TORQUE SPECIFICATIONS - U.S. HARDWARE

Use the torques in this chart when special torques are not given. These torques apply to fasteners with both UNC and UNF threads as received from suppliers, dry, or when lubricated with engine

Grade 8 Bolts, Nuts, and Studs



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CAPACITIES AND LUBRICANTS

ENGINE OIL
- Capacity with filter change ..... 10.4 litres (11 U.S. quarts)
- Type of oil ..... See Engine Oil Recommendations on Page 3
- Oil Level Check Interval ..... Every 10 Hours of Operation or One Time Each Day
- Oil Change and Filter Replacement Interval ..... Every 250 Hours of Operation

ENGINE COOLING SYSTEM
- Capacity ..... 17 litres (18 U.S. quarts)
- Type of coolant ..... Ethylene glycol and water mixed for lowest ambient temperature at least 50/50 mix

FUEL TANK
- Capacity ..... 81.4 litres (21.5 U.S. gallons)

HYDRAULIC SYSTEM
- System capacity ..... 39.7 litres (10.5 U.S. gallons)
- Reservoir capacity with filter change ..... 32.2 litres (8.5 U.S. gallons)
- Reservoir capacity without filter change ..... 31.2 litres (8.25 U.S. gallons)
- Type of oil (Specifications) ..... Case No. 1 engine oil SAE 10W30 (API Service CE, CD, CC/SG) mixed with Case HTO additive

NOTE: *Machines prior to PIN JAF0067438 do not need the Case HTO additive. All machines PIN JAF0067438 and after must have the Case HTO additive mixed as instructed.*

WHEN CHANGING OIL: When you change the hydraulic oil, you must add 1.4 litres (1.5 U.S. quarts) of Case HTO additive (Case part number B17508).

WHEN ADDING OIL: When you add oil to the hydraulic reservoir between oil changes, you must use a mixture of Case HTO additive and SAE 10W-30 engine oil. Completely mix one U.S. quart of Case HTO additive to 19 litres (5 U.S. gallons) of 10W-30 engine oil (20 to 1 ratio).

DRIVE CHAIN COMPARTMENTS
- Capacity (each) ..... 4.7 litres (5 U.S. quarts)
- Type of oil (Specifications) ..... Case No. 1 engine oil - SAE 10W30

PLANETARIES (Only Before PIN JAF0067438)
- Capacity (each side) ..... 0.5 litres (1 U.S. pint)
- Type of oil (Specifications) ..... Case No. 1 engine oil - SAE 10W30

GREASE FITTINGS
- Quantity ..... As required
- Specifications ..... Case molydisulfide grease

BATTERY
- Quantity ..... As required
- Specifications ..... Drinking or distilled water

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MAINTENANCE SCHEDULE

	SERVICE ITEM	AS REQUIRED	EVERY 10 HOURS OF OPERATION OR DAILY	EVERY 50 HOURS OF OPERATION	EVERY 100 HOURS OF OPERATION	EVERY 250 HOURS OF OPERATION	EVERY 500 HOURS OF OPERATION	EVERY 1000 HOURS OF OPERATION	EVERY 2000 HOURS OF OPERATION
1.	Lubricate the Loader Pivot Points (16 Grease Fittings) Case Molydisulfide Grease.		●						
2.	Check the Precleaner for the Air Cleaner - if Equipped. See Operators Manual.		●						
3.	Service the Air Cleaner if the Air Cleaner Warning Lamps On. See Operators Manual.	●							
3.	Clean and Check the Air Cleaner Dust Valve. See Operators Manual.			●					
3.	Replace the Air Cleaner Elements. Use Case Filter.								●
4.	Inspect the Rops. See Operators Manual.						●		
5.	Check the Wheel Nut Torque, 115 to 125 lb ft (156 To 170 Nm). See Section 6008	●							
6.	Check the Drive Chain Tension (Each Side). See Section 9001.					●			
7.	Lubricate the Cluster Sprocket Bearings (2 Grease Fittings) Case Molydisulfide Grease.					●			
8.	Drain Water from the Fuel Filter. See Operators Manual.			●					
9.	Change Engine Oil and Replace the Engine Oil Filter. Case No. 1 Engine Oil, Use Case Filters.					●			
10.	Replace the Fuel Filter(s). See Operators Manual.						●		
11.	Clean Dirt and Debris from the Engine Area.	●							
12.	Check the Fan Belt for Wear Replace if Damaged.	●							
13.	Drain, Flush and Refill the Engine Cooling System (See Note 3). Ethylene Glycol and Water.								●
14.	Check Engine Oil Level Case No. 1 Engine Oil.		●						
15.	Check and Clean the Hydraulic Oil Cooler. See Operators Manual.		●						

NOTE 1: *When adding oil to the hydraulic reservoir between oil changes, use a mixture of Case HTO additive and SAE 10W30 engine oil. Completely mix one U.S. quart of Case HTO additive to 19 litres (5 U.S. gallons) of SAE 10W30 oil (20 to 1 ratio).*

NOTE 2: *When changing the hydraulic oil in the reservoir, add 1.7 litres (1.6 U.S. gallons) of Case HTO additive (Case Part No. B17508).*

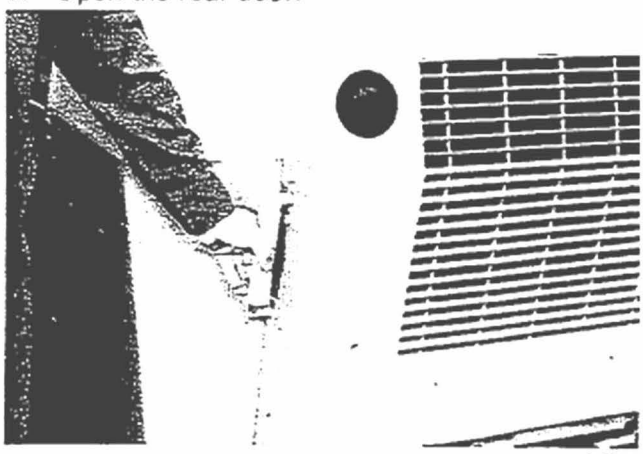
NOTE 3: *Use Ethylene Glycol and water that is mixed 50/50. When adding to the engine, use this mixture.*

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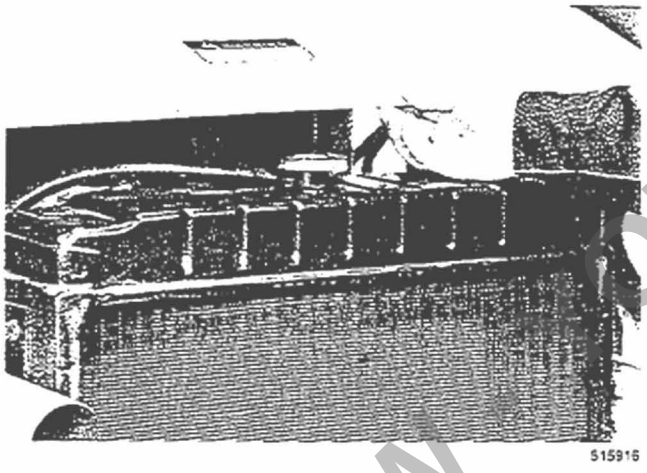
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ENGINE REMOVAL

