

Content

Star Alloy Grade 100

17

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Advantages of Star Alloy G 100

- Safe:** with the violet signal colour no risk of confusion with G 80
- Durability:** higher wear resistance due to increased hardness
- Simple:** easily adjustable with multi-function shortening hook
- Traceability:** appropriate marking on chains & components
- Quality:** ISO 9001 certified company
- Reliability:** Decades of experience
- Strong:** 25 % higher load capacity than G 80 allows the transition to smaller chain diameters

e.g. 2-leg chain slings

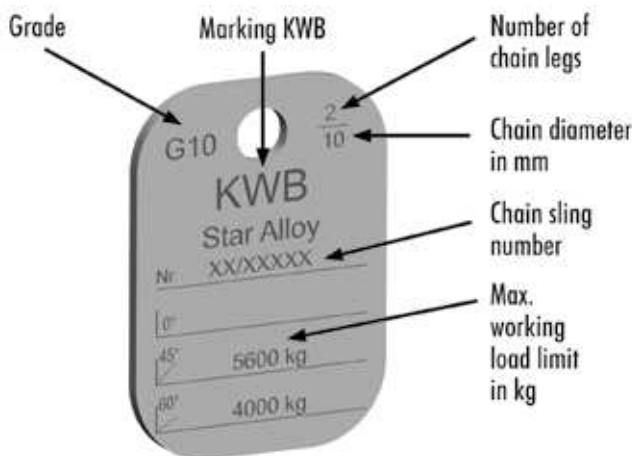
| Working Load Limit kg | Previous Chain – Ø G 80 mm | Star Alloy-Chain – Ø mm |
|-----------------------|----------------------------|-------------------------|
| 3,550 | 10 | 8 |
| 5,600 | 13 | 10 |
| 9,000 | 16 | 13 |

Light: with smaller chain dimensions considerable weight reduction compared to G-80, easier handling

e.g. with 2-leg chain slings 3 m length

| Working Load Limit kg | Previous Chain Weight G 80 mm | Star Alloy-Chain Weight kg |
|-----------------------|-------------------------------|----------------------------|
| 3,550 | 16.2 | 11.0 |
| 5,600 | 27.6 | 17.6 |
| 9,000 | 42.2 | 29.6 |

Clear Identification





Sample of tag for ready made chain sling

Certificate

A test certificate is issued for all our products which certifies all the specified characteristics.






Star Alloy G 100 – Characteristics

| | | | |
|---|--|---------------|--|
| Chain Quality: | Star Alloy | SA/S | Corresponds with ASTM A973/A973M-01 & EN 818-2 but with higher working load limit (permissible operating temperature max. 200° C) & machinery directive 2006/42/EC |
| | Star Alloy Plus PAS | SAPP/S | Corresponds with PAS 1061 & machinery directive 2006/42/EC |
| | Star Alloy Plus + | SAP/S | Corresponds with EN 818-2 with a higher load capacity & machinery directive 2006/42/EC |
| Stress at Load Capacity Limit: | 250 N/mm ² | | |
| Test Stress: | 625 N/mm ² corresponds to 2.5 times the load capacity | | |
| Breaking Stress: | 1,000 N/mm ² corresponds to 4 times the load capacity | | |
| Breaking Elongation: | min. 20 % | | |
| Bending acc. to PAS 1061/EN 818-2: | 0.8 x nominal diameter | | |
| Permissible Working Temperature: | Star Alloy | SA/S | max. 200 °C |
| | Star Alloy Plus + | SAP/S | max. 380 °C |
| | Star Alloy Plus PAS | SAPP/S | max. 380 °C |
| | Components | | max. 380 °C |
| Grade Marking: | Star Alloy | SA/S | 10 at a spacing of approx. 300 mm up to dim. 16 (others 900 mm) and 10 on the back of each link |
| | Star Alloy Plus + | SAP/S | 8S at a spacing of approx. 900 mm up from dim. 19 |
| | Star Alloy Plus PAS | SAPP/S | 10 at a spacing of approx. 300 mm up to dim. 16 |
| | Components | | 10 (some components are still marked with 8S) |
| Surface: | Star Alloy | SA/S | Purple varnished |
| | Star Alloy Plus + | SAP/S | Violet varnished |
| | Star Alloy Plus PAS | SAPP/S | Violet varnished |
| | Components | | Violet powder coated |
| Working Load Tag: | Star Alloy | |  |
| | Star Alloy Plus PAS/ Star Alloy Plus + | |  |

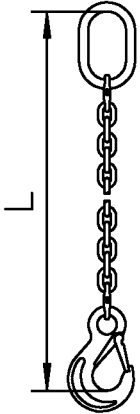
All the required data is shown on the working load tag.

Note: Working load tags should only be assembled acc. EN 818-4 and by competent persons. Working load tags can be used solely when the particular chain & KWB components are assembled in the chain sling. Should alternative Working load limits arise in the chain sling through the use of special parts, the tags are impermissible. Disregard of these instructions can lead to material damage and personal injury. KWB will not assume liability.

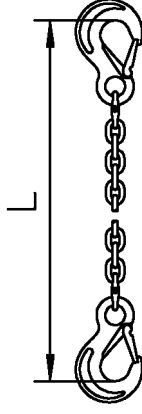
The performance concerning stress crack corrosion is identical to G 80.

| Temperature | -40° to 200 °C | above 200° to 300 °C | above 300° to 380 °C |
|---|--|--|---|
| Load Factor Star Alloy | 1 | impermissible | impermissible |
| Load Factor Star Alloy Plus+/PAS | 1 | 0.9 | 0.75 |
| Asymmetric Load Distribution | In this case the working load limit must be reduced by at least one chain leg, for example a 3-leg or 4-leg sling is to be classified as a 2-leg chain sling. In case of doubt, it must be supposed that only one of the chain legs carries the entire load. | | |
| Edge Loads | R = larger than 2x chain Ø  | R = larger than chain Ø  | R = chain Ø or smaller  |
| Load Factor | 1 | 0.7 | 0.5 |
| Impact Load | slight impact | medium impact | strong impact |
| Load Factor | 1 | 0.7 | impermissible |

