mercruiser
STERN DRIVES & INBOARDS

service bulletin

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NUMBER: 83-34

CIRCULATE TO:
SERVICE MANAGER ☐
PARTS MANAGER ☐
MECHANICS ☐
"Place In a Service Bulletin Binder"

A. MANUAL RELEASE VALVE "O" RINGS BEING DAMAGED ON "OILDYNE" POWER TRIM PUMPS

If you encounter a MerCruiser Stern Drive with an "Oildyne" Power Trim pump that has one of the problems listed below, the trouble may be due to damaged "O" rings on the "Manual Release Valve". (Figures 1 and 2)

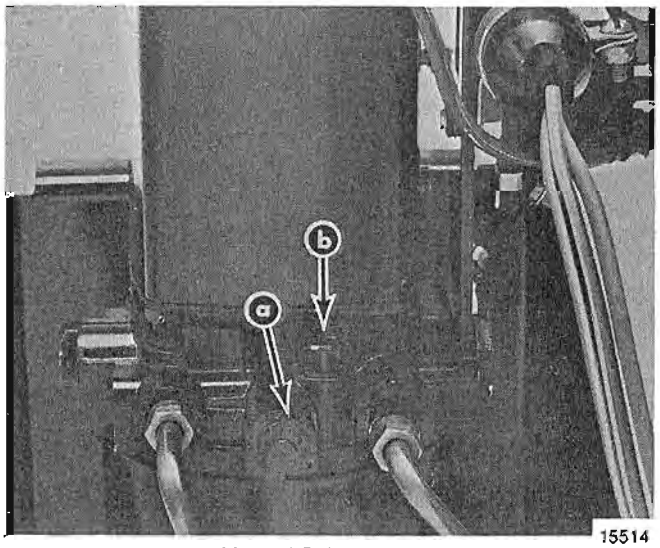
- Drive unit leaks down from raised position.
- Drive unit cannot be trimmed "Out" or raised.
- Drive unit cannot be trimmed "In" or lowered.

Damage to the "O" rings may result from the following:

- Operation of the Power Trim pump with the "Manual Release Valve" partially open. **Valve Must Be Completely Closed (Turned Clockwise Until Bottomed-Out) When Trimming "IN" or "OUT".** Tighten valve finger-tight only -- DO NOT USE A PLIERS.

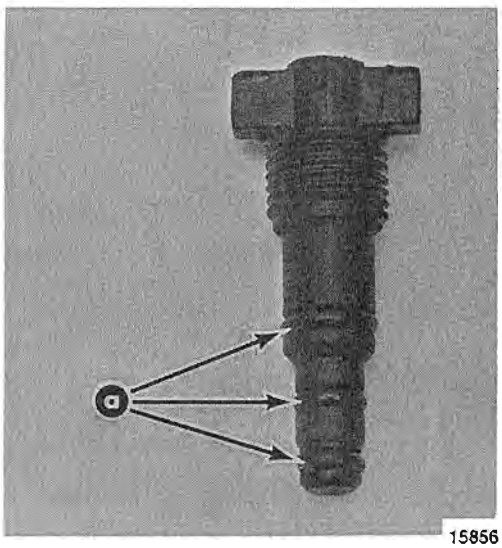
IMPORTANT: The Power Trim System bleeding procedure has been changed to prevent possible damage to "O" rings (refer to Subject B; following).

- Opening "Manual Release Valve" quickly with stern drive unit in the fully raised position. **Valve Must Be Opened SLOWLY to Gradually Relieve Pressure On System.**
- Continuous use of "Manual Release Valve". **Valve Is Designed for Emergency (Limited) Use Only.**



a - Manual Release Valve
b - Fill/Vent Screw

Figure 1. Oildyne Power Trim Pump



a - "O" Rings (3)

