.09 | 4.45 | 4.93 | 2.84 | 1.77 | .99 | 10.14         |
|   |                     |            |        |          |        |                   |      |      |      |      |      |     |               |

| TWN 0122  | M Metric Screw Size | Trade Size |        | Part-No. | WLL    | Dimensions [inch] |      |      |      |       |      |      | Weight approx |
|---|---------------------|------------|--------|----------|--------|-------------------|------|------|------|-------|------|------|---------------|
|   |                     | [mm]       | [inch] |          |        | E                 | F    | A    | C    | L     | D    | B    |               |
|   |                     |            |        |          |        |                   |      |      |      |       |      |      |               |
|  <p>Hoist Ring bolted type</p>  | M16                 | 10-8       | 3/8    | F35070   | 7,100  | 4.41              | 2.25 | 3.55 | 1.50 | 5.12  | 0.71 | 1.58 | 3.39          |
|   | M20                 | 13-8       | 1/2    | F35075   | 12,000 | 5.87              | 3.11 | 4.53 | 1.89 | 6.50  | 0.87 | 1.97 | 6.24          |
|   | M30                 | 16-8       | 5/8    | F35080   | 18,100 | 7.21              | 3.66 | 5.91 | 2.94 | 8.35  | 1.02 | 2.56 | 12.94         |
|   | M36                 | 22-8       | 7/8    | F35095   | 34,200 | 8.90              | 4.49 | 6.90 | 2.84 | 10.05 | 1.42 | 2.96 | 24.68         |
|   | M42                 | 26-8       | 1      | F35098   | 47,700 | 10.72             | 5.59 | 7.88 | 3.55 | 11.62 | 1.77 | 3.74 | 42.54         |
|   | M45                 | 28-8       | 1 1/8  | F35101   | 56,000 | 10.72             | 5.59 | 7.88 | 3.55 | 11.62 | 1.77 | 3.74 | 44.52         |
|   | M56                 | 32-8       | 1 1/4  | F35102   | 72,300 | 13.24             | 7.60 | 9.06 | 3.94 | 13.00 | 1.89 | 4.33 | 69.87         |
|   | M56                 | 34-8       | 1.34   | F35285   | 80,640 | 13.24             | 7.60 | 9.06 | 3.94 | 13.00 | 1.89 | 4.33 | 69.87         |
|   |                     |            |        |          |        |                   |      |      |      |       |      |      |               |

| TWN 0123   | M Metric<br>Screw Size | Trade Size |        | Part-<br>No. | WLL   | Dimensions<br>[inch] |      |     |      |      |      |      | Weight<br>approx |      |
|--|------------------------|------------|--------|--------------|-------|----------------------|------|-----|------|------|------|------|------------------|------|
|  |                        | [mm]       | [inch] |              |       | [lbs.]               | E    | F   | D    | T    | B    | L    |                  | SW   |
|  <p>Hoist Ring<br/>Threaded<br/>Eye Bolt Type</p> | M16                    | 6-8        | 7/32   | F34110       | 2,100 | 4.45                 | 2.05 | .63 | 2.76 | 1.34 | 1.18 | 1.81 | 2.36             | 1.61 |
|  | M20                    | 8-8        | 1/4    | F34120       | 3,500 | 4.45                 | 2.05 | .63 | 2.76 | 1.34 | 1.50 | 1.81 | 2.36             | 2.09 |
|  | M24                    | 10-8       | 3/8    | F34130       | 7,100 | 5.04                 | 2.64 | .71 | 3.35 | 1.58 | 1.38 | 1.81 | 2.36             | 2.29 |

| TWN 0124A  | Trade Size |        | Part-No. | WLL    | Dimensions<br>[inch] |      |      |      |      |      |      | Weight<br>approx |
|--|------------|--------|----------|--------|----------------------|------|------|------|------|------|------|------------------|
|  | [mm]       | [inch] |          |        | [lbs.]               | E    | F    | C    | L    | H    | D    |                  |
|  <p>Hoist Ring<br/>weld-on type<br/>with fixing spring</p> | 6-8        | 7/32   | F35107A  | 2,100  | 2.21                 | 1.18 | 1.26 | 1.26 | 1.10 | 0.47 | 1.42 | 0.55             |
|  | 8-8        | 1/4    | F35110A  | 3,500  | 2.64                 | 1.46 | 1.50 | 1.50 | 1.30 | 0.55 | 1.65 | 0.95             |
|  | 10-8       | 3/8    | F35124A  | 7,100  | 3.19                 | 1.77 | 1.77 | 1.73 | 1.50 | 0.71 | 1.89 | 1.59             |
|  | 13-8       | 1/2    | F35139A  | 12,000 | 4.61                 | 2.72 | 2.36 | 2.36 | 2.01 | 0.95 | 2.60 | 4.19             |
|  | 16-8       | 5/8    | F35144A  | 18,100 | 4.81                 | 2.64 | 2.68 | 2.56 | 2.40 | 1.10 | 2.84 | 6.17             |

| TWN 0127   | M Metric<br>Screw Size | Trade Size |        | Part-No. | WLL    | Dimensions<br>[inch] |      |      |      |      |      |      | Weight<br>approx |
|--|------------------------|------------|--------|----------|--------|----------------------|------|------|------|------|------|------|------------------|
|  |                        | [mm]       | [inch] |          |        | [lbs.]               | E    | F    | A    | C    | L    | D    |                  |
|  <p>Hoist-Ring MDB<br/>screwed type<br/>with screws</p> | M20                    | 10-8       | 3/8    | F35157   | 7,100  | 2.68                 | 1.89 | 3.55 | 1.73 | 5.12 | 0.71 | 1.89 | 2.42             |
|  | M24                    | 13-8       | 1/2    | F35158   | 12,000 | 4.45                 | 2.72 | 4.33 | 2.36 | 6.30 | 0.95 | 2.60 | 5.95             |



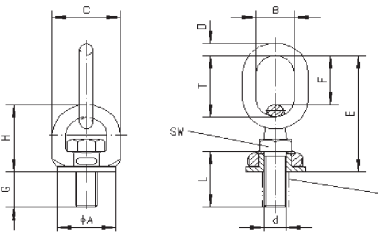


## The TITAN Hoist Ring TWN 1120

is capable of lifting with the working load limit in all directions. The coupling link is freely moveable in all directions. It rotates easily due to the special bushing and glide plate made from stainless steel. Built as a compact one piece unit, it requires less space for assembly. The TITAN Hoist Ring allows fast and easy assembling with common tools and can be supplied with other screw lengths upon request. A plastic net cover protects the screw during shipment and storage.

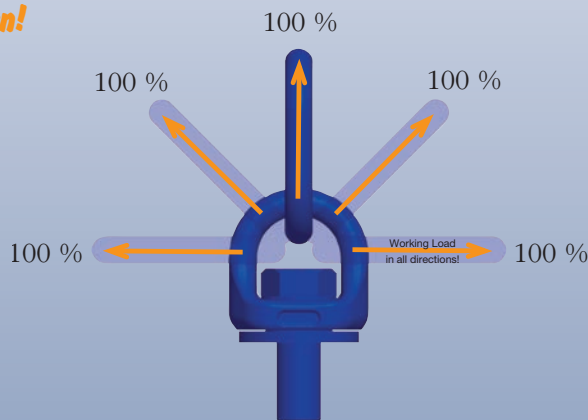
- 100 % Magnetic crack tested. BG - approved.
- **Warning:** Does not swivel under load.
- Hoist Ring rotates 360° and 180° end to end .

Finish: RAL 5002



| Screw Size | Part.-No. | Working Load Limit | Thread Length | Dimensions |      |      |      |      |      |      |      |      |        | Weight approx. |
|------------|-----------|--------------------|---------------|------------|------|------|------|------|------|------|------|------|--------|----------------|
|            |           |                    |               | [inch]     |      |      |      |      |      |      |      |      |        |                |
| d          |           | [lbs.]             | G             | E          | F    | D    | T    | B    | A    | C    | H    | SW   | [lbs.] |                |
| M8         | F34405    | 784                | 0.73          | 3.74       | 1.58 | 0.39 | 1.97 | 1.10 | 1.69 | 1.97 | 2.13 | 0.51 | 0.88   |                |
| M10        | F34390    | 1,008              | 0.73          | 3.74       | 1.58 | 0.39 | 1.97 | 1.10 | 1.69 | 1.97 | 2.13 | 0.63 | 0.88   |                |
| M12        | F34395    | 1,344              | 0.93          | 3.74       | 1.58 | 0.39 | 1.97 | 1.10 | 1.69 | 1.97 | 2.13 | 0.71 | 0.95   |                |
| M16        | F34400    | 3,136              | 1.10          | 3.74       | 1.58 | 0.39 | 1.97 | 1.10 | 1.69 | 1.97 | 2.13 | 0.95 | 1.04   |                |
| M20        | F34410    | 5,600              | 1.26          | 4.49       | 1.89 | 0.47 | 2.36 | 1.34 | 2.13 | 2.36 | 2.56 | 1.18 | 1.74   |                |
| M24        | F34420    | 7,840              | 1.58          | 5.32       | 2.17 | 0.63 | 2.76 | 1.58 | 2.56 | 2.92 | 3.11 | 1.42 | 3.31   |                |
| M30        | F34430    | 15,008             | 1.97          | 6.54       | 2.60 | 0.71 | 3.35 | 1.97 | 3.15 | 3.66 | 3.98 | 1.81 | 5.95   |                |
| M36        | F34440    | 17,920             | 2.60          | 8.35       | 3.62 | 0.87 | 4.53 | 1.97 | 3.78 | 4.22 | 4.73 | 2.17 | 10.58  |                |