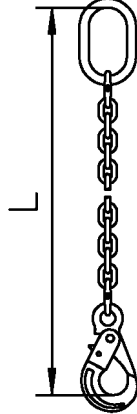
Sling Examples



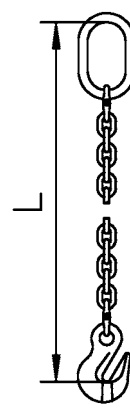
I A/S-HS/S V/S



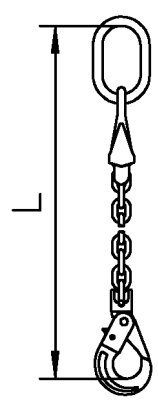
I HS/S-HS/S V/S



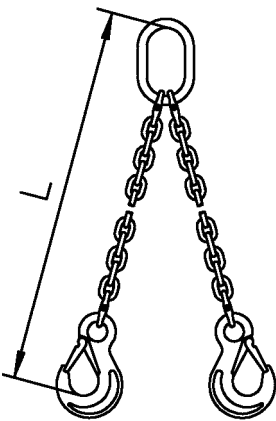
I A/S-HSB/S V/S



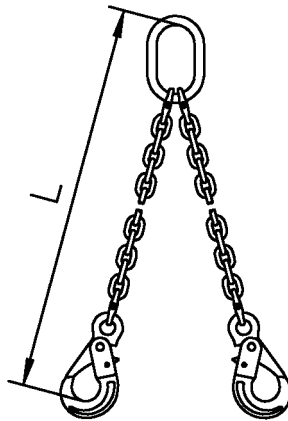
I A/S-P/S V/S



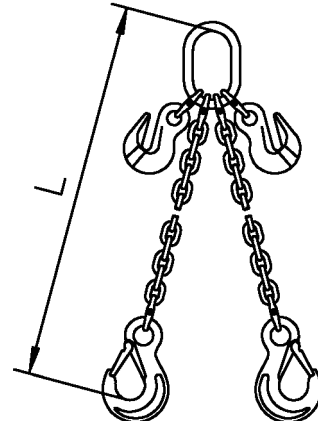
I GTVK/S-HKSB/S



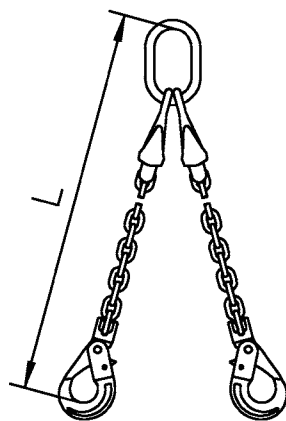
II A/S-HS/S V/S



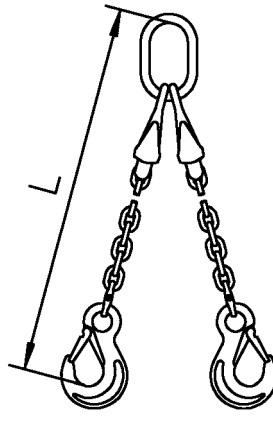
II A/S-HSB/S V/S



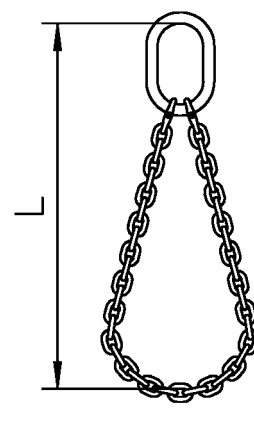
II A/S-HS/S-P/S V/S



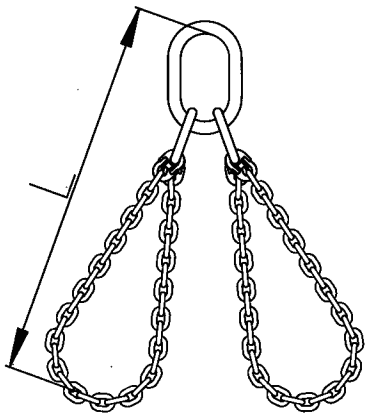
II GTVK/S-HKSB/S



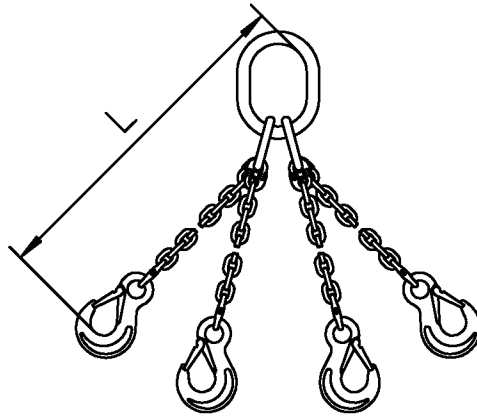
II GTVK/S-HS/S V/S



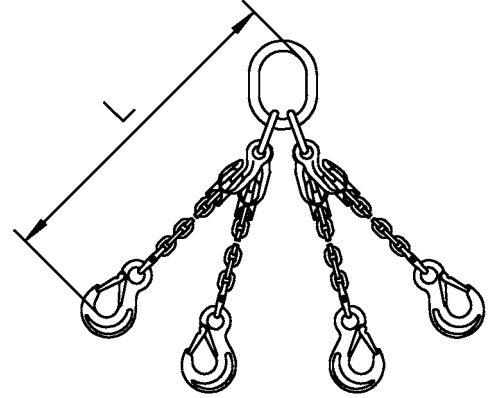
II A/S-S V/S



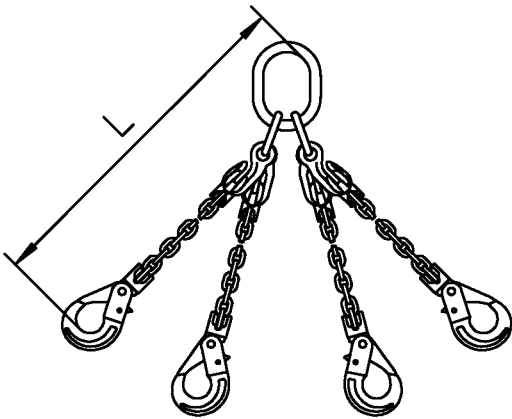
IV G/S-S V/S



IV G/S-HS/S V/S



IV GTVK/S-HS/S V/S



IV GTVKS/S-HKSB/S

Example of Order Text:

Chain Star Alloy SA/S 10 mm, 2 legs with Masterlink A/S and Eye Sling Hook with Forged Safety Latch HS/S, length 3,000 mm assembled with Connecting Link V/S.

SA/S 10 II A/S - HS/S 3000 V/S

Chain Nominal diameter Number of legs Master Link Hook Length Connecting link

Master Links & Sub-Assemblies 1-leg

| | | | | | |
|--|------|-------------|---------------------|------------------------------|-----------------------------|
| | | | | | |
| Chain Star Alloy Chain Star Alloy Plus PAS Chain Star Alloy Plus + Ø | | Master Link | Special Master Link | Special Master Link Assembly | Special Clevis Sub-Assembly |
| | | A/S | T/S | GL/S | GTVK/S 1 |
| mm | inch | Code | Code | Code | Code |
| 6 | 1/4 | A/S 13 | T/S 13 | | GTVK/S 1-6 |
| 7 | 9/32 | A/S 13 | T/S 13 | | GTVK/S 1-7 |
| 8 | 5/16 | A/S 16 | T/S 16 | | GTVK/S 1-8 |
| 10 | 3/8 | A/S 18 | T/S 18 | GL/S 1-10 | GTVK/S 1-10 |
| 13 | 1/2 | A/S 22 | T/S 22 | GL/S 1-13 | GTVK/S 1-13 |
| 16 | 5/8 | A/S 26 | T/S 26 | GL/S 1-16 | GTVK/S 1-16 |
| 19 | 3/4 | A/S 32 | T/S 32 | GL/S 1-19/22 | |
| 22 | 7/8 | A/S 36 | T/S 36 | GL/S 1-19/22 | |
| 26 | 1 | A/S 45 | | | |
| Page 24 | | Page 25 | Page 25 | Page 26 | Page 27 |

Master Links & Sub-Assemblies 2-leg

| | | | | | |
|--|------|-------------|---------------------|------------------------------|-----------------------------|
| | | | | | |
| Chain Star Alloy Chain Star Alloy Plus PAS Chain Star Alloy Plus + Ø | | Master Link | Special Master Link | Special Master Link Assembly | Special Clevis Sub-Assembly |
| | | A/S | T/S | GL/S | GTVK/S 2 |
| mm | inch | Code | Code | Code | Code |
| 6 | 1/4 | A/S 13 | T/S 13 | GL/S 2-6/7/8/4-6 | GTVK/S 2-6 |
| 7 | 9/32 | A/S 16 | T/S 16 | GL/S 2-6/7/8/4-6 | GTVK/S 2-7 |
| 8 | 5/16 | A/S 18 | T/S 18 | GL/S 2-6/7/8/4-6 | GTVK/S 2-8 |
| 10 | 3/8 | A/S 22 | T/S 22 | GL/S 2-10/4-7/8 | GTVK/S 2-10 |
| 13 | 1/2 | A/S 26 | T/S 26 | GL/S 2-13/4-10 | GTVK/S 2-13 |
| 16 | 5/8 | A/S 32 | T/S 32 | GL/S 2-16/4-13 | GTVK/S 2-16 |
| 19 | 3/4 | A/S 36 | T/S 36 | GL/S 2-19/4-16 | |
| 22 | 7/8 | A/S 45 | | | |
| 26 | 1 | A/S 50 | T/S 56 | | |
| Page 24 | | Page 25 | Page 25 | Page 26 | Page 27 |

Master Links & Sub-Assemblies 3 & 4-leg

| | | | | | | |
|--|------|--------------|----------------------|----------------------|----------------------|-----------------------------|
| | | | | | | |
| Chain Star Alloy Chain Star Alloy Plus PAS Chain Star Alloy Plus + Ø | | Sub-Assembly | Special Sub-Assembly | Special Sub-Assembly | Special Sub-Assembly | Special Clevis Sub-Assembly |
| | | G/S | GT/S | TG/S | GL/S | GTVK/S 4 |
| mm | inch | Code | Code | Code | Code | Code |
| 6 | 1/4 | G/S 6 | GT/S 6 | TG/S 6 | GL/S 2-6/7/8/4-6 | GTVK/S 4-6 |
| 7 | 9/32 | G/S 7/8 | GT/S 7/8 | TG/S 7/8 | GL/S 2-10/4-7/8 | GTVK/S 4-7 |
| 8 | 5/16 | G/S 7/8 | GT/S 7/8 | TG/S 7/8 | GL/S 2-10/4-7/8 | GTVK/S 4-8 |
| 10 | 3/8 | G/S 10 | GT/S 10 | TG/S 10 | GL/S 2-13/4-10 | GTVK/S 4-10 |
| 13 | 1/2 | G/S 13 | GT/S 13 | TG/S 13 | GL/S 2-16/4-13 | GTVK/S 4-13 |
| 16 | 5/8 | G/S 16 | GT/S 16 | TG/S 16 | GL/S 2-19/4-16 | GTVK/S 4-16 |
| 19 | 3/4 | G/S 19/20 | | | | |
| 22 | 7/8 | G/S 22 | | | | |
| 26 | 1 | G/S 26 | | | | |
| Page 24 | | Page 25 | Page 26 | Page 26 | Page 26 | Page 27 |

Connecting & Shortening Elements

| Chain Star Alloy Plus PAS | | Connecting Link | Webbing Coupling Link | Shortening Hook | Eye Grab Hook | Eye Grab Hook with Safety Pin | Clevis Grab Hook |
|---------------------------|------|-----------------|-----------------------|-----------------|---------------|-------------------------------|------------------|
| Chain Star Alloy Plus + Ø | | V/S | RSK/S | VK/S | P/S | PS/S | PK/S |
| mm | inch | Code | Code | Code | Code | Code | Code |
| 6 | 1/4 | V/S 6 | | VK/S 6 | P/S 6 | | PK/S 6 |
| 7 | 9/32 | V/S 7 | | VK/S 7 | P/S 7/8 | PS/S 7/8 | PK/S 7 |
| 8 | 5/16 | V/S 8 | RSK/S 8 | VK/S 8 | P/S 7/8 | PS/S 7/8 | PK/S 8 |
| 10 | 3/8 | V/S 10 | RSK/S 10 | VK/S 10 | P/S 10 | PS/S 10 | PK/S 10 |
| 13 | 1/2 | V/S 13 | RSK/S 13 | VK/S 13 | P/S 13 | PS/S 13 | PK/S 13 |
| 16 | 5/8 | V/S 16 | RSK/S 16 | VK/S 16 | P/S 16 | | PK/S 16 |
| 19 | 3/4 | V/S 19/20 | | | P/S 19/20 | | PK/S 19/20 |
| 22 | 7/8 | V/S 22 | RSK/S 22 | | P/S 22 | | PK/S 22 |
| 26 | 1 | V/S 26 | | | P/S 26 | | |
| Page 24 | | Page 28 | Page 28 | Page 28 | Page 29 | Page 29 | Page 29 |

