

HENRIKSEN HOOKS

HOOKS
HENRIKSEN HOOKS

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OFF-LOAD RELEASE REMOTE HOOKS

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Rev.: A3

M000136

HENRIKSEN

REDUCING OPERATIONAL RISK

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GENERAL

- Read this user manual carefully before you use the hook and save it for future reference.
- Operational scenarios with corresponding risk evaluations must be well known for the operators.
- It is important that the hook is inspected and maintained periodically to ensure a safe and well-functioning equipment.
- Monthly controls by the operators are limited to visual check and practical operations.
- All necessary examination and maintenance shall be carried out by authorized service personal.
- Annual inspection course for Henriksen hooks is available online, please check our website for more information.
- 5-years thorough examination and overhaul require authorized service personnel trained according to H. Henriksen AS specific procedures to ensure continued compliance with MED-B and MED-D certification for the hook.

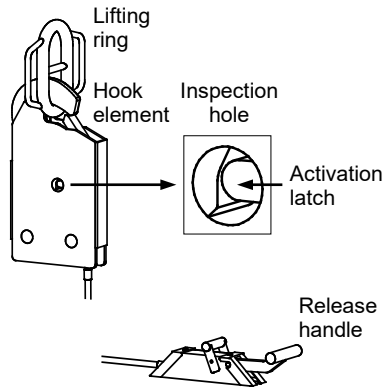
The mandatory 5-years overhaul consist of replacement of load bearing components and recertification according to factory acceptance procedures.

- Any unauthorized repair, service and/or parts used in the hook will violate the certification, safety and warranty.
- Contact the manufacturer in case of any visible damage and/or if malfunction occurs.

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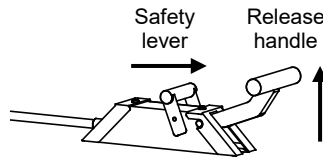
LAUNCH

- 1 Check the following before launch:
 - the hook, the remote unit and the cable are not damaged
 - the hook element is in closed position
 - the release handle is in the closed position
 - you can clearly see the activation latch in the inspection hole, refer to the illustration
 - the lifting ring is properly placed
 - the hook is free of any impurities or ice



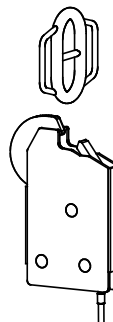
- 2 Start the lowering process with a continuous motion.

- 3 When the boat is close to the water surface activate the hook:
 - pull the safety lever
 - set the release handle to the activated position and release the safety lever
 - verify that the release handle is locked



Stand back and take a safe stand-by position.

- 4 When the boat is waterborne and the hook is off-loaded, the hook will open automatically and release the lifting ring.

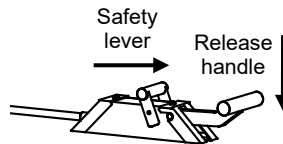


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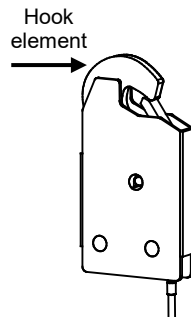
RESET

- 1** Pull the safety lever on the remote unit and verify that the release handle falls to the closed position.

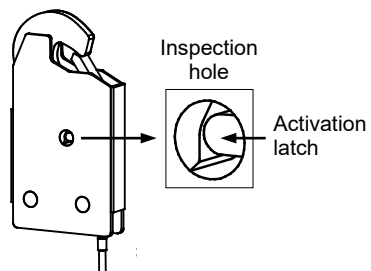
Release the safety lever and make sure that the release handle is locked.



- 2** Set the hook element manually to closed position, confirmed by a click sound.



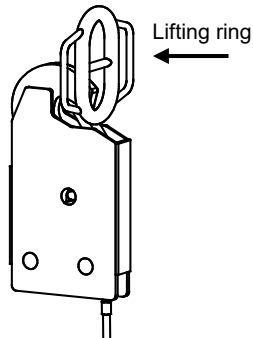
- 3** Make sure that you can clearly see the activation latch in the inspection hole, refer to the illustration.



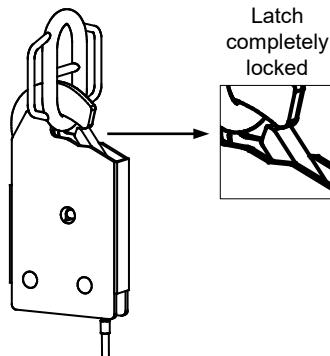
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RECOVERY

- 1** Check visually that the hook is not damaged.
Make sure that the hook is reset.
Place the lifting ring properly into the jaw of the hook.



- 2** Make sure that the latch is completely locked, refer to the illustration.
The hook is ready to recover the boat.

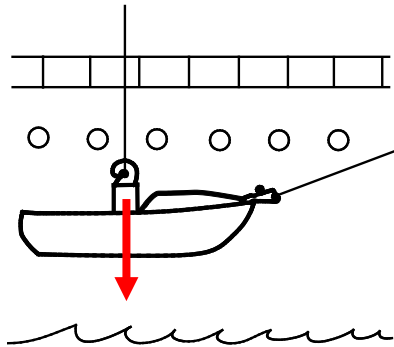


NOTE: See the “SAFE USE” chapter at the end of the manual for the recommended lifting operations.

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GENERAL CONSIDERATIONS

- 1 Consider the position of the hook before mounting it on the boat. The hook shall be placed over the center of gravity. The load going through it shall be as straight and symmetrical as possible during the **whole** lifting operation.



