Instructions for use and maintenance

(Translation of the original German instructions for use and maintenance (AWA))

Rescue hook with butterfly safety-catch
WLL 600 kg

P/N: HUB-7/8-8

EASA STC n° 10063978, 10082172, 10085893

- EPA -

FOCA TC Z 25-60-20 (PRES; grandfathered)

Picture: A&H © 2025

These AWA instructions apply to all simple and complex PCDS systems compliant with CS-27./29.865(c)(2)(i), (ii) und (iii)

0. Content

Reference material

[1] Inspections for use and maintenance AWA, part 2, MRO steel and wire ropes (AWA_LAM-MRO-ST_T2)

All texts available at www.air-work.swiss, Documents

1. Use

Correct Use

Lifting and carrying of persons as Human External Cargo (HEC), up to a maximum weight of 600 kg. The transport of human cargo must be carried out by employing a maximum of 3 rings, 3 carabiners, 3 thimbles or 3 webbing slings (with or without fittings) and by attaching a maximum of 2 sling legs per fitting.

The HUB rescue hook must always move freely on all its three axes. The wire rope (with sharp edge protection SEP), the low-torque swivel and the rope itself, the SLE load element (aka buoy) and the entire HEC system are coupled together by using flexible connecting devices. The HUB rescue hook is always placed at the bottom of a HEC system.

When the HUB is under load (1 or 2 accessories carrying human cargo) another 1 or 2 accessories can be hooked onto it until the maximum quantity of 3 is reached. It is equally possible to take off an accessory under load, but in both cases the connectors, fittings or slings (webbings or ropes equipped with rings/carabiners/thimbles/loops) must be relieved from strain.

The HEC cargo must be attached and unhooked manually from the rescue hook. Correct hooking/unhooking must work smoothly even under rough conditions, i.e. at low temperatures, with strong wind, in the event of icing, pollution, etc. Therefore, rescuers must be able to handle the safety mechanism of the HUB hook confidently and precisely while wearing gloves, even during adverse conditions and difficult tasks. The securing of all accessories must be carried out automatically without the need for visual checks or additional manipulations since visual conditions during rescue interventions may be strongly compromised and there may be no time for further handling.

To safeguard the correct attachment of human cargo, it is compulsory to employ suitable simple PCDS or complex PCDS (e.g. HN2/HN3 horizontal net).

The maximum payload is defined either by the helicopter maximum external load capacity or by the carrying capacity of the HEC equipment, whichever is lower.

The present AWA instructions contain illustrations for the correct employment of HEC equipment as well as maintenance advice and possible restrictions for use.

If used in the correct way, the HUB rescue hook guarantees safe handling.

It is designed to be used only and exclusively in the above mentioned way, that is as a lifting device for the transport of human external cargo (HEC) by helicopter or by other rescue devices (on the ground).

2. User training

Personnel assigned to using this device must have adequate instruction and training prior to its first use. During the introduction to its use and subsequent in-depth training, particular stress should be placed on gaining a good knowledge of the present instructions for its use and maintenance.

Training has to be repeated at least once a year and proof of this must be demonstrable. Please document the type, amount and the date of training in an appropriate way.

Picture: A&H © 2025

3. Overview

Note: not to scale

3.1 Position of the HUB rescue hook within the complex PCDS system

Fig. 1 Overview with HUB position (red circle)

