

SERVICE WORK INSTRUCTION

SEAKEEPER ANGLE SENSOR CALIBRATION



PRODUCT SEAKEEPER SERIES MODELS

PURPOSE

To provide standardized instructions on the gimbal angle sensor calibration of Seakeeper stabilizers for troubleshooting, post-maintenance, or installation. [**NOTE:** Seakeeper 2 through 6 with the latest GCM software may use SWI-108A for sensor calibration.]

BACKGROUND

Earlier Seakeeper models, and occasionally on newer Seakeeper Series models, it is required to perform an angle sensor calibration that requires the manual positioning of the angle sensor mounting plate with manual precession of the enclosure.

TOOLS/SUPPLIES REQUIRED

Parts List:

- Loctite #243 blue thread locker
- Rags or towels
- Cable ties

Tools:

- SAE and Metric Allen T or Allen wrench set

PRECAUTIONS/NOTES

1. Before removing covers or accessing unit for service, **ENSURE** Seakeeper is locked and at zero RPM.
2. **BEWARE** of remote start capabilities when troubleshooting. **ASSUME** Seakeeper could move without warning. **OPEN** both circuit breakers supplying power to Seakeeper **AND FOLLOW** proper lockout procedures.
3. Note the same gimbal angle sensor is used across several models, the leads are integral to the sensor, and cable length is unique to each model. Visit the [Seakeeper Partner Center](#) for compatibility or refer to the assembly parts list on the [Dealer Access](#) portal.

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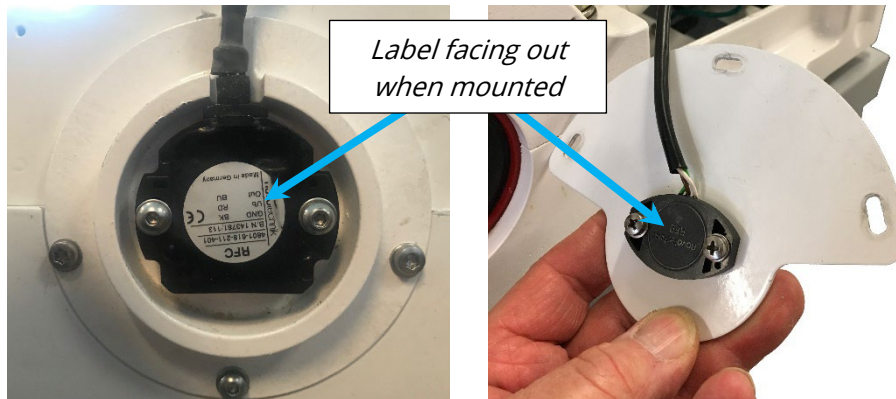
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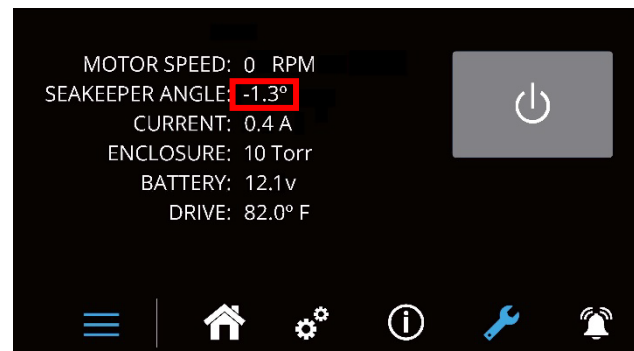
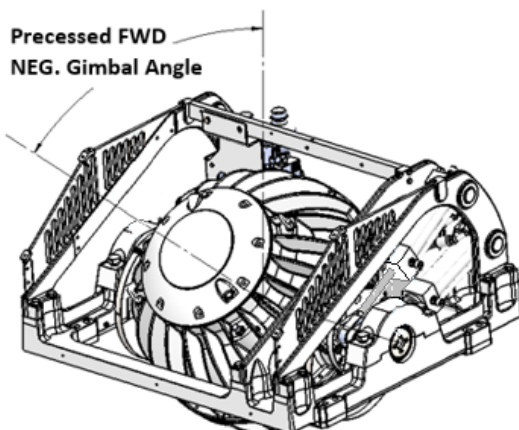
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PROCEDURE

