
5610S, 6610S, 7610S, 7010, 8010 REPAIR MANUAL COMPLETE CONTENTS

SECTION 00 - GENERAL	2
SECTION 10 - ENGINE	3
SECTION 18 - CLUTCH	7
SECTION 21 - TRANSMISSION SYSTEMS	8
SECTION 23 - FRONT AXLE TRANSFER BOX	9
SECTION 25 - FRONT AXLE - FOUR WHEEL DRIVE	10
SECTION 27 - MECHANICAL REAR WHEEL DRIVE	10
SECTION 31 - POWER TAKE-OFF	11
SECTION 33 - BRAKING SYSTEM	12
SECTION 35 - HYDRAULIC SYSTEM	13
SECTION 41 - STEERING SYSTEM	15
SECTION 44 - FRONT AXLE - TWO WHEEL DRIVE	16
SECTION 55 - ELECTRICAL SYSTEMS	16

The following pages are the collation of the contents pages from each section and chapter of the 5610S, 6610S, 7610S, 7010, and 8010 Tractor Repair manual. Complete Repair part # 87032901.

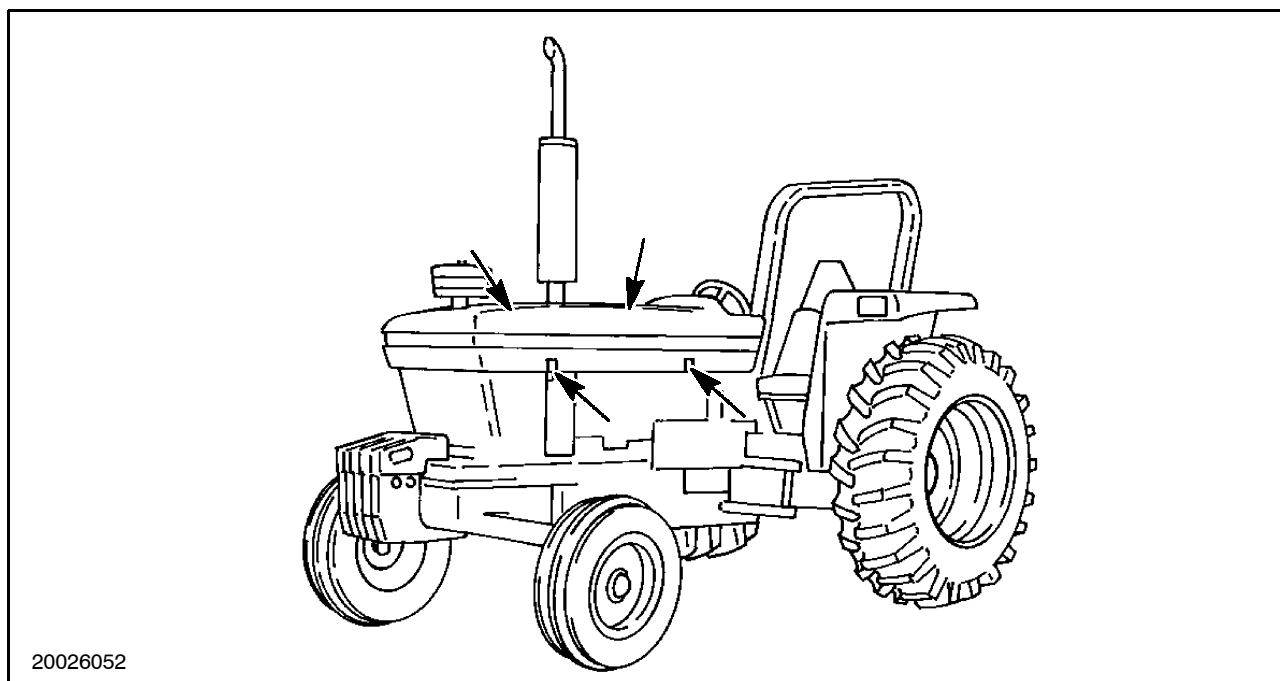
The sections used through out all New Holland product Repair manuals may not be used for each product. Each Repair manual will be made up of one or several books. Each book will be labeled as to which sections are in the overall Repair manual and which sections are in each book.

