SECTION AND GROUP CONTENTS—Continued

SECTION 09—STEERING SYSTEM
- Group 0930—Emergency Steering
- Group 0960—Hydraulic System

SECTION 10—SERVICE BRAKES
- Group 1011—Active Elements
- Group 1015— Controls Linkage
- Group 1060—Hydraulic System

SECTION 11—PARKING-EMERGENCY BRAKES
- Group 1111—Active Elements
- Group 1115—Controls Linkage

SECTION 16—ELECTRICAL SYSTEMS
- Group 1671—Batteries, Support and Cables
- Group 1672—Alternator, Regulator and Charging System Wiring
- Group 1673—Lighting System
- Group 1674—Wiring Harness and Switches
- Group 1675—System Controls
- Group 1676—Instruments and Indicators

SECTION 17—FRAME, CHASSIS, OR SUPPORTING STRUCTURE
- Group 1740—Frame Installation
- Group 1746—Frame Bottom Guards
- Group 1749—Chassis Weights

SECTION 18—OPERATOR'S STATION
- Group 1800—Removal and Installation
- Group 1810—Operator Enclosure
- Group 1821—Seat and Seat Belt
- Group 1830—Heating and Air Conditioning

SECTION 19—SHEET METAL AND STYLING
- Group 1910—Hood or Engine Enclosure
- Group 1921—Grille and Grille Housing
- Group 1927—Fenders

SECTION 20—SAFETY, CONVENIENCE AND MISCELLANEOUS
- Group 2002—Mirror
- Group 2004—Horn and Warning Devices
- Group 2006—Cigar Lighter

SECTION 21—MAIN HYDRAULIC SYSTEM
- Group 2160—Hydraulic System

SECTION 31—LOADER
- Group 3102—Buckets
- Group 3115—Controls Linkage
- Group 3140—Frames
- Group 3160—Hydraulic System

SECTION 33—BACKHOE
- Group 3300—Removal and Installation
- Group 3301—Blades, Teeth and Shanks
- Group 3302—Buckets
- Group 3315—Controls Linkage
- Group 3340—Frames
- Group 3360—Hydraulic System

SECTION 90 - SYSTEM TESTING
- Group 9005—General Information—Seven Basic Steps of Diagnosis and Testing
- Group 9010—Engine
- Group 9015—Electrical System
- Group 9020—Power Train
- Group 9025—Hydraulic System
- Group 9031—Heating and Air Conditioning

SECTION 99—SPECIAL TOOLS

INDEX

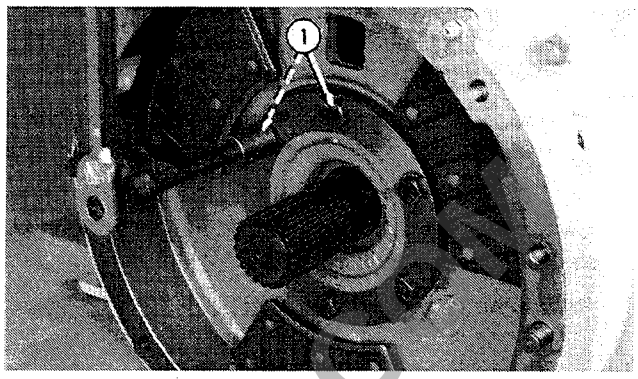
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T09;1228 02 180184

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DIFFERENTIAL BEARING QUILL SPECIFICATION

1. Cap screws torque .....(108 N.m) 80 lb-ft

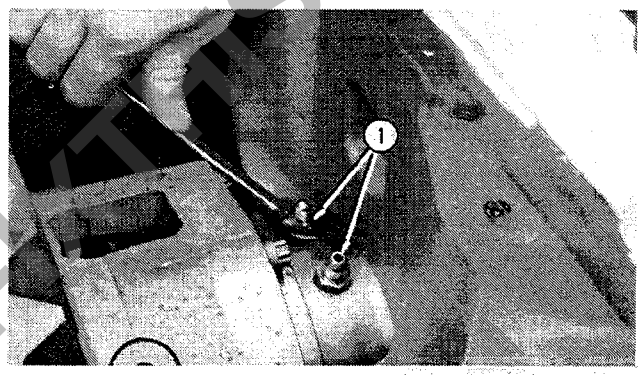


06A;T77776 T09;021015 200181

DIFFERENTIAL LOCK LINE CONNECTOR SPECIFICATIONS

1. Connectors torque .....(27 N.m) 20 lb-ft

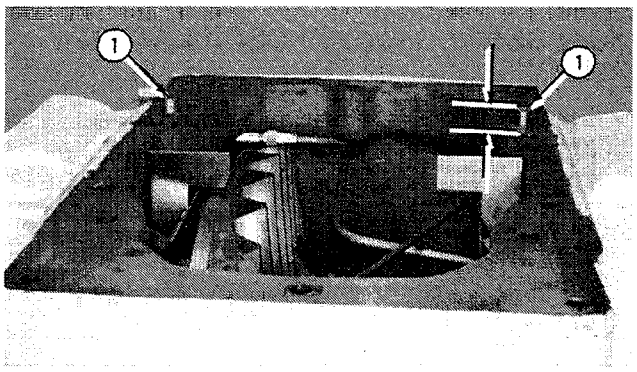
   Differential lock lines torque ..... (13.5 N.m) 10 lb-ft



06A;T77769 T09;021016 200181

DIFFERENTIAL CASE SPECIFICATION

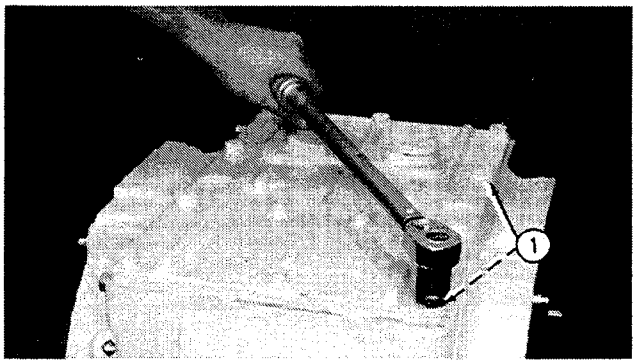
1. Dowel pin protrusion .....(13 mm) 0.5 in.



06A;T77605 T09;021017 180281

DIFFERENTIAL CASE COVER SPECIFICATION

1. Cap screws torque .....(115 N.m) 85 lb-ft

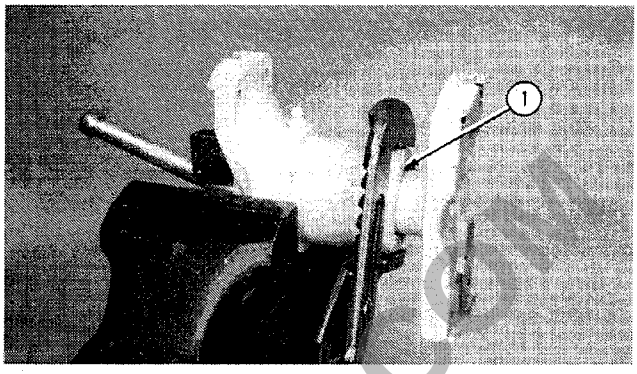


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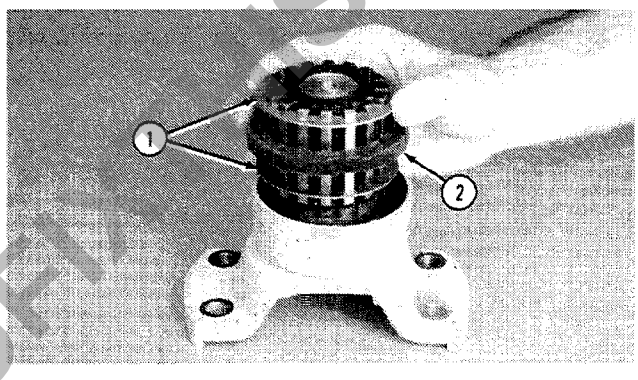
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4. Remove dust cap (1) and pull apart the yoke couplings.



06A;T77420 T09;022536 151280

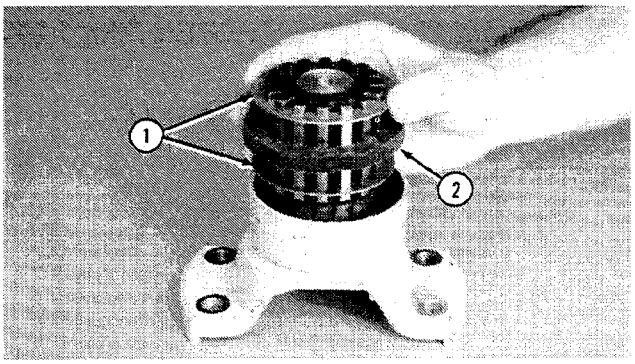
5. Remove retainer washers (1) felt seal (2) and dust cap.
6. Thoroughly clean and inspect splines of coupling yokes. Splines of yokes must be free of burrs.
7. Replace any damaged parts.



06A;T77421 T09;022537 151280

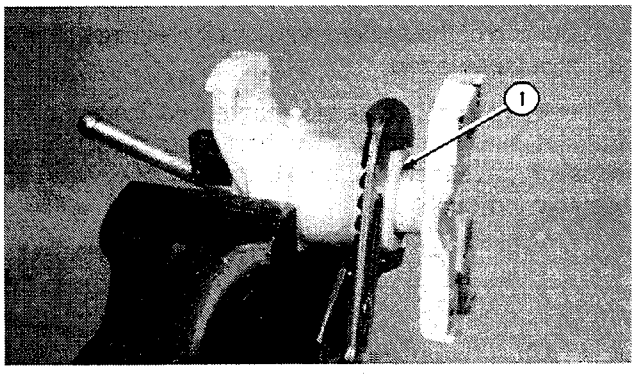
ASSEMBLE REAR DIFFERENTIAL DRIVE LINE

1. Install dust cap, felt seal (2) and retainer washers (1).



06A;T77421 T09;022538 151280

2. Slide the yoke couplings together with yoke ears as closely as splined index will permit.
3. Install dust cap (1). Tighten dust cap hand tight plus one additional turn.