Sling Hooks

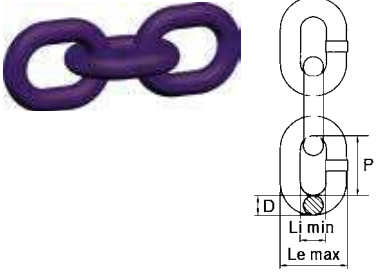
| Chain Star Alloy Plus PAS | | Clevis Sling Hook | Wide Bowl Clevis Sling Hook | Clevis Self Locking Hook | Clevis Foundry Hook | Eye Sling Hook with Forged Safety Latch | Eye Self Locking Hook | Swivel Safety Hook | Foundry Hook |
|---------------------------|------|-------------------|-----------------------------|--------------------------|---------------------|---|-----------------------|--------------------|--------------|
| Chain Star Alloy Plus + Ø | | HKS/S | VHKS/S | HKSB/S | GHK/S | HS/S | HSB/S | WSB/S | GH/S |
| mm | inch | Code | Code | Code | Code | Code | Code | Code | Code |
| 6 | 1/4 | HKS/S 6 | | HKSB/S 6 | | HS/S 6 | HSB/S 6 | WSB/S 6 | |
| 7 | 9/32 | HKS/S 7 | | HKSB/S 7 | | HS/S 7/8 | HSB/S 7/8 | WSB/S 7/8 | GH/S 7/8 |
| 8 | 5/16 | HKS/S 8 | VHKS/S 8 | HKSB/S 8 | GHK/S 8 | HS/S 7/8 | HSB/S 7/8 | WSB/S 7/8 | GH/S 7/8 |
| 10 | 3/8 | HKS/S 10 | VHKS/S 10 | HKSB/S 10 | GHK/S 10 | HS/S 10 | HSB/S 10 | WSB/S 10 | GH/S 10 |
| 13 | 1/2 | HKS/S 13 | | HKSB/S 13 | GHK/S 13 | HS/S 13 | HSB/S 13 | WSB/S 13 | GH/S 13 |
| 16 | 5/8 | HKS/S 16 | | HKSB/S 16 | | HS/S 16 | HSB/S 16 | WSB/S 16 | GH/S 16 |
| 19 | 3/4 | HKS/S 19/20 | | | | HS/S 19/20 | HSB/S 19/20 | | GH/S 19/20 |
| 22 | 7/8 | HKS/S 22 | | | | HS/S 22 | HSB/S 22 | | |
| 26 | 1 | | | | | HS/S 26 | | | |
| Page 24 | | Page 30 | Page 30 | Page 30 | Page 30 | Page 31 | Page 31 | Page 31 | Page 31 |

Special Accessories

| Chain Star Alloy Plus PAS | | Sheet Metal Plate Hook | Ratchet Load Binder |
|---------------------------|------|------------------------|---------------------|
| Chain Star Alloy Plus + Ø | | BH/S | RLS/S |
| mm | inch | Code | Code |
| 6 | 1/4 | | |
| 7 | 9/32 | BH/S 7/8 | |
| 8 | 5/16 | BH/S 7/8 | RLS/S 8 |
| 10 | 3/8 | BH/S 10 | RLS/S 10 |
| 13 | 1/2 | BH/S 13 | RLS/S 13 |
| 16 | 5/8 | BH/S 16 | |
| 19 | 3/4 | BH/S 19/20 | |
| 22 | 7/8 | BH/S 22 | |
| 26 | 1 | | |
| Page 24 | | Page 32 | Page 32 |

Star Alloy Chain and Star Alloy Plus+ /PAS Chain

Chain Star Alloy SA/S – Measurements, Load Values, Weights



| Chain | | Pitch | Li/min. | Le/max. | Weight | Working Load limit | Breaking Load |
|-------|------|-------|---------|---------|--------|--------------------|---------------|
| D | | P | | | | | |
| mm | inch | mm | mm | mm | kg/m | kg | kN |
| 6 | 1/4 | 18 | 8,7 | 22 | 0.96 | 1,400 | 56.5 |
| 7 | 9/32 | 21 | 9,5 | 25 | 1.20 | 1,900 | 77 |
| 8 | 5/16 | 24 | 10,9 | 29 | 1.57 | 2,500 | 101 |
| 10 | 3/8 | 30 | 13,5 | 36 | 2.46 | 4,000 | 157 |
| 13 | 1/2 | 39 | 17,5 | 47 | 4.18 | 6,700 | 265 |
| 16 | 5/8 | 48 | 21,5 | 58 | 6.28 | 10,000 | 402 |
| 19 | 3/4 | 57 | 26,6 | 69 | 8.90 | 14,000 | 567 |
| 22 | 7/8 | 66 | 29,5 | 79 | 11.88 | 19,000 | 760 |
| 26 | 1 | 78 | 35 | 94 | 16.18 | 26,500 | 1,060 |

Chain acc. ASTM A973/A973M-01


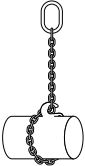
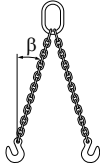

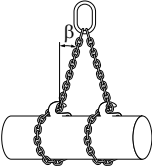
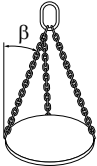
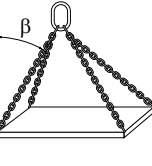
Chain Star Alloy Plus PAS SAPP/S - Chain Star Alloy Plus+ SAP/S – Measurements, Load Values, Weights



| Chain | | Pitch | Li/min. | Le/max. | Weight | Working Load Limit | Breaking Load |
|-------|------|-------|---------|---------|--------|--------------------|---------------|
| D | | P | | | | | |
| mm | inch | mm | mm | mm | kg/m | kg | kN |
| 6 | 1/4 | 18 | 8,7 | 22 | 0.96 | 1,400 | 56.5 |
| 7 | 9/32 | 21 | 9,5 | 25 | 1.20 | 1,900 | 77 |
| 8 | 5/16 | 24 | 10,9 | 29 | 1.57 | 2,500 | 101 |
| 10 | 3/8 | 30 | 13,5 | 36 | 2.46 | 4,000 | 157 |
| 13 | 1/2 | 39 | 17,5 | 47 | 4.18 | 6,700 | 265 |
| 16 | 5/8 | 48 | 21,5 | 58 | 6.28 | 10,000 | 402 |
| 19 | 3/4 | 57 | 26,6 | 69 | 8.90 | 14,000 | 567 |
| 22 | 7/8 | 66 | 29,5 | 79 | 11.88 | 19,000 | 760 |
| 26 | 1 | 78 | 35 | 94 | 16.18 | 26,500 | 1,060 |


Dimension 6 to 16 acc. PAS 1061 (SAPP/S).
Dimension 19 to 26 acc. EN 818-2 with higher working load limit (SAP/S).

Maximum Working Load Limit for Star Alloy Chains


| Safety factor | 1-leg Chains | | 2-leg Chains | | | | 3- and 4-leg Chains | |
|---------------|---|---|---|--|--|---|---|---------|
| 4 |  |  |  |  |  |  |  | |
| | - | - | up to 45° | 45°-60° | up to 45° | 45°-60° | up to 45° | 45°-60° |
| Load Factor | 1 | 0.8 | 1.4 | 1 | 1.12 | 0.8 | 2.1 | 1.5 |
| Ø | Load Capacity [kg] | | | | | | | |
| 6 | 1,400 | 1,120 | 2,000 | 1,400 | 1,600 | 1,120 | 3,000 | 2,120 |
| 7 | 1,900 | 1,500 | 2,650 | 1,900 | 2,120 | 1,500 | 4,000 | 2,800 |
| 8 | 2,500 | 2,000 | 3,550 | 2,500 | 2,800 | 2,000 | 5,300 | 3,750 |
| 10 | 4,000 | 3,150 | 5,600 | 4,000 | 4,250 | 3,150 | 8,000 | 6,000 |
| 13 | 6,700 | 5,300 | 9,500 | 6,700 | 7,500 | 5,300 | 14,000 | 10,000 |
| 16 | 10,000 | 8,000 | 14,000 | 10,000 | 11,200 | 8,000 | 21,200 | 15,000 |
| 19 | 14,000 | 11,200 | 20,000 | 14,000 | 16,000 | 11,200 | 30,000 | 21,200 |
| 22 | 19,000 | 15,000 | 26,500 | 19,000 | 21,200 | 15,000 | 40,000 | 28,000 |
| 26 | 26,500 | 21,200 | 37,500 | 26,500 | 30,000 | 21,200 | 56,000 | 40,000 |

If the chain slings are used in more demanding conditions (e.g. high temperature, asymmetric load distribution, edge loads, impacts) the maximum load capacities in the table must be reduced. Please use the load factors on page 19 and refer to the specification in the user information.

Master Links, Sub-Assemblies & Accessories


| Master Link A/S | | | | | | | | | | |
|--|---------|----|--------|---|------------|-----|-----|----|--------|-------------------------------|
|  | Chain Ø | | Code | Can be used to single hook acc. to DIN15401 no. | Dimensions | | | | Weight | Working Load Limit (0°-45° *) |
| | ⊥ | ∧ | | | d | t | w | s | | |
| | mm | mm | | | mm | | | | | |
| | 6+7 | 6 | A/S 13 | 2.5 | 13 | 110 | 60 | 10 | 0.34 | 2,300 |
| | 8 | 7 | A/S 16 | 2.5 | 17 | 110 | 60 | 14 | 0.55 | 3,500 |
| | 10 | 8 | A/S 18 | 5 | 19 | 135 | 75 | 14 | 0.94 | 5,000 |
| | 13 | 10 | A/S 22 | 6 | 23 | 160 | 90 | 17 | 1.64 | 7,600 |
| | 16 | 13 | A/S 26 | 8 | 27 | 180 | 100 | 20 | 2.53 | 10,000 |
| | 19 | 16 | A/S 32 | 10 | 33 | 200 | 110 | 26 | 4.28 | 14,000 |
| | 22 | 19 | A/S 36 | 16 | 36 | 260 | 140 | | 6.22 | 25,100 |
| | 26 | 22 | A/S 45 | 25 | 45 | 340 | 180 | | 12.74 | 30,800 |
| | | 26 | A/S 50 | 32 | 50 | 350 | 190 | | 16.55 | 40,000 |
| | | | A/S 56 | 32 | 56 | 400 | 200 | | 23.3 | 64,000 |

*) Please refer to table „Maximum working load Limit“ on page 24 when using in chain slings.