1. Open the rear door.



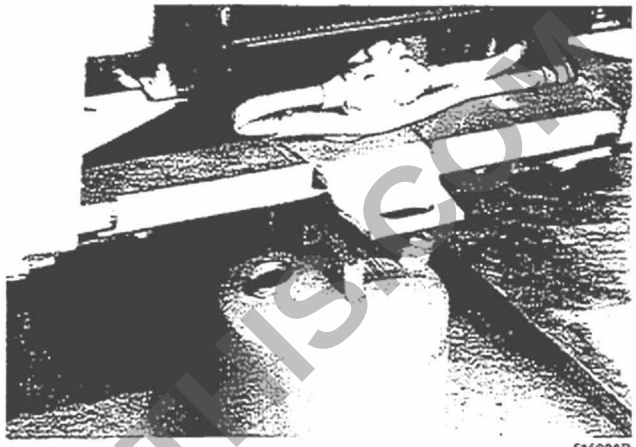
2. Raise the rear cover.



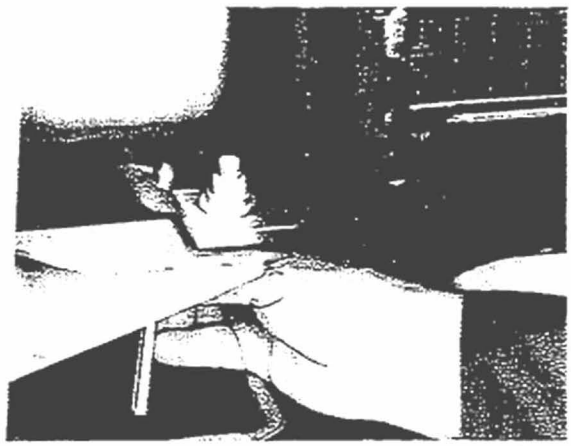
3. Loosen and remove the radiator cap.



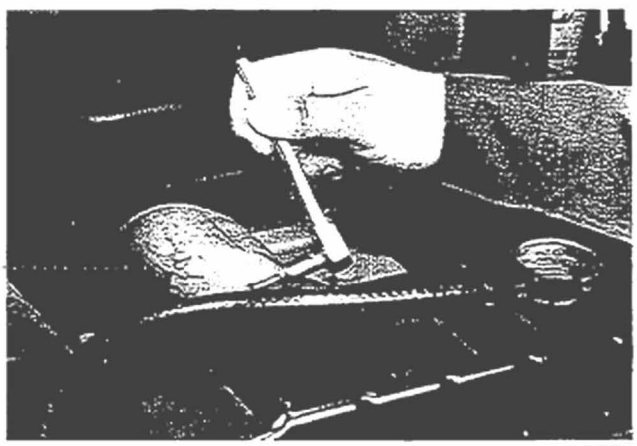
4. Open the drain valve at the LH bottom side of the radiator and drain the cooling system. The cooling system contains approximately 18.2 quarts (17.2 litres) of coolant.



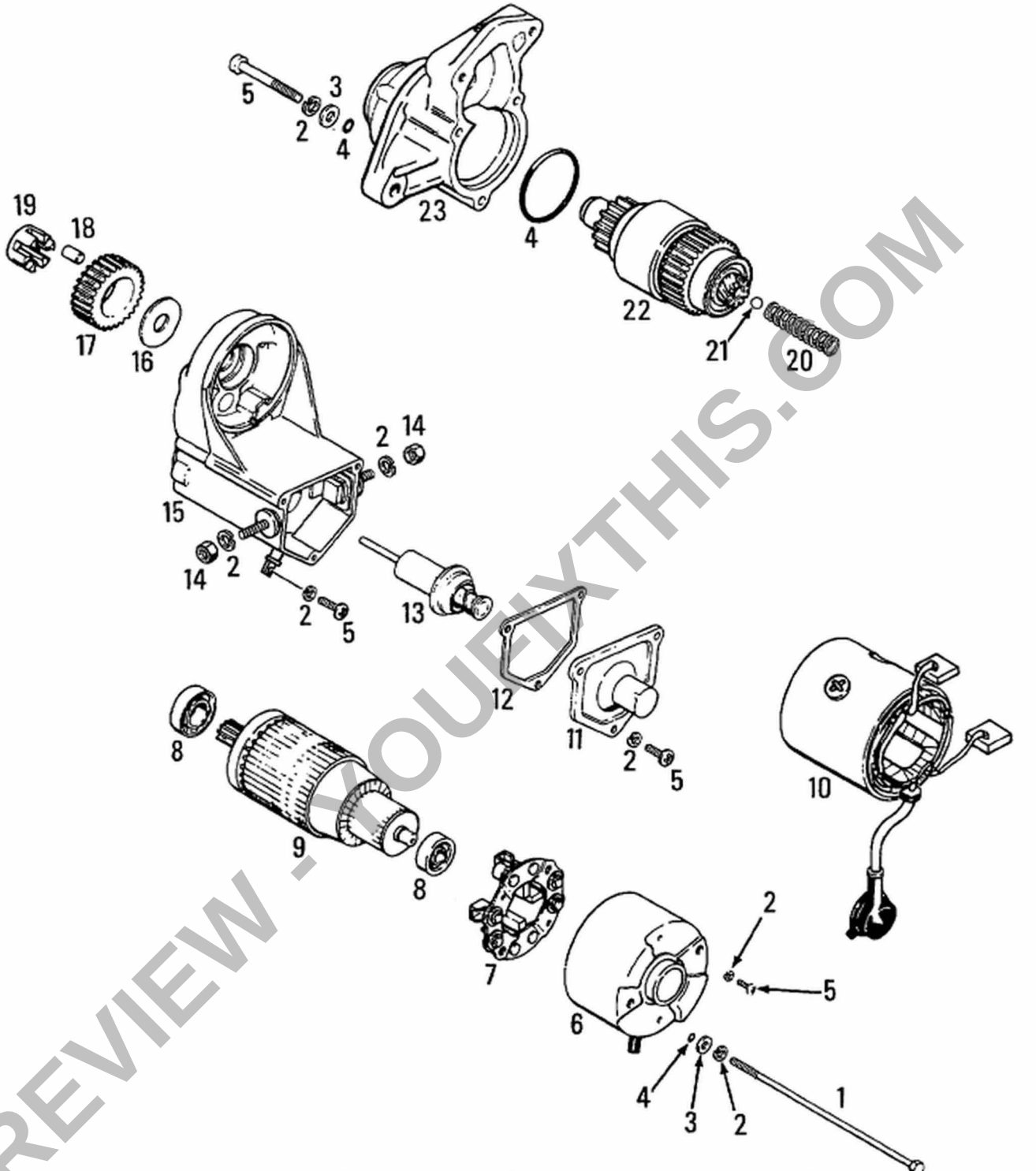
5. Drain the coolant reservoir. Loosen the clamp for the hose on the coolant reservoir and disconnect the hose to drain the coolant reservoir.