The sections listed above are the sections utilized for the 5610S, 6610S, 7610S, 7010, and 8010 Tractors.

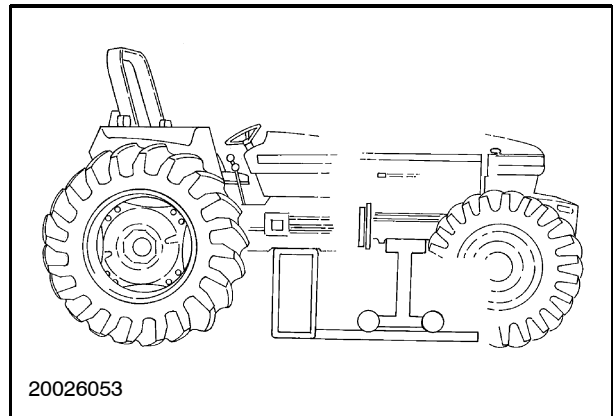
SEPARATING THE TRACTOR

Separating the engine from the front transmission

1. Raise the right-hand hood assembly and support with rod. Disconnect the battery.
2. Remove the vertical exhaust muffler (where installed) to facilitate removing the left-hand hood assembly.
3. Completely remove the left and right-hand side hood assemblies, Figure 2, by removing retaining bolts.
4. Remove the exhaust piping on the left-hand side of the engine (where installed) at the clamp below the auxiliary engine mounted hydraulic pump.
5. Remove the hydraulic piping at the auxiliary engine mounted pump (where installed). Cap and plug all exposed openings to prevent contamination. Remove and retain brackets for piping.
6. Remove the hydraulic steering piping on the left-hand side of the engine. Cap and plug all exposed openings to prevent contamination. Remove and retain brackets for piping.
7. Disconnect the rear hood assembly from the left, right and center brackets by removing the retaining bolts.
8. Disconnect the front and rear harness assemblies and ground wires. Remove and retain clips.
9. Disconnect the hydraulic oil cooler tubing at the center housing. Cap and plug all exposed openings to prevent contamination. Remove and retain brackets and clamps for piping.
10. Disconnect the wires at the starter motor.
11. Remove the starter motor, and the battery grounding cable from the retaining bolt.
12. Remove the bolts securing the fuel tank to the center support bracket at the front of the tank.
13. Disconnect the throttle control rod from the fuel injection pump.
14. Close the fuel shut-off valve and disconnect the fuel tank-to-fuel filter tube at the tank.
15. Disconnect the fuel filter hose from the fuel auxiliary tank (where installed).
16. Release the fuel leak-off tube from the neck of the filler tube (where installed).
17. Remove the engine flywheel access cover.
18. Remove the drive shaft guard assembly (where installed).
19. Remove the drive shaft-to-axle drive flange retaining bolts, and remove drive shaft (where installed).



20. Position the tractor Splitting Tool No. 201387, Figure 3.
21. Remove the engine-to-front transmission buckle up bolts and pull the front of the tractor away from the rear of the tractor.

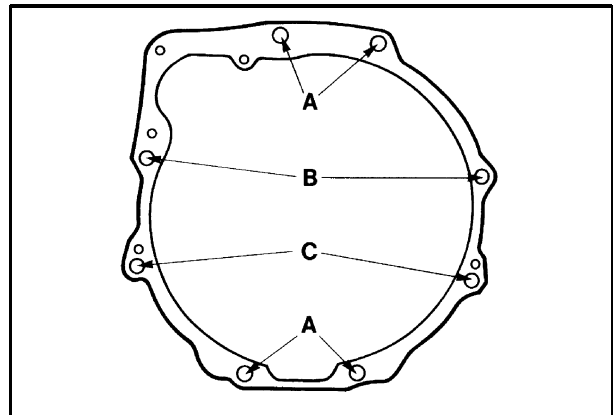


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Reconnecting the engine to the front transmission