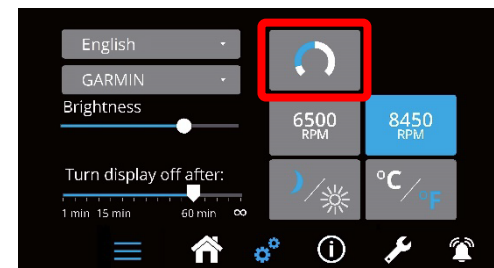
1. **ENSURE** angle sensor and leads are installed per [ATTACHMENT](#):
 - a. **ENSURE** sensor label facing away from Seakeeper.



- b. **ENSURE** SEAKEEPER ANGLE reads negative on MAINTENANCE screen of MFD / display when enclosure precessed forward, as shown below.



- i. **IF** MFD / display shows a positive angle when precessed forward, **THEN PRESS** angle orientation button on SETTINGS screen, as shown.



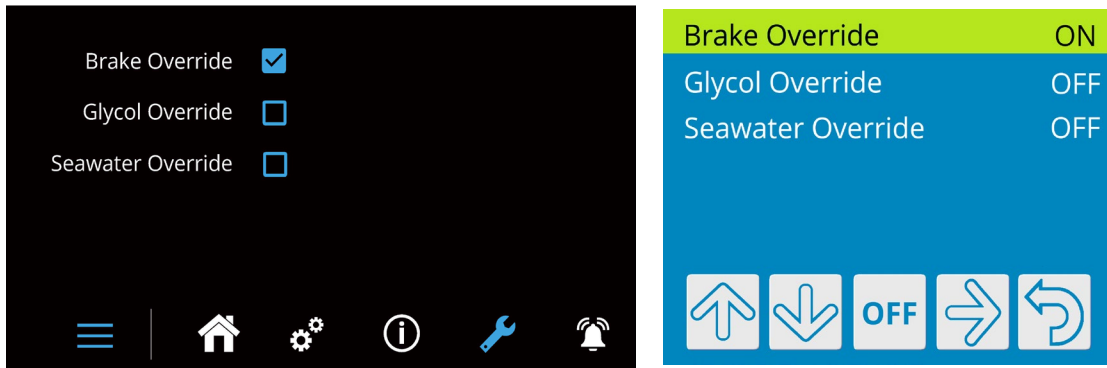
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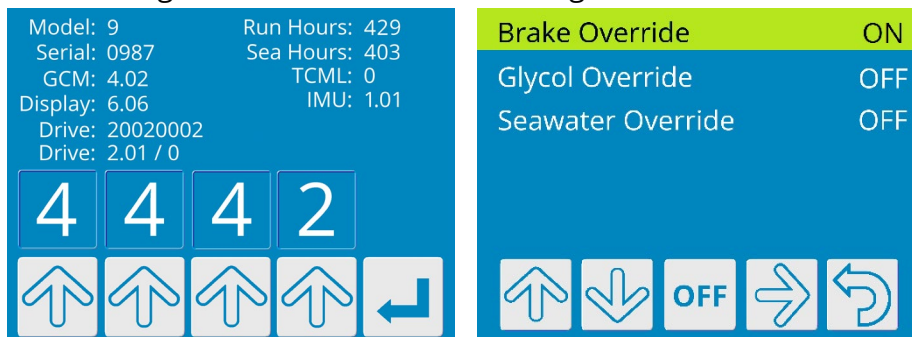


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2. **ENSURE** low current DC power available to Seakeeper.
3. **ACTIVATE** Brake Override from MFD / display:



- a. For MFD app or 5-inch touch display:
 - i. **PRESS** wrench icon.
 - ii. **PRESS AND HOLD** wrench icon until Override Screen appears (3 – 5 seconds).
 - iii. **PRESS** box beside Brake Override.
- b. For 3.5-inch display on homepage:
 - i. **PRESS** gears icon button **AND THEN** wrench & driver icon button.
 - ii. **PRESS** right arrow button.
 - iii. **ENTER** code 4442.
 - iv. **PRESS** return button.
 - v. **PRESS** right arrow button until reaching override screen.



- vi. Using arrow buttons, **SELECT** Brake Override.

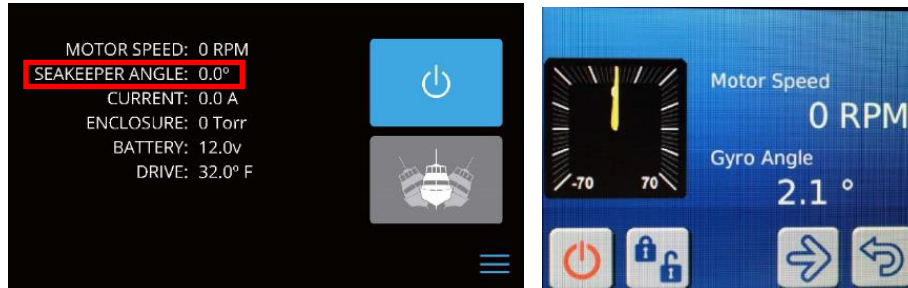
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4. **SELECT** gimbal angle view on MFD / display:



- a. For MFD or 5-inch display, **PRESS** wrench icon.
- b. For 3.5-inch display, **PRESS** return go back arrow button until arriving at gyro angle screen.
5. **MANUALLY PRECESS** enclosure full travel while monitoring angle on display.

NOTE:

Maximum angles shown should be:

- $\pm 1.0^\circ$ from **$\pm 68.0^\circ$** for Seakeeper model:
 - **2** (All serial numbers)
- $\pm 1.0^\circ$ from **$\pm 70.0^\circ$** for Seakeeper model:
 - **3** (S/N: 3-0001 thru 3-194-0957)
 - **3DC/5 (EM)** without bump stop
 - **16/12HD/18**
 - **9/7HD**
 - **35/30HD/40**
- $\pm 1.0^\circ$ from **$\pm 60.0^\circ$** for Seakeeper model:
 - **3** (S/N 3-0958 to current)
 - **3DC/5 (EM)** with bump stop
 - **26/20HD**
 - **6/5/5HD**
 - **M-Series**

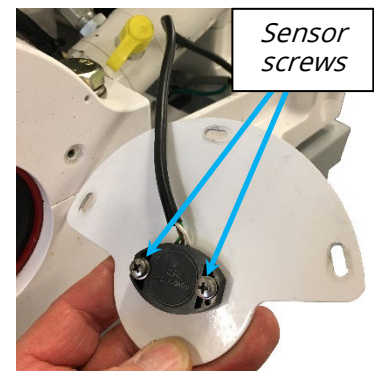
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6. **IF** either set of indications are out of tolerance from each other,
THEN ADJUST sensor as follows:
 - a. **VERIFY** angle sensor lead orientation matches images in [ATTACHMENT](#).
 - b. **LOOSEN** angle sensor mounting screws enough to adjust angle sensor.
 - c. **MANUALLY** precess enclosure full forward and aft to verify adjustments made.
 - d. **ADJUST** sensor so that maximum angle at each end of travel is within 1.0° of each other **AND** within 1° of:
 - i. $\pm 68^\circ$,
 - ii. $\pm 70^\circ$, **OR**
 - iii. $\pm 60^\circ$,PER NOTE above.
 - e. **TIGHTEN** angle sensor mounting screws.
 - f. **RECHECK** angle readings after tightening sensor mounting screws.
 - g. **IF** enclosure sphere replaced and angle sensor only reading 0° gimbal angle,
THEN:
 - i. **CYCLE** DC power to wire harness.
 - ii. **REMOVE** angle sensor mounting plate.
 - iii. **LOOSEN** sensor screws.
 - iv. **REPOSITION AND TIGHTEN** sensor to plate.
 - v. **REINSTALL** plate per [ATTACHMENT](#).
 - vi. **REPEAT** steps 5 and 6.
7. **DEACTIVATE** Brake Override at MFD / display.
8. **RESET** any alarms.