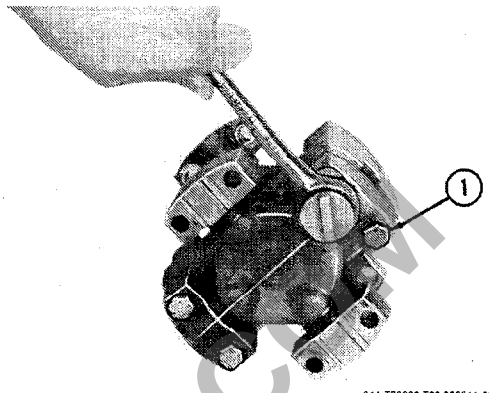
06A;T77420 T09;022539 030682

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TRANSMISSION DRIVE SHAFT SPECIFICATIONS

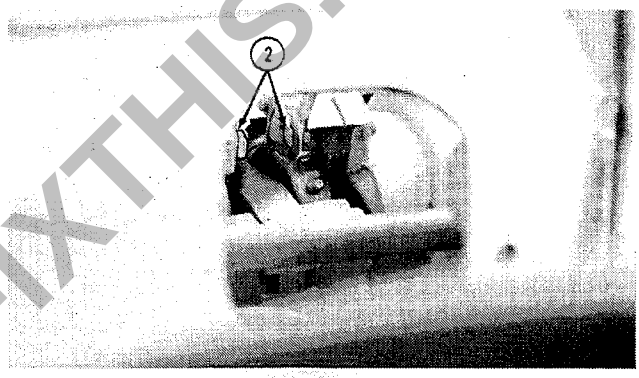
1. Cap screws torque .....(61 ± 7 N.m) 45 ± 5 lb-ft

   Nuts torque (Rockwell only) ..... (23 ± 3 N.m) 17 ± 2 lb-ft



01A;T78232 T09;032511 090281

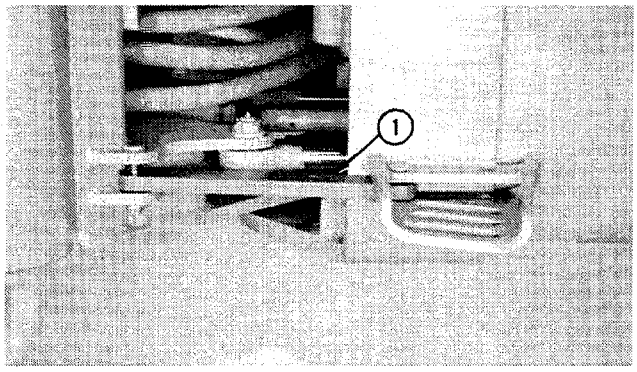
2. Cap screws torque .....(68 ± 7 N.m) 50 ± 5 lb-ft



01A;T78233 T09;032512 090281

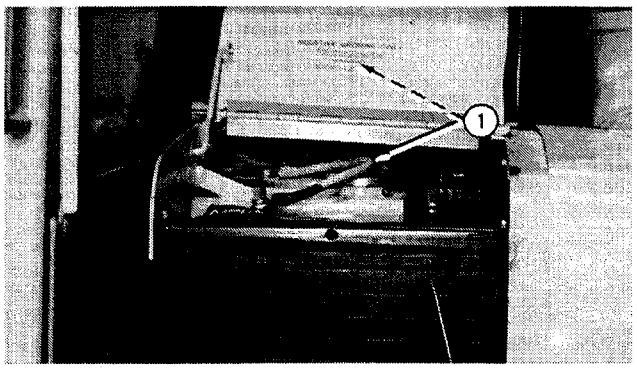
REMOVE TRANSMISSION DRIVE SHAFT

1. Lower all equipment to the ground.
2. Stop the engine.
3. Operate the steering valve, brake valve and loader control valve to release hydraulic pressure in the system.
4. Install lock bar.



01A;T75019 T09;032503 111280

5. Disconnect battery ground cables (1).



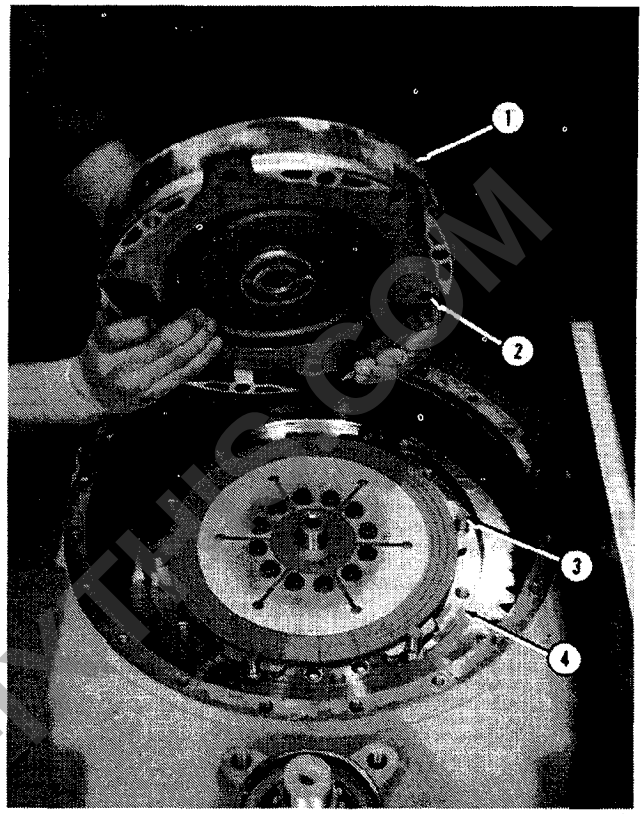
01A;T78321 T09;032513 090281

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INSTALL HIGH RANGE CLUTCH PISTON HOUSING

1. Align the piston housing holes (2) with the pins (3).

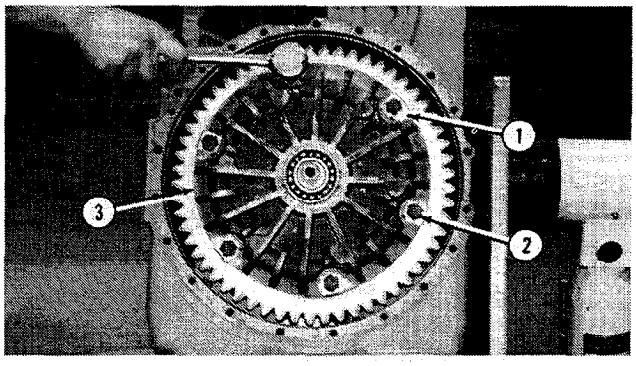
2. Install the piston housing (1) onto the transfer drive gear (4). Use a soft hammer to seat the piston housing in the counterbore of the transfer drive gear.



01A;T78580 T09;0350 337 130281

3. Install six lock tabs (1) and six cap screws (2) into the piston housing (3). Tighten the cap screws to (113 to 136 N·m) 83 to 100 lb-ft.

4. Bend the lock tabs against the cap screw heads.



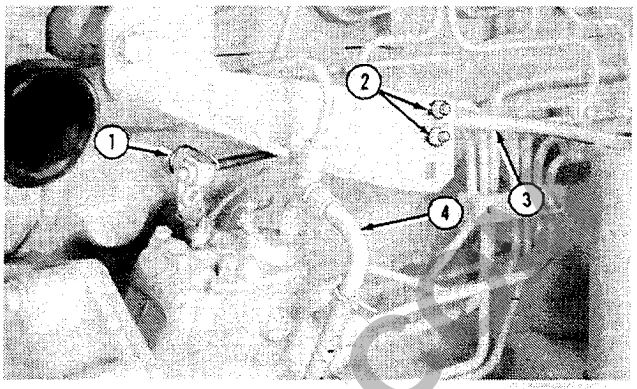
01A;T78422 T09;0350 338 130281

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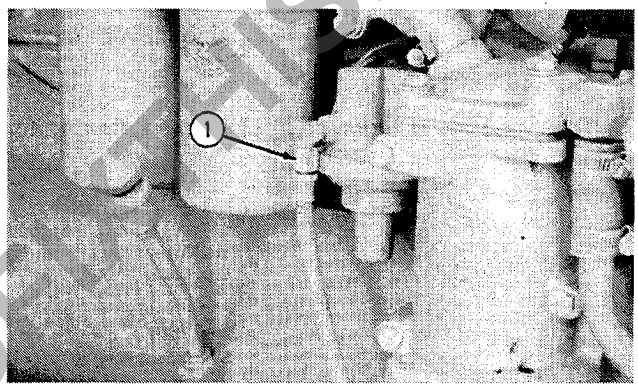
DISCONNECT LINKAGE AND HOSES

1. Remove cotter pin and washer (1) to disconnect swivel.
2. Remove nuts and U-bolt (2) to disconnect cable (3).
3. Disconnect return hose (4).