- 2 Make sure that the hook operator can get access to the hook easily and can operate the hook and connect the lifting ring safely.
- 3 Use an installation path for the cables that prevents tripping hazard and protect the cables against wear and tear.
- 4 Make sure that the minimum bending radius of the push/pull cables will be more than 176 mm / 7 inches (for standard cables) or 127 mm / 5 inch (for arctic cables) after the cables are installed.

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GENERAL CONSIDERATIONS

- 5** Consider the ergonomical details before mounting the remote release unit. It shall be easy to install and remove, and safe to operate the unit.
- 6** Consider prevention against impurities and icing on the hook.
- 7** We strongly recommend to use standard Henriksen Lifting Rings, because the ring dimensions are designed to **geometrically fit** together with the Henriksen Hooks.
See more details in our **HLR** document.
- 8** We offer standard Henriksen Bolt Sets and Shims for mounting.
See more details in our **Bolt Set** and **Shims** documents.

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RECOMMENDED BOLTS AND LOCKNUTS

| Hook type | SWL (kg) | Bolts ⁽¹⁾ and locknuts ^{(1) (2)} dimensions | | Max. torque (Nm) |
|-----------------|---------------|---|-----------------------------|------------------|
| | | to frame ⁽³⁾ | to swivel joint | |
| HMKR 3,5 | 3 500 | M24 | M24 x 75 | 70 |
| HMKR 5 | 5 000 | M30 | M30 x 90 | 70 |
| HMKR 8 | 8 000 | M30 | M30 x 90 | 70 |
| HMKR 12 | 12 000 | M30 | M30 x 150 | 70 |
| HMKR 15 | 15 000 | Ø40/M36 ⁽⁴⁾ | Ø40/M36 x 75 ⁽⁵⁾ | 70 |

(1) Bolts: minimum A4 70 quality, locknuts: minimum A4 quality

(2) Locknuts according to DIN 985 – Nylon insert.

(3) The bolt should be unthreaded in the lifting cross-section. Use washers with the locknuts if necessary.

(4) Stud bolt: shaft Ø40 with M36 threaded ends, EN 1.4462 quality. Bolts can be ordered from Henriksen, the length is specified by the boat builder.

(5) Stud bolt: shaft Ø40 with M36 threaded ends, EN 1.4462 quality. Shaft length: 75 mm, total length: 163 mm.

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REMOTE CABLE OVERVIEW

| Hook type | Hook part number | Cable part number | |
|------------------|------------------|-------------------------|-----------------------|
| | | Standard | Arctic ⁽¹⁾ |
| HMKR 3,5 | HH000115 | HH090034 | HH2530XX |
| HMKR 5 | HH000107 | HH090034 ⁽²⁾ | HH2531XX |
| HMKR 8 | HH000087 | HH090034 ⁽²⁾ | HH2531XX |
| HMKR 12 | HH000077 | HH090673 ⁽²⁾ | HH2511XX |
| HMKR 15 | HH000091 | HH090034 | HH2530XX |
| HMKRH 3,5 | HH000088 | HH090034 ⁽²⁾ | HH2531XX |
| HMKRHB 5 | HH005139 | HH090034 | HH2530XX |
| HMKRHB 8 | HH007652 | HH090034 | HH2530XX |
| HMKRHB 15 | HH007576 | HH090673 | HH2510XX |
| HMKRHF 15 | HH002637 | HH090673 ⁽²⁾ | HH2510XX |
| HMKRHI 12 | HH001962 | HH090673 | HH2510XX |
| HMKRW 3,5 | HH000709 | HH090019 | HH2540XX |
| HMKRW 5 | HH000108 | HH090034 ⁽²⁾ | HH2531XX |
| HMKRW 8 | HH000085 | HH090034 ⁽²⁾ | HH2531XX |
| HMKRW 15 | HH000105 | HH090673 ⁽²⁾ | HH2511XX |

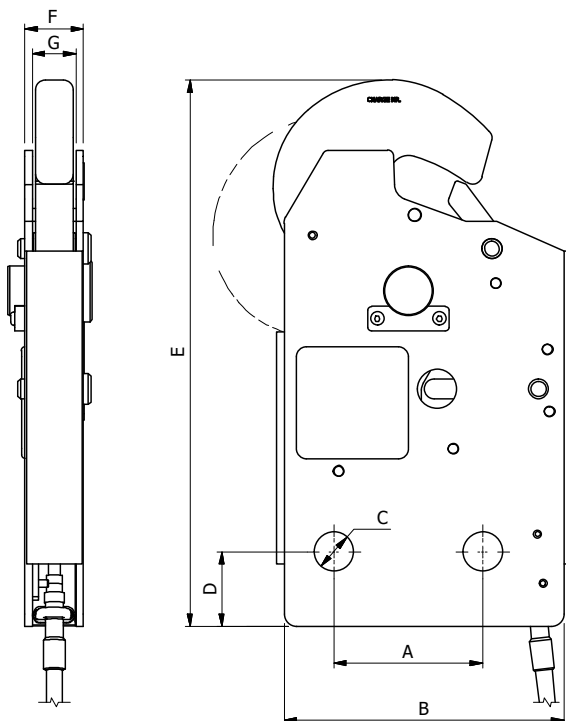
⁽¹⁾ Cables with reduced minimum bending radius requirements.
The last two digits (XX) in the part number describe the cable length in 0,5 m increments: "10" stands for 1,0 m, "15" stands for 1,5 m, etc.
Example: HH253020 is a cable with a length of 2,0 m.

⁽²⁾ Modification on the hook side: 15 mm to cut.