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

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REVISION	DESCRIPTION	APPROVAL	DATE
2	Editorial changes	K. Zervas	26MAR2021
3	Added installation verification & part numbers. Revised calibration criteria.	T Messner	08JUN2022
4	Added Seakeeper 40. Corrected Seakeeper 2 precession angles. Minor edits.	A Patricio	12JUN2024

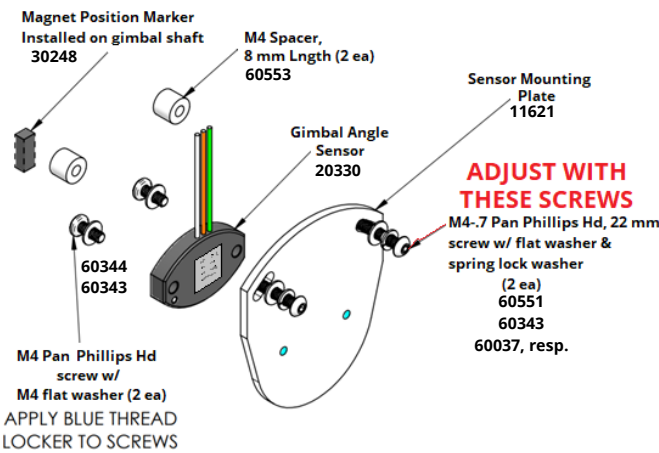
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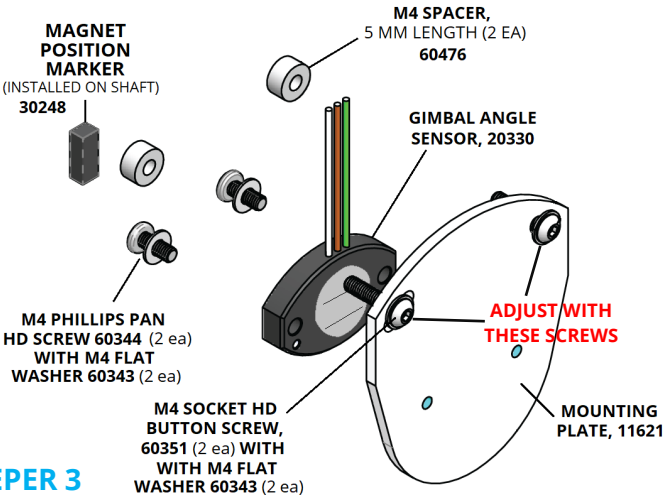
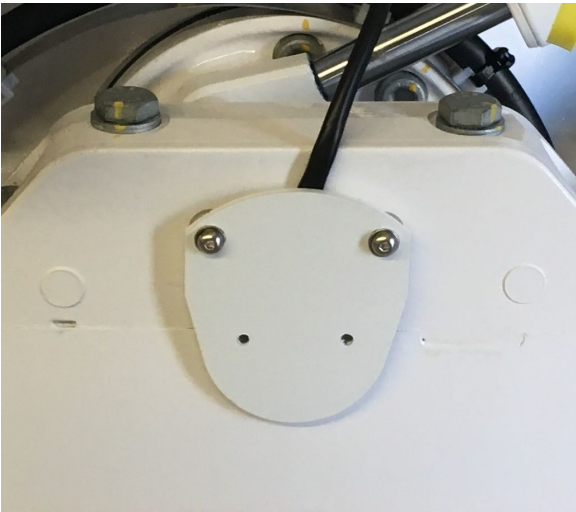