*The right turn!*

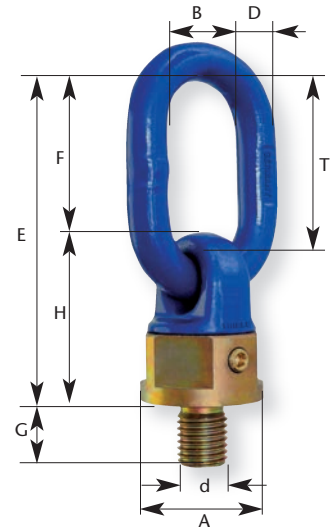


**100 % Working Load Limit in all directions!**



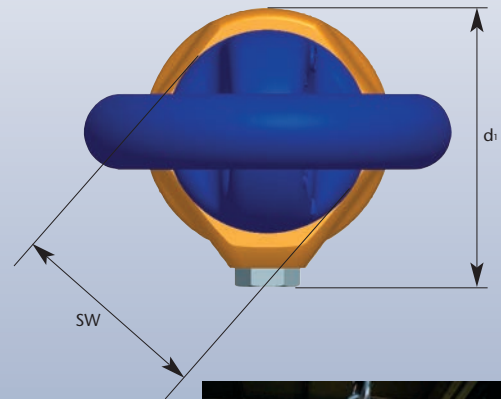
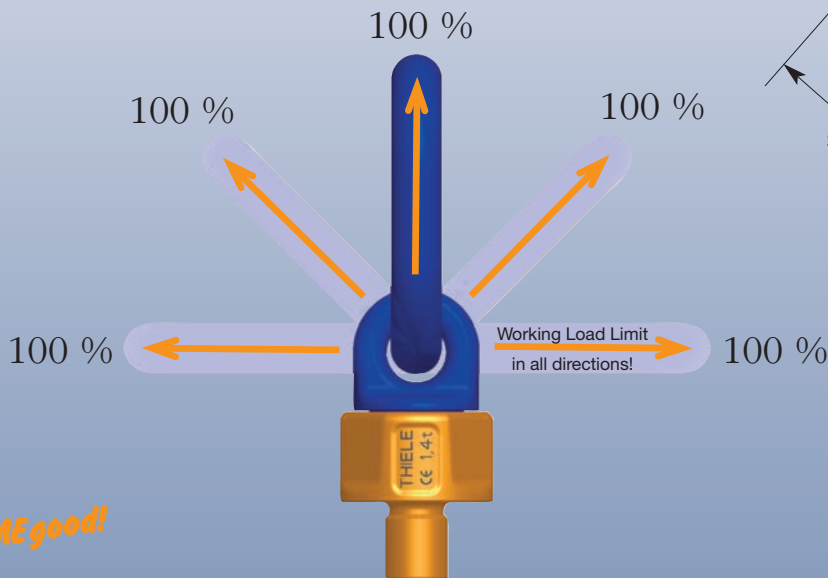
## The X-TREME Hoist Ring TWN 1830

- X-TREME 1830 Hoist Ring
- In sizes from M10 to M56 (3/8" — 2 1/4")
- 100% WLL in all lifting and pulling directions
- Integrated ball bearing design allows the Hoist Ring to rotate, turn and twist to the perfect angle every time
- Simple, compact design and ease of installation make using the X-TREME 1830 child's play
- Special screw length up to 3x screw length, upon request
- Swivels under load



| Screw Size | Part.-No. | Working Load Limit<br>[lbs.] | Thread Length<br>[mm]<br>G | Dimensions |      |      |      |      |      |      |      |      |      | Weight approx.<br>[ lbs.] |
|------------|-----------|------------------------------|----------------------------|------------|------|------|------|------|------|------|------|------|------|---------------------------|
|            |           |                              |                            | [inch]     |      |      |      |      |      |      |      |      |      |                           |
| d          |           |                              |                            | E          | F    | D    | T    | B    | A    | SW   | H    | d    |      |                           |
| M10        | F34306    | 1,980                        | 0.60                       | 4.00       | 2.00 | 0.51 | 2.16 | 1.3  | 1.53 | 1.42 | 2.15 | 0.39 | 1    |                           |
| M12        | F34307    | 2,645                        | 0.70                       | 4.00       | 2.00 | 0.51 | 2.16 | 1.3  | 1.53 | 1.42 | 2.15 | 0.47 | 1    |                           |
| M16        | F34300    | 6,170                        | 0.78                       | 4.00       | 2.00 | 0.51 | 2.16 | 1.3  | 1.53 | 1.42 | 2.15 | 0.63 | 1    |                           |
| M20        | F34310    | 11,680                       | 0.98                       | 4.76       | 2.30 | 0.63 | 2.75 | 1.33 | 2.00 | 1.81 | 2.50 | 0.78 | 2    |                           |
| M24        | F34320    | 15,400                       | 1.18                       | 5.80       | 2.83 | 0.7  | 3.35 | 1.57 | 2.25 | 2.00 | 3.00 | 1.00 | 3.3  |                           |
| M30        | F34330    | 22,000                       | 1.57                       | 6.72       | 3.27 | 0.87 | 4.00 | 2.00 | 2.87 | 2.56 | 3.44 | 1.57 | 6    |                           |
| M36        | F34340    | 33,000                       | 2.00                       | 7.00       | 3.19 | 0.86 | 4.00 | 2.00 | 3.26 | 2.75 | 3.86 | 1.42 | 8    |                           |
| M42        | F34350    | 40,000                       | 2.36                       | 9.60       | 4.57 | 1.26 | 5.51 | 2.75 | 4.17 | 3.75 | 4.72 | 1.65 | 18.3 |                           |
| M48        | F34355    | 44,000                       | 2.68                       | 9.60       | 4.57 | 1.26 | 5.51 | 2.75 | 4.17 | 3.75 | 4.72 | 1.89 | 19   |                           |
| M56        | F34360    | 61,700                       | 3.07                       | 9.60       | 4.57 | 1.26 | 5.51 | 2.75 | 4.17 | 3.75 | 4.72 | 2.21 | 20.1 |                           |

**100 % Working Load Limit in all directions!**



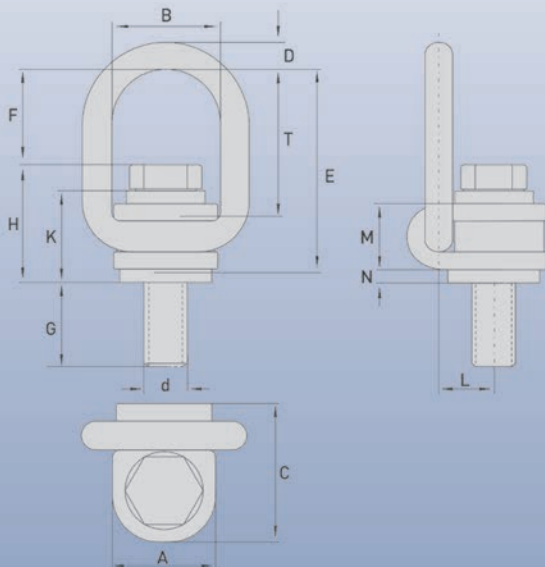
**X-TREME good!**



The NEW **XS-Point TWN 1890** 

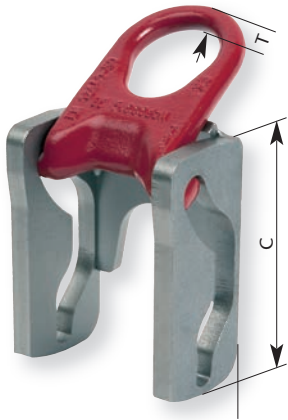
- 100% WLL with 360° rotation and 180° swivel
- Extra wide bow is designed with a unique tension spring holding the bow in place at the perfect angle and allowing one handed use.
- Fast and uncomplicated mounting and removal using standard tools.

| Thread<br>[mm]<br>d x G | Trade Size | Part.-No. | Working Load<br>Limit<br>[lbs.] | Dimensions<br>[inch] |     |     |     |     |     |     |     |     |     |     |     |
|-------------------------|------------|-----------|---------------------------------|----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                         |            |           |                                 | E                    | F   | D   | T   | B   | A   | C   | H   | K   | L   | M   | N   |
| M10x17                  | 0.5t       | F35243    | 1,100                           | 3.8                  | 2.0 | 0.5 | 2.8 | 2   | 1.9 | 2.5 | 1.8 | 1.5 | 1.0 | 1.2 | 0.3 |
| M12x22                  | 0.8t       | F35244    | 1,764                           | 3.8                  | 2.0 | 0.5 | 2.8 | 2   | 1.9 | 2.5 | 1.8 | 1.5 | 1.0 | 1.2 | 0.3 |
| M16x30                  | 1.5t       | F35245    | 3,300                           | 3.8                  | 1.8 | 0.5 | 2.8 | 2   | 1.9 | 2.5 | 2.0 | 1.6 | 1.0 | 1.2 | 0.3 |
| M20x38                  | 2.5t       | F35246    | 5,500                           | 3.9                  | 1.7 | 0.5 | 2.8 | 2   | 1.9 | 2.5 | 2.2 | 1.7 | 1.0 | 1.2 | 0.3 |
| M24x41                  | 4.0t       | F35247    | 8,800                           | 5.7                  | 2.8 | 0.7 | 4.1 | 3   | 2.8 | 3.6 | 2.9 | 2.3 | 1.4 | 1.8 | 0.5 |
| M27x50                  | 5.0t       | F35248    | 11,000                          | 5.7                  | 2.7 | 0.7 | 4.1 | 3   | 2.8 | 3.1 | 2.9 | 2.3 | 1.4 | 1.8 | 0.5 |
| M30x58                  | 6.0t       | F35249    | 13,200                          | 5.7                  | 2.5 | 0.7 | 4.1 | 3   | 2.8 | 3.2 | 3.1 | 2.3 | 1.4 | 1.8 | 0.5 |
| M36x70                  | 8.0t       | F35250    | 17,600                          | 7.8                  | 3.8 | 1.3 | 3.9 | 3.9 | 3.8 | 5.8 | 4.1 | 3.2 | 2.0 | 2.4 | 0.6 |
| M42x78                  | 10.0t      | F35251    | 22,000                          | 7.9                  | 3.6 | 1.3 | 3.9 | 3.9 | 3.8 | 5.8 | 4.3 | 3.3 | 2.0 | 2.4 | 0.6 |
| M48x76                  | 12.0t      | F35252    | 26,400                          | 7.9                  | 3.4 | 1.3 | 3.9 | 3.9 | 3.8 | 5.8 | 4.5 | 3.3 | 2.0 | 2.4 | 0.6 |



## Lashing Point ZK Module **GK8** TWN 1470

The newly developed ZK module from THIELE is a lashing ring with a cassette that can easily be adapted and attached to the side frames of trailers. These lashing rings are made of the same steel used in the manufacture of lashing chains. The THIELE ZK module is additionally approved by the German TÜV inspection board and complies with the European standard DIN EN 12640.



It also offers 100% lashing capacity and is capable of withstanding load in all directions of strain. The lashing point has a swivel range of 150°, enabling the secure strapping of low-load goods as well as goods that project beyond the load platform. Besides this, the lashing ring is retractable, consequently preventing accidents from happening when walking on the cargo area.