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DIMENSIONS - HMKR



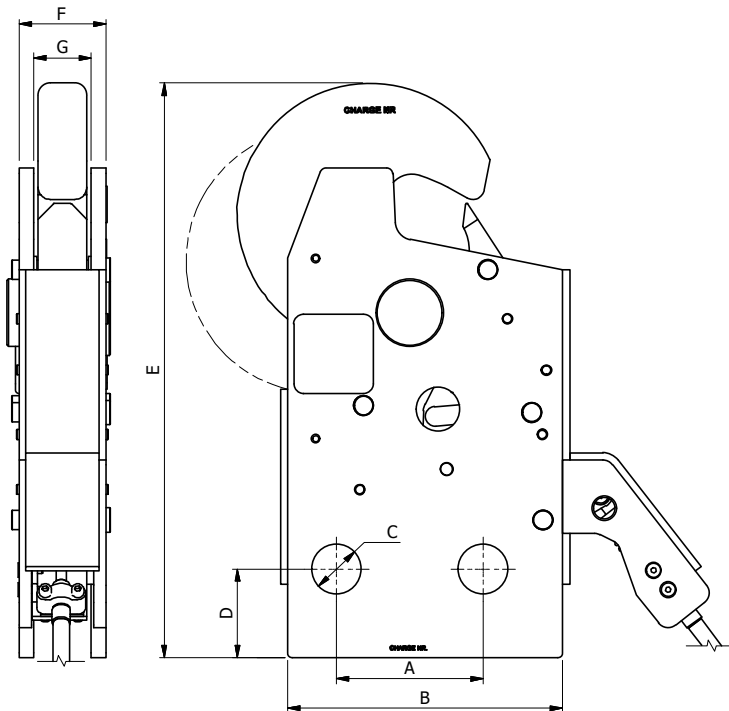
| PART NO. | HOOK | SWL | A | B | C | D | E | F | G | WEIGHT |
|----------|----------|-----------|-----|-----|-------|----|-----|----|----|---------|
| HH000115 | HMKR 3,5 | 3 500 kg | 100 | 185 | Ø24,5 | 49 | 352 | 40 | 30 | 10,1 kg |
| HH000107 | HMKR 5 | 5 000 kg | 120 | 225 | Ø30,5 | 60 | 439 | 47 | 35 | 17,3 kg |
| HH000087 | HMKR 8 | 8 000 kg | 120 | 225 | Ø30,5 | 60 | 439 | 51 | 35 | 19,4 kg |
| HH000077 | HMKR 12 | 12 000 kg | 100 | 226 | Ø30,5 | 40 | 350 | 80 | 50 | 22,9 kg |
| HH000091 | HMKR 15 | 15 000 kg | 120 | 225 | Ø40,5 | 73 | 470 | 71 | 47 | 30,4 kg |

NOTE: Detailed drawings and 3D models are available on request.



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DIMENSIONS - HMKRW



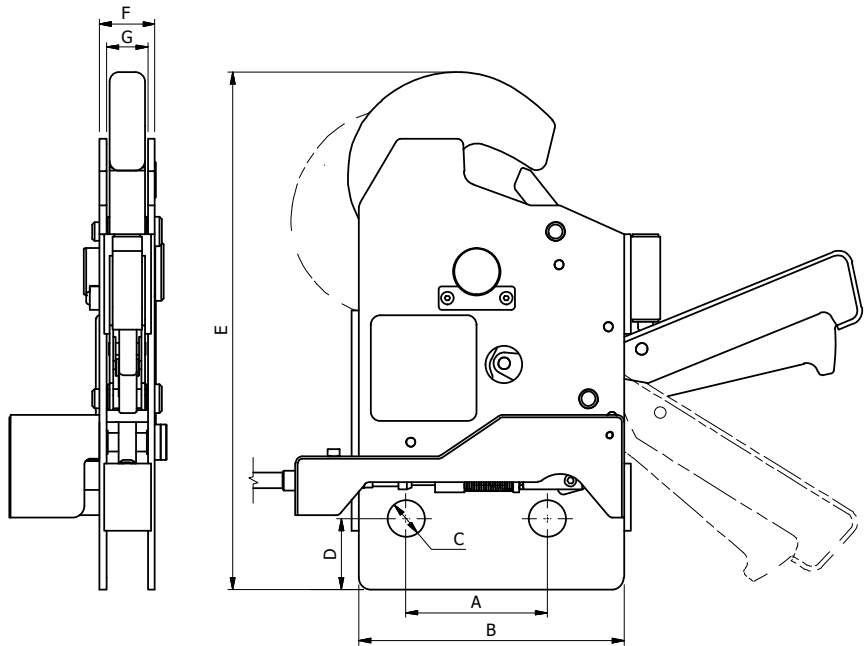
| PART NO. | HOOK | SWL | A | B | C | D | E | F | G | WEIGHT |
|----------|----------|-----------|-----|-----|-------|----|-----|----|----|---------|
| HH000108 | HMKRW 5 | 5 000 kg | 120 | 225 | Ø30,5 | 60 | 467 | 47 | 35 | 18,9 kg |
| HH000085 | HMKRW 8 | 8 000 kg | 120 | 225 | Ø30,5 | 60 | 467 | 51 | 35 | 20,9 kg |
| HH000105 | HMKRW 15 | 15 000 kg | 120 | 225 | Ø40,5 | 73 | 470 | 71 | 47 | 31,6 kg |

NOTE: Detailed drawings and 3D models are available on request.



