



MARINE HOOKS

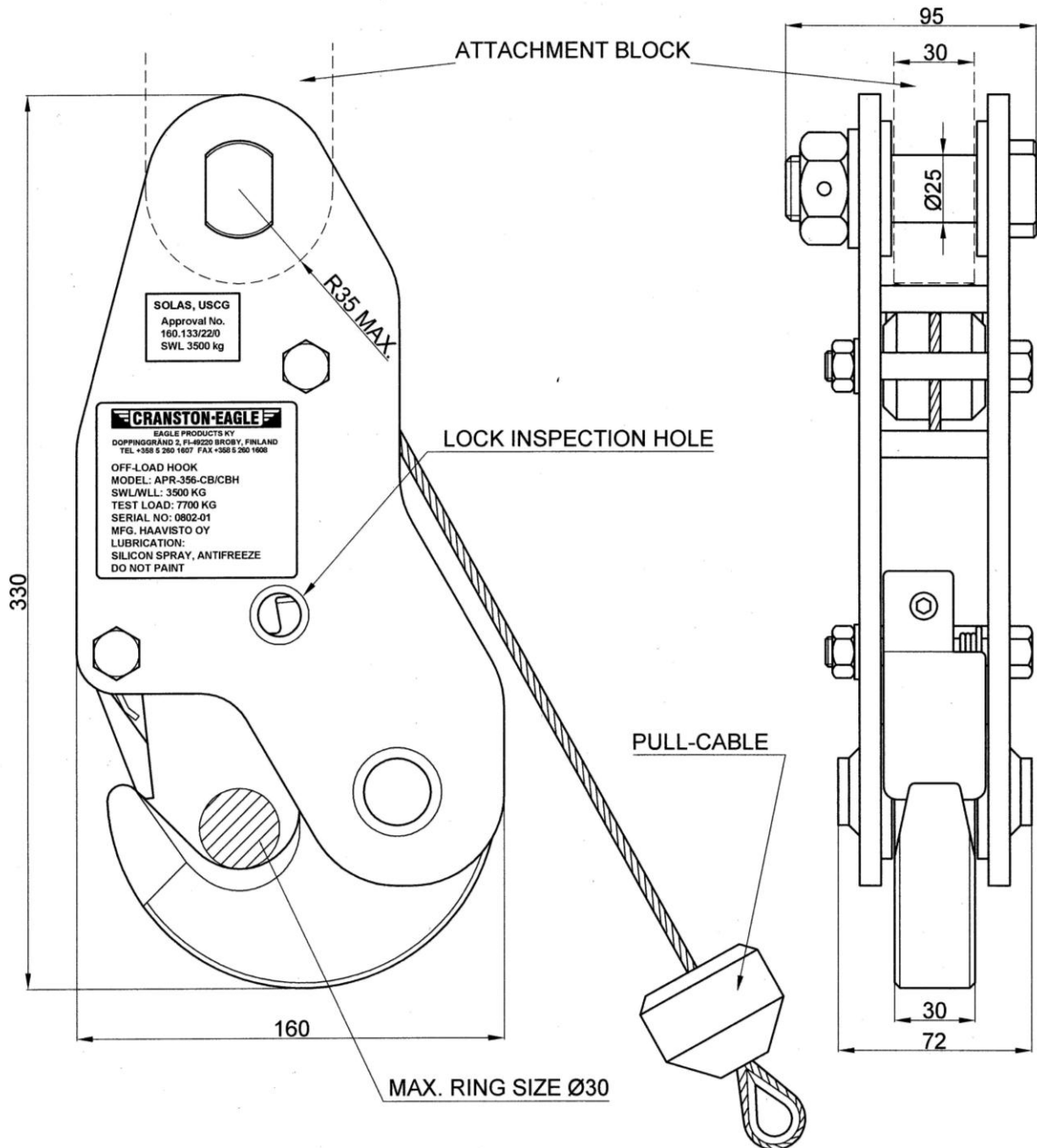
Off-Load, Quick Release Type
Single Point Davit or Crane Fall Mounted
Pull-Cable (Lanyard) Release
Top Bolt Attachment

