1845C SKID STEER

Service Manual
8-42913

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CASE CORPORATION
700 State Street
Racine, WI 53404 U.S.A.

CASE CANADA CORPORATION
3350 South Service Road
Burlington, ON L7N 3M6 CANADA

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Section

1002

FLUIDS AND LUBRICANTS

1845C Skid Steer

CASE CORPORATION
700 State Street
Racine, WI 53404 U.S.A.

CASE CANADA CORPORATION
450 Sherman Avenue
Hamilton, ON L8N 4C4 CANADA

Bur 8-17742

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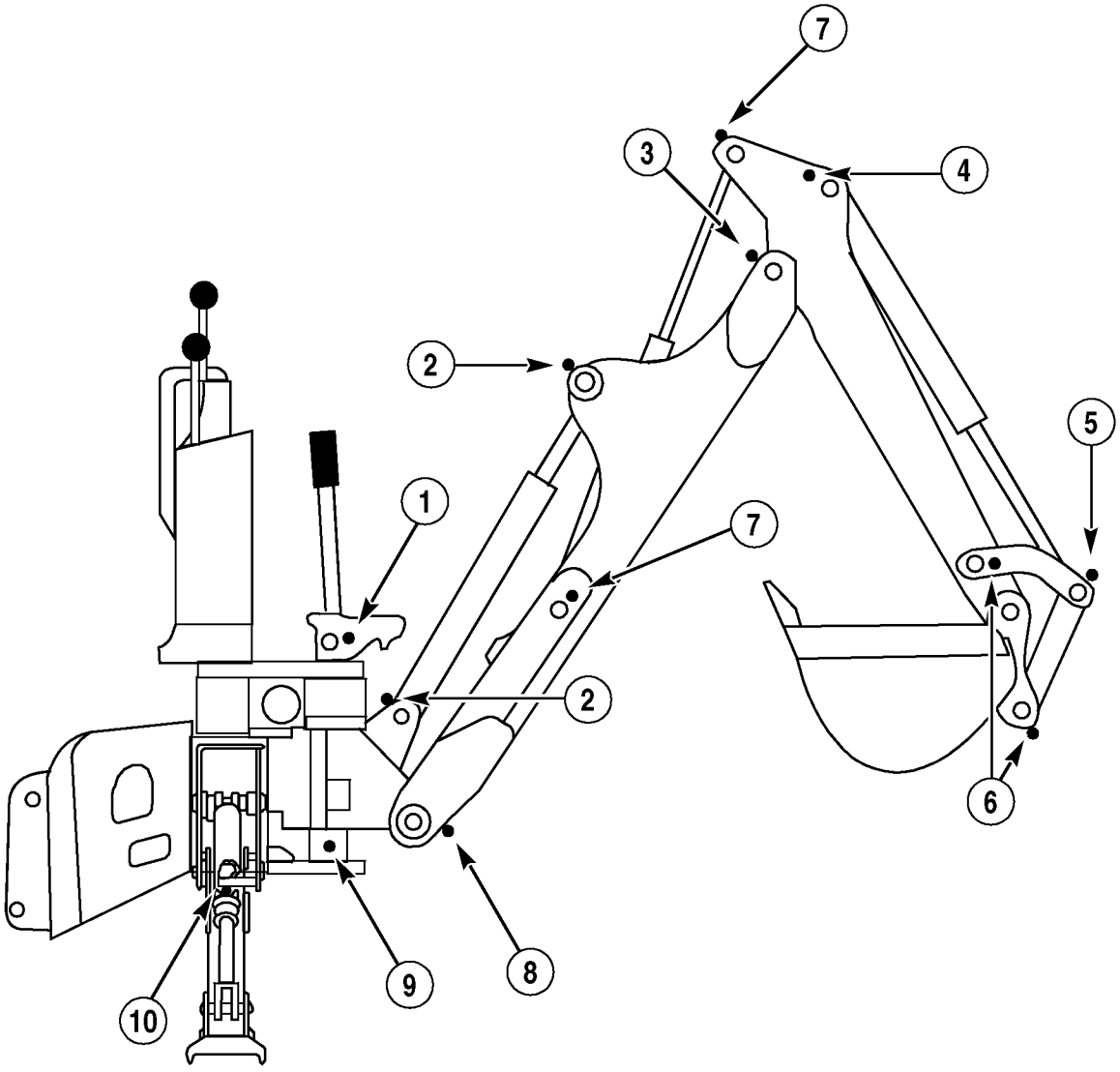
D125 BACKHOE PIVOTS (IF EQUIPPED)
Use Case Molydisulfide Grease

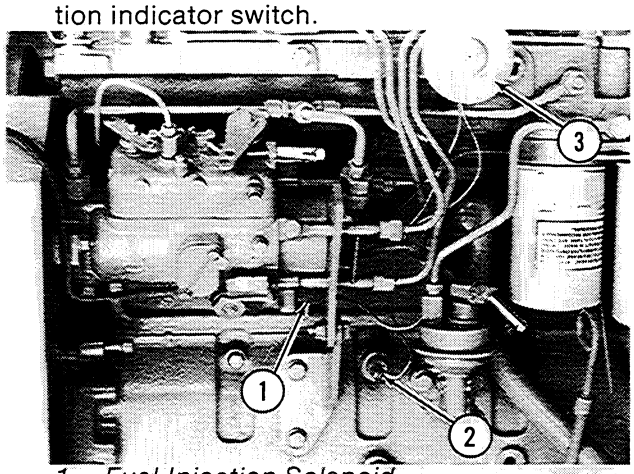


ts98h009

IF YOU OPERATE THE MACHINE IN SEVERE CONDITIONS, LUBRICATE AND SERVICE THE MACHINE MORE FREQUENTLY. IT IS RECOMMENDED THAT YOU SEE YOUR **CASE** DEALER FOR INFORMATION ON THE SYSTEMGARD LUBRICATION SYSTEM.

SEE YOUR OPERATORS MANUAL FOR MAINTENANCE OF SAFETY RELATED ITEMS AND FOR DETAILED INFORMATION OF THE SERVICE ITEMS ON THIS CHART. OPERATORS AND SERVICE MANUALS ARE AVAILABLE FOR THIS MACHINE FROM YOUR **CASE** DEALER.

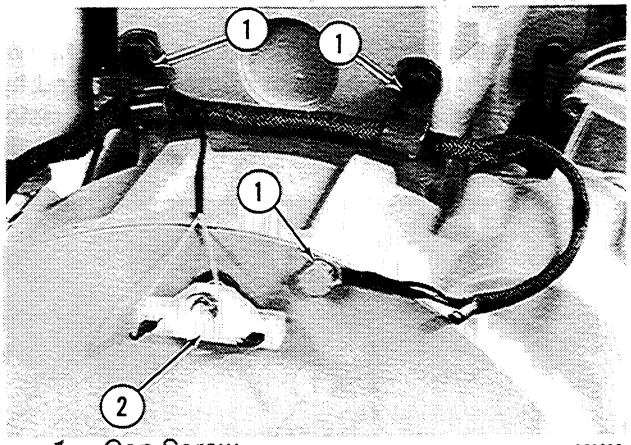
c. Disconnect the wire from the fuel injection solenoid on the fuel injection pump. Disconnect the wire from the engine oil pressure switch. Disconnect the wires from the restriction indicator switch.



516134

1. *Fuel Injection Solenoid*
2. *Engine Oil Pressure Switch*
3. *Restriction Indicator Switch*

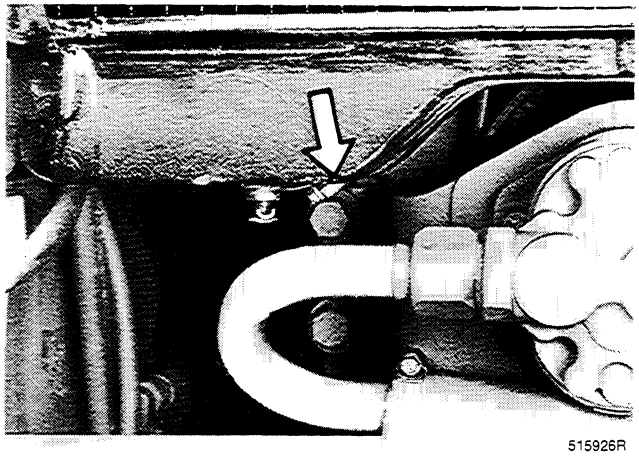
d. Loosen and remove the cap screws that fasten the wiring harness to the rear of the engine and flywheel cover. Disconnect the wires from the resistor on the flywheel cover.



856632

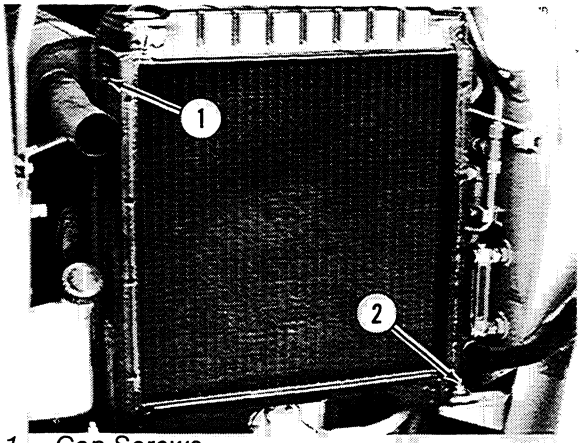
1. *Cap Screw*
2. *Resistor*

7. Loosen the clamp on the bottom radiator hose.



515926R

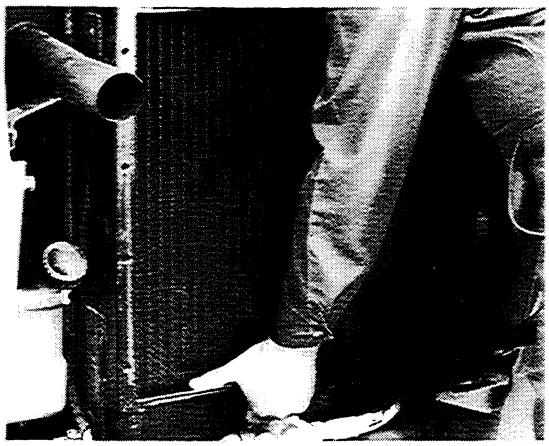
8. Loosen and remove the cap screws, bolts, lock washers, flat washers, and nuts that hold the radiator in place.



515928R

1. *Cap Screws*
2. *Bolts*

9. Pull the radiator to the rear to disconnect the bottom radiator hose, and remove the radiator from the machine.



515930R

10. If the radiator is being removed for repair or cleaning:

a. Disconnect the hose from the fill opening on the radiator.

b. Loosen and remove the cap screws, lock washers, and flat washers that fasten the clamps for the hose and the fan shroud to the radiator.

c. Remove the hose and fan shroud from the radiator.

SPARK ARRESTER MUFFLER

The laws of some states and provinces make it necessary to install a spark arrester muffler on this machine. If this machine has a spark arrester muffler, a pipe plug is installed on the bottom of the muffler toward the front of the machine.

If this machine has a spark arrester muffler, the replacement muffler must be a spark arrester muffler.

Clean the spark arrester muffler every 100 hours of operation.

1. Apply the parking brake.

2. Disconnect the wire from the fuel shutoff solenoid at the bottom of the fuel injection pump.

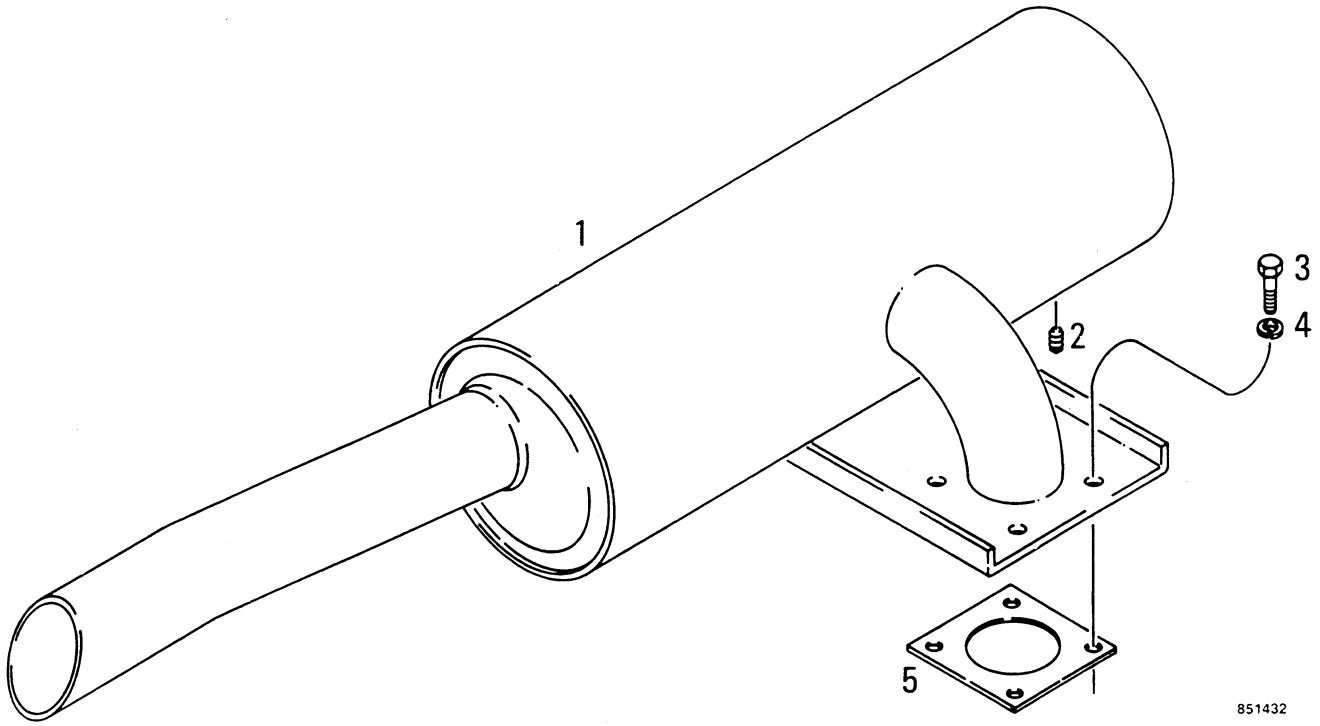
3. Loosen and remove the pipe plug from the bottom of the spark arrester muffler. If a new pipe plug is required, the pipe plug must be brass.

4. Have another person close the opening in the exhaust pipe.

5. Hold the key switch in the START position for 30 seconds to remove the carbon from the muffler.

6. Install and tighten the pipe plug.

7. Connect the wire to the fuel shutoff solenoid at the bottom of the fuel injection pump.



1. *Muffler, Standard or Spark Arrester*
2. *Plug, Used With Spark Arrester Muffler*
3. *Cap Screw*
4. *Lock Washer*
5. *Gasket*

Camshaft

Type	Hardened Iron
Bushing (Front Only)	1, Replaceable
Bushing Lubrication:	
Front Bushing	Pressure Lubricated
Intermediate	Pressure Lubricated
Rear	Pressure Lubricated
Oil Clearance	0.076 to 0.152 mm
ID of No. 1 Bushing, Installed	54.107 to 54.133 mm
Maximum Service Limit	54.146 mm
ID of No. 1 Oversize (57.24 mm OD) Service Bushing	54.089 to 54.139 mm
Maximum Service Limit	54.146 mm
ID of No. 2, 3, 4 and 5 Service Bushing	54.089 to 54.139 mm
Maximum Service Limit	54.146 mm
Width of No. 1 Bushing	25.15 to 25.65 mm
Width of No. 2, 3, 4 and 5 Service Bushing	17.75 to 18.25 mm
Camshaft Bushing Journal OD	53.987 to 54.013 mm
Camshaft Bore Diameter in Block	
No. 1 Bushing	57.222 to 57.258 mm
No. 1 Oversize Bushing, Machine to	57.722 to 57.758 mm
No. 2, 3, 4 and 5, Less Bushings	54.089 to 54.139 mm
No. 2, 3, 4 and 5 Oversize for Bushings, Machine to	57.222 to 57.258 mm
Camshaft Thrust Thickness	9.42 to 9.58 mm
Minimum Service Limit	9.34 mm
Camshaft Thrust Clearance	0.130 to 0.340 mm
Maximum Service Limit	0.470 mm
Camshaft Lobes:	
Minimum Diameter at Peak Intake	47. 265 mm
Minimum Diameter at Peak Exhaust	46.994 mm

Turbocharger

Horizontal Travel of Turbine Shaft	0.10 to 0.16 mm

Gear Train

Backlash:	
Crankshaft Gear to Camshaft Gear	0.08 to 0.33 mm
Crankshaft Gear to Idler Gear	0.08 to 0.33 mm
Camshaft to Fuel Pump Gear	0.08 to 0.33 mm
Idler Gear to Oil Pump	0.08 to 0.33 mm
Camshaft to Auxiliary	0.08 to 0.33 mm
Maximum Service Limit (All Gears)	0.45 mm

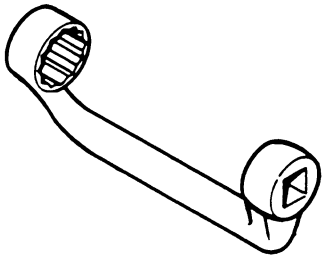
SPECIAL TOOLS

B902883J

CAS-1694 Injector Bore Cleaner (For 9 mm injectors)
CAS-2155 Injector Bore Cleaner (For 7 mm injectors)
This tool is first used on Page 28.

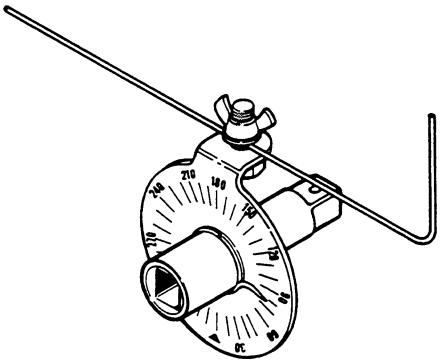
B902884J

CAS-1743 Valve Guide Reamer
This tool is first used on Page 14.



B902886J

CAS-1066A Head Bolt Wrench
This tool is first used on Page 36.



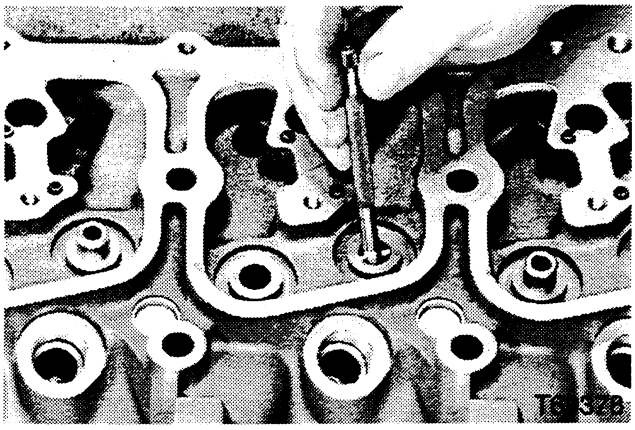
CAS-2162 Torque Angle Gauge
This tool first used on Page 31.

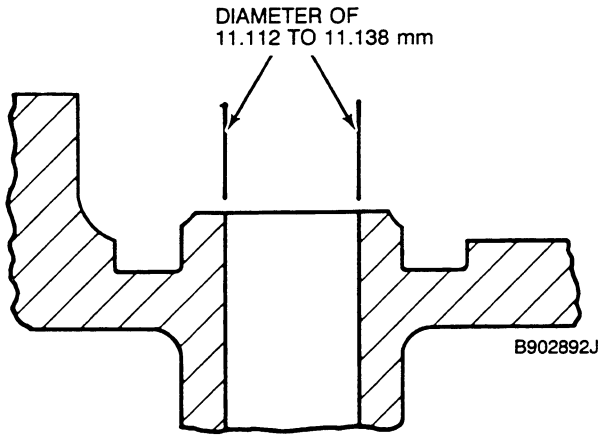
11 mm Replacement Valve Guides

· Specifications

Valve guide OD	11.150 to 11.163 mm
Bore cylinder head to	11.112 to 11.138 mm
Installed height above top of valve guide boss on cylinder head	11.25 to 11.75 mm

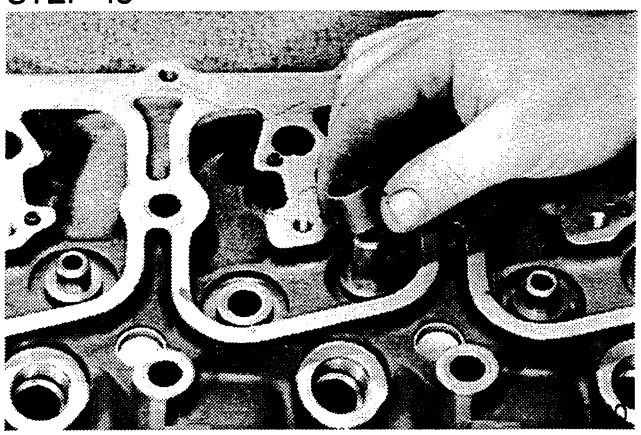
STEP 44

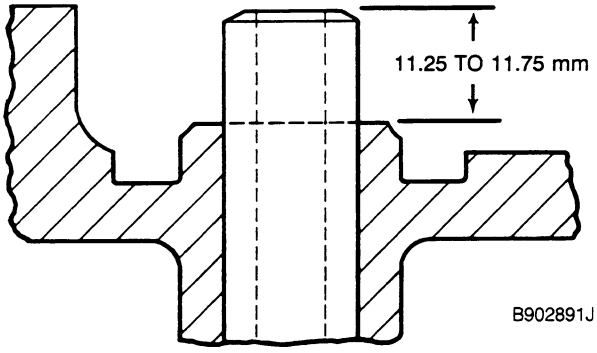




Drill the valve guide bores to 11.112 to 11.138 mm diameter.

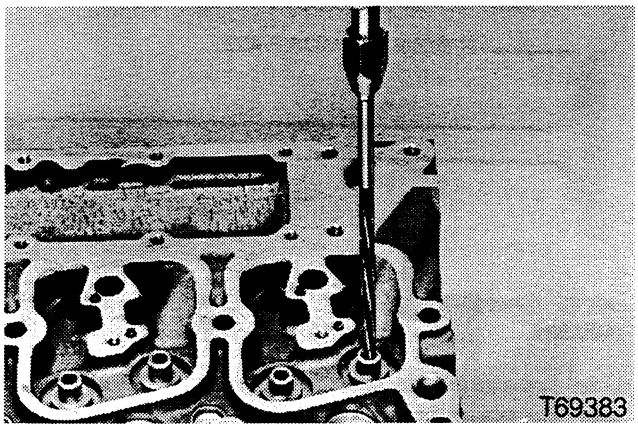
STEP 45





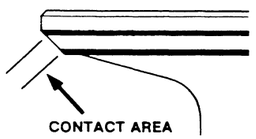
Make a bushing 16.038 mm ID x 11.25 to 11.75 mm long. Install the bushing over the new valve guide. Press the new valve guide into the cylinder head until the press contacts the bushing.

STEP 46

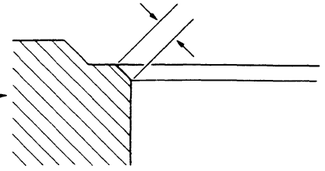


Drill the valve guides to a diameter of 8.0 mm. Ream the new valve guides to a finished diameter of 8.019 to 8.039 mm.

THIS IS THE CORRECT SEAT CONTACT AREA ON THE VALVE.



→ THE CORRECT EXHAUST VALVE CONTACT AREA ON THE SEAT WILL GIVE A SEAT WIDTH OF 1.47 TO 2.07 mm.