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DIMENSIONS - HMKRWH



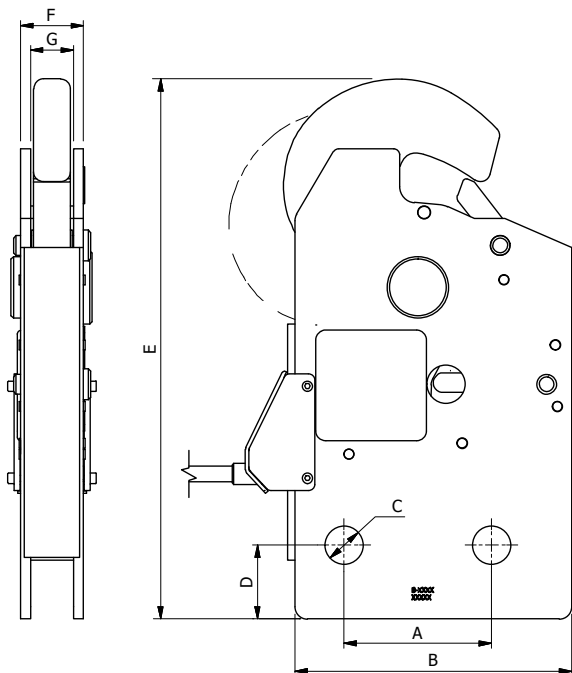
| PART NO. | HOOK | SWL | A | B | C | D | E | F | G | WEIGHT |
|----------|------------|----------|-----|-----|-------|----|-----|----|----|---------|
| HH000709 | HMKRWH 3,5 | 3 500 kg | 100 | 180 | Ø24,5 | 49 | 352 | 40 | 30 | 18,9 kg |
| HH000686 | HMKRWH 5 | 5 000 kg | 120 | 225 | Ø30,5 | 60 | 440 | 47 | 35 | 20,9 kg |
| HH002200 | HMKRWH 8 | 8 000 kg | 120 | 225 | Ø30,5 | 60 | 459 | 51 | 35 | 31,6 kg |

NOTE: Detailed drawings and 3D models are available on request.



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DIMENSIONS - HMKRHB



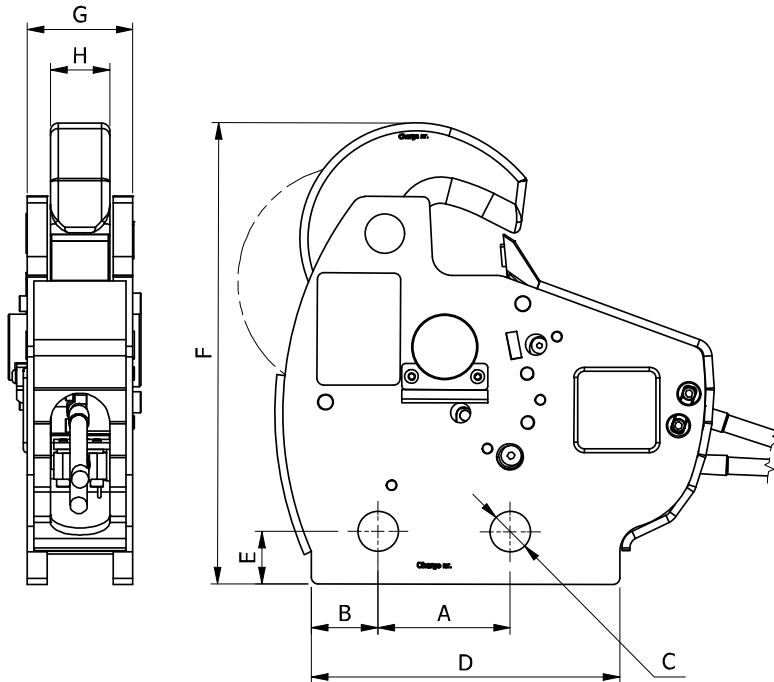
| PART NO. | HOOK | SWL | A | B | C | D | E | F | G | WEIGHT |
|----------|------------|-----------|-----|-----|-------|----|-----|----|----|---------|
| HH000088 | HMKRHB 3,5 | 3 500 kg | 100 | 180 | Ø24,5 | 49 | 352 | 40 | 30 | 10,1 kg |
| HH005139 | HMKRHB 5 | 5 000 kg | 120 | 225 | Ø30,5 | 60 | 440 | 47 | 35 | 16,8 kg |
| HH007652 | HMKRHB 8 | 8 000 kg | 120 | 225 | Ø30,5 | 60 | 440 | 51 | 35 | 19,8 kg |
| HH007576 | HMKRHB 15 | 15 000 kg | 120 | 225 | Ø40,5 | 73 | 470 | 71 | 47 | 30,0 kg |

NOTE: Detailed drawings and 3D models are available on request.