6. Loosen the clamp on the top radiator hose and disconnect the hose.



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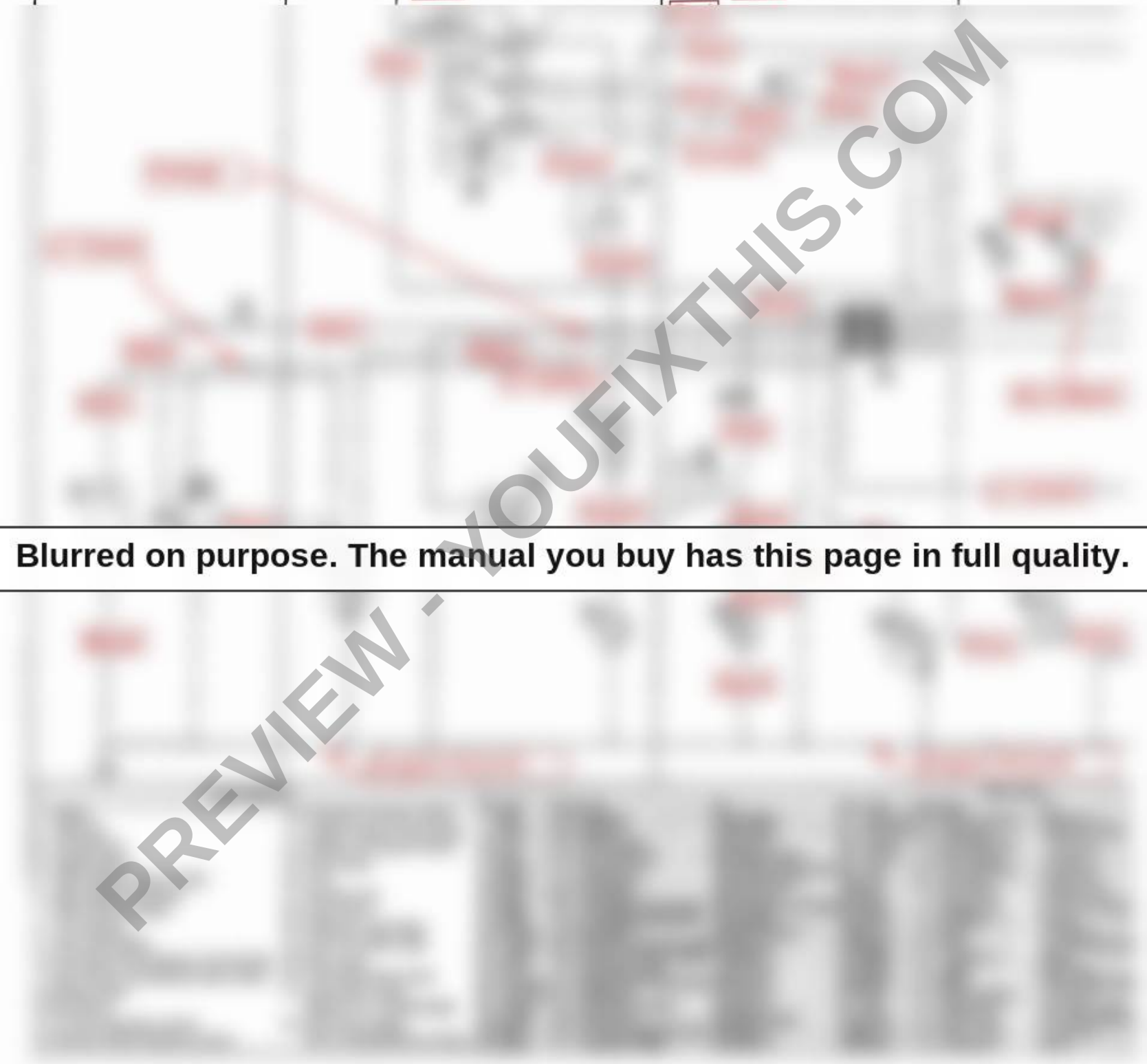
1. Cap Screw
2. Lock Washer
3. Flat Washer
4. O-Ring
5. Screw
6. Cover
7. Brush Holder
8. Bearing
9. Armature
10. Field Frame
11. Cover
12. Gasket
13. Plunger
14. Nut
15. Starter Solenoid Assembly
16. Thrust Washer
17. Idler Gear
18. Roller (6)
19. Bearing Cage
20. Spring
21. Steel Ball
22. Starter Drive
23. Starter Drive Housing

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CHARGING | ENGINE STARTING CIRCUIT | GAUGES, S



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TROUBLESHOOTING GUIDE

NOTE: *It is assumed that the engine is in good working order and properly tuned, and that the electrical system has been checked and repaired as necessary.*

Starting Problem	Engine Surges At Idle	Rough Idle When Engine Is Warm	Engine Misses Under Load	Low Power	Excessive Fuel Consumption	Engine Cannot Be Shut Off	Poor Performance Or Black Smoke Or Low Power	Fog-Like Exhaust In Full-Load Range	Incorrect Idle Or Maximum Speed	Engine Does Not Rev Up	CAUSE AND REMEDY
■		■	■	■			■	■		■	Incorrect fuel in the fuel tank: Drain tank, flush system and fill with correct fuel
■	■		■	■				■		■	Fuel tank empty or fuel tank vent blocked: Fill tank and bleed system, check tank vent (Refer to Section 3410)
■	■	■	■				■	■		■	Air in the fuel system: Bleed fuel system, eliminate air leaks (Refer to Section 3410)
	■	■									Pump rear support bracket loose: Replace as necessary
■						■					Voltage supply malfunction, stop solenoid defective: Correct electrical faults, replace solenoid (Refer to Section 3414)
■			■	■				■		■	Fuel filter blocked: Replace fuel filter (Refer to Section 3410)
■			■	■				■		■	Fuel supply lines blocked or resticted: Check all fuel supply lines, flush or replace
■			■	■							Loose connection, injection lines leaking or broken: Tighten the connection, eliminate the leak
■			■				■			■	Paraffin deposit in fuel filter: Replace filter, use Diesel Fuel no.1 (Refer to Operators Manual)
■			■	■			■	■		■	Fuel injection pump timing incorrect: Adjust timing
■		■	■	■			■				Injection nozzle faulty: Repair or replace (Refer to Section 3413)
				■	■		■				Engine air filter blocked: Replace air filter element
■		■		■	■						Injection sequence does not correspond to firing order: Install fuel injection lines in the correct order (Refer to Section 3414)
	■		■	■				■	■	■	Overflow fitting interchanged with inlet fitting: Install fittings in correct positions (Refer to Section 3414)
■	■				■		■		■	■	Cold-start device malfunction (if equipped): Check cold-start mechanism (if equipped)
■		■		■			■			■	Low or uneven engine compression: Repair as necessary (Refer to Section 2425)
■	■	■	■	■	■		■	■	■	■	Fuel injection pump defective or cannot be adjusted: Replace (Refer to Section 3414)

