

Original operating manual for Eye Self Locking Hook HSB/S

| 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 | Working Load Limit |
| | e | h | a | b | d1 | d2 | g | s max. | kg | kg | | | |
| | mm | inch | | mm | mm | mm | mm | mm | | | mm | | |
| | 6 | 1/4 | HSB/S 6 | 110 | 20 | 17 | 71 | 21 | 11 | 28 | 1 | 0.50 | 1,400 |
| | 7+8 | 9/32+5/16 | HSB/S 7/8 | 136 | 26 | 20 | 88 | 25 | 12 | 34 | 1 | 0.90 | 2,500 |
| | 10 | 3/8 | HSB/S 10 | 169 | 30 | 29 | 107 | 35 | 15 | 45 | 1 | 1.50 | 4,000 |
| | 13 | 1/2 | HSB/S 13 | 205 | 40 | 35 | 138 | 40 | 20 | 52 | 1.50 | 2.70 | 6,700 |
| | 16 | 5/8 | HSB/S 16 | 251 | 50 | 41 | 168 | 50 | 27 | 60 | 2 | 5.70 | 10,000 |
| | 19 | 3/4 | HSB/S 19/20 | 290 | 62 | 50 | 194 | 60 | 30 | 70 | 2 | 9.80 | 16,000 |
| | 22 | 7/8 | HSB/S 22 | 322 | 65 | 52 | 211 | 70 | 32 | 81 | 2 | 12.40 | 19,000 |

Static test coefficient = 2.5; Safety factor = 4

These Eye Self Locking Hooks HSB/S are designed for the assembly of chain slings and after reading the operating manual as well as the current national norms for lifting and transporting purposes. Eye Self Locking Hooks HSB/S are combined with other components like KWB Star Alloy chains, connecting links and master links to build chain slings. This product meets the requirements of the EU Machinery Directive 2006/42/EC and is only to be used when taking into consideration the declaration of incorporation and after reading and understanding the operating manual. The operating manual must always be available to the user until the hooks are discarded. It is updated continuously and is only valid in its latest version, which can be downloaded from the following link www.kwb-ketten.at.

Conditions of use

Use purposes: these Eye Self Locking Hooks HSB/S serve as end hooks or suspension hooks for the attachment of the chain sling to the load or other load handling attachment in an easy and quick way. Moreover, they can be attached to chain legs for building loops (choke hitch). The safety catch can be closed by hand, but the hook also closes automatically when loaded and will be locked by means of a trigger situated on the back of the hook. Due to this system, hooks with a closed safety catch are also securely hooked even if they are not loaded. The trigger must be pressed in order to open the hook.

Load: the load must only act in the longitudinal direction and on the center of the radius on the hook with a maximum working load limit described in the table above. The hook must be aligned in the direction of the load. This must also be applied in case of a choke hitch.

Admissible operating temperature: -40 °C – 200 °C.

Impacts: the load must be applied without any impact or shock loading.

- Eye Self Locking Hooks HSB/S must only be used by competent personnel
- Eye Self Locking Hooks HSB/S must be checked before each use for visible signs of damage

Restrictions of use

Under certain conditions, the use of Eye Self Locking Hooks HSB/S is restricted (see table below). The table below describes certain loads with their corresponding reduction factors. Safe working load values are calculated by multiplying the working load limit with the reduction factor defined in the table. If more restrictions of use are applicable during a lifting process, all corresponding reduction factors must be taken into account.

| Reduction factors | | | |
|-------------------|--|---|---|
| Temperature* | -40 °C to 200 °C | above 200 °C to 300 °C | above 300 °C to 380 °C |
| Reduction factor | 1 | 0.9 | 0.75 |
| Impact Load | Slight impacts created, for example, when accelerating during the lifting or lowering movement | Medium impacts created, for example, when the chain is loaded but it slips while adjusting to the shape of the load | Strong impacts created, for example, when the load falls onto an unloaded chain |
| Reduction factor | 1 | 0.7 | Impermissible |

* The use at temperatures below -40 °C and above 380 °C is forbidden!

All instructions given in this operating manual assume the absence of extremely dangerous conditions. Such extremely dangerous conditions include offshore activities, lifting of people and potentially dangerous loads, such as liquid metals or nuclear material. In these cases, the admissibility and extent of the risks are to be assessed by KWB.

Reasonably foreseeable misuse

Eye Self Locking Hooks HSB/S are not designed to be used with food, cosmetics or pharmaceutical products, and must not be subjected to severe corrosive influences (e.g. acids, sewage...). They must not be used in explosion-protected areas or exposed to the fumes released by acids or chemicals. They also must not be used under other circumstances as the one described in Conditions of use and Restrictions of use – e.g. transverse or flexural loading. The safety catch must not be loaded during the lifting process (attention when building loops). Eye Self Locking Hooks HSB/S must not be hooked into small eyes in order to avoid tip loading. Do not apply any surface coating procedure with damaging effects on the materials (e.g. hot galvanizing or electrogalvanizing) and do not subject them to heat, welding or drilling processes.

