

# 18-2291

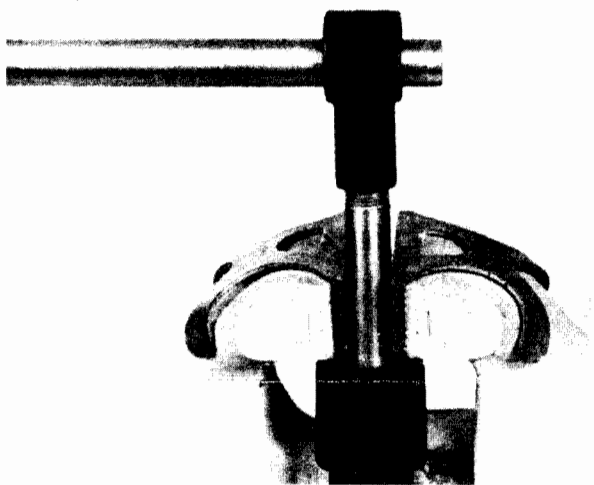
## TRIM CYLINDER

Repair Kits for Mercruiser Parts  
replacement, disassembly and reassembly procedure

**CAUTION:** Work in clean, lint-free area. Lubricate parts with SAE 10W-30 or 10W-40 automotive oil after cleaning.

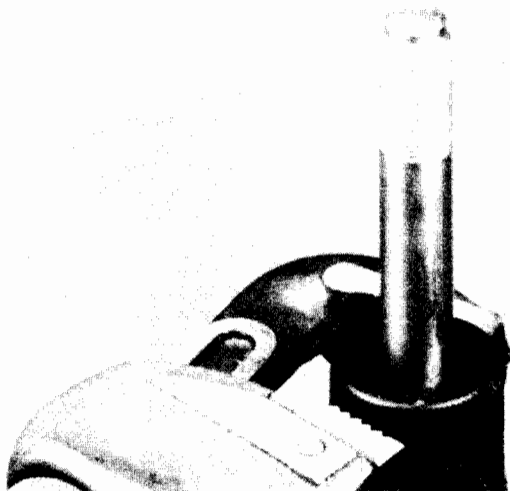
**CAUTION:** DO NOT clamp vise on sealing surfaces of piston rod, following.

**NOTICE:** Disregard Steps 1, 2, 16, 17 and 18, if pivot end is not to be replaced. Cylinders with nylon coated pivot ends are welded and are not replaceable.



**Figure 1. Piston Rod in Vise**

1. Secure piston rod in vise (with soft jaws to prevent possible scoring) as close to pivot end as possible. (Figure 1)
2. Place a bar thru eye of pivot and rotate counterclockwise to remove. If pivot end is extremely tight, apply heat only with piston rod extended, being careful not to overheat cylinder parts.

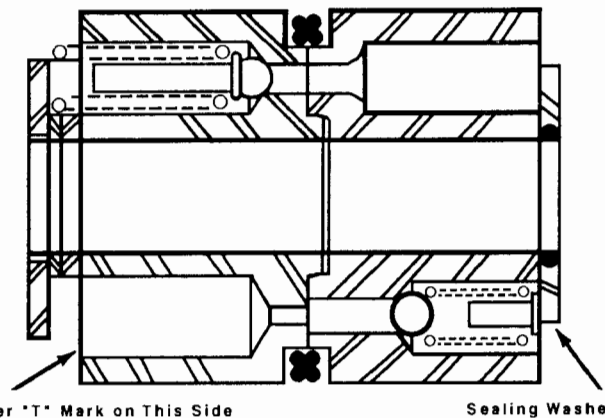


**Figure 2. Removing End Cap**

3. Rotate cylinder end cap carefully, counterclockwise with a pipe wrench to remove. (Figure 2)
4. Pull piston rod and piston rod bearing from cylinder. The inner cylinder can come with it.
5. Remove floating piston and tube guide. Use a wire hook or tap end of tube against a block of wood to remove tube guide if it remains in outer cylinder.

**CAUTION:** DO NOT remove or discard piston assembly if other than a major overhaul kit is used for repairs.

6. Place piston rod in vise, as in Step 1, and remove nut or bolt that retains piston assembly.
7. Remove piston assembly from piston rod and discard.
8. Remove piston rod bearing. Replace its inner and outer "O" rings.
9. Place plain washer, Equi-Flex scraper and piston rod bearing on piston rod.
10. Discard loose small shim washers in envelope. Use shim washers supplied with new piston only. Remove nut which holds new piston assembly together, being careful to hold assembly parts in position with a free hand.
11. Remove shipping bolt and washer from under piston assembly while holding piston upright. Place sealing washer in its proper position. Refer to assembly drawing below. (Figure 3)



**Figure 3. Piston Sealing Washer Location**

12. Replace piston, using "a" or "b" following:
  - a. Carefully place piston assembly over piston rod stud with sealing washer toward piston rod. Install new nut and torque to 8-10 lbs.

ft. (10.8-13.6 N.m) Remove piston rod assembly from vise.

- b. Place bolt, which held piston assembly to piston rod thru piston assembly. Apply high strength thread locker to threads of bolt and install. Torque bolt to 20 lbs. ft. (27 N.m).