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- Cylinder Head 4

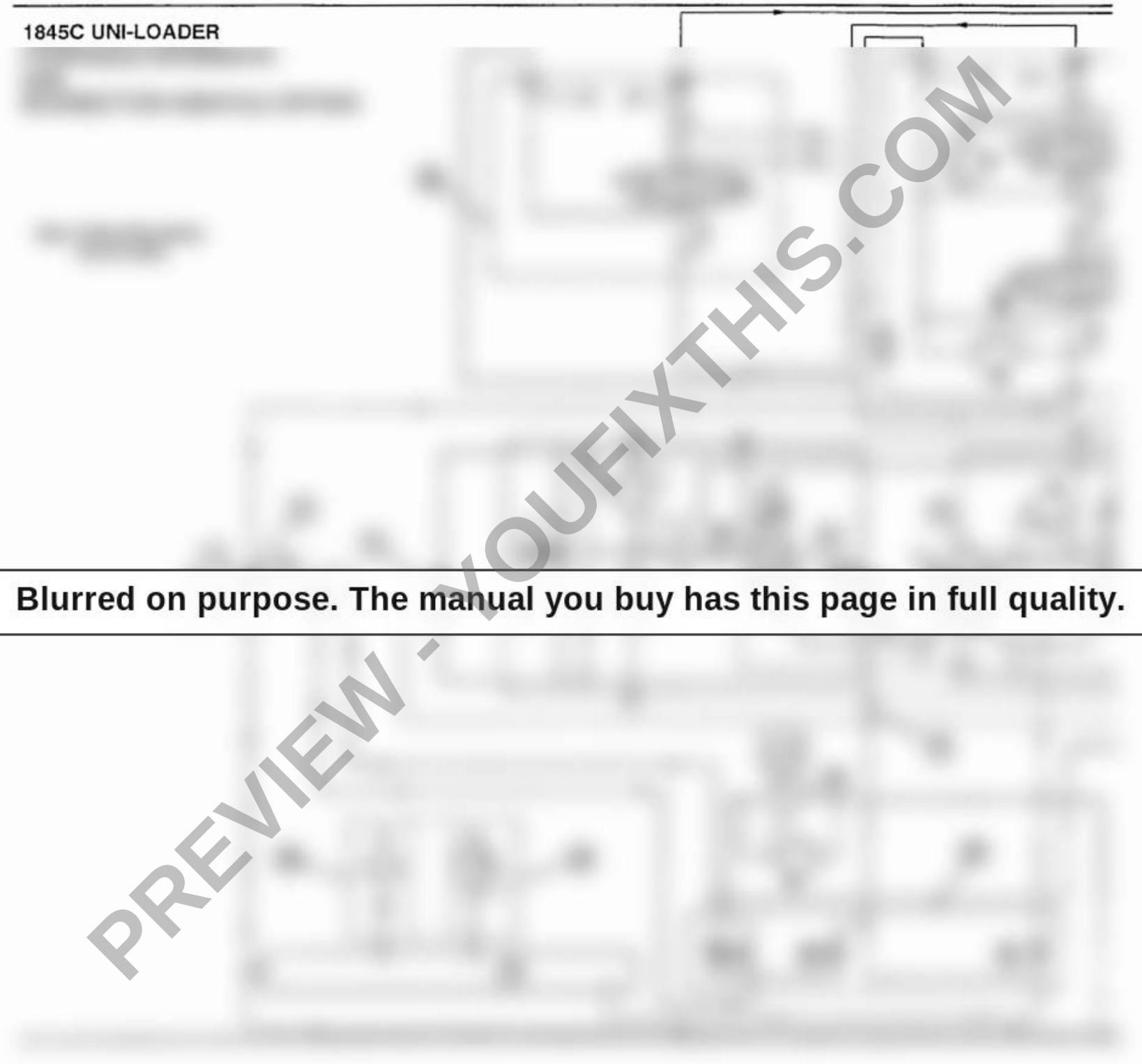
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SAFETY RULES

This symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED. The message that follows the symbol contains important information about safety. Carefully read the message. Make sure you fully understand the causes of possible injury or death. 1-1-C

IMPORTANT: *To prevent injury on the job, follow the Warning, Caution, and Danger notes in this section and other sections throughout this manual. Follow the instructions carefully.*

The procedures recommended and shown in this manual are good, effective service methods. However, all possible procedures and service hazards may not be covered. Therefore, if you use a tool or procedure not recommended, you must make sure that the method you select is a safe method.

Put the warning tag shown below on the key for the key switch when you are servicing or repairing this machine. One warning tag is on every new machine. You can buy additional warning tags, part number 331-4614, from Service Parts Supply.



DANGER: *Engine exhaust fumes can cause death. If it is necessary to start the engine in a closed place, remove the exhaust fumes from the area with an exhaust pipe extension. If you do not have an exhaust pipe extension, open the doors and get outside air into the area.* 48-56

WARNING: *Read operator's manual to familiarize yourself with control lever functions.* 46-27

WARNING: *Operate tractor and equipment controls from the seat position only. Any other method could result in serious injury.* 48-55

WARNING: *This is a one man machine, no riders allowed.* 35-8

WARNING: *If you wear clothing that is too loose or do not use the correct safety equipment for your job, you can be injured. Always wear clothing that will not catch on objects. Extra safety equipment that can be required includes hard hat, safety shoes, ear protection, eye or face protection, heavy gloves and reflector clothing.* 45-3-A



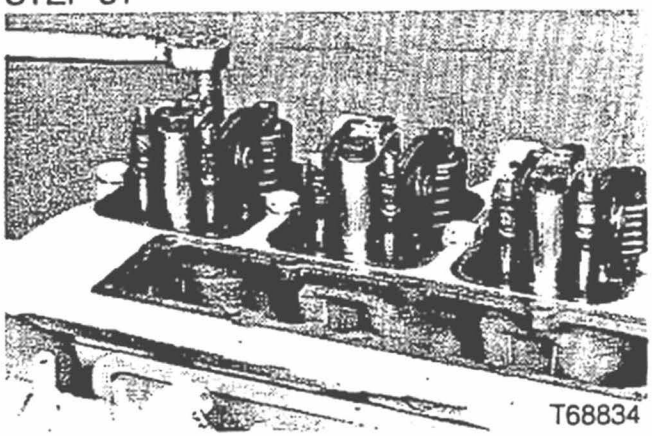
WARNING: *Operate controls from the operator's seat only.* 35-7

WARNING: *When working in the area of the fan belt with the engine running, avoid loose clothing if possible, and use extreme caution.* 35-4-

