



Optimus EPS SmartStick – Verado™ Install Procedure

- For boats already equipped with a Verado steering system, it is highly recommended to drain the system of its hydraulic steering fluid.
- After draining hydraulic fluid remove the Verado hydraulic fittings, which includes the two 90° elbow hose fittings and the two bleed fittings on each side of the Verado cylinder body. Do this for each cylinder in the system.
- Remove any original tie bar or tiller hardware if equipped.

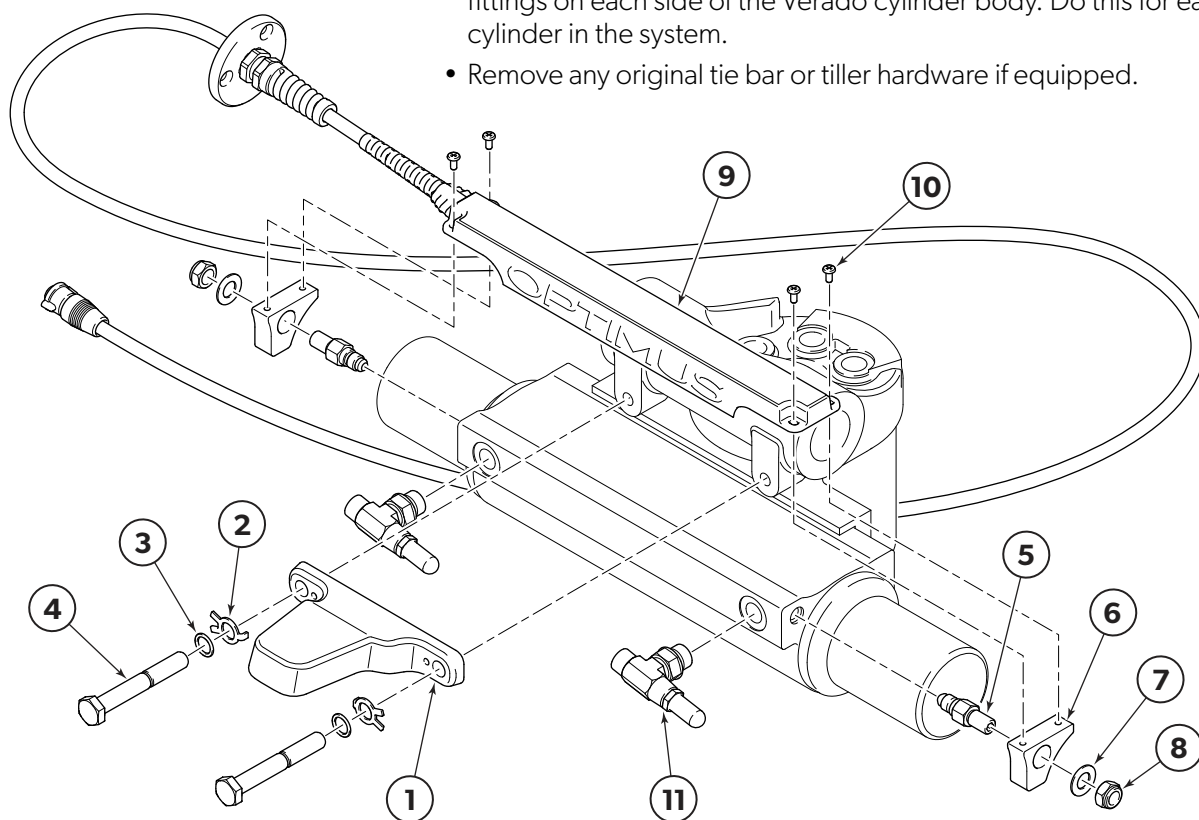


Figure 1. General assembly.

