

SE205™ Shift Shaft Installation Guide



Tools Needed:

Sockets

- 9/16" • 13mm
- 10mm • ½"

Sealers / Lubricants

- Water-proof grease

Wrenches

- 9/16" • 13mm
- 10mm • ½"

Misc.

- Wire cutter
- Zip tie
- Torque wrench
- Ratchet

Disclaimer

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Step 1

Powerhead Removal

In approximately 1997, Mercury Marine redesigned the shift system in the "metric" inline engine family (75 – 125 hp). The amount of throw needed to shift between forward, neutral and reverse increased. As a consequence, the midsection shift shaft needs to be changed to the new style which provides the needed travel. Tiller handle models do not need any modification before installing a six-jaw lower unit.

1.1 Remove the gearcase. Refer to the 205 installation guide for directions.



1.2 (Above) Disconnect the battery cables from the battery. Remove the negative side first. On the port side of the engine, use a 10mm socket or wrench and remove the two nuts holding the shift and throttle cable ends (yellow arrows). Slide the retaining clip open (red arrow) and remove the two cables. Slide them out of the cowling.



1.3 (Above) On the starboard side of the engine, remove the 1/2" nut holding the positive battery cable to the solenoid (yellow arrow). Remove the 9/16" headed bolt securing the negative battery cable to the starter mount (red arrow). Slide both cables out of the cowling.



1.4 (Above) Remove the fuel line at the quick-connect (arrow). Remove the bolt on the inside of the cowling, which holds the quick connect. Pull the fitting into the cowling.



1.5 (Above) Pull apart the wire harness connection (arrow) and pull it through the cowling.



1.6 (Above) Remove the clip holding the tilt switch (if so equipped) to the starboard lower cowling (arrow). Push the switch into the cowling.



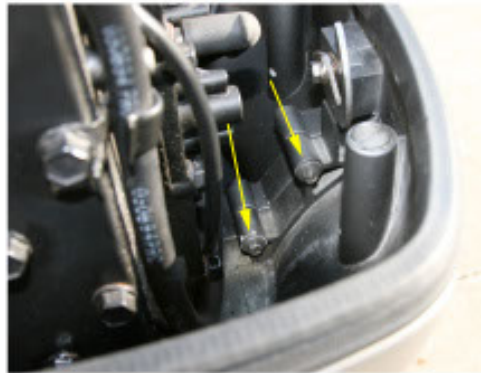
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1.7 (Above) Disconnect the wire couplings (arrows) for the trim/tilt system. Make note of the color-coding for use during reassembly. Pull the harness through the cowling. The lower cowling is removed for visibility.



1.8 (Above) Using a 10mm socket, remove the cowling bolt from the port side (arrow).



1.9 (Above) Remove the two bolts joining the rear of the two lower cowling together (arrows). Use a 10mm socket or wrench.



1.10 (Above) Locate the nuts that hold down the front cowling latch (arrow). Loosen the nuts and pull the cowlings apart.

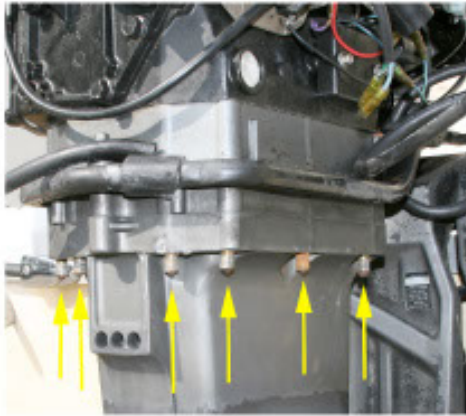


1.11 (Above) Cut the zip-tie holding the tell-tail to the starboard side lower cowling. Pull the hose off of the nipple. The fitting is plastic so be careful not to break it. Remove the lower cowlings and set them aside.



1.12 (Above) Remove the attachment nut for the midsection shift shaft (arrow).

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1.13 (Above) Remove the eight nuts holding the power head to the exhaust adapter plate (arrows). Attach a Mercury lifting eye to the flywheel and using a suitable lifting device, lift off the power head.

remaining gasket material and corrosion. Be careful not to damage the surface.



1.15 (Above) Scrape any remaining gasket material and corrosion from the mounting surface on the midsection (red arrow). Lift out the old three-jaw shift shaft (green arrow).