Finish: RAL 3003

| Trade Size | Part-No. | Lashing Capacity (LC)<br>[daN] | Dimensions<br>[inch] |      |      |      |      |      | Weight<br>app. [lbs.] |
|------------|----------|--------------------------------|----------------------|------|------|------|------|------|-----------------------|
|            |          |                                | A                    | B    | C    | D    | E    | T*   |                       |
| 5          | F35236   | 5,000                          | 4.21                 | 0.47 | 5.67 | 2.83 | 1.97 | 0.55 | 5.73                  |
| 10         | F35237   | 10,000                         | 5.39                 | 0.59 | 5.67 | 2.83 | 2.36 | 0.71 | 7.94                  |



## Welded Lashing Point **XL** with spring TWN 1880



A perfect interaction between compactness and easier handling. The small size of the TWN 1880 lashing point was at the focus during the development of this weld-on lashing point. The high working load limit/lashing capacity when compared with its compact design is what makes the lashing point something special. It can be swivelled by 180°.

100% Magnetic crack tested.

Finish: RAL 5002

| Trade Size | Part-No. | Nominal Size<br>[inch] | Lashing Capacity (LC)*<br>[daN] | Dimensions<br>[inch] |      |      |      |      |      | Weight<br>app. [lbs.] |
|------------|----------|------------------------|---------------------------------|----------------------|------|------|------|------|------|-----------------------|
|            |          |                        |                                 | D                    | B    | A    | E*   | H    | C    |                       |
| 6-XL       | F35204   | 7/32                   | 3,000                           | 0.55                 | 1.50 | 2.56 | 1.65 | 0.98 | 1.93 | 0.93                  |
| 8-XL       | F35205   | 1/4                    | 5,000                           | 0.59                 | 1.77 | 2.99 | 1.77 | 1.06 | 1.97 | 1.26                  |
| 10-XL      | F35206   | 3/8                    | 8,000                           | 0.67                 | 1.97 | 3.35 | 2.24 | 1.22 | 2.17 | 1.87                  |
| 13-XL      | F35207   | 1/2                    | 13,500                          | 0.91                 | 2.68 | 4.57 | 3.11 | 1.73 | 3.03 | 4.85                  |

\* upright standing ring

## Calibrated hoist chain Grade 80 (Type T, DAT according to EN 818-7)

| Dimensions<br>[mm]        | Article-No.<br>Type T <sup>3)</sup><br>for manual hoists |                |                       | Article-No.<br>Type DAT <sup>3)4)</sup><br>for electric hoists |                |                       | Weight<br>approx.<br>[lbs] |
|---------------------------|--|----------------|-----------------------|--|----------------|-----------------------|----------------------------|
|                           | bright   | el. galvanized | el. galv.+yellow chr. | bright   | el. galvanized | el. galv.+yellow chr. |                            |
| 4 x 12                    | –  | –              | F09002                | –  | F09008         | F09009                | 0.77                       |
| 4.2 x 12.2                | –  | –              | –                     | –  | –              | F09014                | 0.86                       |
| 5 x 15                    | –  | F09016         | –                     | –  | F09018         | F09019                | 1.21                       |
| 5.3 x 15.2                | –  | –              | –                     | –  | –              | F09024                | 1.39                       |
| 6 x 18                    | –  | F09026         | F09027                | –  | F09028         | F09029                | 1.74                       |
| 7 x 21 <sup>1)</sup>      | F09030   | F09031         | –                     | –  | F09033         | F09034                | 2.38                       |
| 7 x 22                    | –  | F09036         | –                     | –  | F09038         | F09039                | 2.34                       |
| 7.4 x 21.2                | –  | –              | –                     | –  | –              | F09044                | 2.71                       |
| 8 x 24                    | –  | F09046         | F09047                | –  | F09048         | F09049                | 3.11                       |
| 9 x 27 <sup>1)</sup>      | F09050   | F09051         | –                     | –  | F09053         | F09054                | 3.95                       |
| 10 x 30                   | –  | F09056         | F09057                | –  | F09058         | F09059                | 4.87                       |
| 11 x 31 <sup>1)</sup>     | F09060   | F09061         | F09062                | –  | F09063         | F09064                | 6.06                       |
| 13 x 36 <sup>1)</sup>     | F09065   | F09066         | –                     | –  | –              | –                     | 8.53                       |
| 16 x 45 <sup>1)</sup>     | F09070   | F09071         | –                     | –  | –              | –                     | 12.83                      |
| 18 x 50                   | F09075   | F09076         | –                     | –  | –              | –                     | 16.31                      |
| 22 x 66 <sup>1)</sup>     | F09080   | F09081         | –                     | –  | –              | –                     | 25.59                      |
| 31.5 x 90 <sup>1)2)</sup> | F09085   | F09086         | –                     | –  | –              | –                     | 49.38                      |

### Calibrated hand chain, el. galvanized

| Dimensions<br>[mm] | Article-No.<br>Type T <sup>3)</sup><br>el. galvanized |                       |        | Article-No.<br>Type DAT <sup>3)4)</sup><br>el. galvanized |  |  | Weight<br>approx.<br>[lbs] |
|--------------------|---|-----------------------|--------|---|--|--|----------------------------|
|                    | bright  | el. galv.+yellow chr. | bright | el. galv.+yellow chr.                                     |  |  |                            |
| 5 x 25             |   | Z02655                |        |   |  |  | 1.01                       |



## Technical Properties

| Dimensions<br>[mm]        | Chain Diameter [mm] |              | Pitch |               | Width               |                     | Multi Pitch Length  |               |
|---------------------------|---------------------|--------------|-------|---------------|---------------------|---------------------|---------------------|---------------|
|                           | d                   | Tolerance    | p     | Tolerance     | w <sub>3</sub> min. | w <sub>2</sub> max. | 11 x p <sub>n</sub> | Tolerance     |
| 4 x 12                    | 4.0                 | 0.2          | 12.0  | +0.15 / -0.1  | 4.8                 | 13.6                | 132.0               | +0.4 / -0.2   |
| 4.2 x 12.2                | 4.2                 | +0.1 / -0.2  | 12.2  | +0.15 / -0.1  | 4.8                 | 13.7                | 134.2               | +0.4 / -0.2   |
| 5 x 15                    | 5.0                 | 0,2          | 15.0  | +0.2 / -0.1   | 6.0                 | 17.0                | 165.0               | +0.5 / -0.3   |
| 5.3 x 15.2                | 5.3                 | +0.1 / -0.2  | 15.2  | +0.2 / -0.1   | 5.9                 | 16.9                | 167.2               | +0.5 / -0.3   |
| 6 x 18                    | 6.0                 | 0,2          | 18.0  | +0.25 / -0.1  | 7.2                 | 20.4                | 198.0               | +0.6 / -0.3   |
| 7 x 21 <sup>1)</sup>      | 7.0                 | +0.1 / -0.28 | 21.0  | +0.3 / 0      | 8.4                 | 23.4                | 231.0               | +0.7 / 0      |
| 7 x 22                    | 7.0                 | 0.3          | 22.0  | +0.3 / -0.15  | 8.4                 | 23.8                | 242.0               | +0.8 / -0.4   |
| 7.4 x 21.2                | 7.4                 | +0.1 / -0.3  | 21.2  | +0.3 / -0.15  | 8.4                 | 23.8                | 233.2               | +1.7 / +0.7   |
| 8 x 24                    | 8.0                 | 0.3          | 24.0  | +0.3 / -0.15  | 10.2                | 27.2                | 264.0               | +0.8 / -0.4   |
| 9 x 27 <sup>1)</sup>      | 9.0                 | +0.1 / -0.4  | 27.0  | +0.25 / -0.1  | 10.8                | 30.4                | 297.0               | +0.7 / -0.3   |
| 10 x 30                   | 10.0                | 0.4          | 30.0  | +0.4 / -0.2   | 12.0                | 34.0                | 330.0               | +1.0 / -0.5   |
| 11 x 31 <sup>1)</sup>     | 11.0                | +0.3 / -0.4  | 31.0  | +0.3 / -0.15  | 13.2                | 36.5                | 341.0               | +0.9 / -0.3   |
| 13 x 36 <sup>1)</sup>     | 13.0                | +0.1 / -0.5  | 36.0  | +0.35 / -0.15 | 15.2                | 42.9                | 396.0               | +1.1 / -0.2   |
| 16 x 45 <sup>1)</sup>     | 16.0                | +0.3 / -0.6  | 45.0  | +0.45 / -0.25 | 18.2                | 52.8                | 495.0               | +1.4 / -0.5   |
| 18 x 50                   | 18.0                | 0.9          | 50.0  | +0.65 / -0.35 | 21.6                | 61.2                | 550.0               | +1.75 / -0.85 |
| 22 x 66 <sup>1)</sup>     | 22.0                | +0.8 / -1.1  | 66.0  | +0.65 / -0.35 | 27.0                | 75.0                | 726.0               | +2.0 / -0.7   |
| 31.5 x 90 <sup>1)2)</sup> | 31.5                | 1.6          | 90.0  | +1.2 / -0.6   | 37.8                | 107.1               | 990.0               | +3.2 / -1.6   |



