8M0107462
SMARTCRAFT TRIM POSITION SENSOR AND ANALOG SENDER KIT

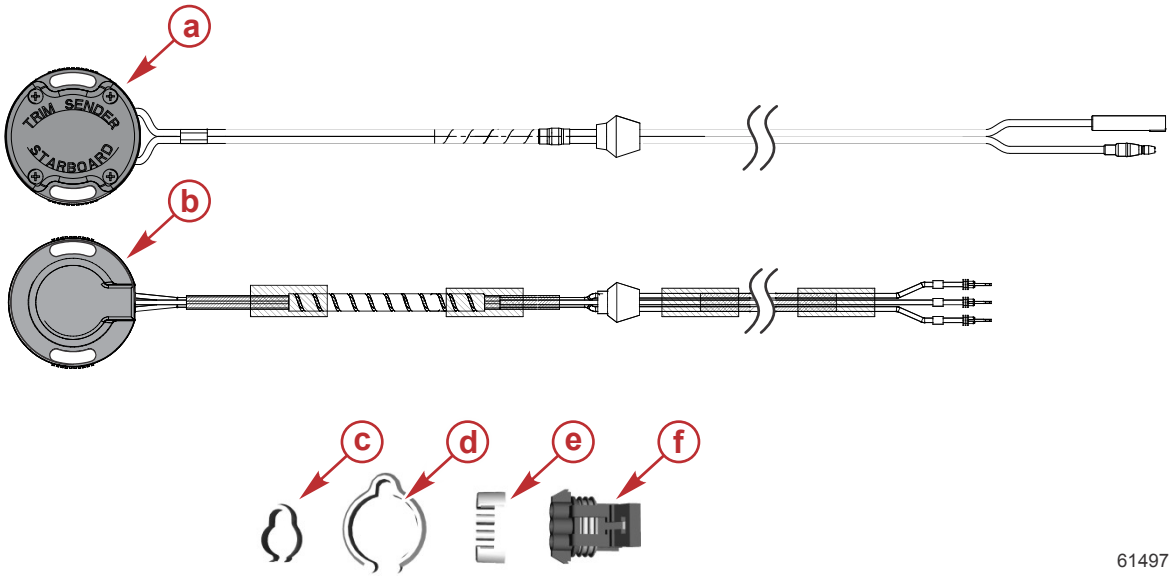
IMPORTANT: This document guides our dealers, boatbuilders, and company service personnel in the proper installation or service of our products. If you have not been trained in the recommended servicing or installation procedures for these or similar Mercury Marine products, have the work performed by an authorized Mercury Marine dealer technician. Improper installation or servicing of the Mercury product could result in damage to the product or personal injury to those installing or operating the product. Always refer to the appropriate Mercury Marine service manual for component removal and installation instructions.

NOTE: *After completing installation, place these instructions with the product for the owner's future use.*

NOTE: *Digital Throttle and Shift (DTS) models with SmartCraft transoms that use a Mercury analog gauge interface (AGI) kit do not need an analog trim position sender to provide analog trim gauge input.*

Sterndrive Models Covered

Models Covered	SmartCraft Transom Serial Number Range
DTS engines	0M300000–2A417473
496 Bravo engines using analog trim gauges	All



Ref.	Description	Part Number
a	Analog trim position sender and harness assembly	805130A10
b	3-wire trim sensor	8M0083579
c	Small harness clamp	818557001
d	Harness clamp	818557
e	3-wire connector clip	831957
f	3-wire connector	8307973

Replacing the SmartCraft Trim Position Sensor and Analog Trim Position Sender

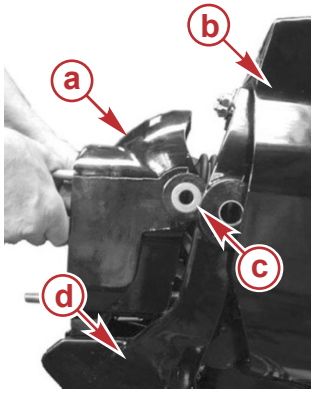
SmartCraft Trim Position Sensor and Analog Sender Important Information

The SmartCraft trim position sensor and analog sender kit is provided for SmartCraft transom assemblies that use a 3-wire trim position sensor for digital trim limiting, or SmartCraft trim position input, and a 2-wire analog trim position sender for analog trim gauge input.

