
TC21DA, TC24DA REPAIR MANUAL COMPLETE CONTENTS

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The following pages are the collation of the contents pages from each section and chapter of the TC21DA and TC24DA Repair manual. Complete Repair part # 87053135.

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 TC21DA and TC24DA Tractors.

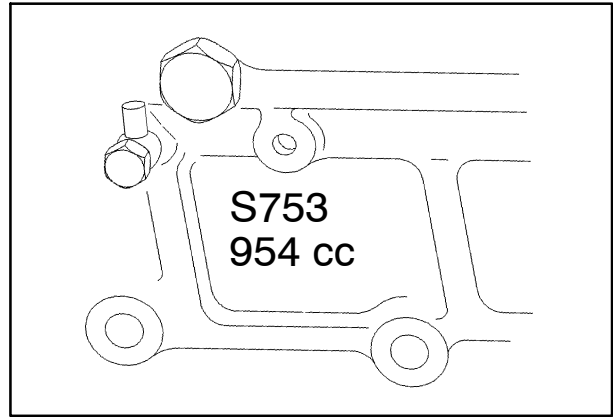
DESCRIPTION AND OPERATION - GENERAL INFORMATION

This section describes the engine overhaul and repair procedures of the Models TC21DA and TC24DA tractors. Repair procedures are essentially the same for all models except as noted in the repair procedures.

The tractors are equipped with three-cylinder in-line engines. They are all four cycle, overhead valve, liquid cooled engines. The engines are identified by a code cast into the lower right side of the cylinder block, just behind the hydraulic pump. The identification numbers of the engines used is shown in the following chart.

IDENTIFICATION CHART

Engine Identification	Tractor Model	Horsepower
S773	TC21DA	21.0
S773L	TC24DA	24.0

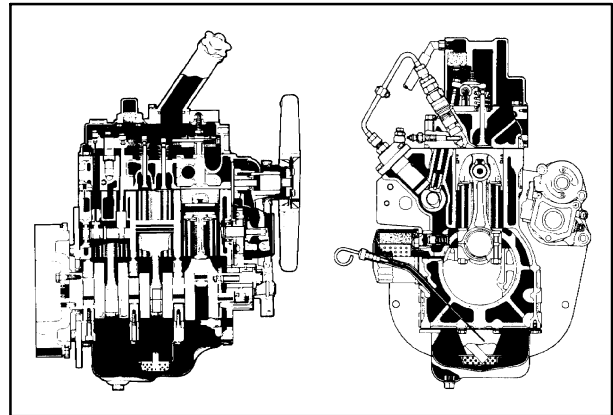


1

CYLINDER HEAD AND VALVE TRAIN COMPONENTS

The cylinder head incorporates the valve assemblies, rocker arms, rocker shaft, push rods, lifters, and pre-combustion chambers. The air intake manifold is incorporated into the left hand side of the valve cover assembly. The exhaust manifold is bolted on the left-hand side of the cylinder head. The cylinder heads have integral valve guides. Standard size valves only are used. Figure 2 provides a cut-away front and side view of an engine.

A pre-combustion chamber is located between the injector assembly and the combustion chamber of the cylinder and provides an area for initial ignition of the fuel for improved starting. A glow plug located in the head extends into the pre-combustion chamber and, when energized, pre-heats the fuel-air mixture for improved fuel ignition under cold weather conditions.



