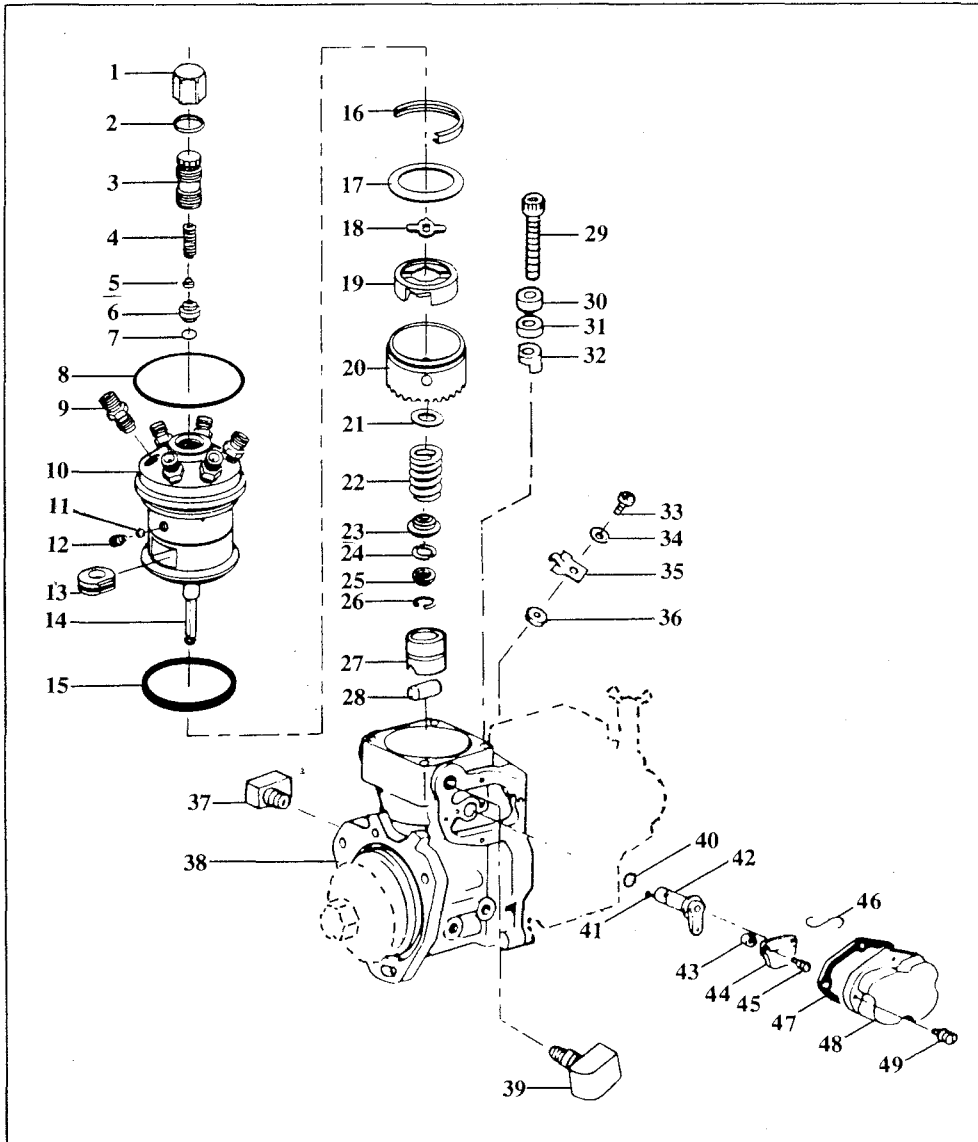


Exploded view of Hydraulic Head Assembly and Related Components



Parts List

1. CAP NUT, delivery valve
2. GASKET, cap nut
3. HOLDER, delivery valve
4. SPRING, delivery valve
5. GUIDE, spring
6. VALVE ASSEMBLY, delivery
7. SPACER, delivery valve
8. GASKET, "O" ring — upper
9. FITTING, discharge (6)
10. HEAD, hydraulic
11. BALL, sealing
12. SCREW, set
13. SLEEVE, plunger
14. PLUNGER
15. GASKET, "O" ring — lower
16. RETAINER, gear
17. WASHER, thrust
18. GUIDE, plunger (Oldham drive)
19. HUB, face gear
20. GEAR, face
21. WASHER, plunger spring
22. SPRING, plunger
23. SEAT, lower spring
24. RING, split — lower spring seat (2)
25. BUTTON, plunger
26. RING, retaining
27. GUIDE, tappet
28. ROLLER, tappet
29. SCREW, retaining — hydraulic head
30. WASHER, clamp — upper
31. WASHER, clamp — lower
32. CLAMP, retaining — hydraulic head
33. SCREW, head locating
34. GASKET, head locating screw
35. PLATE, head locating
36. GASKET, head locating plate
37. FITTING (VALVE), overflow
38. HOUSING ASSEMBLY, pump
39. FITTING, fuel inlet
40. GASKET, "O" ring — control unit
41. PIN, plunger sleeve — control unit
42. CONTROL UNIT ASSEMBLY
43. SPACER, C.U. retaining plate
44. PLATE, retaining — C.U.