## Technical Properties

### Working Load Table

| Dimensions                      | Type T for manual hoists <sup>3)</sup> |                       | Type DAT for electric hoists <sup>3)4)</sup> |                       | Test Force MPF min. [kN] | Breaking Force BF min. [kN] |
|---------------------------------|--|-----------------------|--|-----------------------|--------------------------|-----------------------------|
|                                 | Metric tonnes                          | Surface Hardness min. | Working L.L. Metric tonnes                   | Surface Hardness min. |                          |                             |
| <b>4 x 11.8</b>                 | 0.5                                    | 360, HV 5             | 0.4  | 500, HV 5             | 12.6                     | 20.1                        |
| <b>4 x 12</b>                   | 0.5                                    | 360, HV 5             | 0.4  | 500, HV 5             | 13.9                     | 22.0                        |
| <b>4.2 x 12.2</b>               | –                                      | –                     | 0.45   | 500, HV 5             | 19.6                     | 31.4                        |
| <b>5 x 15</b>                   | 0.8                                    | 360, HV 5             | 0.63   | 500, HV 5             | 22.1                     | 36.0                        |
| <b>5.3 x 15.2</b>               | –                                      | –                     | 0.72   | 500, HV 5             | 28.3                     | 45.2                        |
| <b>6 x 18</b>                   | 1.1                                    | 360, HV 5             | 0.9  | –                     | 38.5                     | 61.6                        |
| <b>7 x 21<sup>1)</sup></b>      | 1.5                                    | 360, HV 10            | –  | 500, HV 10            | 38.5                     | 61.6                        |
| <b>7 x 22</b>                   | 1.5                                    | 360, HV 10            | 1.2  | 500, HV 10            | 43.0                     | 69.0                        |
| <b>7.4 x 21.2</b>               | –                                      | –                     | 1.4  | 500, HV 10            | 50.3                     | 80.4                        |
| <b>8 x 24</b>                   | 2.0                                    | 360, HV 10            | 1.6  | 500, HV 10            | 63.6                     | 102.0                       |
| <b>9 x 27<sup>1)</sup></b>      | 2.5                                    | 360, HV 10            | 2.0  | 500, HV 10            | 78.5                     | 126.0                       |
| <b>10 x 30</b>                  | 3.2                                    | 360, HV 10            | 2.5  | 500, HV 10            | 95.0                     | 152.0                       |
| <b>11 x 31<sup>1)</sup></b>     | –                                      | –                     | 3.1  | –                     | 133.0                    | 212.0                       |
| <b>13 x 36<sup>1)</sup></b>     | 5.3                                    | 360, HV 10            | –  | –                     | 201.0                    | 322.0                       |
| <b>16 x 45<sup>1)</sup></b>     | 8.2                                    | 360, HV 10            | –  | 450, HV 10            | 255.0                    | 408.0                       |
| <b>18 x 50</b>                  | 10.4                                   | 360, HV 10            | 8.3  | –                     | 380.0                    | 608.0                       |
| <b>22 x 66<sup>1)</sup></b>     | 15.0                                   | 360, HV 10            | –  | –                     | 780.0                    | 1247.0                      |
| <b>31.5 x 90<sup>1)2)</sup></b> | 31.8                                   | 360, HV 10            | –  | –                     | –                        | –                           |

| Operating mode                                   | ISO 4301             | Hand Operated Hoist | Power Driven Hoist |     |     |     |     |
|--|----------------------|---------------------|--------------------|-----|-----|-----|-----|
|  |                      |                     | 1Cm                | 1Bm | 1Am | 2m  | 3m  |
| Drive mechanism group                            | ISO 4301             |                     | 1Cm                | 1Bm | 1Am | 2m  | 3m  |
| Type of chain                                    |                      | T                   | DAT                | DAT | DAT | DAT | DAT |
| Nominal stress at highest admissible chain force | [N/mm <sup>2</sup> ] | 200                 | 160                | 160 | 140 | 125 | 112 |
| Nominal stress at minimum breaking force         | [N/mm <sup>2</sup> ] | 800                 | 800                | 800 | 800 | 800 | 800 |
| Minimum elongation at break                      | %                    | 10                  | 10                 | 10  | 10  | 10  | 10  |
| Lower temperature limit                          | °F                   | -40                 | -40                | -40 | -40 | -40 | -40 |
| Upper temperature limit                          | °F                   | 392                 | 392                | 392 | 392 | 392 | 392 |

#### Advices:

- 1) Limited tolerances. Meet also the requirements as per DSKN 726 300.
- 2) similar EN 818-7
- 3) **Type T** for manual hoists; **Type DAT** for power driven hoists.
- 4) The selection criteria of EN 818-7 part B for power driven hoists (influencing factors, like engine group, No. of teeth, speed, etc.) are to be considered.  
Surfaces optional bright polished or electro galvanized. Further finishes upon request.  
**Standard manufacturing lengths** 50m, other lengths upon request.  
**Hoist Chains are being proofed as per EN 818-7 and marked with T3 Thiele quality brand mark.**  
Tests results are being stated as per EN 818-7 in a test certificate.
- 5) In order to ensure proper operation, please send your Sprocket information data.





## TM-Series

### Advantages of the overload protection with TM-Series:

- + Prevents the hoist from being overloaded to a point that it becomes dangerous**
- + Helps protect the operator from injury**
- + Protects the load being lifted**
- + Longer service life**



### TM-Chain Hoists TWN 1000 TM-Lever Tools 1001

#### with Overload Protection\*

- Lightweight robust steel construction
- Super strength alloy loadchain as per EN818-7 galvanized and yellow chromated
- Minimum headroom
- Minimum effort to raise maximum load by easy handling
- Hooks with strong cast steel safety latches
- Lower hook easily turnable with roller bearing
- Also approved for tensioning as per EN 12195 (TM-Lever Tool only)
- Fully enclosed gear train (TM-Chain Hoist only)
- Protected automatic Weston brake with unique Twin Pawls
- galvanised handchain as standard (TM-Chain Hoist only)
- Durable baked enamel paint protection
- Spare parts available
- TÜV / GS / CE approved
- Supply with individual test certificate and manual in 7 languages
- Approved for mining acc. to ATEX/68+69 (PN-EN 13463-1:2003)

\*Except TM-LB 250 kg

#### TM-Chain Hoist    TM-Lever Hoists

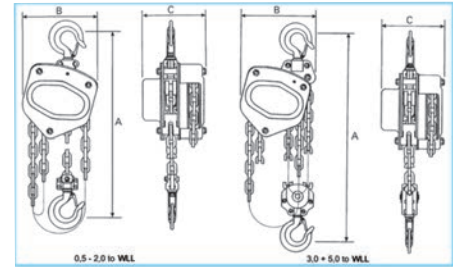
Capacities 500 kg  
to 5 tonnes

Capacities 250 kg  
to 6 tonnes



## TM-Chain Hoist TWN 1000

**with Overload Protection**  
Capacities 1/2 ton to 5 ton

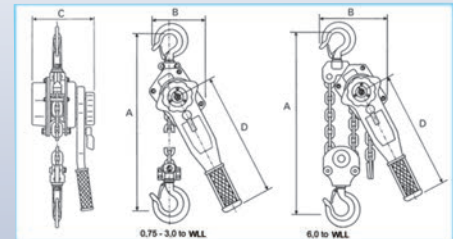


| Safe Working Load                    |                        | 500 kg  | 1.0 to  | 2.0 to  | 3.0 to  | 5.0 to  |
|--------------------------------------|------------------------|---------|---------|---------|---------|---------|
| Lift                                 | 10 ft (approx. 3.05 m) | F063511 | F063611 | F063711 | F063811 | F063911 |
| Lift                                 | 15 ft (approx. 4.60 m) | F063512 | F063612 | F063712 | F063812 | F063912 |
| Lift                                 | 20 ft (approx. 6.10 m) | F063513 | F063613 | F063713 | F063813 | F063913 |
| Lift                                 | 30 ft (approx. 9.10 m) | F063514 | F063614 | F063714 | F063814 | F063914 |
| Lift                                 | 40 ft (approx. 12.2 m) | F063515 | F063615 | F063715 | F063815 | F063915 |
| Strands of chain                     |                        | 1       | 1       | 1       | 2       | 2       |
| Effort to lift W.L.L. [lbs.] -10 ft. |                        | 22      | 66      | 77      | 60      | 90      |
| Net weight [lbs.]                    |                        | 22      | 26      | 48      | 70      | 101     |
| Loadchain Diameter [mm]              |                        | 6       | 6       | 8       | 8       | 10      |
| Headroom (A) [inch]                  |                        | 10.64   | 12.49   | 16.31   | 18.32   | 25.06   |
| Width (B) [inch]                     |                        | 5       | 6.23    | 7.37    | 8.27    | 9.97    |
| Depth (C) [inch]                     |                        | 5.16    | 5.52    | 6.34    | 6.34    | 6.34    |
| Hook opening (upper)                 |                        | 1.4     | 1.7     | 1.8     | 2.1     | 2.4     |
| Hook opening (lower)                 |                        | 1.4     | 1.7     | 1.8     | 2.1     | 2.4     |

\* Special lifts upon request!

## TM-Lever Hoist TWN 1001

**with Overload Protection<sup>1</sup>**  
Capacities 1/4 ton to 6 ton



| Safe Working Load / Tensioning Force |                        | 250 kg  | 750 kg  | 1.5 to  | 3.0 to  | 6.0 to  |
|--------------------------------------|------------------------|---------|---------|---------|---------|---------|
| Lift                                 | 5 ft (approx. 1.5 m)   | F061901 | F062411 | F062511 | F062611 | F062711 |
| Lift                                 | 10 ft (approx. 3.05 m) | F061902 | F062412 | F062512 | F062612 | F062712 |
| Lift                                 | 15 ft (approx. 4.60 m) | F061903 | F062413 | F062513 | F062613 | F062713 |
| Lift                                 | 20 ft (approx. 6.10 m) | F061904 | F062414 | F062514 | F062614 | F062714 |
| Strands of chain                     |                        | 1       | 1       | 1       | 1       | 2       |
| Effort to lift W.L.L. [lbs.] - 5 ft. |                        | 4       | 30      | 48      | 70      | 75      |
| Net weight [lbs.]                    |                        | 4       | 15      | 24      | 46      | 68      |
| Loadchain Diameter [mm]              |                        | 4       | 6       | 8       | 10      | 10      |
| Length of lever handle (D)           |                        | 6.3     | 11      | 16.1    | 16.1    | 16.1    |
| Headroom (A) [inch]                  |                        | 9       | 12.8    | 15      | 18.9    | 24.4    |
| Width (B) [inch]                     |                        | 3.3     | 5.4     | 6.3     | 7.1     | 9.3     |
| Depth (C) [inch]                     |                        | 3.6     | 5.8     | 6.8     | 7.9     | 7.9     |
| Hook opening (upper)                 |                        | 1.0     | 1.7     | 1.8     | 2.1     | 2.4     |
| Hook opening (lower)                 |                        | 1       | 1.7     | 1.8     | 2.1     | 2.4     |

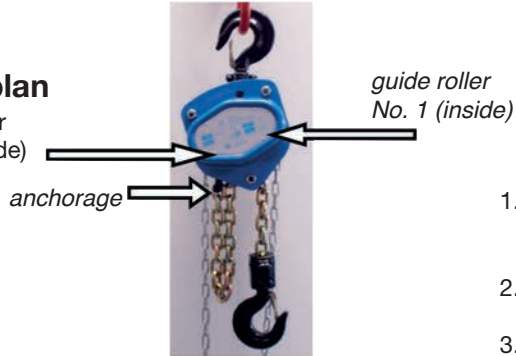
<sup>1</sup> except TM-LB 250 kg

\* Special lifts upon request!

