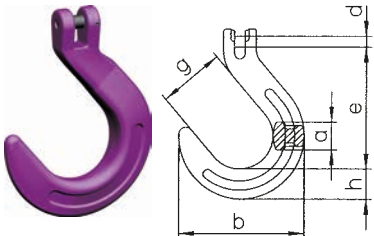


Original operating manual for Clevis Foundry Hook GHK/S

Clevis Foundry Hook GHK/S										
Chain		Code	Dimensions						Weight	Working Load Limit
			e	h	a	g	d	b		
mm	inch		mm						kg	kg
8	5/16	GHK/S 8	120	29	25	64	10	118	1.00	2,500
10	3/8	GHK/S 10	140	35	32	76	12.5	143	1.78	4,000
13	1/2	GHK/S 13	170	42	40	89	16	170	2.96	6,700



For applications where jaw size „g“ of the VHK/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.

Static test coefficient = 2.5; Safety factor = 4

These Clevis Foundry Hooks GHK/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. Clevis Foundry Hooks GHK/S are combined with other components like KWB Star Alloy chains, connecting links and master links to build chain slings. These hooks are provided with a wide throat opening and are, therefore, designed mainly for foundries. Since they are not provided with a safety latch, their use is restricted. 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 Clevis Foundry Hooks GHK/S serve as end hooks or suspension hooks for the attachment of the chain to the load or other load handling attachment in an easy and quick way. Before each use, it must be proved that the use of the hook without a safety latch is permitted. This could be the case in which the use of a safety latch could represent a higher risk than using a hook without it.

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 Clevis Foundry Hook GHK/S must be aligned in the direction of the load.

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

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

- Clevis Foundry Hooks GHK/S must only be used by competent personnel
- Clevis Foundry Hooks GHK/S must be checked before each use for visible signs of damage

Restrictions of use

Under certain conditions, the use of Clevis Foundry Hooks GHK/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!

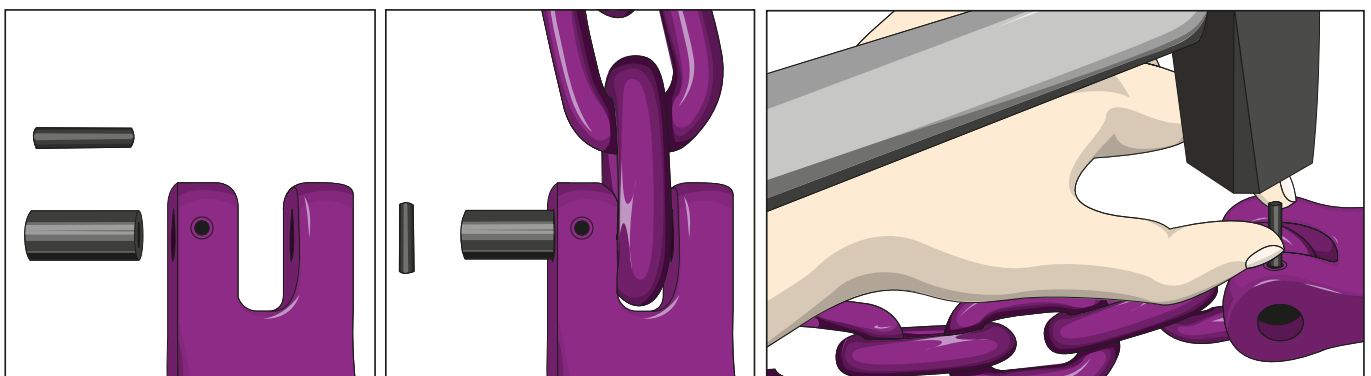
All instructions given in this operating manual assume the absence of extremely dangerous conditions. Such extremely dangerous conditions include offshore activities, lifting of people and potentially dangerous loads, such as liquid metals or nuclear material. In these cases, the admissibility and extent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

Reasonably foreseeable misuse

Clevis Foundry Hooks GHK/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. Clevis Foundry Hooks GHK/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 Clevis Foundry Hooks GHK/S are attached at the clevis connection to the chain – see figure below. Clevis Foundry Hooks GHK/S are only to be assembled with the original accessories provided by KWB – bolts and safety pins. The assignment of the right chain dimension is determined by the product code (e.g. GHK/S 13) and the grade (10), with which the Clevis Foundry Hook GHK/S is also marked. For example, GHK/S 13 must be used with 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), Clevis Foundry Hooks GHK/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 Clevis Foundry Hooks GHK/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 Clevis Foundry Hook GHK/S 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 Clevis Foundry Hooks GHK/S must not be assembled and used Clevis Foundry Hooks GHK/S must be inspected before the assembly process as described below under the section Maintenance, Inspections and Repairs.

Replacement part

Clevis load pins type KBG/S.

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 Clevis Foundry Hook GHK/S. Other factors are unsatisfactory adjustment, transgression of the permitted angle of inclination, high vibrations with heavy load, transverse loading, and the use of uninspected Clevis Foundry Hooks GHK/S. 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. The no provision of a safety latch could also lead to accidental unhooking of the load.

How to act in case of accidents or damages

If the Clevis Foundry Hook GHK/S gets jammed, under no circumstances should force be used to avoid damage on the hook. In this case, remove the load and eliminate the fault by means of hand force. After deformation of the Clevis Foundry Hook GHK/S 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

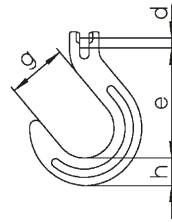
Maintenance: Clevis Foundry Hooks GHK/S shall be cleaned regularly, dried when in contact with wet atmospheres and protected from corrosion, e.g. lightly oiled.

Inspections: Clevis Foundry Hooks GHK/S including their bolts and safety pins 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 Clevis Foundry Hook GHK/S condition is possible. When cleaning, do not subject Clevis Foundry Hooks GHK/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. Clevis Foundry Hooks GHK/S must be checked before each use for visible signs of damage. Once a year an inspection of the hook – including its bolt – must be carried out by a competent person. However, this period must also 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 Clevis Foundry Hooks GHK/S every two years to a crack test. There are different ways of crack testing: subjecting the Clevis Foundry Hook GHK/S 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 Clevis Foundry Hook GHK/S
- Unrecognizable identification marking
- If wear or excessive corrosion occurs and the tolerable change of measurement is transgressed (see following table)
- Bolts that are not completely assembled or secured by the safety pin

Measure	Maximal permitted change
d	-10 %
e	+5 %
g	+10 %
h	-10 %



Repair:

Clevis Foundry Hooks GHK/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 Clevis Foundry Hooks GHK/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 Clevis Foundry Hook GHK/S.

Storage

KWB Star Alloy Clevis Foundry Hooks GHK/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:

DI Bernhard Oswald; Mariazeller Straße 143; A-8605 Kapfenberg

Klagenfurt, 2011-09-01

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Technical changes and misprints are subject to alteration.