| Special Master Link T/S | | | | | | | | | | |
|--|---------|----|--------|---|------------|-----|-----|----|--------|-------------------------------|
|  | Chain Ø | | Code | Can be used to single hook acc. to DIN15401 no. | Dimensions | | | | Weight | Working Load Limit (0°-45° *) |
| | ⊥ | ∧ | | | d | t | w | s | | |
| | mm | mm | | | mm | | | | | |
| | 6+7 | 6 | T/S 13 | 4 | 14 | 120 | 70 | 10 | 0.46 | 2,300 |
| | 8 | 7 | T/S 16 | 5 | 16 | 140 | 80 | 13 | 0.73 | 3,200 |
| | 10 | 8 | T/S 18 | 6 | 19 | 160 | 95 | 14 | 1.12 | 4,200 |
| | 13 | 10 | T/S 22 | 10 | 23 | 170 | 105 | 17 | 1.81 | 6,700 |
| | 16 | 13 | T/S 26 | 10 | 27 | 190 | 110 | 20 | 2.72 | 10,100 |
| | 19 | 16 | T/S 32 | 12 | 33 | 230 | 130 | 26 | 4.78 | 16,000 |
| | 22 | 19 | T/S 36 | 20 | 38 | 275 | 150 | 29 | 7.48 | 21,200 |
| | | 26 | T/S 56 | 50 | 56 | 350 | 250 | | 21.98 | 40,000 |

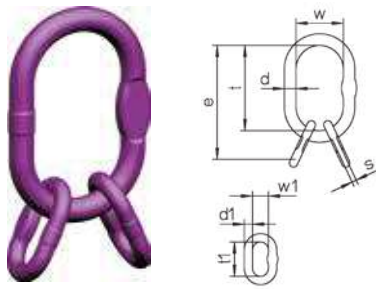
Similar to master link A/S, but due to larger inside dimensions suitable for next sized crane hook or special hook.

*) Please refer to table „Maximum working load Limit“ on page 24 when using in chain slings.

| Sub-Assembly G/S | | | | | | | | | | | | | | | |
|--|---------|-----------|---|------------|----|-----|-----|----|-----|----|----|--------|-------------------------------|----|----|
|  | Chain Ø | Code | Can be used to single hook acc. to DIN15401 no. | Dimensions | | | | | | | | Weight | Working Load Limit (0°-45° *) | | |
| | | | | ∧ | | e | d | t | w | d1 | t1 | | | w1 | s |
| | | | | mm | | mm | | | | | | | | kg | kg |
| | 6 | G/S 6 | 5 | 189 | 19 | 135 | 75 | 13 | 54 | 25 | 10 | 1.28 | 4,200 | | |
| | 7+8 | G/S 7/8 | 6 | 230 | 23 | 160 | 90 | 17 | 70 | 34 | 14 | 2.37 | 7,600 | | |
| | 10 | G/S 10 | 8 | 265 | 27 | 180 | 100 | 20 | 85 | 40 | 14 | 3.75 | 9,600 | | |
| | 13 | G/S 13 | 10 | 315 | 33 | 200 | 110 | 23 | 115 | 50 | 17 | 6.60 | 14,000 | | |
| | 16 | G/S 16 | 16 | 400 | 36 | 260 | 140 | 27 | 140 | 65 | 20 | 10.06 | 21,200 | | |
| | 19 | G/S 19/20 | 32 | 500 | 50 | 350 | 190 | 33 | 150 | 70 | 26 | 22.87 | 34,100 | | |
| | 22 | G/S 22 | 32 | 520 | 50 | 350 | 190 | 36 | 170 | 75 | | 24.79 | 40,000 | | |
| | 26 | G/S 26 | 32 | 570 | 56 | 400 | 200 | 45 | 170 | 80 | | 37.60 | 56,000 | | |

*) Please refer to table „Maximum working load Limit“ on page 24 when using in chain slings.

Special Sub-Assembly GT/S

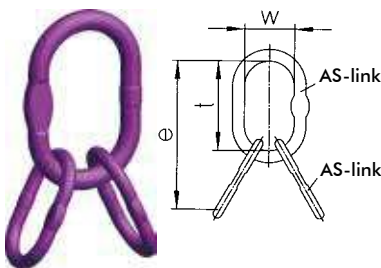


Similar to G/S but also suitable for larger crane hooks and special hooks.

| Chain Ø | Code | Can be used to single hook acc. to DIN15401 no. | Dimensions | | | | | | | | Weight | Working Load Limit 0°-45° *) |
|------------|----------|---|------------|----|-----|-----|----|-----|----|----|--------|---------------------------------|
| | | | e | d | t | w | d1 | t1 | w1 | s | | |
| mm | | | mm | | | | | | | | kg | kg |
| 6 | GT/S 6 | 6 | 214 | 19 | 160 | 95 | 13 | 54 | 25 | 10 | 1.47 | 4,200 |
| 7+8 | GT/S 7/8 | 10 | 240 | 23 | 170 | 105 | 17 | 70 | 34 | 14 | 2.53 | 6,600 |
| 10 | GT/S 10 | 10 | 275 | 27 | 190 | 110 | 20 | 85 | 40 | 14 | 3.87 | 10,100 |
| 13 | GT/S 13 | 12 | 345 | 33 | 230 | 130 | 23 | 115 | 50 | 17 | 7.21 | 15,700 |
| 16 | GT/S 16 | 25 | 415 | 38 | 275 | 150 | 27 | 140 | 65 | 20 | 11.30 | 21,200 |

*) Please refer to table „Maximum working load Limit“ on page 24 when using in chain slings.

Special Sub-Assembly TG/S

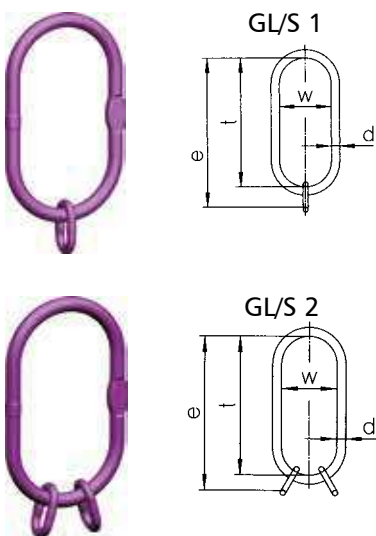


For 4-leg slings, when shortening hooks are to be assembled separately, and for slings with thimble eyes.

| Chain Ø | Code | Can be used to single hook acc. to DIN15401 no. | Dimensions | | | | | Weight | Working Load Limit 0°-45° *) |
|------------|----------|---|------------|-----|-----|-----|----|--------|---------------------------------|
| | | | d | e | t | w | d1 | | |
| mm | | | mm | | | | | kg | kg |
| 6 | TG/S 6 | 5 | 19 | 245 | 135 | 75 | 13 | 1.63 | 3,000 |
| 7+8 | TG/S 7/8 | 6 | 23 | 270 | 160 | 90 | 16 | 2.73 | 5,300 |
| 10 | TG/S 10 | 10 | 33 | 360 | 200 | 110 | 23 | 7.45 | 10,100 |
| 13 | TG/S 13 | 16 | 36 | 440 | 260 | 140 | 27 | 11.14 | 14,300 |
| 16 | TG/S 16 | 25 | 45 | 540 | 340 | 180 | 33 | 21.02 | 22,200 |

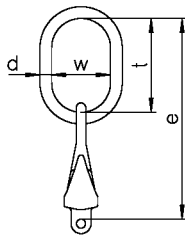
*) Please refer to table „Maximum working load Limit“ on page 24 when using in chain slings.

Special Master Link Assembly GL/S



| Chain Ø | Code | Consisting of | Dimensions | | | | Can be used to single hook acc. to DIN15401 no. | Weight | Working Load Limit 0°-45° |
|------------|---------------------|---------------|------------|-----|-----|-----|---|--------|------------------------------|
| | | | d | t | w | e | | | |
| mm | | | mm | | | | kg | kg | |
| 10 | GL/S 1-10 | L/S27+B/S16 | 27 | 340 | 180 | 410 | 25 | 4.76 | 4,000 |
| 13 | GL/S 1-13 | L/S27 | 27 | 340 | 180 | 340 | 25 | 4.40 | 6,700 |
| 16 | GL/S 1-16 | L/S32 | 33 | 340 | 180 | 340 | 25 | 6.70 | 10,000 |
| 19+22 | GL/S 1-19/22 | L/S40 | 40 | 340 | 180 | 340 | 25 | 10.00 | 19,000 |
| | | | | | | | | | 0°-45°* |
| 6+7+8 | 6 GL/S 2-6/7/8/4-6 | L/S 22+2B/S13 | 23 | 340 | 180 | 394 | 25 | 3.54 | 3,550 |
| 10 | 7+8 GL/S 2-10/4-7/8 | L/S 27+2B/S16 | 27 | 340 | 180 | 410 | 25 | 5.12 | 5,600 |
| 13 | 10 GL/S 2-13/4-10 | L/S 32+2B/S20 | 33 | 340 | 180 | 425 | 25 | 7.92 | 9,500 |
| 16 | 13 GL/S 2-16/4-13 | L/S 40+2B/S22 | 40 | 340 | 180 | 455 | 25 | 12.32 | 14,000 |
| 19 | 16 GL/S 2-19/4-16 | L/S 40+2B/S26 | 40 | 340 | 180 | 480 | 25 | 13.84 | 21,200 |

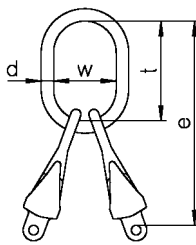
1 Special Clevis Sub-Assembly GTVK/S



For 1-leg slings with shortening element.