Figure 2. Manual Release Valve

B. NEW AIR-BLEEDING PROCEDURE FOR POWER TRIM SYSTEMS WITH "OILDYNE" PUMP

⚠CAUTION

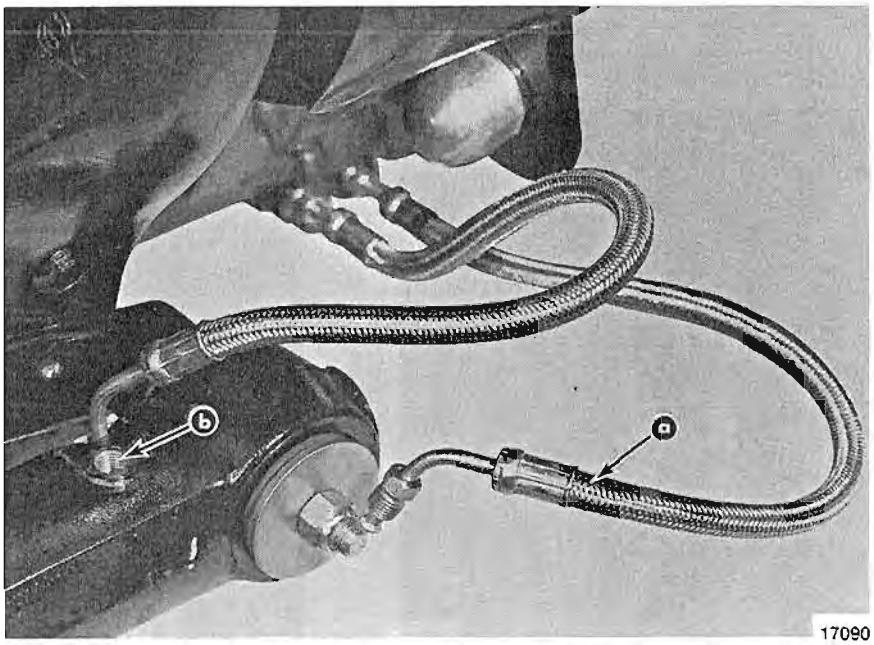
This procedure should be used instead of instructions outlined in MerCruiser Service Bulletin 83-13. Procedure has been changed to prevent possible damage to "Manual Release Valve" "O" rings and to ensure more complete bleeding of system.

The Power Trim system will purge itself of a small amount of air by raising and lowering the drive unit several times. However, if a rebuilt trim cylinder is being installed (which has not been filled with oil), the following bleeding procedure should be used to remove the air from the system.

1. With drive unit in the fully "In" ("Down") position, remove "Fill/Vent" screw (Figure 1) and fill trim pump to proper level (indicated on dipstick) with SAE 10W-30 or 10W-40 motor oil.

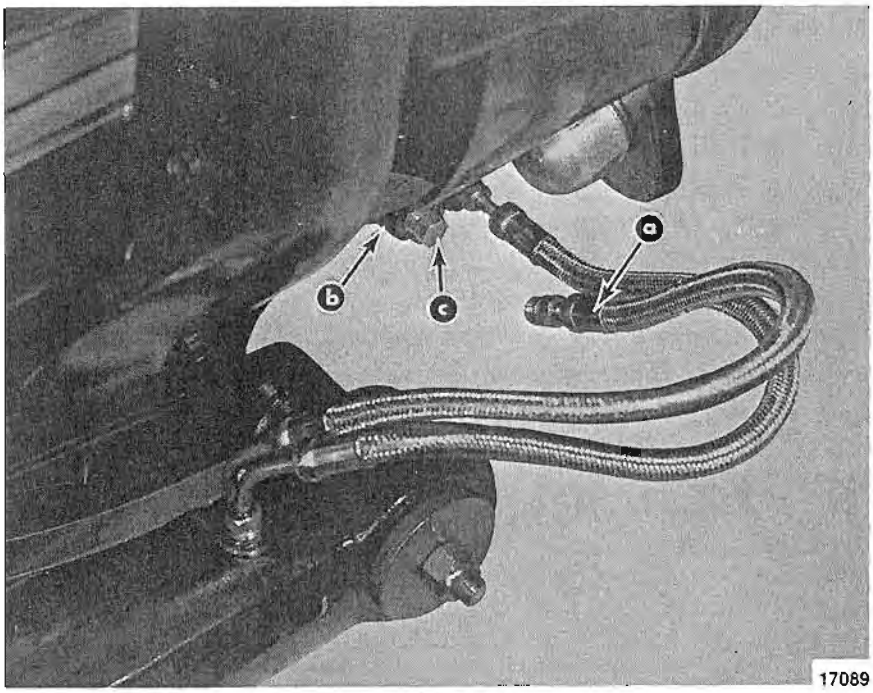
   NOTE: If both trim cylinders have been rebuilt, fill trim pump with oil to bottom of threads in "Fill/Vent" screw hole. This is necessary to prevent pump from running out of oil when bleeding system.