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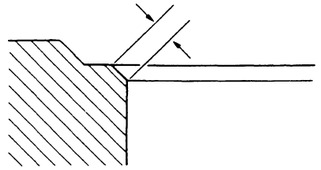
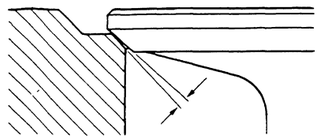


→ 1 DEGREE INTERFERENCE ANGLE

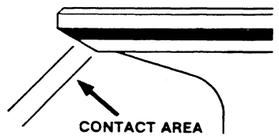


→ CORRECT REFACING OF EXHAUST VALVES AND VALVE SEATS WILL GIVE A 1 DEGREE INTERFERENCE ANGLE. THIS ANGLE IS IMPORTANT BECAUSE THE ANGLE GIVES ASSISTANCE IN CUTTING CARBON AND TO SEAT THE VALVES.

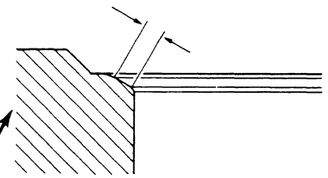
→ IF THE VALVE HEAD IS RECESSED MORE THAN 1.52 mm REPLACE THE VALVE AND INSTALL A VALVE SEAT.

30 DEGREE INTAKE VALVES ONLY

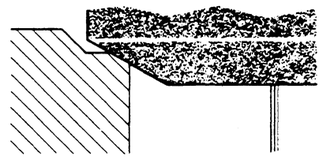
SEAT CONTACT AREA ON THE VALVE TO LOW



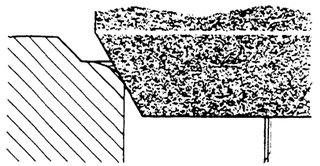
IF THE VALVE CONTACT AREA ON THE SEAT LOOKS LIKE THIS (A SEAT THAT HAS BEEN GROUND).



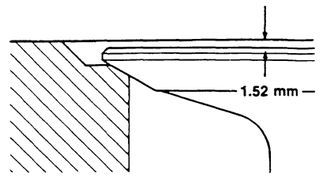
→ USE A 30 DEGREE STONE TO LIFT AND TO MAKE WIDER THE CONTACT AREA.



→ USE A 45 DEGREE OR 60 DEGREE STONE TO NARROW THE LOWER CONTACT AREA INCREASED BY THE 30 DEGREE STONE.

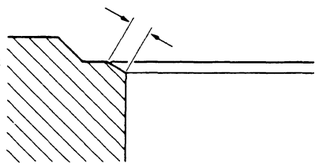


→ CHECK THAT THE VALVE HEAD IS NOT RECESSED MORE THAN 1.52 mm, BELOW THE CYLINDER HEAD SURFACE.

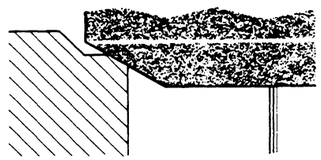


→ IF THE VALVE HEAD IS RECESSED MORE THAN 1.52 mm REPLACE THE VALVE AND INSTALL A VALVE SEAT.

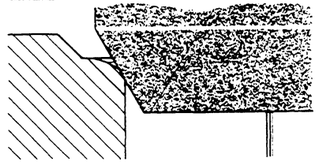
IF THE VALVE CONTACT AREA ON THE SEAT LOOKS LIKE THIS.



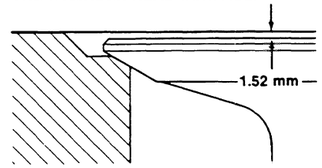
→ USE A 30 DEGREE STONE TO LIFT THE CONTACT AREA.



→ USE A 45 DEGREE OR 60 DEGREE STONE TO NARROW THE LOWER CONTACT AREA.



→ CHECK THAT THE VALVE HEAD IS NOT RECESSED MORE THAN 1.52 mm BELOW THE CYLINDER HEAD SURFACE.

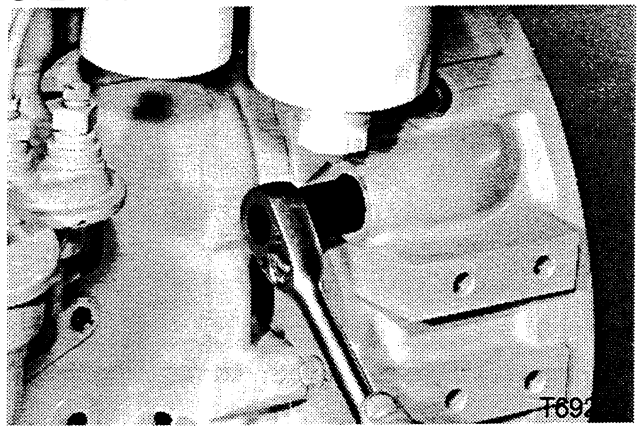


→ IF THE VALVE HEAD IS RECESSED MORE THAN 1.52 mm REPLACE THE VALVE AND INSTALL A VALVE SEAT.

B902910J

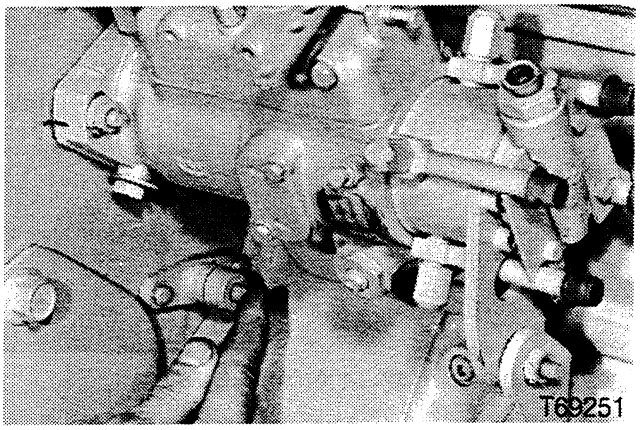
LOCATING TOP CENTER

STEP 98



Install the engine rotating tool into the flywheel housing. Rotate the engine four revolutions to make sure the push rods are seated correctly.

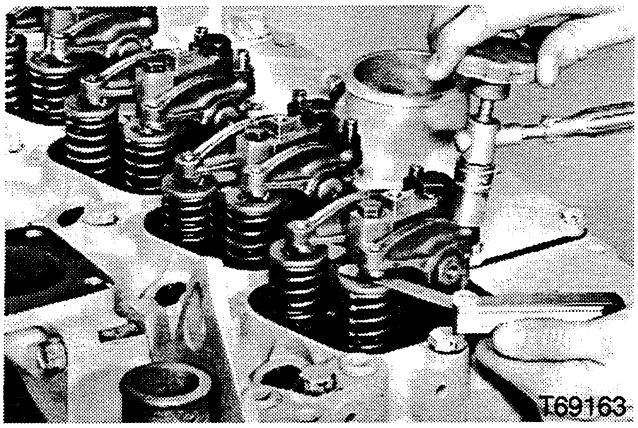
STEP 99



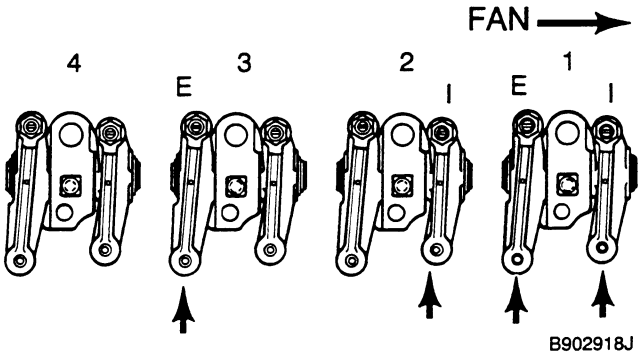
While turning the engine, push the lock pin in. When the lock pin moves into the camshaft gear the engine will be at top center.

ADJUSTING THE ROCKER ARM TO VALVE CLEARANCE
Cold Setting

STEP 100



Check and adjust the intake and exhaust valves as the arrows show below.

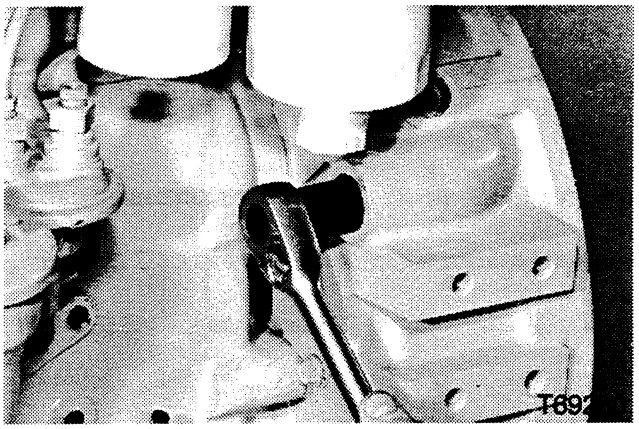


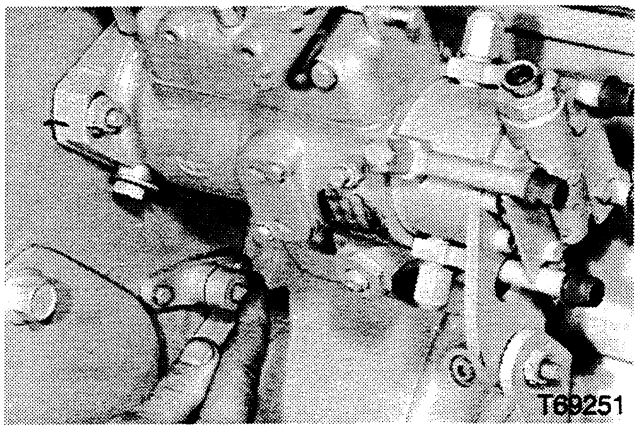
Number one cylinder top center compression stroke.

Valve Clearance, Cold: Intake Valves - 0.254 mm

Exhaust Valves - 0.508 mm

STEP 101





Install the engine rotating tool. Move the engine a small amount in each direction. Pull the lock pin out.

PISTON PIN

OD of Pin	39.997 to 40.003 mm
Minimum Service Limit	39.990 mm

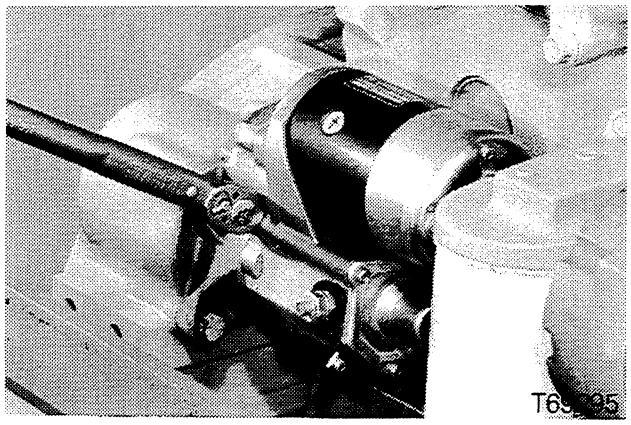
CONNECTING ROD

Bushing ID installed	40.053 to 40.067 mm
Maximum Service Limit	40.092 mm
Journal ID Without Bearing Liners	72.987 to 73.013 mm
Bearing Oil Clearance	0.038 to 0.116 mm
Maximum Service Limit	0.129 mm
Side Clearance	0.100 to 0.300 mm
Maximum Service Limit	0.330 mm
Bolt (Maximum Length)	59.25 mm

CRANKSHAFT

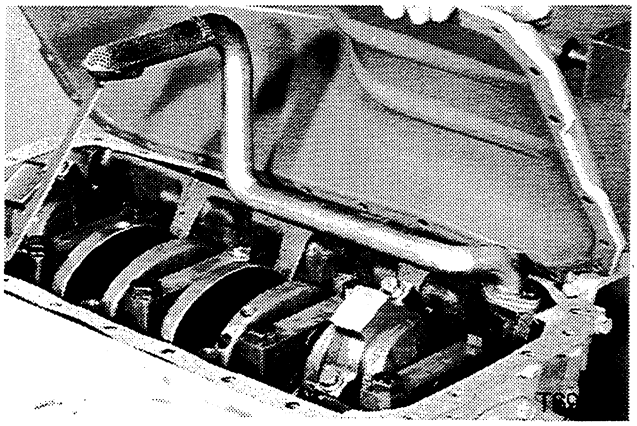
End Clearance, Center Main Bearing Cap	0.041 to 0.119 mm
Center Main Bearing Thrust Surface Thickness	2.50 mm
Connecting Rod Journal Standard OD	68.987 to 69.013 mm
Maximum Service Limit	68.962 mm
0.25 mm OD Undersize, Grind to	68.737 to 68.763 mm
0.50 mm OD Undersize, Grind to	68.487 to 68.513 mm
0.75 mm OD Undersize, Grind to	68.237 to 68.263 mm
1.00 mm OD Undersize, Grind to	68.987 to 68.013 mm
Connecting Rod Journal Maximum Taper	0.013 mm
Connecting Rod Journal Out of Round Maximum	0.050 mm
Main Bearing Oil Clearance	0.041 to 0.119 mm
Maximum Service Limit	0.140 mm
Main Bearing Journal Standard OD	82.987 to 83.013 mm
Maximum Service Limit	82.962 mm
0.25 mm OD Undersize, Grind to	82.737 to 82.763 mm
0.50 mm OD Undersize, Grind to	82.487 to 82.513 mm
0.75 mm OD Undersize, Grind to	82.237 to 82.263 mm
1.00 mm OD Undersize, Grind to	81.987 to 82.013 mm
Main Bearing Journal Bore ID No Liners	87.982 to 88.018 mm
Maximum Service Limit	88.031 mm
Bolt (Maximum Length)	119.25 mm

STEP 37



Install the starter and tighten the bolts to a torque of 39 to 47 Nm.

STEP 38



Install the engine oil pan. See Section 2445 for oil pan installation.

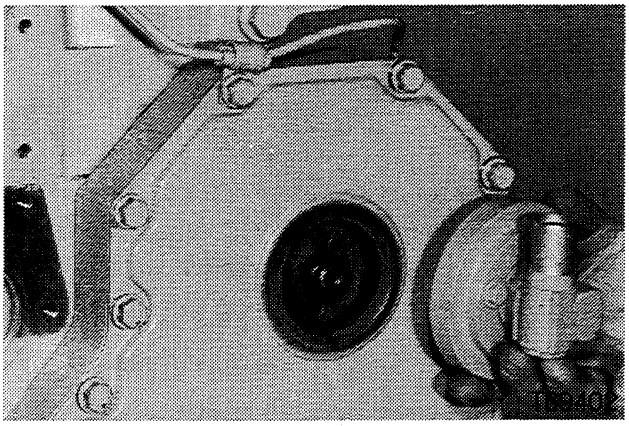
FRONT OIL SEAL AND WEAR SLEEVE INSTALLATION

Used when crankshaft flange is worn and standard seal does not stop oil flow.

STEP 39

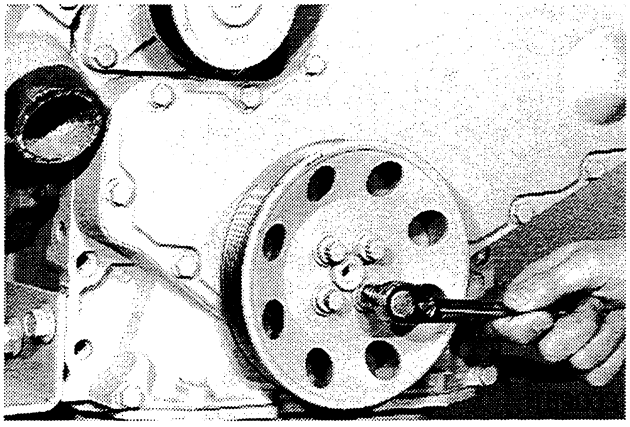
Lift the belt tensioner and remove the fan belt.

STEP 40



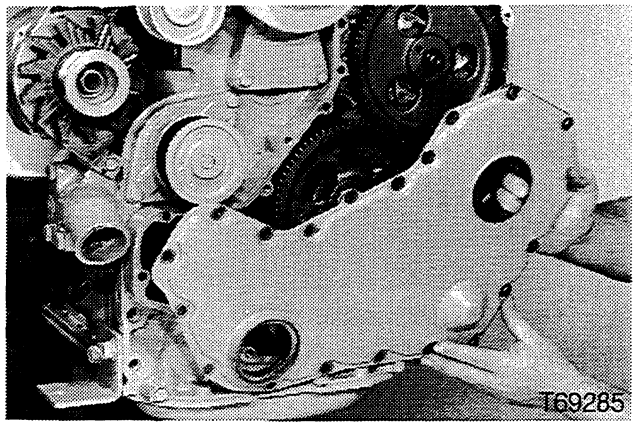
Remove the tachometer drive, if equipped.

STEP 41



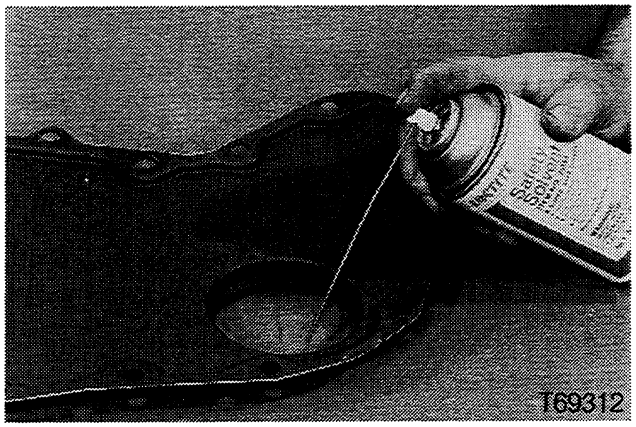
Remove the bolts from the crankshaft pulley and remove the crankshaft pulley.

STEP 42



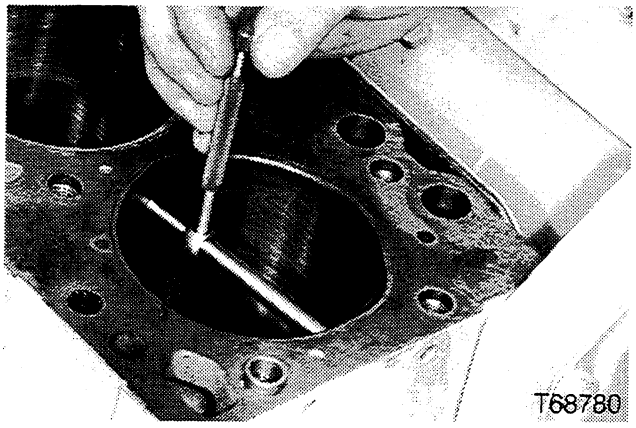
Remove the bolts and the front cover.

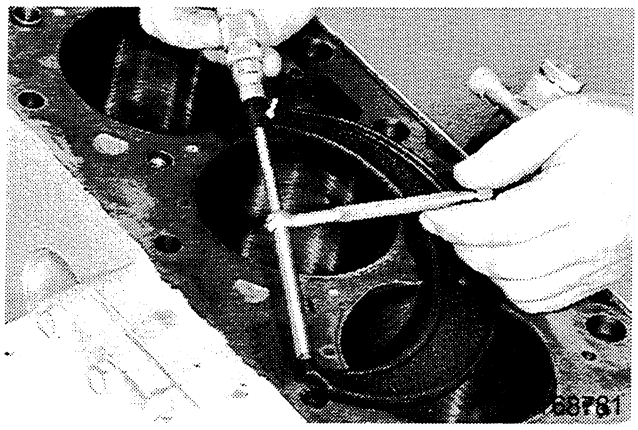
STEP 43



Remove the oil seal and clean the seal surface with Loctite safety solvent.

STEP 87





Measure the cylinder wall bores for out-of-round as follows:

1. Measure the bore parallel to the crankshaft at the top end of the ring travel.

2. Measure the bore in the same position at the bottom end of the ring travel.

3. Measure the bore at right angles to the crankshaft at the top end of the ring travel.

4. Measure the bore in the same position at the bottom end of the ring travel.

Compare the measurements (1) and (3) to find the out-of-round wear at the top end of the bore.

Compare the measurements (2) and (4) to find the out-of-round wear at the bottom of the bore.

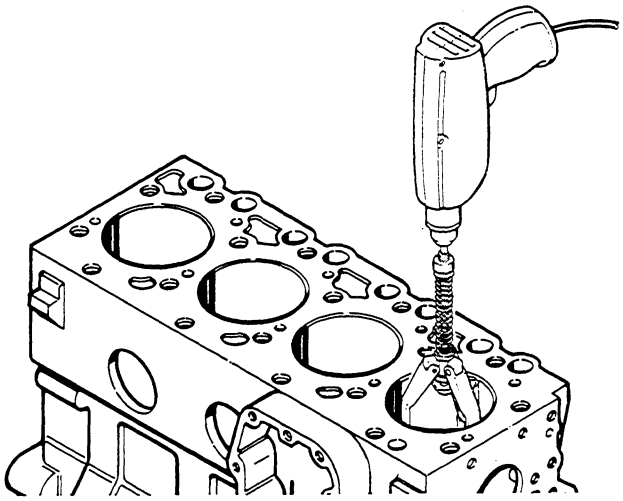
If out-of-round is more than 0.038 mm, bore the cylinders. See reconditioning the cylinder block.

STEP 88

Measure the cylinder bores. See specifications on Page 4. If the cylinder bore is more than 102.116 mm, the cylinders must be bored. See reconditioning the cylinder block.

STEP 89

IMPORTANT: *Before removing glaze, cover the crankshaft journals with a clean cloth to prevent abrasives and dirt caused by the cylinder hone from falling on the crankshaft.*



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If new rings are used, the glaze must be removed from the cylinder bore so that the piston rings can correctly seat against the cylinder wall during the run-in time. It is recommended that a qualified engine repair shop do this work.

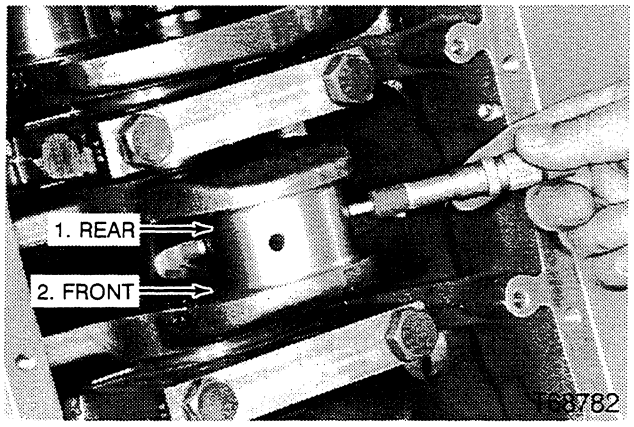
Removing glaze can be done by using a cylinder hone with 250 to 300 grit stone.

Too much glaze (smooth surface) on cylinder walls of a new engine or an engine with an overhaul is caused by run-in procedure that is not correct.

Glaze does not permit the piston rings to seat correctly in the cylinder sleeves. This will cause too much oil consumption.

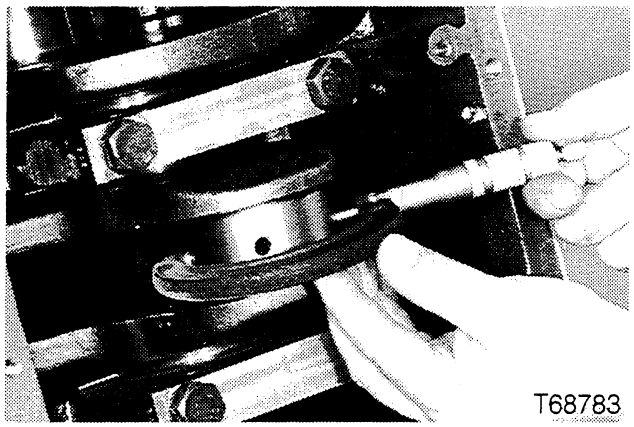
Too much glaze on the cylinder walls can be prevented by giving your customer instructions in the correct run-in procedure. See Section 2402 in the service manual for the correct run-in procedure.