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DIMENSIONS - HMKRHI



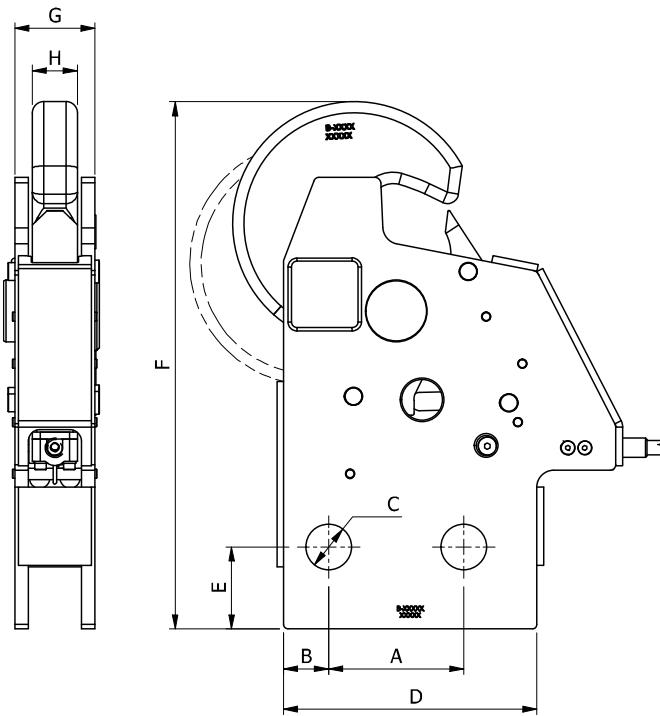
| PART NO. | HOOK | SWL | A | B | C | D | E | F | G | H | WEIGHT |
|----------|-----------|-----------|-----|----|-------|-----|----|-----|----|----|---------|
| HH001963 | HMKRHI 12 | 12 000 kg | 100 | 50 | Ø30,5 | 233 | 40 | 350 | 80 | 50 | 29,5 kg |

NOTE: Detailed drawings and 3D models are available on request.



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DIMENSIONS - HMKRHF



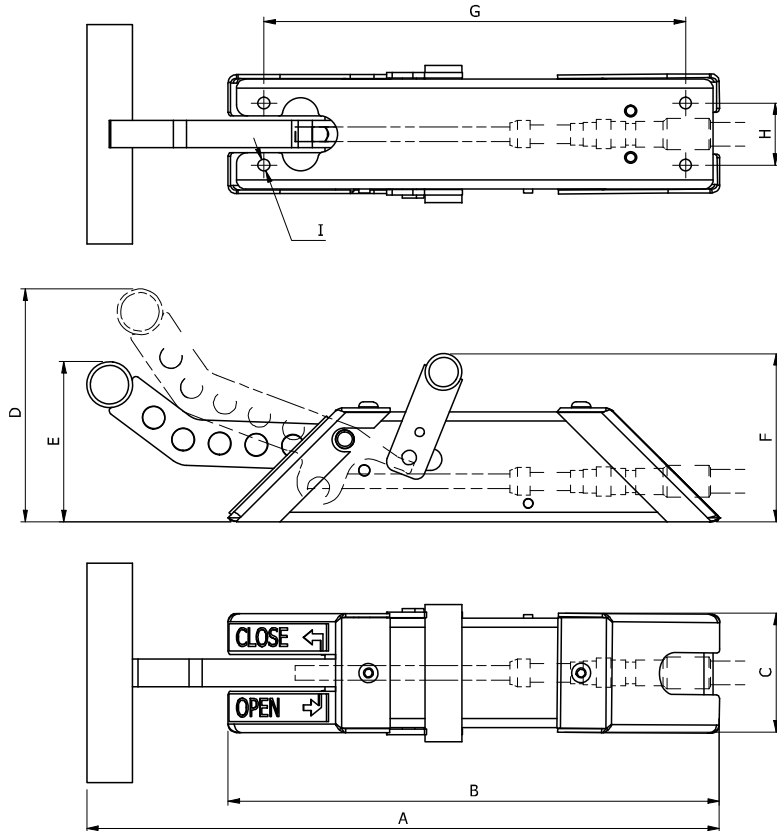
| PART NO. | HOOK | SWL | A | B | C | D | E | F | G | H | WEIGHT |
|----------|-----------|-----------|-----|----|-------|-----|----|-----|----|----|---------|
| HH002637 | HMKRHF 15 | 15 000 kg | 120 | 40 | Ø40,5 | 225 | 73 | 470 | 71 | 40 | 21,5 kg |

NOTE: Detailed drawings and 3D models are available on request.



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DIMENSIONS – HMKR REMOTE UNIT



| PART NO. | A | B | C | D | E | F | G | H | I | WEIGHT |
|----------|-----|-----|----|-----|----|----|-----|----|------|--------|
| HH000064 | 345 | 268 | 65 | 127 | 87 | 92 | 230 | 34 | Ø6,5 | 2,9 kg |

NOTE: Detailed drawings and 3D models are available on request.

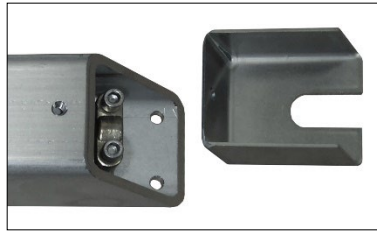
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- 1** Install the remote cable in the boat before attaching it to the remote unit and the hook.

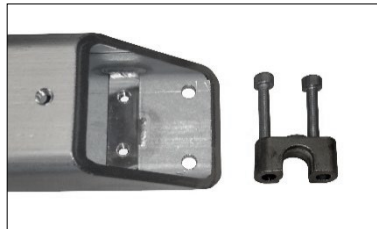
Start the cable mounting process at the remote unit.



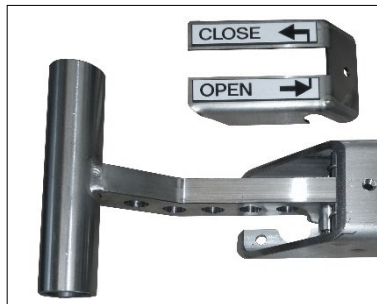
- 2** Remove the cover from the remote unit on the cable entry side.



- 3** Remove the cable clamp.