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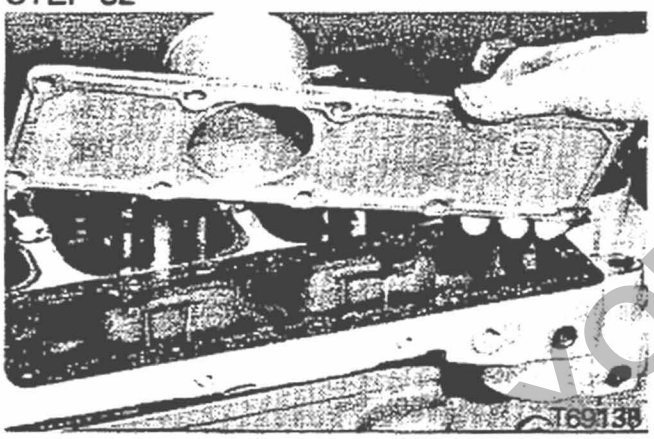
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STEP 81



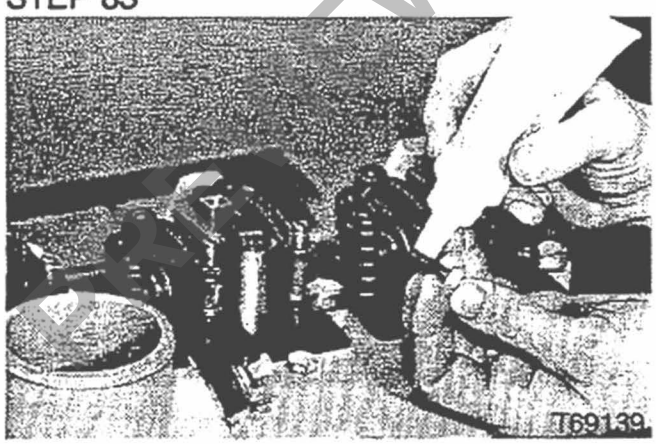
Tighten the rocker shaft bracket bolt to a torque of 21 to 27 Nm.

STEP 82



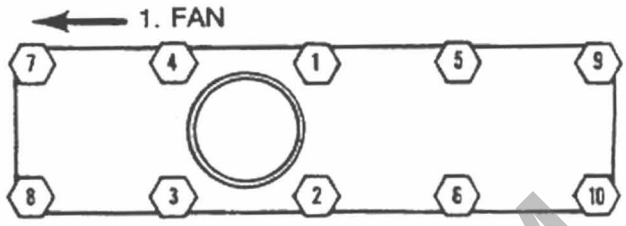
Install the intake manifold gasket and the intake manifold.

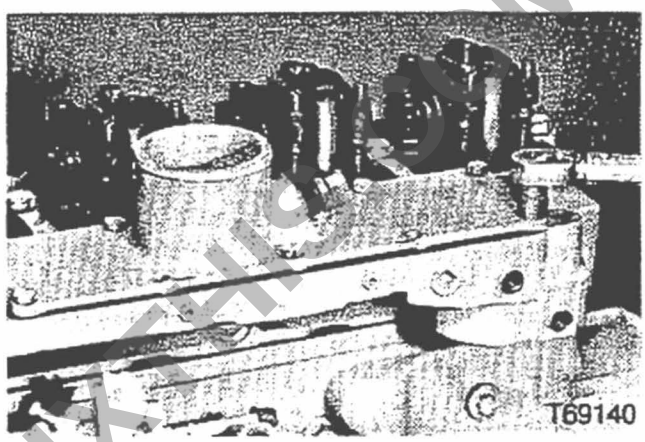
STEP 83



Put Loctite liquid teflon on the intake manifold bolts.

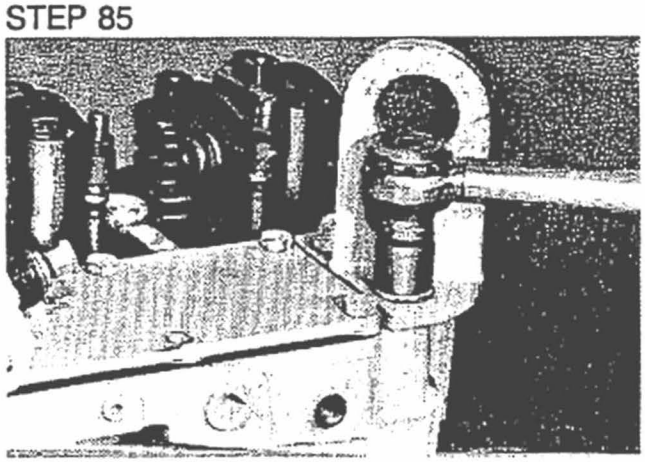
STEP 84





Install the intake manifold bolts and tighten to a torque of 21 to 27 Nm, following the torque sequence shown above.

STEP 85

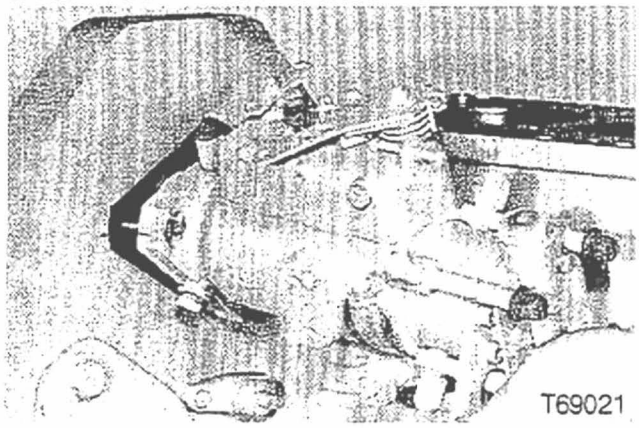


Install the rear lift bracket and tighten the bolts to a torque of 71 to 83 Nm.

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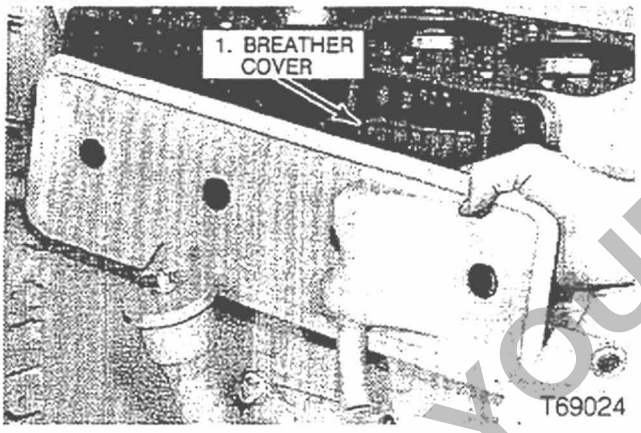
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STEP 166 CAV INJECTION PUMP



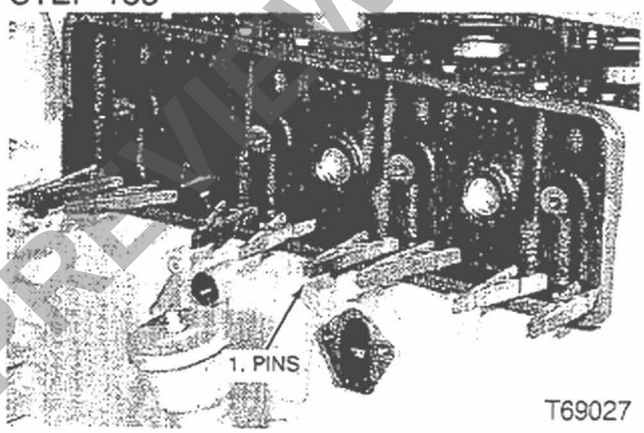
Remove the injection pump and primer pump. See Section 3414 in the service manual.