2. Make sure that "Manual Release Valve" (Figure 1) is completely closed (bottomed-out).
3. Disconnect "Up" hose from front connection on rebuilt trim cylinder. (Figure 3) If both cylinders were rebuilt, disconnect hose from both cylinders.
4. Direct end of trim hose(s) into a container; then, run trim pump in the "Out" ("Up") direction until a solid, air-free stream of oil is expelled from hose(s). Reconnect hose(s) and tighten securely.
5. Refill trim pump to proper level.
6. Disconnect "Down" trim hose (on side with rebuilt trim cylinder) from rear connection on gimbal housing hydraulic connector. (Figure 4) If both cylinders were rebuilt, disconnect hose from aft connection on both sides of connector.
7. Plug connector(s) in hydraulic connector, using plug (22-38609) or a suitable device. (Figure 4)



a - "Up" Trim Hose
b - Front Connection On Trim Cylinder

Figure 3. Bleeding "Up" Trim Circuit



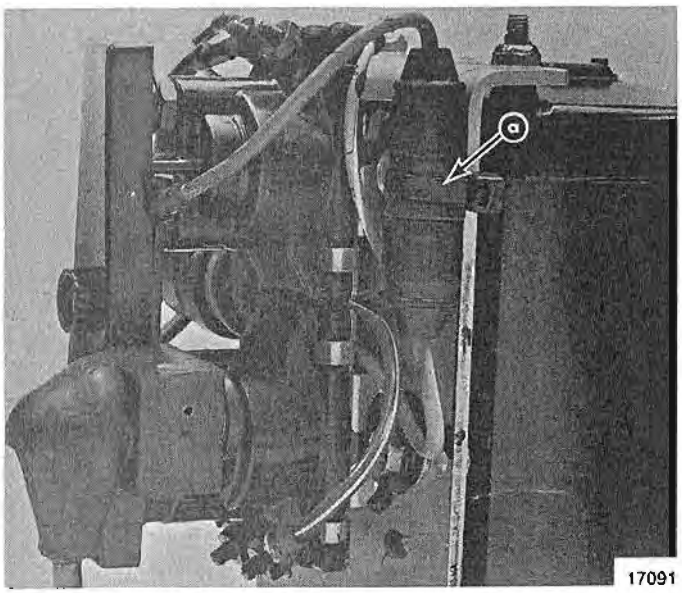
a - "Down" Trim Hose
b - Hydraulic Connector
c - Plug (22-38609)

Figure 4. Bleeding "Down" Trim Circuit

8. Direct end of trim hose(s) into a container. Run trim pump in the "Out" ("Up") direction until trim cylinders are fully extended.
9. Remove plug(s) from gimbal housing hydraulic connector and momentarily run trim pump in the "In" ("Down") direction until a solid stream of oil is expelled from connector. Reconnect trim hose(s) and tighten securely.
10. Lower drive unit to the fully "In" ("Down") position and refill trim pump to proper level. Run trim system "In" and "Out" several times and recheck oil level.

C. 20 AMP FUSE ON "OILDYNE" POWER TRIM PUMPS

Newer production "Oildyne" trim pumps are equipped with a 20 amp fuse instead of a circuit breaker (Figure 5). The part number for the replacement fuse is 88-79091. This fuse protects the trim control and wiring harness.