Model: APR-356-CB/CBH

INSTRUCTIONS

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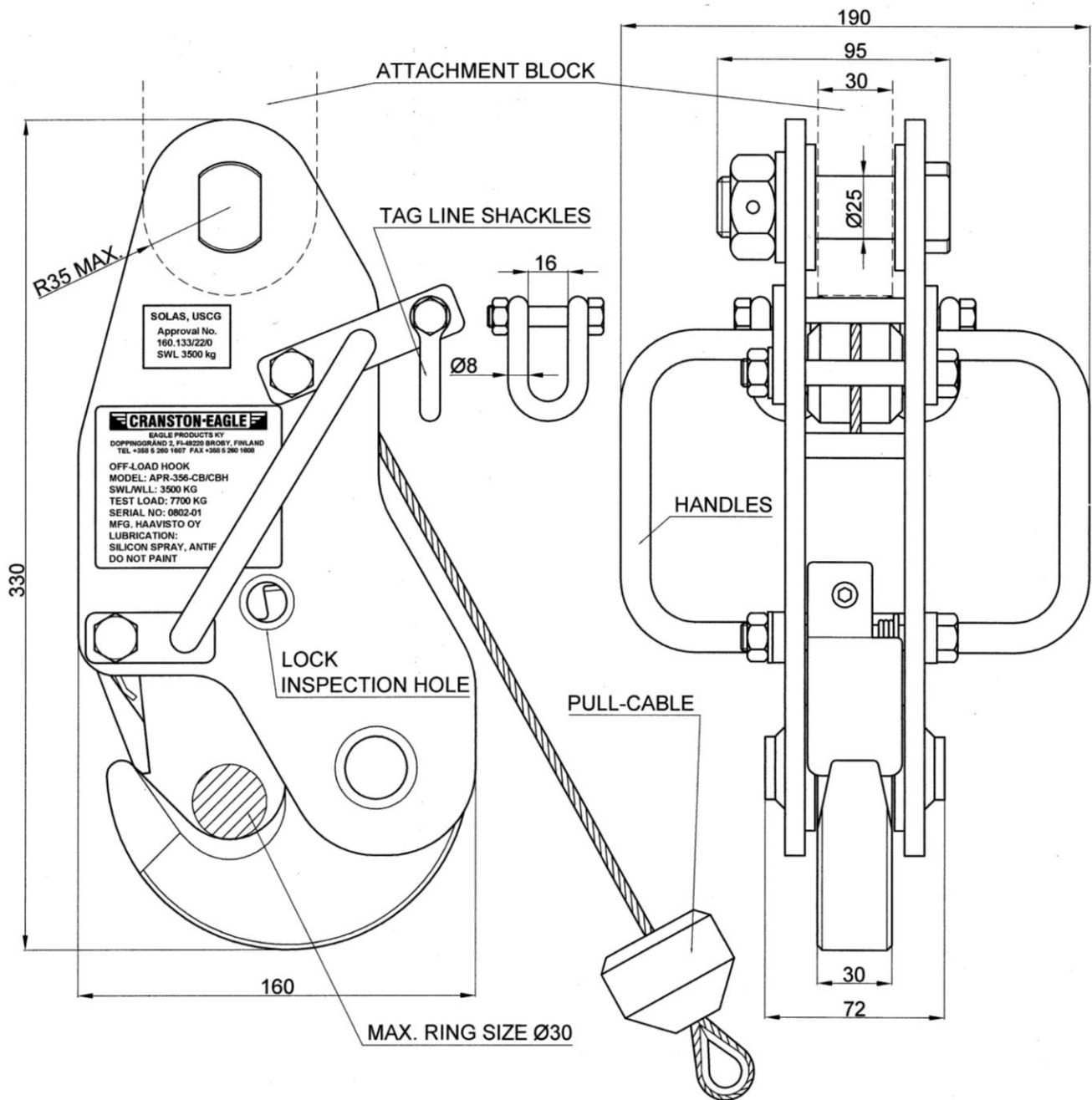
"C-E" Marine Hook, Off-Load type

Model: APR-356-CB

Cable release, Top bolt mounting

SWL/WLL: 3500 kg (6:1) Weight: 9.0 kg

Approved by US Coast Guard



"C-E" Marine Hook, Off-Load type Model: APR-356-CBH (with handles)

Cable release, Top bolt mounting
SWL/WLL: 3500 kg (6:1) Weight: 10.5 kg
Approved by US Coast Guard

INSTALLATION INSTRUCTIONS

1. HOOK ASSEMBLY MOUNTED TO A DAVIT OR CRANE FALL (WIRE)

C-E Hook Model APR-356-CB/CBH is designed for mounting with the mounting bolt on the UPPER position and the hook piece in the LOWER position. In this case, the hook assembly is attached to a davit or crane fall (wire) and the lift ring is attached to lifting belts or other lifting arrangement connected to a boat.