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ATTACHMENT



SEAKEEPER 2



SEAKEEPER 3

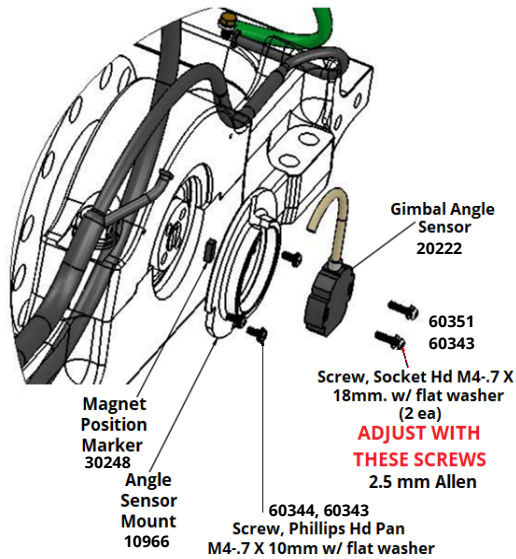
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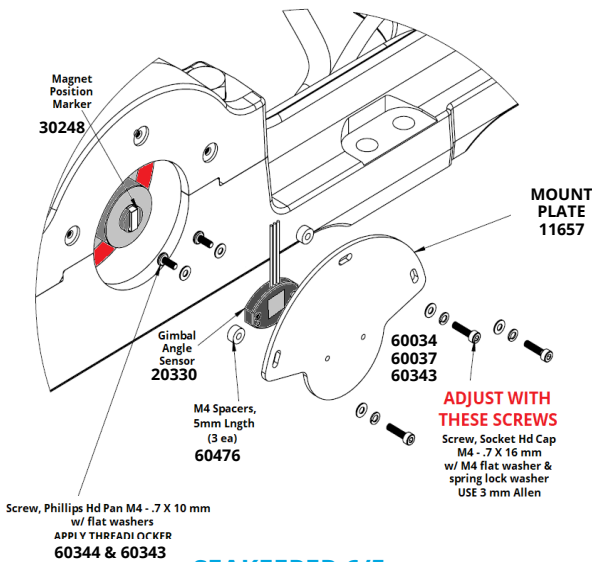


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ATTACHMENT (CONT'D)