Reconnecting the engine to the front transmission follows the separation procedures in reverse with the following requirements:

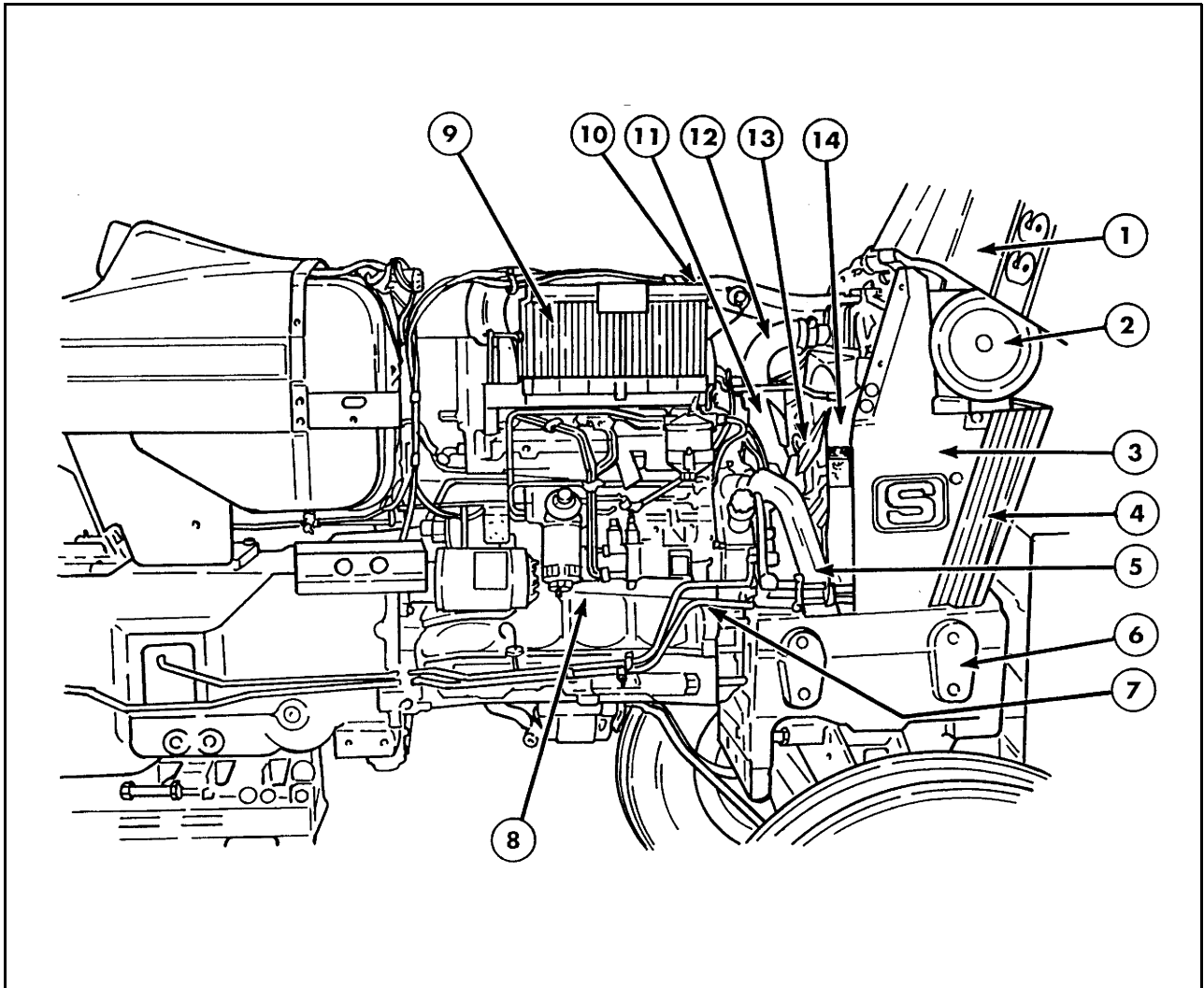
1. When aligning the front of the tractor with the rear, ensure the correct positioning of all components to prevent damage from bending, pinching or crushing.
2. Tighten the top two and bottom two engine to-transmission buckle up bolts to 373-460 N.m (275-339 ft.-lb.). Tighten the two lower side bolts to 224-271 N.m (165-200 ft.-lb.), and the upper two side bolts to 190-230 N.m (140-170 ft.-lb.), see Figure 4.
3. Tighten the starter motor to a torque of 27-34 N.m (240-300 in.-lb.).
4. Check for proper installation of all washers, spacers, brackets and clamps.
5. Check all fuel connections for proper tightening.
6. Bleed air from fuel system and leak check piping.
7. Check all hydraulic connections for proper tightening.
8. Check level of hydraulic oil and replenish as necessary.
9. Bleed air from hydraulic system and leak check piping.
10. Perform check of the steering system.