The lift ring (when engaged in the hook) is on the lower side of the hook assembly, which means that the lift ring is generally in contact only with the hook throat, and is unlikely to cause damages to the hook latch. Also, with the hook assembly in the bolt up-hook piece down position, the lock pin spring is on TOP of the lock pin, which means that the lock pin is always seeking to ENGAGE itself with the hook piece, except when the pull-cable (lanyard) is actuated to OPEN the hook and RELEASE the lift ring.

2. PULLING FORCE AT RELEASE, OFF-LOAD HOOKS

C-E marine hooks are made to release ONLY when there is NO LOAD on the hook piece, and therefore the term OFF-LOAD applies. There is a negative angle at the "locking faces" of the hook piece and lock pin which prevents the hook from being OPENED when a force of approx. 100 kg (220 lbs) is present and the "locking faces" are fully engaged. Pulling force to cause release is approx. 15 kg (35 lbs) when there is no load on the hook.

Heavy lift ring assemblies will increase the force required to cause release, as the weight of the lift ring assembly is lifted upwards a few millimetres when the hook lock pin is actuated at release. This is due to a slight upwards rotation of the hook throat as the "negative angle faces" of the lock pin and hook piece pass over each other just prior to release of the lift ring.

3. LIFT RINGS

"C-E" marine hooks are designed for use with lift rings which have a ROUND cross-section. Lift rings should not be used which have OVAL cross-section, or rings which are too large in diameter and do not pass freely through the hook latch when the hook is CLOSED.

4. REMOTE RELEASE CONTROL

In case the hook pull-cable (lanyard) is to be attached to a release lever, rope extension, or any type of remote operator, the arrangement must not allow any pre-loading on the pull-cable, as this may prohibit the lock pin from fully engaging the hook piece "locking face". Fouling of the pull-cable in surrounding structures must also be avoided.

Under no circumstances shall the pull-cable be subjected to a "pre-loaded" condition in the mounting arrangement !

INSTALLATION INSTRUCTIONS (continued)**VERY IMPORTANT !**

The "locking faces" of the hook piece and lock pin must be FULLY ENGAGED when the hook is CLOSED. A sudden shock load may cause the boat to fall if the "locking faces" are not fully engaged when handling the boat on the hook.

(The "locking faces" may be viewed through inspection holes on both hook sides)

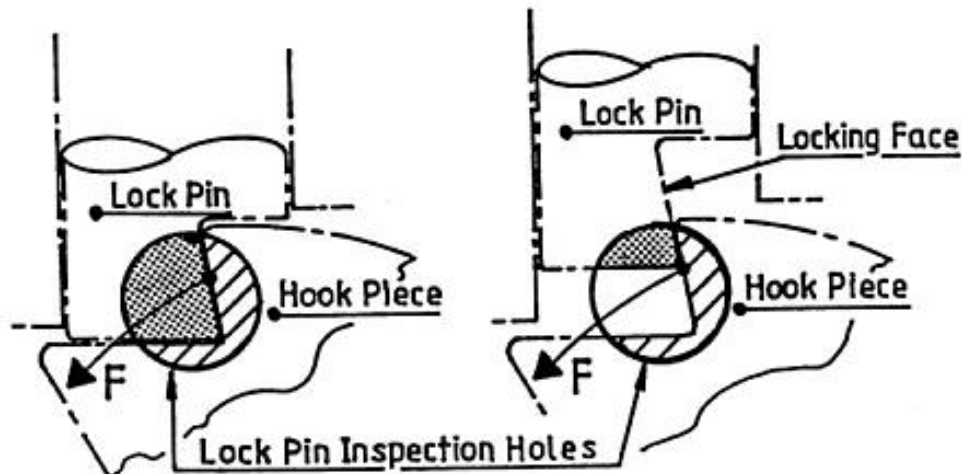


Fig. A - **SAFE**

Lock Faces Fully Engaged

Fig. B - **NOT SAFE**

Lock Faces NOT FULLY ENGAGED

F = Direction of Force when a load is applied to the Hook.