STEP 167



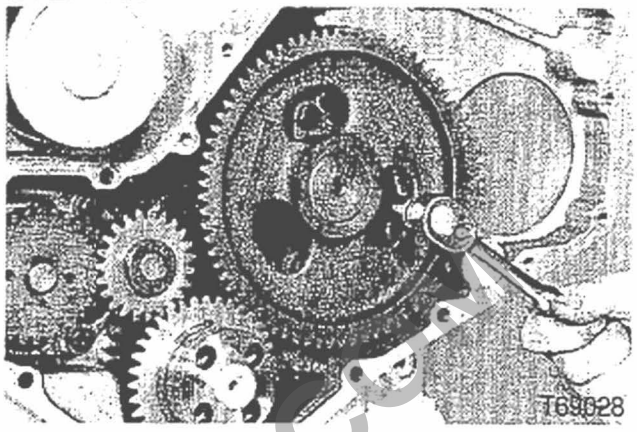
Remove the lifter cover bolts, lifter cover and the breather cover.

STEP 168



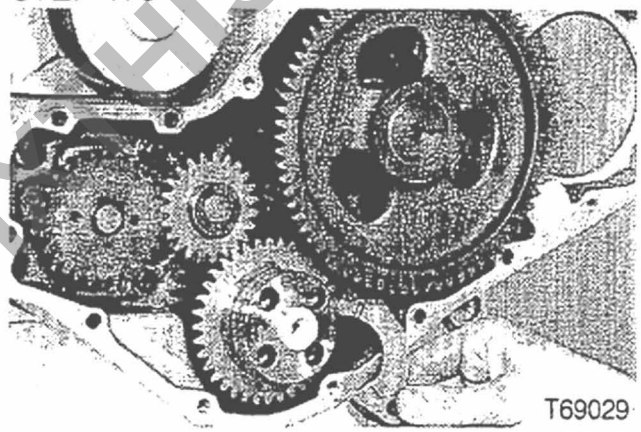
Raise the lifters and install pins to hold up the lifters.

STEP 169



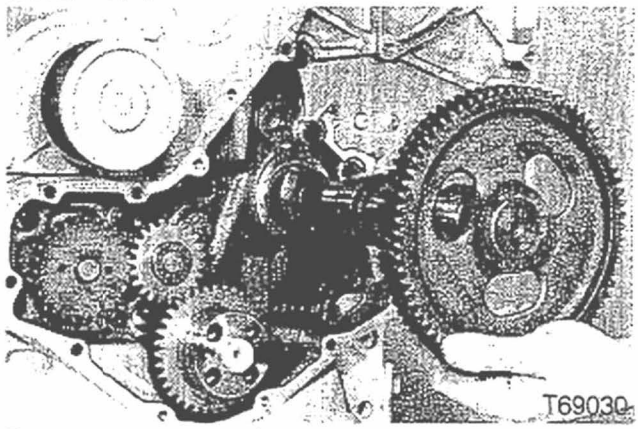
Remove the bolts that hold the camshaft thrust plate.

STEP 170



Remove the camshaft thrust plate.

STEP 171



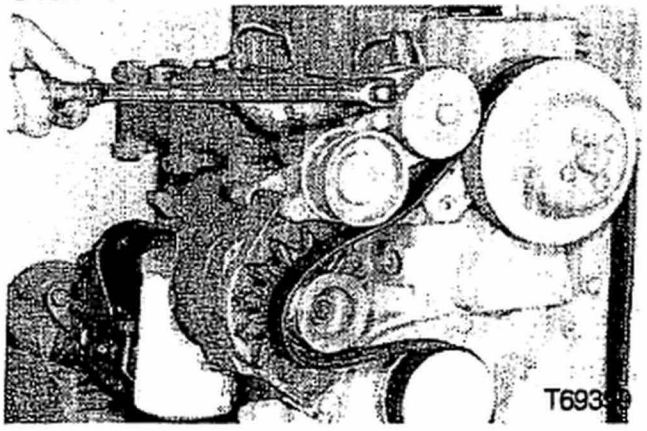
Remove the camshaft.

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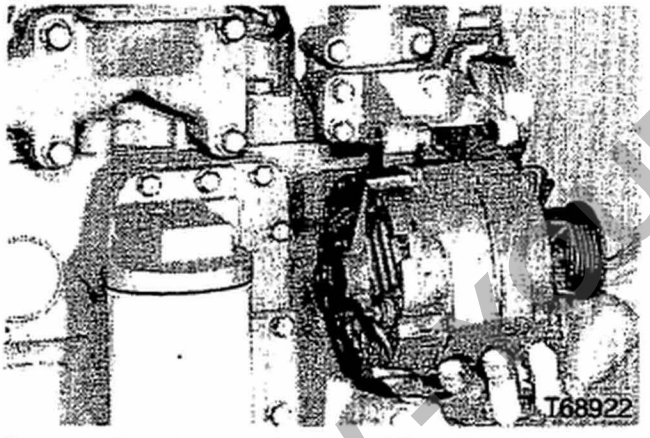
THERMOSTAT
Removal

STEP 6



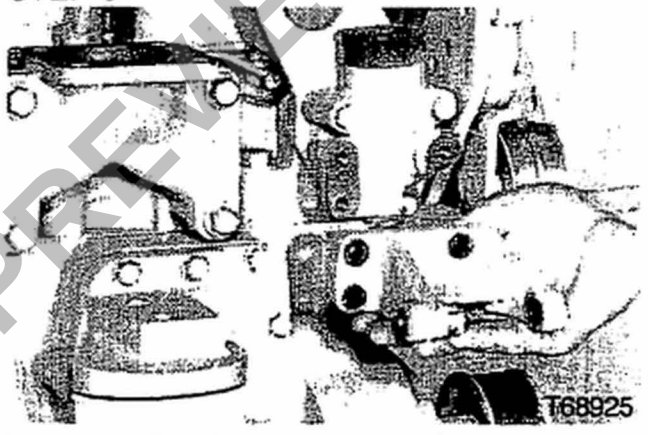
Lift the belt tensioner pulley and remove the fan belt.

