MARINER OUTBOARDS

MERCURY OUTBOARDS

service bulletin

No. 94-1

Actuator Seal Failures - Quicksilver Power Steering

Quicksilver Power Steering

P/N 17443A2, A3, A7, A8, A10, A11

Power steering actuator seal can fail due to:

Overfilling the reservoir.

Extending or retracting the steering ram prior to removing the factory installed plugs in the steering cylinder and actuator head.

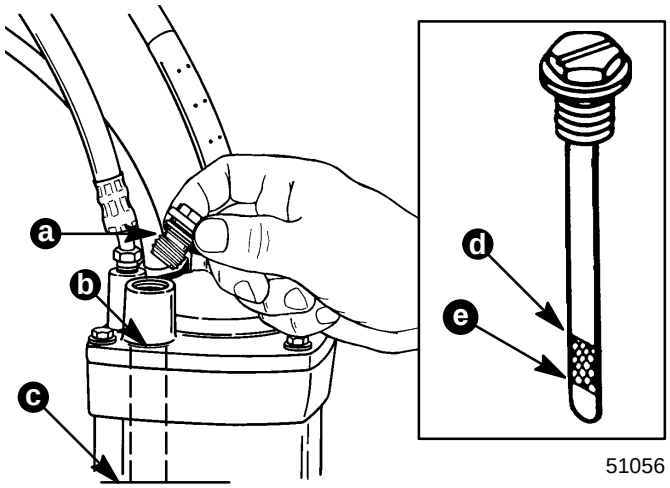
Kinking or pinching the return hydraulic line.

Extremely aggressive steering maneuvers with the earlier A2, A3, A7, A8 and A10 power steering units.

Overfilling the Reservoir. A caution decal has been developed to provide convenient instructions on how to check and maintain the oil level in the reservoir. Order caution decal p/n 37-826190 and install next to the oil fill hole on all in-stock and customer owned power steering units that do not have the decal. Also, explain the proper fluid checking/filling procedure to the customer.

To Check Oil Level

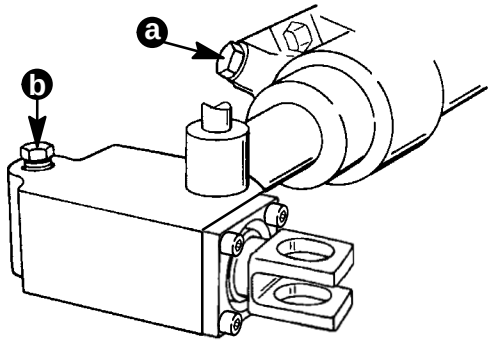
1. Turn key off.
2. Release fluid pressure by steering thru the full steering range (stop to stop) three (3) times, then extend the steering ram full out.
3. Remove fill cap. NON-DIPSTICK MODELS: fill with fluid to bottom of fill neck (b). Actual fluid level in reservoir will be at the bottom of the fill tube (c). DIPSTICK MODELS: fill with fluid to the dipstick full mark (d). DO NOT OVERFILL.
4. Thread fill cap in two full turns. DO NOT TIGHTEN.
5. Turn key "ON". Activate the system by steering thru the full steering range (stop to stop) three (3) times, then extend the steering ram full out. DO NOT REFILL OIL RESERVOIR.
6. Tighten fill cap with steering ram extended full out.



a. Fill Cap.
b. Fluid Level - Bottom of Fill Neck.
c. Actual Fluid Level
d. Dipstick Full Mark.
e. Dipstick Add Mark.

Figure 1. Fluid Level.

Factory Installed Plugs. It is important to remove the plug on the steering cylinder and the plug on the actuator head before moving the steering ram. Failure to remove the plugs prior to moving the ram will "blow out" the actuator seal. The seal usually is not damaged with this type of failure and can be reinstalled.

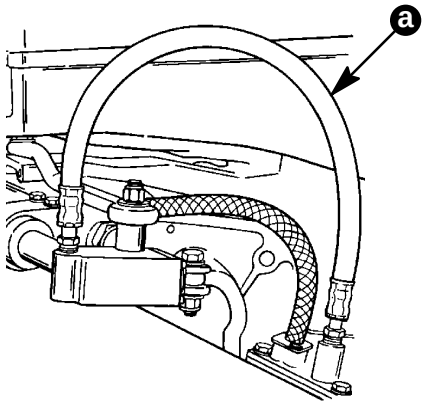


a. Cylinder Plug.
b. Actuator Head Plug.

