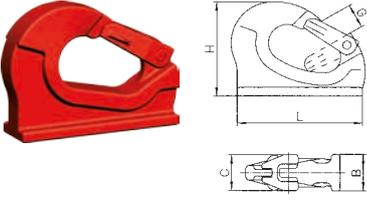


Original operating manual for Weld-On Hook HAS

Weld-on Hook HAS								
 <p>Weldable Safety Hook e.g. excavator buckets. According to safety specifications. Please consider welding instructions!</p>	Code	Measurements					Weight	Working Load Limit
		L	H	G	B	C		
	mm						kg	kg
HAS 1.3	95	74	25	25	34	0.6	1,300	
HAS 3.8	132	106	29	35	40	1.3	3,800	
HAS 6.3	167	133	34	45	49	2.8	6,300	
HAS 10	175	136	34	50	49	3.7	10,000	

Static test coefficient = 2.5; Safety factor = 4

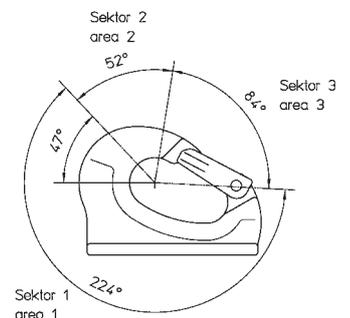
These Weld-On Hooks HAS are designed for universal use on lifting means, excavators and wheel loaders and after reading the operating manual as well as the current national norms for lifting and transporting purposes. For their application, Weld-On Hooks HAS are welded on the above mentioned devices. 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 Weld-On Hooks HAS 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

Purpose of use: these Weld-On Hooks HAS serve as suspension hooks for the attachment of a lifting chain to the lifting means in a quick and easy way. After the attachment, the safety catch must be able to close. The safety catch avoids accidental unhooking of the lifting chain and must therefore be provided.

Load: allowed working load limits in different load areas: the hooked lifting mean must not get jammed.

	Working load limits in [to]		
	area 1	area 2	area 3
HAS 1..3	1.3	1	0.3
HAS 3.8	3.8	2.8	0.9
HAS 6.3	6.3	4.7	1.5
HAS 10	10	7.5	2.5



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

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

- Weld-On Hooks HAS must only be used by competent personnel
- Weld-On Hooks HAS must be checked before each use for visible signs of damage

Restrictions of use

Under certain conditions, the use of Weld-On Hooks HAS is restricted (see table below). The table below describes certain loads with their corresponding reduction factors. Safe working load values can be calculated by multiplying the working load limit taking into account the different load areas 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 400 °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 400 °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

Weld-On Hooks HAS 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. 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 or drilling processes.

Assembly instructions

The Weld-On Hooks HAS must be attached by welding in a position so that damage is excluded and the hook could not get caught (excavator). A precondition for the welding process is to possess a valid qualification according to EN 287. Material of the hook: KWB special hardened and tempered steel TK28A, for reference analysis see following table:

C	Si	Mn	Cr	Ni	Al	B	Alloy additives
0.28	0.30	1.38	0.50	0.45	0.035	0.003	Cu max. 0.25/+Ti

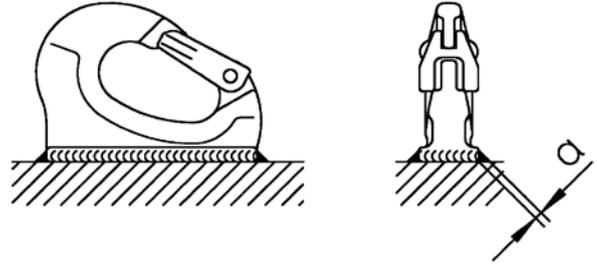
Cleanliness: the surface of the welding area must be cleaned thoroughly. Dampness, dirt, painting, oil, tinder, etc. must be removed.

Recommendation: the verification of the basis material suitability for welding (counter part of the Weld-On Hook HAS), the analytical and strength equivalence of the basis material to the KWB part and the degree of safety of the whole device is the responsibility of the welding company. The part on which the hook will be welded must be able to resist the load and load application on the desired place.

Max. temperature of the intermediate layer (max. temperature of the hook around the weld surface area): 400 °C. Preheat the hook to 250°C, then do the welding. Afterwards cool down slowly under cover.

Weld thickness a [mm] according to the following table must be applied:

Code	min. a (mm)
HAS 1.3	4
HAS 3.8	6
HAS 6.3	8
HAS 10	9



**Filler metals for basis materials according to CR-ISO 15608 (1)
Group 1, steels with a specified minimum yield strength $R_{eH} < 460 \text{ N/mm}^2$
e.g.: S355J2G3:**

MAG-wire:

EN ISO 21952-A: G MoSi
AWS A5.28: ER70S-A1 (ER80S-G)
e.g.: Böhler DMO-IG

Stick electrode:

EN ISO 2560-A: E42 5 B 12 H5
AWS A5.1: E7016-1H4R
e.g.: Böhler VOX EV 50-W

Replacement part

Safety catch set type SFG-A.

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.

How to act in case of accidents or damages

If the safety catch blocks or the lifting mean gets jammed in the hook, under no circumstances should force be used in order to avoid damage on the safety latch or the hook. In this case, remove the load and eliminate the fault by means of hand force. After deformation of the Weld-On Hook HAS because of overloading or other extraordinary events, take the lifting assembly out of service for inspection or repair by a qualified person.

Residual risks

Overloading because of exceeding the working load limit according to the load areas of the hook, or not reducing the working load limit when influences under severe conditions such as temperature or impact occur, can lead to failure of the Weld-On Hook HAS. Other factors are unsatisfactory welding process, strong vibrations with heavy load, transverse loading, and the use of uninspected Weld-On Hooks HAS. 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 safety latch could break when overloaded; a missing safety latch could also lead to the accidental unhooking of the load.

Maintenance, Inspections and Repairs

Maintenance: Weld-On Hooks HAS should be cleaned regularly, dried when exposed to wet atmospheres and protected from corrosion, e.g. lightly oiled.

Inspections: Weld-On Hooks HAS 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 Weld-On Hook HAS condition is possible. When cleaning, do not subject

Weld-On Hooks HAS 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. Weld-On Hooks HAS 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 Weld-On Hooks HAS every two years to a crack test. There are different ways of crack testing: subjecting the Weld-On Hook HAS 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 Weld-On Hook HAS
- Unrecognizable identification marking
- If wear or excessive corrosion occurs and the nominal dimension on this part exceed 10 %
- If the safety latch is missing or not working correctly – a swing-out safety latch indicates the overloading of the hook

Repair: Weld-On Hooks HAS 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 Weld-On Hooks HAS are not permitted. Inspections and repairs have to be documented and the corresponding reports have to be retained during the service life of the Weld-On Hook HAS.

Storage

KWB Super Alloy Weld-On Hooks HAS 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, 2013-10-01

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