45. SCREW AND LOCKWASHER, C.U.
46. WIRE, lock — C.U. screw
47. GASKET, C.U. cover
48. COVER, C.U.
49. SCREW, C.U. cover (3)
SCREW, C.U. cover — lockwire

FIGURE 1-5

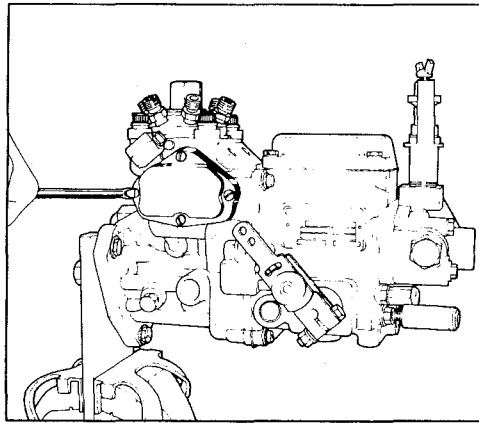
Caution: All work on injection equipment must be performed in the cleanest possible location. No filing, sawing or scraping should be done on the bench where repairs are made.

- (1) Wash all external dirt and grease from the injection pump.
- (2) Remove protection caps and plugs, and drain all lubricating and fuel oil out of the pump.
- (3) Mount pump on bracket TSE 76193 and clamp lower end of bracket in a vise.

Caution: Never clamp pump mounting flange in a vise.

- (4) If pump is sealwired between control unit cover and governor top cover, remove wire. Remove the four control unit cover fastening screws and lockwashers and then remove the control unit cover and gasket. Refer to Fig. 1-6.

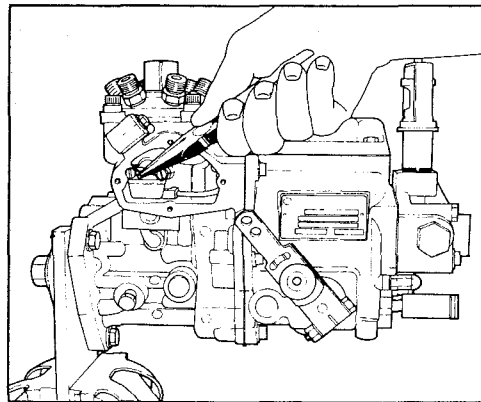
A. Hydraulic Head Removal



**FIGURE 1-6
REMOVING CONTROL UNIT
COVER SCREWS**

Note: To break loose gasket, tap cover lightly with a non-metallic mallet.

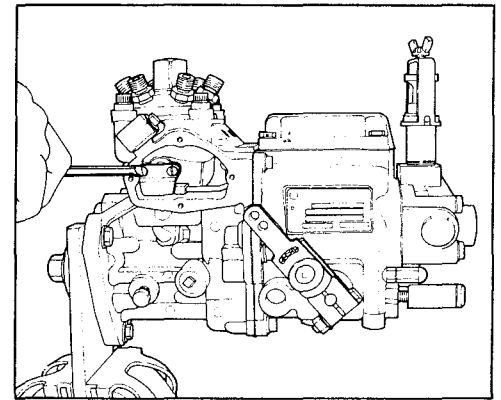
- (5) Using pliers, break control unit retaining plate screw lockwire and remove the lockwire from retaining screws.