## Load chain mounting TM-Chain Hoists

### Chain plan

guide roller  
No. 2 (inside)



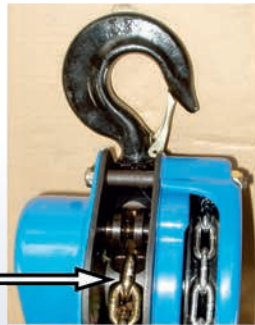
guide roller  
No. 1 (inside)

anchorage

1. The load chain mounting is described in direction from hook to anchorage.
2. Pay attention not to twist the load chain.
3. The load chain will be carried by the sprocket in case of operation of the hand chain. It will be guided by the guide rollers.
4. Load chain ends should be fixed with bolts and split pins.
5. The load chain should be lubricated for the first use.

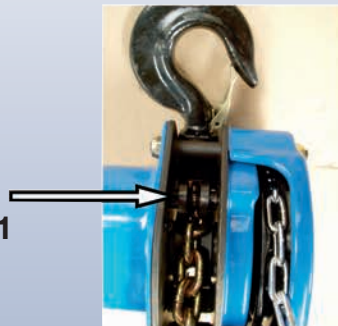
### Position of chain end

1. vertical load chain end; welding-zone of all vertical chain links face outwards



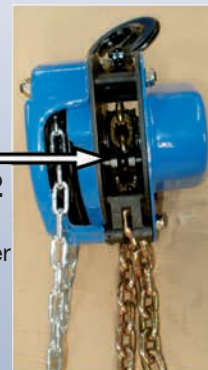
### Position of chain and guide roller No. 1

guide roller No. 1  
Loadchain below guide roller No. 1:



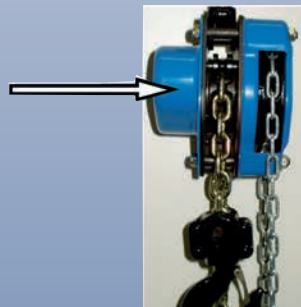
### Position of chain and guide roller No. 2

guide roller No. 2  
Load chain below guide roller No. 2:



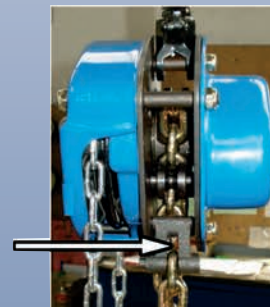
### Control

Right side view:  
Hook/Bottom block in front



Loadchain below of anchorage; will be fixed at anchorage later

Left side view:  
Anchorage in front



## Load chain mounting TM-Lever Hoists

### Chain plan

TM-LB 025  
TM-LB-OP 075 N  
TM-LB-OP 150 N  
TM-LB-OP 300 N



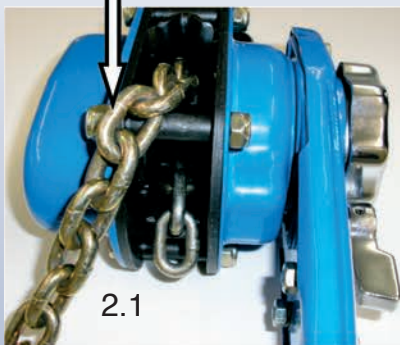
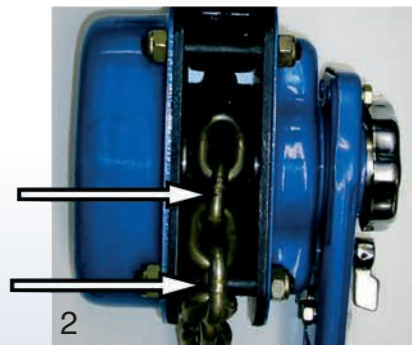
### Chain plan

TM-LB-OP 600 N



### Insertion of the chain

Welding zone of all vertical chain links face outwards



1. Switch direction-lever to „N“-position for load chain mounting.
- 2./2.1 Insert the load chain end to the sprocket, so that the welding zones of the vertical chain links face outwards.
3. Further move the load chain by turning the hand wheel.
4. TM-LB 025-300:  
Fix load chain end to hook.  
TM-LB 600:  
Move load chain through bottom block and fix chain end to the top hook. Pay attention not to twist the chain. If necessary, shorten the chain by one link.
5. Fix loose load chain end by bolt and split pin to the chain ring (TM-LB 025: only spring ring).
6. The load chain should be lubricated for the first use.

### Control



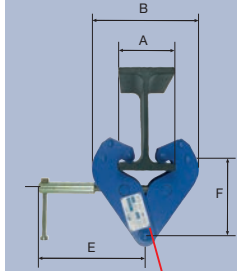
TM-LB 025

TM-LB-OP 075 N  
TM-LB-OP 150 N  
TM-LB-OP 300 N

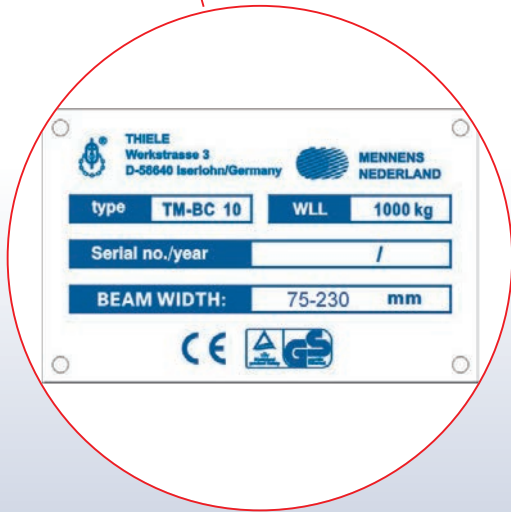
TM-LB-OP 600 N

## TM-Girder Clamp

| Capacity<br>[t]        | Part-No. | Clearance Dimensions<br>[inch] |      |       |      | Adjustable beam<br>width<br>[inch] |
|------------------------|----------|--------------------------------|------|-------|------|------------------------------------|
|                        |          | A                              | B    | E     | F    |                                    |
| <b>TM-Girder Clamp</b> |          |                                |      |       |      |                                    |
| 1                      | Z08133   | 10.95                          | 7.17 | 8.55  | 3.55 | 2.96-9.06                          |
| 2                      | Z08134   | 10.95                          | 7.17 | 8.55  | 3.55 | 2.96-9.06                          |
| 3                      | Z08135   | 14.03                          | 8.67 | 10.91 | 5.71 | 3.15-12.61                         |
| 5                      | Z08136   | 14.03                          | 8.67 | 10.91 | 5.71 | 3.55-12.61                         |




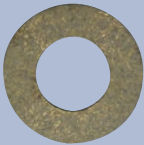
### Labels








## Spare Parts TM-Series

|  | Part-No.                                       | Use with TM-Chain Hoists | Capacity [kg max] |
|---|--|--------------------------|-------------------|
|   | <b>Ratchet disc Part-No. 17 (prev. No. 27)</b> |                          |                   |
|   | Z06928   | B 05                     | 500               |
|   | Z06929   | B 10                     | 1,000             |
|   | Z06930   | B 20                     | 2,000             |
|   | Z06931   | B 30                     | 3,000             |
|   | Z06932   | B 50                     | 5,000             |


|  | Part-No.   | Use with TM-Chain Hoists | Capacity [kg max] |
|---|--|--------------------------|-------------------|
|   | <b>Friction plate Part-No. 16 (prev. No. 28)</b> |                          |                   |
|   | Z06934   | B 05                     | 500               |
|   | Z06935   | B 10                     | 1,000             |
|   | Z06936   | B 20                     | 2,000             |
|   | Z06937   | B 30                     | 3,000             |
|   | Z06938   | B 50                     | 5,000             |


|  | Part-No.  | Use with TM-Chain Hoists | Capacity [kg max] |
|---|---|--------------------------|-------------------|
|   | <b>Top hook assy Part-No. 6N (prev. No. 23)</b> |                          |                   |
|   | Z09939  | B 05                     | 500               |
|   | Z09940  | B 10                     | 1,000             |
|   | Z09941  | B 20                     | 2,000             |
|   | Z09942  | B 30                     | 3,000             |
|   | Z09943  | B 50                     | 5,000             |


|  | Part-No.                                      | Use with TM-Chain Hoists | Capacity [kg max] |
|---|---|--------------------------|-------------------|
|   | <b>Safety clip Part-No. 7N (prev. No. 8N)</b> |                          |                   |
|   | Z09944  | B 05                     | 500               |
|   | Z09945  | B 10                     | 1,000             |
|   | Z09946  | B 20                     | 2,000             |
|   | Z09947  | B 30                     | 3,000             |
|   | Z09948  | B 50                     | 5,000             |


|  | Part-No.   | Use with TM-Chain Hoists | Capacity [kg max] |
|---|--|--------------------------|-------------------|
|   | <b>Bottom hook assy Part-No. 8N (prev. No. 7N)</b> |                          |                   |
|   | Z09949   | B 05                     | 500               |
|   | Z09950   | B 10                     | 1,000             |
|   | Z09951   | B 20                     | 2,000             |
|   | Z09952   | B 30                     | 3,000             |
|   | Z09953   | B 50                     | 5,000             |



|  | Part-No.  | Use with TM-Lever Hoists | Capacity [kg max] |
|---|---|--------------------------|-------------------|
|   | <b>Ratchet Disc assy Part-No. T 21N (prev. No. T17+T18)</b> |                          |                   |
|   | Z06960  | LB 75                    | 750               |
|   | Z06961  | LB 100                   | 1,500             |
|   | Z06962  | LB 300 / LB 600          | 3,000 / 6,000     |

|  | Part-No.   | Use with TM-Lever Hoists | Capacity [kg max] |
|---|--|--------------------------|-------------------|
|   | <b>Top hook assy Part-No. T 8N (prev. No. 31N)</b> |                          |                   |
|   | Z09968   | LB 75                    | 500               |
|   | Z09969   | LB 150                   | 1,500             |
|   | Z09970   | LB 300                   | 3,000             |
|   | Z09971   | LB 600                   | 6,000             |

|  | Part-No.   | Use with TM-Lever Hoists | Capacity [kg max] |
|---|--|--------------------------|-------------------|
|   | <b>Bottom hook assy Part-No. T 10N (prev. No. 33N)</b> |                          |                   |
|   | Z09972   | LB 75                    | 500               |
|   | Z09973   | LB 150                   | 1,500             |
|   | Z09974   | LB 300                   | 3,000             |
|   | Z09975   | LB 600                   | 6,000             |

|  | Part-No.   | Use with TM-Lever Hoists | Capacity [kg max] |
|---|--|--------------------------|-------------------|
|   | <b>Safety clip Part-No. T 9N (prev. No. 61N)</b> |                          |                   |
|   | Z09976   | LB 75                    | 750               |
|   | Z09977   | LB 150                   | 1,500             |
|   | Z09978   | LB 300                   | 3,000             |
|   | Z09979   | LB 600                   | 6,000             |