STEP 7



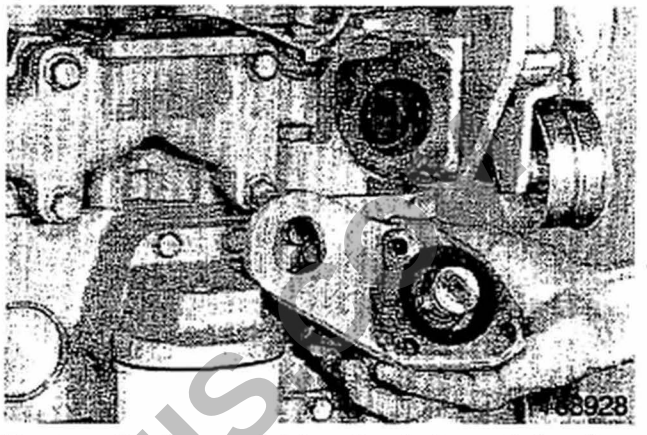
Remove the alternator bolts and the alternator.

STEP 8



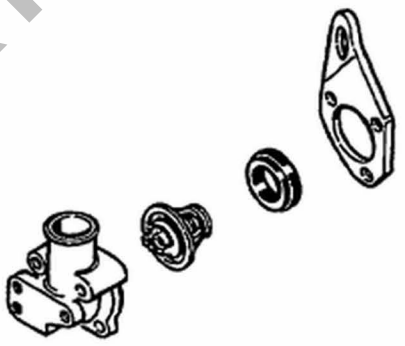
Remove the bracket bolts and the alternator bracket.

STEP 9



Remove the thermostat bearing bolts and the thermostat housing assembly.

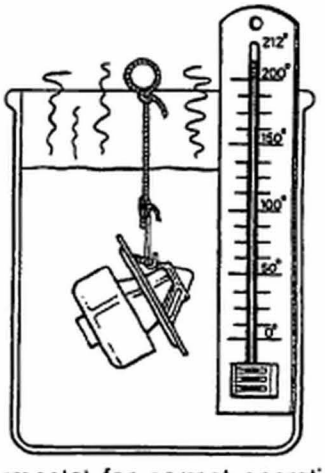
STEP 10



410L91

Disassemble the thermostat housing.

STEP 11



155666

Check the thermostat for correct operation. Put the thermostat in a container of hot water, approximately 175°F (83°C), at this temperature the thermostat should start to open. Gradually heat the water to a temperature of 203°F (95°C), the thermostat should be fully open at this temperature. The thermostat must be replaced if it does not meet this specification.

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STARTER

Removal

1. Park the machine on a level surface and lower the attachment to the floor.

2. Put both of the operator protection bars in the UP position and stop the engine.

3. Open the battery cover.

4. Disconnect the negative battery cable from the battery.

5. Remove the cover from the battery terminal on the starter.

6. Disconnect the wires and cable from the terminals on the starter.

7. Hold the starter and remove the cap screws and flat washers that fasten the starter to the flywheel housing.

8. Remove the starter.

Installation

1. Put the starter in position on the flywheel housing.

2. Install the cap screws and flat washers that fasten the starter to the engine.

3. Connect the wires and cable to the terminals on the starter.

4. Install the cover on the battery terminal of the starter.

5. Connect the negative battery cable to the battery.

6. Close the battery cover.

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Section

4019

65 AMPERE ALTERNATOR - A186125

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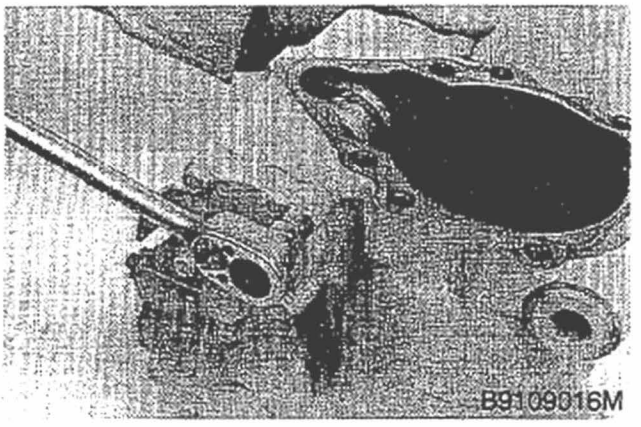
CASE CORPORATION

Bur 8-11381

Issued November 1991

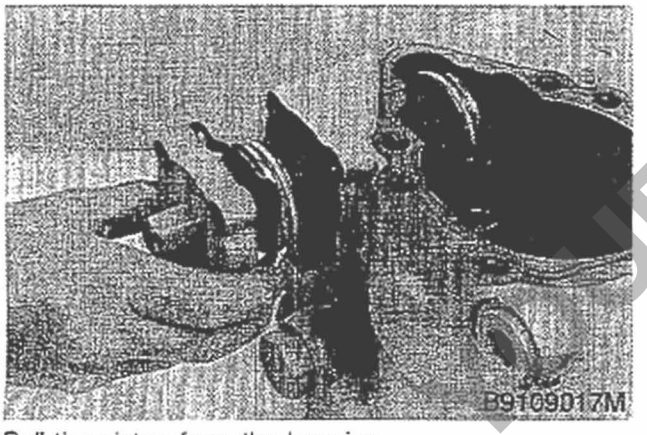
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STEP 23



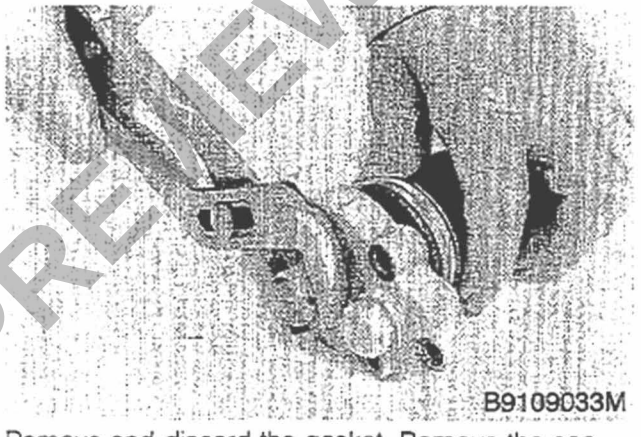
Remove the bolts from the cover.

STEP 24



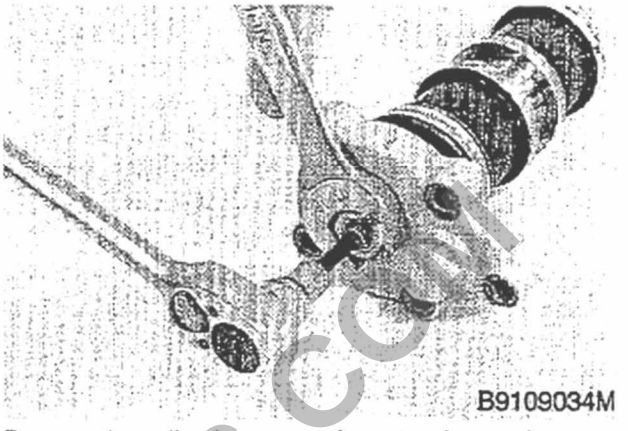
Pull the piston from the housing.