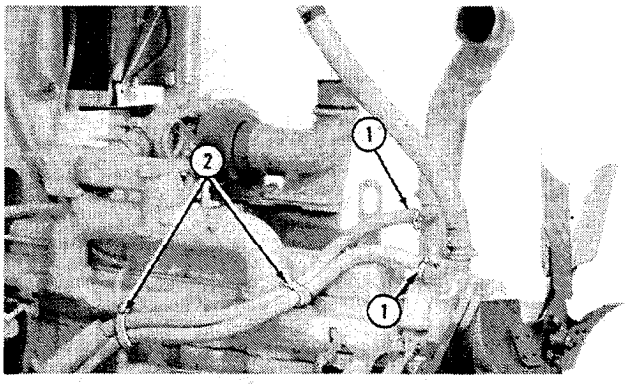
07A;T78753 T09;040057 200281

4. Disconnect fuel hose (1).



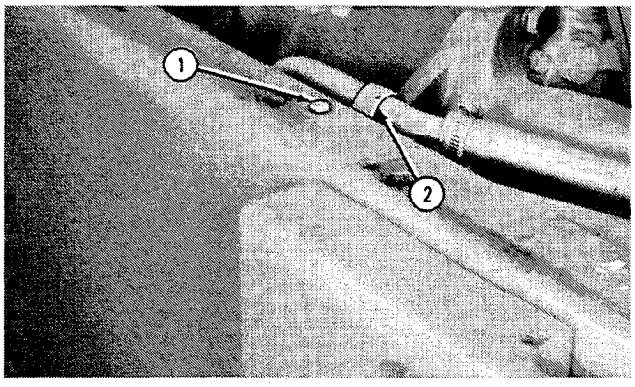
07A;T78755 T09;040059 200281

5. Disconnect hoses (1).
6. Remove clamp (2) from engine.



07A;T78756 T09;040060 200281

7. Remove cap screw and nut (1) to remove clamp (2) from frame.



07A;T78757 T09;040061 200281

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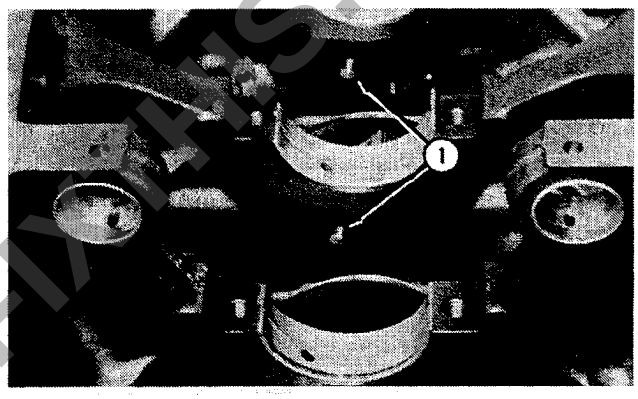
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11. Use D01062AA or D01073AA Puller (1) to remove cylinder liners, if necessary.

12. Remove cylinder packings from cylinder liner bore.

07A;T79079 T09;040416 180281

REMOVE REMAINING PARTS FROM BLOCK



1. Remove starting motor (Group 0422).

2. Remove alternator (Group 1672) and fan belts.

3. Remove the water pump (Group 0417).

4. Remove oil filter, oil filter housing, and dipstick (Group 0407) and engine oil cooler (Group 0419).

5. Remove crankshaft pulley and timing gear cover (Group 0402).

6. Remove camshaft (Group 0402).

7. Remove flywheel and flywheel housing (Group 0433).

8. Remove crankshaft (Group 0401) and piston cooling orifices (1).

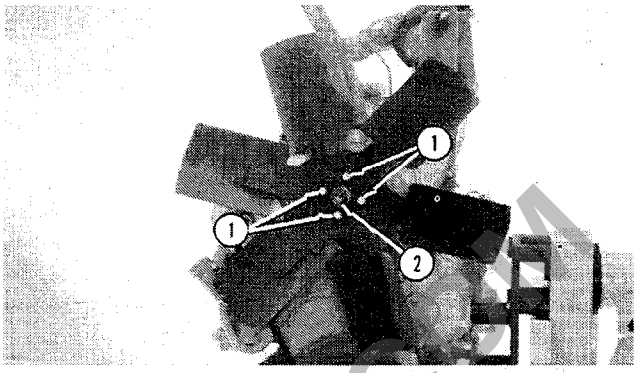
07A;T79077 T09;040414 180281

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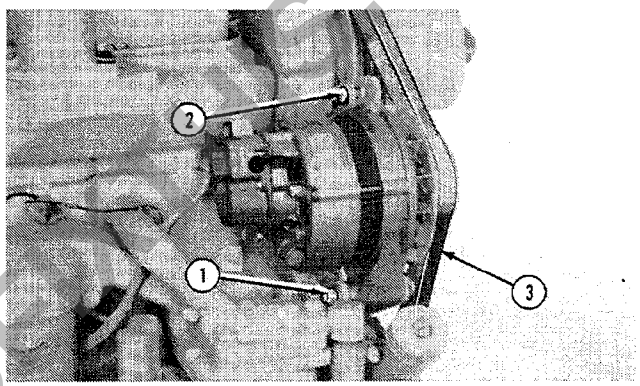
REMOVE WATER PUMP

1. Remove cap screws (1) to remove fan.
2. Remove cap screw (2) to remove fan spacer.



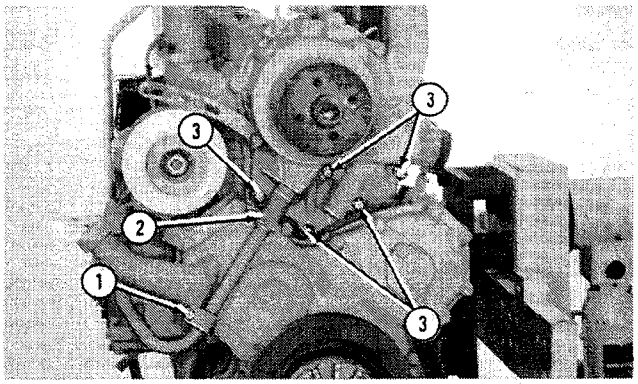
07A;T78938 T09;041707 250281

3. Loosen nut and cap screw (1) and cap screw (2). Remove belts (3).



07A;T78939 T09;041708 110381

4. Remove cap screw (1) and loosen clamp (2) to disconnect hose.
5. Remove cap screws and nut (3) to remove water pump.



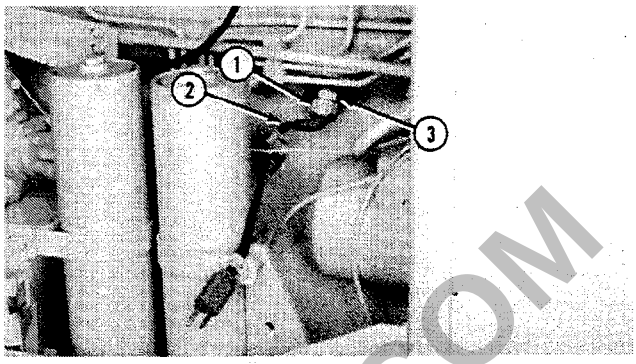
07A;T78940 T09;041709 250281

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REMOVE ENGINE COOLANT HEATER

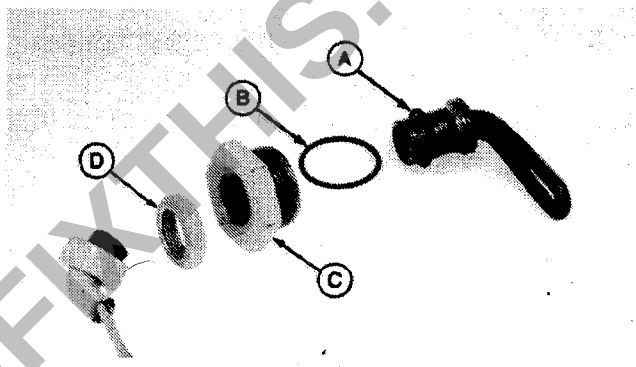
1. Open engine right side shield. Remove coolant from cooling system (Group 0510).
2. Turn nut (1) counterclockwise to disconnect cord (2) from heater.
3. Loosen nut (3).
4. Remove adapter to remove heater from cylinder block.



09A;T78393 T09;050526 090281

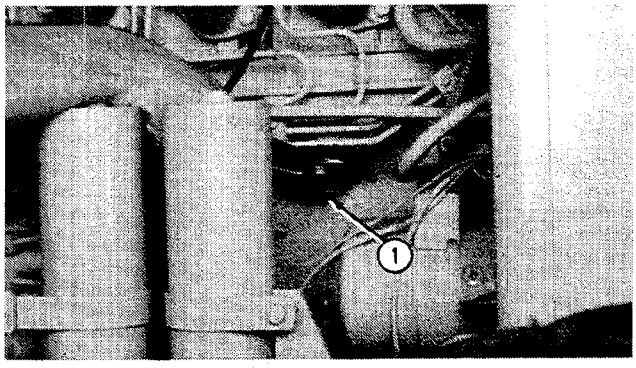
INSTALL ENGINE COOLANT HEATER

1. Install new gasket (A) on heater element and a new O-ring (B) on adapter (C). Install heater element through adapter, and install nut (D), but do not tighten.
2. Install heater into cylinder block with element up.



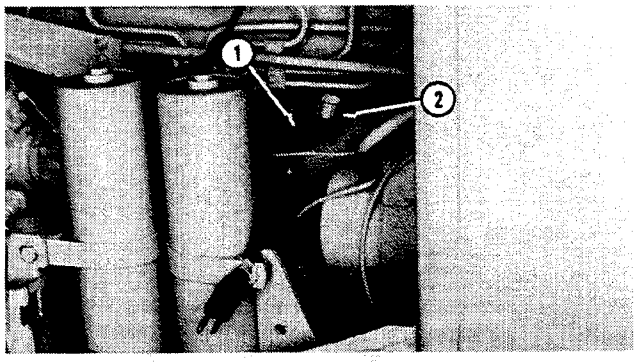
09A;T87072 T09;050531 260281

3. Use a wrench (1) to move heater so element is not touching casting; then tighten nut to (34 N·m) 25 lb-ft.



09A;T78396 T09;050529 090281

4. Install cord (1) and tighten nut (2).
5. Fill cooling system to proper level with proper coolant. Check for leaks (Group 9010).