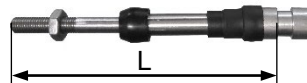
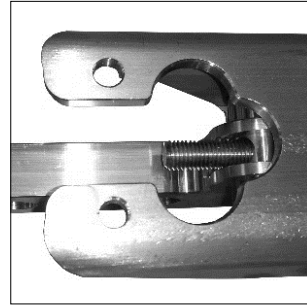
- 4** Remove the cover from the remote unit on release handle side.



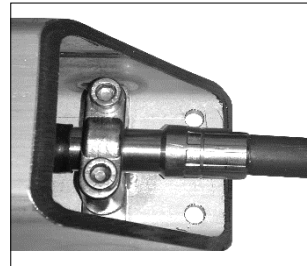
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- 5** Remove the nut from the end of the cable on the remote side and thread the cable through hole in the bolt of the remote handle mechanism.

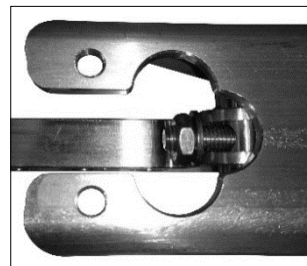
Pull the cable ends out from the sleeve as possible and measure the length (L), refer to the illustration. The length (L) is longer on the end of remote side of the cable.



- 6** Lock the cable with the cable clamp. Tighten the screws carefully to prevent damage on the cable.



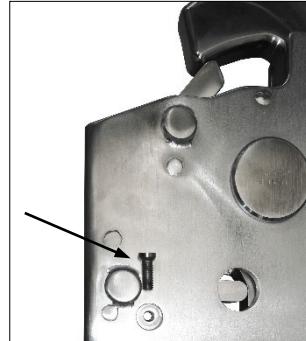
- 7** Set a washer and the nut on the cable end. Do not tighten yet.



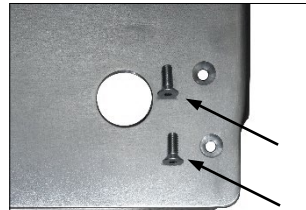
- 8** Spray a small amount of lubricant oil into the remote unit.

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- 9** Remove the screw from the activation latch on the hook.



- 10** Remove the two screws holding the cable bracket.



- 11** Take out the bracket and the spring with the cable top attachment.



- 12** Check if cable end shall be modified on the hook side, see the overview for details later in this chapter, and modify the length if necessary.

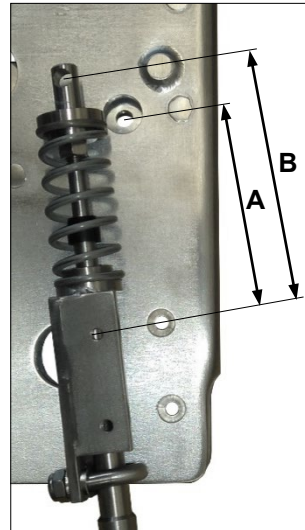
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- 13** Lock the cable onto the bracket with the cable clamp. Tighten the screws carefully to prevent damage on the cable.

Attach the spring onto the cable and install the top attachment onto the cable as deep as possible (min. 5 mm).

Check that there is still enough space for an other nut on the remote end of the cable (see step 7) and change the position of the top attachment if necessary.

Note: The nut has been removed from the cable end on the hook side if the cable length has been modified before delivery.

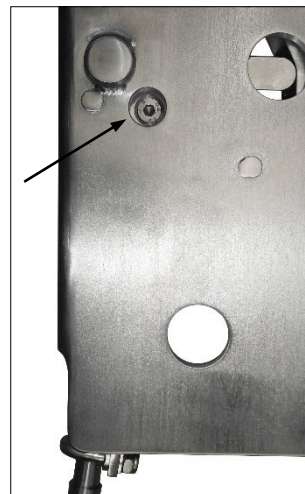


- 14** Make sure that the “B” is greater than “A” where:

A: the distance between the hole on the activation latch and the upper mounting hole for the bracket

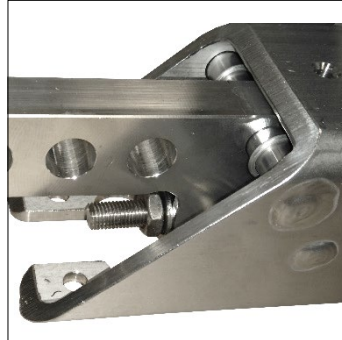
B: distance between the hole on the top attachment and the upper hole on the bracket

- 15** Put the cable with the cable bracket into the hook and lock the cable top attachment onto the activation latch with the locking screw (see arrow).



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- 16** Align the holes before mounting the bracket (see step 17) - if necessary - by adjusting the position of the nut on cable end at the remote unit.



- 17** Lock the cable bracket inside the hook with the two locking screws.



- 18** Make sure that the remote handle can be set properly to both open and closed positions and adjust the position of the nut on cable end at the remote unit if necessary. See the next steps for proper adjustment.

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19 Make sure that the activation latch is properly locking the hook element when the remote handle is in closed position.

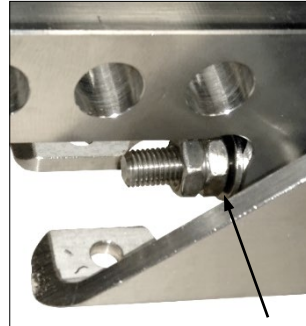


20 Make sure that hook element can rotate freely when the remote handle is in open position (there is a gap between the activation latch and the hook element).



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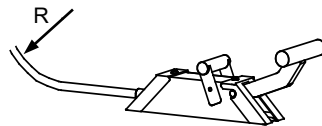
- 21** Set the release handle into closed position.
Lock the nut on the cable end at the remote unit with a second nut.
Make sure that there is a little gap between the washer and the release handle and there is no tension in the cable, refer to the illustration.