Hardware Kit # HA6830		
Item	Description	Qty.
1	Magnet bracket	1
2	Tab lock washer	2
3	Thin top washer	2
4	M10 Bolt	2
	Loctite® 263	A/R

Hardware Kit # HA5505		
Item	Description	Qty.
5	Bleed plug c/w O-ring	2
6	SmartStick mount	2
7	Large washer	2
8	Nyloc® nut	2
9	SmartStick	1
10	#6-32 Phillips screw	4

Hardware Kit # HF6013		
Item	Description	Qty.
11	Horizontal bleed tee	2



Procedure — Installing hardware

1. Liberally grease washers (items 2 and 3) using Mercury high performance grease, Part # 8M0071842 or equivalent.
2. Insert the M10 bolts, washers and lock washers (items 4, 3, and 2) into the magnet bracket assembly (item 1), and apply the provided Loctite® to the first four threads of each M10 fastener as shown in figure 2.
3. Torque the two M10 bolts to 26–30 ft-lbs being careful to engage the pre-bent tabs of the lock washers into item 1 pilot holes as shown in figure 2.
4. Hand thread the two bleed plugs (item 5) into either end of the Verado cylinder body.
5. Using a deep socket, torque both bleed plugs to 6–8 ft-lbs as shown in figure 2.
6. Place one of the SmartStick mounts (item 6) on each installed bleed plug, orientation shown in figure 2.
7. Place a 3/8 ID flat washer (item 7) and a Nyloc® nut (item 8) on each of the bleed plugs on either end of the Verado cylinder, then torque the nuts to 6–8 ft-lbs as shown in figure 2. Do not overtighten.

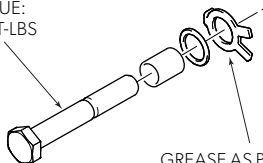


WARNING!

Do not let SmartStick mounts twist on the bleed plug studs. Mount must be parallel with top of steering cylinder.

TECH TIP

TORQUE:
12–15 FT-LBS



GREASE AS PER STEP 1

For users with Mercury Verado engines generation 1–4. In Step 2 replace M10 bolts and hardware with M8 bolts and hardware in HA6833 kit. Apply Loctite® to first four threads as shown in figure 2.

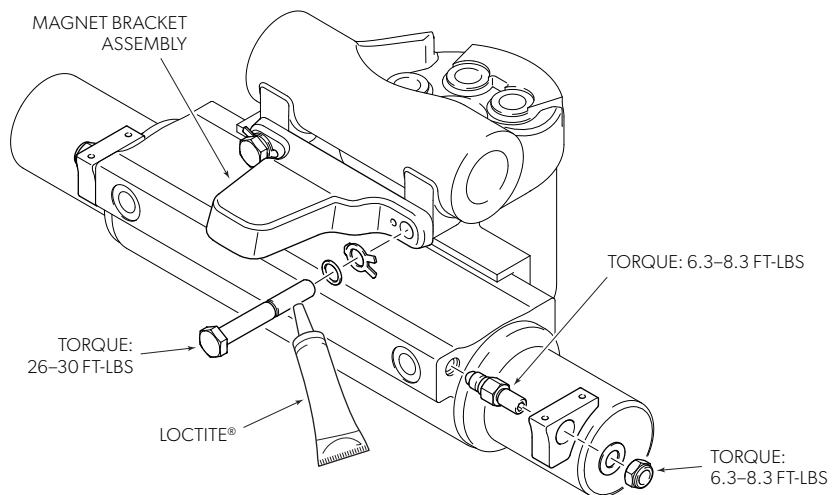


Figure 2. HA6830 Assembly and HA5505 mounting brackets.

8. Rest the SmartStick (item 9) across the top of the Verado cylinder in the orientation shown in figure 3. Align the left hand holes with the holes of the SmartStick mount below, and start two of the #6-32 Phillips screws (item 10) as shown in figure 3.
9. Repeat Step 8 for the right hand side SmartStick holes.
10. Make sure the SmartStick is sitting flush and is not twisted, then torque the four #6-32 Phillips screws (previously hand tightened) to 10–12 in-lb (0.83–1 ft-lb).