3.2 Load element, including buoy, sharp edge protection (SEP) rope

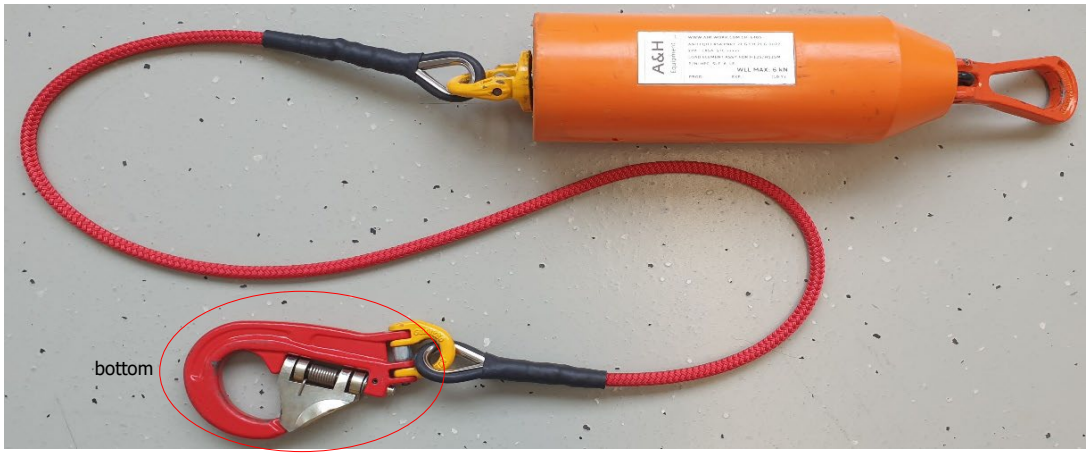


Fig. 2 View of the SLE load element and the HUB rescue hook (red circle)

3.3 HUB rescue hook

Fig. 3 to 5: HUB with SKT small suspension link (yellow), SKLI swivel joint (yellow) or SKG big suspension link (yellow)

Interface

The HUB rescue hook serves as a slinging point for

- personal protective equipment (PPE), aka simple PCDS,
  for example devices compliant with EN 354, EN 358, EN 362 or similar, in conformity with CM-CS-005
- complex PCDS, for example HN2/HN3 horizontal nets

3.4 HUB rescue hook: technical description

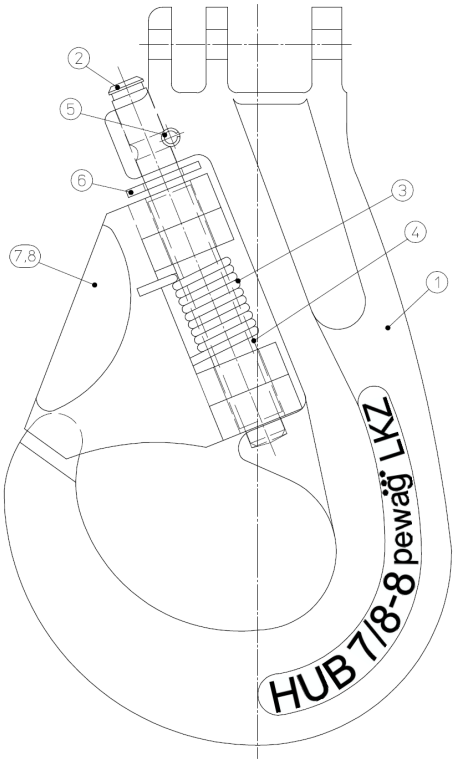


Fig. 6 Technical details

Caption:

1	main body (bearing)
2	bolt Ø 8 x 84 mm
3	spring Ø 1.8 mm
4	tube Ø 10 x 1 mm
5	clamping sleeve Ø 4 x 12 mm
6	washer M8
7	safety latch, right side
8	safety latch, left side

HUB	= type
7/8	= size
-8	= quality grade
pewag*	= forging company
LKZ	= lot identification number of the forging tool (3 digits)

4. Operational conditions

4.1 Conditions for the use of the HUB rescue hook

Working load limit (WLL) for HEC operations	600 kg/1322 lbs
Admissible maximum speed (VNE)	n/a
Recommended speed with HEC load attached	n/a
Minimum ballast load attached to the hook	n/a
Inclination in all directions	+/- (20°)
Altitude, temperature, climb and descent rate, wind	n/a

4.2 Attachment and unhooking of accessories

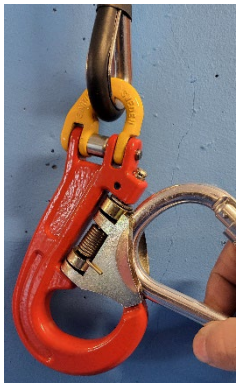
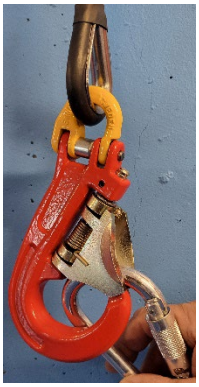
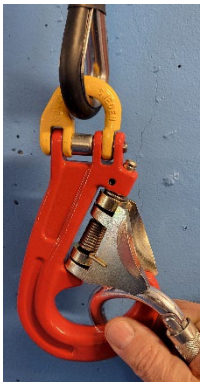
Requirements:

1. The dimension of the accessory/accessories must match the size of the HUB rescue hook. For examples of compliant fittings, see chapter 4.3.
2. Do not attach more than 3 carabiners, rings, thimbles or webbing slings.
3. Avoid any clamping points, ensure sufficient performance, use certified equipment compliant with Regulation (EU) 2016/425 on PPE or EASA CS-27.865.
4. The fitting to be attached to the hook together with the lanyard must not be under load or under tension.

