TECHNICAL BULLETIN

SEAKEEPER ANNUAL INSPECTION

PRODUCT ALL SEAKEEPER MODELS

PURPOSE

This bulletin identifies specific areas to visually check for scheduled maintenance of Seakeeper stabilizers. This procedure does NOT direct the opening of the brake systems for inspection.

REFERENCES

- TB-90426 – Seakeeper Scheduled Maintenance Plan – Recreational
- Appropriate Operation Manual for Seakeeper

PRECAUTIONS

1. PERSONNEL INJURY MAY RESULT if Seakeeper is NOT locked and flywheel at zero RPM before removing covers or accessing unit for service.

2. PERSONNEL INJURY MAY RESULT if attempting to perform maintenance on Seakeeper without removing flywheel motor power (AC or high-current DC power) for minimum of 10 minutes prior to maintenance due to remote start capabilities.

3. PERSONNEL CRUSHING HAZARD EXISTS when working near operating Seakeeper when in UNLOCKED/SEA mode.

4. PINCH HAZARD EXISTS between latch pawl and gimbal shaft.

INITIAL CONDITIONS

1. **TURN OFF** high-current AC or DC breaker to Seakeeper motor.

2. **ENSURE** DC control power and DC seawater pump breakers ON.

3. **ENSURE** motor speed at zero RPM on Service Screen of MFD app, shown in Figure 1.

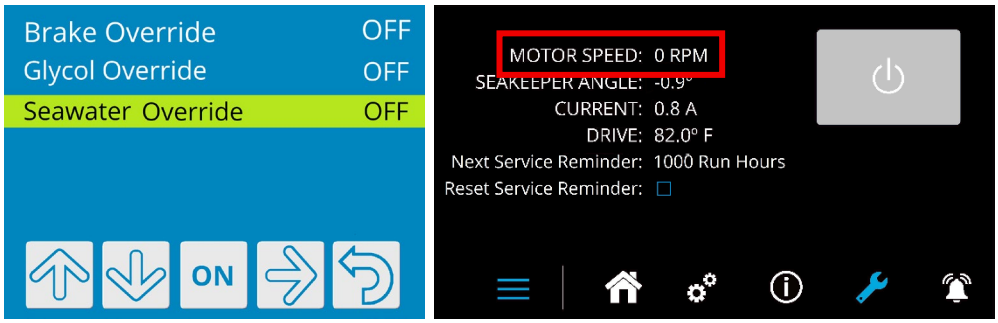

Figure 1: Service screen shown with motor speed highlighted

4. **WHEN** in contact with latch mechanism, **WEAR** leather gloves and eye protection.

5. **OBTAIN** following tools and materials:

- Flashlight
- Inspection mirror
- Lint-free rags
- Torque wrench, ¼" drive, 200 in-lbs (22.6 Nm)
- Torque wrench, 3/8" drive, 100 ft-lb (135 Nm)
- 8 mm Allen hex
- 10 and 13 mm socket

6. **REMOVE** Seakeeper top cover(s).

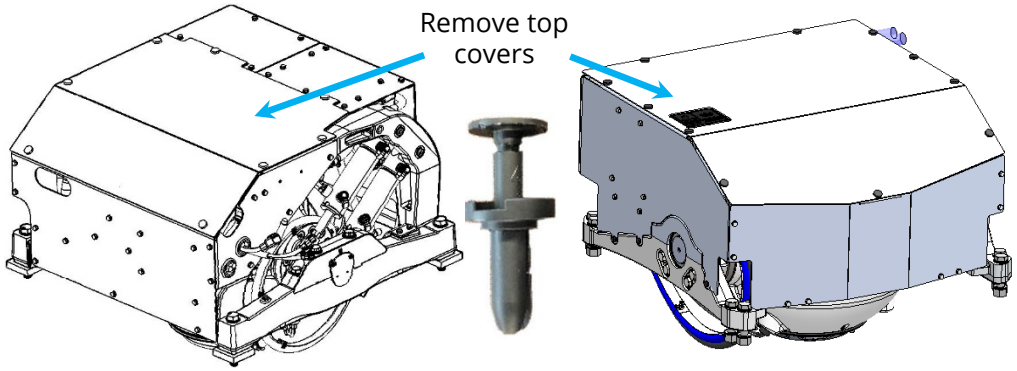

Figure 2a: Late model panels use a pin that must be lifted with a small screwdriver to release panel.