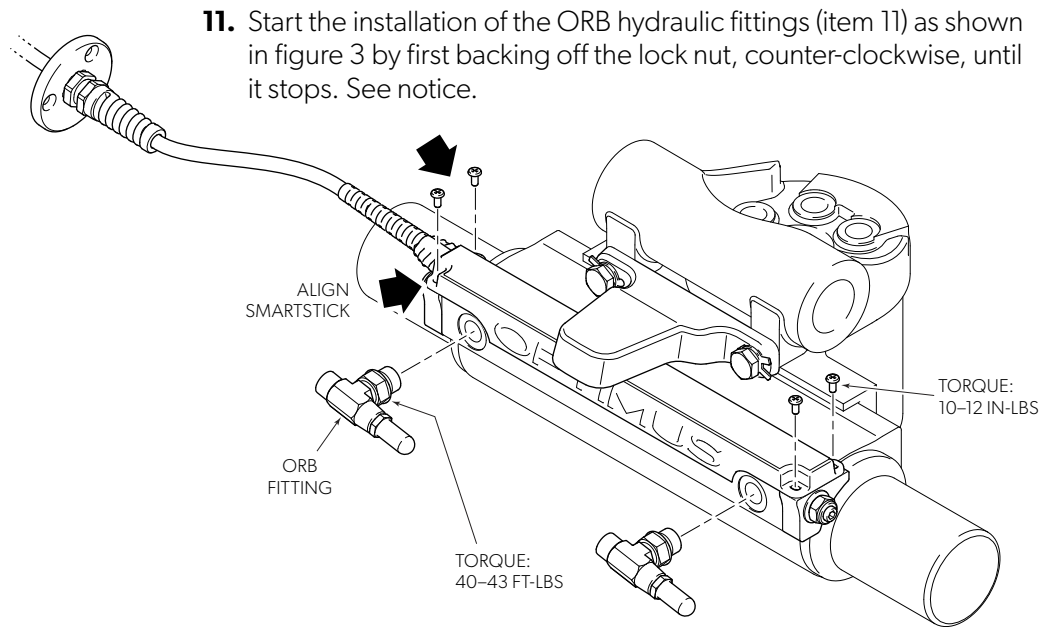


Figure 3.



NOTICE!

O-ring must be fully on sealing surface and cannot contact any threads. Do not use Teflon tape or any liquid pipe sealant with ORB fittings.

12. Thread fitting into cylinder body until fitting washer contacts the face of the cylinder port. Tighten hand tight, do not torque fitting at this time.
13. Position fitting orientation to be within $\pm 10^\circ$ from horizontal by turning it counter-clockwise to a maximum of 1 full turn as shown in figure 4.

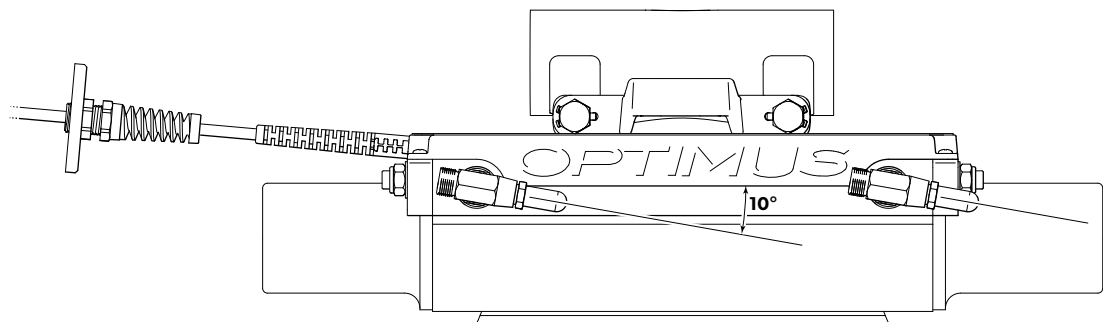


Figure 4.