13. Place new "O" rings on floating piston and tube guide. Place them into inner cylinder and position them in the outer cylinder. Refer to assembly drawing (Figure 4)

14. Insert piston rod and piston into inner cylinder while fitting piston rod bearing into outer cylinder.

**CAUTION: Make sure that spiral grounding springs are properly installed on anchor pins (between rubber bushing) when installing cylinder. DO NOT install spiral grounding springs on cylinder ends which are nylon coated.**

15. Coat threads of outer cylinder with marine grease and install end cap. Torque to 35-45 lbs. ft. (47-61 N.m).

16. Secure piston rod in vise as close to pivot end threads as possible. (Figure 1)

17. Clean threads on piston rod and apply thread locker.

18. Replace pivot end and torque to 25-30 lbs. ft. (34-41 N.m).

19. Paint over scratches to protect exposed metal.

20. Reinstall trim cylinder and refill and bleed hydraulic system, as outlined in appropriate service manual.

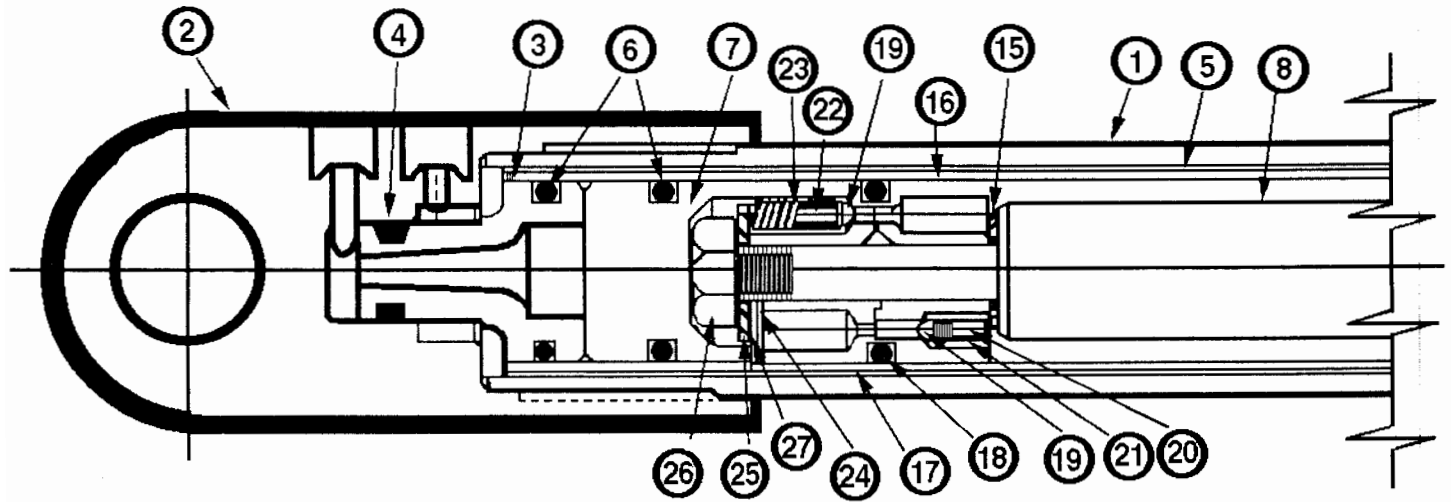
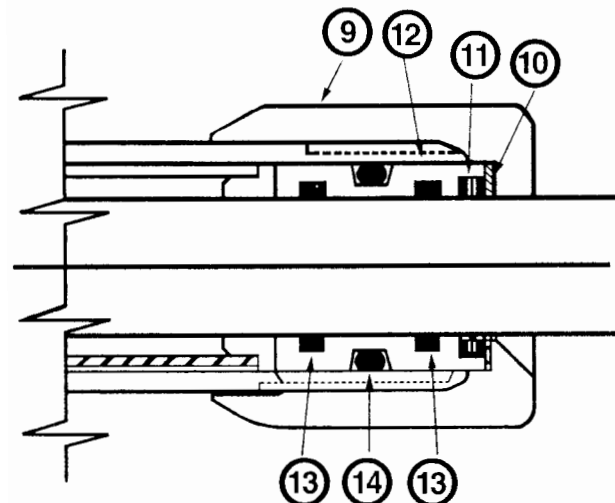


Figure 4. Cylinder Assembly Drawing

Torque Nut to 8-10 lbs ft. (10.8-13.6 N.m)  
Torque Bolt to 20 lbs. ft. (27 N.m)



- |                               |                              |
|-------------------------------|------------------------------|
| 1. Outer Tube Assembly        | 14. "O" Ring                 |
| 2. End Cap-Pivot              | 15. Washer - Sealing         |
| 3. Inner Tube Guide           | 16. Shock Piston - Return    |
| 4. "O" Ring                   | 17. Shock Piston - Impact    |
| 5. Tube - Inner               | 18. Quad Ring (or Seal Ring) |
| 6. "O" Ring                   | 19. Ball - Steel             |
| 7. Piston - Floating          | 20. Rivet - Tubular          |
| 8. Rod - Piston               | 21. Spring - By-Pass Check   |
| 9. End Cap - Cylinder         | 22. Rivet - Tubular          |
| 10. Washer - Plain            | 23. Spring - Shock Relief    |
| 11. Scraper - Rod (Equi Flex) | 24. Washer - Plain           |
| 12. Bearing - Piston Rod      | 25. Washer - Plain           |
| 13. "O" Ring                  | 26. Nut (or Bolt)            |
|                               | 27. Washer - Plain           |

Figure 4. Cylinder Assembly Drawing