| Chain Ø | | Code | Can be used to single hook acc. to DIN15401 no. | Dimensions | | | | Weight | Working Load Limit | |
|---------|------|-------------|---|------------|-----|-----|-----|--------|--------------------|----|
| ⊥ | | | | d | t | w | e | | kg | kg |
| mm | inch | | | mm | | | | kg | | kg |
| 6 | 1/4 | GTVK/S 1-6 | 4 | 14 | 120 | 70 | 204 | 0.68 | 1,400 | |
| 7 | 9/32 | GTVK/S 1-7 | 4 | 14 | 120 | 70 | 242 | 1.12 | 1,900 | |
| 8 | 5/16 | GTVK/S 1-8 | 5 | 16 | 140 | 80 | 262 | 1.37 | 2,500 | |
| 10 | 3/8 | GTVK/S 1-10 | 6 | 19 | 160 | 95 | 319 | 2.45 | 4,000 | |
| 13 | 1/2 | GTVK/S 1-13 | 10 | 23 | 170 | 105 | 373 | 4.65 | 6,700 | |
| 16 | 5/8 | GTVK/S 1-16 | 10 | 27 | 190 | 110 | 424 | 8.05 | 10,000 | |

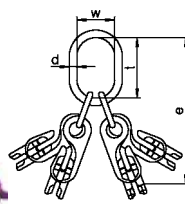
2 Special Clevis Sub-Assembly GTVK/S



For 2-leg slings with shortening element.

| Chain Ø | | Code | Can be used to single hook acc. to DIN15401 no. | Dimensions | | | | Weight | Working Load Limit β | |
|---------|------|-------------|---|------------|-----|-----|-----|--------|----------------------|-----------|
| ∧ | | | | d | t | w | e | | kg | up to 45° |
| mm | inch | | | mm | | | | kg | | kg |
| 6 | 1/4 | GTVK/S 2-6 | 4 | 14 | 120 | 70 | 204 | 0.89 | 2,000 | 1,400 |
| 7 | 9/32 | GTVK/S 2-7 | 5 | 16 | 140 | 80 | 262 | 2.03 | 2,650 | 1,900 |
| 8 | 5/16 | GTVK/S 2-8 | 6 | 19 | 160 | 95 | 282 | 2.48 | 3,550 | 2,500 |
| 10 | 3/8 | GTVK/S 2-10 | 10 | 23 | 170 | 105 | 329 | 4.44 | 5,600 | 4,000 |
| 13 | 1/2 | GTVK/S 2-13 | 10 | 27 | 190 | 110 | 393 | 8.17 | 9,500 | 6,700 |
| 16 | 5/8 | GTVK/S 2-16 | 12 | 33 | 230 | 130 | 464 | 15.13 | 14,000 | 10,000 |

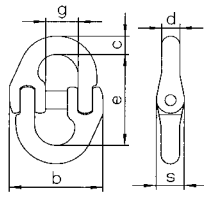
4 Special Clevis Sub-Assembly GTVK/S



For 3 and 4-leg slings with shortening element.

| Chain Ø | | Code | Can be used to single hook acc. to DIN15401 no. | Dimensions | | | | Weight | Working Load Limit β | |
|---------|------|-------------|---|------------|-----|-----|-----|--------|----------------------|-----------|
| ∧ | | | | d | t | w | e | | kg | up to 45° |
| mm | inch | | | mm | | | | kg | | kg |
| 6 | 1/4 | GTVK/S 4-6 | 6 | 19 | 160 | 95 | 298 | 2.40 | 3,000 | 2,120 |
| 7 | 9/32 | GTVK/S 4-7 | 10 | 23 | 160 | 110 | 352 | 5.18 | 4,000 | 2,800 |
| 8 | 5/16 | GTVK/S 4-8 | 10 | 23 | 170 | 105 | 362 | 5.25 | 5,300 | 3,750 |
| 10 | 3/8 | GTVK/S 4-10 | 10 | 27 | 190 | 110 | 434 | 9.04 | 8,000 | 6,000 |
| 13 | 1/2 | GTVK/S 4-13 | 12 | 33 | 230 | 130 | 548 | 18.15 | 14,000 | 10,000 |
| 16 | 5/8 | GTVK/S 4-16 | 20 | 38 | 275 | 150 | 649 | 31.99 | 21,200 | 15,000 |

Connecting Link V/S

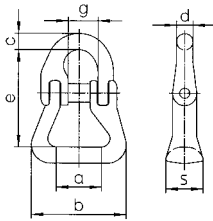


Connecting link for:
Master Link – Chain
Chain – Chain
Hook – Chain
Only for straight pull!

Load pin and bush are also separately available.

| Chain | | Code | Dimensions | | | | | | Weight | Working Load Limit |
|-------|------|-----------|------------|----|----|----|-----|----|--------|--------------------|
| mm | inch | | e | c | s | d | b | g | | |
| 6 | 1/4 | V/S 6 | 44 | 8 | 11 | 8 | 39 | 14 | 0.11 | 1,400 |
| 7 | 9/32 | V/S 7 | 51 | 10 | 13 | 9 | 47 | 17 | 0.20 | 1,900 |
| 8 | 5/16 | V/S 8 | 62 | 12 | 14 | 10 | 55 | 18 | 0.29 | 2,500 |
| 10 | 3/8 | V/S 10 | 72 | 15 | 18 | 13 | 64 | 24 | 0.52 | 4,000 |
| 13 | 1/2 | V/S 13 | 88 | 20 | 22 | 17 | 79 | 28 | 0.91 | 6,700 |
| 16 | 5/8 | V/S 16 | 103 | 21 | 29 | 21 | 106 | 33 | 1.34 | 10,000 |
| 19/20 | 3/4 | V/S 19/20 | 115 | 30 | 35 | 24 | 123 | 42 | 3.33 | 16,000 |
| 22 | 7/8 | V/S 22 | 161 | 34 | 39 | 25 | 148 | 51 | 3.14 | 19,000 |
| 26 | 1 | V/S 26 | 190 | 40 | 46 | 30 | 175 | 60 | 5.72 | 26,500 |

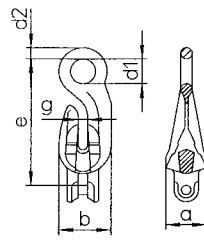
Webbing Coupling Link RSK/S



Link for webbing slings mounted in one V/S-half. Reduced risk of damage due to wide surface.

| Chain | | Code | Dimensions | | | | | | | Weight | Working Load Limit |
|-------|------|----------|------------|-----|----|----|-----|----|----|--------|--------------------|
| mm | inch | | a | e | c | d | b | s | g | | |
| 8 | 5/16 | RSK/S 8 | 29 | 66 | 12 | 10 | 68 | 18 | 18 | 0.36 | 2,500 |
| 10 | 3/8 | RSK/S 10 | 40 | 81 | 15 | 13 | 82 | 21 | 24 | 0.69 | 4,000 |
| 13 | 1/2 | RSK/S 13 | 44 | 104 | 20 | 17 | 101 | 28 | 28 | 1.32 | 6,700 |
| 16 | 5/8 | RSK/S 16 | 47 | 113 | 21 | 21 | 110 | 40 | 33 | 1.83 | 10,000 |
| 22 | 7/8 | RSK/S 22 | 110 | 190 | 34 | 25 | 215 | 58 | 51 | 7.98 | 19,000 |

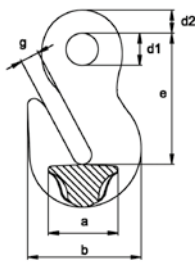
Shortening Hook VK/S



Can be mounted in any chain leg due to Clevis part. No WLL reduction.

| Chain | | Code | Dimensions | | | | | | Weight | Working Load Limit |
|-------|------|---------|------------|-----|----|----|----|----|--------|--------------------|
| mm | inch | | e | b | a | d1 | d2 | g | | |
| 6 | 1/4 | VK/S 6 | 84 | 37 | 29 | 18 | 9 | 8 | 0.27 | 1,400 |
| 7 | 9/32 | VK/S 7 | 122 | 54 | 39 | 24 | 12 | 11 | 0.67 | 1,900 |
| 8 | 5/16 | VK/S 8 | 122 | 54 | 39 | 24 | 12 | 11 | 0.67 | 2,500 |
| 10 | 3/8 | VK/S 10 | 159 | 70 | 50 | 31 | 14 | 13 | 1.34 | 4,000 |
| 13 | 1/2 | VK/S 13 | 203 | 92 | 64 | 37 | 18 | 15 | 2.83 | 6,700 |
| 16 | 5/8 | VK/S 16 | 234 | 102 | 80 | 48 | 24 | 20 | 5.43 | 10,000 |

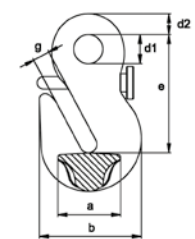
Eye Grab Hook P/S



For shortening and for any slings that must not tighten.
Reduction of load capacity not required due to 4-fold safety.

| Chain | | Code | Dimensions | | | | | | Weight | Working Load Limit |
|-------|-----------|-----------|------------|-----|----|----|----|-----|--------|--------------------|
| mm | inch | | e | b | d1 | d2 | g | a | | |
| 6 | 1/4 | P/S 6 * | 50 | 42 | 12 | 9 | 7 | 26 | 0.15 | 1,400 |
| 7+8 | 9/32+5/16 | P/S 7/8 * | 65 | 56 | 16 | 12 | 9 | 35 | 0.37 | 2,500 |
| 10 | 3/8 | P/S 10 * | 77 | 70 | 20 | 14 | 12 | 46 | 0.70 | 4,000 |
| 13 | 1/2 | P/S 13 * | 101 | 91 | 26 | 19 | 15 | 60 | 1.52 | 6,700 |
| 16 | 5/8 | P/S 16 * | 121 | 113 | 32 | 23 | 19 | 69 | 2.90 | 10,000 |
| 19/20 | 3/4 | P/S 19/20 | 151 | 150 | 36 | 27 | 25 | 84 | 6.15 | 16,000 |
| 22 | 7/8 | P/S 22 | 170 | 165 | 42 | 31 | 27 | 91 | 8.30 | 19,000 |
| 26 | 1 | P/S 26 | 201 | 195 | 50 | 37 | 32 | 107 | 13.80 | 26,500 |