Note: Beware of ice in freezing weather conditions

DO NOT USE THE HOOK IF THE LOCK PIN AND HOOK PIECE ARE NOT FULLY ENGAGED WHEN THE HOOK IS IN THE CLOSED POSITION !

(See service instructions)

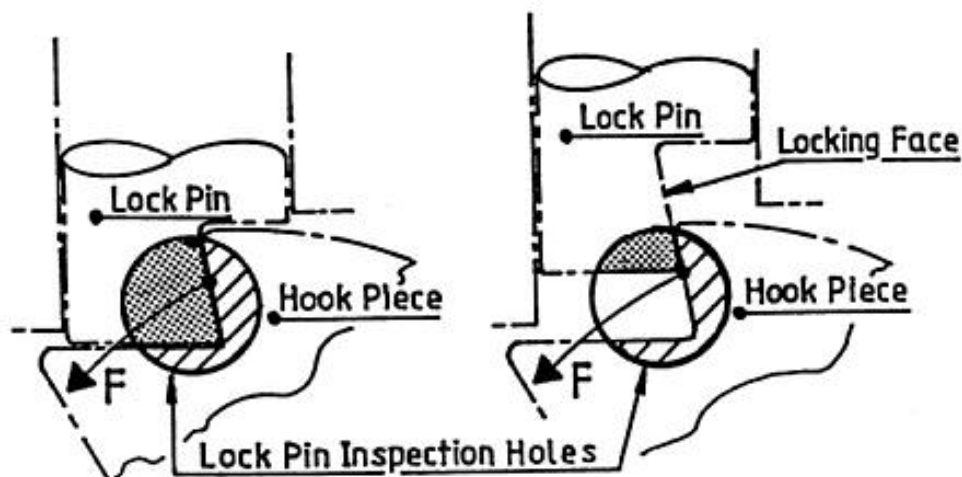
INSTRUCTIONS FOR USE**1. HOOKING ON THE LIFT RING**

- 1.1. Rotate the hook piece to the CLOSED position. There should be a "snap" sound when the hook lock pin engages the hook piece.
- 1.2. Check that the lock pin is fully engaged with the hook piece. View through one of the inspection holes on the hook sides.

VERY IMPORTANT !

The "locking faces" of the hook piece and lock pin must be FULLY ENGAGED when the hook is CLOSED. A sudden shock load may cause the boat to fall if the "locking faces" are not fully engaged when handling the boat on the hook.

(The "locking faces" may be viewed through inspection holes on both hook sides)

**Fig. A - SAFE****Lock Faces Fully Engaged****Fig. B - NOT SAFE****Lock Faces NOT FULLY ENGAGED****F = Direction of Force when a load is applied to the Hook.**

Note: Beware of ice in freezing weather conditions

DO NOT USE THE HOOK IF THE LOCK PIN AND HOOK PIECE ARE NOT FULLY ENGAGED WHEN THE HOOK IS IN THE CLOSED POSITION !

(See service instructions)

- 1.3. Hook on the lift ring **ONLY** through the hook latch.
THE HOOK MUST BE CLOSED BEFORE ATTACHING THE LIFT RING !

INSTRUCTIONS FOR USE (continued)

2. LIFTING OR LOWERING A BOAT

- 2.1. Before handling a boat on the hook, always check that the hook lock pin is fully engaged with the hook piece.
DO NOT USE THE HOOK IF THE LOCK PIN AND HOOK PIECE ARE NOT FULLY ENGAGED WHEN THE HOOK IS IN THE CLOSED POSITION !
(See service instructions)
- 2.2. Take special note that the pull-cable (lanyard) is absolutely free of interference from any and all structures, and that personnel are clear of the hook pull-cable.

3. BOAT RELEASE AT LAUNCH

- 3.1. Just prior to, or as the boat becomes waterborne, grasp the pull-cable (lanyard) and hold with some slack, i.e. without a pulling force, until ready to activate RELEASE.
- 3.2. Pull sharply on the pull-cable when the lift ring goes slack in the hook. Keep pulling until the hook piece rotates to the OPEN position and the lift ring drops free.
KEEP CLEAR OF THE FALLING LIFT RING !

4. MARKING

The pull-cable (lanyard) should be adequately marked with, e.g. a red plastic tag indicating CAUTION: BOAT RELEASE CABLE, or other suitable text.