STEP 125



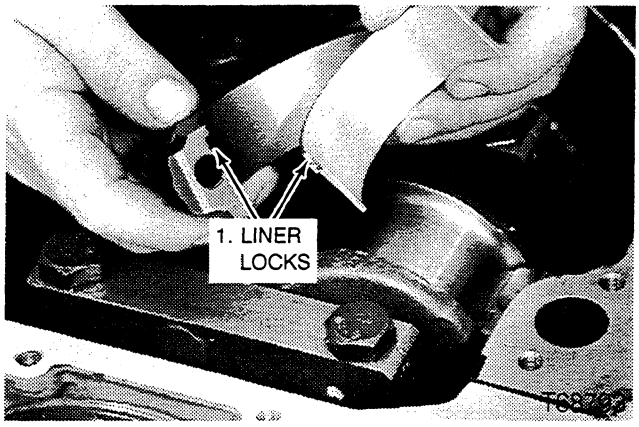
Measure the connecting rod journals on the crankshaft. Each journal must be a minimum of 68.962 mm in diameter. Measure the front and rear of each journal, checking for taper. If the taper is more than 0.013 mm or the journal is less than 68.962 mm, reconditioning of the journals must be done.

STEP 126



The connecting rod journals must be checked again, 90 degrees from the first measurements for out-of-round. If out-of-round is more than 0.050 mm, reconditioning of the journals must be done.

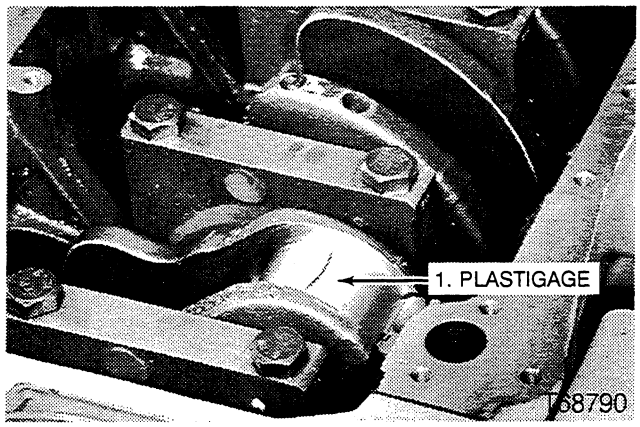
STEP 127



Install the liners. The liner locks must be in alignment.

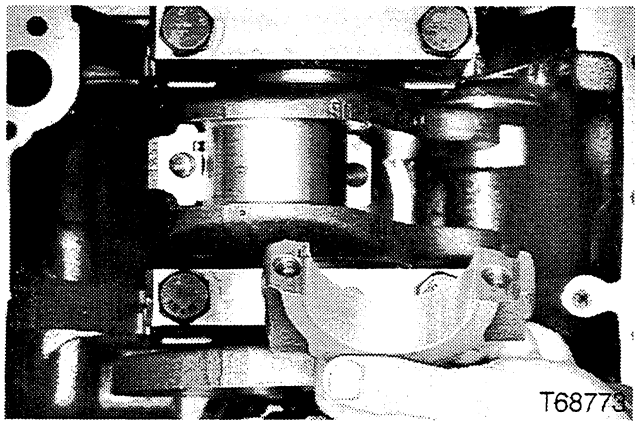
NOTE: *When installing the liners, make sure that the liner locks are in alignment. Use a sliding type movement when installing the liners. Never push on the center of the liner locks.*

STEP 128



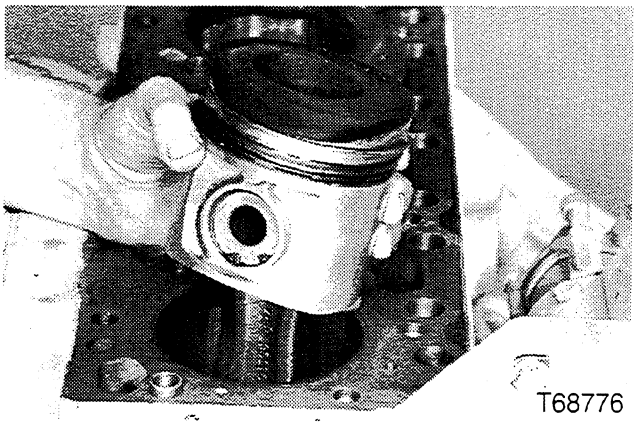
Clean the connecting rod journals and the rod bearing liners. Put a piece of plastigage on the crankshaft journal.

STEP 178



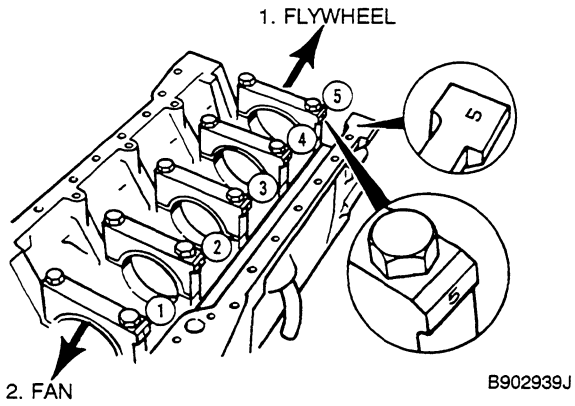
Remove the bolts and the connecting rod bearing caps.

STEP 179



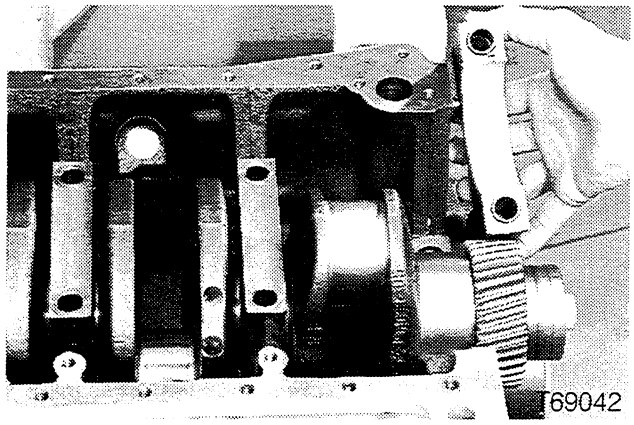
Remove the pistons and connecting rods.

STEP 180



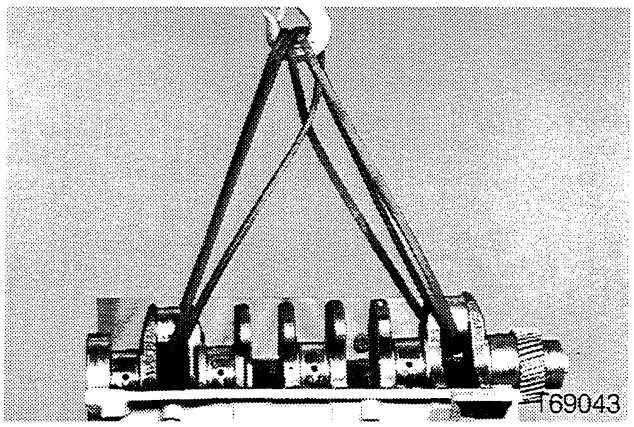
Each bearing cap has a number for assembly identification.

STEP 181



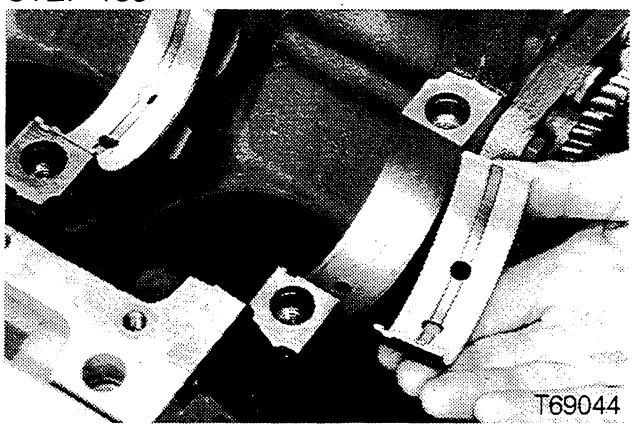
Remove the bolts and the crankshaft main bearing caps.

STEP 182



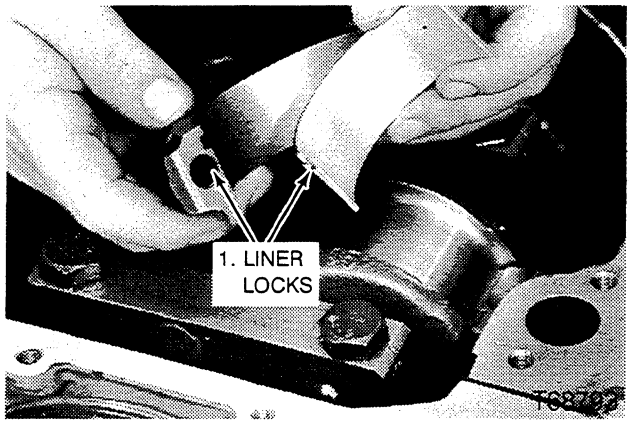
Remove the crankshaft from the engine.

STEP 183



Remove the main bearing liners from the engine.

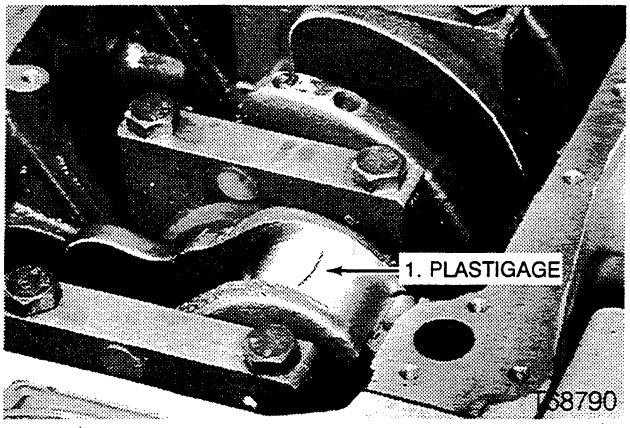
STEP 229



Install the bearing liners on the connecting rods and rod caps.

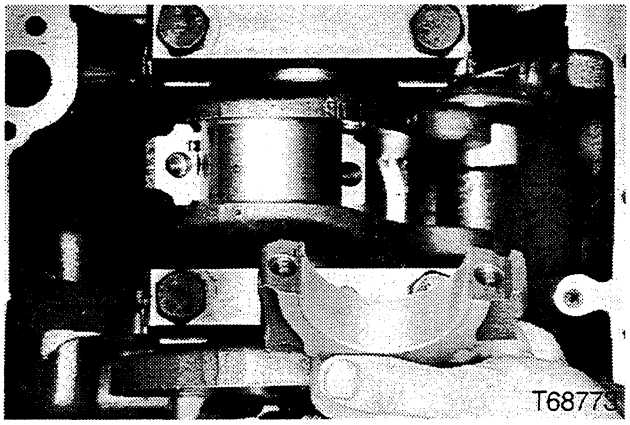
IMPORTANT: *Make sure the liner locks are aligned when installing the liners. Use a sliding type movement when installing the liners. Never push on the center of the liners.*

STEP 230



Clean the connecting rod journals and the bearing liners. Put a piece of plastigage on the crankshaft journals.

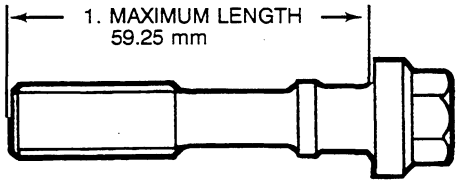
STEP 231



Install the bearing caps.

NOTE: *Make sure the number on the bearing cap is equal to the number on the connecting rod.*

STEP 232

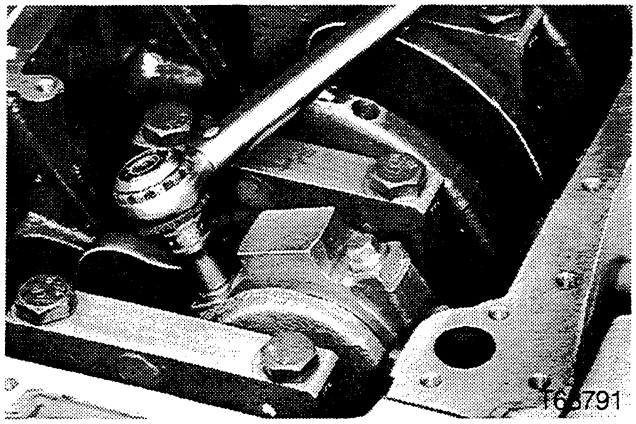


7L92

Measure the length of the connecting rod bolts. If the bolt length is more than 59.25 mm the bolt must be replaced.

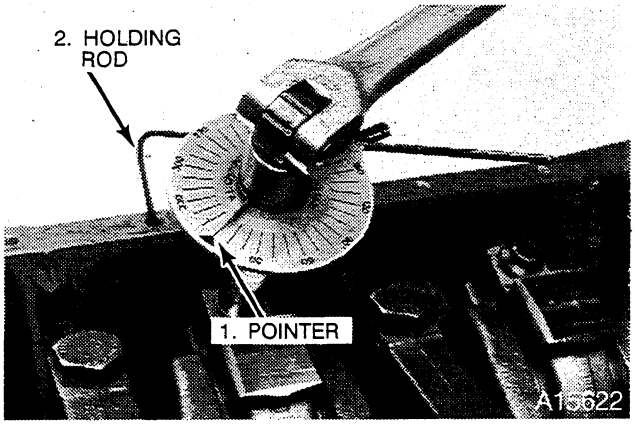
IMPORTANT: *Each bolt length must be checked before installation.*

STEP 233



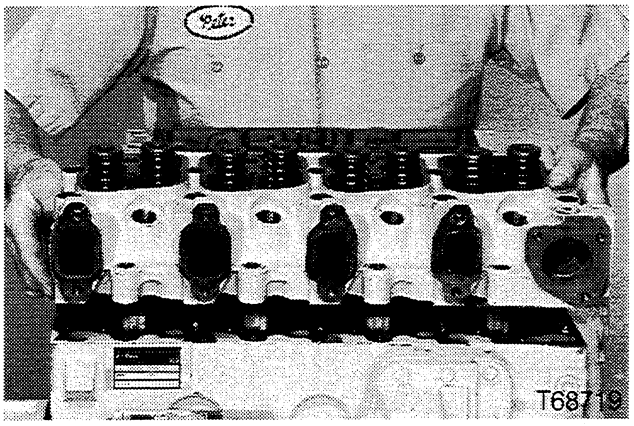
Tighten the connecting rods to a torque of 60 Nm.

STEP 234



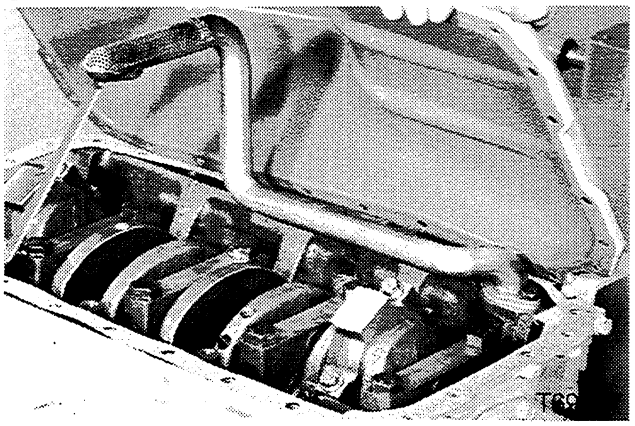
Install the torque angle gauge. Position and lock the holding rod. Turn the pointer to 60 degrees. Tighten the bolt until the pointer is at 0 degrees.

STEP 283



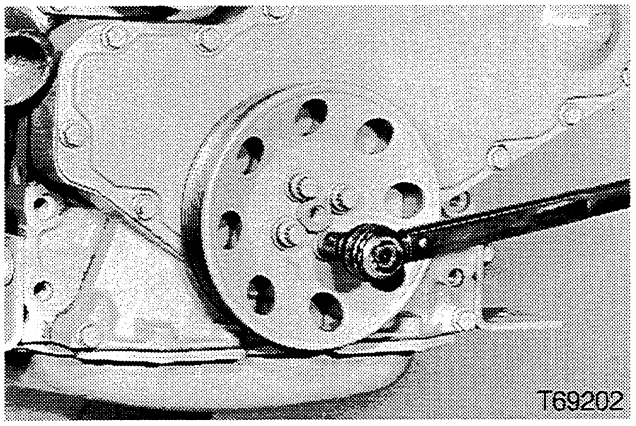
Install the cylinder head. See Section 2415 for cylinder head installation.

STEP 284



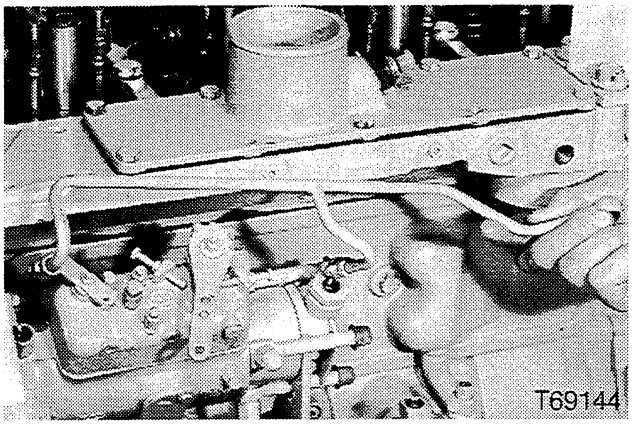
If the engine oil pan was removed, see Section 2445 in the service manual for installation.

STEP 285



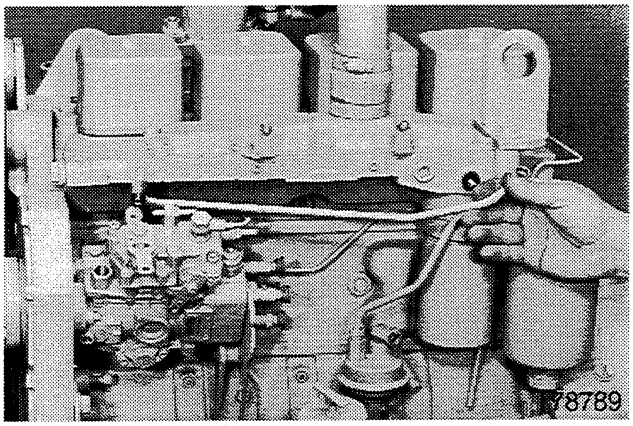
Install the front crankshaft pulley and tighten the bolts to a torque of 120 to 130 Nm.

STEP 286 CAV INJECTION PUMP



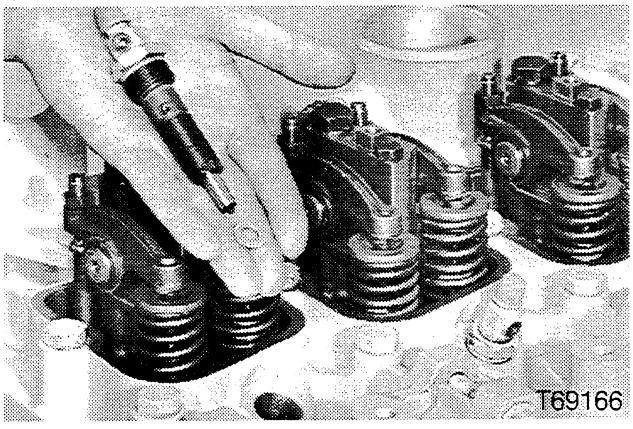
See Section 3414 in the service manual to install the injection pump fuel lines.

STEP 287 BOSCH INJECTION PUMP



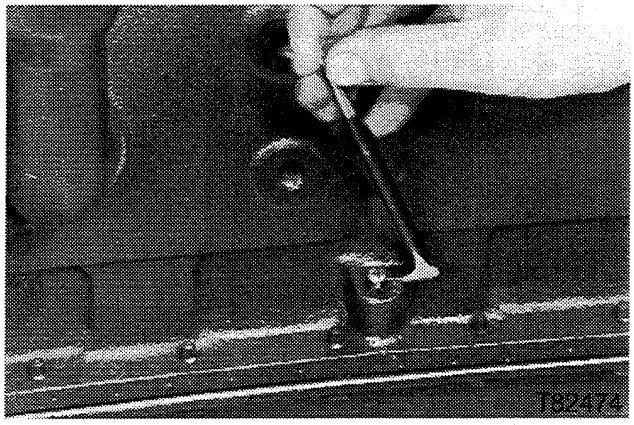
See Section 3415 in the service manual to install the injection pump fuel lines.

STEP 288



See Section 3413 in the service manual to install the fuel injectors.

STEP 323



Install a screw in the expansion plug and pull the expansion plug out of the cylinder block.

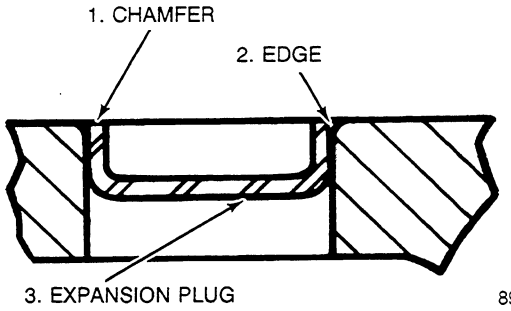
STEP 324

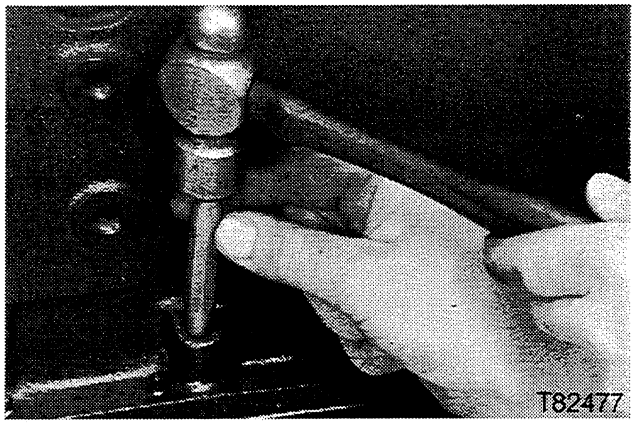
Use Loctite safety solvent to clean the sealing surface of all foreign material.

STEP 325

Apply Loctite 277 to the sealing surface of the expansion plug.

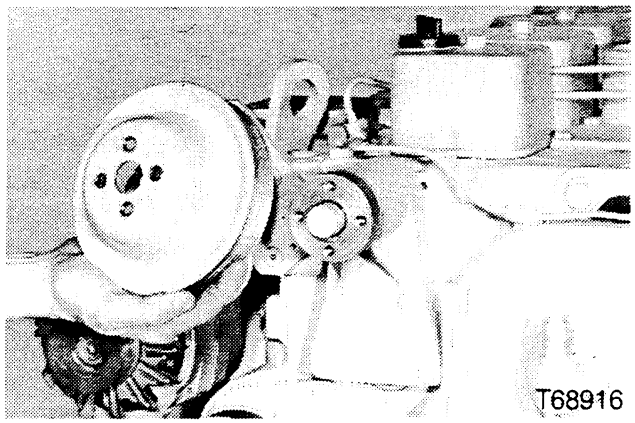
STEP 326





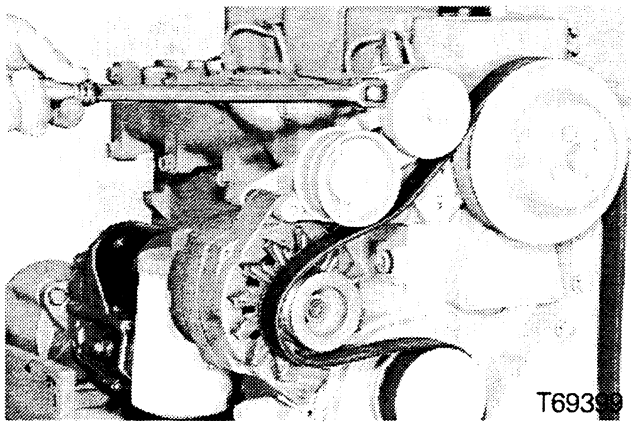
Install the expansion plug into the cylinder block until the top edge of the expansion plug is even to the bottom edge of the chamfer.