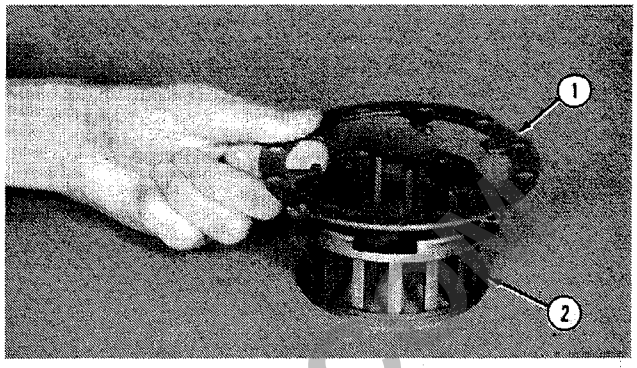


09A;T78397 T09;050530 090281

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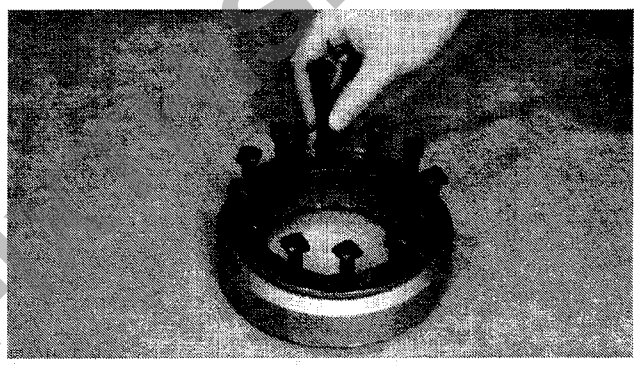
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11. Remove the spring plate (1) from the roller cage (2).



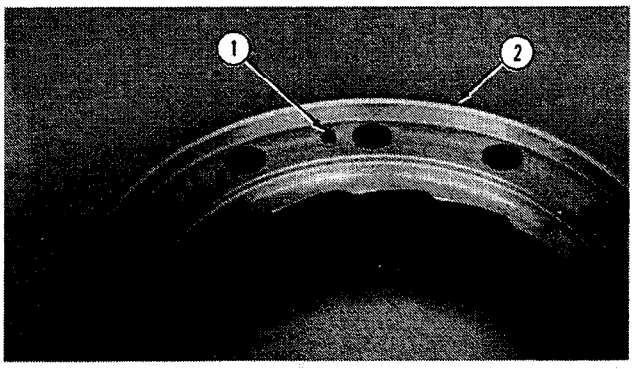
00A;T74698 T09;0651 195 130281

12. Remove 12 cap screws from the cam assembly.



00A;T78848 T09;0651 196 130281

13. Remove roll pin (1) from cam (2) if replacement is necessary.



00A;T74700 T09;0651 197 130281

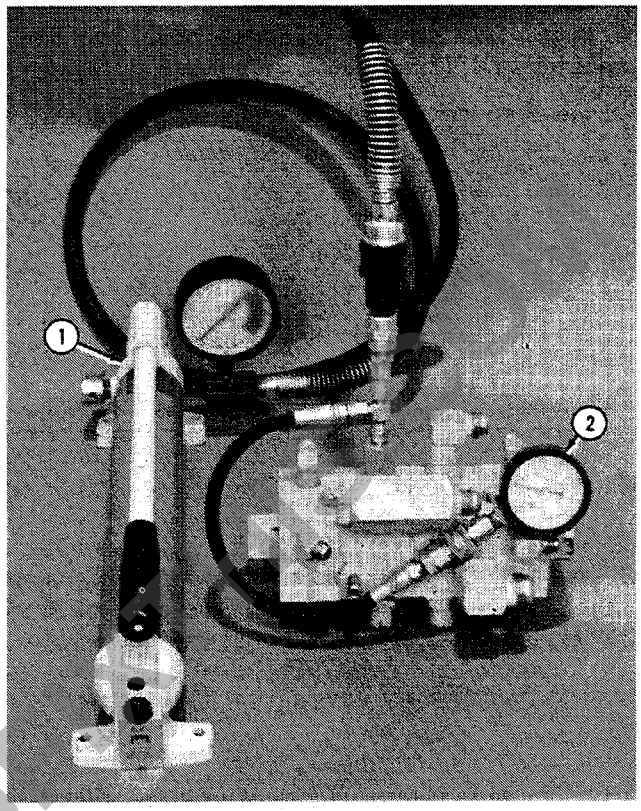
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15. Connect the D-01019AA Hydraulic Hand-Operated Pump (1) and (34 475 kPa) (345 bar) 5000 psi gauge (2) to the pressure circuit port using fittings and hose from the D-15028NU Universal Pressure Test Kit.

16. Apply pressure with the pump. The pressure must increase to (22 200 ± 700 kPa) (222 ± 7 bar) 3220 ± 100 psi, then decrease. The point at which pressure decreases is an indication circuit relief valve has opened and is the pressure setting of circuit relief valve.

17. If pressure setting is not correct, install or remove shims to get the specified setting.



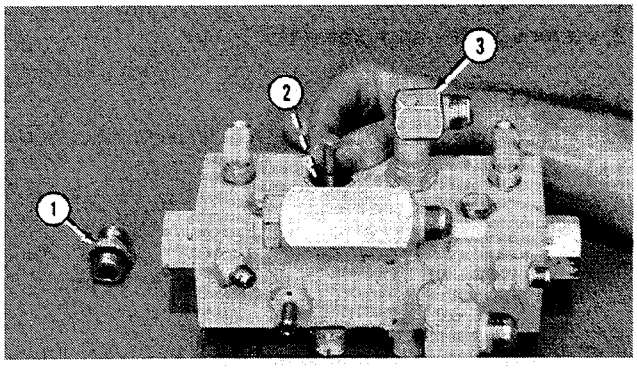
04A;T75875 T09;096077 061280

18. Release the Pressure. Disconnect pump and remove fitting (1).

19. Remove plug (2) and install fitting.

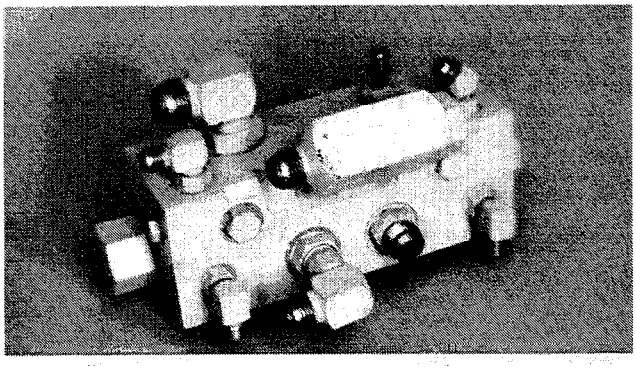
20. Do steps 10 through 18 for the other pressure circuit (3).

The pressure settings must be within the specifications and same range for both pressure circuit relief valves.



04A;T75876 T09;096078 051280

21. Install all fittings as shown.

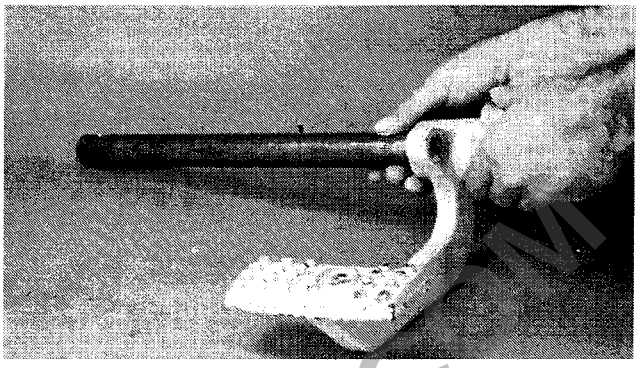


04A;T77128 T09;096079 061280

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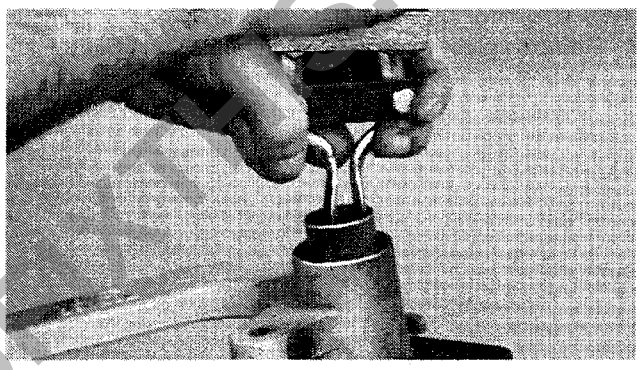
7. Remove right pedal.



10A;T75927 T09;101513 251180

8. Remove bushing using D-01209AA Slide Hammer.

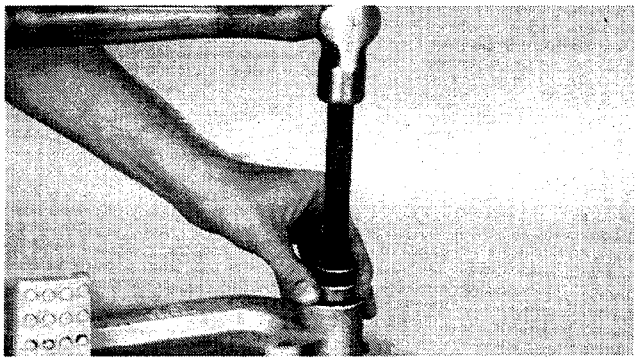
9. Inspect all brake parts for wear or damage; replace parts as necessary.