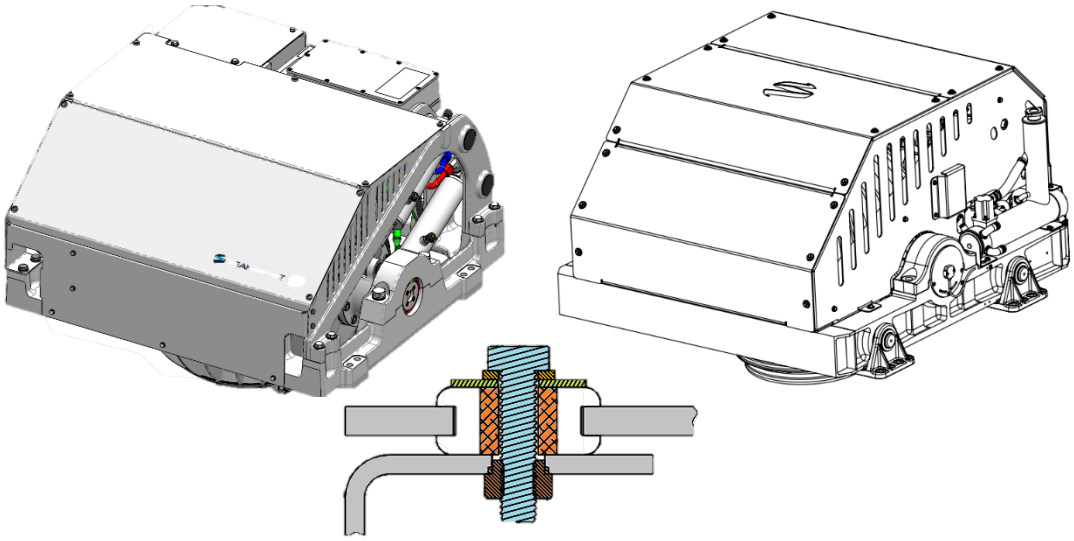

Figure 2b: Early model panels use a screw and washer to secure top cover panels.

SEAKEEPER ANNUAL INSPECTION

PRODUCT ALL SEAKEEPER MODELS

PROCEDURE

COOLING SYSTEM CHECKS

WARNING!

PERSONNEL SHOCK HAZARD EXISTS WHEN FLYWHEEL ROTATING
OR POWER ALIGNED TO SEAKEEPER.

1. **VISUALLY INSPECT** heat exchanger and all hose fittings for leaks (Fig. 3).

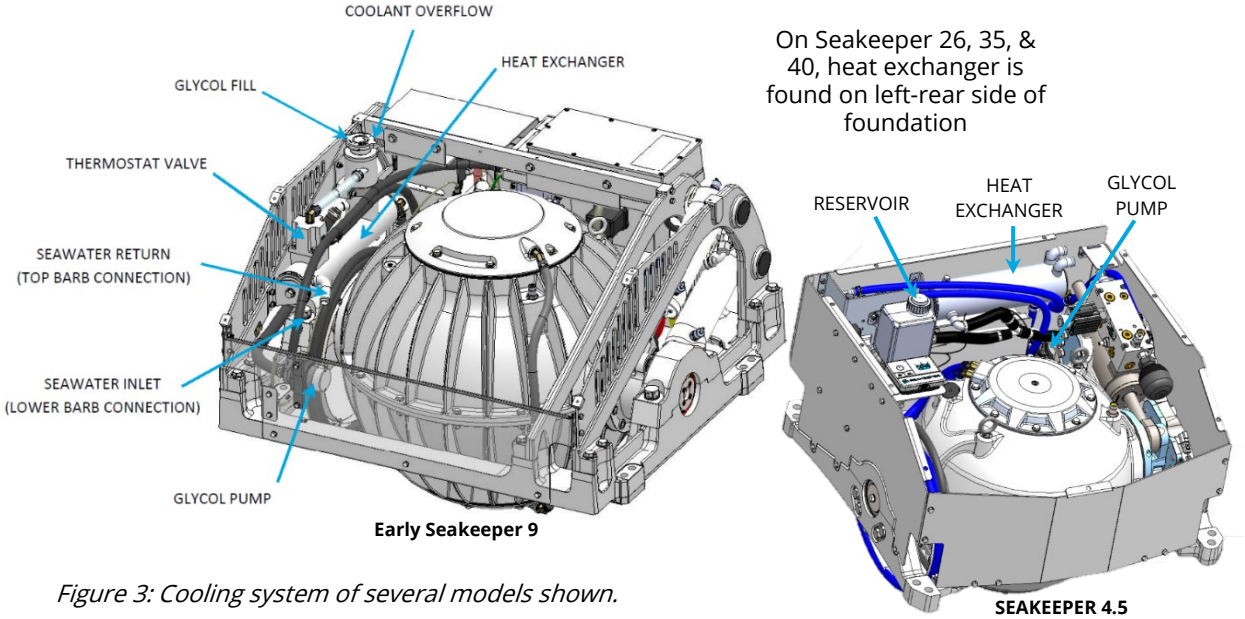

Figure 3: Cooling system of several models shown.

2. **VISUALLY INSPECT** heat exchanger exterior surfaces for severe corrosion.

3. **VISUALLY INSPECT** all cooling hoses and fittings for damage / chafing. (Chafing can occur on hoses routed over the flexible guide bands around the gimbal shaft of the enclosure sphere)

4. **INSPECT** bilge area under Seakeeper for indication of coolant leaks.

5. **IF** leaks, corrosion, or damage/chafing discovered,
THEN CONTACT local Seakeeper dealer for repair or replacement.
(Visit **https://www.seakeeper.com/find-us/** to find a dealer)

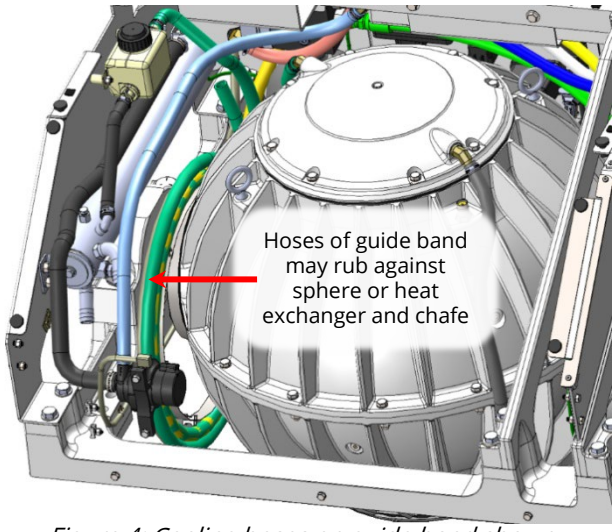

Figure 4: Cooling hoses on guide band shown.