- 22** Consider the ergonomical details and mount the remote unit to the dashboard with 4 pcs. M6 / Ø6 screws depending of the dashboard material.
For hole positions refer to the drawing on page 15.

- 23** Install the covers back onto the remote unit.

- 24** Make sure that the bending radius (R) of the cable is greater than 176 mm / 7 inches (standard cables) or 127 mm / 5 inches (arctic cables).



- 25** Make sure that the rubber gaskets are still properly placed on both ends of the cable.

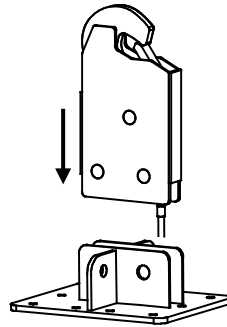
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26 Place the hook between the plates of the lifting arrangement of the boat.

We recommend:

- to use two outside mounting plates if possible
- to apply shims to reduce the gap between the mounting plates and the hook.

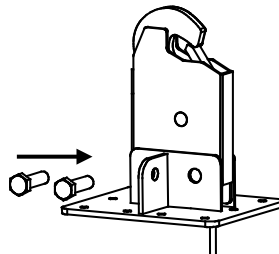
Check that the hook is in the preferred direction.



27 Insert the mounting bolts through the holes on the lifting arrangement and the hook.

WARNING:

Use only recommended bolts, see the table on the next page.



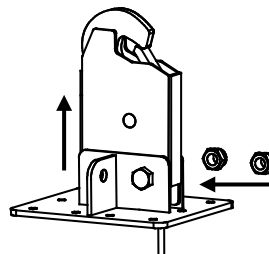
28 Mount the locknuts.

We recommend to hold the hook in lifted position when tightening the nuts.

WARNING:

Use only recommended locknuts and torques, see the table on the next page.

Always use new locknuts.



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FUNCTIONAL TEST

Do a functional test of the following after mounting the hook on the boat:

- The release handle can be set to activated and closed positions.
- The hook element can open and close fully.
- The ring shall be inserted simply and safely.
- Cable friction does not prevent the proper operation.
- The activation latch can move freely up and down between the closed and the activated positions.
- The hook is loaded as straight and symmetrical as possible during the **whole** lifting operation.

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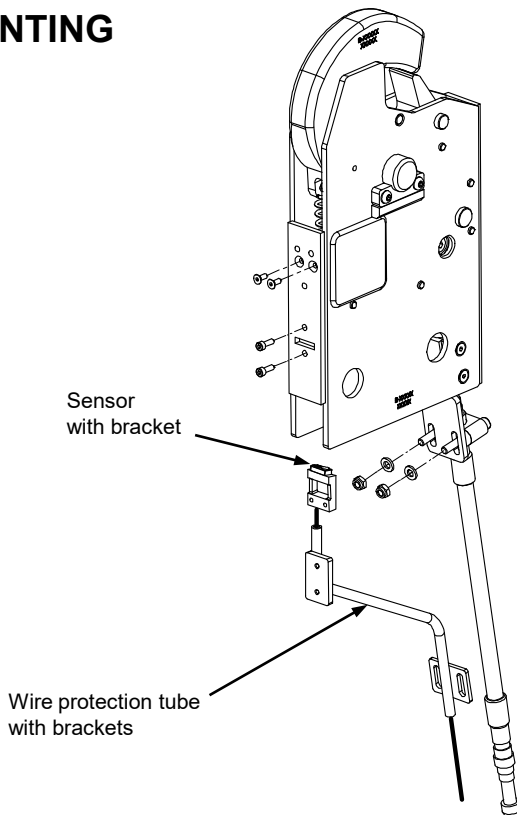
OPEN HOOK SENSOR (OHS)

HMKR hooks can be delivered with an OHS on demand.

The OHS detects when the lifting hook is in open state. This signal can be used for different applications.

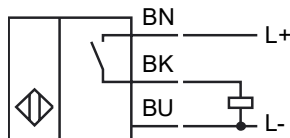
When the lifting- and painter hook is operated by our electrical actuators and set to be released in a sequential order (IHS), the OHS information is vital.

MOUNTING



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CONNECTION DIAGRAM



FUNCTIONAL TEST OF OHS IN AN IHS SETUP

Do a functional test of the following after mounting the hooks on the boat:

1. Check that the lifting- and painter hook is in closed position.
2. Use the wire diagram above to connect or verify the connection on the flying leads from the OHS.
3. Try to release the painter hook when the lifting hook is closed. The painter hook shall not open.
4. Activate the lifting hook and wait for it to open.
5. Try to release the painter hook. The painter hook shall open.



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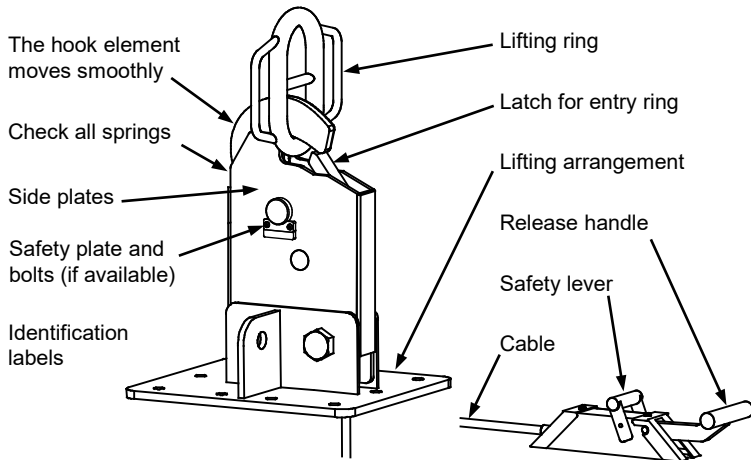
1 For safety reasons carry out the control in good lighting conditions.