Assembly instructions

The assembly may only be executed by a qualified person. KWB Star Alloy Eye Self Locking Hooks HSB/S are attached at the eye of the hook to the chain by means of connecting links. The assignment of the right connecting link and chain dimension is determined by the product code (e.g. HSB/S 13) and the grade (10), with which the hooks are also marked. For example, HSB/S 13 must be used with V/S 13 Connecting Links and Star Alloy 13 mm chains. 13 indicates the diameter of the material which the chains are made of, 10 indicates the grade. In the case of multi-leg chain slings, hook tips shall point outwards. When repairing Super Alloy chain slings (G8), Eye Self Locking Hooks HSB/S can also be used as long as a misinterpretation of the right WLL by the user is excluded – e.g. by means of a unified coloration and correct identification. Moreover, it is important to pay attention to the same length of the chain legs in multi-leg chain slings. Possibly, all Eye Self Locking Hooks HSB/S must be replaced. It is also vital to pay attention to the right working load limit marking of the whole system (WLL on identification tag). The weakest part will determine the working load limit. The lifting accessory into which the safety hook is to be incorporated must be declared in conformity with the provisions of the Directive 2006/42/EC. Only non-damaged parts must be assembled. Defective Eye Self Locking Hooks HSB/S must not be assembled and used. Eye Self Locking Hooks HSB/S must be inspected before the assembly process as described below under the section Maintenance, Inspections and Repairs.

Replacement part

Trigger set Type HBG.

Safety precautions to be taken by the user

Gloves must be worn during the whole process. When conditions with restrictions of use take place, working load limit values must be reduced by the above reduction factors in order to assure the required security level.

Residual risks

Overloading because of exceeding the working load limit or not reducing the working load limit when influences under severe conditions such as temperature, asymmetry, edge load or impact occur, can lead to failure of the safety hook. Other factors are unsatisfactory adjustment, transgression of the permitted angle of inclination, strong vibrations with heavy load, transverse loading, and the use of uninspected safety hooks. In such cases, the load could fall causing injuries or fatalities among the workers who operate and work in the danger zone of the lifting equipment. Moreover, the trigger could fail if the hook is not aligned to the direction of the load or if the safety catch is loaded. A missing or broken trigger could also lead to the opening of the hook and to the accidental unhooking of the load.

How to act in case of accidents or damages

After deformation of the safety hook because of overloading or other extraordinary events, take the lifting assembly out of service for inspection or repair by a qualified person.

Maintenance, Inspections and Repairs

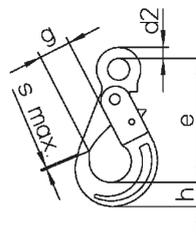
Maintenance: Eye Self Locking Hooks HSB/S shall be cleaned regularly, dried when in contact with wet atmospheres and protected from corrosion, e.g. lightly oiled.

Inspections: Eye Self Locking Hooks HSB/S need to be inspected in a clean condition – they must not contain oil, dirt or rust. Painting is only permissible if an evaluation of the safety hook condition is possible. When cleaning, do not subject Eye Self Locking Hooks HSB/S to processes which cause material embrittlement (e.g. pickling), overheating (e.g. flame cleaning), material abrasion (e.g. sand blasting), etc. Surface cracks or other defects must not be covered. Eye Self Locking Hooks HSB/S must be checked before each use for visible signs of damage. Once a year an inspection must be carried out by a competent person. However, this period must be shortened in view of the conditions of use – e.g. because of frequent use with maximum load capacity or under conditions with restrictions of use, wear or corrosion. It is recommended to subject Eye Self Locking Hooks HSB/S every two years to a crack test. There are different ways of crack testing: subjecting the safety hook to a load test with 2 times the working load limit, followed by a visual inspection, a magnetic crack test or a dye-penetration method.

Withdrawal:

- Broken parts, deformation, notches, cracks of all types
- Signs of heat (e.g. discoloration or coating-burn off)
- In the case of doubts about the safety and correct functioning of the Eye Self Locking Hook HSB/S
- Unrecognizable identification marking
- If wear or excessive corrosion occurs and the tolerable change of measurement is transgressed (see following table)
- If the trigger is missing or not working correctly

| Measure | Maximal permitted change |
|-------------|--------------------------|
| d2 | -10 % |
| e | +5 % |
| g | +10 % |
| h | -10 % |
| Tip opening | 2 x smax. |



Repair:

Eye Self Locking Hooks HSB/S are only to be repaired by a qualified person. Damaged accessories must be replaced by new, original replacement parts. Welding, heat treatments, as well as the straightening of bent Eye Self Locking Hooks HSB/S are not permitted. Inspections and repairs have to be documented and the corresponding reports have to be retained during the service life of the Eye Self Locking Hook HSB/S.

Storage

KWB Star Alloy Eye Self Locking Hooks HSB/S shall be stored cleaned, dried, protected from corrosion, e.g. lightly oiled. While stored, they must not be exposed to corrosive, mechanical or thermal influences.

Declaration of incorporation

In accordance with the requirements established in Annex II, part B, of the EU Machinery Directive 2006/42/EC for components in lifting accessories:

This is to inform you that the product mentioned in this original operating manual is designed to be incorporated in lifting accessories complying with all essential requirements of the EU Machinery Directive 2006/42/EC. This product must not be put into service until the final lifting accessory into which it is to be incorporated has been declared in conformity with the provisions of the Directive 2006/42/EC. Moreover, it is a precondition that this operating manual has been read and understood. This declaration has no legal effect if any changes to the product are introduced without KWB's approval.

Following essential safety and health requirements of Annex I of the Directive are applied and fulfilled:

1.1.3, 1.3.4, 1.5.4, 4.1.2.3, 4.1.2.5, 4.3, 4.4.1.

Additionally, we declare that the relevant technical documentation is compiled in accordance with part B of Annex VII and will be transmitted electronically due to a well-founded request by the national competent authority.

The person authorised to compile the technical documentation:

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