STEP 16



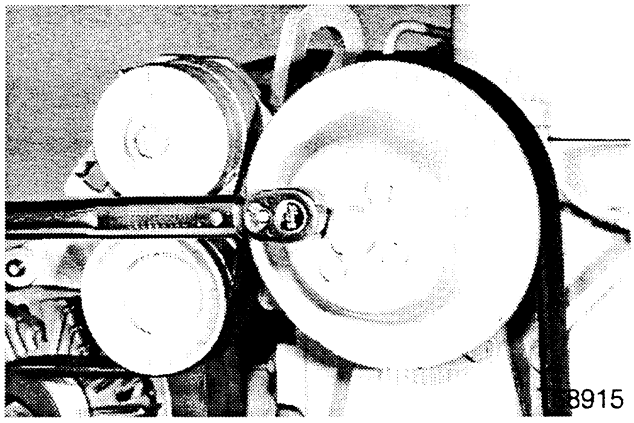
Install the fan pulley and the retaining bolts.

STEP 17



Lift the fan belt tensioner pulley and install the fan belt.

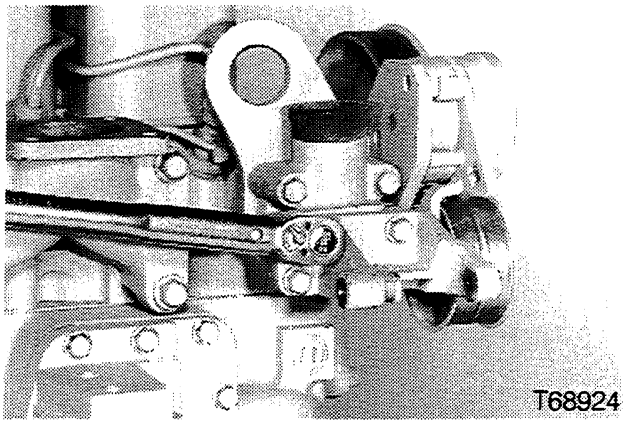
STEP 18



Tighten the fan pulley retaining bolts to a torque of:

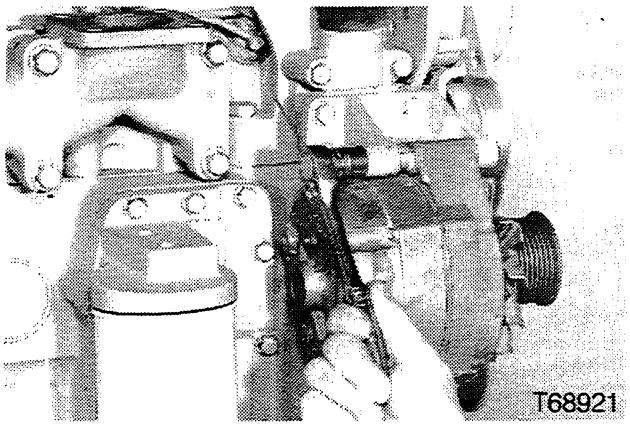
Grade 8.8 Size M8	26 to 31 Nm
Grade 10.9 Size M8	37 to 43 Nm
Grade 8.8 Size M10	51 to 62 Nm
Grade 10.9 Size M10	51 to 62 Nm

STEP 16



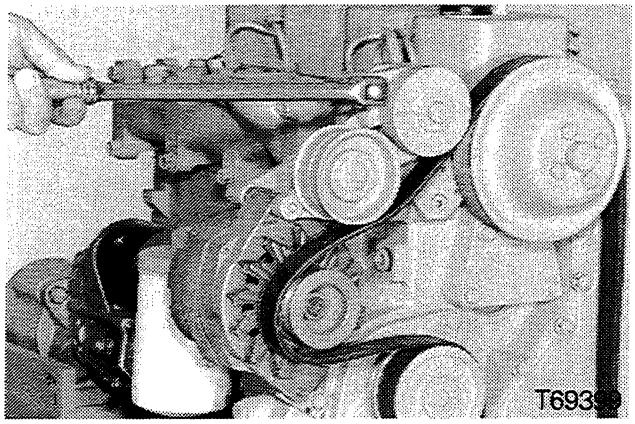
Install the alternator bracket and tighten the retaining bolts to a torque of 21 to 27 Nm.

STEP 17



Install the alternator and tighten the retaining bolts.

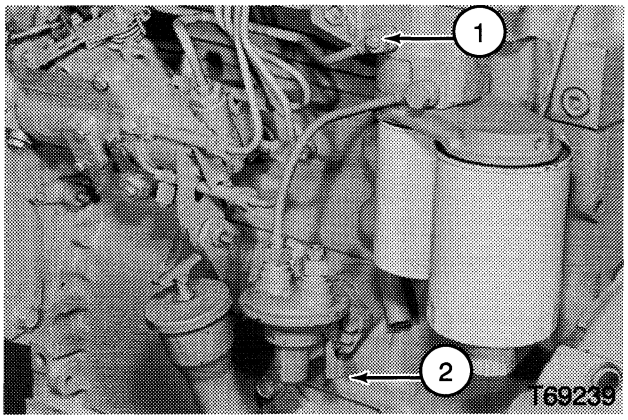
STEP 18



Lift the belt tensioner pulley and install the fan belt.

BLEEDING AIR FROM THE FUEL SYSTEM

STEP 5 4-390 ENGINE

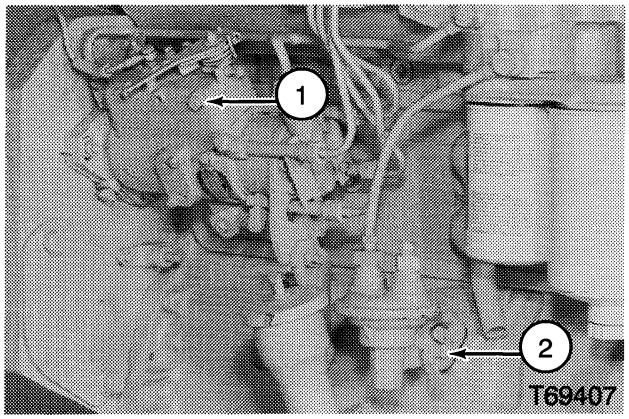


1. Bleed Screw
2. Primer Pump

Make sure there is fuel in the fuel tank. Loosen the bleed screw and actuate the primer pump. Tighten the bleed screw when clear fuel with no air bubbles flows from the bleed screw.

NOTE: *If the primer pump can not be actuated, rotate the engine until the primer pump can be actuated.*

STEP 6 4-390 ENGINE

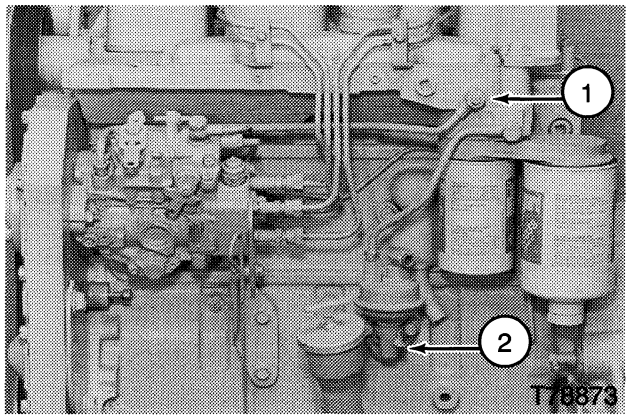


1. Bleed Screw
2. Primer Pump

Put the key switch in the ON position. Loosen the bleed screw on the fuel injection pump. Actuate the primer pump. Tighten the bleed screw when clear fuel with no air bubbles flows from the bleed screw.

NOTE: *If the primer pump can not be actuated, rotate the engine until the primer pump can be actuated.*

STEP 7 4T-390 ENGINE

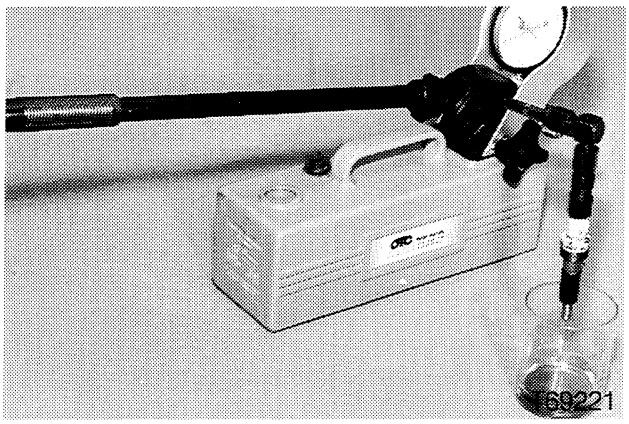


1. Bleed Screw
2. Primer Pump

Make sure there is fuel in the fuel tank. Loosen the bleed screw and actuate the primer pump. Tighten the bleed screw when clear fuel with no air bubbles flows from the bleed screw.

NOTE: *If the primer pump can not be actuated, rotate the engine until the primer pump can be actuated.*

FUEL INJECTOR TESTER



A Diesel Fuel Injection Nozzle Tester, OEM 1064, is needed for checking and adjusting the injectors. The following instructions will work for all models of testers except for descriptions on adjustments to the tester. Operating instructions are given with the tester.

The tester is used to make the following checks:

1. Check and adjust the injector opening pressure.
2. Check the injector assembly for fuel leakage.
3. Check the injector for accurate spring pattern.

Fuel injectors must be checked on the tester when making the following service operations:

1. An injector that has been removed from the engine for cleaning, must be checked on the tester before the injector can be installed in the engine.
2. A new injector assembly must be checked on the tester before the injector can be installed in the engine.
3. All the injectors must be removed and checked on the tester during an engine overhaul.
4. An injector must be removed and checked on the tester before the injector is disassembled, if the injector is the cause of engine performance that is not acceptable.

Nozzle Tester Preparation

1. Fill the reservoir with clean fuel.
2. Connect the correct connectors to the connection tube.
3. Connect the injector to the tester.
4. To remove the air that is in the system, close the pressure release valve and the gauge protection valve, open the pump. Operate the pump rapidly to remove the air from the system.

Section

3414

CAV FUEL INJECTION PUMP

Pump Drive Gear, Fuel ShutOff Primer Pump and Pump Timing

4-390 Diesel Engine

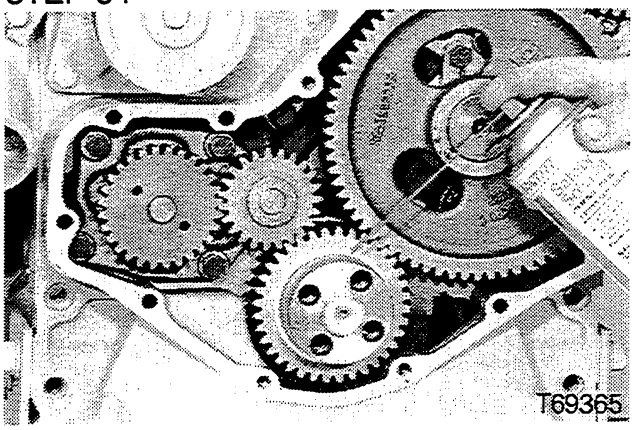
IMPORTANT: This engine was made using the metric measurement system. All measurements and checks must be made with metric tools to make sure of an accurate reading when inspecting parts.

CASE CORPORATION

Rac 7-37131

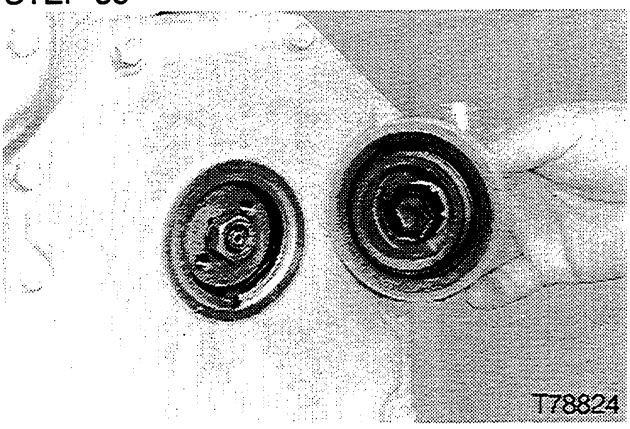
February, 1991 (Revised February, 1992)

STEP 34



Clean the sealing surface of the crankshaft with Loctite Solvent. Refer to Section 2425 to install the timing gear front cover and oil seal.

STEP 35



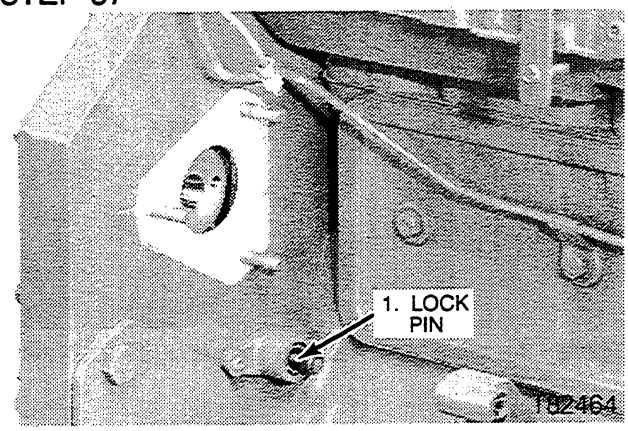
Install the tachometer drive assembly (if equipped).

STEP 36

Lift the belt tensioner and install the fan belt.

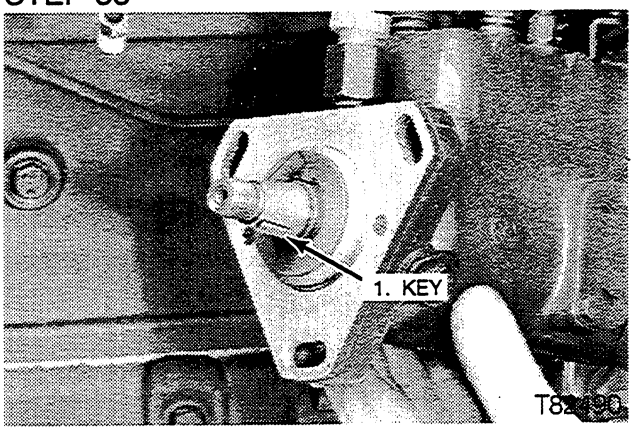
INJECTION PUMP TIMING

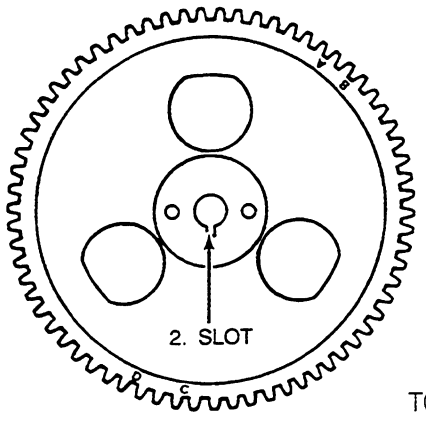
STEP 37



Make sure the lock pin is engaged in the camshaft gear.

STEP 38





TG3414

If the pump shaft is not in the locked position, rotate the shaft clockwise until the key on the shaft and the slot in the drive gear are aligned.

ALTERNATOR

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. Hold the belt tightener out of the way and remove the drive belt from the pulley.

6. Pull the boot away from the B+ terminal of the alternator.

7. Remove the nut and lock washer from the B+ terminal.

8. Remove the wire from the B+ terminal.

9. Disconnect the connectors for the wiring harness from the alternator.

10. Loosen the cap screw at the top of the alternator.

11. Remove the cap screw that fastens the mounting link to the bottom of the alternator.

12. Hold the alternator and remove the cap screw, lock washer, and flat washer at the top of the alternator.

13. Remove the alternator.

Installation

1. Hold the alternator in alignment with the mounting bracket and install the cap screw, lock washer, and flat washer at the top of the alternator. Do not tighten the cap screw.

2. Install the cap screw that fastens the mounting link to the bottom of the alternator.

3. Tighten both of the cap screws.

4. Connect the connectors to the alternator.

5. Install the wire on the B+ terminal.

6. Install the lock washer and nut on the B+ terminal.

7. Install the boot over the B+ terminal.

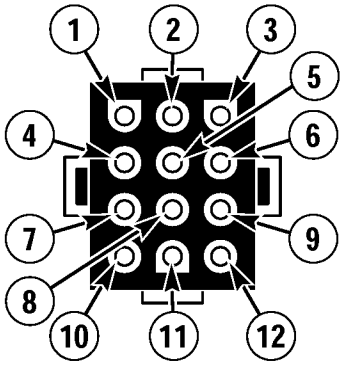
8. Hold the belt tightener out of the way and install the drive belt on the pulley.

9. Connect the negative battery cable to the battery.

10. Close the battery cover.

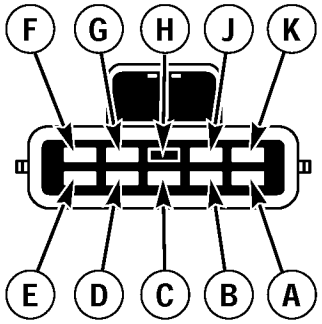
INSTRUMENT PANEL HARNESS CONNECTORS

OLDER INSTRUMENT PANEL HARNESS CONNECTOR



HI01B001

NEWER INSTRUMENT PANEL HARNESS CONNECTOR



HI01B002

OLDER PANEL PIN NUMBER	CIRCUIT/FUNCTION	NEWER PANEL PIN NUMBER
1	ENGINE COOLANT TEMPERATURE	J
2	HYDRAULIC OIL TEMPERATURE	D
3	FUEL LEVEL	C
4	12 VDC	B
5	ALTERNATOR	A
6	PLUGGED	
7	GROUND	K
8	ENGINE OIL PRESSURE	E
9	PLUGGED	
10	PLUGGED	H
11	HYDRAULIC FILTER RESTRICTION	G
12	AIR FILTER RESTRICTION	F

Fuel Solenoid

1840 Before P.I.N. JAF0223014, 1845C Before P.I.N. JAF0250483

CHECK POINTS	GOOD READING	POSSIBLE CAUSE OF BAD READING
Check between the housing of the fuel solenoid and ground	Continuity	Bad ground connection between the fuel solenoid and ground.
NOTE: *Put the key switch in the ON position.*		
Terminal for wire 12 and ground	12 volts	Bad circuit between the fuel solenoid and the key switch. Also check the key switch.
NOTE: *If the readings are good, replace the fuel solenoid.*		

Fuel Solenoid

1840 P.I.N. JAF0223014 through JAF0285318
1845C P.I.N. JAF0250483 through JAF0276092
and
P.I.N. JAF0276176 through JAF0276197

CHECK POINTS	GOOD READING	POSSIBLE CAUSE OF BAD READING
NOTE: *Disconnect connector C from the fuel solenoid.*		
Terminal for wire 23 and ground	Continuity	Bad ground circuit.
NOTE: *Put the key switch in the START position.*		
Terminal for wire 22 and ground	12 volts	Bad circuit between the fuel solenoid and the fuel pull-in relay. Also check the fuel pull-in relay.
NOTE: *Raise the seat bar to the UP position. Put the key switch in the ON position.*		
Terminal for wire 28 and ground	12 volts	Bad circuit between the fuel solenoid and the fuel solenoid timer relay. Also check the fuel solenoid timer relay.
NOTE: *If the readings are good, replace the fuel solenoid.*		

Fuel Solenoid

1840 P.I.N. JAF0285319 through JAF0286784
1845C P.I.N. JAF0276093 through JAF0277352
except
P.I.N. JAF0276176 through JAF0276197

CHECK POINTS	GOOD READING	POSSIBLE CAUSE OF BAD READING
Check between the housing of the fuel solenoid and ground	Continuity	Bad ground connection.
NOTE: *Raise the seat bar to the UP position. Put the key switch in the ON position.*		
Terminal for wire 28 and ground	12 volts	Bad circuit between the fuel solenoid and the fuel solenoid timer relay. Also check the fuel solenoid timer relay.
NOTE: *If the readings are good, replace the fuel solenoid.*		

Cold Start Switch

CHECK POINTS	GOOD READING	POSSIBLE CAUSE OF BAD READING
NOTE: *Put the key switch in the ON position.*		
Terminal for wire 132 to ground	12 volts	Bad circuit between the cold start switch and the key switch. Also check the key switch.
NOTE: *Disconnect the wires from the cold start switch. Push in and hold the cold start switch.*		
Terminal for wire 132 to terminal for wire 641	Continuity	Bad cold start switch.

Thermostart

CHECK POINTS	GOOD READING	POSSIBLE CAUSE OF BAD READING
Check between the housing of the thermostart and ground	Continuity	Bad ground connection.
Terminal for wire 641 and ground	Continuity	Bad thermostart.
NOTE: *Put the key switch in the ON position. Have another person push in and hold the cold start switch.*		
Terminal for wire 641 and ground	12 volts	Bad circuit between the thermostart and the cold start switch. Also check the cold start switch.

Key Switch

CHECK POINTS	GOOD READING	POSSIBLE CAUSE OF BAD READING
Terminal for wire 170 to ground	12 volts	Bad circuit between the key switch and the 40 amp circuit breaker. Also check the circuit breaker.
NOTE: *Disconnect the connector from the key switch. Turn the key switch to the ON position.*		
Between the BAT and IGN terminals of the key switch	Continuity	Bad key switch.
Between the BAT and ACC terminals of the key switch	Continuity	Bad key switch.
NOTE: *Hold the key switch in the START position.*		
Between the BAT and ST terminals of the key switch	Continuity	Bad key switch.
Between the BAT and IGN terminals of the key switch	Continuity	Bad key switch.
Between the BAT and ACC terminals of the key switch	Open	Bad key switch.

Right Signal Relay

CHECK POINTS	GOOD READING	POSSIBLE CAUSE OF BAD READING
Terminal for wire 178 (86) to ground	Continuity	Bad ground circuit.
NOTE: *Put the key switch in the ON position. Put the turn signal switch in the RIGHT TURN position.*		
Terminal for wire 756 (85) to ground	12 volts	Check the circuit and the diode between the right signal relay and the turn signal switch. Also check the turn signal switch.
Terminal for wire 757 (30) to ground	Intermittent 12 volts	Check the circuit between the right signal relay and the flasher. Also check the flasher.
Terminal for wire 757 (87) to ground	Intermittent 12 volts	Bad right signal relay.

Hazard Switch

CHECK POINTS	GOOD READING	POSSIBLE CAUSE OF BAD READING
Terminal for wire 178 to ground	Continuity	Bad ground circuit.
NOTE: *Put the key switch in the ON position.*		
Terminal for wire 751 to ground	12 volts	Check the circuit between the hazard switch and the 20 amp fuse in the accessory fuse block. Also check the fuse and the fuse block.
NOTE: *Put the hazard switch in the ON position.*		
Terminal for wire 758 to ground	12 volts	Bad hazard switch.