6. **VERIFY** glycol coolant level in reservoir at bottom of fill neck.

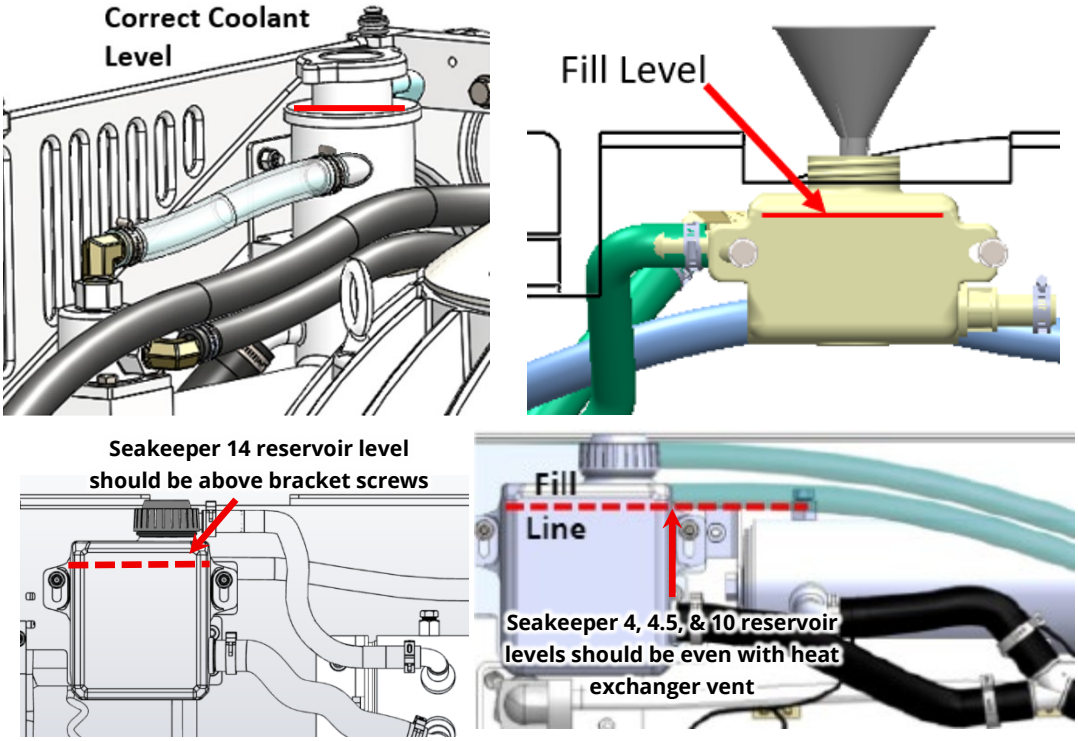

Figure 5: Proper reservoir levels shown.

a. **FILL** reservoir, as necessary, with 50/50 ethylene glycol and distilled water mixture to level shown in images above.

7. **CLEAN OR DESCALE** seawater side of heat exchanger with commercially available descaler (i.e., Barnacle Buster or similar).

8. **PERFORM** flow measurement of seawater pump as follows:

> **NOTE**:
>
> Later installations and some refitted seawater installations have an electric ball valve on the inlet side of the seawater pump.

a. **ENSURE** DC power aligned to Seakeeper and seawater pump.

b. **ACTIVATE** seawater override as follows:

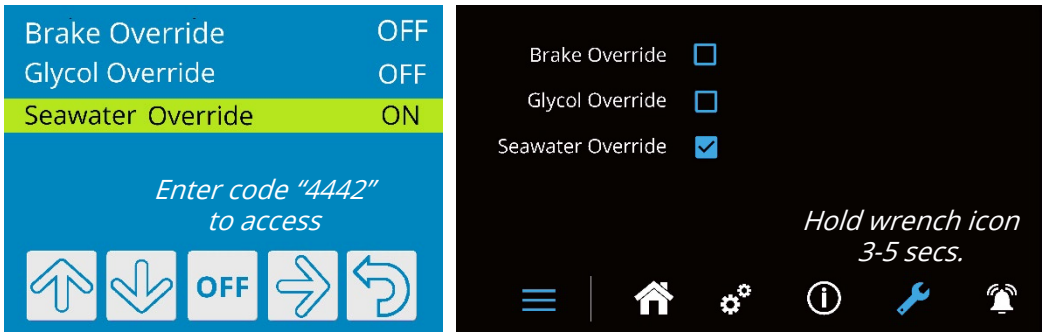

Figure 6: Hidden override screen shown.

i. At MFD app or display, **PRESS** wrench icon.

ii. **PRESS AND HOLD** wrench icon until override screen appears (3 to 5 seconds).

iii. **SELECT** Seawater Override.

c. **IF** Seakeeper NOT equipped with direct reading flow meter,
THEN:

i. **DIVERT** discharge of seawater pump into a bucket.

ii. **MEASURE** time to fill a known volume.

iii. **CONVERT** to gallons per minute or liters per minute.

d. **COMPARE** flow rate to range specified in **Attachment 1**.

e. **DEACTIVATE** seawater override.