Removal

NOTE: *Refer to* ***MerCruiser Bravo Sterndrives Service Manual #39*** *or,* ***MerCruiser Alpha Sterndrives Service Manual #14*** *for sterndrive removal, bell housing separation, and installation procedures that are required to access the sensor harness clamp plate screw.*

1. Remove the sterndrive and separate the bell housing from the gimbal ring and U-joint bellows to access the sensor harness clamp plate and screw. Retain all hardware.



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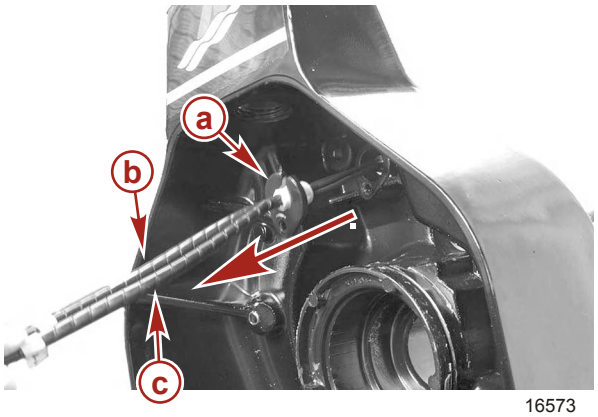
a - Bell housing
b - Gimbal housing
c - Hinge pin backing washer
d - Gimbal ring

2. Disconnect the trim position sensor wiring from the transom harness connector.
3. Disconnect the analog trim sender wiring from the engine harness connector.
4. Remove the clamp plate screw and clamp plate from the gimbal housing.



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a - Clamp plate
b - Trim position sensor harness (port)
c - 2-wire analog sender (starboard)

5. Pull approximately 30 cm (1 ft) of the trim position sensor and analog sender harness out of the gimbal housing.
6. Cut each harness just forward of the tapered plug. Do not remove the harnesses from the gimbal housing. They will be used to pull the new harnesses through the transom and into the boat.

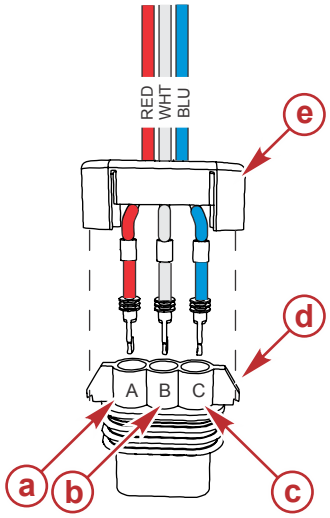
Installation

1. Tape the connector ends of the new sensor and sender to the cut ends of the old harnesses.
2. Pull the new harnesses through the gimbal housing to the inside of the boat using the old harnesses.
3. Remove and discard the cut sections of the old harnesses.
4. Route the new sensor and sender wires through the hole. Bring together the two grommet halves and ensure that they are seated tightly in the hole and that the flat edges that mate together are vertically aligned. Maintain light tension on the wires from inside the boat, to hold the grommets in the hole.
5. Install the clamp plate around both sets of wires and position it while hand starting the clamp plate screw. Ensure that the trim position sensor (3-wire) wiring is positioned to the port side of the gimbal housing and the trim position sender is positioned to the starboard side of the gimbal housing.
6. Apply sealant to the trim harness clamp plate screw threads and install the clamp plate. Tighten the screw to the specified torque.

Tube Ref No.	Description	Where Used	Part No.
19	Perfect Seal	Trim harness clamp plate screw threads	92-34227Q02

Description	Nm	lb-in.	lb-ft
Trim harness clamp plate screw	11	97.3	–

7. Install the sensor harness terminal leads into the harness terminal connector as follows:
   a. Insert the terminal lead **A** into the terminal marked **A** on the terminal connector. Push the terminal lead into the terminal connector until the terminal lead clicks into place and cannot be pulled out.
   b. Insert the terminal lead **B** into the terminal marked **B** on the terminal connector. Push the terminal lead into the terminal connector until the terminal lead clicks into place and cannot be pulled out.
   c. Insert the terminal lead **C** into the terminal marked **C** on the terminal connector. Push the terminal lead into the terminal connector until the terminal lead clicks into place and cannot be pulled out.
   d. Place the terminal lead retaining clip over the leads at the rear of the terminal connector.
   e. Push the retaining clip onto the terminal connector until it snaps into place over the locking tabs located on either side of the terminal connector.