Users/operators must carefully study the instructions for use of the simple and/or complex PCDS employed and check their suitability for the intended purpose. All users must be appropriately trained.

Users/operators are responsible for failure-free attachment and unhooking in conformity with regulations. A&H cannot guarantee that every PPE against falls available on the market fits onto the HUB rescue hook.

4.2.1 Standard attachment procedure


Caption

Fig. 7 Push carabiner into the notch on the safety latch,

Fig. 8 push the safety latch to the right, then

Fig. 9 push the safety latch to the left.

Fig. 10 Carabiner is placed on the hook's load beam and instantly secured.

Fig. 7 Fig. 8 Fig. 9 Fig. 10

Figures 7 to 10 illustrate the standard attachment of accessories onto the HUB rescue hook.
Alternatively, it is possible to open the safety latch on the right with the thumb.
The procedure can be repeated for the attachment of up to 3 accessories.

4.2.2 Standard unhooking procedure

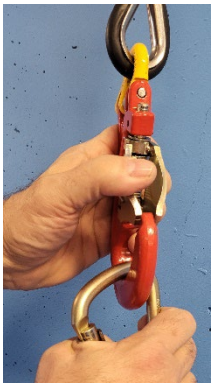
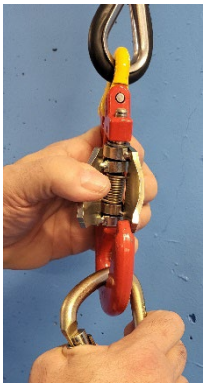
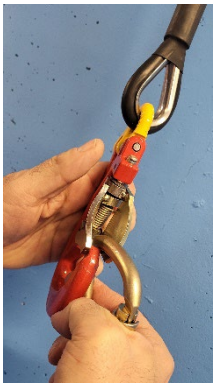






Fig. 11 Fig. 12 Fig. 13 Fig. 14 Fig. 15

Fig. 11 grasp HUB and accessory

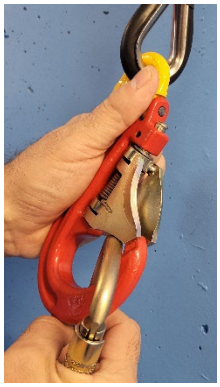
Fig. 12 grasp safety latch with your thumb

Fig. 13 open safety latch with your thumb

Fig. 14. push accessory into the gap and release the safety latch

Fig. 15 accessory can be removed

4.2.3 Alternative unhooking procedure





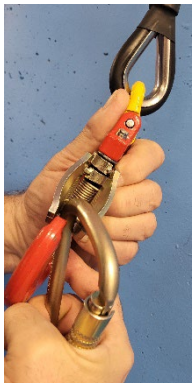



Fig. 16 Fig. 17 Fig. 18 Fig. 19 Fig. 20 Fig. 21

Fig. 16 grasp HUB and accessory

Fig. 17 push accessory upwards and twist it

Fig. 18 continue twisting and pushing the accessory

Fig. 19 push accessory into the gap

Fig. 20 as fig. 14; fig. 21 as fig. 15

The procedure described in figures 11 to 21 only works if the lanyard with fitting is not under load.

4.3 Admissible configurations of the HUB rescue hook, examples


Fig. 22


Fig. 23


Fig. 23


Fig. 25


Fig. 26


Fig. 27


Fig. 28


Fig. 29


Fig. 30


Fig. 31


Fig. 32

Caption

Fig. 22 3 carabiners with round profile

Fig. 23 3 carabiners with square and pointed profile

Fig. 24 3 AW-10 rings

Fig. 25 3 webbing slings

Fig. 26 HUB attached to HUB (REGA model)

Fig. 27 rigging plate with big aperture

Attention: this rigging plate is a simple PCDS and hence may carry only 2 individuals. As a third attachment, only luggage can be transported!

Fig. 28 BKS_2_ECW two-leg sling

Fig. 29 rings of different provenience

Fig. 30 3 PRES thimbles

Fig. 31 HN2/HN3 horizontal net with carabiner and BKS_2_0.65_AZA two-leg sling

Fig. 32 3 BKS_2_0.65_AZA two-leg slings

This list of admissible configurations is incomplete. Requirements for other configurations are described in chapter 4.2.