9. **IF** electric seawater valve installed,
   THEN INSPECT electric seawater ball valve as follows:

   a. **TURN OFF** seawater pump and valve DC power breaker.

> **NOTE**:
>
> The Seakeeper 40 seawater pump power is connected through ring terminals at the pump.

   b. **DISCONNECT** seawater pump electrical power.

   c. **CLOSE** seacock valve.

   d. **REMOVE** electric ball valve from seawater plumbing to view internals.

Figure 7: Two types of electric ball valve

   e. **ENSURE** electric ball valve is shut.

   f. **TURN ON** seawater pump and valve DC power breaker.

   g. **ACTIVATE** seawater override.

   h. **ENSURE** ball valve has fully opened.

   i. **CYCLE** valve two more times with the seawater override to ensure operation.

   j. **DEACTIVATE** seawater override.

   k. **REINSTALL** electric ball valve in seawater plumbing.

   l. **OPEN** seacock valve.

   m. **TURN OFF** seawater pump and valve DC power breaker.

   n. **CONNECT** seawater pump electrical power.

   o. **TURN ON** seawater pump and valve DC power breaker.

10. For Seakeeper models listed in table, **INSPECT** zinc anodes as follows:

Seakeeper Model	Serial Range	No. Zincs	Zinc Anode Length
Seakeeper 3DC (EM)*	3DC-0001 – 3DC-0296	2	3/4 in. (1/4 NPT) P/N 40143
Seakeeper 5 (EM)*	5-0001 – 5-0296	2	
Seakeeper 9*	9-0001 – 9-1513	2	
Seakeeper 26*	26-0001 – 26-0101	1	
Seakeeper 35*	35-0001 – 35-0104	1	
Seakeeper 16 (EM)	16-0001 – 16-0916	1	1-1/2 in. (1/2 in. dia., 3/8 NPT) P/N 40430
Seakeeper 18 / 16	18/16-0001 to Current	1	
Seakeeper 5 (EM)	5-0297 – 5-1049	2	1-1/4 in. (1/2 in. dia., 3/8 NPT) P/N 40446
Seakeeper 6 / 5	ALL	2	
Seakeeper 9	9-1514 to Current	1	
Seakeeper 26	26-0102 to Current	2	
Seakeeper 35	35-0105 to Current	2	
Seakeeper 40	ALL	2	

***** If heat exchanger has been replaced, the 1-1/4 anode may be used. Check before ordering new anodes.

a. **CLOSE** seawater pump inlet seacock valve.

b. **DRAIN** seawater from seawater pump inlet strainer drain valve or cover.

c. **REMOVE** zinc anodes of Seakeeper heat exchanger with wrench.

d. **REPLACE** anodes with greater than 50% erosion.

e. **ENSURE** SHUT inlet strainer drain valve or cover.

f. **REOPEN** seacock valve.

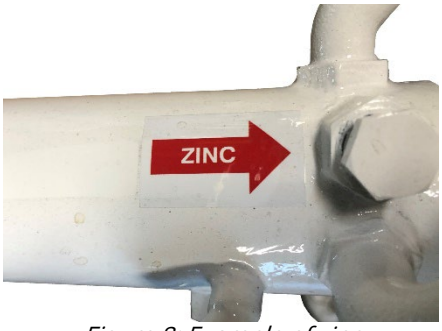

Figure 8: Example of zinc location label

BRAKE SYSTEM CHECKS

1. **VISUALLY INSPECT** brake system hose and manifold fittings for leaks.

2. **VISUALLY INSPECT** brake system hoses for damage.

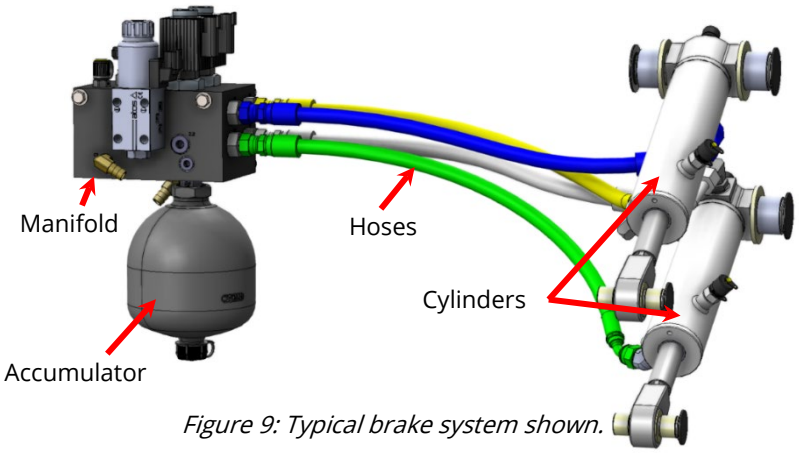

Figure 9: Typical brake system shown.

NOTE:

Some oil residue under rod seals on bottom of cylinders is normal.
Significant leaks may result in low brake pressure alarm condition.

3. **VISUALLY INSPECT** area under brake cylinders for indication of leakage from cylinder rod seals.