10A;T75928 T09;101514 251180

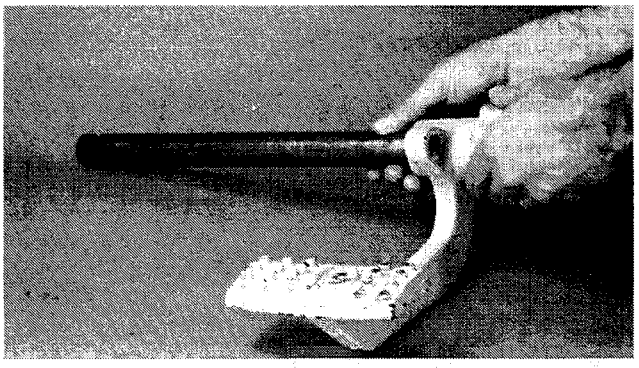
ASSEMBLE SERVICE BRAKE PEDALS

1. Install bushing using 27501 and 27503 disks and handle from D-01045AA driver set.



10A;T75929 T09;101515 251180

2. Install right pedal.



10A;T75927 T09;101516 251180

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BATTERY SPECIFICATIONS

BCI Group 31

Cold Cranking Amps (at [-18°C] 0°F) ..... 625 amps

Cold Cranking Amps (at [-29°C] -20°F) ..... 470 amps

Reserve Capacity (minutes at 25 amps) ..... 170 min

T09;167102 131180

HANDLE BATTERIES SAFELY

CAUTION: Never lay a metal object on top of a battery as a short circuit can result. Sparks or an open flame must be kept away from batteries due to the presence of explosive gas in and around the batteries while they are being charged or in use.

T09;167103 101180

Battery acid is harmful on contact with skin or fabrics. If acid spills, follow these first aid tips:

1. Immediately remove any clothing on which acid spills.

2. If acid contacts the skin, rinse the affected area with running water for 10 to 15 minutes.

3. If acid comes into contact with the eyes, flood the eyes with running water for 10 to 15 minutes. See a docotr at once. Never use any medication or eye drops unless prescribed by the doctor.

4. To neutralize acid spilled on the floor, use one of the following mixtures: (0.5 kg) 1 lb. of baking soda in (4 L) 1 gal. of water, or (0.4 L) 1 pt. of household ammonia in (4 L) 1 gal. of water.

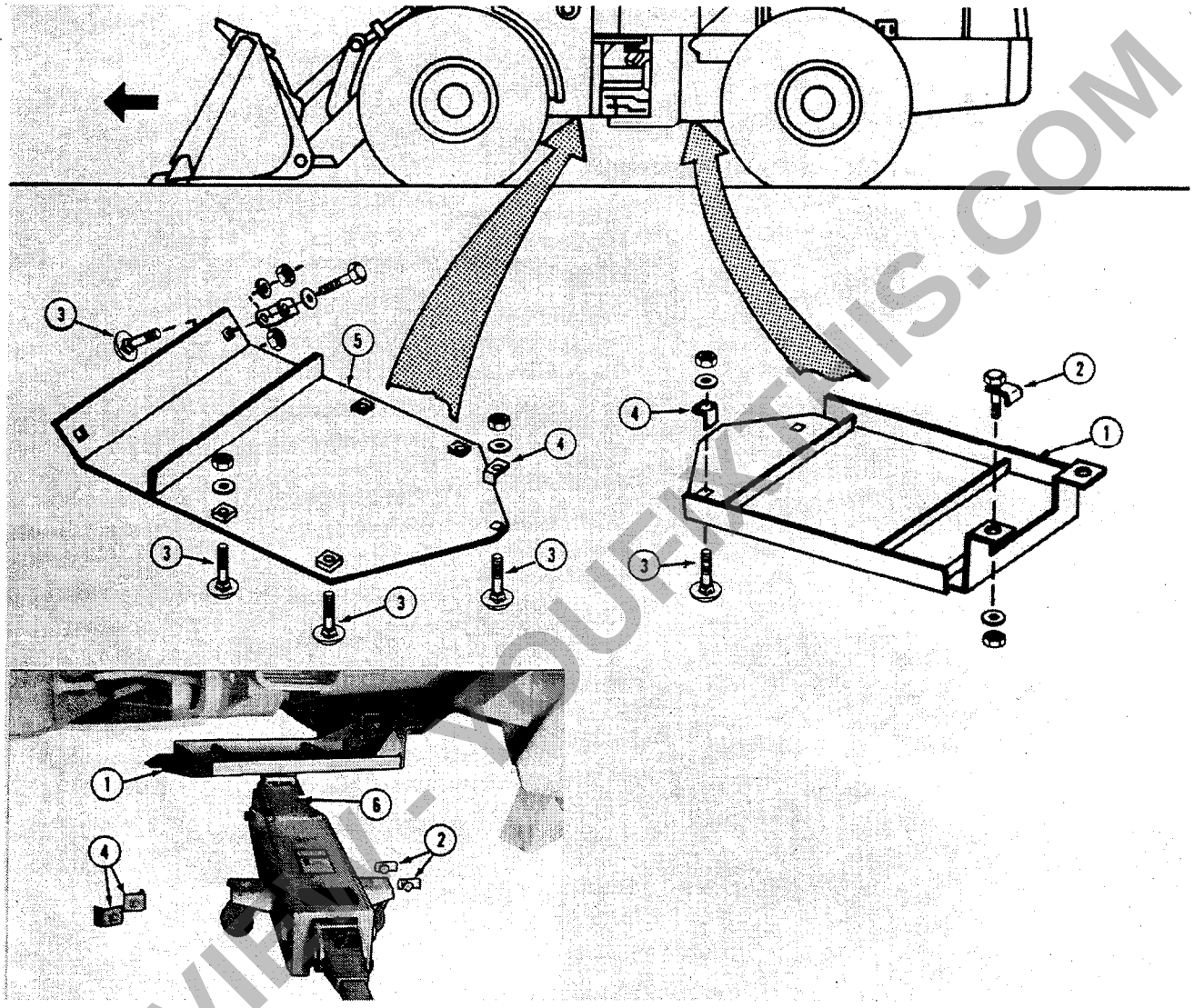
5. Acid from the batteries can also damage the paint and metal surfaces of the machine. Avoid over fitting the battery cells.

T09;167104 231280

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REMOVE AND INSTALL AUXILIARY BOTTOM GUARDS (IF EQUIPPED)



1—Center Bottom Guard
2—Retainer
3—Rd. Hd. Bolt
4—Clamp
5—Front Bottom Guard
6—Service Jack

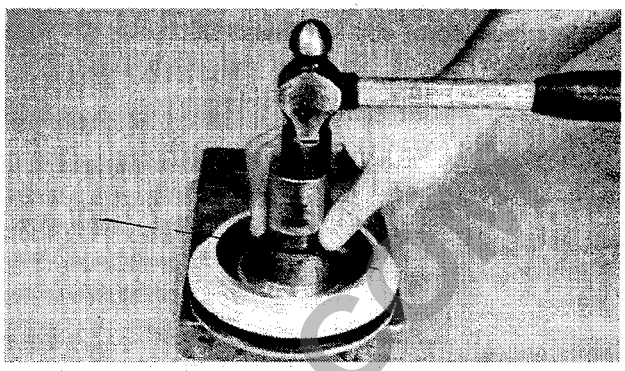
1. To remove, put a service jack (6) under center of bottom guard (1 or 5).
2. Remove attaching hardware (2 and 3).
3. Lower jack and remove bottom guard.
4. To install, lift bottom guard into position using a jack. Install all hardware loosely. Clamps (4) must overlap top of frame cross-piece. Tighten nuts.

14A;T77756 T09;174602 140181

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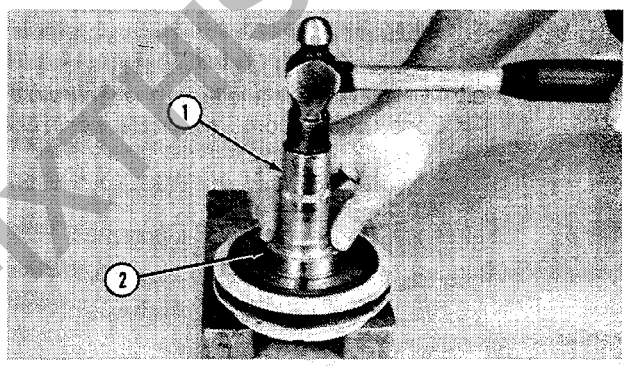
REPLACE BEARING

1. Remove bearing with AC-443 Bearing Remover from D-05273ST Air Conditioning Compressor Service Tool Kit.



03A;T76086 T09;183044 130181

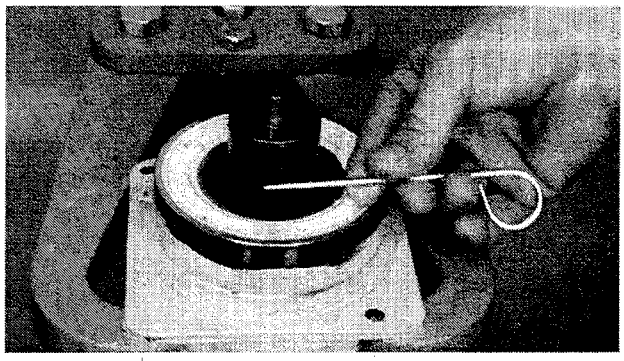
2. Install new bearings with AC-443 (1) and AC-444 Pulley Installer (2) from D-05273ST Air Conditioning Compressor Service Tool Kit. Make sure tool (2) contacts the outer bearing race only.