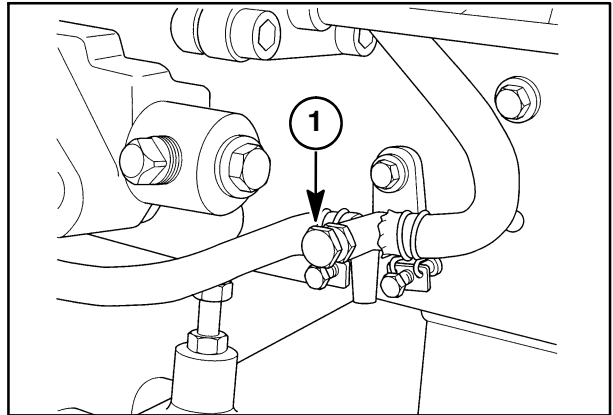
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OVERHAUL - ENGINE

ENGINE PREPARATION

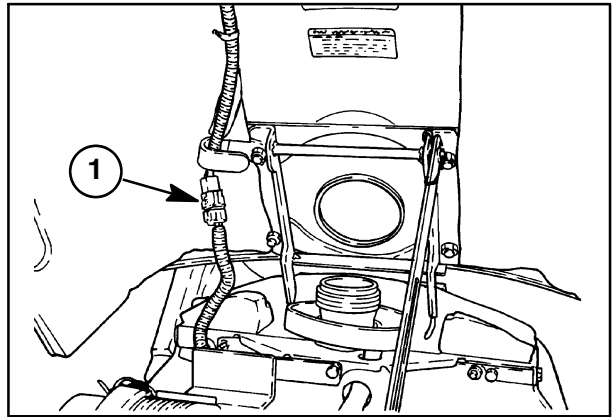
Disassembly

1. Open the radiator drain, 1, and drain and remove the radiator assembly. See "Radiator Removal" discussed later in this section.



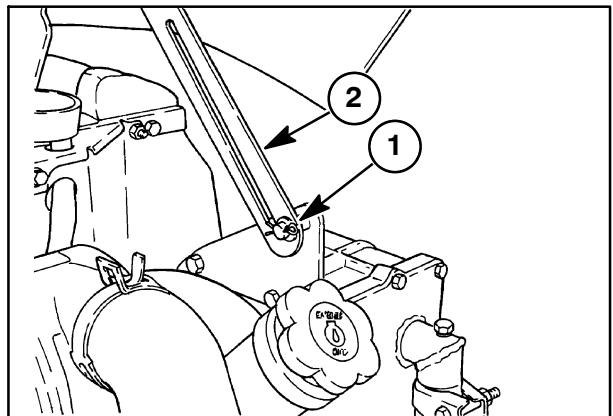
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2. Disconnect the electrical connector, 1, for the head lamps.



4

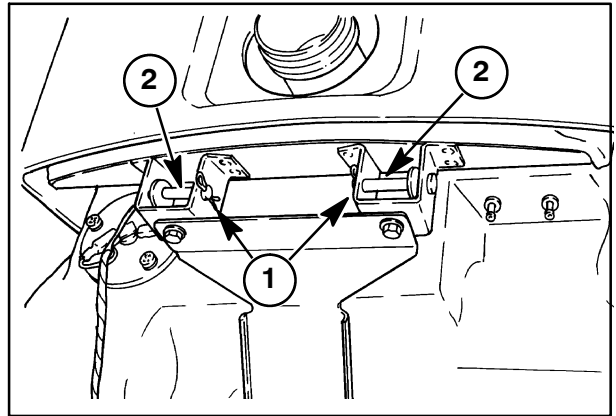
3. Remove the clip pin, 1, from the hood support, 2, and gradually lower the hood.



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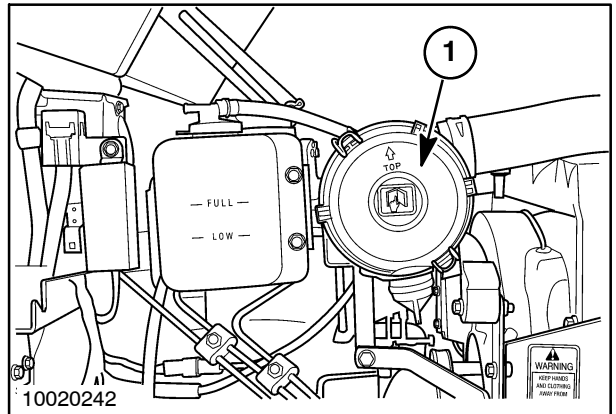
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4. Pull the instrument panel out by hand and remove the clip pins, 1, from the hood hinge pins, 2. Then remove the hinge pins.
5. Raise the hood and remove from the tractor.