a - Fuse

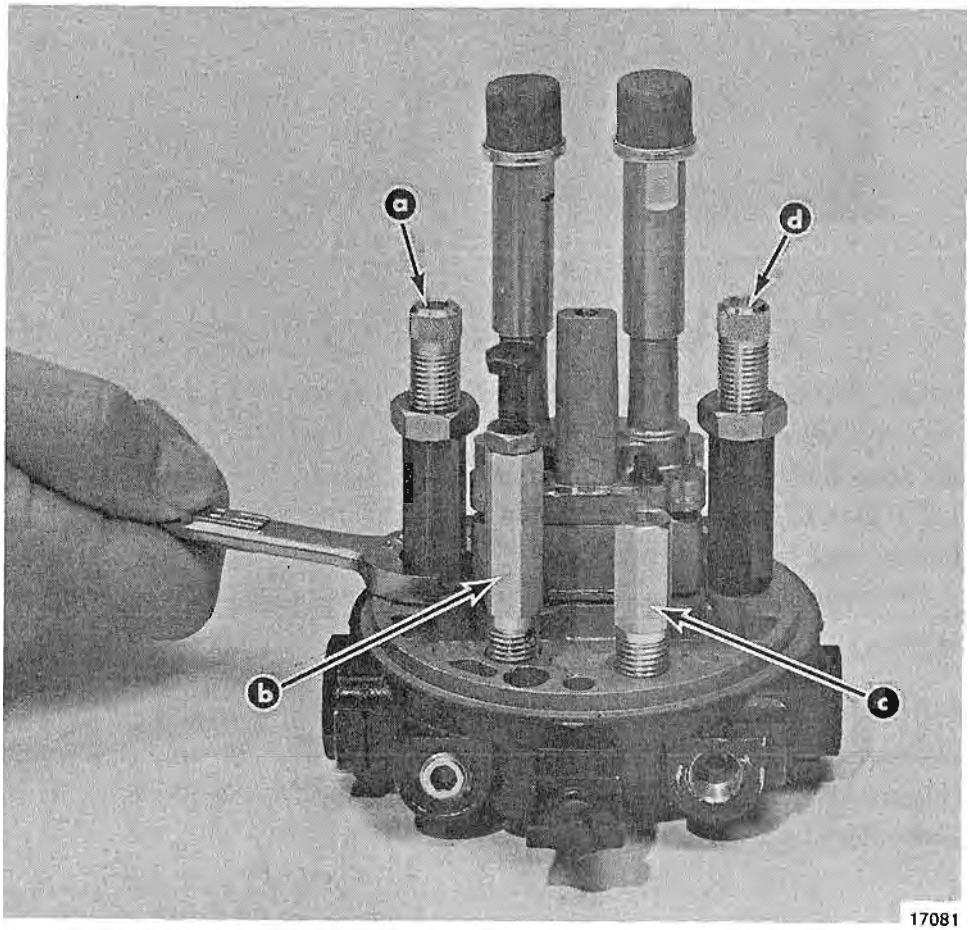
Figure 5. 20 Amp Fuse On "Oildyne" Pump

D. INDIVIDUAL RELIEF VALVES FOR "OILDYNE" POWER TRIM PUMPS

Individual relief valves for the "Oildyne" Power Trim pump are now available under the part numbers listed below. (Figure 6) Installation instructions are included with each valve.

- 95355A1 - Down Pressure Relief Valve
- 95351A1 - Up Pressure Relief Valve
- 95353A1 - Thermal Relief Valve
- 19-11005 - Replacement Plug - Trail-Out Valve

NOTE: Early production "Oildyne" pumps were equipped with a trail-out valve. This valve was eliminated on later pumps. If this valve should fail on one of the early production pumps, the valve can be removed and replaced with plug (19-11005).



a - Down Pressure Relief Valve
b - Trail-Out Valve (Used on Early Production Pumps Only)
c - Thermal Relief Valve
d - Up Pressure Relief Valve

Figure 6. "Oildyne" Power Trim Pump Relief Valve

E. MALFUNCTIONING DOWN PRESSURE RELIEF VALVE ON "OILDYNE" POWER TRIM PUMPS

If you encounter a MerCruiser Stern Drive (with an "Oildyne" trim pump) where the pump motor runs, but the drive unit will not lower from the raised position, the problem may be due to a malfunctioning down pressure relief valve. (Figure 6) To correct this problem, install a new down pressure relief valve (95355A1). This valve is of a new design for improved reliability.

The new valve is being used on all current production Power Trim pumps and replacement parts.

F. TROUBLESHOOTING "OILDYNE" POWER TRIM PUMPS

Use the following information in conjunction with test procedure in MerCruiser Service Bulletin 83-13 to determine which trim pump component is faulty. "Possible Causes" are listed in order of probability and ease of checking.

POSSIBLE CAUSE & REMEDY	PROBLEM			
	Low Down Pressure -- Drive Unit Will Not Trim "In" ("Down") or Does So Slowly	Down Circuit Leaking Internally -- Drive Unit Trails-Out In Reverse or When Decelerating	Low Up Pressure -- Drive Unit Will Not Trim "Out" ("Up") or Does So Slowly	Up Circuit Leaking Internally -- Drive Unit Leaks Down From Raised Position or Trims "In" While Underway
Damaged Manual Release Valve "O" Rings -- Replace Valve	1	1	1	1
Faulty Down Pressure Relief Valve -- Replace Valve	2	N/A	N/A	N/A
Faulty Trail-Out Valve -- Replace Valve with Plug (19-11005)	3	2	N/A	N/A
Faulty Adaptor -- Replace	4	4	4	4
Adaptor Pilot Valves or Seals Leaking -- Install Rebuild Kit (99073)	N/A	3	N/A	3
Faulty Up Pressure Relief Valve -- Replace Valve	N/A	N/A	2	N/A
Faulty Thermal Relief Valve -- Replace Valve	N/A	N/A	3	2