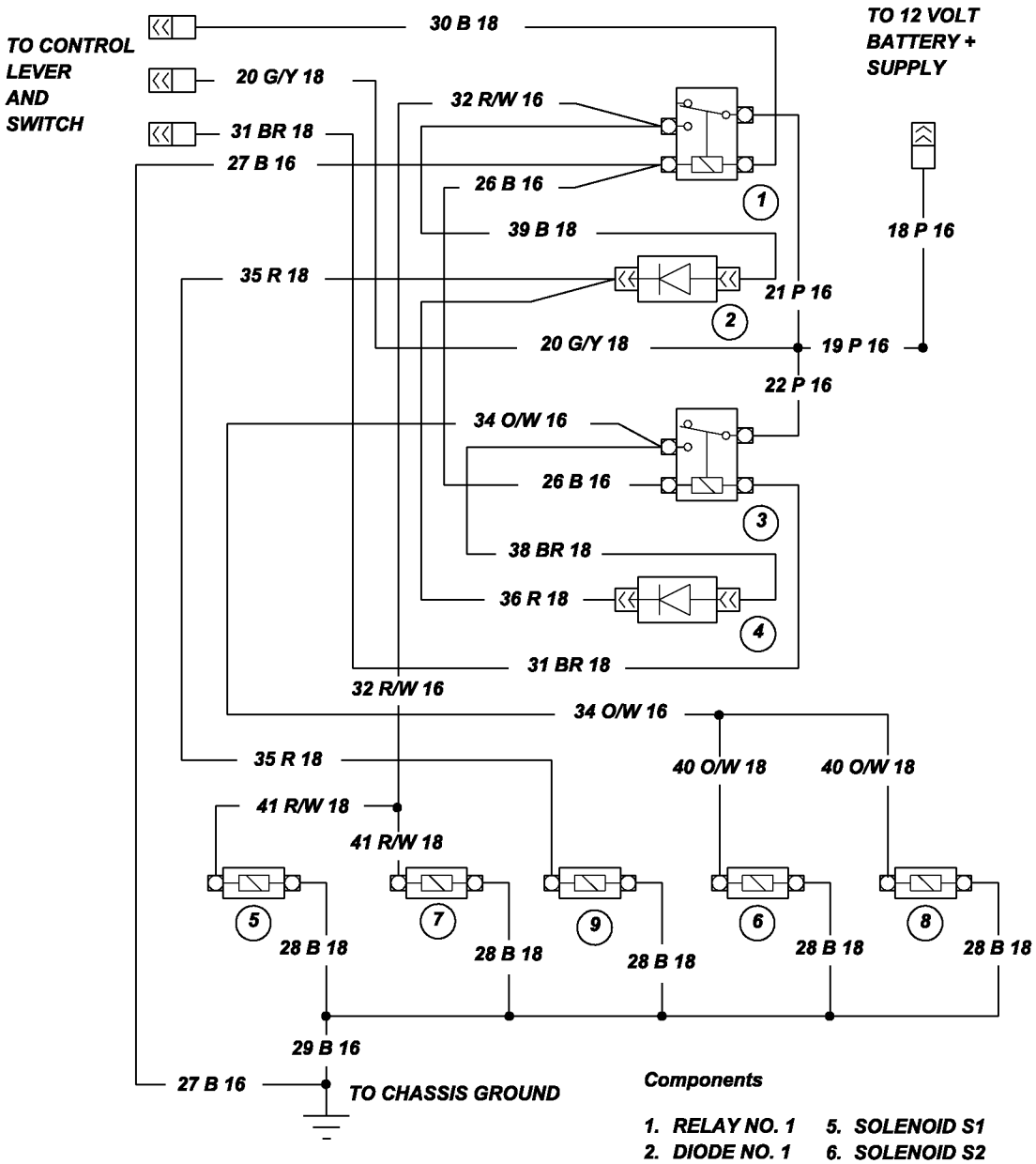
Turn Signal Indicator Light

CHECK POINTS	GOOD READING	POSSIBLE CAUSE OF BAD READING
Terminal for wire 178 to ground	Continuity	Bad ground circuit.
Between the terminals of the bulb	Continuity	Bad bulb.
NOTE: *Put the key switch in the ON position. Put the turn signal switch in a TURN position.*		
Terminal for wire 754 to ground	Intermittent 12 volts	Check the circuit between the turn signal indicator light and the flasher. Also check the flasher.

Turn Signal Switch

CHECK POINTS	GOOD READING	POSSIBLE CAUSE OF BAD READING
NOTE: *Put the key switch in the ON position.*		
Terminal for wire 751 to ground	12 volts	Check the circuit between the turn signal switch and the 20 amp fuse in the accessory fuse block. Also check the fuse and the fuse block.
NOTE: *Put the turn signal switch in the RIGHT turn position.*		
Terminal for wire 756 to ground	12 volts	Bad turn signal switch.
NOTE: *Put the turn signal switch in the LEFT turn position.*		
Terminal for wire 757 to ground	12 volts	Bad turn signal switch.

HIGH FLOW BI-DIRECTIONAL ELECTRICAL SCHEMATIC



Components

1. RELAY NO. 1
2. DIODE NO. 1
3. RELAY NO. 2
4. DIODE NO. 2
5. SOLENOID S1
6. SOLENOID S2
7. SOLENOID S3
8. SOLENOID S4
9. SOLENOID S5

HI01A003

4006

STARTER AND STARTER SOLENOID

TABLE OF CONTENTS

CASE CORPORATION

8-42910

Printed in U.S.A.
Issued March 1986

INSPECTION

All parts except the starter drive must be cleaned using mineral spirits and a brush or cloth. Use a clean, dry cloth to clean the starter drive.

Brushes and Brush Springs

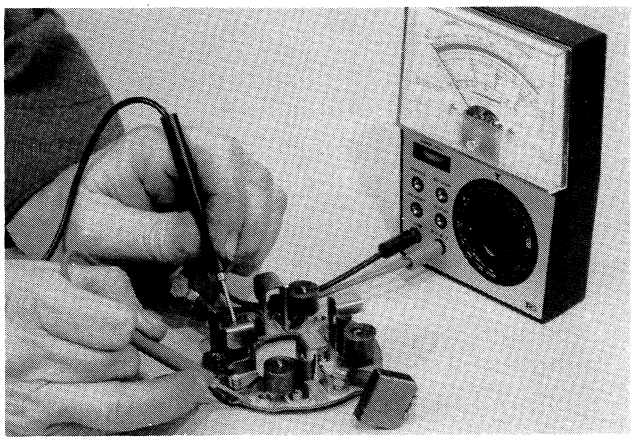
1. If the length of a brush fastened to the brush holder is less than 7/16 inch (11 mm), a new brush holder assembly must be used when the starter is assembled.

2. If the length of a brush fastened to the field coil is less than 7/16 inch (11 mm), a new field frame assembly must be used when the starter is assembled.

3. Use a spring scale to check the tension of the brush springs. Pull the brush spring up until the brush spring is just above the brush holder. The scale indication must be between 4 and 9 pounds (1.8 and 4.1 kg). If a brush spring is not as specified, use a new brush spring when the starter is assembled.

Brush Holder

1. Hold the leads of an ammeter against the frame and the brush holders that have insulation between the brush holder and frame.



313142

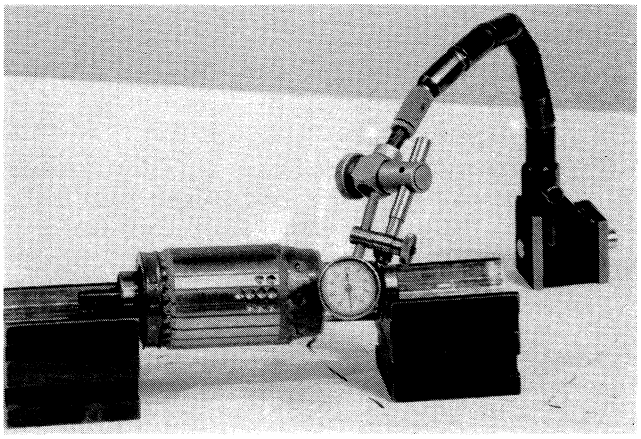
2. If there was an indication of a complete circuit, install a new brush holder.

Armature

1. Test the armature on an armature tester. Use the equipment manufacturer's instructions.

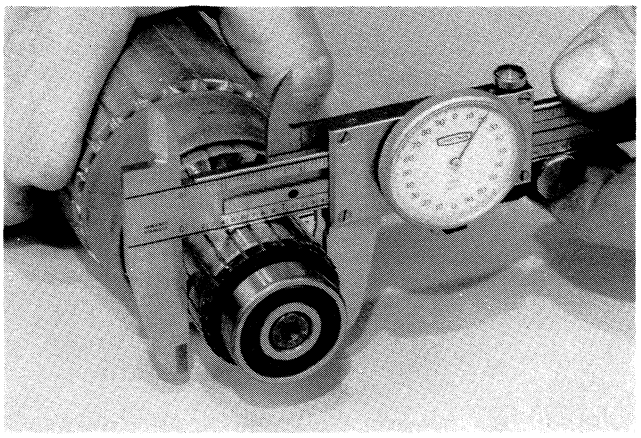
2. Put the armature on vee-blocks as shown and check the runout of the armature with a dial indicator. The runout must not be more than .002 inch (0.05 mm).

3. If necessary, put the armature in a lathe and remove enough material from the commutator to make the runout less than .002 inch (0.05 mm).



834918

4. Measure the diameter of the commutator. If the diameter is less than 1.38 inch (35 mm), install a new armature.



313141

5. If the depth of the groove between the commutator bars is less than .008 inch (0.2 mm), cut the insulation between the commutator bars to a depth of 1/64 to 1/32 inch (0.5 to 0.8 mm). Use sandpaper to remove the rough edges from the commutator bars.

6. Check the bearings on the armature for free rotation, rough balls, and damage to the inner race or outer race. If a bearing is to be replaced, use a press and acceptable tools to remove and install the bearings.

Section 4007

65 AMP ALTERNATOR A187873

CASE CORPORATION
700 State Street
Racine, WI 53404 U.S.A.

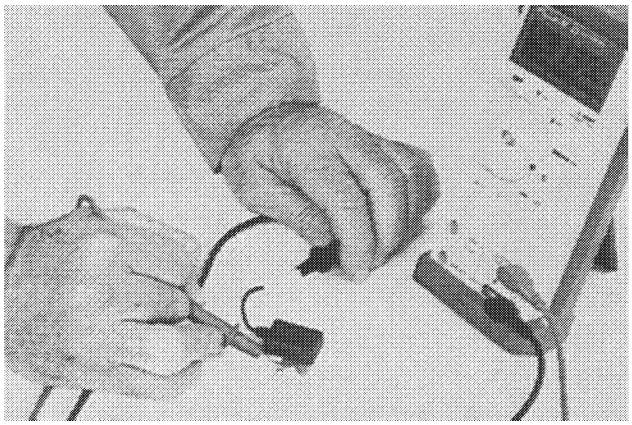
CASE CANADA CORPORATION
3350 South Service Road
Hamilton, ON L7N 3M6 CANADA

Bur 8-15670

Printed in U.S.A.
Issued July 1990

TESTING THE CONDENSER

STEP 42



B9064424M

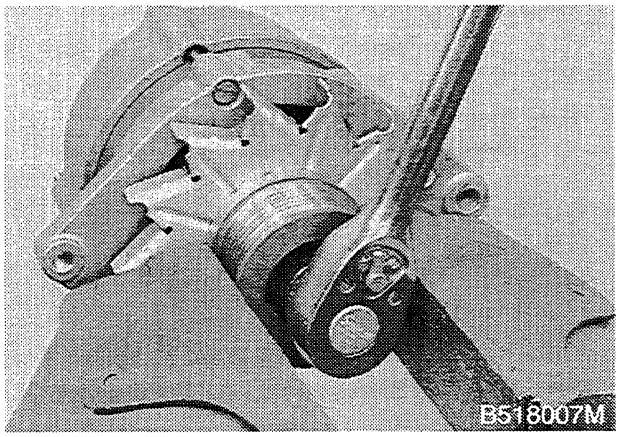
Touch the leads of the ohmmeter to the condenser as shown. The reading will increase and then return to zero resistance as the condenser is charged. If there is no indication of resistance, a new condenser must be installed. The condenser is used to reduce radio noise.

STEP 43

Touch the terminal to the bracket to discharge the condenser.

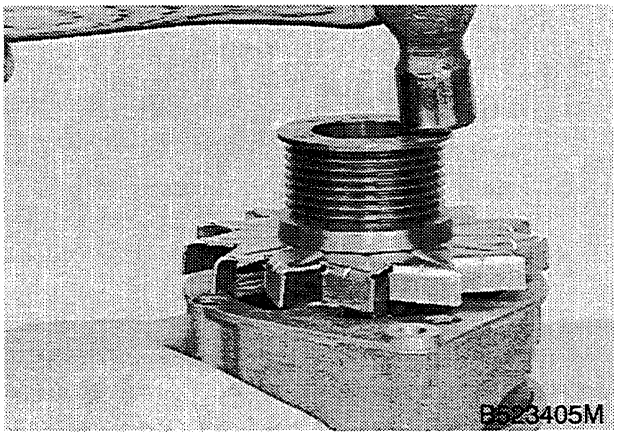
DISASSEMBLY

STEP 1



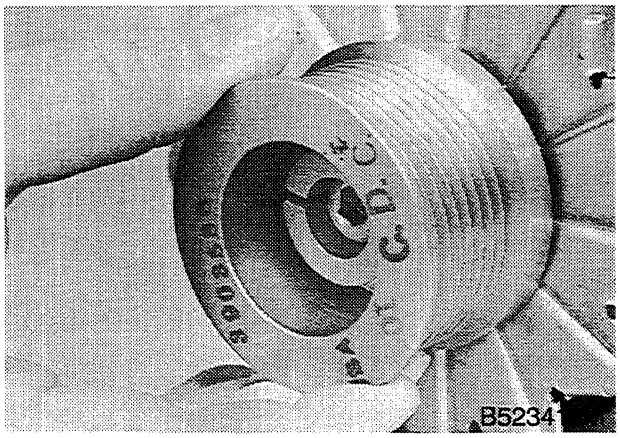
Fasten the pulley in a vise with soft jaws and remove the nut and lock washer.

STEP 2



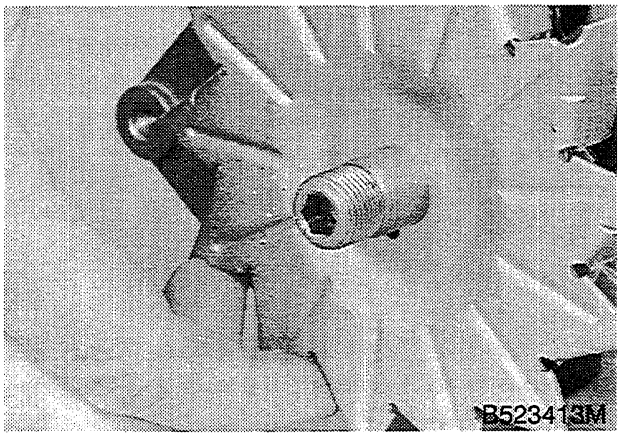
Tap the pulley with a hammer to loosen the tapered bushing in the pulley. Too much force will damage the bearing in the rear housing.

STEP 3



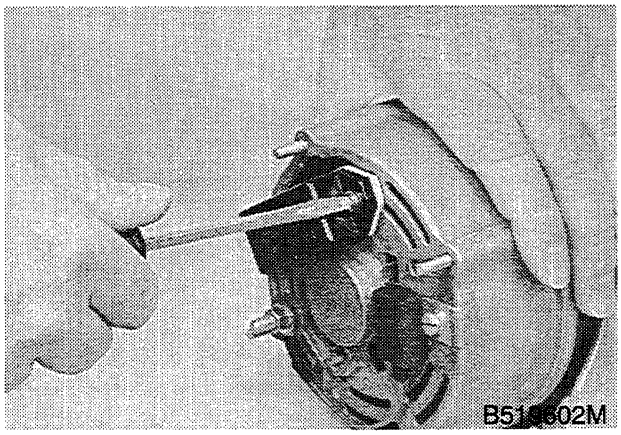
Remove the pulley and the tapered bushing.

STEP 4



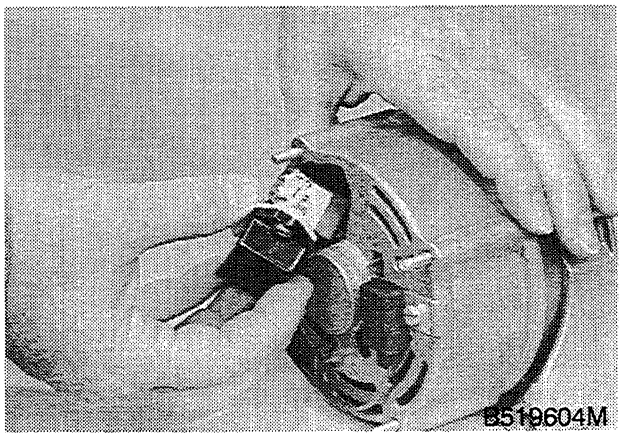
Remove the fan.

STEP 5



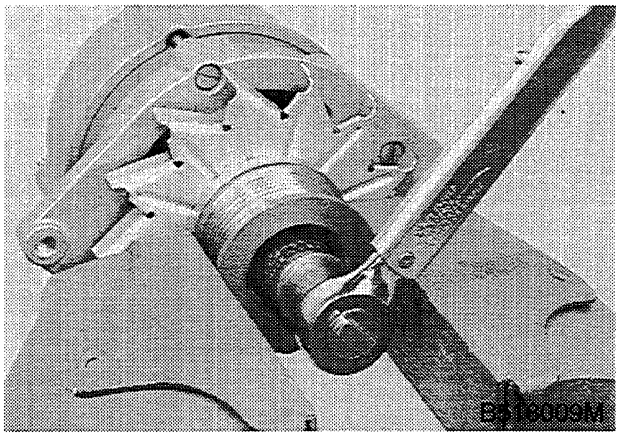
Remove the screws and flat washers that fasten the voltage regulator and brush holder to the housing.

STEP 6



Remove the voltage regulator and brush holder.

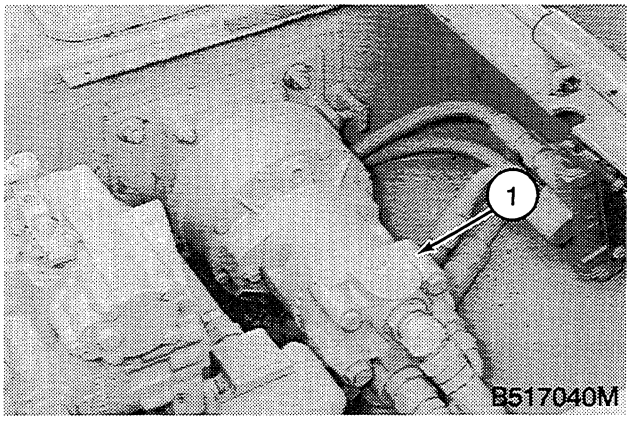
STEP 48



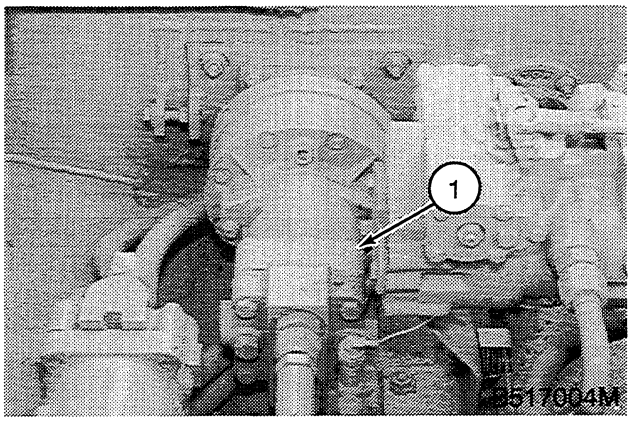
Fasten the pulley in a vise with soft jaws. Tighten the nut to 50 pound-feet (68 Nm).

MOTOR - BEFORE P.I.N. JAR0067438

Removal



1. Left Motor



1. Right Motor

1. Raise the wheels off the floor and use blocks to hold the machine in place.

2. Move the operators compartment forward according to instructions in this section.

3. Remove all dirt and grease from the motor and the area around the motor.

4. Connect a vacuum pump to the filler pipe for the reservoir. Start the vacuum pump.

5. Disconnect the drain hose.

   a. For left motor, disconnect the small hose from the motor and install a plug in the hose.

   b. For right motor, disconnect the tee from the motor and install a plug in the tee.

6. Stop the vacuum pump.

7. Disconnect the hoses from the motor. Fasten an identification tag to one of the hoses for correct assembly.

8. Install a plug in each hose.

9. Loosen and remove the Ferry head screws that hold the motor.

10. Remove the motor from the planetary. The lubricant in the planetary will begin to drain.

Installation

IMPORTANT: *If the motor was removed for repair or a new motor has been installed because of a failure, the cause and results of the failure must be known. If the failure caused broken parts to be sent to the piston pump, the piston pump must be removed and disassembled for inspection and cleaning. Also, the hoses between the motor and piston pump must be removed and cleaned. Then flush the complete hydraulic system according to the instructions in Section 8003.*

1. Install a new O-ring on the pilot of the motor.

2. Lubricate the splines of the motor shaft with Molykote Type G according the the instructions on the container.

3. Install the motor in the reverse order of steps 4 through 10.

4. Tighten the Ferry head screws that hold the motor to 80 to 96 pound-feet (109 to 130 Nm).

5. Fill the planetary with the lubricant specified in Section 1002.

   a. Loosen and remove the fill plug.

   b. Loosen and remove one of the cap screws that hold the motor.

   c. Fill the planetary until the lubricant begins to flow out of the hole for the cap screw.

   d. Install and tighten the fill plug.

6. Do the Hydrostatic System Start-Up Procedure on page 16.

7. Fasten the operators compartment in place according the instructions in this section.

8. Remove the blocks from under the machine and lower the machine to the floor.

6002

Section

6002

HYDROSTATIC DRIVE SYSTEM TROUBLESHOOTING

1845C Skid Steer

CASE CORPORATION
700 State Street
Racine, WI 53404 U.S.A.

CASE CANADA CORPORATION
450 Sherman Avenue
Hamilton, ON L8N 4C4 CANADA

Bur 8-17762

Printed in U.S.A.
December, 1998

Section

6004

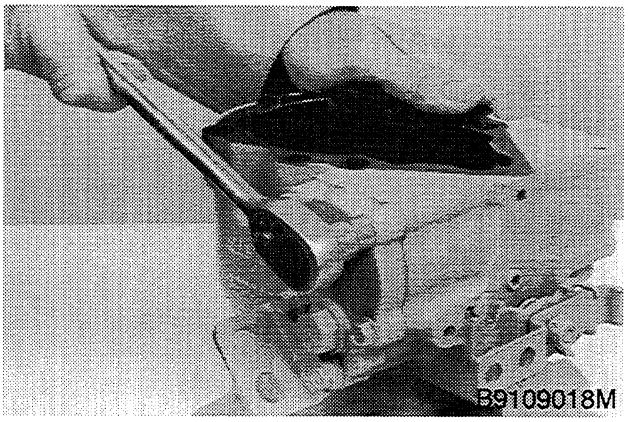
PISTON PUMP

CASE CORPORATION

Bur 7-44180

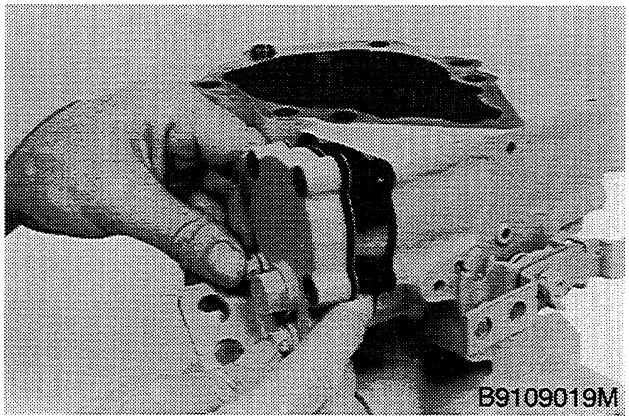
Printed in U.S.A.
Issued November 1991

STEP 35



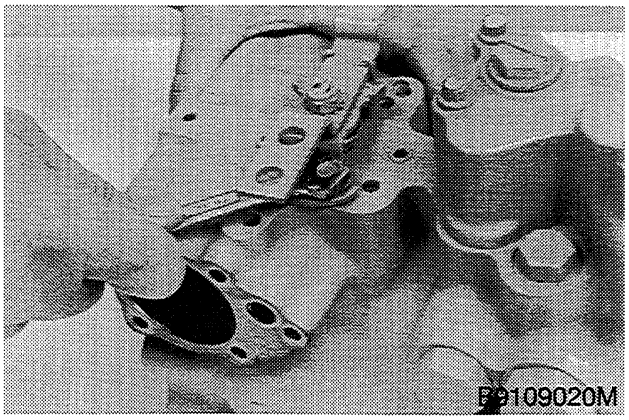
Remove the bolts from the cover.