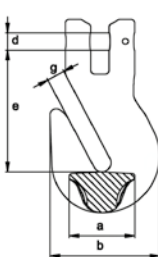
Eye Grab Hook with Safety Pin PS/S



Shortening hook protected against accidental release of the chain.
Reduction of load capacity not required due to 4-fold safety.

| Chain | | Code | Dimensions | | | | | | Weight | Working Load Limit |
|-------|-----------|------------|------------|-----|----|----|----|----|--------|--------------------|
| mm | inch | | e | b | d1 | d2 | g | a | | |
| 7+8 | 9/32+5/16 | PS/S 7/8 * | 65 | 42 | 16 | 12 | 9 | 35 | 0.37 | 2,500 |
| 10 | 3/8 | PS/S 10 * | 77 | 70 | 20 | 14 | 12 | 46 | 0.70 | 4,000 |
| 13 | 1/2 | PS/S 13 * | 101 | 91 | 26 | 19 | 15 | 60 | 1.52 | 6,700 |
| 16 | 5/8 | PS/S 16 | 121 | 113 | 32 | 23 | 19 | 69 | 2.90 | 10,000 |

Clevis Grab Hook PK/S



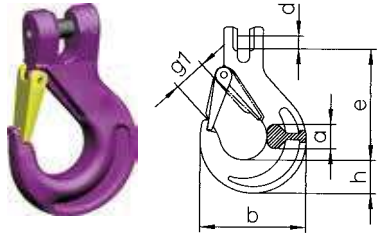
For shortening and for slings that must not tighten.
Reduction of load capacity not required due to 4-fold safety.

| Chain | | Code | Dimensions | | | | | Weight | Working Load Limit |
|-------|------|------------|------------|-----|------|----|----|--------|--------------------|
| mm | inch | | e | b | d | g | a | | |
| 6 | 1/4 | PK/S 6 * | 47 | 42 | 7.4 | 9 | 26 | 0.20 | 1,400 |
| 7 | 9/32 | PK/S 7 * | 63 | 56 | 9 | 9 | 35 | 0.46 | 1,900 |
| 8 | 5/16 | PK/S 8 * | 63 | 56 | 10 | 9 | 35 | 0.43 | 2,500 |
| 10 | 3/8 | PK/S 10 * | 78 | 70 | 12.5 | 15 | 46 | 0.90 | 4,000 |
| 13 | 1/2 | PK/S 13 * | 93 | 92 | 16 | 15 | 60 | 1.71 | 6,700 |
| 16 | 5/8 | PK/S 16 * | 115 | 113 | 20 | 19 | 70 | 3.24 | 10,000 |
| 19/20 | 3/4 | PK/S 19/20 | 141 | 150 | 24 | 27 | 84 | 6.55 | 16,000 |
| 22 | 7/8 | PK/S 22 | 158 | 165 | 27 | 27 | 91 | 9.28 | 19,000 |



It is very important and intended from the technical point of view that the middle chain link no longer contacts the bearing surface of the KWB Eye Grab Hook P/S and Clevis Grab Hook PK/S, since the Star Alloy chain is supported by the side faces of the KWB Grab Hook. Reduction of load capacity is not required due to 4-fold safety!

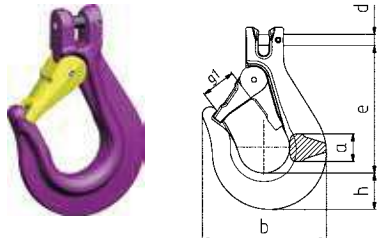
Clevis Sling Hook with Forged Safety Latch HKS/S



General purpose hook.

| Chain | | Code | Dimensions | | | | | | Weight | Working Load Limit |
|-------|------|-------------|------------|----|----|------|----|-----|--------|--------------------|
| mm | inch | | e | h | a | d | g1 | b | | |
| 6 | 1/4 | HKS/S 6 | 69 | 20 | 15 | 7 | 19 | 66 | 0.25 | 1,400 |
| 7 | 9/32 | HKS/S 7 | 95 | 28 | 19 | 9 | 26 | 90 | 0.68 | 1,900 |
| 8 | 5/16 | HKS/S 8 | 95 | 28 | 19 | 10 | 26 | 90 | 0.58 | 2,500 |
| 10 | 3/8 | HKS/S 10 | 109 | 35 | 25 | 12.5 | 31 | 108 | 1.14 | 4,000 |
| 13 | 1/2 | HKS/S 13 | 136 | 41 | 34 | 16 | 39 | 131 | 2.02 | 6,700 |
| 16 | 5/8 | HKS/S 16 | 155 | 49 | 37 | 20 | 45 | 153 | 3.57 | 10,000 |
| 19/20 | 3/4 | HKS/S 19/20 | 184 | 53 | 51 | 24 | 53 | 177 | 5.55 | 16,000 |
| 22 | 7/8 | HKS/S 22 | 214 | 62 | 52 | 27 | 62 | 196 | 8.99 | 19,000 |

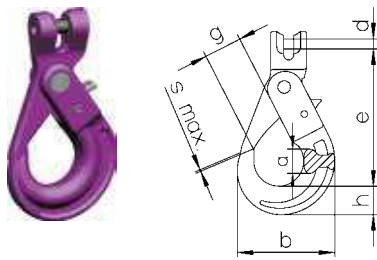
Wide Bowl Clevis Sling Hook with Forged Safety Latch VHKS/S



Alternative for the HKS/S with wider throat opening.

| Chain | | Code | Dimensions | | | | | | Weight | Working Load Limit |
|-------|------|----------|------------|----|----|----|----|-----|--------|--------------------|
| mm | inch | | e | h | a | d | g1 | b | | |
| 8 | 5/16 | VHKS/S 8 | 116 | 33 | 25 | 10 | 32 | 113 | 1.26 | 2,500 |

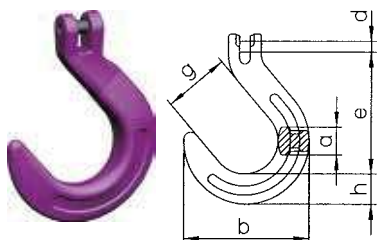
Clevis Self Locking Hook HKSB/S



Closes and locks automatically.

| Chain | | Code | Dimensions | | | | | | | | Weight | Working Load Limit |
|-------|------|-----------|------------|----|----|-----|------|----|--------|------|--------|--------------------|
| mm | inch | | e | h | a | b | d | g | s max. | | | |
| 6 | 1/4 | HKSB/S 6 | 94 | 20 | 17 | 71 | 7.5 | 28 | 1 | 0.56 | 1,400 | |
| 7 | 9/32 | HKSB/S 7 | 123 | 26 | 20 | 88 | 9 | 34 | 1 | 0.87 | 1,900 | |
| 8 | 5/16 | HKSB/S 8 | 123 | 26 | 20 | 88 | 10 | 34 | 1 | 1.00 | 2,500 | |
| 10 | 3/8 | HKSB/S 10 | 144 | 30 | 29 | 107 | 12.5 | 45 | 1 | 1.61 | 4,000 | |
| 13 | 1/2 | HKSB/S 13 | 180 | 40 | 35 | 138 | 16 | 52 | 1.5 | 3.24 | 6,700 | |
| 16 | 5/8 | HKSB/S 16 | 218 | 50 | 41 | 168 | 20 | 60 | 2 | 5.95 | 10,000 | |

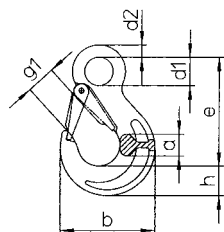
Clevis Foundry Hook GHK/S



For applications where jaw size „g” of the VHKS/S hook is inadequate; mainly in foundries. Before using the hook, check whether hooks without safety latch are allowed to be used for this particular application.

| Chain | | Code | Dimensions | | | | | | Weight | Working Load Limit |
|-------|------|----------|------------|----|----|----|------|-----|--------|--------------------|
| mm | inch | | e | h | a | g | d | b | | |
| 8 | 5/16 | GHK/S 8 | 120 | 29 | 25 | 64 | 10 | 118 | 1.04 | 2,500 |
| 10 | 3/8 | GHK/S 10 | 140 | 35 | 32 | 76 | 12.5 | 143 | 1.74 | 4,000 |
| 13 | 1/2 | GHK/S 13 | 170 | 42 | 40 | 89 | 16 | 170 | 3.38 | 6,700 |

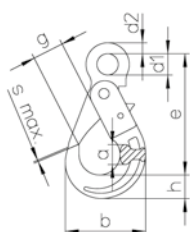
Eye Sling Hook with Forged Safety Latch HS/S



For general lifting applications.

| Chain | | Code | Dimensions | | | | | | | | Weight kg | Working Load Limit kg |
|-------|-----------|------------|------------|----|----|----|----|----|-----|-------|--------------|--------------------------------|
| mm | inch | | e | h | a | d1 | d2 | g1 | b | | | |
| 6 | 1/4 | HS/S 6 | 85 | 21 | 17 | 20 | 10 | 19 | 68 | 0.29 | 1,400 | |
| 7+8 | 9/32+5/16 | HS/S 7/8 | 106 | 27 | 19 | 25 | 11 | 26 | 88 | 0.57 | 2,500 | |
| 10 | 3/8 | HS/S 10 | 131 | 33 | 26 | 34 | 16 | 31 | 109 | 1.19 | 4,000 | |
| 13 | 1/2 | HS/S 13 | 164 | 44 | 33 | 43 | 19 | 39 | 134 | 1.96 | 6,700 | |
| 16 | 5/8 | HS/S 16 | 183 | 50 | 40 | 50 | 25 | 45 | 155 | 3.85 | 10,000 | |
| 19 | 3/4 | HS/S 19/20 | 205 | 55 | 48 | 55 | 27 | 53 | 178 | 5.92 | 16,000 | |
| 22 | 7/8 | HS/S 22 | 225 | 62 | 50 | 60 | 29 | 62 | 196 | 7.65 | 19,000 | |
| 26 | 1 | HS/S 26 | 259 | 75 | 70 | 70 | 37 | 73 | 235 | 12.76 | 26,500 | |