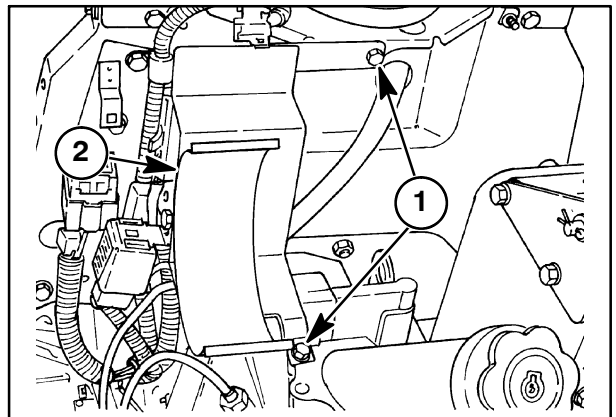
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6. Remove the whole air cleaner assembly, 1, along with the air cleaner hoses.



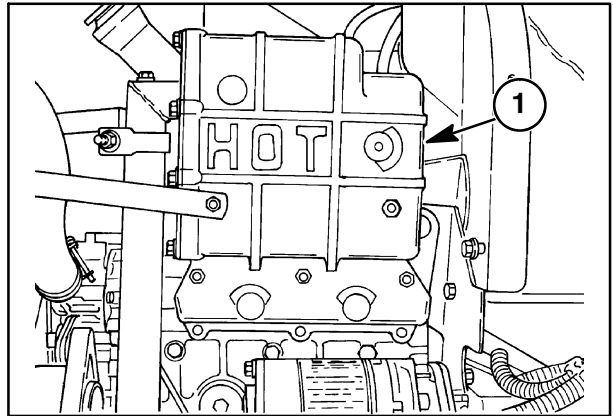
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7. Remove the two capscrews, 1, and remove the air cleaner mounting bracket, 2.



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- Remove the exhaust muffler and manifold assembly, 1.

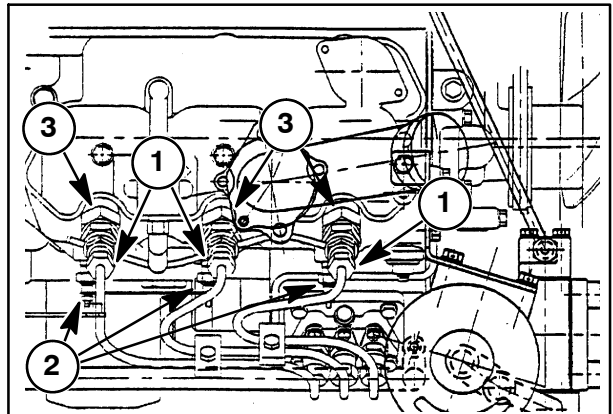


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FUEL INJECTOR AND GLOW PLUG

Removal

- Clean all dirt and oil from the injectors and surrounding areas.
- Disconnect the fuel lines, 1, from the injectors and cap all openings.
- Remove the three glow plugs, 2.
- Disconnect the return line to the fuel tank from the number three injector.
- Remove the injector assemblies, 3.