**FIGURE 1-7
REMOVING LOCKWIRE FROM
CONTROL UNIT RETAINING
PLATE SCREWS**

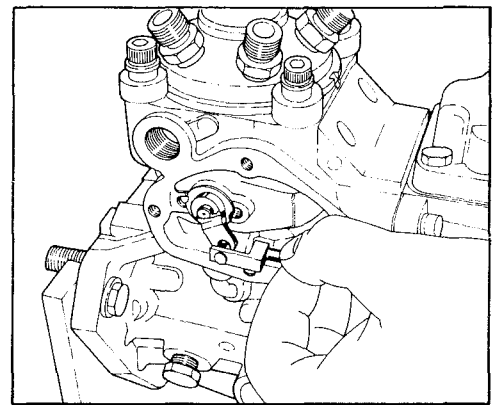
Caution: Make certain all pieces of lockwire are removed from the pump. Lockwire should not be cut with wire cutters since pieces could fall into pump housing.

- (6) Remove the two control unit retaining plate screws and lockwashers, retaining plate and spacers together to avoid dropping spacers into pump.



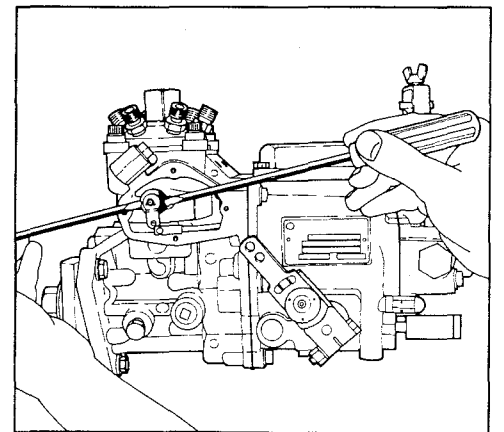
**FIGURE 1-8
REMOVING CONTROL UNIT RETAINING
PLATE SCREWS**

- (7) Disengage control rod pin from the control unit assembly.



**FIGURE 1-9
DISENGAGING CONTROL ROD**

- (8) Pry the control unit flange partially out from the pump housing so that screw drivers can be placed behind the control unit flange. **Carefully** remove the control unit assembly with two screw drivers and remove "O" ring from control unit assembly.



**FIGURE 1-10
REMOVING CONTROL UNIT ASSEMBLY**

Note: If desired, the internal timing of pump can be checked prior to disassembly. Rotate camshaft until line mark on face gear is aligned with raised mark in timing window. The pump is timed properly when the camshaft keyway is exactly at the 12 o'clock position.

(9) The delivery valve holder cap nut and the delivery valve holder should be loosened prior to removing the hydraulic head assembly.

(10) Loosen the four head retaining screws two full turns and raise the hydraulic head assembly. (Refer to Fig. 1-13). Rotate head slightly to facilitate removal of two head screws, clamps and washers. Rotate head in opposite direction and remove the remaining two screws, clamps and washers.

Note: On pumps equipped with head locating plate, loosen head bolts and rotate head flange above plate tab.