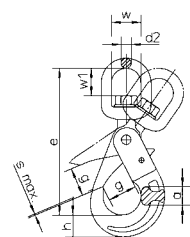
Eye Self Locking Hook HSB/S



Large eye, therefore suitable for ropes and webbing slings. Automatically closes and locks under load, and requires the load to be grounded before load can be released. Not for welded system!

| Chain | | Code | Dimensions | | | | | | | | Weight kg | Working Load Limit kg |
|-------|-----------|-------------|------------|----|----|-----|----|----|----|--------|--------------|--------------------------------|
| mm | inch | | e | h | a | b | d1 | d2 | g | s max. | | |
| 6 | 1/4 | HSB/S 6 | 110 | 20 | 17 | 71 | 21 | 11 | 28 | 1 | 0.52 | 1,400 |
| 7+8 | 9/32+5/16 | HSB/S 7/8 | 136 | 26 | 20 | 88 | 25 | 12 | 34 | 1 | 0.92 | 2,500 |
| 10 | 3/8 | HSB/S 10 | 169 | 30 | 29 | 107 | 35 | 17 | 45 | 1 | 1.57 | 4,000 |
| 13 | 1/2 | HSB/S 13 | 205 | 40 | 35 | 138 | 40 | 20 | 52 | 1.50 | 3.19 | 6,700 |
| 16 | 5/8 | HSB/S 16 | 251 | 50 | 41 | 168 | 50 | 27 | 60 | 2 | 6.24 | 10,000 |
| 19 | 3/4 | HSB/S 19/20 | 290 | 62 | 50 | 194 | 60 | 30 | 70 | 2 | 9.75 | 16,000 |
| 22 | 7/8 | HSB/S 22 | 322 | 65 | 52 | 211 | 70 | 32 | 81 | 2 | 11.45 | 19,000 |

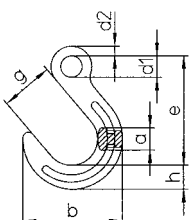
Swivel Safety Hook WSB/S



Standard type can not be swiveled when loaded. Not for welded system!

| Chain | | Code | Dimensions | | | | | | | | Weight kg | Working Load Limit kg |
|-------|-----------|-----------|------------|----|----|----|----|----|----|--------|--------------|--------------------------------|
| mm | inch | | e | h | a | w | w1 | d2 | g | s max. | | |
| 6 | 1/4 | WSB/S 6 | 161 | 20 | 17 | 35 | 36 | 12 | 28 | 1 | 1.20 | 1,400 |
| 7+8 | 9/32+5/16 | WSB/S 7/8 | 182 | 26 | 20 | 35 | 36 | 12 | 34 | 1 | 1.54 | 2,500 |
| 10 | 3/8 | WSB/S 10 | 218 | 30 | 29 | 42 | 40 | 16 | 45 | 1 | 2.14 | 4,000 |
| 13 | 1/2 | WSB/S 13 | 269 | 40 | 35 | 49 | 47 | 20 | 52 | 1.5 | 4.42 | 6,700 |
| 16 | 5/8 | WSB/S 16 | 319 | 50 | 41 | 60 | 60 | 24 | 60 | 2 | 7.34 | 10,000 |

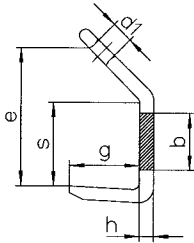
Foundry Hook GH/S



| Chain | | Code | Dimensions | | | | | | | Weight kg | Working Load Limit kg |
|-------|-----------|------------|------------|----|----|----|----|-----|-----|--------------|--------------------------------|
| mm | inch | | e | h | a | d1 | d2 | g | b | | |
| 7+8 | 9/32+5/16 | GH/S 7/8 | 131 | 29 | 25 | 24 | 11 | 64 | 118 | 0.94 | 2,500 |
| 10 | 3/8 | GH/S 10 | 158 | 35 | 32 | 31 | 14 | 76 | 143 | 1.62 | 4,000 |
| 13 | 1/2 | GH/S 13 | 190 | 42 | 40 | 39 | 17 | 89 | 170 | 3.24 | 6,700 |
| 16 | 5/8 | GH/S 16 | 224 | 50 | 46 | 47 | 22 | 102 | 200 | 5.65 | 10,000 |
| 19 | 3/4 | GH/S 19/20 | 260 | 61 | 54 | 56 | 28 | 114 | 231 | 9.50 | 16,000 |

Special Accessories

Sheet Metal Plate Hook BH/S

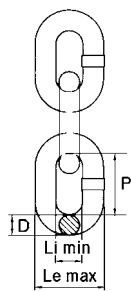


For lifting sheet metal stacks and boards. Recommended angle of inclination of the sling: 15-30°. Use min. 3-leg chain sling.

| Chain | | Code | Dimensions | | | | | | Weight | Working Load Limit |
|-------|-----------|------------|------------|-----|-----|----|----|-----|--------|--------------------|
| e | s | | b | h | d1 | g | | | | |
| mm | inch | | mm | | | | | | kg | kg |
| 7+8 | 9/32+5/16 | BH/S 7/8 | 131 | 80 | 50 | 15 | 28 | 55 | 1.50 | 2,500 |
| 10 | 3/8 | BH/S 10 | 170 | 100 | 70 | 20 | 36 | 65 | 2.80 | 4,000 |
| 13 | 1/2 | BH/S 13 | 209 | 130 | 80 | 25 | 40 | 90 | 5.30 | 6,700 |
| 16 | 5/8 | BH/S 16 | 263 | 160 | 100 | 30 | 50 | 110 | 10.50 | 10,000 |
| 19 | 3/4 | BH/S 19/20 | 306 | 185 | 120 | 40 | 60 | 130 | 17.50 | 16,000 |
| 22 | 7/8 | BH/S 22 | 368 | 220 | 140 | 50 | 75 | 150 | 30.50 | 19,000 |

Special types available upon request

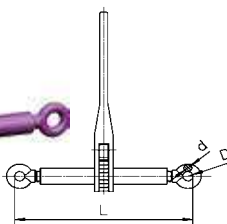
Lashing Chain Star Alloy SA/S – Measurements, Load Values, Weights



Chain acc. ASTM A973/A973M-01

| Chain | | Pitch | Li/min. | Le/max. | Weight | LC Lashing Capacity | Breaking Force |
|-------|------|-------|---------|---------|--------|---------------------|----------------|
| D | P | P | mm | mm | kg/m | kN | kN |
| mm | inch | mm | mm | mm | kg/m | kN | kN |
| 8 | 5/16 | 24 | 10,9 | 29 | 1.57 | 50 | 101 |
| 10 | 3/8 | 30 | 13,5 | 36 | 2.46 | 80 | 157 |
| 13 | 1/2 | 39 | 17,5 | 47 | 4.18 | 80 | 157 |

Ratchet Load Binder RLS/S




According to EN-specifications


| Code | Max. Permissible Lashing Capacity | Normal Tension Force | Dimensions | | | | | Weight |
|----------|-----------------------------------|----------------------|-----------------|---------------|---------------|----|----|--------|
| | | | Length L closed | Length L open | Tension range | D | d | |
| LC | STF | | mm | | | | | kg |
| kN | daN | | | | | | | |
| RLS/S 8 | 50 | 1,900 | 355 | 500 | 145 | 20 | 16 | 3.12 |
| RLS/S 10 | 80 | 3,000 | 365 | 510 | 145 | 26 | 18 | 3.68 |
| RLS/S 13 | 134 | 2,500 | 576 | 866 | 290 | 31 | 22 | 8.11 |

Spare Parts

Forged Safety Latch Kits for Eye Sling Hooks and Clevis Sling Hooks

| | Chain | | Code | Spare Part for |
|--|-------|-----------|--------|------------------------------|
| | mm | inch | | |
|  | 6 | 1/4 | FG 6 | HKS/S 6 + HS/S 6 |
| | 7+8 | 9/32+5/16 | FG 7/8 | HKS/S 7 + HKS/S 8 + HS/S 7/8 |
| | 10 | 3/8 | FG 10 | HKS/S 10 + HS/S 10 |
| | 13 | 1/2 | FG 13 | HKS/S 13 + HS/S 13 |
| | 16 | 5/8 | FG 16 | HKS/S 16 + HS/S 16 |
| | 19 | 3/4 | FG 19 | HKS/S 19/20 + HS/S 19/20 |
| | 22 | 7/8 | FG 22 | HKS/S 22 + HS/S 22 |
| | 26 | 1 | FG 26 | HS/S 26 |


Forged Safety Latch Kits for Wide Bowl Clevis Sling Hook with Safety Latch VHKS/S

| | Chain | | Code | Spare Part for |
|---|-------|------|---------|----------------|
| | mm | inch | | |
|  | 8 | 5/16 | FG-V 8 | VHKS/S 8 |
| | 10 | 3/8 | FG-V 10 | VHKS/S 10 |

Pin Kits for Clevis Sling Hook and Shortening Hook

| | Chain | | Code | Spare Part for |
|---|-------|------|----------|---|
| | mm | inch | | |
|  | 6 | 1/4 | KBG/S 6 | HKS/S 6 + VK/S 6 + PK/S 6 |
| | 7 | 9/32 | KBG/S 7 | HKS/S 7 + VK/S 7 + PK/S 7 + GHK/S 7 |
| | 8 | 5/16 | KBG/S 8 | HKS/S 8 + VK/S 8 + PK/S 8 + VHKS/S 8 + GHK/S 8 |
| | 10 | 3/8 | KBG/S 10 | HKS/S 10 + VK/S 10 + PK/S 10 + VHKS/S 10 + GHK/S 10 |
| | 13 | 1/2 | KBG/S 13 | HKS/S 13 + VK/S 13 + PK/S 13 + GHK/S 13 |
| | 16 | 5/8 | KBG/S 16 | HKS/S 16 + VK/S 16 + PK/S 16 |
| | 19 | 3/4 | KBG/S 19 | HKS/S 19/20 + PK/S 19/20 |
| | 22 | 7/8 | KBG/S 22 | HKS/S 22 + PK/S 22 |