4

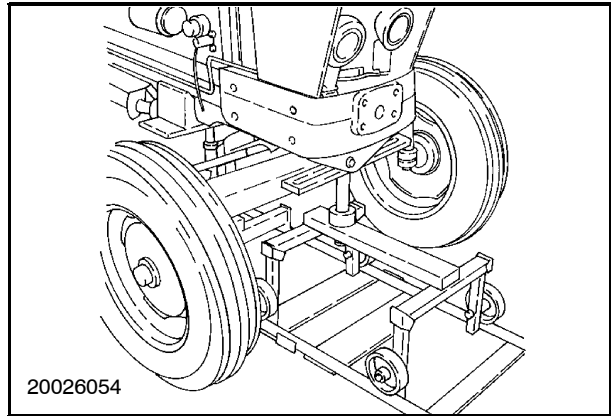
Separating the engine from the front axle assembly

1. Correctly discharge the refrigerant from the air conditioning system (where installed).
2. Raise the right-hand hood assembly and support with rod. Disconnect the battery (9).
3. Remove the vertical exhaust muffler (where installed).
4. Remove the left and right hood assemblies by removing the retaining bolts.
5. Remove the air pre-cleaner to facilitate removing the front hood assembly.
6. Raise the front hood assembly (1), and support with rod.
7. Remove the radiator grill assembly (4).
8. Disconnect the electrical connections to the horn, headlamps, and air conditioning thermostat (where installed).
9. Disconnect clips retaining the front wiring harness to the front section of the tractor.
10. Drain the radiator coolant. Refer to section 10, Chapter 2 "Cooling System".
11. Remove the engine fan shroud (14).
12. Disconnect the oil cooler piping (7). Cap and plug all openings to prevent contamination.
13. Loosen the clamps and disconnect the upper (12) and lower (5) hoses from the radiator. Disconnect all other radiator hoses.
14. Loosen clamps and disconnect intake hose (10) from air cleaner (2).
15. Disconnect hoses from the air conditioning condenser (where installed).
16. Insert wooden wedges between the axle support (6) and the front axle to prevent movement.
17. Remove the retaining bolts and radiator shell (3) from support.
18. Remove the retaining bolt and separate the drag link from the steering arm (where installed).
19. Remove the hydraulic steering piping on the left-hand side of the engine. Cap and plug all exposed openings to prevent contamination. Remove and retain brackets for piping.
20. Remove the drive shaft guard assembly (where installed).
21. Remove the drive shaft-to-axle drive flange retaining bolts, and remove drive shaft (where installed).



22. Position the Splitting Tool No. 201387 under the tractor.
23. Remove the buckle-up bolts and separate the engine from the front axle.