WARNING!

Failure to be within stated $\pm 10^\circ$ could cause interference and damage between steering components and potential loss of steering.

14. While holding fitting body with a wrench, tighten the lock nut and torque to 40-43 ft-lb as noted in figure 3.



15. After routing the hydraulic hoses as desired, connect the hoses to their respective U & D hydraulic fittings as shown, and torque fitting nut to 15 ft-lb while holding fitting body with a wrench.
16. Restrain SmartStick harness to hydraulic steering hoses as described in book 50.1 Optimus EPS Installation Manual — Electronic Power Steering for Outboard Powered Vessels.

System Setup and Configuration

Follow Book 65 with the following exceptions:

1. Book 65 Section 4.2.3 — Select Steering Type
Select “Outboard Verado” as the Steering Type instead of “Outboard Optimus”. The selection is illustrated in figure 5.
2. Book 65 Section 4.2.4 — Select Number of Devices
If you are using a Dash Panel indicator instead of a CANtrak display, set the Number of Displays to zero as shown in figure 6.

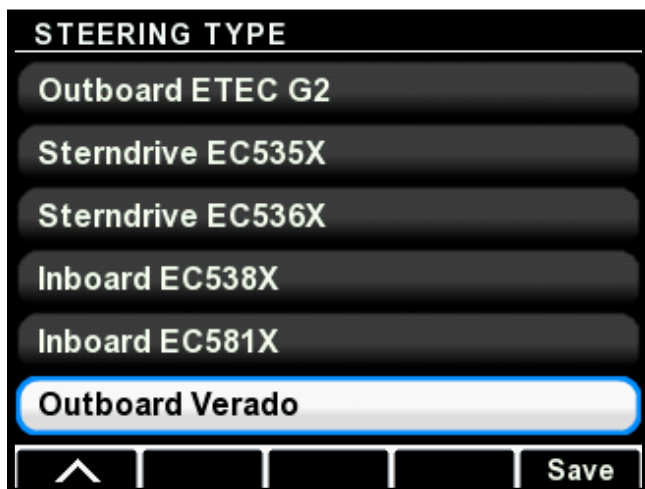


Figure 5.

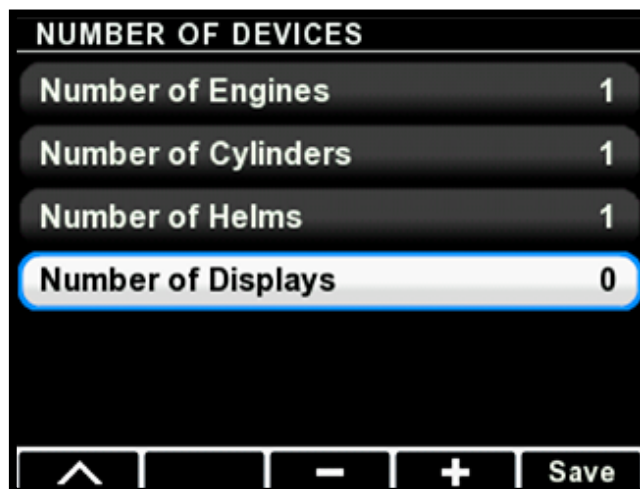


Figure 6.

3. After successfully completing system calibration, bend the two protruding tabs on the tab lock washers (item 2) around so they are fully engaged against M10 (or M8 for Gen 1–4 users) bolt head. Final state of bent tab lock washers can be seen in figure 4.



NOTICE!

Please use Book 65 and this supplement for setting up your Verado Optimus EPS system and when installing the dash panel version for Single Engine applications please reference supplement # 682147.

Maintenance



See maintenance section of your Optimus Installation Manual.

NOTE

The magnet bracket assembly (mounted to the engine pan) can attract ferritic debris over time. Periodically inspect the underside of the magnet bracket assembly for any accumulation of material. The gap between the magnet bracket assembly and the SmartStick sensor must be free and clear at all times.