## THIELE Stainless Steel Chains

| Dimensions<br>[mm] | Art.-No.<br>Grade<br>AISI 3/6 | Plant Standard<br>TWN | W.L.L.<br>[kg] | Test Force<br>[kN] | Breaking<br>Force<br>[kN] min. | Standard               | Chain Diameter |              | Pitch<br>Tolerance<br>[mm] | Width       |                             | Weight<br>app.<br>[kg] |                             |
|--------------------|-------------------------------|-----------------------|----------------|--------------------|--------------------------------|------------------------|----------------|--------------|----------------------------|-------------|-----------------------------|------------------------|-----------------------------|
|                    |                               |                       |                |                    |                                |                        | d<br>[mm]      | Tol.<br>[mm] |                            | t<br>[mm]   | b <sub>1</sub> min.<br>[mm] |                        | b <sub>2</sub> max.<br>[mm] |
| 2x12               | Z02607                        | TWN 0084              | -              | -                  | -                              | DIN 5685 <sup>1)</sup> | 2              | ± 0.10       | 12                         | +0.6 / -0.6 | 3.6                         | -                      | 0.02                        |
| 2x22               | Z02587                        | TWN 0084              | -              | -                  | -                              | DIN 5685 <sup>1)</sup> | 2              | ± 0.10       | 22                         | +1.1 / -1.1 | 3.6                         | -                      | 0.02                        |
| 3x16               | Z02658                        | TWN 0084              | -              | -                  | -                              | DIN 5685 <sup>1)</sup> | 3              | ± 0.15       | 16                         | +0.8 / -0.8 | 5.4                         | -                      | 0.05                        |
| 3x26               | Z02485                        | TWN 0084              | -              | -                  | -                              | DIN 5685 <sup>1)</sup> | 3              | ± 0.15       | 26                         | +1.3 / -1.3 | 5.4                         | -                      | 0.04                        |
| 4x16               | Z02604                        | TWN 0083              | 200            | 5                  | 8                              | DIN 766                | 4              | ± 0.20       | 16                         | +0.3 / -0.2 | 4.8                         | 13.6                   | 0.09                        |
| 4x19               | Z02634                        | TWN 0084              | -              | -                  | -                              | DIN 5685 <sup>1)</sup> | 4              | ± 0.20       | 19                         | +1.0 / -1.0 | 7.2                         | -                      | 0.09                        |
| 4x32               | Z02824                        | TWN 0082              | 100            | 2.5                | 6                              | DIN 763 <sup>1)</sup>  | 4              | ± 0.20       | 32                         | +1.0 / -1.0 | 7.2                         | 16.8                   | 0.08                        |
| 5x18.5             | Z02484                        | TWN 0083              | 320            | 8                  | 13                             | DIN 766                | 5              | ± 0.20       | 18.5                       | +0.4 / -0.2 | 6.0                         | 17.0                   | 0.16                        |
| 5x21               | Z02743                        | TWN 0084              | -              | -                  | -                              | DIN 5685 <sup>1)</sup> | 5              | ± 0.25       | 21                         | +1.1 / -1.1 | 9.0                         | -                      | 0.15                        |
| 5x35               | Z02515                        | TWN 0082              | 160            | 4                  | 10                             | DIN 763 <sup>1)</sup>  | 5              | ± 0.25       | 35                         | +1.1 / -1.1 | 9.0                         | 21.0                   | 0.13                        |
| 6x18.5             | Z02633                        | TWN 0083              | 400            | 10                 | 16                             | DIN 766                | 6              | ± 0.20       | 18.5                       | +0.4 / -0.2 | 7.2                         | 20.4                   | 0.24                        |
| 6x42               | Z02593                        | TWN 0082              | 200            | 5                  | 12.5                           | DIN 763 <sup>1)</sup>  | 6              | ± 0.20       | 42                         | +1.3 / -1.3 | 10.8                        | 25.2                   | 0.18                        |
| 7x22               | Z02710                        | TWN 0083              | 630            | 16                 | 25                             | DIN 766                | 7              | ± 0.30       | 22                         | +0.4 / -0.2 | 8.4                         | 23.8                   | 0.32                        |
| 8x24               | Z02483                        | TWN 0083              | 800            | 20                 | 32                             | DIN 766                | 8              | ± 0.30       | 24                         | +0.4 / -0.2 | 9.6                         | 27.2                   | 0.43                        |
| 8x52               | Z02530                        | TWN 0082              | 400            | 10                 | 25                             | DIN 763 <sup>1)</sup>  | 8              | ± 0.30       | 52                         | +1.6 / -1.6 | 14.4                        | 33.6                   | 0.33                        |
| 10x28              | Z02548                        | TWN 0083              | 1250           | 32                 | 50                             | DIN 766                | 10             | ± 0.40       | 28                         | +0.5 / -0.3 | 12.0                        | 36.0                   | 0.69                        |
| 13x36              | Z02662                        | TWN 0083              | 2000           | 50                 | 80                             | DIN 766                | 13             | ± 0.50       | 36                         | +0.6 / -0.3 | 15.6                        | 47.0                   | 1.18                        |
| 13x82              | Z02631                        | TWN 0082              | 1000           | 25                 | 63                             | DIN 763 <sup>1)</sup>  | 13             | ± 0.50       | 82                         | +2.5 / -2.5 | 23.4                        | 54.6                   | 0.90                        |
| 16x45              | Z02711                        | TWN 0083              | 3200           | 40                 | 128                            | DIN 766                | 16             | ± 0.60       | 45                         | +0.8 / -0.4 | 19.2                        | 58.0                   | 0.87                        |

| Dimensions<br>[mm] | Art.-No.<br>Grade<br>AISI 3/6 | Plant Standard<br>TWN | W.L.L.<br>[kg] | Test Force<br>[kN] | Breaking<br>Force<br>[kN] min. | Standard              | Chain Diameter |              | Pitch<br>Tolerance<br>[mm] | Width       |                             | Weight<br>per foot<br>[kg] |                             |
|--------------------|-------------------------------|-----------------------|----------------|--------------------|--------------------------------|-----------------------|----------------|--------------|----------------------------|-------------|-----------------------------|----------------------------|-----------------------------|
|                    |                               |                       |                |                    |                                |                       | d<br>[mm]      | Tol.<br>[mm] |                            | t<br>[mm]   | b <sub>1</sub> min.<br>[mm] |                            | b <sub>2</sub> max.<br>[mm] |
| 5x18.5             | F00050                        | TWN 0083              | 320            | 8                  | 13                             | DIN 766               | 5              | ± 0.20       | 18.5                       | +0.4 / -0.2 | 6.0                         | 17.0                       | 0.51                        |
| 6x18.5             | F00075                        | TWN 0083              | 400            | 10                 | 16                             | DIN 766               | 6              | ± 0.20       | 18.5                       | +0.4 / -0.2 | 7.2                         | 20.4                       | 0.79                        |
| 7x22               | F000791                       | TWN 0083              | 630            | 16                 | 25                             | DIN 766               | 7              | ± 0.30       | 22                         | +0.4 / -0.2 | 8.4                         | 23.8                       | 1.06                        |
| 8x24               | F00163                        | TWN 0083              | 800            | 20                 | 32                             | DIN 766               | 8              | ± 0.30       | 24                         | +0.4 / -0.2 | 9.6                         | 27.2                       | 1.41                        |
| 10x28              | F00285                        | TWN 0083              | 1250           | 32                 | 50                             | DIN 766               | 10             | ± 0.40       | 28                         | +0.5 / -0.3 | 12.0                        | 36.0                       | 2.28                        |
| 10x65              | F01138                        | TWN 0082              | 630            | 16                 | 25                             | DIN 763 <sup>1)</sup> | 10             | ± 0.50       | 65                         | +2.0 / -2.0 | 18.0                        | 42.0                       | 1.68                        |
| 13x36              | F00385                        | TWN 0083              | 2000           | 50                 | 80                             | DIN 766               | 13             | ± 0.50       | 36                         | +0.6 / -0.3 | 15.6                        | 47.0                       | 3.87                        |
| 13x82              | F01154                        | TWN 0082              | 1000           | 25                 | 40                             | DIN 763 <sup>1)</sup> | 13             | ± 0.50       | 82                         | +2.5 / -2.5 | 23.4                        | 54.6                       | 2.87                        |
| 16x45              | F00485                        | TWN 0083              | 3200           | 80                 | 128                            | DIN 766               | 16             | ± 0.60       | 45                         | +0.8 / -0.4 | 19.2                        | 58.0                       | 5.82                        |