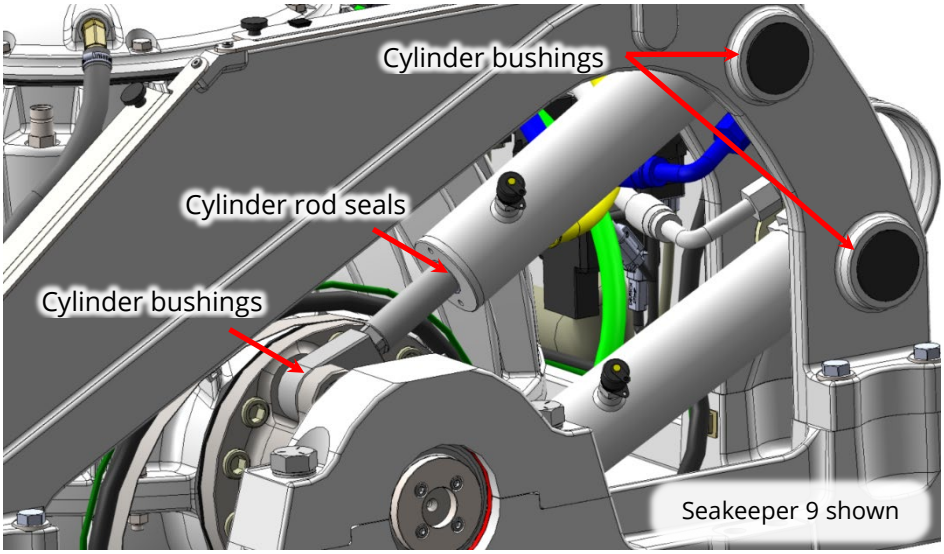

Figure 10: brake cylinder details shown.

4. **IF** any hose damage or leakage found from brake fittings or seals, **THEN CONTACT** local Seakeeper dealer for repair / replacement. (Visit https://www.seakeeper.com/find-us/ to find a dealer)

NOTE:

Cylinder rod ends have a pin and bushings to allow freedom of movement. Brake pins are held in rod ends by a retainer and washer. Excessive corrosion may lead to failure of retainer.

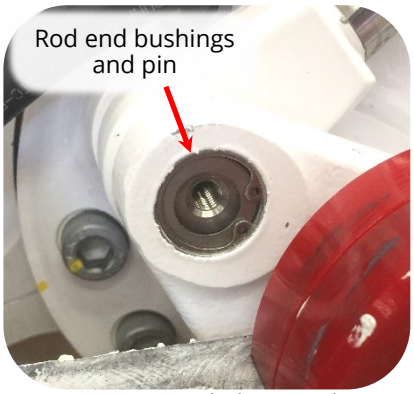

Figure 11: Gimbal cap and pin cover removed for clarity

5. **VISUALLY INSPECT** brake cylinder rod ends for excessive corrosion.

6. **VISUALLY INSPECT** brake cylinder rods fully threaded into clevises.

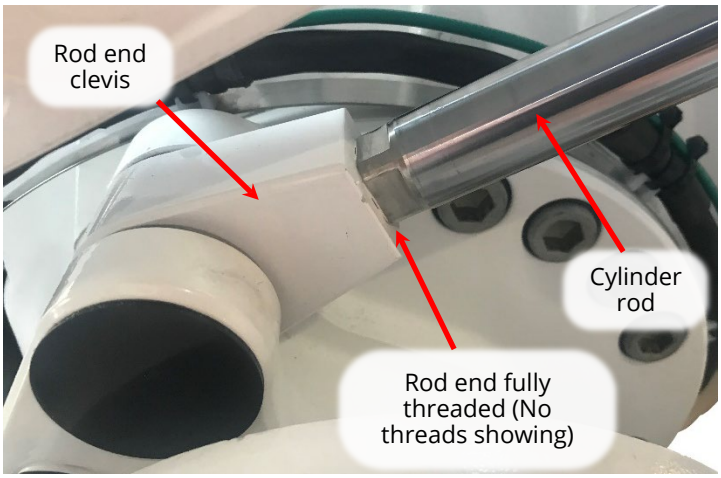

Figure 12: Cylinder rod end should be fully threaded into clevis.

7. **VISUALLY INSPECT** areas beneath front and rear cylinder bushings for brown powder residue (evidence of excessive bushing wear).

8. **VISUALLY INSPECT** gimbal shaft fasteners not loose and torque marks aligned, if provided.

9. **IF** excessive corrosion at rod ends, exposed threads of cylinder rod at clevis, evidence of bushing failure, or loose fasteners,
THEN CONTACT local Seakeeper dealer for repair / replacement.
(Visit https://www.seakeeper.com/find-us/ to find a dealer)

Figure 13: Yellow torque marks shown.

ELECTRICAL SYSTEM CHECKS

The Seakeeper wire harness is like that found in automobile engine compartments. Each connector has a minimum of two wedge tabs to securely lock the connector in position.

Ground cables run from the motor drive, heat exchanger and some spheres to the foundation. The foundation has a separate ground cable to the vessel ground or bonding bus.

1. **VISUALLY INSPECT** cables and wire harness along Seakeeper frame and on sphere guide bands for damage or chafing.
   a. **APPLY** cable ties to lightly chafed cables or wiring, if possible, to keep from continued rubbing.
2. **IF** cables or wiring found with excessive damage or chafing, **THEN CONTACT** local Seakeeper dealer for repair or replacement.
   (Visit **https://www.seakeeper.com/find-us/** to find a dealer)
3. **VISUALLY INSPECT** electrical connectors securely fastened.
   a. **RECONNECT** any discovered loose connectors.
4. **VISUALLY INSPECT** green ground cables for excessive corrosion at lugs.
   a. **IF** corrosion found on ground lug, **THEN:**
      i. **REMOVE** cable **AND CLEAN** cable lugs and ground screw with wire brush.
      ii. **RECONNECT** ground cable.
      iii. **APPLY** corrosion prevention compound on ground lugs with acid brush to minimize further corrosion.