Figure 2. Plug Locations.

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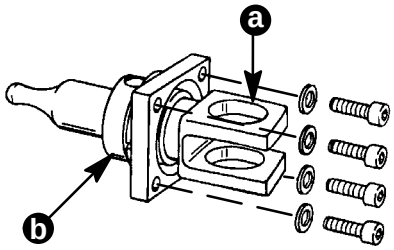
Kinked or Pinched Return Hydraulic Line. The return line from the actuator head to the reservoir must not be kinked or pinched. If the return line is kinked or pinched and restricts the return of fluid, the actuator seal will “blow out”. Reroute or replace the return line to correct the problem. Proper routing of the return hose is particularly troublesome with the remote mount models because of the various boat designs. Some hoses may have to be replaced if they show signs of being kinked because the inside has collapsed.



a. Return Hydraulic Line.

Figure 3. Transom Mount.

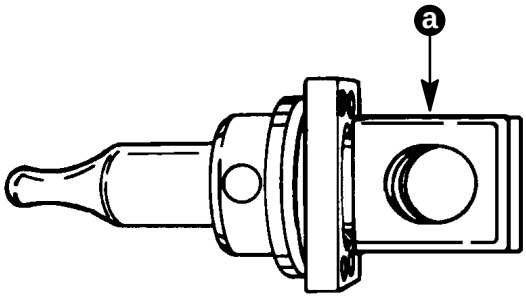
Aggressive Steering Maneuvers. An actuator yoke assembly kit p/n 826641A1 has been developed to avoid actuator yoke seal failures due to aggressive steering maneuvers on 17443A2, A3, A7, A8 and A10 power steering. The actuator yoke assembly has an improved actuator yoke and bushing. It comes fully assembled with four (4) new attaching screws and installation instructions.



a. Actuator Yoke.
b. Bushing.

Figure 4. Actuator Yoke Assembly.

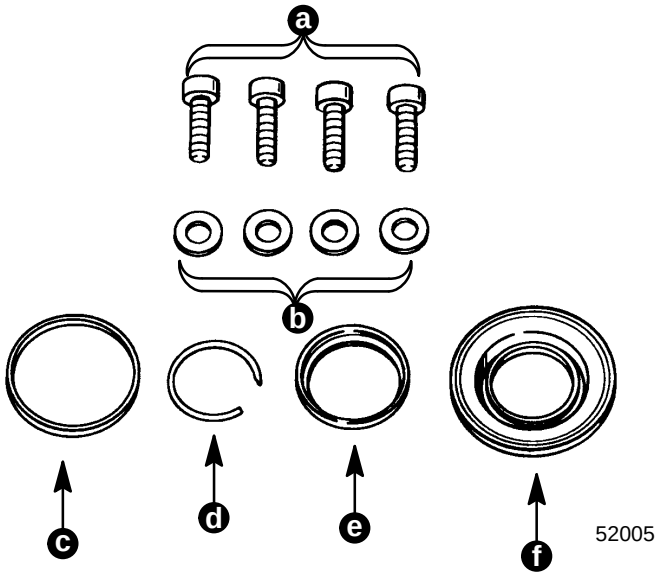
This is the same actuator yoke assembly that is installed in p/n 17443A11 power steering units and is identified by the square yoke end. The previous actuator yoke has a round end.



a. Square End.

Figure 5. Improved Actuator Yoke.

The Power Steering Actuator Yoke Seal Kit p/n 811632A1 continues to be available for actuator seal repairs. Refer to Service Bulletin 92-3.



a. Screws.
b. Washers.
c. Square Cut O-Ring.
d. Snap Ring.
e. Collar.
f. Housing Seal.

Figure 6. Actuator Yoke Seal Kit.

WARRANTY:

Complete warranty claim listing:

Part number of Power Steering.

Qty. 1 p/n 37-826190 Decal
and/or
Qty. 1 p/n 826641A-1 Actuator Yoke Assembly.

One half (0.5) hour labor.

Labor Rate Code - NJC.

Failure Code - 821 26

USA and Canada - Return actuator yoke assembly with claim.

International - Hold actuator yoke for inspection/disposal by a Marine Power International technical representative.

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