STEP 36



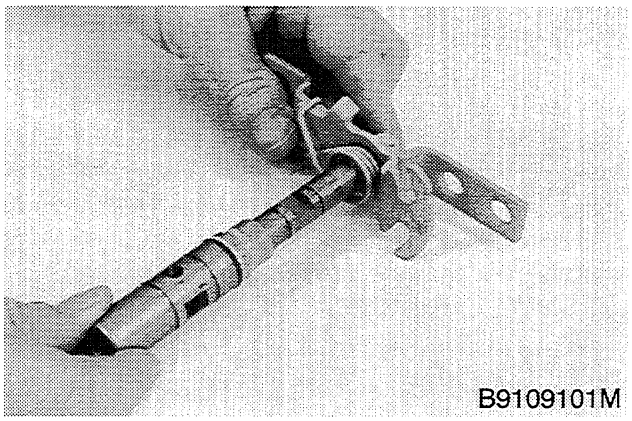
Remove the cover, gasket, and bracket.

STEP 37



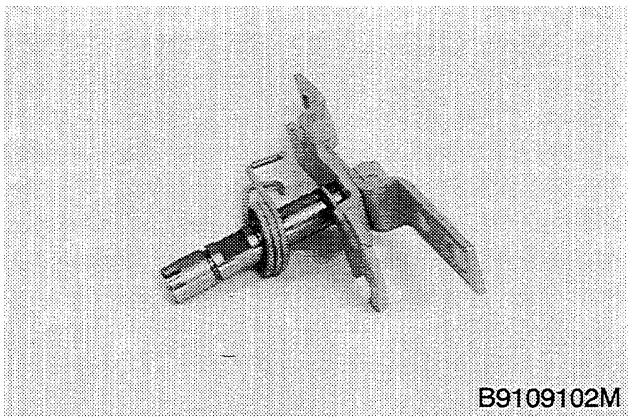
Make a mark to show the position of the stop bracket. Remove the bolt. Remove the spool assembly and body from the housing.

STEP 38



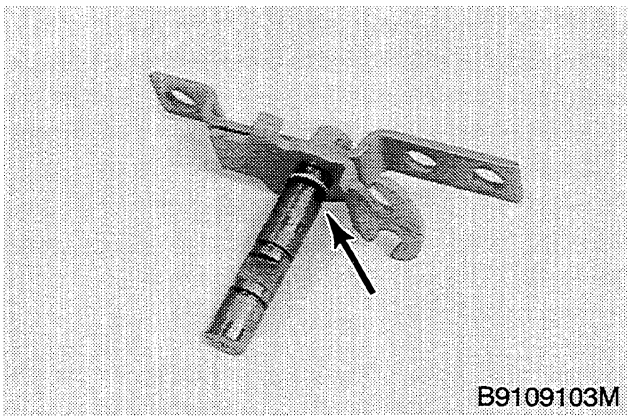
Remove the body from the spool.

STEP 39



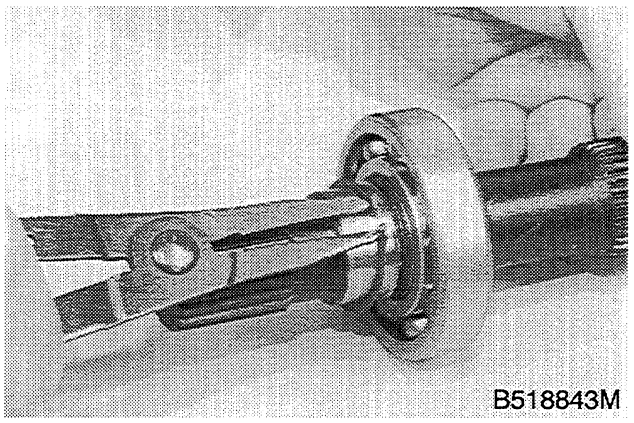
Remove the spring.

STEP 40



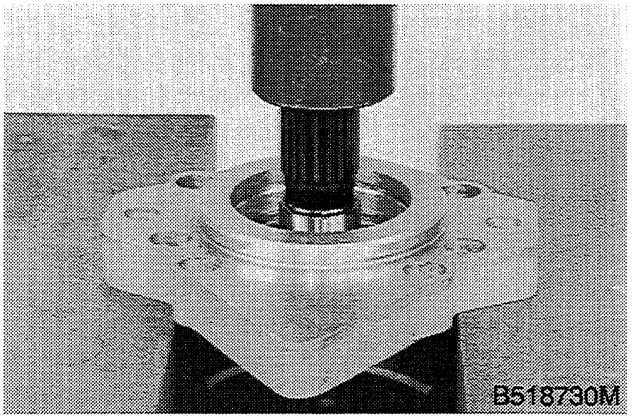
Remove and discard the O-ring and backup ring from the spool.

STEP 82



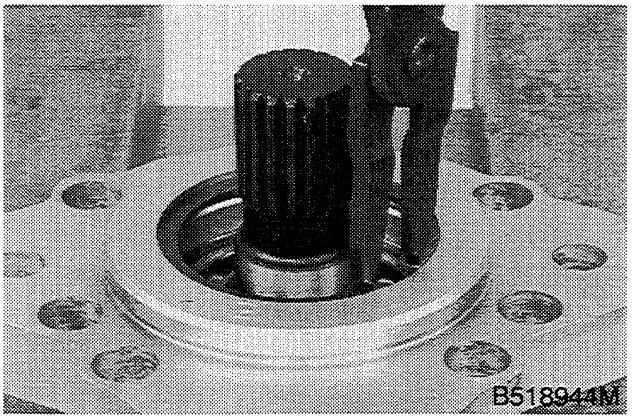
If the ball bearing for the shaft has been replaced, Install the snap rings.

STEP 83



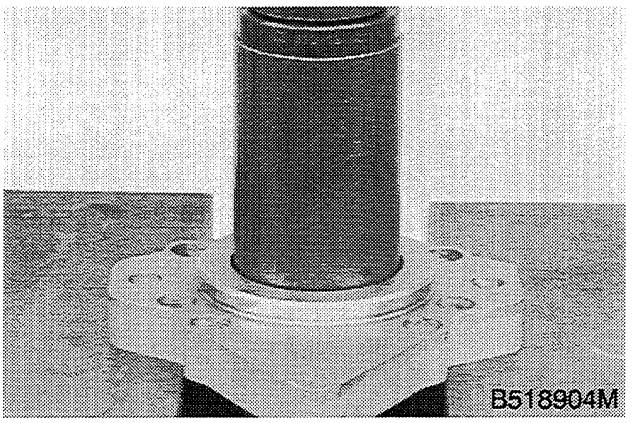
Press the bearing and shaft into the drive end cover.

STEP 84



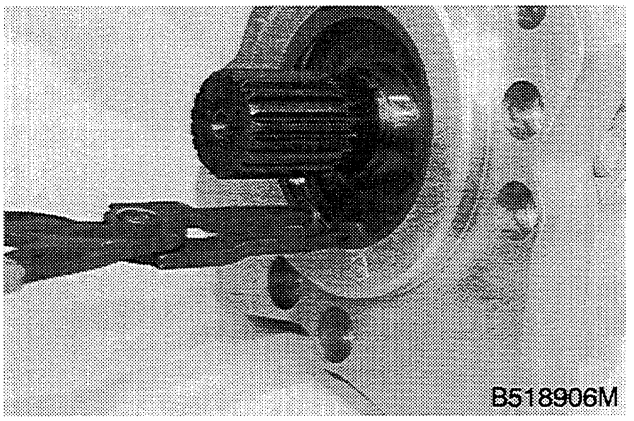
Install the snap ring in the groove just above the bearing.

STEP 85



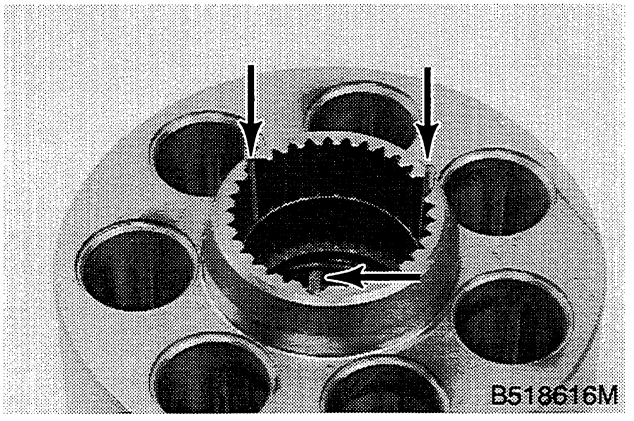
Lubricate the lip of the seal with clean oil. Carefully press the new seal, with the lip down, into the drive end cover.

STEP 86



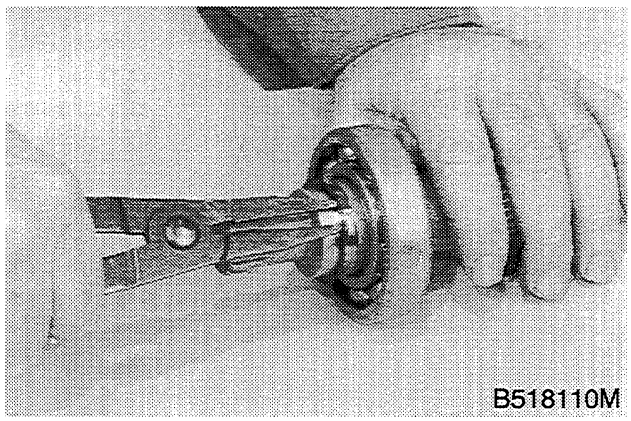
Install the other snap ring.

STEP 87



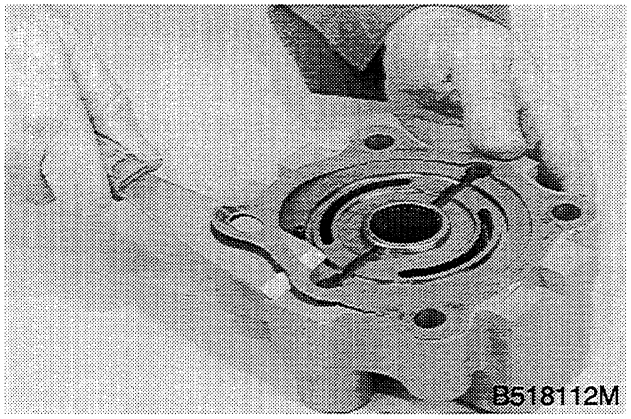
Make sure the three pins are installed in the cylinder block.

STEP 13



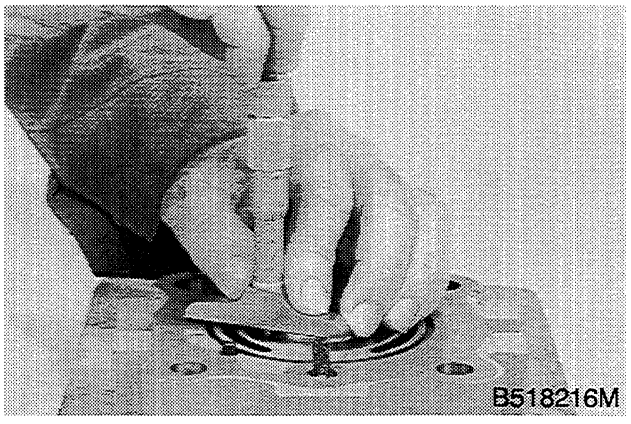
Remove the snap ring.

STEP 14



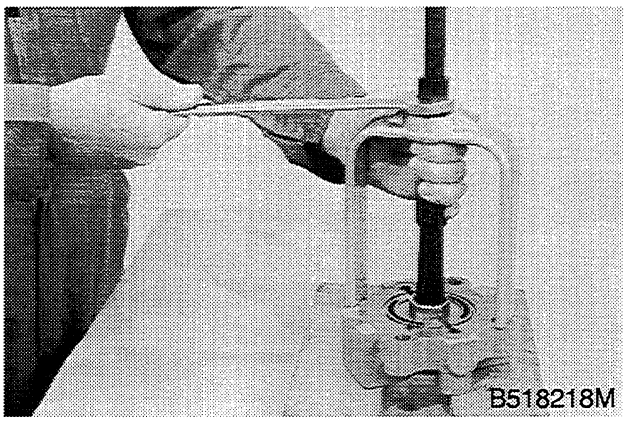
Remove the gasket.

STEP 15



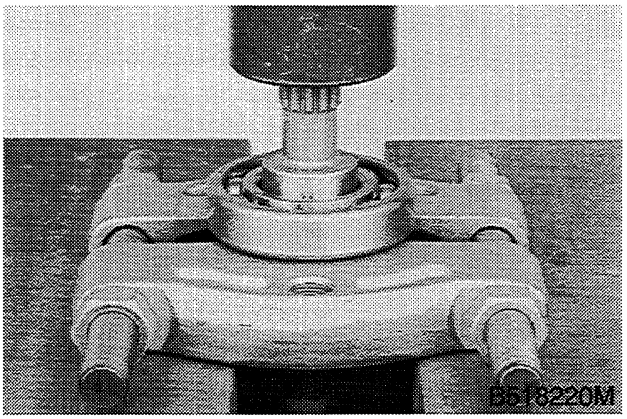
If the needle bearing in the end cover is to be replaced, measure the distance from the top of the needle bearing to the end cover. Make a record of the measurement.

STEP 16



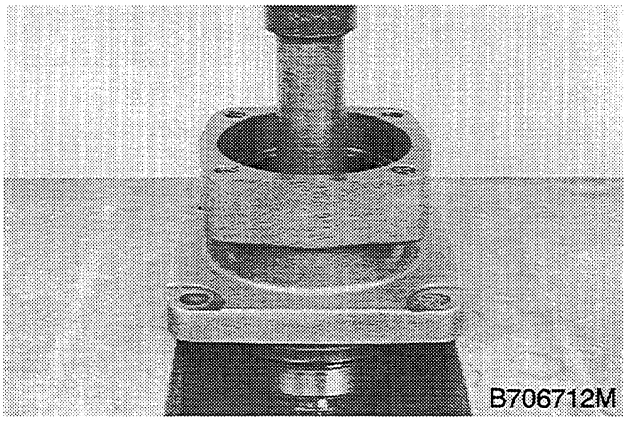
Use an acceptable puller and remove the needle bearing.

STEP 17



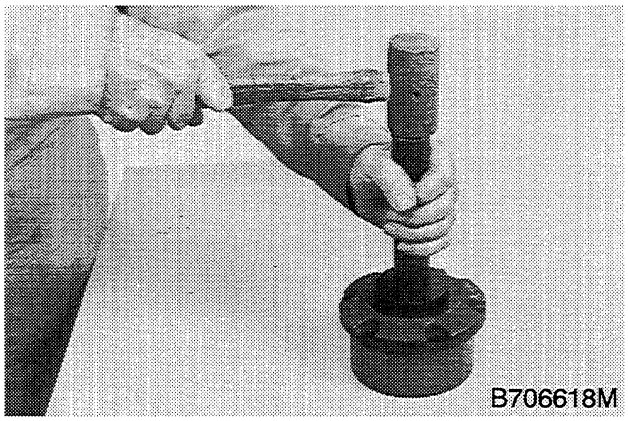
Press the shaft out of the ball bearing. Be careful not to damage the snap ring on the shaft.

STEP 61



Press the output shaft assembly out of the housing only if the output shaft assembly is to be replaced. Replace the seal.

STEP 62



Use an acceptable driver and drive the seal out of the seal carrier.

Inspection

1. Clean all parts in cleaning solvent. Be careful to prevent damage to the machined surfaces of the parts. Do not use shop cloths to dry the parts.

2. Inspect the machined surfaces of the manifold, thrust plate and wear plate for cracks, scoring and pitting. If any of these defects are found, install new parts as required.

3. Inspect the rollers, stator and rotor for scoring and pitting. These parts are available as an assembly only.

Section

6006

CONTROLS

CASE CORPORATION

Bur 7-44200

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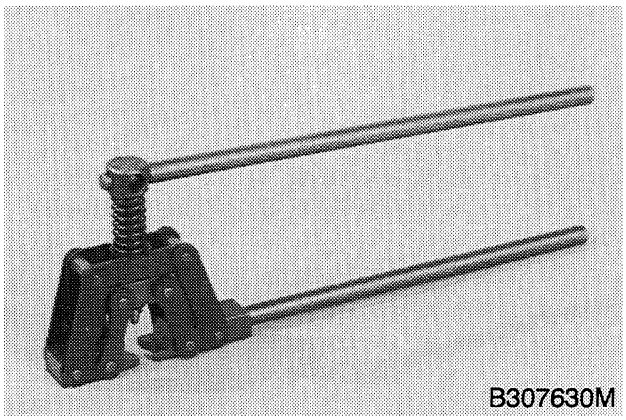
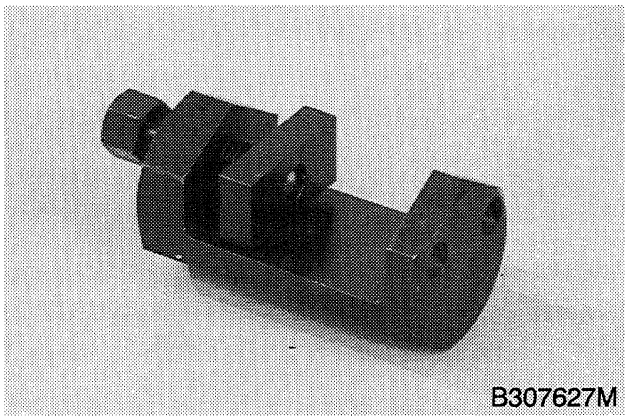
SPECIAL TOOLS



CAS-1439 Chain Separator, used to separate a drive chain or driven chain. Shown in use on page 9.



CAS-1438 Side Bar Tool, used to install the side bar on a master link. Shown in use on page 14.

GENERAL INFORMATION

Drive Chain and Driven Chain

The drive chain (one per side) is the chain installed between the planetary and the cluster sprocket.

The driven chain (two per side) is the chain installed between the cluster sprocket and the axle sprockets.

I See page 7 for an illustration of the chain installation.

Chain Lubrication

1. Each chain compartment is filled with 5 U.S. quarts (5 litres) of engine oil.

2. After 500 hours of operation, drain the chain compartments and flush each chain compartment with diesel fuel.

3. Fill each chain compartment with the engine oil specified in Section 1002.

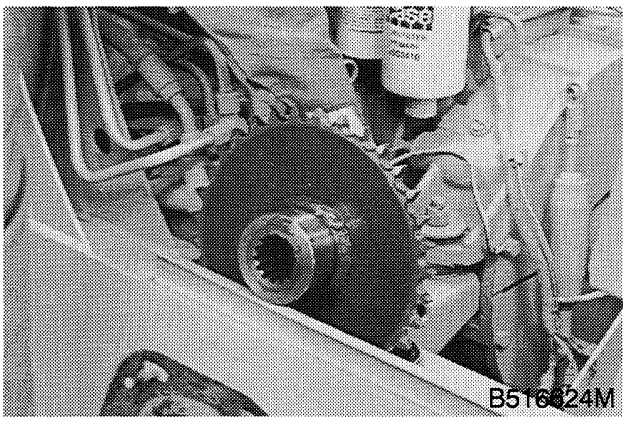
When to Replace a Chain

1. Replace a driven chain when the axle housing cannot be moved in the slots to tighten the driven chain.

2. Replace the drive chain when the mounting plate for the planetary cannot be moved in the slots to tighten the drive chain.

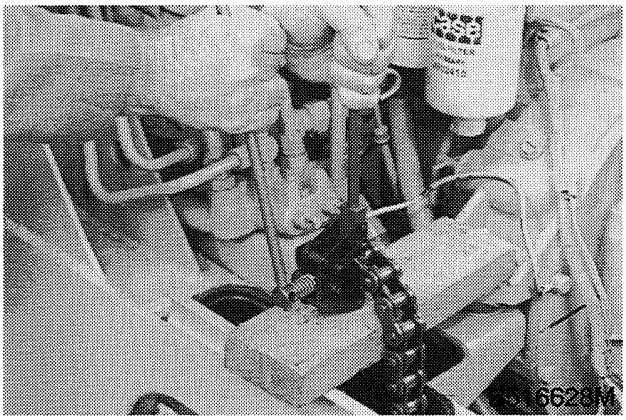
3. DO NOT try to shorten a drive chain or driven chain.

STEP 50



Remove the sprocket.

STEP 51

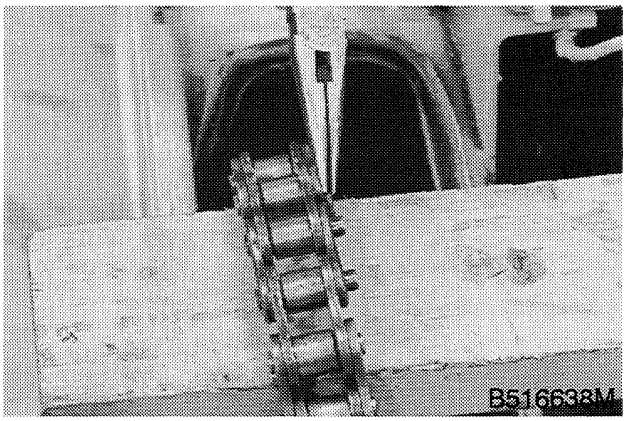


If the driven chain does not have a master link, use the CAS-1439 chain separator to remove the side bar from one of the links. Then continue with step 56.

STEP 52

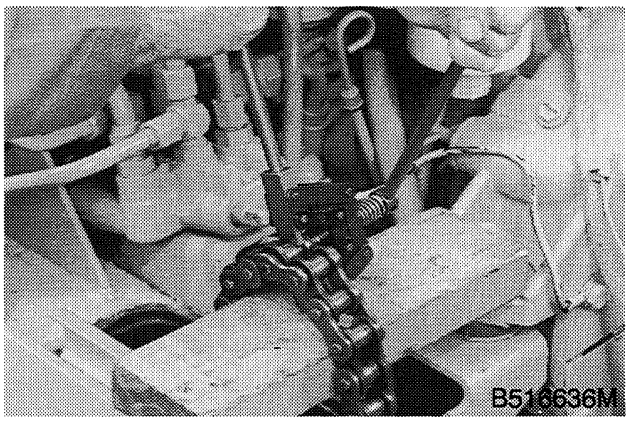
If the driven chain has a master link, do steps 53 through 55.

STEP 53



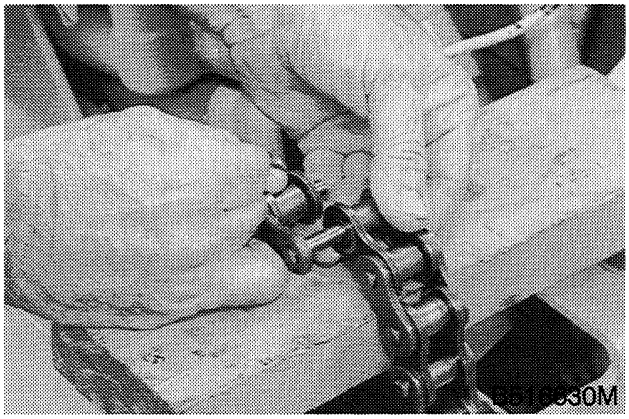
Remove the cotter pins.

STEP 54



Use the CAS-1439 chain separator to push the master link out of the side bar. Push one pin a short distance and then the other pin a short distance. Repeat until the side bar is free of the pins.