SEAKEEPER 5 (EM) & 3DC



SEAKEEPER 6/5



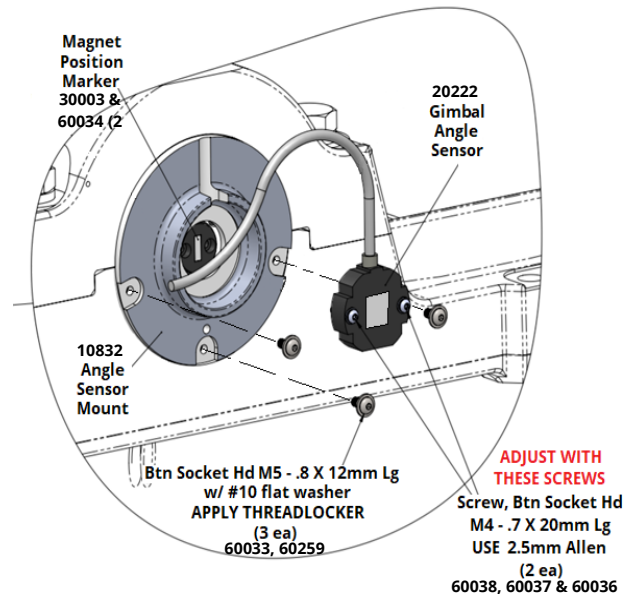
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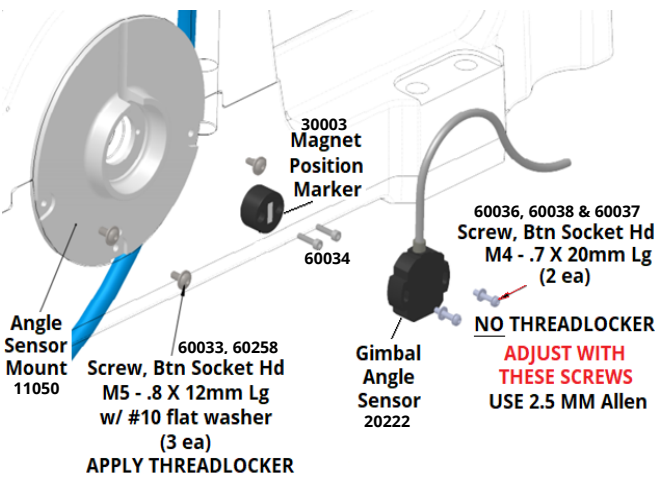
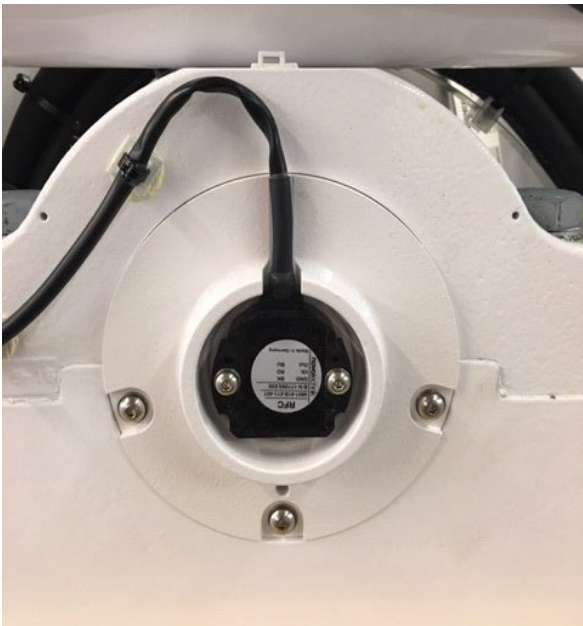


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ATTACHMENT (CONT'D)



SEAKEEPER 9/7HD MODELS



SEAKEEPER 16/12HD & 18 MODELS



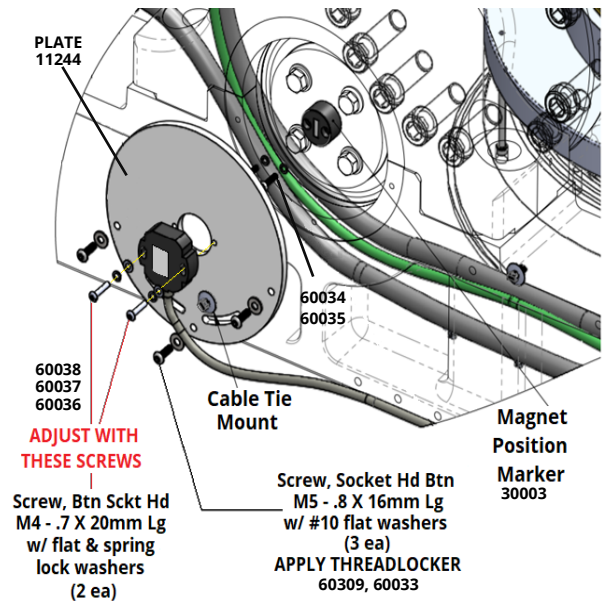
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PRODUCT SEAKEEPER SERIES MODELS

ATTACHMENT (CONT'D)



SEAKEEPER 26/20HD, 35/30HD, AND 40