STEP 25



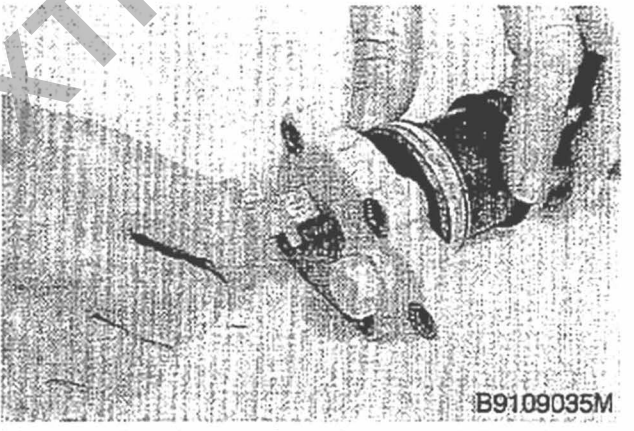
Remove and discard the gasket. Remove the cap.

STEP 26



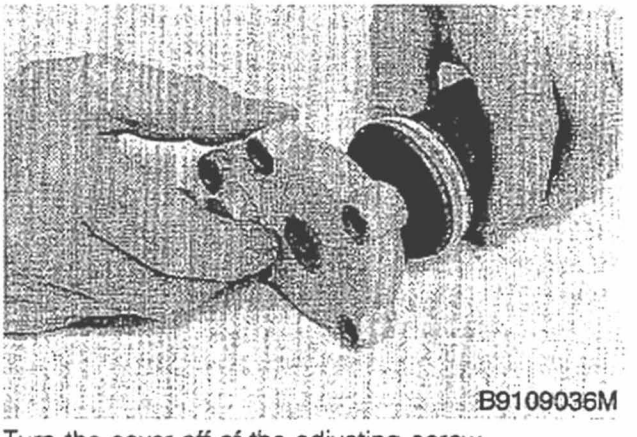
Prevent the adjusting screw from turning and remove the self-locking nut.

STEP 27



Measure the distance from the end of the adjusting screw to the cover. Record the measurement.

STEP 28



Turn the cover off of the adjusting screw.

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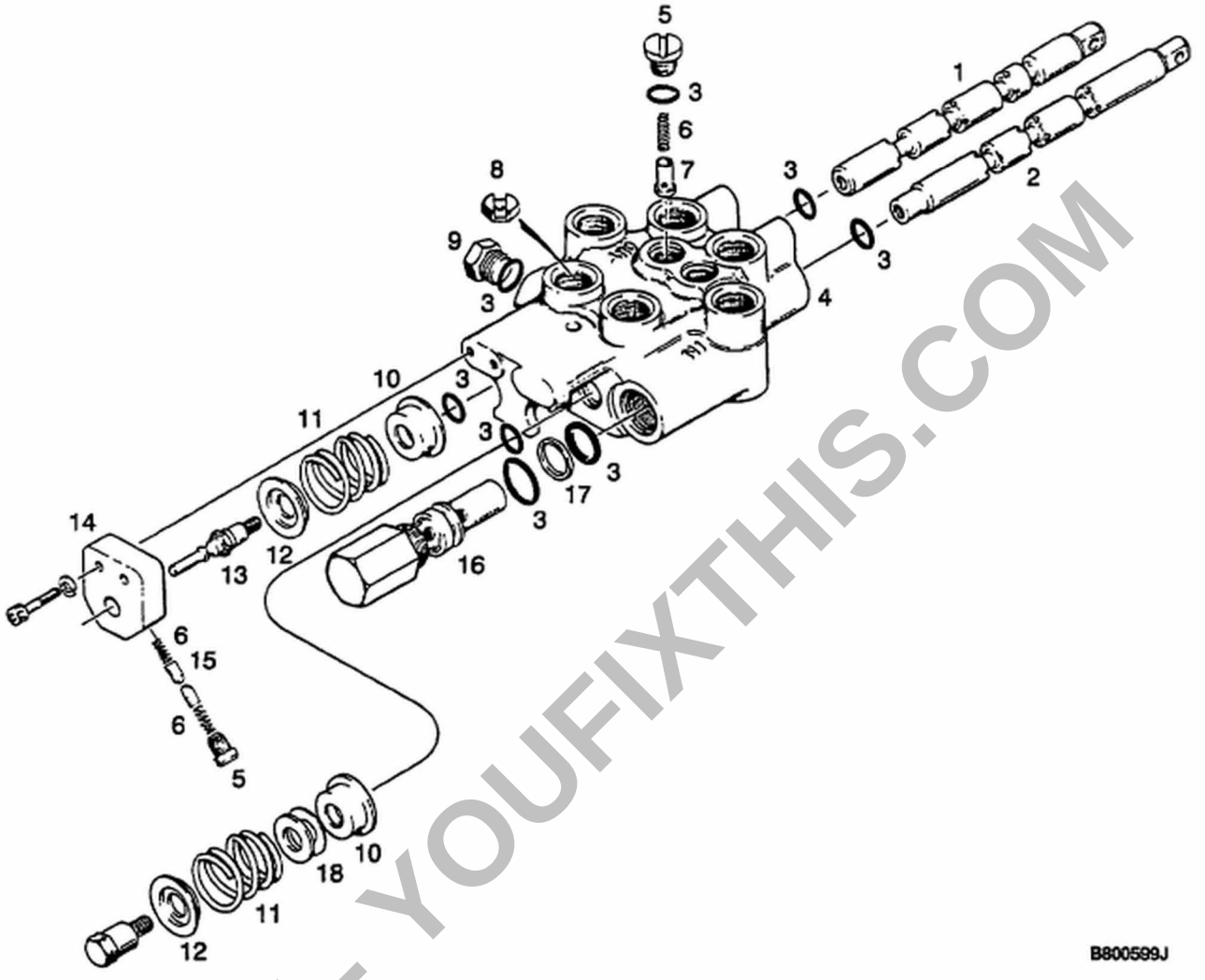
LOADER HYDRAULIC CIRCUITS



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1. *Lift Spool*
2. *Bucket Spool*
3. *O-ring*
4. *Body*
5. *Plug*
6. *Spring*
7. *Poppet*
8. *Restrictor*
9. *Plug*
10. *Inner Spring Seat*
11. *Centering Spring*
12. *Outer Spring Seat*
13. *Detent Stud*
14. *Detent Housing*
15. *Detent*
16. *Main Relief Valve*
17. *Backup Ring*
18. *Washer*

Loader Control Valve Before P.I.N. JAF0041140

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