STEP 55



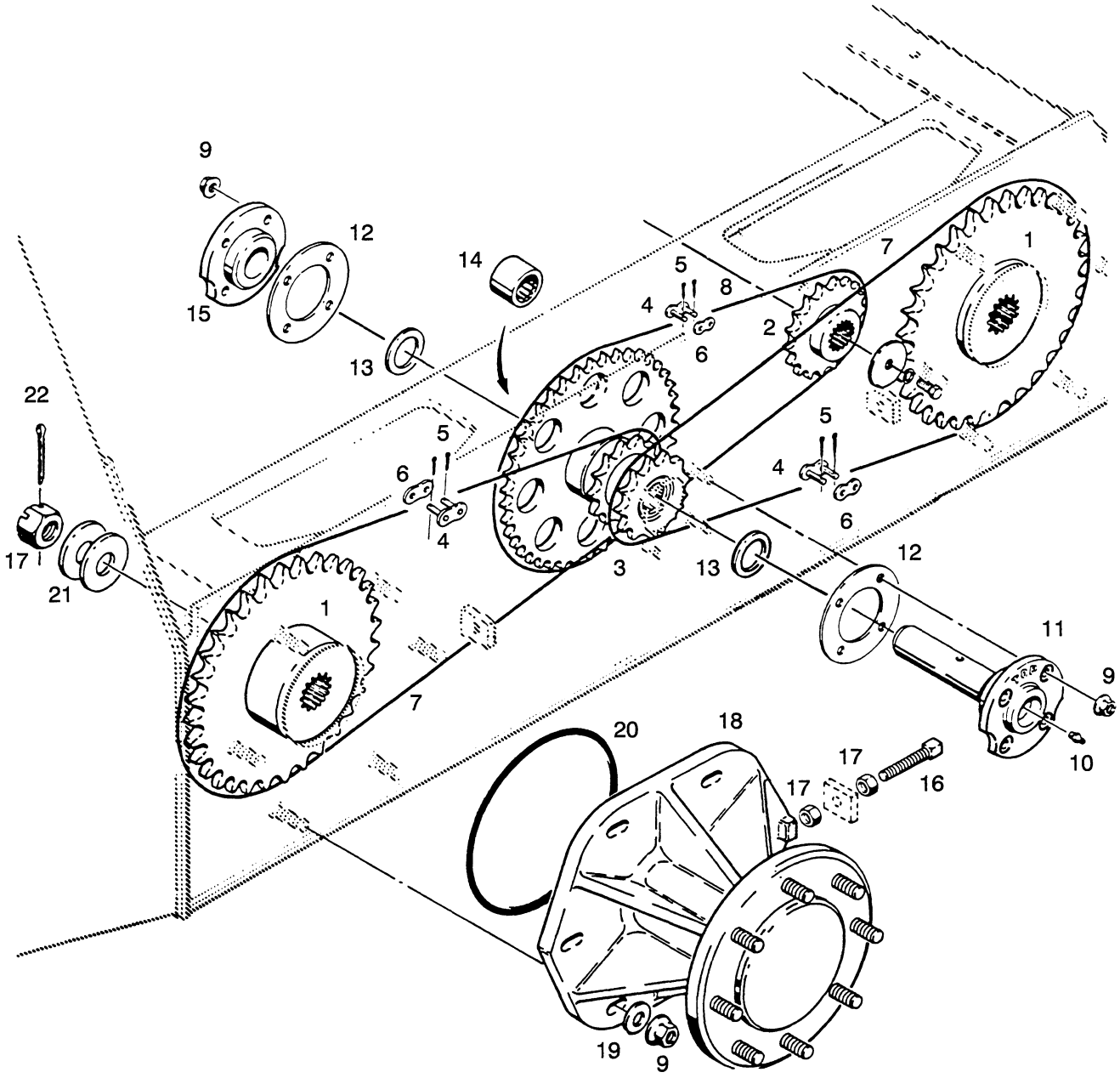
Remove the master link.

STEP 56

Remove the driven chain from the chain compartment.

STEP 57

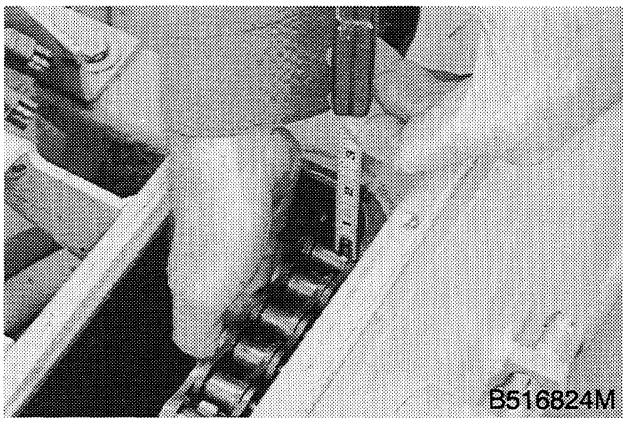
If necessary, flush the chain compartment with diesel fuel. Then install the drain plug.



1. *Axle Sprocket*
2. *Planetary Sprocket*
3. *Cluster Sprocket*
4. *Master Link. Must Be Installed As Shown. Used Only With Replacement Chains*
5. *Hardened Cotter Pin*
6. *Side Bar*
7. *Driven Chain*
8. *Drive Chain*
9. *Self-Locking Nut*
10. *Grease Fitting*
11. *Shaft*
12. *Gasket*
13. *Thrust Washer*
14. *Needle Bearing (2)*
15. *End Cap*
16. *Adjusting Bolt*
17. *Nut*
18. *Axle Housing*
19. *Hardened Washer*
20. *O-ring*
21. *Flat Washer. Use As Required*
22. *Cotter Pin*

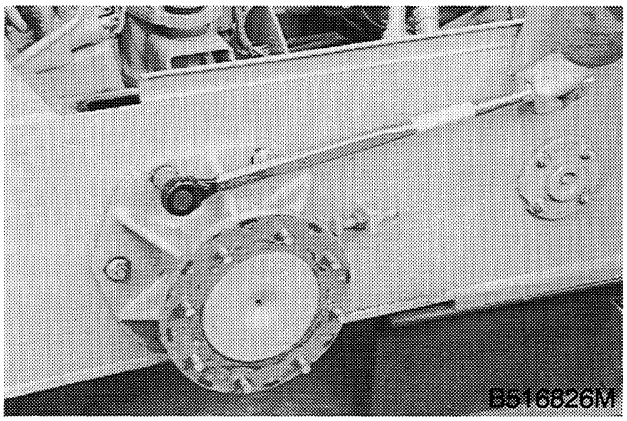
Cluster Sprocket Installation

STEP 188



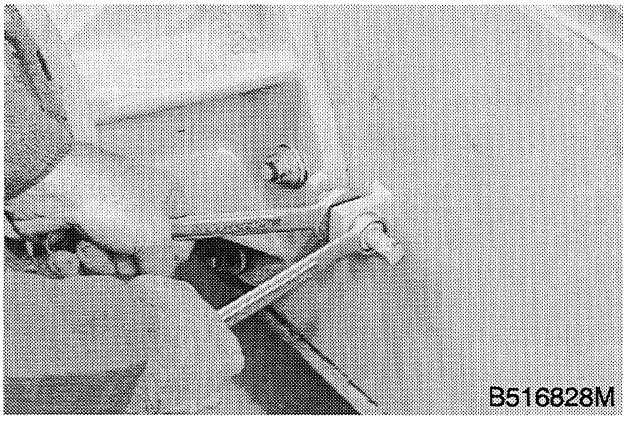
Tighten the adjusting bolt and measure the chain deflection of the driven chain at 90 degree intervals. The chain deflection must be 1/8 to 1 inch (3 to 25 mm).

STEP 189



When the chain deflection is correct, tighten the self-locking nuts to a torque of 80 to 100 pound-feet (108 to 136 Nm).

STEP 190



Make sure that the adjusting bolt is touching the axle housing and tighten the lock nut on the adjusting bolt.

STEP 191

Make sure that the drain plug is installed and install 5 U.S. quarts (5 litres) of the engine oil specified in Section 1002.

STEP 192

Check the condition of the gasket on the cover and install a new gasket if necessary.

STEP 193

Install the cover and tighten the nut.

STEP 194

Install the wheel and the wheel nuts. Tighten the wheel nuts to a torque of 115 to 125 pound-feet (156 to 170 Nm).

STEP 195

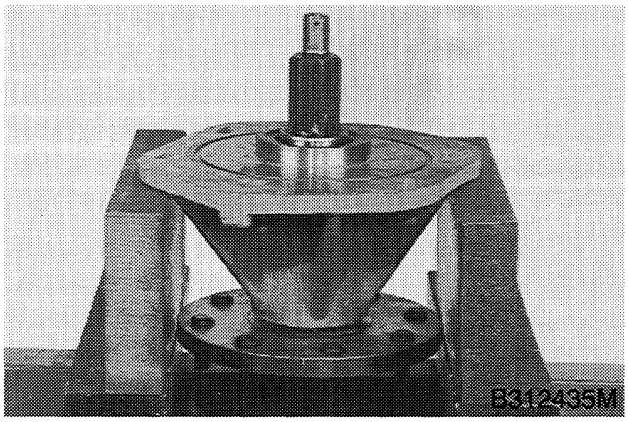
Remove the block(s) and lower the wheels to the floor.

STEP 196

Fasten the operators compartment in the operating position according to the instructions in Section 6001.

Disassembly of the Axle Housing

STEP 197



Put the axle housing in a press for removal of the axle.

6009

PLANETARY

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Issued March 1986

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DRIVE COUPLING

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Section

6011

WHEELS AND TIRES

CASE CORPORATION

Bur 7-44220

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Issued November 1991

8002

Section

8002

HYDRAULIC SCHEMATICS, SPECIFICATIONS AND TROUBLESHOOTING

1845C Skid Steer

CASE CORPORATION
700 State Street
Racine, WI 53404 U.S.A.

CASE CANADA CORPORATION
450 Sherman Avenue
Hamilton, ON L8N 4C4 CANADA

Bur 8-17773

Printed in U.S.A.
December, 1998

Problem in All Circuits - See the following pages for other circuits

See Page 17 and check the pressure setting of the loader main relief valve. Is the pressure setting correct?

NO → Adjust or replace the main relief valve.

YES ↓

See Page 20. Do the flowmeter test, Test No. 1 Equipment Pump.

Problem in the Loader Circuit

Start and run the engine at full throttle. Operate the control for the bad circuit. Does the cylinder move in both directions?

NO → See Section 8005. Disassemble the loader control valve and check for worn or damaged parts.

YES ↓

Check the cylinder piston packing Page 28. Is the piston packing good?

NO → Inspect and repair or replace piston packing.

YES ↓

See Section 8005. Disassemble the loader control valve and check for worn or damaged parts.

5. Connect the hose from the outlet of the flowmeter to the running tee installed in the oil cooler line.

6. Remove the vacuum pump and install the filler cap on the reservoir. Check oil level in the reservoir, add Case No. 1 10W-30 if needed.

7. Open the pressure valve on the flowmeter all the way. Make sure the flow switch is in the Flow position and move the range switch to the HI position.

8. Start the engine and run the engine at full throttle. Push down the temperature switch and read the temperature gauge. The temperature of the oil must be at least 52º C (125º F).

9. If the temperature of the hydraulic oil is not as specified, run the engine at full throttle and close the pressure valve on the flowmeter until the pressure gauge indicates 103 bar (1500 psi). Continue to run the engine until the temperature of the oil is as specified.

10. Open the pressure valve completely.

IMPORTANT: *A tachometer must be used to maintain constant engine r/min (rpm) for all of the flowmeter test readings at different pressures.*

NOTE: *The following readings will be recorded on the checksheet on Page 55 or 56.*

11. Use the tachometer and adjust the engine speed to 2000 r/min (rpm) and read the flow gauge. Write the reading on Test 1, line 1 of the check sheet for 0 bar (psi).

12. Slowly close the pressure valve on the flowmeter until the pressure gauge indicates 103 bar (1500 psi). Keep the engine running at 2000 r/min (rpm). Read the flow gauge and write the reading on Test 1, line 2 of the check sheet.

13. Continue slowly closing the pressure valve on the flowmeter until the pressure gauge indicates 124 bar (1800 psi). Keep the engine running at 2000 r/min (rpm). Read the flow gauge and write the reading on Test 1, line 3 on the check sheet.

14. Slowly close the pressure valve on the flowmeter until the pressure gauge indicates 152 bar (2300 psi). Keep the engine running at 2000 r/min (rpm). Read the flow gauge and write the reading on Test 1, line 4 on the check sheet.

15. Open the pressure valve on the flowmeter completely. Decrease engine speed and stop the engine.

Understanding Result of Test

Flow Output @ 0 bar (psi)	Result
Less than 56 L/min (14.8 gpm)	Possible restriction between equipment pump and reservoir; a damaged or worn pump.
Greater than 54.9 L/min (14.5 gpm)	No Restrictions. Equipment pump may have damage or be worn without loss of flow at 0 bar.

1. Any loss of output at 152 bar (2300 psi) will show the extent to which the equipment pump is worn. Equipment pump efficiency can be determined by doing the following.

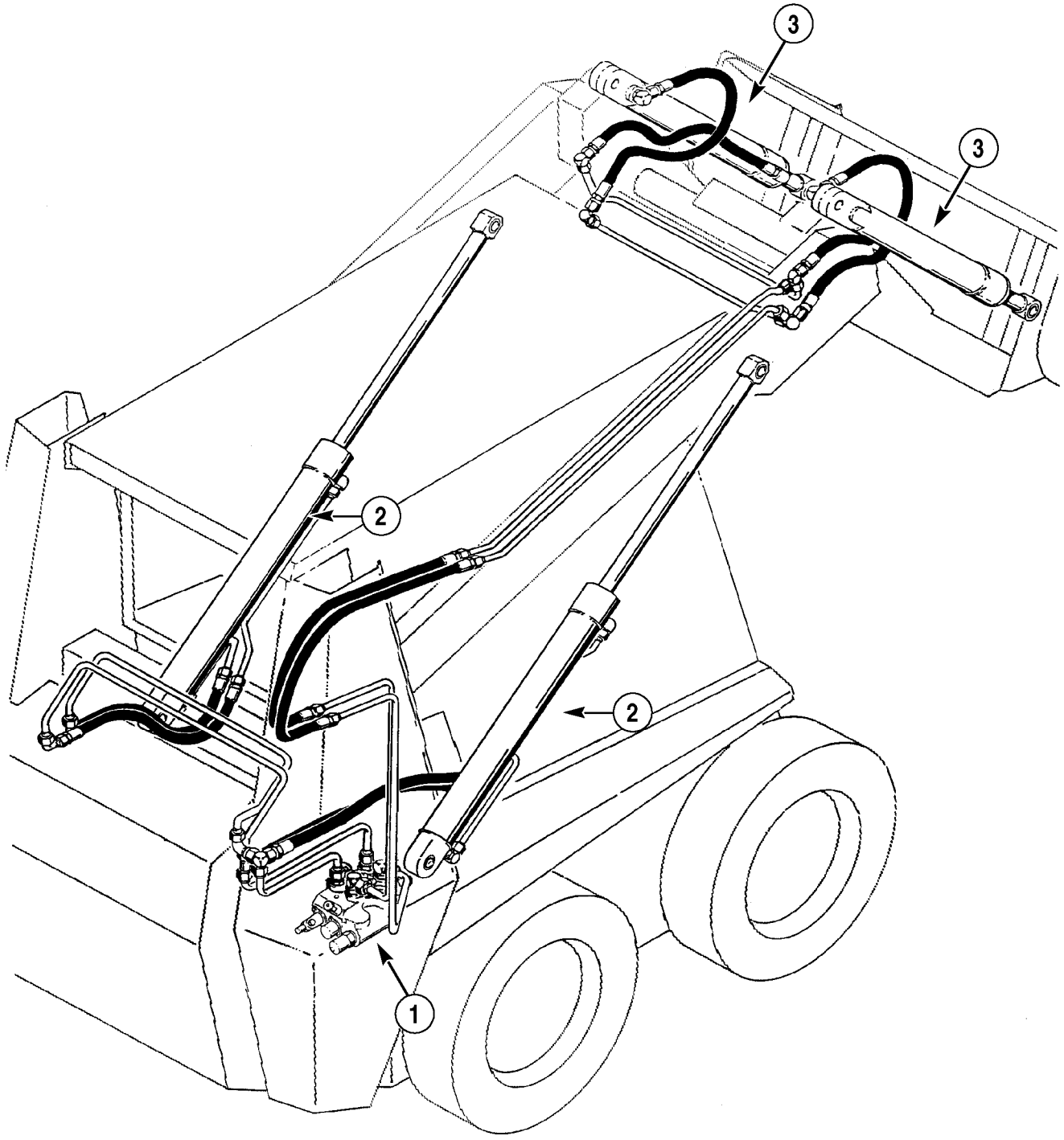
Example: STEP 11 - 56.8 L/min (15 gpm)
45.500 ÷ 56.8 = .80 .80 = 80% efficient

Example: STEP 14 - 45.5 L/min (12 gpm)
12.00 ÷ 15 = .80 .80 = 80% efficient

2. If the efficiency is less than 75% the pump should be replaced or repaired.

3. The flow at other pressures will be used in Test 2 and Test 3.

LOADER HYDRAULIC CIRCUITS



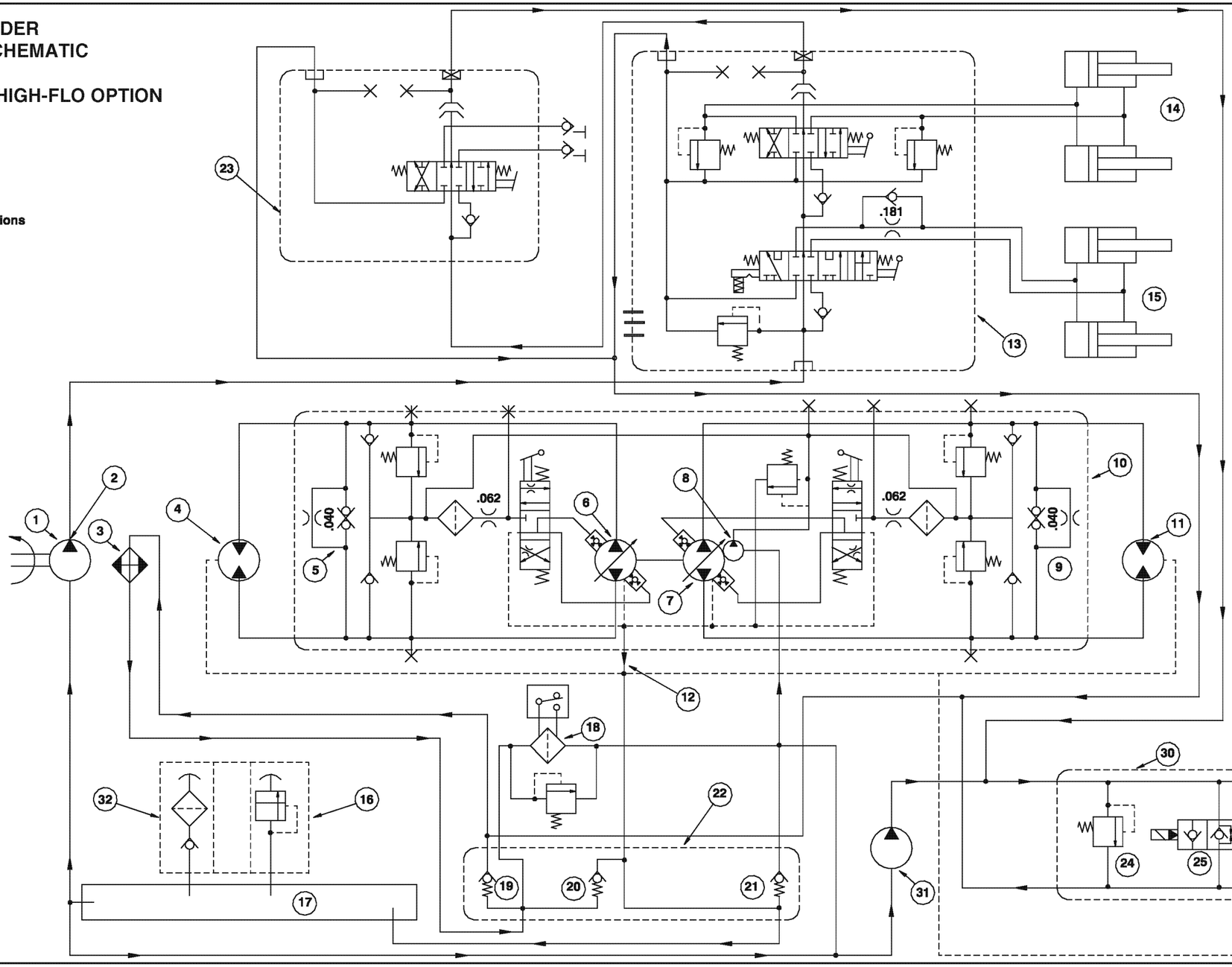
ts98h064

1. LOADER CONTROL VALVE
2. LOADER LIFT CYLINDERS
3. LOADER BUCKET CYLINDERS

HYDRAULIC SCHEMATICS

1845C UNI-LOADER HYDRAULIC SCHEMATIC with BI-DIRECTION HIGH-FLO OPTION

Note: Orifice Dimensions Are In Inches.