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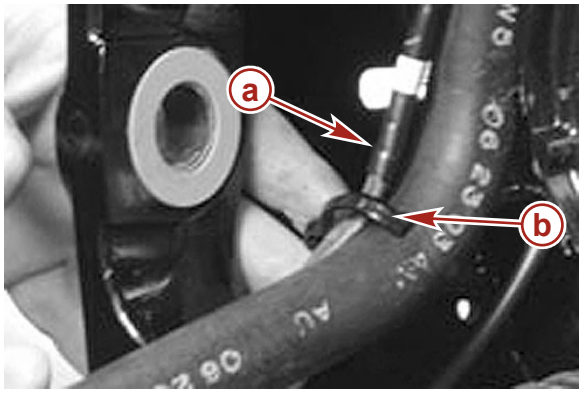
a - Terminal **A** (red wire)
b - Terminal **B** (white wire)
c - Terminal **C** (blue wire)
d - Terminal connector
e - Retaining clip

8. Connect the trim position sensor connector to the transom harness connector.
9. Secure the trim position sensor harness to the water hose with the harness clamp.



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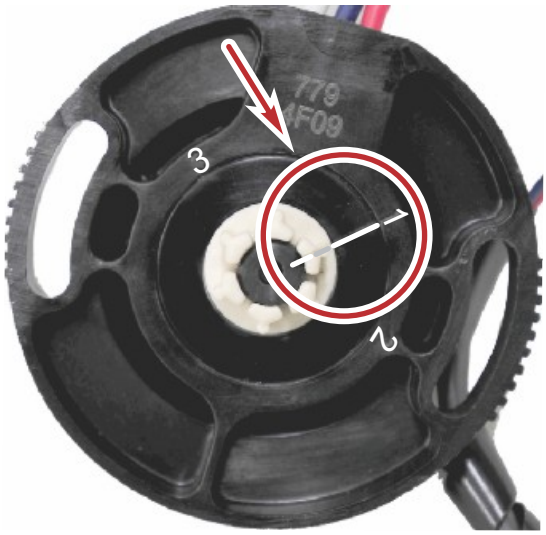
Shown disassembled for clarity
a - Trim position sensor harness
b - Harness clamp

10. Install the bell housing and sterndrive using the assembly procedures described in the appropriate service manual.
11. Place the sterndrive in the full-in (all the way down) position.

12. Align the index mark on the rotor with the #1 index mark on the sensor body.



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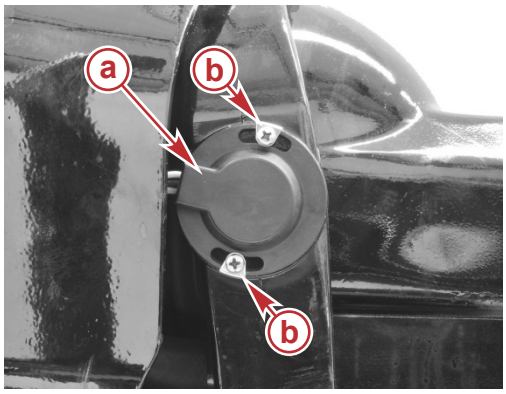
Aligned index marks

IMPORTANT: Do not change the rotor position or orientation of the index marks during sensor installation.

13. Carefully install the trim position sensor on the port side of the gimbal ring using the retained fasteners. Tighten the screws securely.

NOTE: *When viewed in CDS G3 live data the trim range should fall between 50 and 200 counts with the index mark on the rotor aligned with the #1 index mark on the sensor body (drive in full down position).*



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a - Trim position sensor
b - Screw, washer, and retainer

14. Turn the center rotor of the trim position sender to align the index mark with the index mark on the sender body.

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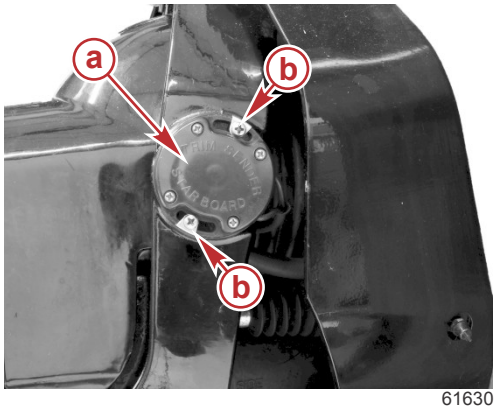
IMPORTANT: Do not change the rotor position or orientation of the index marks during sender installation.