4.4 Inadmissible configurations


Fig. 33


Fig. 34


Fig. 35


Fig. 36


Fig. 37


Fig. 38

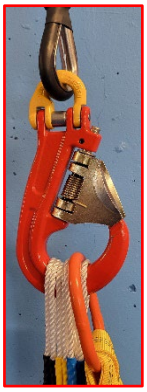


Fig. 39

Caption

Fig. 33 DELTA maillon rapide –> pressure on the threaded sleeve –> curve profile too narrow

Fig. 34 Captive eye carabiner too small

Fig. 35 Shackle (not a PPE, not an EASA component) –> too big, shunt loading

Fig. 36 shackle not secured

Fig. 37 PETZL LEZARD, cross section too small

Fig. 38 Rigging plate OK, but the carabiner does not match the size of the hole

Fig. 39 Loops of the HN2/HN3 legs directly attached to the hook, with ring exerting pressure on the loops.

This list of inadmissible configurations and accessories is incomplete.

Restriction: only a maximum of 3 accessories can be attached to the HUB rescue hook.

Pay careful attention that components are able to move freely.

5. Pre-flight preparation

5.1 Preparation of the PCDS for attachment to the HUB rescue hook

1. Check if the HUB is fully functional.
2. Ensure the presence of a low-torque swivel (HEC_SLE) within the HEC system.
3. Make sure that the size of the fittings on the simple or complex PCDS match the size of the HUB rescue hook.

For the lifting and transport of persons, it is compulsory to place a low-torque swivel between the rope and the cargo (rule of technology). Without a low-torque swivel, due to load rotation, the rope can be already irreparably damaged during one flight cycle.

The use of other components of non-approved suppliers, mainly carabiners made by aluminium alloys, can compromise the aforementioned characteristics or lead to malfunctions and/or failure.

The use of industrial fittings, construction slings, slings with insufficient WLL, etc. is FORBIDDEN!

Users/operators must carefully study the instructions for use of the simple and/or complex PCDS and check their suitability for the intended purpose. All users must be appropriately trained.

6. During operation

6.1 Loading conditions

Normal loading

Fig. 40

Extreme loading

Fig. 41

Fig. 42

Caption

Fig. 40 "Normal loading" means: employment of up to 3 accessories, WLL 600 kg, deflection up to +/- 20°

Fig. 41 Shunt loading may occur during attachment/unhooking of small loads. As soon as the HEC system gets under traction during departure, the upper accessory will return to its normal position, as the two accessories below. Normal operation mode.

Fig. 42 The illustrated loading condition should be avoided but may occur when the bearing HEC system is lowered to the ground. The human cargo at the bottom will pull downwards whereas the upper human cargo might be endangered by the downward pull, but the HUB will stay closed.

7. Post-flight procedure

7.1 End of operation

It is strictly forbidden to release rescue devices from more than 2 meters above the ground:
- **danger of severe injury to persons on the ground**
- **unrecoverable damage of the HEC equipment**

8. Inspection and maintenance instructions

8.1 In-service inspection

Prior to every usage, the equipment must be inspected by the operator for damage, unusual wear or any type of defects. In case of doubts, contact the manufacturer before further usage.

8.2 Scheduled inspections/maintenance

The equipment must be inspected at least once a year by the manufacturer or by a qualified person authorized by the operator.

8.3 Unscheduled inspections/maintenance

The equipment must be inspected for damage, unusual wear or other defects after the following incidents: whenever the equipment has

- suffered shock loads
- been dropped from heights exceeding 2 meters above the ground
- undergone excessive loading
- been involved in any other unclear incident, which substantiates the need for an inspection.

Under such circumstances, before further usage the manufacturer must be contacted who will check the equipment and, as the case may be, certify its release to service.

8.4 Life time and restrictions

Regular service life without any need for maintenance (TBO) amounts to 10 years.

See labelling on every part.

An extension of service life can only be granted by the manufacturer.

Restrictions

Life time of components expires immediately:

The usability of all components ends immediately after a shock loading has occurred. All components involved must be taken out of service.

All events or any exceeding of the limits listed under "Restrictions" are reportable occurrences, hence an occurrence report must be forwarded to the authorities and the manufacturer.

Any requalification and clearance for return to service can only be granted by the manufacturer.