03A;T76087 T09;183045 040682

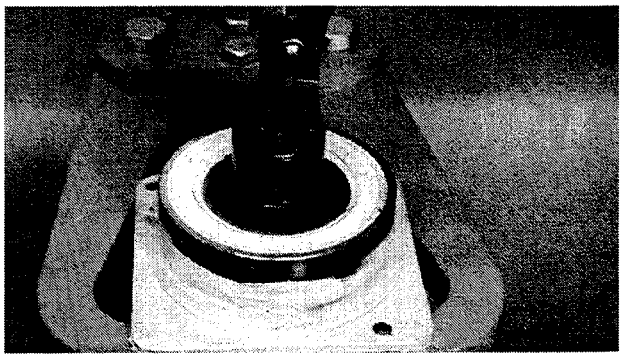
REMOVE CLUTCH COIL

1. Remove shield with AC-412 O-ring Remover from D-05273ST Air Conditioning Compressor Service Tool Kit.



03A;T76088 T09;183046 130181

2. Remove snap ring with AC-426 Snap Ring Pliers from D-05273ST tool kit.



03A;T76089 T09;183047 261180

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7. I.D. of stroke control valve sleeve (top end) ..... (6.782 ± 0.008 mm) 0.2670 ± 0.0003 in.

8. O.D. of stroke control valve (top end) ..... (6.764 ± 0.005 mm) 0.2663 ± 0.0002 in.

9. Stroke control valve spring

Test length at (623 ± 66.75 N ..... 84.07 mm)
140 ± 15 lb. force ..... 3.310 in.

10. O.D. of crankcase outlet valve (top end) ..... (11.887 ± 0.005 mm) 0.4680 ± 0.0002 in.

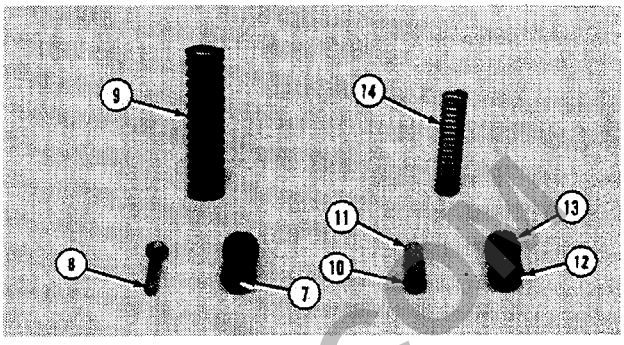
11. O.D. of crankcase outlet valve (bottom end) ..... (11.100 ± 0.005 mm) 0.4370 ± 0.0002 in.

12. I.D. of crankcase outlet valve sleeve (top end) ..... (11.905 ± 0.008 mm) 0.4687 ± 0.0003 in.

13. I.D. of crankcase outlet valve sleeve (bottom end) ..... (11.118 ± 0.008 mm) 0.4377 ± 0.0003 in.

14. Crankcase outlet valve spring

Test length at (222.5 ± 22.3 N ..... 55.88 mm)
50 ± 5 lb. force ..... 2.20 in.



05A;T77175 T09;2160 105 081280

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DISASSEMBLE AND INSPECT HYDRAULIC PUMP DRIVE

1. Inspect components for wear or damage. If necessary, install new parts.

2. If bushings and drive bushings in pump drive couplers are loose, install a new coupler.

T09;216068 171180

ASSEMBLE AND INSTALL HYDRAULIC PUMP DRIVE

1. Check that mating surfaces of pump drive coupling, crankshaft pulley, tapped holes in pulley and the cap screws (12) are clean and free of paint.

Install front half coupling (11) on engine. Tighten cap screws (12) to (51.5 ± 4 N·m) 38 ± 3 lb-ft. Install coupling cushion (13).

2. Install pump support (17). Tighten cap screws (8 and 10) to 230 N·m) 170 lb-ft.

3. Tighten cap screws (9) to (230 N·m) 170 lb-ft.

4. Install rear half coupling (14) on pump drive shaft (16). Tighten cap screws (15) to (47.5 ± 4 N·m) 35 ± 3 lb-ft. Install pump drive shaft on the coupling cushion (13).

5. Install hydraulic pump (6) on pump support (17) with pump shaft inside pump drive shaft (16). Tighten cap screws (5) to (115 N·m) 85 lb-ft.

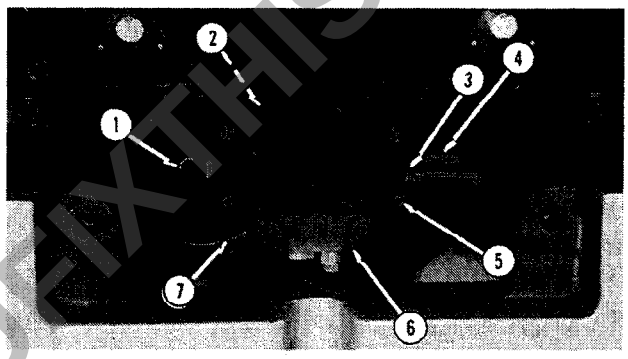
6. Clean the threads of cap screws (2) and tapped holes in pump drive shaft with T43511 John Deere Loctite Clean and Cure Primer or an equivalent. Put T43513 John Deere Thread Lock and Sealer (high strength) or an equivalent on the threads of cap screws (2). Tighten cap screws in a "X" pattern until all cap screws hold (47.5 ± 4 N·m) 35 lb-ft.

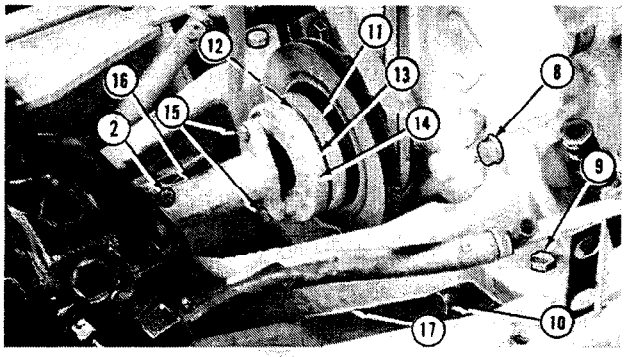
7. Connect the hydraulic lines.

8. Install the grille housing (Group 1921).

9. Install the radiator (Group 0510).

10. Install the oil cooler (Group 0360).





1—Inlet Line
2—Cap Screw (4 used)
3—Outlet Line
4—Excess Charge Pressure Line
5—Cap Screw (4 used)
6—Hydraulic Pump
7—Seal Drain Line
8—Cap Screw (2 used)
9—Cap Screw (2 used)
10—Cap Screw (2 used)
11—Front Half Coupling
12—Cap Screw (2 used)
13—Coupling Cushion
14—Rear Half Coupling
15—Cap Screw (2 used)
16—Pump Drive Shaft
17—Pump Support

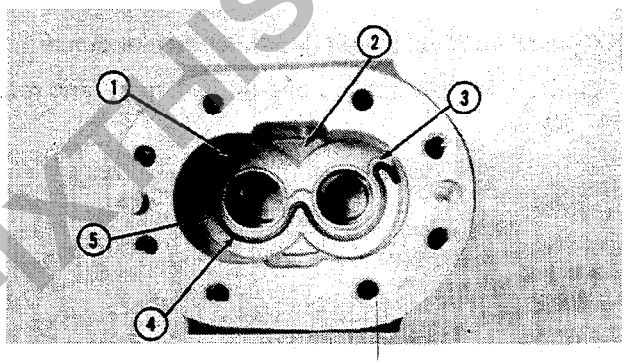
05A;T79003, T79036 T09;2160 134 110281

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1. Wash parts in clean solvent.
2. If parts are replaced, inspect new parts and remove any nicks or burrs.
3. Before assembly, put clean hydraulic oil on all parts.

T09;316019 271080

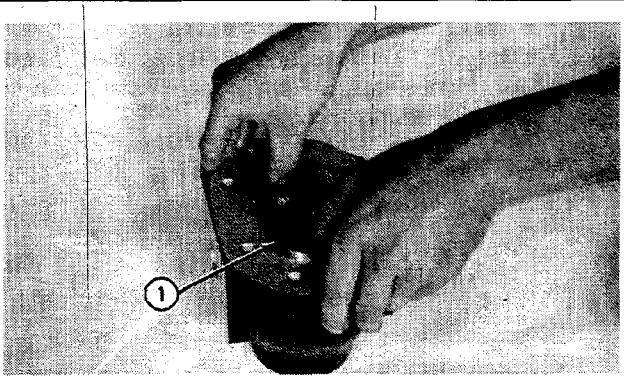
4. Put body of the pump so that the isolation plate retainer cusp (2) is away from you.
5. With rounded edge down, install the isolation plate into bottom of pump.
6. Install the new backup ring (3), O-ring (4) and the retainer ring (5).



18A;T74669 T09;316020 271080

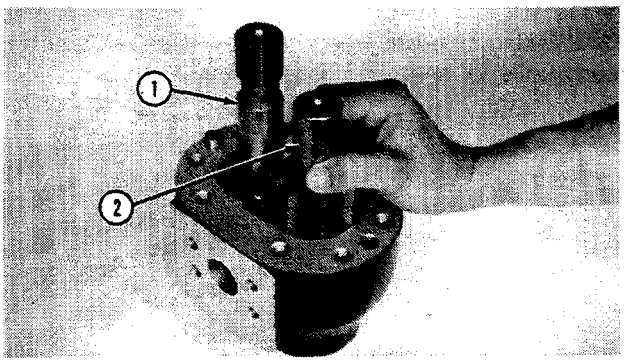
7. Install pressure plate (1) with bronze side up and the rounded trap slots on the outlet side of pump. The outlet side is opposite the isolation plate.