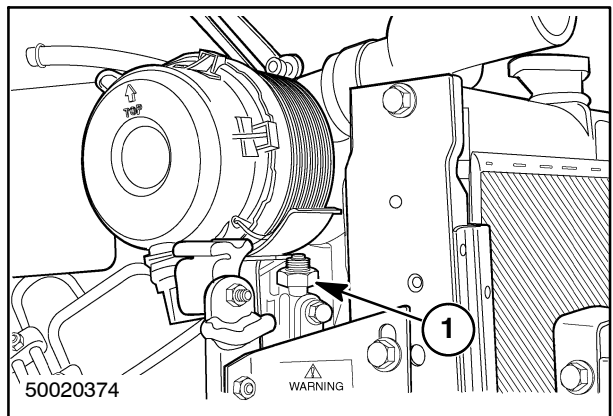
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NOTE: Be sure to remove the injector sealing washer from the injector bore, if not removed with the injector.

OIL PRESSURE SWITCH

Removal

- Disconnect and remove the oil pressure switch, 1.

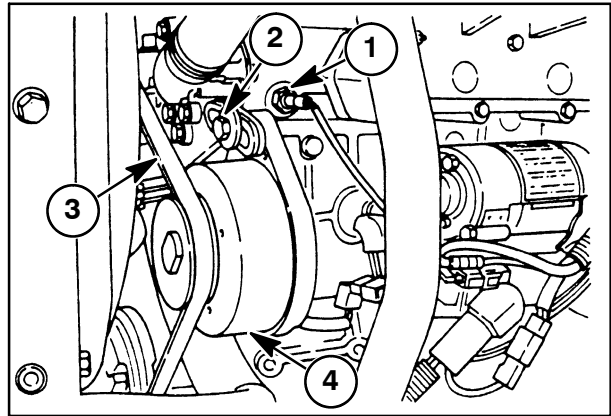


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TEMPERATURE SENDING SWITCH AND ALTERNATOR

Removal

1. Remove the temperature sending switch, 1, from the front of the cylinder head.
2. Loosen the alternator mounting bolts, 2, and remove the V-belt, 3, from the drive pulley.
3. Disconnect the wires from the back of the alternator.
4. Remove the alternator mounting bolts and remove the alternator, 4.

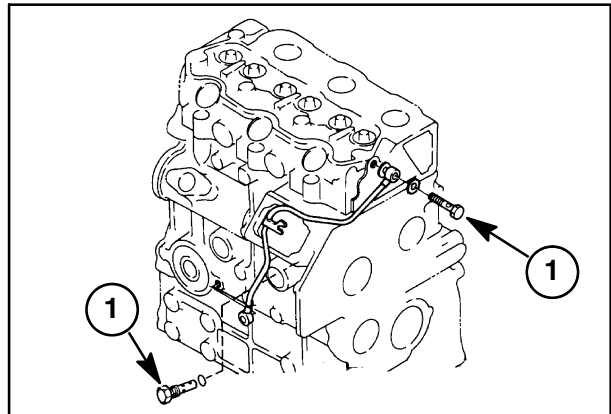


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FAN, WATER PUMP, AND EXTERNAL OIL TUBE

Removal

1. Remove the fan and water pump assembly. See "Water Pump and Thermostat Removal" discussed later in this section.
2. Remove the external oil transfer tube banjo bolts, 1, from the front of the cylinder head and the side of the cylinder block and remove the external oil transfer tube.