Pin Kit for Clevis Self Locking Hook

| | Chain | | Code | Spare Part for |
|---|-------|------|----------------|----------------|
| | mm | inch | | |
|  | 6 | 1/4 | KBG - HKS/S 6 | HKS/S 6 |
| | 7 | 9/32 | KBG - HKS/S 7 | HKS/S 7 |
| | 8 | 5/16 | KBG - HKS/S 8 | HKS/S 8 |
| | 10 | 3/8 | KBG - HKS/S 10 | HKS/S 10 |
| | 13 | 1/2 | KBG - HKS/S 13 | HKS/S 13 |
| | 16 | 5/8 | KBG - HKS/S 16 | HKS/S 16 |

Pin Kit for Connecting Link and Webbing Coupling Link

| Chain | | Code | Spare Part for |
|-------|------|-----------|-------------------|
| mm | inch | | |
| 6 | 1/4 | BG-V/S 6 | V/S 6 |
| 7 | 9/32 | BG-V/S 7 | V/S 7 |
| 8 | 5/16 | BG-V/S 8 | V/S 8 + RSK/S 8 |
| 10 | 3/8 | BG-V/S 10 | V/S 10 + RSK/S 10 |
| 13 | 1/2 | BG-V/S 13 | V/S 13 + RSK/S 13 |
| 16 | 5/8 | BG-V/S 16 | V/S 16 + RSK/S 16 |
| 19 | 3/4 | BG-V/S 19 | V/S 19 |
| 22 | 7/8 | BG-V/S 22 | V/S 22 + RSK/S 22 |
| 26 | 1 | BG-V/S 26 | V/S 26 |

Trigger Kit for Self Locking Hooks

| Chain | | Code | Spare Part for |
|-------|-----------|-------------|---|
| mm | inch | | |
| 6 | 1/4 | HBG/S 06-8 | HSB/S 6 + HKS/S 6 + WSB/S 6 |
| 7+8 | 9/32+5/16 | HBG/S 7/8-8 | HSB/S 7/8 + HKS/S 7 + HKS/S 8 + WSB/S 7/8 |
| 10 | 3/8 | HBG/S 10-8 | HSB/S 10 + HKS/S 10 + WSB/S 10 |
| 13 | 1/2 | HBG/S 13-8 | HSB/S 13 + HKS/S 13 + WSB/S 13 |
| 16 | 5/8 | HBG/S 16-8 | HSB/S 16 + HKS/S 16 + WSB/S 16 |
| 19+22 | 3/4, 7/8 | HBG/S 19+22 | HSB/S 19+22 |

Safety Catch Kit for Eye Grab Hook with Safety Pin PS/S

| Chain | | Code | Spare Part for |
|-------|-----------|-----------|----------------|
| mm | inch | | |
| 7+8 | 9/32+5/16 | PGS/S 7/8 | PS/S 7/8 |
| 10 | 3/8 | PGS/S 10 | PS/S 10 |
| 13 | 1/2 | PGS/S 13 | PS/S 13 |

Working Load Tag with Wire Rope Binder and Fastener

| Code | Code |
|--------|--------------|
| ID-Set | 1/2/3/4-legs |

User Information G12, G10, G8

General

KWB sling chains and accessories can be used for general lifting purposes acc. EN 818-4. Chains should only be used by trained personnel, who have read and understood the instructions for use. KWB sling chains and components should not be altered e.g. twisting, grinding, removing of parts and drilling. The surface of the chains and accessories should not be subjected to acids or caustic solutions. If necessary please contact the KWB technical department.

Only use the KWB chains and accessories up to the indicated temperature. Should the temperature be exceeded the reduction of the load capacity must be taken into consideration (see pages 8, 19, 38). In the event of temperatures outside this range, do not use the chain slings.

Do not use KWB lifting chains and accessories in acids, alkalines or chemicals or expose them to their fumes. Important: Certain production procedures release acids and or fumes. If necessary please contact KWB. In especially dangerous conditions (e.g. offshore applications, lifting of persons or potentially dangerous loads i.e. molten metals, corrosive materials, nuclear substances) the working load limit must be adjusted according to the risk level by an expert.

Inspection & Maintenance

Before using any lifting equipment for the first time please check the following:

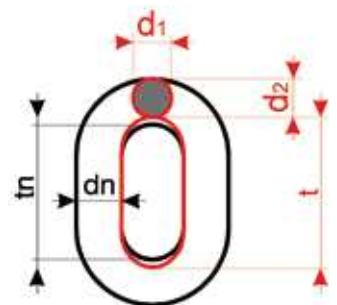
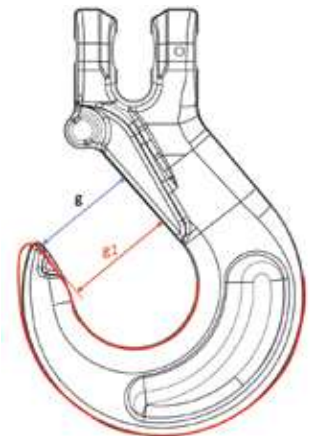
- The sling chain corresponds exactly to the order.
- The test certificate or certificate of conformity have been supplied.
- Marking & working load limit of the chain correspond with the information on the test certificate or certificate of conformity.
- All the data regarding the sling chain has been entered in a register for lifting equipment, if required.
- Before use check the chains for visible damage or signs of wear. In case of damage do not use the chains. In case of doubt likewise.
- Sling chains depending on use should be inspected by an expert once a year i.e. after unusual events that could cause impairment of the chain sling.
- Every two years it is recommended that the chain be subjected to a load test 1.5 times the working load limit, followed by a visual inspection.

When one or more of the following criteria is fulfilled, the chain must be taken out of use:

- Broken link.
- Missing working load tag on the chain sling or illegible marking on the tag.
- Elongation of the chain. The chain must be discarded if $t > 1.05 t_n$ (see catalogue).
- Wear: Wear is determined as the mean value of two measurements of diameters d_1 and d_2 carried out at a right angle (see drawing). The chain must be discarded.

$$dm = \frac{d_1 + d_2}{2} \leq 0.9 dn$$

- Cuts, notches, grooves, surface cracks, excessive corrosion, discoloration due to heat, signs of additional welding, twisted links or other faults.
- Missing i.e. non-functioning safety device or signs of widening of the hook i.e. noticeable enlargement of the opening or other forms of deformation.



Some of the imagery featured in the catalog are artistic depictions and do not show the actual application of the products.

| Designation | Dimensions | Max. Change Permitted |
|--|----------------------------------|-----------------------|
| Chain | D | -10 % |
| | P | +5 % |
| Rings | d | -10 % |
| | t | +10 % |
| Hooks *) | e | +5 % |
| | h, d2 | -10 % |
| | g, g1 | +10 % |
| V, RSK | Both halves must be free to move | No change permitted |
| | e | +5 % |
| | c | -10 % |
| Connecting link VU | Bolts must be free to move | No change permitted |
| | e | +5 % |
| | d and M | -10 % |
| Clevis Bolts and Bolts for Connecting Links + Webbing Coupling Links | d | -10 % |
| HSB, HKSB, WSB | Tip opening | 2 x s max. |

*) HKSB/SUN, HKS/SUN
 VK/S, P/S, PS/S, PK/S, HKS/S, VHKS/S, HKSB/S, GHK/S, HS/S, HSB/S, WSB/S, GH/S, BH/S,
 HS, GH, P, HKS, PK, VHKS, VKL, WSB, HKSB, HSB

KWB chain slings should only be repaired by qualified personnel.
 Records of the inspections and repairs must be kept on file for the entire service life of the chain sling.
 KWB chain slings should be stored in dry condition & protected from corrosion (preferably oiled).

Correct Use of Chain Slings

KWB chain slings should only be used with the angle of inclination indicated on the working load tag.
 Avoid angles of inclination under 15°. Never use the chain slings with an angle of inclination exceeding 60°.
 If KWB chains are guided over edges protective padding should be used to avoid damage or the load capacity reduced (see pages 8, 19, 38). But if chains looped at a beam or other round shaped loads the diameter should be minimum thrice the chain pitch. For smaller diameters the WLL of the chain must be reduced by 50 %.

In cases of possible impact load the working load limit of the KWB chains should be scaled down acc. to the table on pages 8, 19, 38. Impact/shock can be defined as follows:

- Slight impact: arises e.g. when the lifting or lowering movement is accelerated.
- Medium impact: occurs e.g. when the chain slips during adjustment to the shape of the load.
- Strong impact: arises e.g. when the load falls into the unloaded chain.

KWB lifting chains and components are rated according to regulations for 20,000 load cycles. At high dynamic forces there may nevertheless be a risk of damage to the chain and accessories. According to the employer's liability insurance association Metall Nord Süd this risk may be prevented if the stress at load capacity limit is reduced by using a larger chain dimension.

The load capacities of KWB chain slings are defined with the assumption that the load of the individual chain legs is distributed symmetrically. The load can still be considered symmetrical when all the following conditions are complied with:

- The load is smaller than 80 % of the indicated working load limit.
- The angle of inclination of all chain legs is not less than 15°.
- The angle of inclination of all chain legs are equal or deviate max. 15° from each other.
- In the case of 3- and 4-leg chain slings, the corresponding angles in the sling level deviate max. 15° from each other.

Should these parameters not be met, then the load is considered asymmetric and an expert must be called to evaluate the lifting process. In case of doubt the load capacity must be reduced to that of a single-leg chain sling. Individual chain legs which are not in use must be hung back into the master link and the working load limit reduced accordingly.