Figure 14: Seakeeper 1 area of cable chafing concern.

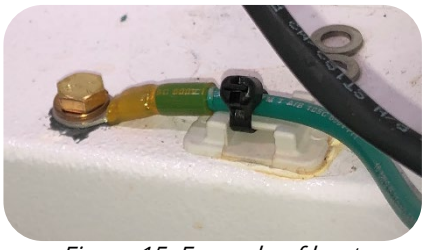

Figure 15: Example of heat exchanger ground cable to foundation

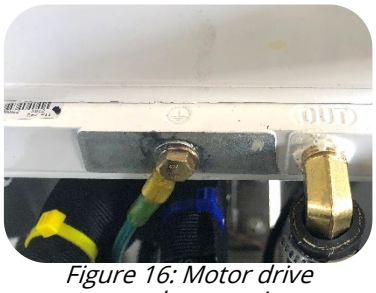

Figure 16: Motor drive ground connection

Acceptable corrosion prevention compounds include:
- Ideal Industries Noalox® Anti-Oxidant Compound
- Gardner Bender GB® Ox-Gard® Anti-Oxidant Compound
- Thomas & Betts CP8-TB Kopr-Shield® Compound
- Jet-Lube SS-30™ Pure Copper High Temperature Anti-Seize & Gasket Compound

ENCLOSURE SPHERE & FOUNDATION

Several factors can result in heavy corrosion on a Seakeeper: environmental issues such as poor ventilation in the space, seawater spray during boating operations, galvanic problems, and chemical or mechanical disruption of painted surfaces that exposes susceptible metals. Seakeeper recommends freshwater rinse of units exposed to seawater spray to minimize surface corrosion (See **How to Care for Your Seakeeper** article).

Seakeeper 26, 35, and 40 models use foundation isolation clevises with urethane bushings. Failure of the bushings would transmit noise into the vessel hull during Seakeeper operation.

1. **VISUALLY INSPECT** enclosure sphere, foundation frame, and associated hardware for corrosion.

2. **IF** Seakeeper surfaces found with excessive corrosion or corrosion damage,
   THEN CONTACT local Seakeeper dealer for refurbishment.
   (Visit **https://www.seakeeper.com/find-us/** to find a dealer)

> **NOTE:**
>
> Appropriate primer and topcoat paint systems include:
> - Primer: Awlgrip S9001
> - Topcoat (Awlcraft 2000, Snow White): Awlgrip F8063

3. **IF** loose paint found on Seakeeper frame or enclosure sphere,
   THEN:

   a. **REMOVE** loose paint back to bare metal.

   b. **APPLY** appropriate primer and topcoat paint system to seal bare metal.

4. **VISUALLY INSPECT** foundation mounting hardware for excessive corrosion and loose fasteners.

   a. **IF** excessive corrosion found,
   THEN CLEAN excess corrosion from fasteners.

5. **IF** Loose mounting fasteners found,
   THEN CONTACT local Seakeeper dealer for survey of foundation and installation.
   (Visit **https://www.seakeeper.com/find-us/** to find a dealer)

6. **IF** Seakeeper 26, 35, or 40 model,
THEN VISUALLY INSPECT foundation isolation clevises for pin retainers installed on both ends of pins.

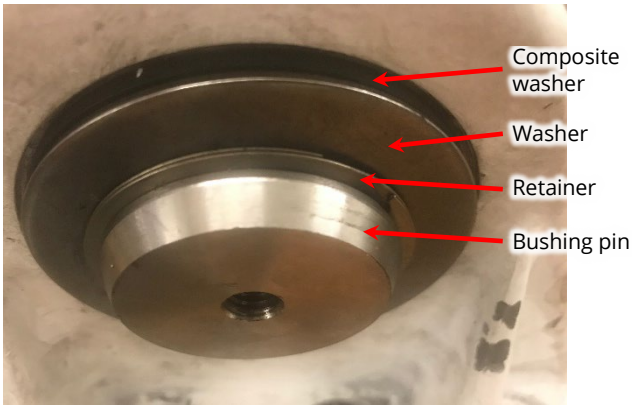

Figure 18: Isolation pin details.

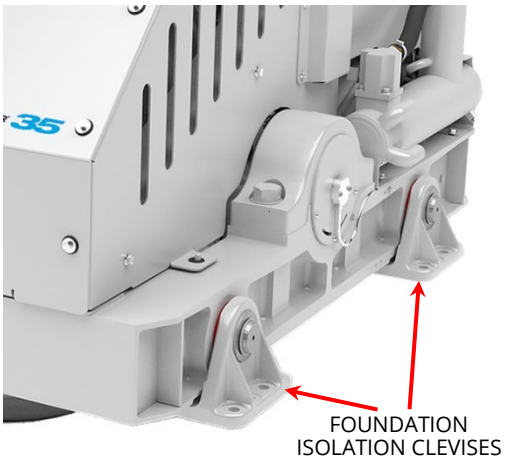

Figure 17: Large Seakeeper foundation isolation clevises shown.