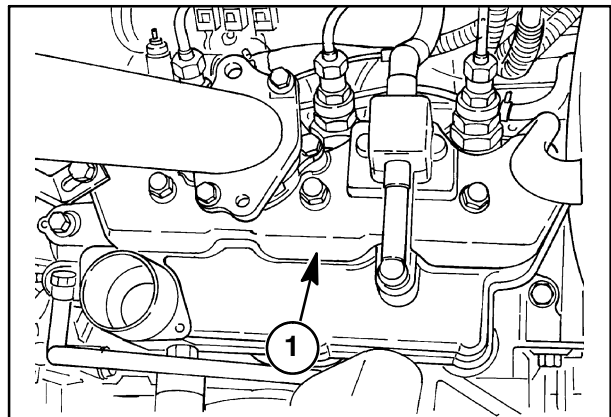


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VALVE COVER

Removal

1. Remove the valve cover, 1, and gasket.



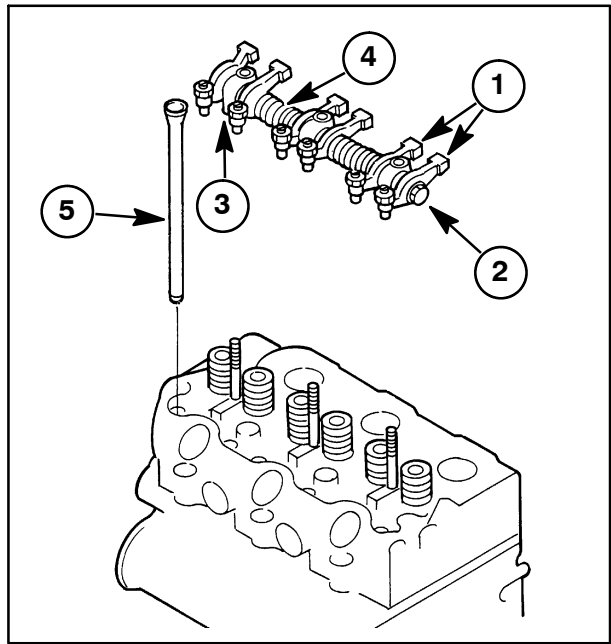
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ROCKER SHAFT AND PUSH ROD

Removal

1. Remove the valve rocker arms, 1, shaft, 2, rocker arm supports, 3, and springs, 4, as an assembly
2. Remove the push rods, 5.

NOTE: Be sure to keep the valve components in separately marked containers for re-assembly in their original position.

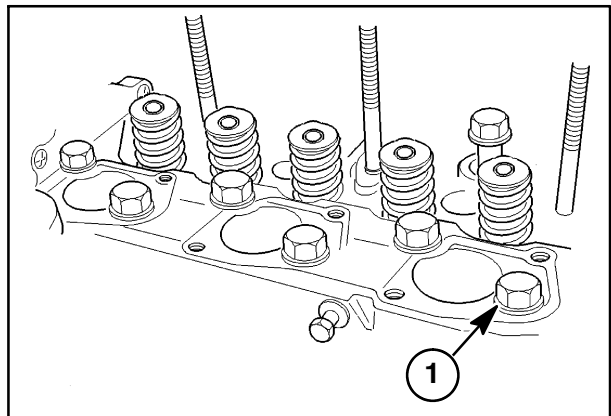


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CYLINDER HEAD

Removal

1. To remove the cylinder head, remove the cylinder head bolts, 1, by alternately loosening a half turn at a time to prevent warping the head.



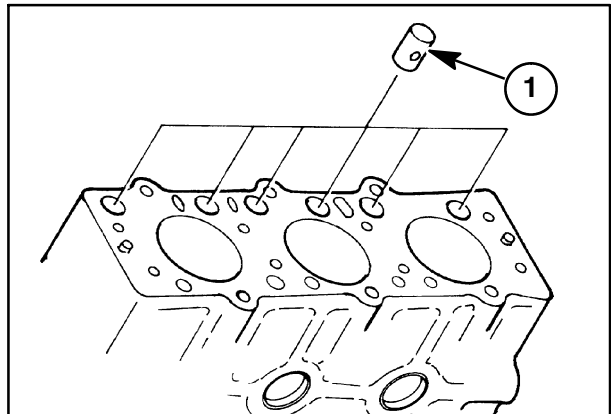
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VALVE TAPPET

Removal

1. Remove the valve tappets, 1, from the machined bore in the cylinder block.

NOTE: Be sure to keep the valve components in separately marked containers for re-assembly in their original position.