IMPORTANT: DO NOT force the pressure plate into place. If it binds, carefully work it back and forth until it slides into position.



18A;T74672 T09;316021 271080

8. Carefully install driveshaft assembly (1) and idler shaft assembly (2).



18A;T74679 T09;316022 271080

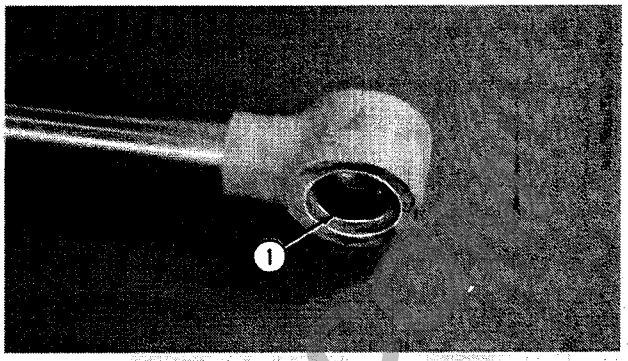
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18. Inspect cylinder head and rod end bushings (1). Replace if necessary.

19. Install new bushings (6 ± 1 mm) 0.24 ± 0.004 in. below surface.

20. Install the seals with lip of seal opposite bushing. Push seal tight against the bushing.



18A;T75419 T09;3160 206 051180

INSTALL MULTI-PURPOSE BUCKET CYLINDER

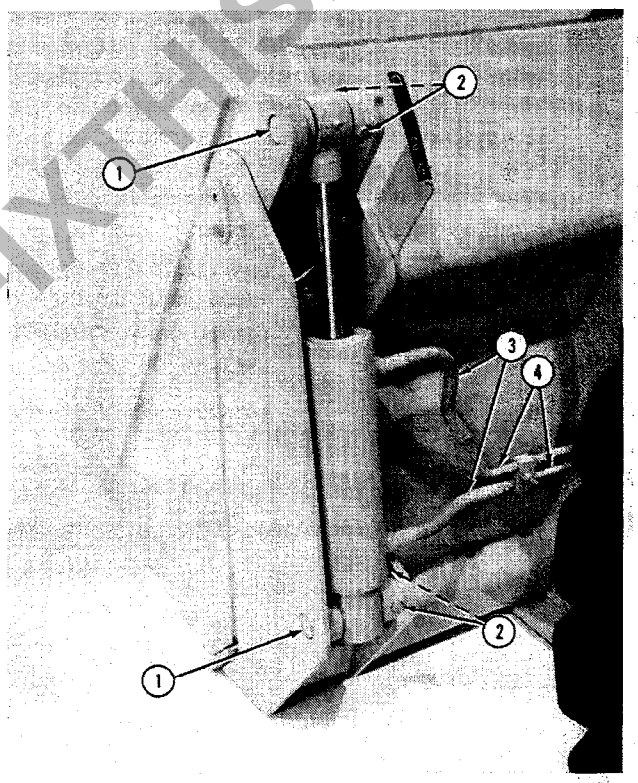
1. Install the cylinder. The approximate weight of the multi-purpose bucket cylinder is (30.4 kg) 67 lb.

2. Install cylinder pins (1).

3. Install nuts and cap screws (2). Tighten nuts to (115 N.m) 85 lb-ft.

4. Connect hydraulic hoses (3) to the cylinder.

5. Connect hydraulic hoses (3) to the hydraulic tubing (4).

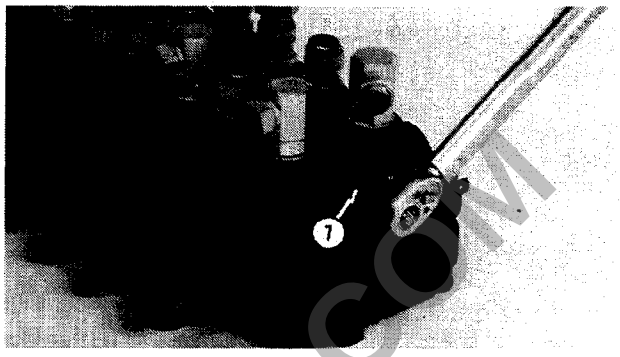


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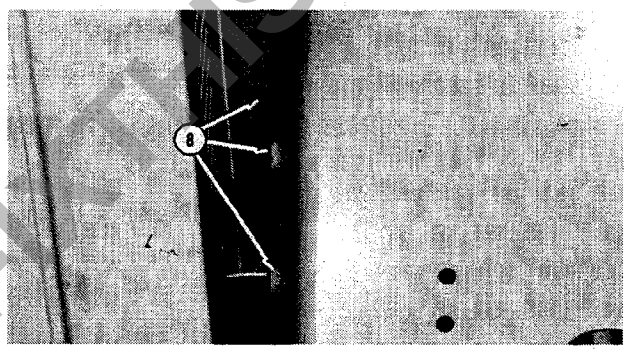
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7. Cap screw torque ..... (27 to 40 N.m) 20 to 25 lb-ft



19A;T79171 T09;336008 240281

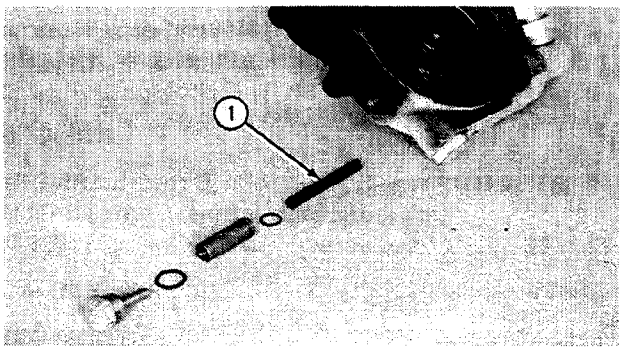
8. Cap screw torque .....(115 N.m) 85 lb-ft



19A;T79172 T09;336009 240281

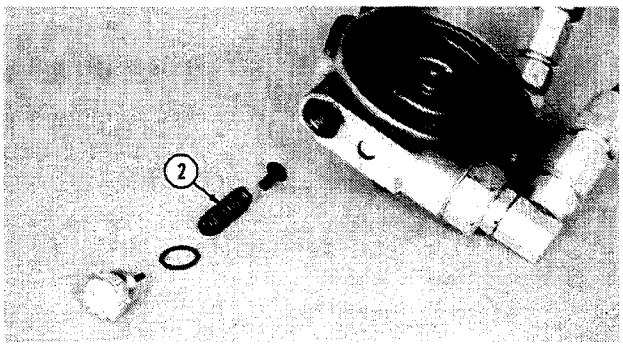
HYDRAULIC FILTER SPECIFICATIONS

1. Spring
   Free length ..... (82.5 mm) 3.24 in.
   Test length at (82.3 ± 8.9 N ..... 63.5 mm)
   18.5 ± 2 lb. force ..... 2.50 in.



19A;T79174 T09;336011 240281

2. Spring
   Free length .....(52 mm) 2.06 in.
   Test length at (151 ± 15 N ..... 33.3 mm)
   34 ± 3.4 lb. force ..... 1.31 in.



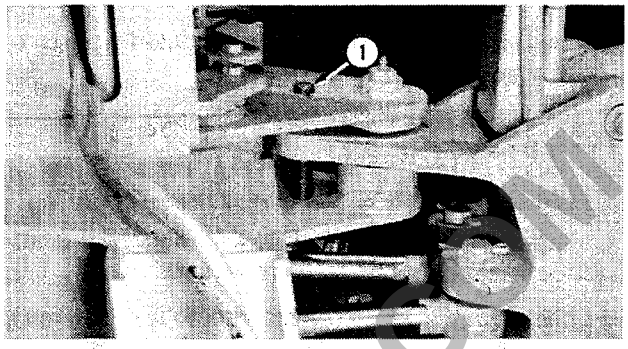
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REMOVE CROWD CYLINDER

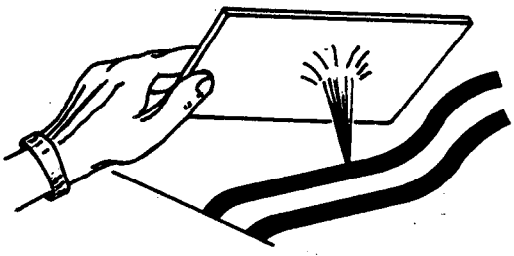
1. Lower the loader bucket and stabilizers to the ground.
2. Extend the boom and dipperstick.
3. Put a D-01182AA stand and 51826 extension at the boom and dipperstick pivot joint.
4. Lower backhoe bucket to the ground.
5. Stop the engine.
6. Operate the steering valve, brake valve, loader control valve and backhoe control valve to release pressure in the systems.
7. Install the swing lock pin (1).



19A;T79187 T09;3360 174 270281

CAUTION: Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin, causing serious injury. Before disconnecting lines, be sure to relieve pressure. Before applying pressure, be sure connections are tight and lines, pipes, and hoses are not damaged. Use a piece of cardboard or wood, rather than hands, to search for leaks.

If injured by escaping oil, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

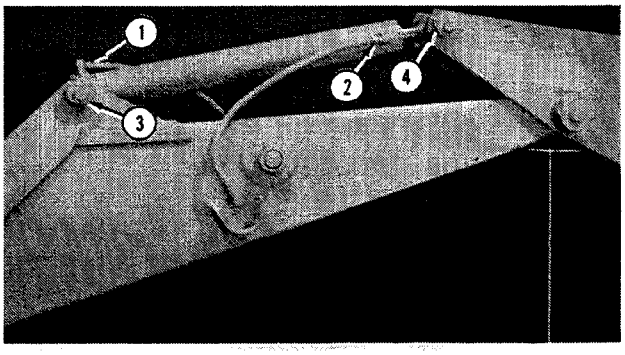


19A;T45794 T09;3360 175 270281

8. Disconnect hoses (1 and 2). Close openings with caps or plugs to keep dirt out of the hydraulic system.
9. Remove cap screws (3 and 4).