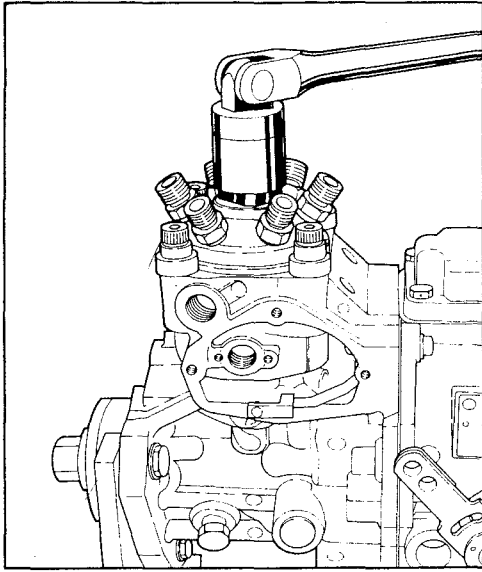


FIGURE 1-11
LOOSENING DELIVERY VALVE HOLDER
CAP NUT

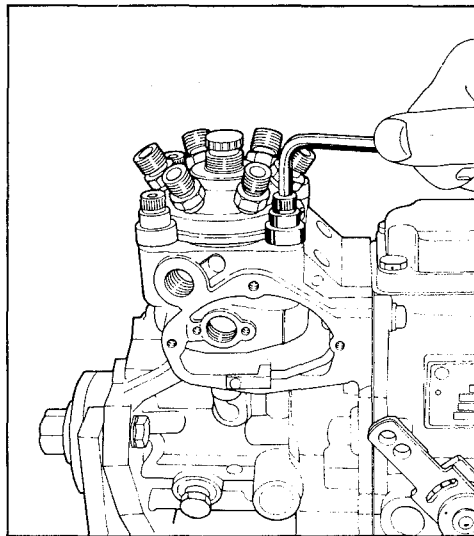


FIGURE 1-13
REMOVING HYDRAULIC HEAD
RETAINING SCREWS

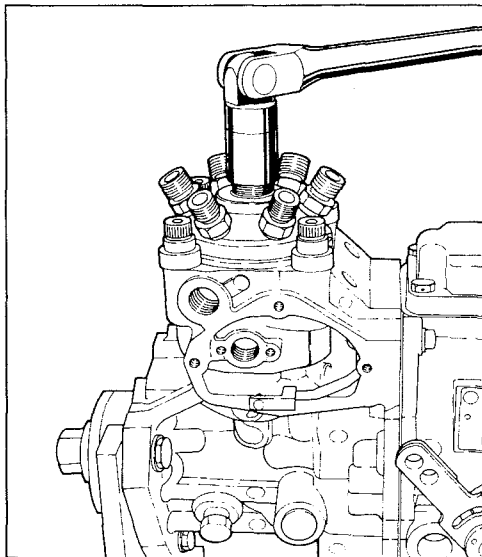


FIGURE 1-12
LOOSENING DELIVERY VALVE HOLDER

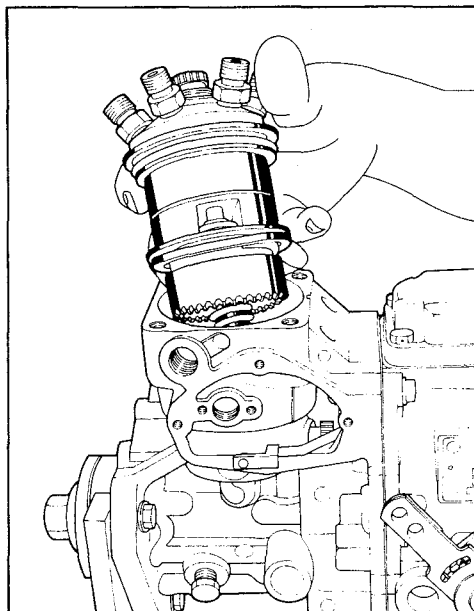
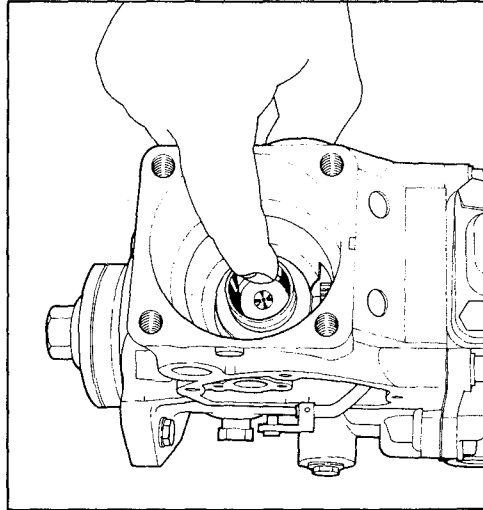