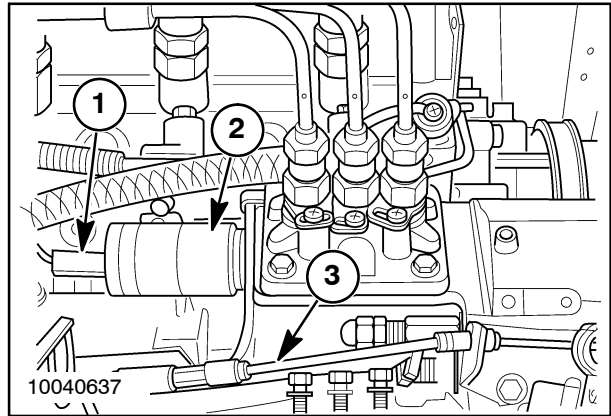


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FUEL SHUT-OFF SOLENOID

Removal

1. Remove the wire connector, 1, and unscrew the fuel shut-off solenoid, 2.

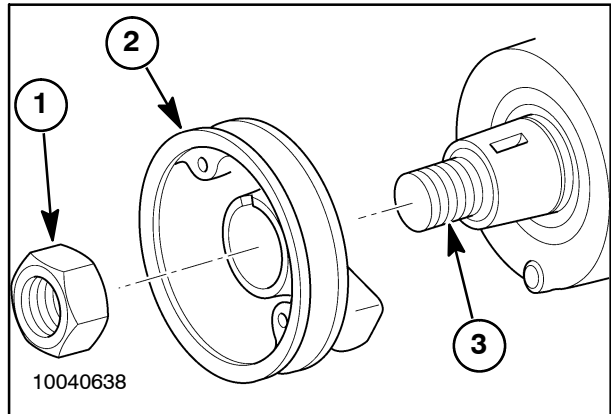


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ENGINE TIMING GEAR COVER

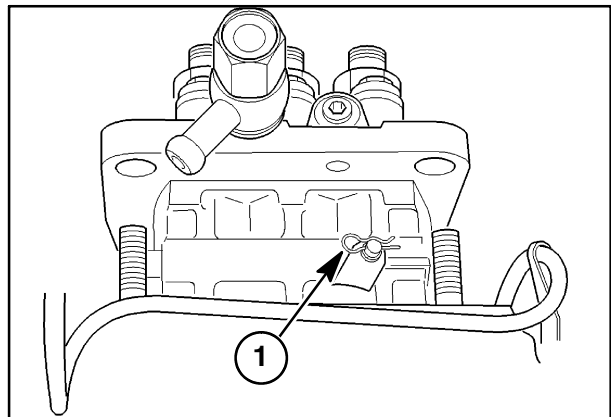
Removal

1. Drain the engine crankcase oil into a suitable container.
2. Remove the nut, 1, and remove the pulley, 2, from the crankshaft, 3.
3. Disconnect the throttle control cable, 3, from the governor lever, Figure 18.



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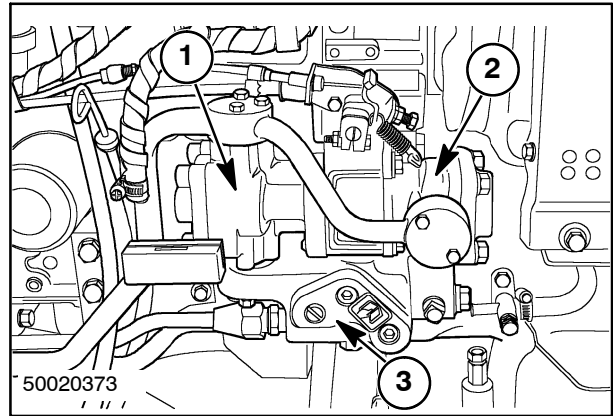
4. Remove the injection pump mounting bolts and raise the injection pump enough to remove the spring pin, 1, and separate the governor link from the control rack.