CAUTION: Crowd cylinder weighs approximately (43 kg) 95 lbs.

10. Remove pins to remove crowd cylinder from backhoe.



19A;T78660 T09;3360 176 270281

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Low Oil Pressure

Basic Engine Problem
- Low oil level
- Excessive main and connecting rod bearing clearance
- Leakage at internal oil passages
- Faulty oil pump
- Improper oil pressure control valve operation
- Improper oil (wrong viscosity)
- Defective oil pressure gauge
- Defective oil pressure gauge sending unit

High Oil Pressure

Basic Engine Problem
- Stuck control valve
- Oil pressure control valve spring worn or broken
- Worn valve or valve seat

Engine Overheats

Basic Engine Malfunction
- Defective cylinder head gasket
- Incorrect engine timing
- Low coolant level
- Radiator dirty or plugged
- Loose or broken fan belt
- Faulty thermostat(s)
- Cooling system coated with lime deposits
- Defective pressure cap
- Faulty water pump
- Scored piston
- Air in coolant
- Engine overloaded
- Crankcase oil level low

Fuel System Malfunction
- Improper fuel
- Excessive fuel delivery
- Improper injection pump timing

Water Pump Leaks

Basic Engine Malfunction
- Worn seal and/or shaft in water pump
- Worn or broken water pump gasket
- Water pump damaged
- Water pump impeller broken

Engine Runs Cold

Basic Engine Problem
- Defective temperature gauge

Water Pump Making Noise

Basic Engine Malfunction
- Worn water pump bearing
- Water pump impeller broken

Oil in Coolant or Coolant in Oil

Basic Engine Malfunction
- Leaking cylinder head gasket
- Cylinder liner packings leaking
- Cylinder block coolant jacket cracked
- Cylinder liner cracked
- Faulty engine oil cooler

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1—Input Flange
2—Front Cover
3—Converter Drive Cover
4—Second Turbine
5—First Turbine
6—Stator
7—Converter Pump
8—Oil Pump Drive Shaft
9—Transmission Housing
10—Oil Suction Tube
11—Oil Pump Gears
12—Oil Pump Assembly
13—First Turbine Drive Gear
14—Reverse Clutch Piston
15—Reverse Clutch
16—Reverse Planetary Pinion
17—Low Range Clutch
18—Low Range Clutch Piston
19—Low Range Planetary Pinion
20—Transfer Drive Gear
21—Rear Cover
22—High Range Clutch
23—High Range Clutch Hub
24—Reverse and Low Range Sun Gear
25—High Range Piston
26—Low Range Planetary Carrier
27—Rear Output Flange
28—Rear Output Shaft
29—Parking Brake
30—Transfer Driven Gear
31—Reverse and Low Range Clutch Anchor
32—Disconnect Coupling
33—Disconnect Shifter Fork
34—Front Output Shaft
35—Front Output Flange
36—Low Range Ring Gear
37—Disconnect Shifter Shaft
38—Reverse Range Ring Gear
39—Reverse Planetary Carrier
40—First Turbine Driven Gear
41—Freewheel Clutch
42—Second Turbine Driven Gear
43—Second Turbine Drive Gear
44—Torque Converter Housing
45—Accessory Drive Gear

Legend for Fig. 2

Twin-Turbine Torque Converter

The transmission is a torque converter, planetary gear type.

The torque converter consists of a pump assembly (7, Fig. 2), first turbine (5), second turbine (4), and stator (6). The pump (7) is the driving member and is driven at engine output speed. The first turbine (5) and second turbine (4) are driven members, connected by combining gears (13, 40, 43 and 42) to the transmission range gearing. The stator (6) is the reaction member.

During operation, the first and second turbines function jointly or separately, depending upon the load demand and speed of the unit. Each turbine is connected to its own output gear set. The first turbine gear train consists of gears (13 and 40). The first turbine provides high torque at low speed. The second turbine gear train consists of gears (42 and 43). The second turbine provides higher speed with less torque.

When torque demand is high, the freewheel clutch is engaged and the first turbine, assisted by the second turbine, drives the range gears. When speed of the unit increases, torque demand decreases. When this occurs, the second turbine assumes the entire load and the freewheel clutch disengages. Transition from first turbine (high torque) to second turbine (high speed) is automatic.

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Install the temperature sensor as follows:

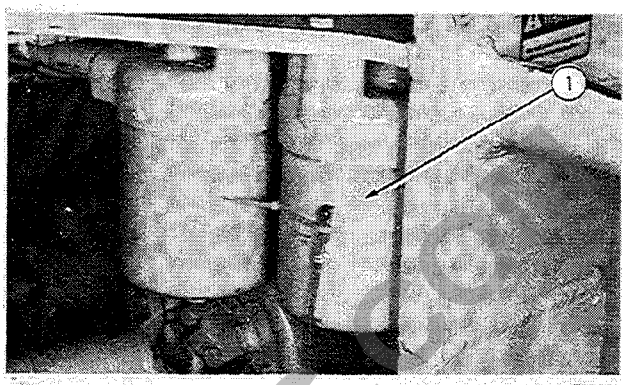
1-Remove the paint from the area where the temperature sensor will be installed.

2-Put grease on the temperature sensor.

3-Use a plastic cable tie or tape to install the temperature sensor.

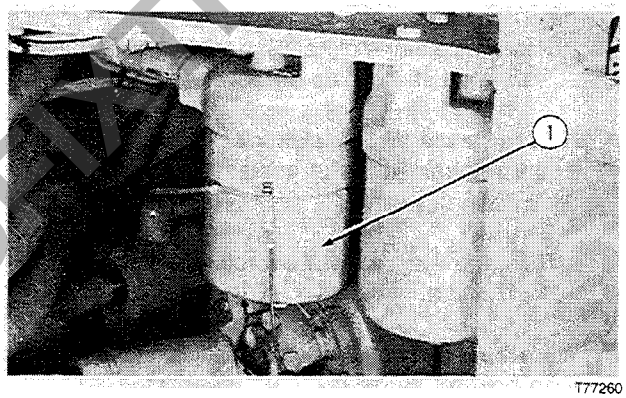
4-Put a shop towel over the temperature sensor to insulate it.

NOTE: Photos shown without shop towel over temperature sensor for clarity only.



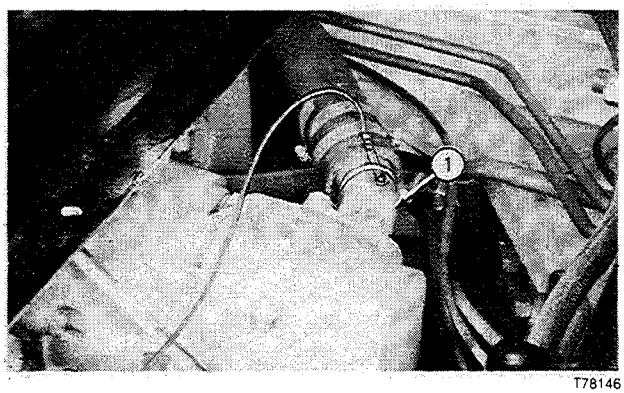
1—Steering Return Filter

Fig. 27-Temperature Sensor Location (steering, brake and differential lock system tests)



1—Transmission Filter

Fig. 28-Temperature Sensor Location (transmission system tests)



1—Loader Hydraulic Pump Inlet Line

Fig. 29-Temperature Sensor Location (loader system tests)

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DIAGNOSIS AND TESTING

VISUAL PRELIMINARY CHECKS

A visual inspection can give important clues to a system's problem areas. Often these problems are areas where regular maintenance is not performed. By performing this simple maintenance, some air conditioning problems can be easily corrected without any extensive testing.

1. Make sure heater valve and petcocks (on the water pump and water outlet) are closed.

2. Adjust compressor drive belt tension to (13 mm) 0.5 in. deflection while applying (112 N) 25 lb. force on the belt midway between the pulleys.

3. Check refrigerant lines for severe bending or kinking.

4. Check the condenser core and radiator to see that they are not partially or completely plugged with dirt or trash. Clean with compressed air or water when needed.

5. Check evaporator core for plugging.

6. Check air intake filter for plugging.

7. Check routing of hoses to be sure they are not rubbing against sharp corners or rough surfaces.

VISUAL OPERATING CHECKS

The second part of the visual system inspection requires an operational check of the system, if it is operable.

With key switch on, turn blower knob to all positions. Observe fan speeds and air volume from air ducts.

With key and blower switches on, turn air conditioner knob toward maximum cooling and listen for audible "click" from compressor clutch. Heater control knob should be in the off position.

With blower switch at "high speed" and air conditioner switch at maximum cooling, operate engine at 2000 rpm.

After 5 minutes, observe sight glass for bubbles.

NOTE: Bubbles may be present immediately after compressor cycles on. If occasional bubbles or a constant stream of bubbles are observed while the compressor is on, system may be low on Refrigerant-12. See "Adding Refrigerant-12 to System".

⚠ CAUTION: Refer to "Safety Precautions", page 9031-13, before attempting to add Refrigerant-12 to the system.

Check temperature of discharge air from air ducts. Hold thermometer in air duct until lowest reading is obtained.

1. If ambient temperature is above (27°C) 80°F the duct air temperature must be (14 to 17°C) 25 to 30°F below ambient temperature.

2. If ambient temperature is below (27°C) 80°F the duct air temperature must be less than (10°C) 50°F.

If unit does not operate as described above, refer to "Diagnostic Flow Chart" and "Operational Diagnostic Chart".

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