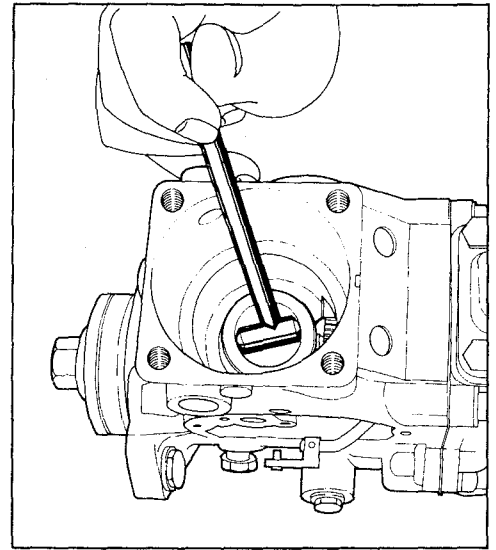
FIGURE 1-14
REMOVING HYDRAULIC HEAD
ASSEMBLY

- (11) Lift out the hydraulic head assembly carefully to prevent damage to the housing bore. Remove the lower gasket which may be stuck to the lower part of the head or in the housing bore.
- (12) Remove the tappet assembly from the pump housing bore.



**FIGURE 1-15
REMOVING TAPPET ASSEMBLY**

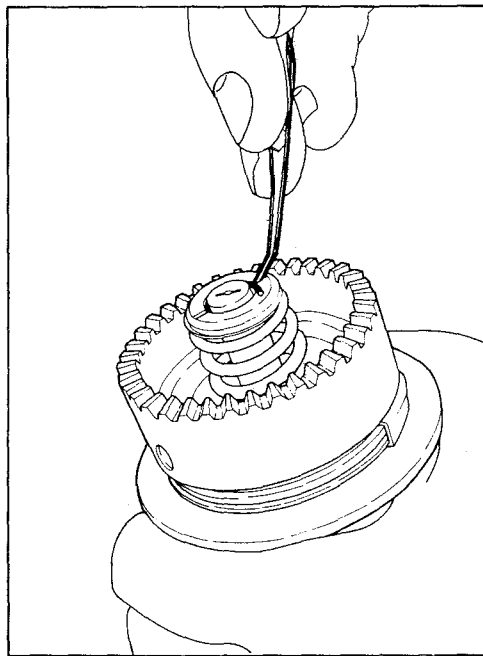
- (13) Next, remove the roller from the housing bore. Use of a pencil magnet will facilitate removal.



**FIGURE 1-16
REMOVING TAPPET ROLLER**

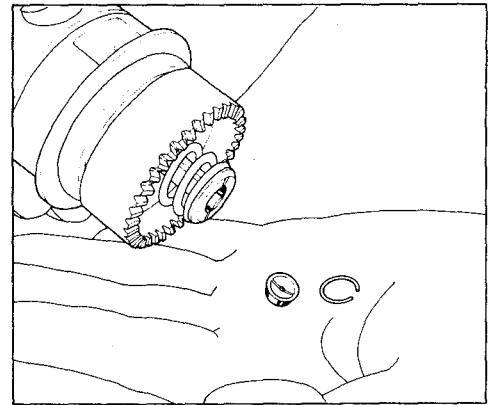
B. Disassembly of Hydraulic Head

- (1) Remove button retaining ring with a thin awl or scribe.



**FIGURE 1-17
REMOVING BUTTON RETAINING RING**

- (2) Next, remove plunger button from bottom of plunger. (Use thin awl or scribe if button adheres to lower plunger).



**FIGURE 1-18
REMOVING PLUNGER BUTTON**

- (3) Invert the hydraulic head assembly and place it on a suitable arbor press. Position Service Tool TSE 76199B on lower spring seat.

Caution: Make certain head and tool are centered and straight before depressing spring to avoid damaging head.

- (4) Depress lower spring seat and spring and remove the two half retaining rings with a magnet or tweezers.