NOTE: *If needed, remove the front axle rear pin and raise the engine a sufficient distance to facilitate removal of the front axle.*



6

Reconnecting the engine to the front axle assembly

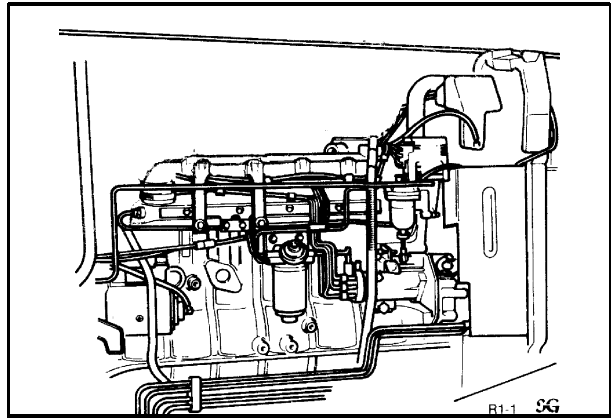
Reconnecting the engine to the front axle assembly follows the separation procedures in reverse with the following requirements:

1. When aligning the front axle assembly with the engine, ensure the correct positioning of all components to prevent damage from bending, pinching or crushing.
2. Tighten the buckle-up bolts to a torque of 240-298 N.m (177-220 ft.-lb.).
3. Check for proper installation of all washers, spacers, brackets and clamps.
4. Service the air conditioning system as needed (where installed).
5. Replenish the cooling system. Refer to Section 10, Chapter 2 "Cooling System".
6. Check all cooling system hoses for leaks.
7. Replenish and bleed air from hydraulic system as needed.
8. Check the hydraulic oil cooler hoses for leaks.
9. Check that the horn, headlamps and air conditioning thermostat function properly (where installed).
10. Check the steering system for proper operation.

DISASSEMBLY AND OVERHAUL

Dismantle the engine following conventional techniques, or by referring to the following removal procedure. Refer to the Engine Specifications section.

NOTE: Replace gaskets, seals, and O-rings when reassembling components and/or the engine.



7

Right Hand View of Engine

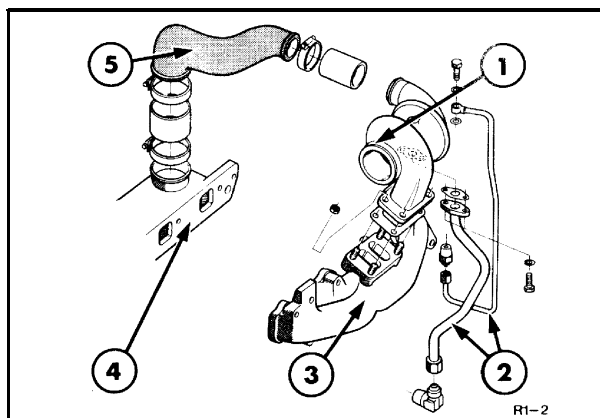
CYLINDER HEAD, VALVES, AND RELATED PARTS

Removal

1. Disconnect battery and swing battery tray away from engine.
2. Remove vertical exhaust muffler (where installed) and the exhaust extension pipe.
3. Remove left and right hood assemblies.
4. Remove air pre-cleaner. Raise and secure the front hood assembly.
5. Remove engine side panels and guards.
6. Drain coolant from the radiator and engine block. Refer to Section 10, Chapter 2 "Cooling System".
7. Shut off heater hose taps. Disconnect and plug heater hoses.
8. Remove radiator top hose. Cap and plug all openings to prevent contamination.
9. Remove air cleaner-to-intake manifold tube.
10. Shut off fuel valve at bottom of fuel tank.
11. Disconnect low-pressure fuel pipes and remove inlet manifold. Cap and plug openings
12. Disconnect and remove fuel pipes to the fuel injector pump. Cap and plug all openings.
13. Disconnect 'thermostart' fuel pipe on the intake manifold. Cap and plug all openings.
14. Disconnect and remove the ventilation tube on the rocker cover.
15. Loosen the belt tension and remove the alternator.
16. Disconnect tacho-drive on the engine front cover. (where installed)
17. Disconnect all loom connections on engine harness and secure clear of the engine.