2.2 (Above) Place one of the small bushings in the curved end of the link bar (red arrow). Slide the end over stud of the shift shaft and secure it using one of the nuts from the kit. Place the large bushing on the shift shaft (green arrow). Apply waterproof grease on the bushing. **If you are converting a Force, use the original Force link bar.**

Step 2 Assembling the shift shaft



2.1 (Above) The shift shaft kit from SEI comes with the items pictured above, as well as with a power head base gasket (not pictured). If you purchased an OEM Mercury kit, it will have the same parts except no base gasket will be included. The parts include a midsection shift shaft with a corresponding bushing, a link bar with two bushings and two new nuts used to reattach the link bar.



1.14 (Above) Scrape the power head mounting gasket surface (arrow) of any

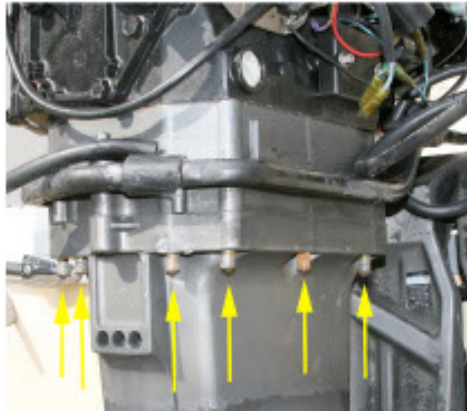


2.3 (Above) Drop the assembled shift shaft back into the midsection in the orientation shown.



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Step 3 Reassembly



3.1 (above) Place the power head base gasket on the midsection. There are dowel pins, which align it. Make sure all the holes line up. Lower the power head onto the midsection. Apply Loctite 271 to the threads and reinstall the eight mounting nuts and torque them to 45 ft. lbs.



3.2 (Above) Insert a new bushing from the SEI shift shaft kit into the mounting hole of the shift link. Reattach the link to the shift slide (arrow). Tighten the nut until it seats, and then back it off ¼ turn.



3.3 (Above) Reinstall the two lower cowlings. Remove any corrosion from the mounting bolts and apply waterproof grease to the threads and shoulders of the bolts. Tighten the outer bolt (arrow). Torque to 65 in. lbs



3.4 (Above) Tighten the two rear bolts (arrows). Torque them to 65 in. lbs.



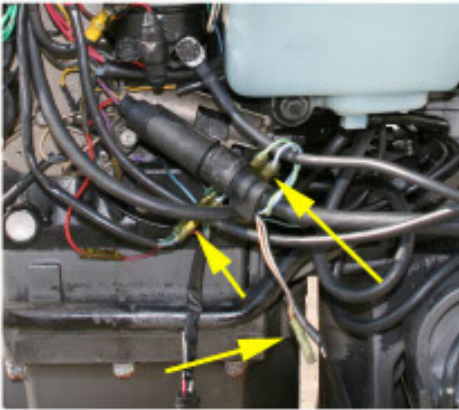
3.5 (Above) Re-tighten the nuts at the front of the cowling, which secure the upper cowling latch (arrow).



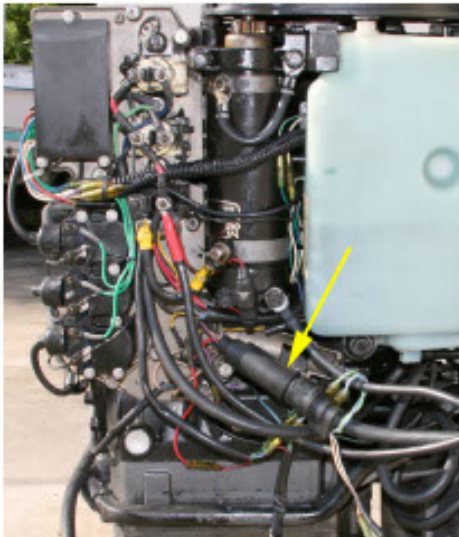
3.6 (Above) Re-attach the tell-tail hose to the nipple in the cowling. Secure it with a new zip tie.



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3.7 (Above) Re-connect the electrical connection for the trim / tilt harness (arrows).



3.8 (Above) Re-connect the main wire harness (Arrow).



3.9 (Above) Re-attach the positive battery cable to the starter solenoid (yellow arrow). Re-attach the negative battery cable to the starter motor mount (red arrow). Torque the bolt to 14.5 ft. lb.

3.10 Pull the throttle and gear shift cables back into the cowling. Do not attach them at this time.

3.11 Reinstall the gearcase. Refer to the 205 Install guide for directions.