15. Install the trim position sender onto the starboard side of the gimbal ring and secure it with the retained attaching screws, washers, and retainers. Tighten the screws securely.



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a - Trim position sender
b - Screws, washers, and retainers

16. Position the trim sender wires on the starboard side of the gimbal housing and attach them to the lube oil bottle transfer hose with the small harness clamp.
17. Connect the two trim position sender bullet connectors to the bullet connectors on the transom harness or boat harness where applicable.
18. Reconnect the battery cables.

Trim Sensor Setup Procedures

For all DTS and all PCM 112 Sterndrive Models

1. Turn the key switch to the **RUN** position (key on—engine off).

2. Use the remote control trim switch to adapt the PCM to the new sensor by holding the trim down button with the drive in the full down position for at least three seconds after the drive has reached the bottom stall point. This completes the lower adaptation procedure.

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Trim switch

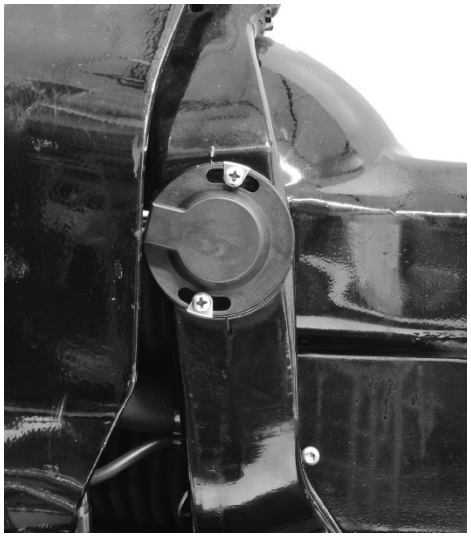
IMPORTANT: An observer must watch the sterndrive during the following procedure to ensure that it will not contact or damage the swim platform.

3. Raise the sterndrive to the full tilt position and continue to hold the trim button for at least three seconds after the drive has reached the upper stall point. This completes the upper adaptation procedure.

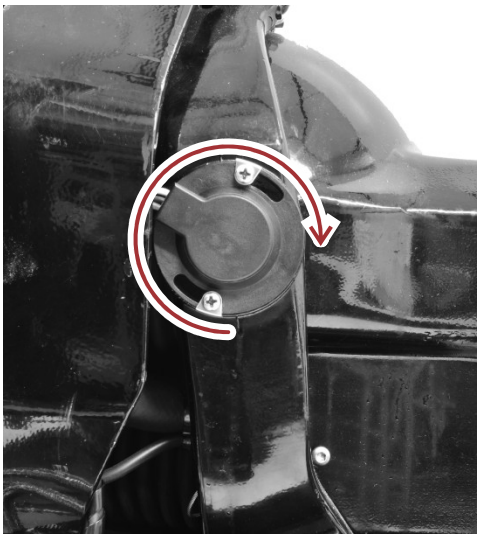
For all 8.2L Mechanical and 496 Mechanical Engines

The following steps must be followed to set the trim limit on 496 mechanical (non-DTS) and 8.2L mechanical (non-DTS) engines.

1. Turn the key switch to the **RUN** position (key on—engine off).
2. Place the sterndrive in the full-in (all the way down) position.
3. Rotate the sensor fully clockwise and then snug the screws.