5. INSTRUCTION STICKERS

Red instruction stickers (2 pcs) are provided with each C-E hook delivery with text as shown to the right. One instruction sticker should be mounted in clear view in the vicinity of the hook, and the other in the wheelhouse or other suitable location.



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Boat Release Hook Off-Load Type Cable Release

INSTRUCTIONS

- HOOK-ON / LIFT / LOWER:**
1. CLOSE HOOK, INSPECT LOCK PIN IS FULLY ENGAGED WITH HOOK
 2. HOOK-ON THROUGH LATCH ONLY
 3. KEEP CABLE FREE OF OBSTRUCTIONS

RELEASE:
SHORT HARD PULL ON CABLE
WHEN BOAT IS WATERBORNE

CAUTION !

**DO NOT PULL CABLE WHEN BOAT IS IN DAVIT OR IN THE AIR !
THE BOAT MAY FALL !**

LUBRICATION:
LIGHT MACHINE OIL
DO NOT USE GREASE !
DO NOT PAINT !

SERVICE PROGRAM AND INSTRUCTIONS

The following inspection and service is to be done at intervals given by OEM (Original Equipment Manufacturer), or at any time the hook does not function properly. (Refer to drawing, page 5 and inspection & service report)

Interval

Procedure

Every time hook is used

Check visually that the hook is complete and without any dents or bends.

Monthly

1. If needed clean the hook with solvent and warm water.
2. Lubricate the hook axle and lock pin with light machine oil, silicon spray or antifreeze in freezing weather. **DO NOT USE GREASE!**
3. Check that the hook piece rotates freely between open and closed position, and that the lock pin moves freely when opening and closing the hook.
4. Check through the inspection holes on the hook sides that the "locking faces" of the hook piece and lock pin is fully engaged when the hook is closed.

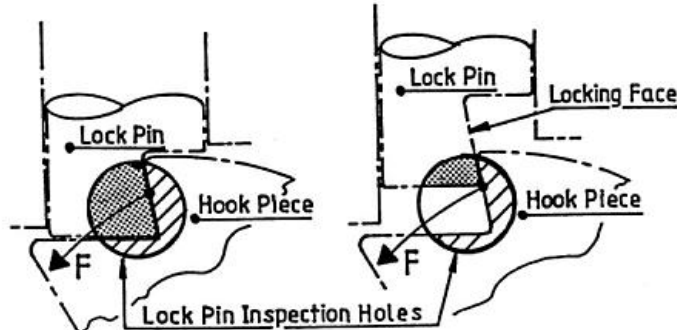


Fig. A - SAFE

Lock Faces Fully Engaged

Fig. B - NOT SAFE

Lock Faces NOT FULLY ENGAGED

F = Direction of Force when a load is applied to the Hook.

If the lock pin does not fully engage with the hook piece or otherwise operates in a sluggish manner, the lock pin spring must be replaced immediately! (See instructions, page 3)

DO NOT USE THE HOOK IF THE LOCK PIN AND HOOK PIECE ARE NOT FULLY ENGAGED WHEN THE HOOK IS CLOSED!

5. Inspect the surface of the locking faces that there are no notches or wear. **The hook must be taken out of use and sent to OEM if any damages at the locking faces are present!**

Interval

Procedure

Monthly (cont.)

6. Inspect hook piece wear. If obvious wear detected, contact OEM.

7. Inspect the pull-cable for free movement and damages. Replace if damaged.

8. Check the latch operation. The latch should operate in a sharp way and touch the hook “nose” when the hook is closed. When the hook is opened the latch should stay tight against the limit.

If the latch does not operate properly, the latch spring must be replaced immediately! (See instructions, page 4)

9. Inspect the mounting bolt for defects and ensure proper tightening with security pin in place.

10. Inspect the lift rings used with the hook. Replace if damaged.

30 months

1. Replace the lock pin spring. (See instructions, page 3)

2. Replace the latch spring. (See instructions, page 4)

60 months

Send hook to OEM or other authorized service and testing facility for complete inspection, service, testing and re-certification.



SPRING & PULL-CABLE REPLACEMENT INSTRUCTIONS

LOCK PIN SPRING (12) & PULL-CABLE (23) REPLACEMENT PROCEDURE

Note: The hook should be demounted before attempting to replace parts.
See drawing on page 5 for part no. identification.