| Dimensions<br>[mm] | Art.-No.<br>Grade<br>DUPLEX | Plant Standard<br>TWN | W.L.L.<br>[kg] | Test Force<br>[kN] | Breaking<br>Force<br>[kN] min. | Standard              | Chain Diameter |              | Pitch<br>Tolerance<br>[mm] | Width       |                             | Weight<br>per foot<br>[kg] |                             |
|--------------------|-----------------------------|-----------------------|----------------|--------------------|--------------------------------|-----------------------|----------------|--------------|----------------------------|-------------|-----------------------------|----------------------------|-----------------------------|
|                    |                             |                       |                |                    |                                |                       | d<br>[mm]      | Tol.<br>[mm] |                            | t<br>[mm]   | b <sub>1</sub> min.<br>[mm] |                            | b <sub>2</sub> max.<br>[mm] |
| 5x18.5             | F00077                      | TWN 0083              | 560            | 14                 | 22                             | DIN 766               | 5              | ± 0.20       | 18.5                       | +0.4 / -0.2 | 6.0                         | 17.0                       | 0.51                        |
| 6x18.5             | F00079                      | TWN 0083              | 800            | 20                 | 32                             | DIN 766               | 6              | ± 0.20       | 18.5                       | +0.4 / -0.2 | 7.2                         | 20.4                       | 0.79                        |
| 7x22               | F00080                      | TWN 0083              | 1100           | 28                 | 44                             | DIN 766               | 7              | ± 0.30       | 22                         | +0.4 / -0.2 | 8.4                         | 23.8                       | 1.06                        |
| 8x24               | F00165                      | TWN 0083              | 1400           | 35                 | 55                             | DIN 766               | 8              | ± 0.30       | 24                         | +0.4 / -0.2 | 9.6                         | 27.2                       | 1.41                        |
| 10x28              | F00284                      | TWN 0083              | 2200           | 54                 | 87                             | DIN 766               | 10             | ± 0.40       | 28                         | +0.5 / -0.3 | 12.0                        | 36.0                       | 2.28                        |
| 10x65              | F01144                      | TWN 0082              | 1200           | 30                 | 48                             | DIN 763 <sup>1)</sup> | 10             | ± 0.50       | 65                         | +2.0 / -2.0 | 18.0                        | 42.0                       | 1.68                        |
| 13x36              | F00388                      | TWN 0083              | 3800           | 95                 | 150                            | DIN 766               | 13             | ± 0.50       | 36                         | +0.6 / -0.3 | 15.6                        | 47.0                       | 3.87                        |
| 13x82              | F01145                      | TWN 0082              | 2000           | 50                 | 80                             | DIN 763 <sup>1)</sup> | 13             | ± 0.50       | 82                         | +2.5 / -2.5 | 23.4                        | 54.6                       | 2.87                        |
| 16x45              | F004651                     | TWN 0083              | 5800           | 145                | 230                            | DIN 766               | 16             | ± 0.60       | 45                         | +0.8 / -0.4 | 19.2                        | 58.0                       | 5.82                        |



Stainless Steel Chains are mostly used in environmental processes with corrosive or aggressive influences, which one will find e.g. in the chemical industry, food industry, medical and pharmaceutical industries and ship building and/or ships. Due to their high value finish they will also find applications in architecture.

The materials 1.4401 (V4A), 1.4571 (V4A) and 1.4462 (DUPLEX) distinguish themselves through their corrosion resistance and mechanical qualities. The material 1.4571 differs to material 1.4401 due to the addition of Titan through a higher resistance against intergranular corrosion (EN10088-3, Tab. 10).

The corrosion resistance is classified by the PRE number (Pitting Resistance Equivalent) as per standard VG81249.

The tables show that the material DUPLEX is especially useful for a high resistance in sea water. In particular, for the higher resistance in environments with high chlorinate ion concentrations and higher temperatures, which one can find e.g. in the Southern Sea or Mediterranean areas. The higher strength of up to 30% at the same time has the advantage of lower weight when selecting chains.

Consequently, this material has an outstanding capability for all purposes, especially as anchor chains (better distribution in the chain box) or for conveying systems (better gliding).

| material            | PRE No.       |
|---------------------|---------------|
| AISI 301 (1.4301)   |               |
| AISI 316 (1.4401)   | 23.10 – 26.75 |
| AISI 316Ti (1.4571) | 23.10 – 28,50 |
| DUPLEX              | 30.85 – 38.07 |

as per VG 81249

| PRE No. | Highest temperature for resistance in salt water |
|---------|--|
| 35      | F 140 (60°C)                                     |
| 30      | F 104 (40°C)                                     |
| 24      | F 77 (25°C)                                      |
| 20      | F 59 (15°C)                                      |
| 15      | F 32 (0°C)                                       |



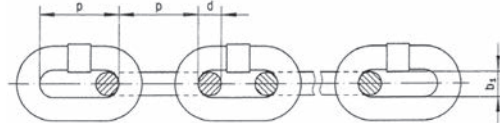
## Chains for Fishing Industry TWN 0081

### Field of application

Twist resistant round steel chains of this data sheet are used for all methods of commercial fishing. The geometrical dimensions match the corresponding type of trawl nets.

Type ML = mid link

Type LL = long link



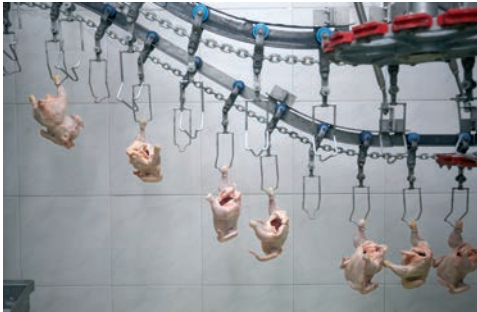
| Dim.<br>[mm] [inch]                | Type | Part-No. | diameter<br>d |         | pitch<br>p |         | inside width b <sub>1</sub> |        | proof<br>force<br>min.<br>[kN] | breaking<br>force<br>min.<br>[kN] | weight<br>[lbs/m] |  |
|------------------------------------|------|----------|---------------|---------|------------|---------|-----------------------------|--------|--------------------------------|-----------------------------------|-------------------|--|
|                                    |      |          | [inch]        | [inch]  | [inch]     | [inch]  | [inch]                      | [inch] |                                |                                   |                   |  |
| <b>Chains for Fishing Industry</b> |      |          |               |         |            |         |                             |        |                                |                                   |                   |  |
| 10 x 40 3/8                        | ML   | F02881   | 3/8           | ±0.015  | 1.576      | ±0.047  | 0.531                       | 0.591  | 63                             | 126                               | 0.375             |  |
| 13 x 55 1/2                        | ML   | F02877   | 1/2           | ±0.019  | 2.167      | ±0.067  | 0.690                       | 0.788  | 107                            | 214                               | 0.433             |  |
| 13 x 81 1/2                        | LL   | F02873   | 1/2           | ±0.019  | 3.191      | ±0.095  | 0.690                       | 0.788  | 107                            | 214                               | 0.556             |  |
| 16 x 64 5/8                        | ML   | F02875   | 5/8           | ±0.023  | 2.522      | ±0.075  | 0.847                       | 0.946  | 161                            | 322                               | 0.443             |  |
| 16 x 100 5/8                       | LL   | F02876   | 5/8           | ±0.023  | 3.940      | ±0.118  | 0.847                       | 0.946  | 161                            | 322                               | 0.842             |  |
| 19 x 76 3/4                        | ML   | F02872   | 3/4           | ±0.0394 | 2.994      | ±0.091  | 1.004                       | 1.123  | 227                            | 454                               | 1.300             |  |
| 19 x 100 3/4                       | LL   | F02874   | 3/4           | ±0.0394 | 3.940      | ±0.118  | 1.004                       | 1.123  | 227                            | 454                               | 0.564             |  |
| 22 x 88 7/8                        | ML   | F02878   | 7/8           | ±0.043  | 3.467      | ±0.102  | 1.162                       | 1.300  | 305                            | 610                               | 1.836             |  |
| 22 x 110 7/8                       | LL   | F02871   | 7/8           | ±0.043  | 4.334      | ±0.130  | 1.162                       | 1.300  | 305                            | 610                               | 1.684             |  |
| 26 x 140 1                         | LL   | F02891   | 1             | ±0.051  | 5.516      | ±0.165  | 1.394                       | 1.674  |                                | 850                               | 2.297             |  |
| 28 x 150 1 1/8                     | LL   | F02879   | 1 1/8         | ±0.055  | 5.910      | ±0.1773 | 1.514                       | 1.942  |                                | 986                               | 2.281             |  |

Type ML = Mid Link  
Type LL = Long Link

### Specifications

- Standard finish black dipped
- Elongation at break min. 15%
- Tensile strength 1100-1255N/mm<sup>2</sup>
- Material according to EN818-2
- Embossed "KWS-8", "Germany", and identification code
- Not for overhead lifting

## Special Conveyor Chains for Poultry Industry



**Application:** Chicken-Slaughterhouses.

### Technical properties:

#### Calibrated Round Steel Chain



|                          |                                      |
|--------------------------|--------------------------------------|
| <b>Dimension:</b>        | <b>8 x 25.4 mm</b>                   |
| <b>Outside width:</b>    | max. 26.1 mm                         |
| <b>Hardening depth:</b>  | min. 0.6 – 1.0 mm, at min. 550 HV    |
| <b>Measuring length:</b> | 11 x p = 279.4 mm $\pm_{-0.4}^{0.6}$ |
| <b>Surface hardness:</b> | min. 720 – 800 HV 10                 |
| <b>Breaking force:</b>   | min. 40 kN                           |
| <b>Finish:</b>           | electro galvanized                   |
| <b>Marking:</b>          | THIELE quality brand mark "T3"       |
| <b>Weight per meter:</b> | app. 1.32 kgs                        |
| <b>Art-No.:</b>          | F06460                               |

#### Chain connecting link



|                          |                                |
|--------------------------|--------------------------------|
| <b>Dimension:</b>        | <b>8 x 25.4 mm</b>             |
| <b>Outside width:</b>    | max. 26.1 mm                   |
| <b>Hardening depth:</b>  | min. 0.6 – 1.0 mm              |
| <b>Surface hardness:</b> | min. 720 – 800 HV 10           |
| <b>Breaking force:</b>   | min. 25 kN                     |
| <b>Finish:</b>           | electro galvanized             |
| <b>Marking:</b>          | THIELE quality brand mark "T3" |
| <b>Weight per piece:</b> | app. 0.04 kgs                  |
| <b>Art-No.:</b>          | F42077                         |



## Manual Instructions (European)

### WARNING!

- Sling Chains and Components can only be used, if user instructions and operating instructions have been read carefully and are completely understood.
- The indicated values of loads on the I.D. tags must not be exceeded.
- Due to improper use, chains can fail.

**IT'S A QUESTION OF YOUR SAFETY**  
**Death or injury can occur from improper use or maintenance!**

#### 1. Transport and Storing

All products must be protected during transportation, use, and storage in severe weather conditions.

#### 2. Before first use

Assembling, disassembling and using should only be accomplished by authorized persons as per BGR 500, Chapter 2.8 (in Germany) Check the following points before using the chain sling for the first time:

- all test certificates exist (declaration of conformity, inspection certificate 3.1.B etc.); the chain sling you are going to use is the same that you ordered
- Slings Chains and Tensioning Chains are provided with the CE label
- identification and working load limit marked on the chain sling are identical to the corresponding information indicated on the test certificate; all details concerning the chain sling have been entered into the chain card file
- The mounting is prohibited until it has been found out, that the machine in which it should be built in, corresponds with the EC Directive for machines and its amendments (European rules and regulations).
- In suitable intervals, check the chain sling for damages or wear (depending upon severity of conditions slings shall be inspected for damage as frequently as prior to each lift. All supplied user instructions must be maintained and available for reference until the product is removed from service.