8.5 Discard criteria

If damage, wear and tear or other defects are found during checks by the operator, the device must be declared unusable and discarded on the basis of the check results.
Please also observe the following instructions for use and maintenance (AWA):

For more information, please check AWA, part 2 (Ref. [1]).

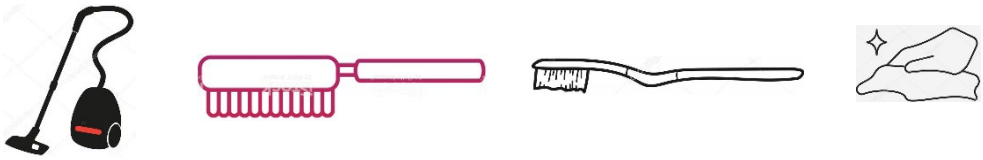
If in doubt, contact the manufacturer. Please also check "Appeal" at the end of these instructions.

8.6 Correct care and storage

- All structural components must be checked visually to make sure they are clean and that there is no damage.

- Dirty metal components (slinging rings, double-stud fittings and carabiners) can be cleaned with a damp cloth, mechanical components are then lubricated with WD40.
- Check all components for damages or alterations.

Better than chemicals: vacuum cleaner and soft brush; for small parts: toothbrush and cloth



Also check AWA instructions, part 2, MRO steel.

The following tools and/or substances must NOT be used for cleaning:

- **Heat > 20°C (hairdryer, lighter, Bunsen burner, radiator, tumble dryer, radiant heater, etc.)**
- **Chemical cleaners such as detergents, curd soap**
- **Caustic or corrosive substances such as stain removers**
- **Volatile substances/hydrocarbons such as ethyl alcohol, fuel, gun oil (only exception: WD40 for the lubrication of mechanical components, where necessary)**
- **Tools such as screw drivers, files, knives, etc.**
- **Compressed air or water pressure as occurring when using nozzles, high pressure cleaners, etc.**

The manufacturer must be notified of all damages. Also see "Appeal" at the end of these AWA instructions.

If you have any doubts or questions, please contact the producer or the supplier.

AWA_LAM-MRO-ST_T2, Ref. [1]

9. Possible inappropriate uses

(Ways of using the HUB rescue hook that are inappropriate and for which it is not designed)

Any use that is not in conformity with the regulations (inappropriate use) of the HUB rescue hook can lead to damages to the same and, therefore, compromise its safety characteristics. In the event of inappropriate use, the producer disclaims all responsibility.

Several examples of inappropriate uses:

Load > WLL of 600 kg
Accessories > 3 items
Use of accessories whose radius is too narrow (e.g. DELTA maillon rapide)
Transport of construction material (HESLO)
Employment of slinging equipment compliant with machinery directive 2006/42/EC

Be careful to avoid other possible risks; residual risk

No hazard identification and/or risk analysis is able to ascertain all possible risks. Please immediately notify the manufacturer of any observations you have made which might compromise safety.

10. Manufacturer

AirWork & Heliseilerei GmbH (A&H)

A&H Equipment

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ISO 9001:2015, SWISO Register no 11298658

EASA Part 21 G POA, CH.21.G.0022

NATO NCAGE SAC17

10.1 Conditions for product use

This product has been manufactured in compliance with EASA Part 21 G POA.
These instructions (AWA) are an integral part of this product and must be compiled in the users or a generally accepted common language. However, only the original German version is legally binding. In absence of valid instructions for use and maintenance (AWA) or without adequate training prior to use of the product, the latter cannot be considered safe.
Gaining a good knowledge of the present AWA, including all its subparts, must be part of user training carried out by the producer, its authorised representative (qualified person) and the person responsible for training in the users' company.

In the case of lending, demonstration, display, sale, discount trading or user training, these instructions for use and maintenance (AWA) must be enclosed/attached.

Picture credits:

Question to the persons responsible for training and work materials
Have you been trained on the basis of these instructions for use and maintenance? Have you read and understood the information given?

Appeal

If you have questions, if a component is damaged, seems to have changed or might be damaged, whenever you have any observations or suggestions to make, please take a photograph and send it to us via email at office@air-work.com (preferably) or via WhatsApp to +41 79 477 54 13.

In 90% of all cases we can answer immediately, thus saving you time and postal charges. Having an image will help us greatly and, together with your short description of the problem, it can usually be identified very quickly.

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