SECTION 10 - ENGINE - CHAPTER 1

18. Remove turbocharger assembly, Figure 8. Refer to Section 10, Chapter 5 "Turbocharger Overhaul". Cap and plug all openings.

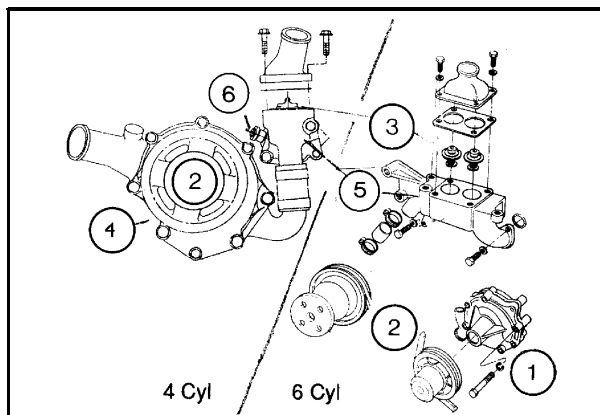


8

Turbocharger Assembly

1. Turbo Housing
2. Oil Feed/Return Tubes
3. Exhaust Manifold
4. Inlet Manifold
5. Inlet Hoses/Tubes

19. Remove water pump. Refer to Section 10, Chapter 2 "Cooling System". Cap and plug all openings.
20. Remove water pump connector from the engine cylinder head.



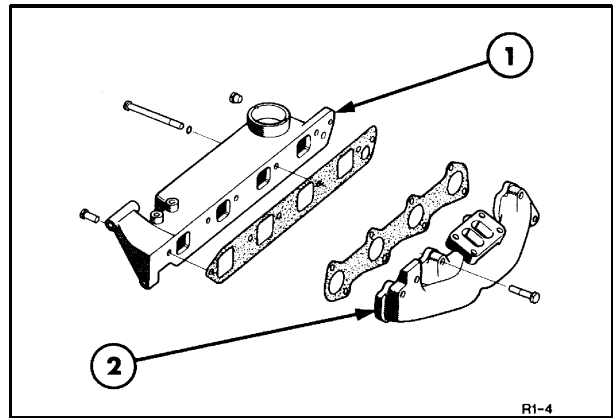
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Water Pump Assembly

1. Pump Body
2. Pulley Assembly
3. Thermostat
4. Gasket
5. Thermostat Housing
6. Temperature Sender

SECTION 10 - ENGINE - CHAPTER 1

- 21. Remove exhaust manifold (2) and gasket.
- 22. Remove inlet manifold (1) and gasket

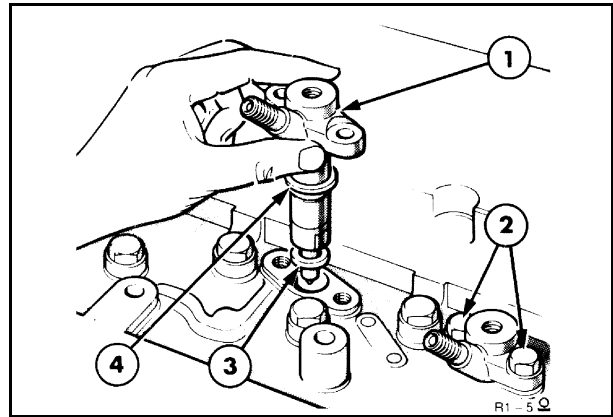


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Manifold Assembly

- 1. Inlet Manifold
- 2. Exhaust Manifold

- 23. Clean area surrounding the fuel injectors.
- 24. Remove injection pump-to-fuel injector, and leak off piping.
- 25. Remove fuel injectors.
- 26. Remove rocker cover and gasket.