#### 3. Warning and use advice

- EC Directive for Machines and its amendments as per 89/392/EWG
- Operation and use instructions for sling chains as per DIN 685 - Part 5 -EN818 -6.
- Consult safety regulations for round steel chains used as slinging gear in hot dipped galvanizing plants (german rules and regulations) as per BGR 150
- Consult Safety Regulations for Cranes as per BGV D 6
- Consult load Suspension Devices for Lifting Operations (german rules and safety regulations) as per BGR 500, Chapter 2.8
- Consult Safety certificate for riggers as per BGI 556
- Consult components for sling chains as per EN 1677-2
- Consult principles for test of industrial safety of lifting products
- Consult slinging of rod iron using steel round steel chains when loading and unloading sea-going ships
- Consult German rules and regulations VDI

2700-2701-2702

Special Components, hooks and clutching devices should only be used in straight tensile direction

#### Especially forbidden is:

- the combination of different grades when assembling (except tongs)
- the use of chain slings which do not correspond with grade 100 or grade 80
- overloading
- to use a combination of products with different working load limits, unless the working load noted on the I.D. tag is based on the weakest component.
- the use of twisted or knotted chains
- to use bolts or wires to connect components
- to use deformed components, rigid or elongated chains
- to lift or pull loads with sharp edges without padding the edges
- to drive equipment over chain sling
- to wrap a chain around a loadhook or tension point multiple times
- to modify products by welding, burning, bending or other mechanical modifications
- to make inadmissible modifications, e.g. the use of a 2-leg sling chain with shortening hooks as a 4-leg sling chain
- to tip load a hook into a chain link
- to apply the load on the tip, side or back of the hook
- to load connectors (XL-Loks) at one side
- to adjust chain links or products
- to adapt inclination over 30°
- to turn swivels or swivel hooks under load
- to weld transport ring screw type lifting eyes
- to exceed the indicated grip on lifting tongs
- the use of open or riveted repair links

#### It must be taken into consideration:

**In the event that THIELE Chain and Components are used in an automated process, all parts should be designed correspondingly larger and inspected at more frequent intervals!**

- the load to be lifted
- the free mobility of the hook's safety latches
- the use under chemical influences for example acids and steam is restricted or prohibited
- the influence of temperature on alloy chain and components
- shock load impacts the chain or fitting while lifting or securing
- any type of surface treatment to chain or fittings especially of hot dipped galvanizing can only be carried out by the manufacturer
- when lifting keep hands and other parts of body far away from the components
- be careful when locking hooks under load Danger of injury!
- when not in use sling chains must be hung on a rack
- ensure free mobility of chain slings or other devices in the crane hook
- when using hooks without latches pay special attention to the position of the hook placement
- to the installation position
- if necessary protect screw tensioners by locking elements to prevent automatic unlocking

- load claws with chains only on the bottom of the pocket claws
- protect chain by padding or wrapping sharp edges
- Safety latches should not be obstructed when hooks are loaded
- in case of shortening hooks, load chains must be loaded in the bowl of the hook
- hook openings must point away from the load being lifted
- that the hook up point and lifting hooks are compatible
- also be sure that the lifting components are suitable for the application
- do not sit loads on the chain sling
- reduction of working load limits is necessary when making lifts at severe angles
- consult charts when using alloy chain at extreme temperatures
- working load limits must be reduced when using endless and basket slings
- extreme caution should be used when using hooks for lifting molten metal or chemicals
- chain slings shall be loaded properly to avoid damage to chain and load
- keep personnel away from loads being lifted

#### 4. Maintenance and tests

- The chain sling must be visually inspected before use. If damage is found, you must consult a chain expert as per VG9a.
- The product must be removed from service if the following damage is found:
  - unreadable tags
  - breaks or deformation
  - cuts, notches, grooves or cracks
  - strong corrosion
  - heating over the admissible temperature allowed
  - elongation of chain must not exceed 5% of manufacturer's published size
  - elongation of the overall chain length shall not exceed 5 %
  - to determine wear rejection on the diameter of a link, you must measure the horizontal and the vertical and reject if reduction is more than 10%.
  - reject hooks if throat opening is opened greater than 10% of new hook or the safety latch does not seat properly
  - wear of hook eye or hook body exceed 5 %
  - missing or damaged safety latch of the hook or shortening component
  - incorrect screw replacement on lifting eyes
  - incorrect or damaged bolts or turn off locking

**Don't repair chain slings yourself unless fully trained. Please contact the manufacturer or a repair expert. Use only original spare parts from THIELE.**

#### 5. Regular inspections

Regular inspection shall include measurement and visual inspection and should be carried out once each year at minimum. Each third year inspection must include the crack detection (magna flux).

On a new chain, you must set up chain card index that shall contain a description of the chain as well as the identity of the certificate. The inspection schedule must be fixed. The condition of sling chains or tensioning chains and their accessories must be noted at each inspection. If damage is repaired, all repairs and details must be noted on the chain card.





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## Conversion Factors

| Convert from: | Multiply by:               | Convert to: |
|---------------|----------------------------|-------------|
| Kilograms     | 2.204                      | Pounds      |
| Metric Tons   | 2204.62                    | Pounds      |
| Pounds        | 0.453                      | Kilograms   |
| Metric Tons   | 1000                       | Kilograms   |
| U.S. Tons     | 0.972                      | Metric Tons |
| Metric Tons   | 1.102                      | U.S. Tons   |
| Celsius       | 9/5 (then add 32)          | Fahrenheit  |
| Fahrenheit    | 5/9 (after subtracting 32) | Celsius     |
| Millimeters   | 0.0394                     | Inches      |
| Meters        | 3.28                       | Feet        |
| Inches        | 25.4                       | Millimeters |
| Inches        | 2.54                       | Centimeters |
| Centimeters   | 0.39                       | Inches      |
| Feet          | 0.30                       | Meters      |
| Yards         | 0.9144                     | Meters      |
| Meters        | 1.09                       | Yards       |
| Miles         | 1.61                       | Kilometers  |
| Kilometers    | 0.62                       | Miles       |

## Decimal and Metric Conversion Table

| Fractional Equivalent<br>(in.) | Decimal Equivalent<br>(in.) | Metric Equivalent<br>(mm) | Fractional Equivalent<br>(in.) | Decimal Equivalent<br>(in.) | Metric Equivalent<br>(mm) |
|--------------------------------|-----------------------------|---------------------------|--------------------------------|-----------------------------|---------------------------|
| 1/64                           | 0.0156                      | 0.397                     | 33/64                          | 0.5156                      | 13.097                    |
| 1/32                           | 0.0312                      | 0.794                     | 17/32                          | 0.5312                      | 13.494                    |
| 3/64                           | 0.0469                      | 1.191                     | 35/64                          | 0.5469                      | 13.891                    |
| 1/16                           | 0.0625                      | 1.588                     | 9/16                           | 0.5625                      | 14.288                    |
| 5/64                           | 0.0781                      | 1.984                     | 37/64                          | 0.5781                      | 14.684                    |
| 3/32                           | 0.0938                      | 2.381                     | 19/32                          | 0.5938                      | 15.081                    |
| 7/64                           | 0.1094                      | 2.778                     | 39/64                          | 0.6094                      | 15.478                    |
| 1/8                            | 0.1250                      | 3.175                     | 5/8                            | 0.6250                      | 15.875                    |
| 9/64                           | 0.1406                      | 3.572                     | 41/64                          | 0.6406                      | 16.272                    |
| 5/32                           | 0.1562                      | 3.969                     | 21/32                          | 0.6562                      | 16.669                    |
| 11/64                          | 0.1719                      | 4.366                     | 43/64                          | 0.6719                      | 17.065                    |
| 3/16                           | 0.1875                      | 4.762                     | 11/16                          | 0.6875                      | 17.462                    |
| 13/64                          | 0.2031                      | 5.159                     | 45/64                          | 0.7031                      | 17.859                    |
| 7/32                           | 0.2188                      | 5.556                     | 23/32                          | 0.7188                      | 18.256                    |
| 15/64                          | 0.2344                      | 5.953                     | 47/64                          | 0.7344                      | 18.653                    |
| 1/4                            | 0.2500                      | 6.350                     | 3/4                            | 0.7500                      | 19.050                    |
| 17/64                          | 0.2656                      | 6.747                     | 49/64                          | 0.7656                      | 19.447                    |
| 9/32                           | 0.2812                      | 7.144                     | 25/32                          | 0.7812                      | 19.844                    |
| 19/64                          | 0.2969                      | 7.541                     | 51/64                          | 0.7969                      | 20.241                    |
| 5/16                           | 0.3125                      | 7.938                     | 13/16                          | 0.8125                      | 20.638                    |
| 21/64                          | 0.3281                      | 8.334                     | 53/64                          | 0.8281                      | 21.034                    |
| 11/32                          | 0.3438                      | 8.731                     | 27/32                          | 0.8438                      | 21.431                    |
| 23/64                          | 0.3594                      | 9.128                     | 55/64                          | 0.8594                      | 21.828                    |
| 3/8                            | 0.3750                      | 9.525                     | 7/8                            | 0.8750                      | 22.225                    |
| 25/64                          | 0.3906                      | 9.922                     | 57/64                          | 0.8906                      | 22.622                    |
| 13/32                          | 0.4062                      | 10.319                    | 29/32                          | 0.9062                      | 23.019                    |
| 27/64                          | 0.4219                      | 10.716                    | 29/64                          | 0.9219                      | 23.416                    |
| 7/16                           | 0.4375                      | 11.112                    | 15/16                          | 0.9375                      | 23.812                    |
| 29/64                          | 0.4531                      | 11.509                    | 61/64                          | 0.9531                      | 24.209                    |
| 15/32                          | 0.4688                      | 11.906                    | 31/32                          | 0.9688                      | 24.606                    |
| 31/64                          | 0.4844                      | 12.303                    | 63/64                          | 0.9844                      | 25.003                    |
| 1/2                            | 0.5000                      | 12.700                    | 1                              | 1.0000                      | 25.400                    |



*A member of the THIELE-Group*

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