7. **IF** foundation isolation pin retainers missing,
THEN DISCONTINUE use of Seakeeper **AND CONTACT** local Seakeeper dealer immediately for repair.
(Visit **https://www.seakeeper.com/find-us/** to find a dealer)

8. **IF** Seakeeper 1,
THEN:

   a. **VERIFY** exit loops of IGUS chain are at least ¾ in. above back of sheet metal bracket (Fig. 19).

   b. **VERIFY** cables and hoses are routed correctly through chain without kinks.

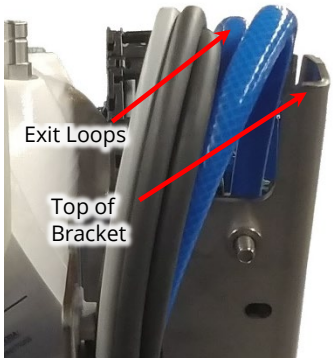

Figure 19: Seakeeper guide band hoses and cables

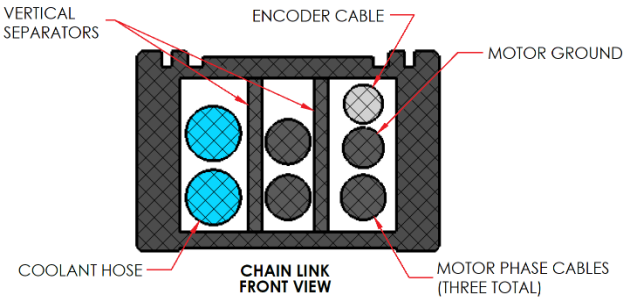

Figure 20: Seakeeper 1 Guide band details

   c. **VERIFY** all chain links secured (Fig. 21).

Figure 21: Properly secured chain link.

9. **IF** Seakeeper 4, 4.5, 10, or 14,
THEN PERFORM following latch mechanism inspection:

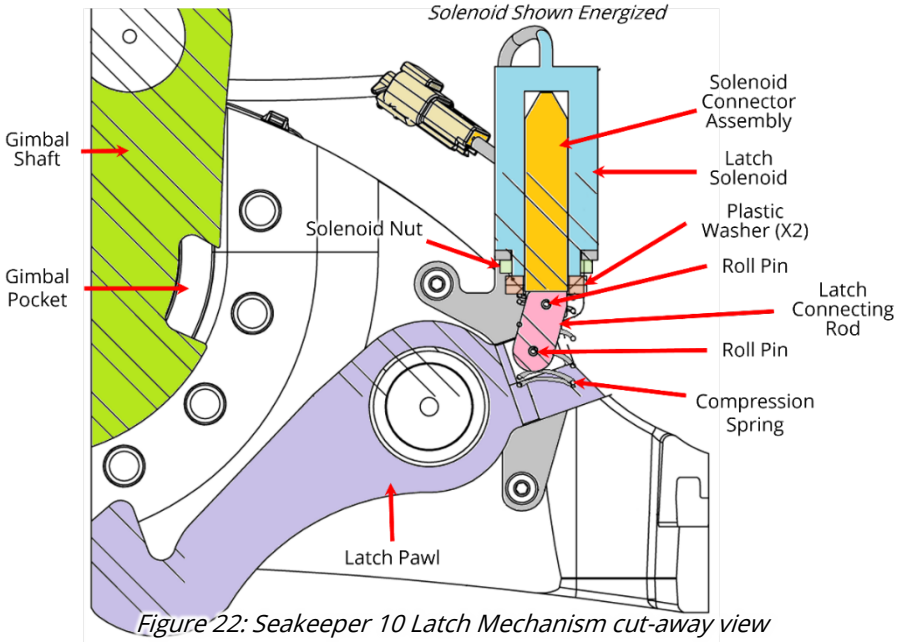

Figure 22: Seakeeper 10 Latch Mechanism cut-away view

a. **ACTIVATE** brake override as follows:

   i. **PRESS AND HOLD** wrench icon until override screen appears.

   ii. **ACTIVATE** "brake override."

   iii. **ACTIVATE** "engage latch."

b. **VISUALLY INSPECT** latch mechanism and gimbal shaft:

   i. **ENSURE** latch mechanism, gimbal shaft pockets, and solenoid housing clean and free of debris, corrosion, or foreign objects.

   ii. **INSPECT** gimbal shaft pockets free of debris, wear, and damage.

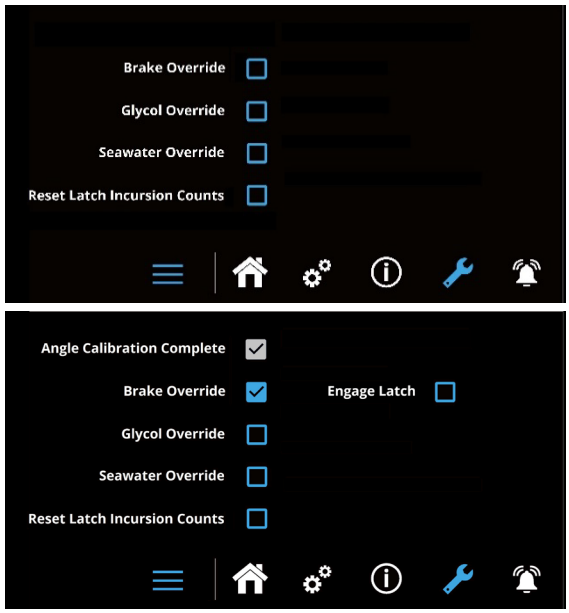

Figure 23: Override screen

Step 9 (Latch Mechanism Inspection) continued

c. **MANUALLY PRECESS** enclosure fully forward or backward.

d. **ENSURE** compression spring inserts latch pawl into gimbal pocket.

e. **DEACTIVATE** "engage latch."

f. **MANUALLY PRECESS** enclosure to near 0° (normal upright position).

g. **ACTIVATE** "engage latch."

h. **REPEAT** steps 9.c through 9.f in opposite direction.

i. **DEACTIVATE** "brake override."