1. Open the hook, and loosen guide bolt (21) at back of hook until lock pin (3) is free to be drawn out of the hook body in the direction of hook piece (1).
2. Unscrew the threaded piece on the pull-cable from the lock pin.
Note: It may be necessary to heat the lock pin in order to remove the threaded piece due to use of LOCTITE on the threads. Use of an electric heat gun is recommended for heating.
3. Remove the old lock pin spring (12) and replace it with a new one.
4. If the pull-cable (23) is replaced, it is further necessary to remove the upper bolt (9) and roller (20) in order to remove the used cable, and install a new one. Control that the new cable is in the roller groove and not behind guide pins (8) when reinstalling the roller and bolt.
5. Apply 4-5 drops of LOCTITE No. 243 or equal locking fluid to the threaded piece on the pull-cable, and screw into the lock pin (3) and tighten.
Note: Use of LOCTITE, or equal locking fluid is recommended to prevent the pull-cable from working loose from the lock pin, in which case opening of the hook to release the lift ring is not possible by means of the pull-cable.
6. Insert the lock pin (3) into the hook body with the guide slot for guide bolt (21) lined up with the bolt position. Apply 2-3 drops of LOCTITE or equal to guide bolt and carefully tighten so that the bolt goes into the lock pin guide slot.
Note: The lock washer (22) must be in place when reinstalling the guide bolt to prevent the bolt from fastening against the lock pin.
7. Check the hook for proper operation.

All spare parts must be ordered from OEM or other authorized dealer!



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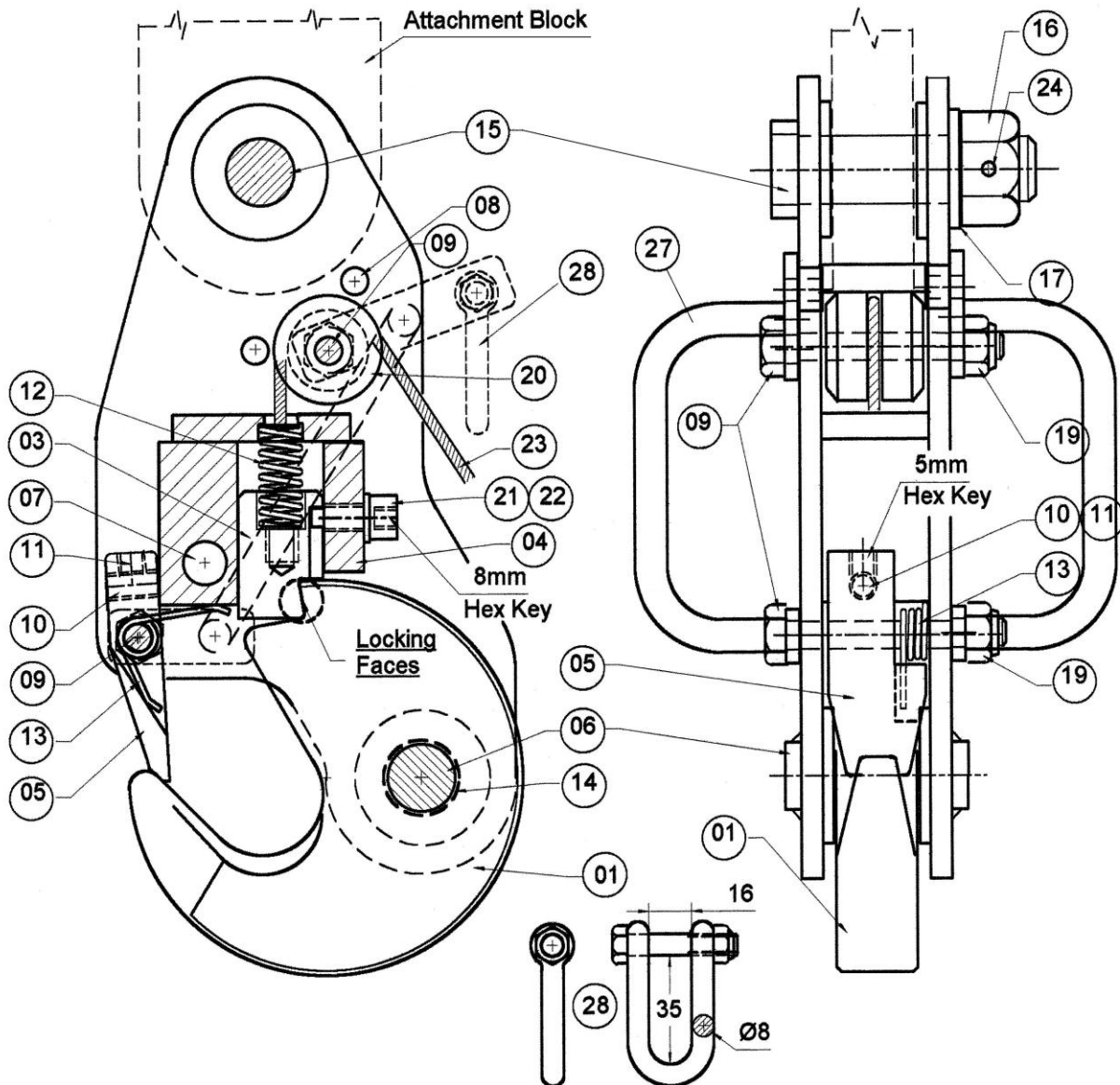
LATCH SPRING (13) REPLACEMENT PROCEDURE