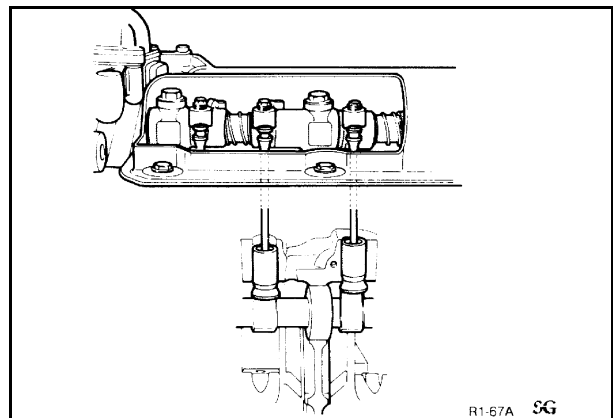


11

Injector Removal

- 1. Fuel Injector
- 2. Mounting Bolts
- 3. Copper Washer
- 4. Cork Washer

- 27. Rotate push rods with the valve closed and check for bent rods.



12

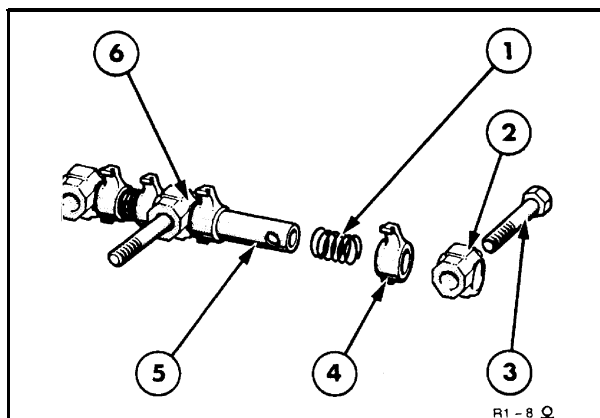
Push Rod Installation

ROCKER SHAFT

Disassembly

NOTE: Leave bolts in rocker shaft supports during removal to retain the support on the shaft.

1. Remove the cylinder head bolts (3), which pass through the rocker shaft supports (2), Figure 13.
2. Loosen the rocker shaft retaining bolts (cylinder head bolts) evenly, and alternately. Remove the rocker shaft assembly.
3. Remove push rods in turn. Place rods in a numbered rack to maintain the same position for re-assembly.
4. Remove remaining cylinder head bolts working inwards and alternately from the cylinder head end to the center.



13

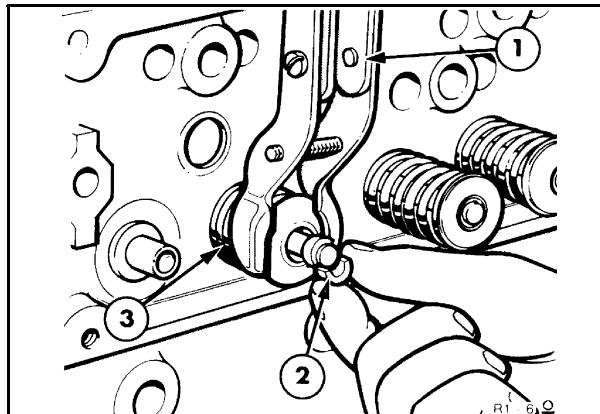
Rocker Shaft Assembly

1. Spring
2. Shaft Support
3. Retaining Bolt
4. Rocker Arm
5. Shaft
6. Spacer

CYLINDER HEAD

Disassembly

1. Remove the retainer locks (2), springs (3), seals and rotators with a valve spring compressor (1). Place parts in a numbered rack, Figure 14.



14

Valve Removal

1. Valve Spring Compressor
2. Retainer Locks
3. Valve Springs

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