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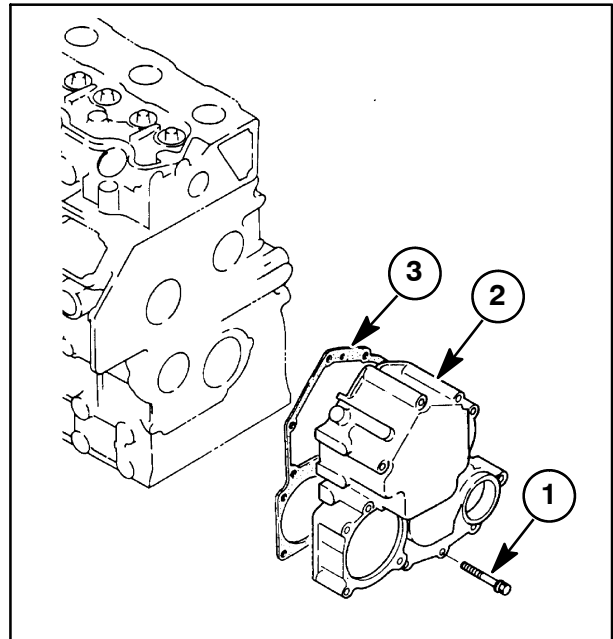
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5. Drain the hydraulic oil from the transmission into a suitable container.
6. Disconnect oil lines from the hydraulic pump and the power steering pump.
7. Remove the hydraulic pump, 1, the power steering pump, 2, and the diverter valve, 3, from the engine.
8. Cap or plug any openings.



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9. Remove the retaining bolts, 1, and lift the front cover, 2, and gasket, 3, off the locating dowels.

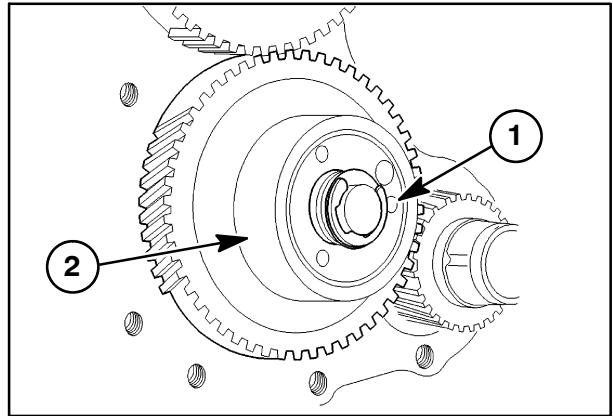


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TIMING GEARS AND CAMSHAFT

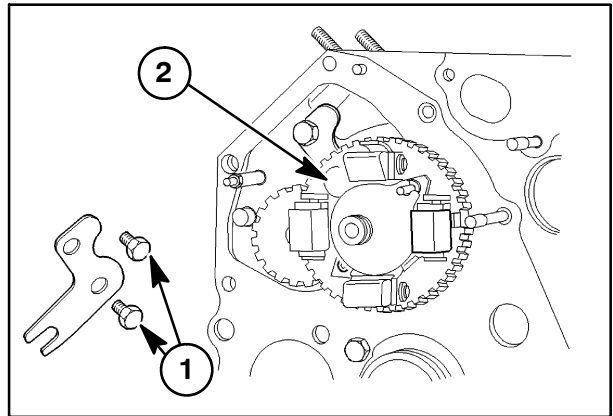
Removal

1. Remove the retaining ring, 1, and remove the idler gear and oil pump assembly, 2.



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2. Remove the two bolts securing the keeper plate, 1. One bolt must be accessed using the access hole, 2, in the cam gear.
3. Slide the camshaft and gear out of the camshaft bore.

