TULMAR

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Technical Service Bulletin

Hammerhead Life Preserver

ISSUE DATE:	January 07, 2022	**TSB NUMBER**	TSB-22-001

HAZARD / URGENCY RATING	
	DANGER – Injury possible if TSB not observed or followed
	WARNING – Product damage possible if TSB not observed or followed
X	**CAUTION – Essential issue affecting operation, service, or parts**
	INFORMATIONAL – Advisory which may be of interest

APPLICATION:

This Technical Service Bulletin (TSB) applies to Hammerhead Life Preservers with the following part number:

- 67003, Life Preserver, Hammerhead, Black, Standard
- 67004, Life Preserver, Hammerhead, Black, Quick Ejector Harness
- 67006, Life Preserver, Hammerhead, Black, CSF
- 67006-001, Life Preserver, Hammerhead, Black, PFDT-65
- 67007-001, Life Preserver, Hammerhead, Black (CTLP)

Updates will be made to the following manuals:

- 67903-002, Service Manual, English, for Hammerhead 67003
- 67903-003, Service Manual, French, for Hammerhead 67003
- 67905-002, Service Manual, English, for Hammerhead 67006
- 67907-002, Service Manual, English, for Hammerhead 67006-001, & kit 67008-001

SUMMARY:

This Technical Service Bulletin warns users of the above listed Hammerhead Life Preservers of the potential negative effect of the aging of rubber components used on Hammerhead inflation systems. As a precautionary measure, O-rings located each side of each inflator are to be replaced as part of the periodic maintenance inspection and any time a mechanical inflator is separated from the valve manifold. Failing to renew the O-rings may cause a leak during inflation, leading to underinflation which results in less buoyancy.

There are two O-rings per inflator and two inflators per Hammerhead Life Preserver.
Replace with Tulmar Safety Systems Inc p/n 3251-105, O-Ring, Manifold. (4 required per life preserver).

IMPACT:

Inflation pressure is retained in the bladder by a valve core inside the valve manifold. During the inflation stage compressed gas exits the CO_2 cylinder, passes through the inflator body, enters the valve

manifold, and pushes past the valve core, ultimately inflating the life preserver bladder. O-rings located each side of the inflator body keep the compressed gases within the inflator body during the brief inflation phase. Degradation or displacement of the O-rings could result in CO_2 escaping the inflator body during inflation, resulting in an underinflated life preserver.

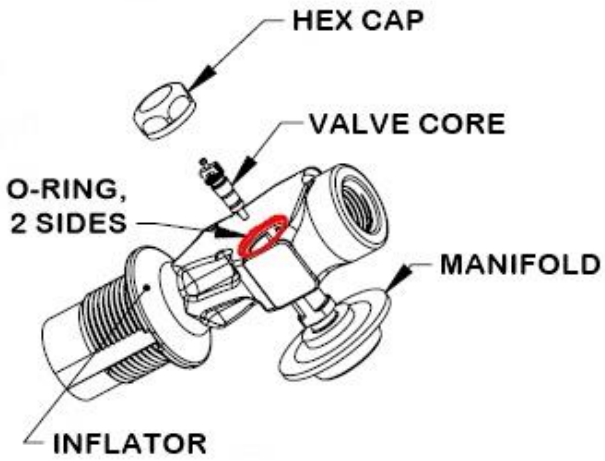

Figure 1, Inflator and manifold assembly

While the shelf life is 15 years from Date of Manufacture, service life of the rubber O-rings is shorter. The O-rings are captive and not exposed to atmosphere and UV rays, so degradation is not rapid or significant. Nevertheless, as a precautionary measure the O-rings are to be replaced as part of the periodic maintenance inspection and any time a mechanical inflator is separated from the valve manifold. Removing the hex cap is sufficient to compromise the seal therefore the O-rings are to be replaced in this scenario as well. There are two O-rings per inflator and two inflators per Hammerhead Life Preserver.

ACTION:

1. Follow the service manual to separate one of the mechanical inflators from its valve manifold.

2. Remove the O-rings from inflator using a thin pointed tool such as a pick tool, being careful not to damage the manifold body. A small slot in the O-ring groove facilitates removal of the O-ring.

Figure 2, Removal of the O-ring

Figure 3, O-ring groove

3. Using a blunt set of tweezers or similar tool, insert a new O-ring into the groove, ensuring it is properly seated and secure. Using the hex cap nut to press down onto the O-ring can also help seat it properly.

Figure 4, Inserting a new O-ring

Figure 5, Seating the O-ring

4. Replace the inflator body onto the manifold, **ensuring the cover fabric is down around the base** and that the cylinder side of the inflator is pointing towards the cylinder webbing loops with the labels.
   NOTE: Ensure no fabric is caught between the base of the inlet manifold and the inflator as this will prevent a tight seal and cause the inflator to leak.

5. Continue to re-assemble the inflation system as outlined in the Service Manual.
   Repeat the O-ring replacement for the 2nd inflator.

Replacement Kit, Inflator Manifold O-Rings, 4pk, p/n 3260-001, (4 required per life preserver).

MANUAL UPDATES:

In addition to the O-ring replacement instructions above, the following changes will be made to the Service Manuals:

1. Incorporating the visual inspection of the neck seam stitching inside the Hammerhead cover as outlined in TSB-19-003.
2. Changing the duration of the pressure test from 5 minutes to 10 minutes with emphasis on the visual inspection of the three high stress areas identified in TSB-19-003.
3. Correction to the pass criteria of the Leakage Test. The manuals incorrectly refer to P_{tube}. The life preserver shall be considered "passed inspection" if the pressure $\mathbf{P_{adjusted}}$ for each chamber meets or exceeds 3.06 PSIg (21.1 kPa).

CONTACT:

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