Full-in (all the way down) position



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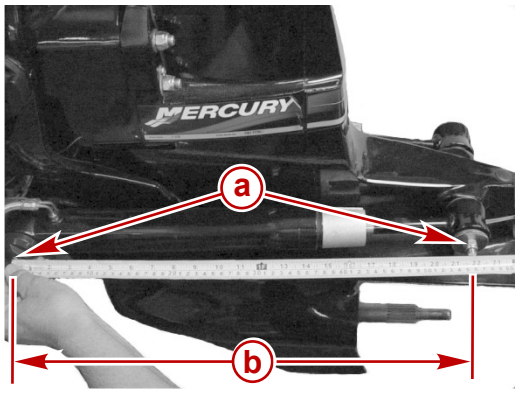
Fully clockwise position

4. Trim the drive up at the helm until the measurement between the centers of the anchor pins on the trim cylinders is 55.3 cm (21.75 in.).



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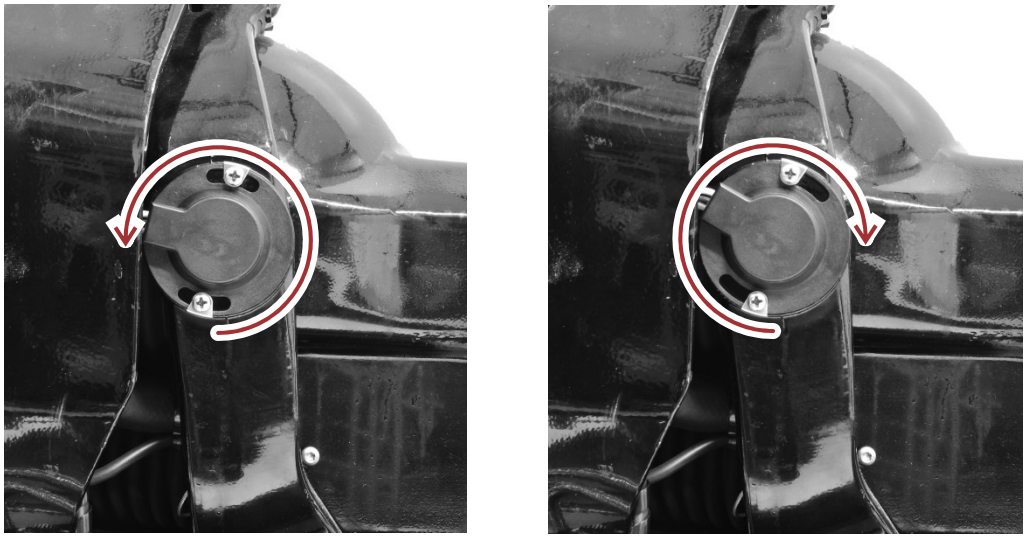
Trimmed up to measurement

a - Anchor pin

b - Measurement

5. Loosen the screws and rotate the sensor slowly counterclockwise until the trim limit relay is heard to click, then slowly turn the sensor back clockwise until the relay clicks again. Tighten the trim sensor screws securely.



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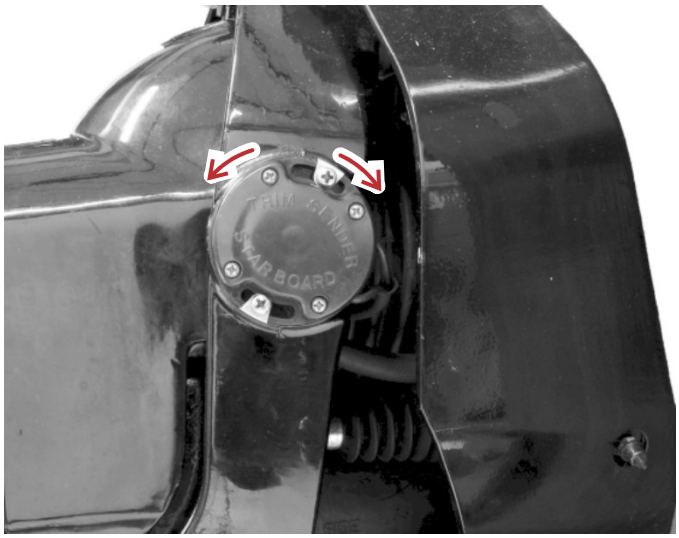
Trim Sender Adjustment (For Analog Gauge)

1. Turn the key switch to the **RUN** position (key on—engine off).
2. Place the sterndrive in the full-in (all the way down) position.

3. Loosen the trim position retaining screws and adjust the sender by rotating the sender until the needle on the analog trim gauge is at the bottom of the arc. Tighten the trim position sender retaining screws to lock the position of the sender.



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