Note: The hook should be demounted before attempting to replace parts.
See drawing on page 5 for part no. identification.

1. Remove lower bolt & nut assembly (9,19), that holds the latch (5) in place.
2. Remove the latch and the old spring.
3. Install the new latch spring (13) so that the long end of the spring goes against the hook body and the short end against the latch.
4. If needed, adjust the latch adjusting screw (10) so that the latch end is against the hook "nose" when the hook is closed. The latch should move approx. 2 mm (5/64") when closing the hook, but must not cause interference at that point.
5. Check the hook for proper operation.

All spare parts must be ordered from OEM or other authorized dealer!

ASSEMBLY & PARTS LIST



- | | |
|--|---|
| 01- Hook piece | 15- Mounting bolt, taylor made (R) |
| 02- Side plates | 16- Nut, M24, DIN 934-A4 (R) |
| 03- Lock pin | 17- Washer, BM24, DIN 125-A4 (R) |
| 04- Lock cylinder | 19- Nut nyloc, M10, DIN 985-A4 (R) |
| 05- Latch (R) | 20- Roller, pull-cable (R) |
| 06- Hook axle | 21- Guide bolt, lock pin, taylor made (R) |
| 07- Support pin | 22- Lock washer, BM10, DIN 127-B-A4 (R) |
| 08- Pin, cable guide | 23- Pull-cable assembly (R) |
| 09- Bolt, M10x80, DIN 931-A4 (R) | 24- Split pin, D5x50, DIN 94-B-A4 (R) |
| 10- Lock screw, M10x25, DIN 913-A4 (R) | 27- Handle assembly, 1RH & 1LH (R) |
| 11- Lock screw, M10x10, DIN 913-A4 (R) | 28- Shackle assembly, M8, 2 req. (R) |
| 12- Spring, lock pin (R) | |
| 13- Spring, latch (R) | |
| 14- Bushing, hook | |

Parts marked with (R) may be replaced in the field. All other parts must be factory fitted.



MARINE HOOKS

INSPECTION & SERVICE REPORT

Hook model: _____ Serial No: _____

Test Certificate No: _____ Date: _____

Installation position: _____ Date: _____

<u>Inspected & serviced</u>	<u>OK</u>	<u>Not OK</u>	<u>Remarks</u>
1. Cleaned	_____	_____	_____
2. Hook body damages	_____	_____	_____
3. Lubricated	_____	_____	_____
4. Free hook rotation	_____	_____	_____
5. Free lock pin movement	_____	_____	_____
6. Lock pin spring	_____	_____	_____
7. Lock pin wear	_____	_____	_____
8. Hook piece wear	_____	_____	_____
9. Pull-cable (if used)	_____	_____	_____
10. Hand lever (if used)	_____	_____	_____
11. Free latch movement	_____	_____	_____
12. Latch spring	_____	_____	_____
13. Latch adjustment (if possible)	_____	_____	_____
14. Mounting bolt	_____	_____	_____
15. Lift ring assembly	_____	_____	_____
16. Welds for cracks	_____	_____	_____
17. Other (list) _____	_____	_____	_____

Inspected by: _____ Date: _____

Scheduled for:	Next inspection & service	Date: _____
	Proof load test	Date: _____
	OEM hook inspection	Date: _____

Remarks and/ or suggestions: _____