2 Remove all impurities (salt, grease, dust, etc.) with fresh water. Remove ice if necessary.



3 Check that the following parts are free from deformations and defects:



Contact the manufacturer in case of any deviation!

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- 4** Do a functional test of the following:
- The release handle can be set to activated and closed positions.
 - The hook element can open and close fully.
 - The ring shall be inserted simply and safely.
 - Cable friction does not prevent the proper operation.
 - The activation latch can move freely up and down between the closed and the activated positions.
 - The hook is loaded as straight and symmetrical as possible during the **whole** lifting operation.

5 DO NOT PAINT ANY PART OF THE HOOK!

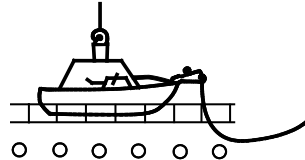


Contact the manufacturer in case of any deviation!

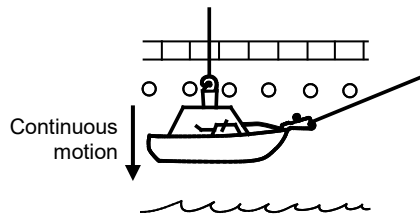
HMKR(HF)/(HB)/(HI)/(W)

SAFE LAUNCH

1 The hook operator connects the lifting ring and the painter line before launch, and then gives a signal to the crane operator that the lowering process can start.

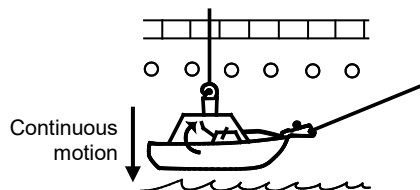


2 The crane operator starts the lowering process with a continuous motion.



3 The operators make sure that there are no obstacles under the boat.

The hook operator then activates the lifting hook when the boat is close to the water surface.



4 The hook operator stands back and takes a safe stand-by position.

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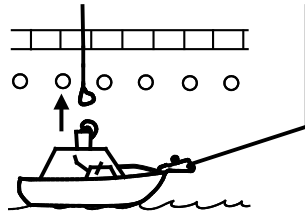


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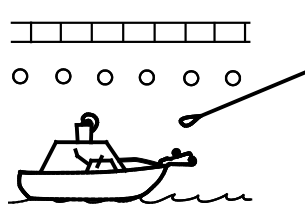
SAFE LAUNCH

- 5** When the boat gets waterborne and the lifting hook is off-loaded, the hook will open automatically and release the lifting ring.

The crane operator lifts the lifting ring to avoid collision with the boat or the crew.



- 6** The coxswain or the hook operator releases the painter line when the boat and the crew are ready.



- 7** The coxswain maneuvers the boat ahead and away from the vessel.

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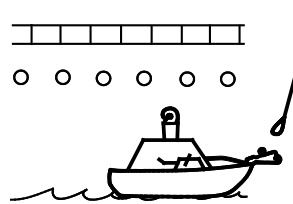
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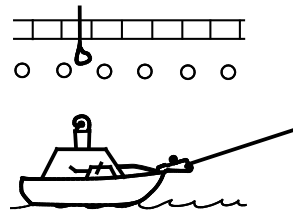
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SAFE RECOVERY

- 1** The hook operator makes sure that both the lifting hook and the painter hook are reset.
- 2** The coxswain maneuvers the boat close to the vessel to let the hook operator safely get the painter line.
- 3** The hook operator connects the painter line. The coxswain aligns the direction of the boat to the direction of the vessel.

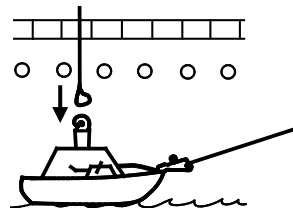


- 4** The coxswain reduces the speed of the boat and the painter line is tensioned. The coxswain then makes sure to keep the correct direction of the boat and tension in the painter line.



The boat shall then be in the correct position below the lifting ring.

- 5** The crane operator lowers the lifting ring to let the hook operator safely get it.



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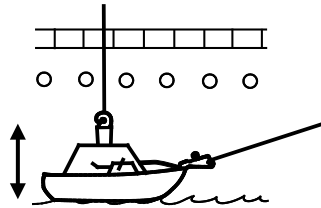


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SAFE RECOVERY

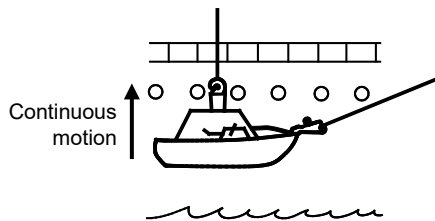
- 6** The hook operator connects the lifting ring and gives a signal to the crane operator.

The crane operator starts the automatic tensioning system (if available) to give tension in the wire.

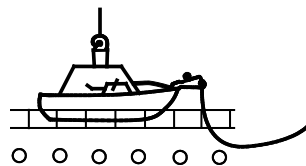


- 7** The hook operator stands back and takes a safe stand-by position.

- 8** The crane operator starts the lifting process with a smooth motion as the boat moves upwards on a wave.



- 9** The crane operator completes the lifting process with a continuous motion and places the boat into the crib.



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