NOTE:

Latch mechanism should cycle freely without sticking, grinding, or resistance.

DANGER:

PINCHING HAZARD EXISTS between pawl and gimbal shaft.

j. **MANUALLY EXERCISE** latch pawl to ensure it operates smoothly.

k. **CONFIRM** mounting hardware torque marks are aligned (Fig. 24):

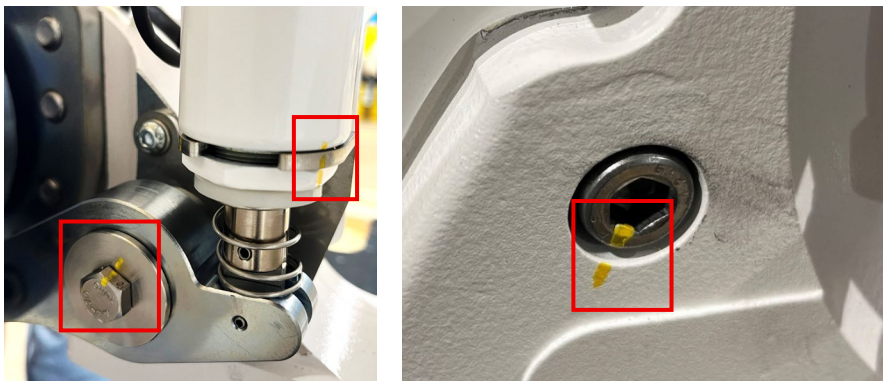

Figure 24: Torque marks in yellow on fastener heads

l. **IF** any check fails,
THEN CONTACT Seakeeper certified dealer for repair.
(Visit **https://www.seakeeper.com/find-us/** to find a dealer)

RESTORE SEAKEEPER FOR OPERATION

1. **INSTALL** top cover(s) to Seakeeper (Fig. 25).

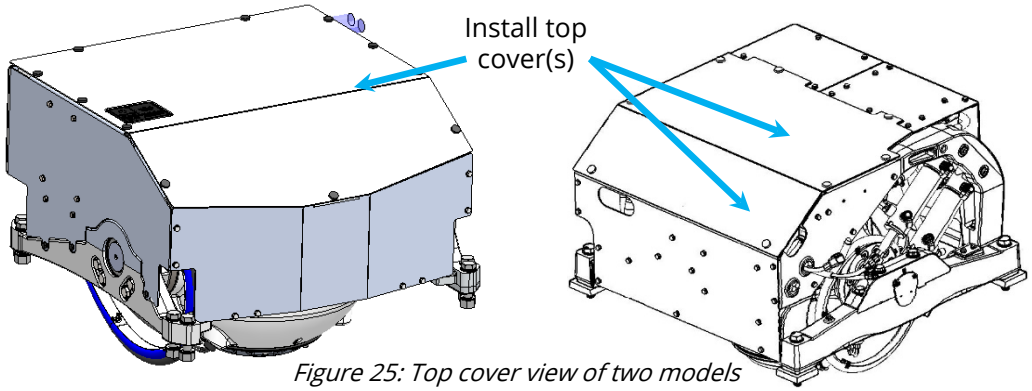

Figure 25: Top cover view of two models

2. **TURN ON** AC or high current DC power breaker to Seakeeper.

********** END **********

Revision	Description	Approval	Date
3	Added new models. Added latch mechanism inspection.	A Patricio	05NOV2025
4	Added attachment 1 for SW flow ranges. Added reference to electric SW ball valve.	A Patricio	DDMMMYYYY

ATTACHMENT 1: Seawater Flow Rates for Models

Seakeeper Model	Flow Rate	
	Minimum	Maximum
Seakeeper 1	2 gpm (7.6 lpm)	4 gpm (15.1 lpm)
Seakeeper 2	2 gpm (7.6 lpm)	6 gpm (22.7 lpm)
Seakeeper 3	2 gpm (7.6 lpm)	6 gpm (22.7 lpm)
Seakeeper 4	2.5 gpm (9.5 lpm)	4 gpm (15.2 lpm)
Seakeeper 4.5	2.5 gpm (9.5 lpm)	4 gpm (15.2 lpm)
Seakeeper 5/6	2.5 gpm (9.5 lpm)	5 gpm (18.9 lpm)
Seakeeper 9	4 gpm (15.2 lpm)	8 gpm (30.3 lpm)
Seakeeper 10	4.5 gpm (17 lpm)	6 gpm (22.7 lpm)
Seakeeper 14	4.5 gpm (17 lpm)	6 gpm (22.7 lpm)
Seakeeper 16/18	4 gpm (15.2 lpm)	8 gpm (30.3 lpm)
Seakeeper 26	4 gpm (15.2 lpm)	8 gpm (30.3 lpm)
Seakeeper 35	10 gpm (38 lpm)	14 gpm (53 lpm)
Seakeeper 40	13 gpm (49 lpm)	15 gpm (57 lpm)