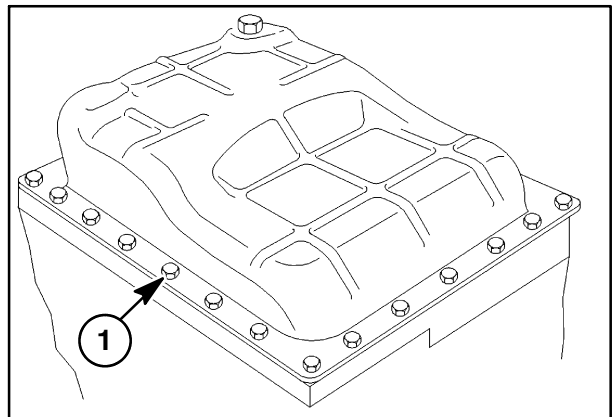


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OIL SUMP

Removal

1. Remove the oil sump retainer bolts, 1.
2. Remove the oil sump and discard gasket.

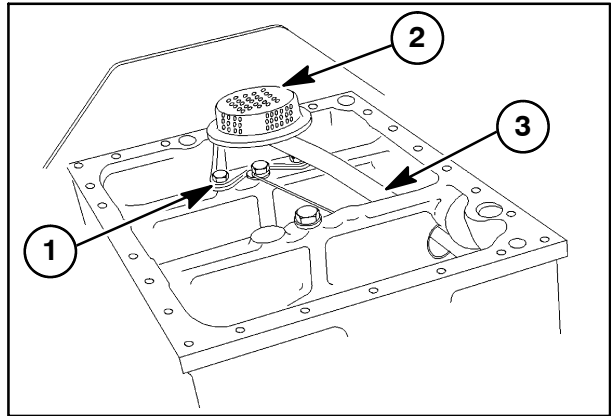


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OIL SUCTION PIPE AND STRAINER

Removal

1. Remove the two retaining bolts, 1.
2. Remove the oil strainer, 2, and rotate the oil suction pipe, 3, out of its bore.

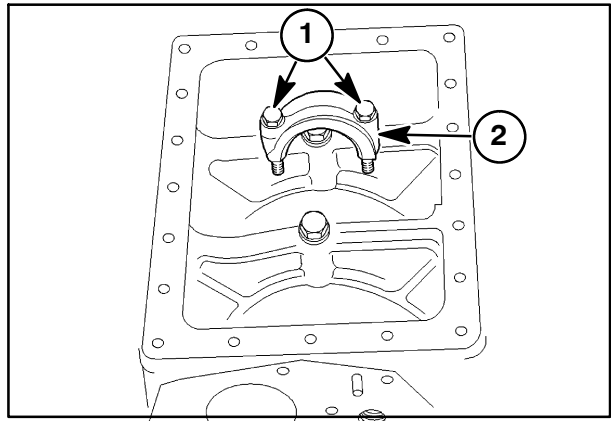


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CONNECTING RODS, BEARINGS, AND PISTON

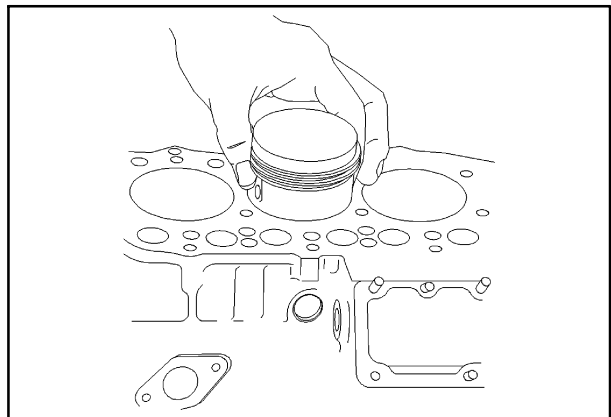
Removal

1. Remove the bolts, 1, retaining the three connecting rod caps, 2.
2. Remove the connecting rod caps with lower half of the connecting rod bearing.



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3. If necessary, remove any ridge from the top of the cylinder bores using a suitable ridge reamer.
4. Push the piston and connecting rod out of the cylinder block.
5. Replace the connecting rod caps to the piston assembly it was removed from. Keep together in cylinder sequence.



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