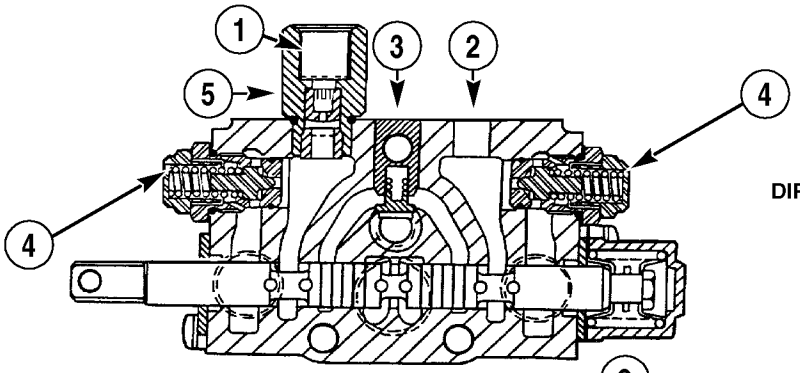


Components

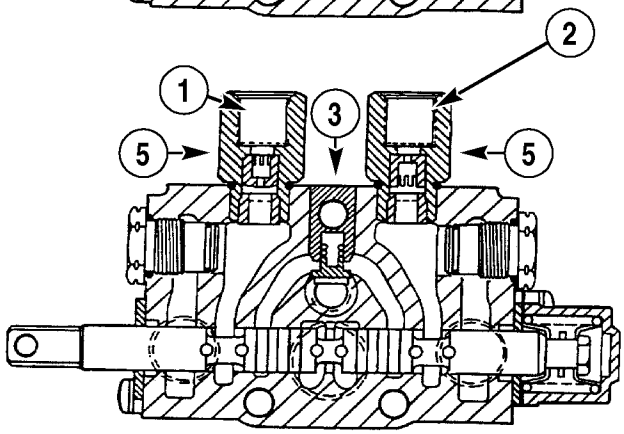
1. Hydraulic Pump
2. Test Point
3. Oil Cooler
4. Right Motor
5. Bypass Valve
6. Rear Piston Pump
7. Front Piston Pump
8. Charging Pump
9. Bypass Valve
10. Hydrostatic Pump
11. Left Motor
12. Case Drain
13. Loader Control Valve
14. Bucket Cylinder
15. Lift Cylinders
16. Filler Cap - Breather
17. Hydraulic Reservoir
18. Hydraulic Filter
19. Oil Cooler Bypass Valve (175 PSI)
20. Case Drain Check Valve (5 PSI)
21. Charging Pump Check Valve (15 PSI)
22. Relief Valve Block
23. Optional Auxiliary Valve
24. Relief Valve
25. Solenoid S5
26. Solenoid S1
27. Solenoid S2
28. Solenoid S3
29. Solenoid S4
30. High Flow Valve - Bi-Directional
31. High Flow Pump
32. Breather

BC01D205

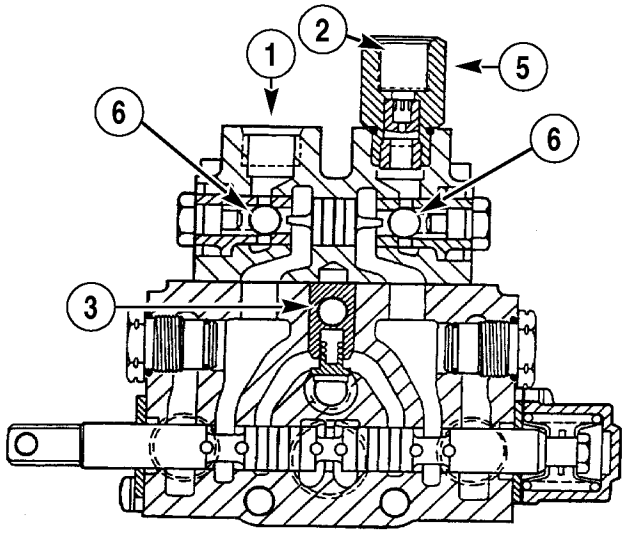
BACKHOE CONTROL VALVE
H672636 (KONTAK)



BOOM AND
DIPPER SECTION



SWING AND
BUCKET SECTION



RIGHT AND LEFT
STABILIZER SECTION

ts98h056

1. WORK PORT "A"
2. WORK PORT "B"
3. LOAD CHECK VALVE
4. CIRCUIT RELIEF VALVE
5. RESTRICTORS (USED IN A AND B PORTS OF SWING SECTION, AND B PORTS OF RIGHT AND LEFT STABILIZER SECTIONS.)
6. DOUBLE CHECK VALVES

23. Stop the portable filter.

24. Stop the engine.

25. Remove the hose from the reservoir.

26. Install the fill cap.

27. Close the valve.

28. Disconnect the inlet hose from the valve.

29. Start the vacuum pump.

30. Loosen and remove the valve.

31. Install and tighten the drain plug.

32. Stop the vacuum pump.

33. Disconnect the vacuum pump from the reservoir.

34. Install and tighten the oil fill cap.

35. Replace the hydraulic filter. See Section 8002.

36. Check the level of the oil in the reservoir and add oil as required.

FLUSHING WATER FROM THE HYDRAULIC SYSTEM

1. Start and run the engine at half throttle.

2. Operate the control levers to retract all cylinder rods.

WARNING: *If retracting the cylinder rods causes the attachment to be raised, block the attachment in place before proceeding to the next step.* 39-4

3. Change the hydraulic oil according to the instructions in the operators manual.

4. Change the hydraulic filter.

5. You will be disconnecting the hydraulic lines from the cylinders in the next step. Before you disconnect any hydraulic lines, make sure that the attachments will not fall. Put supports under the attachments as necessary. Move all control levers in both directions to relieve any circuit pressure.

6. Disconnect the hydraulic lines from the closed ends and the rod ends of all cylinders.

NOTE: *Check the hydraulic oil level frequently while you do steps 7 and 8. Have another person hold a container under the hydraulic lines while you do step 8.*

7. Start and run the engine at low idle.

8. Move each control lever in both directions until clean hydraulic oil flows from each hydraulic line.

9. Stop the engine.

10. Connect the hydraulic lines to the closed ends of the cylinders.

11. Start and run the engine at low idle.

12. Move the control levers to extend the rods of all cylinders. While the rods are being extended, hydraulic oil will be pushed from the rod ends of the cylinders.

13. Stop the engine.

14. Connect the hydraulic lines to the rod ends of the cylinders.

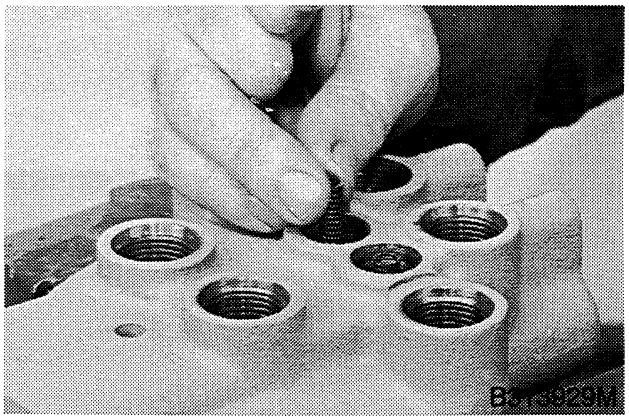
15. Check the hydraulic oil level. Add hydraulic oil as necessary.

Section

8005

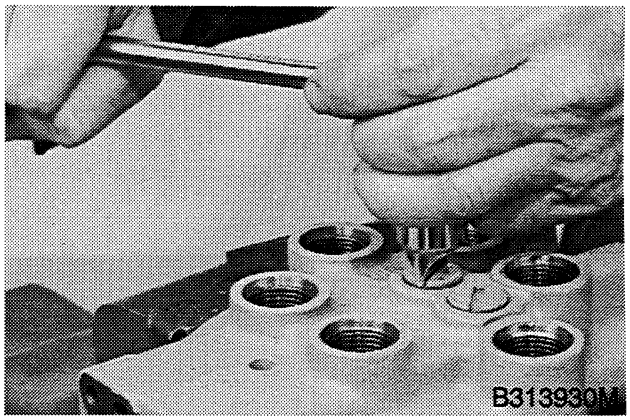
LOADER CONTROL VALVES

STEP 34



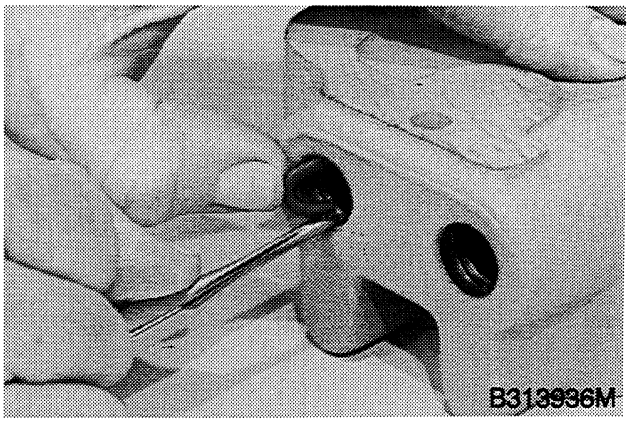
Install the springs.

STEP 35



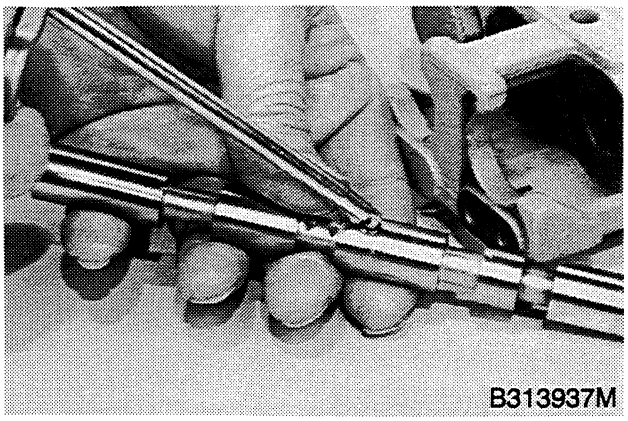
Install and tighten the plugs.

STEP 36



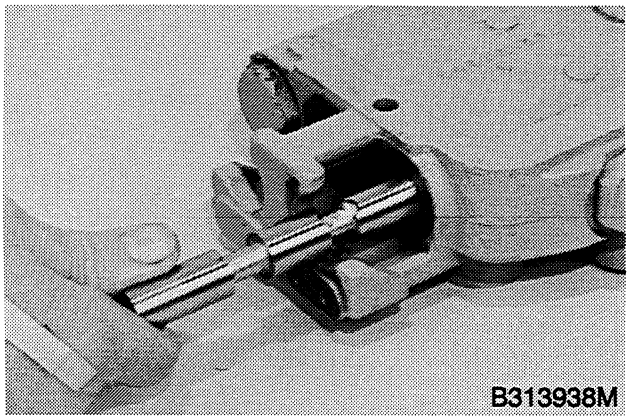
Install a new O-ring in the groove in the bore for the lift spool.

STEP 37



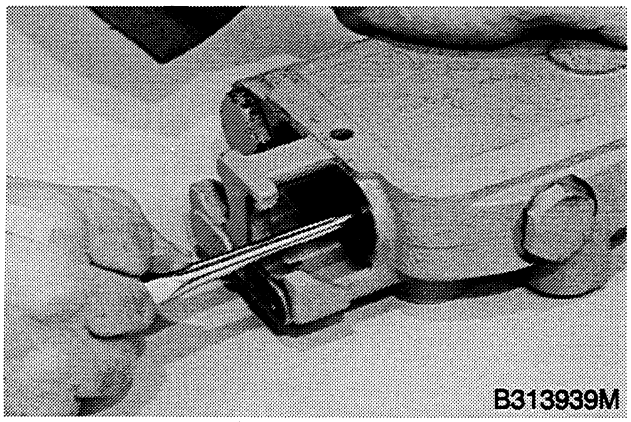
Lubricate the lift spool and bore with clean oil.

STEP 38

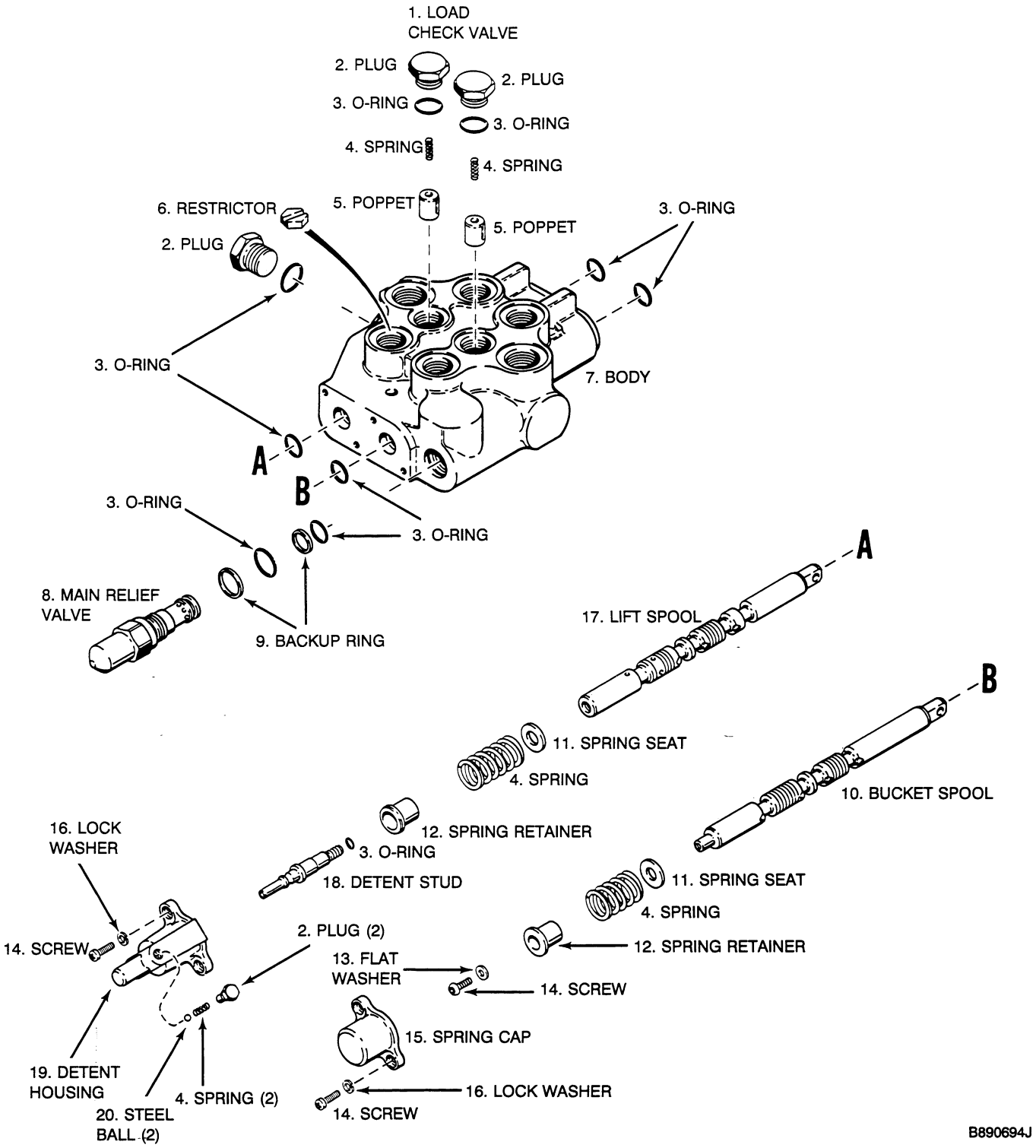


Install the lift spool.

STEP 39



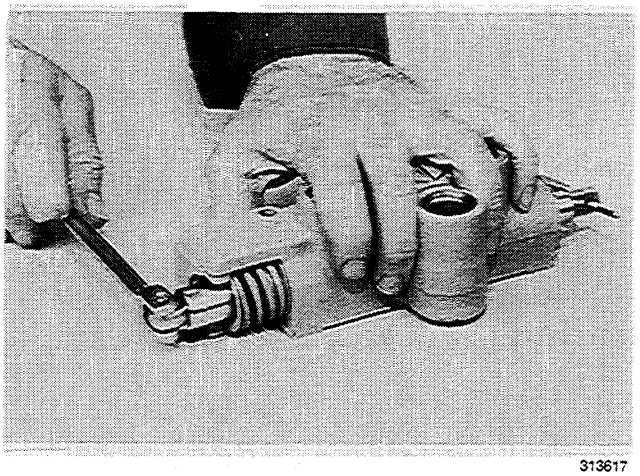
Push the lift spool into the body until the groove in the bore can be seen.



Loader Control Valve P.I.N. JAF0041140 Through JAF0041367

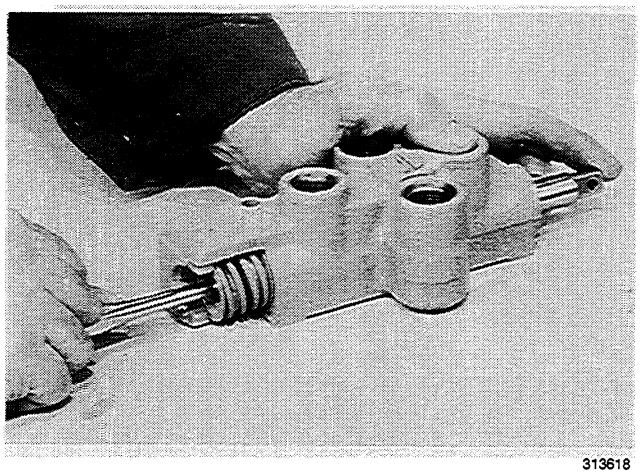
DISASSEMBLY

1. Prevent the spool from turning. Loosen and remove the cap screw.



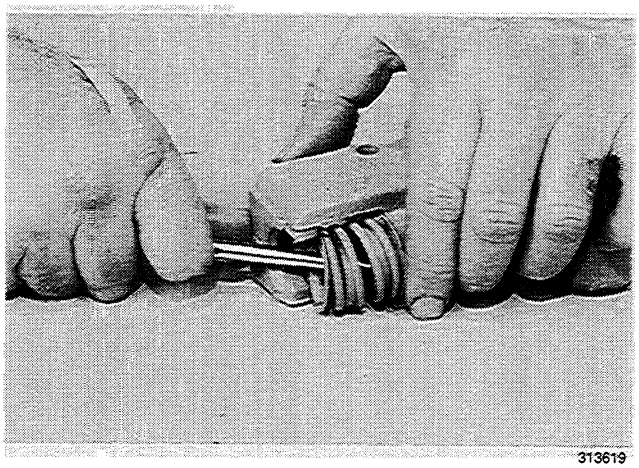
313617

2. Push the spool out of the bore approximately 1/2 inch (13 mm).



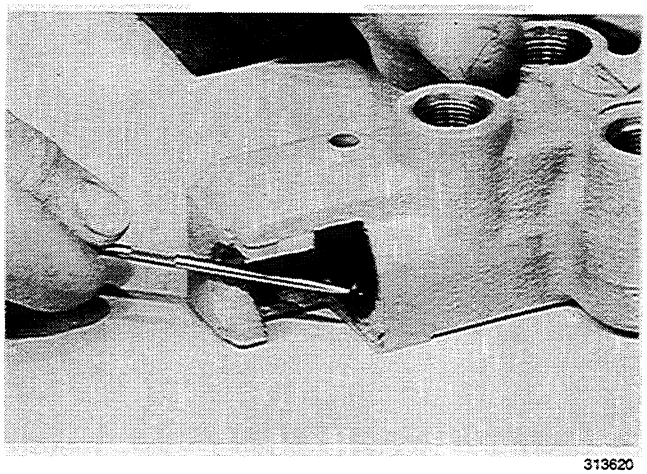
313618

3. Remove the spring seats, centering spring, and spacer.



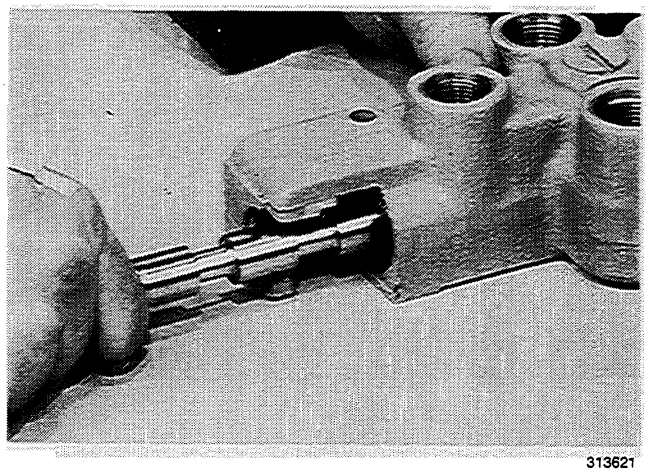
313619

4. Remove the O-ring from the groove in the bore.



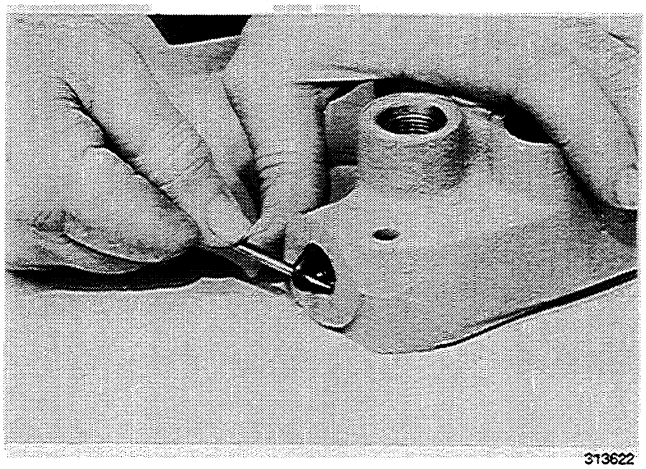
313620

5. Remove the spool.



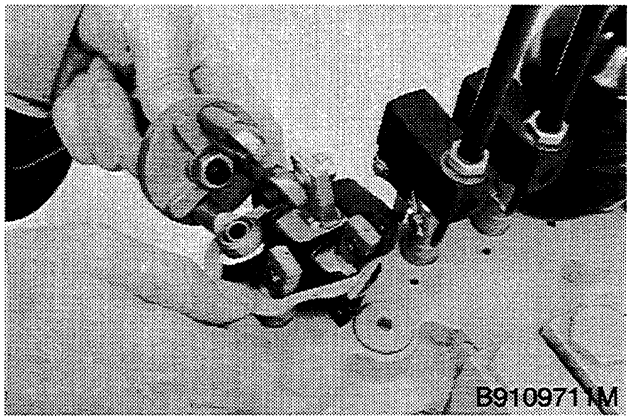
313621

6. Remove the O-ring from the groove in the bore.



313622

STEP 7

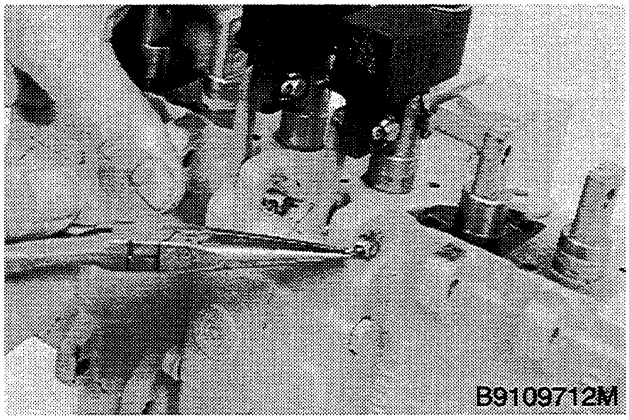


Remove the mounting plate and control lever assembly.

STEP 8

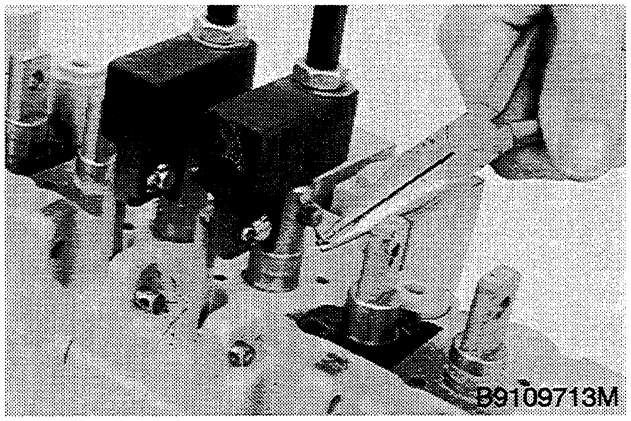
Repeat steps 2 through 7 to remove the control lever assembly from the other side of the backhoe control valve.

STEP 9



Remove the cotter pin from the bottom of the link.

STEP 10

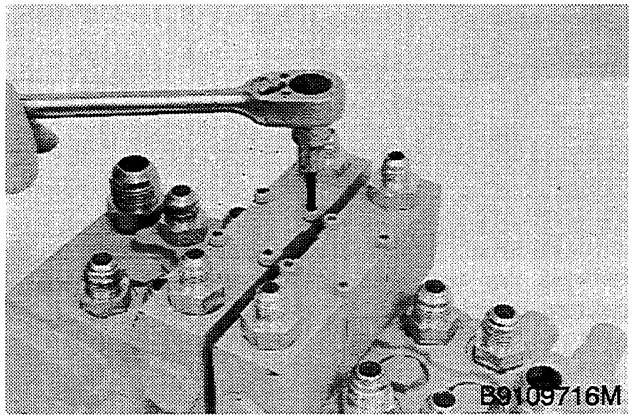


Remove the cotter pin and pin from the spool. Remove the stabilizer control lever from the backhoe control valve.

STEP 11

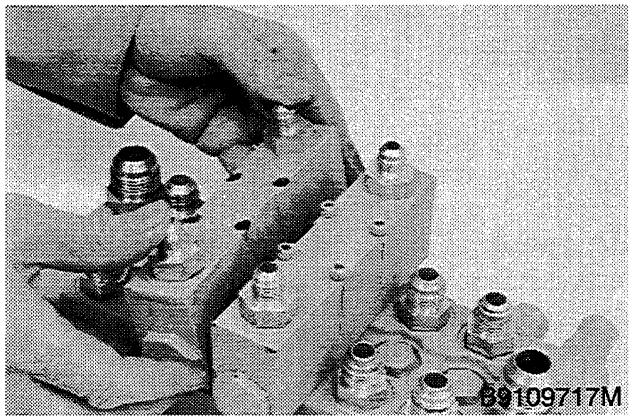
Repeat steps 9 and 10 to remove the other stabilizer control lever.

STEP 12



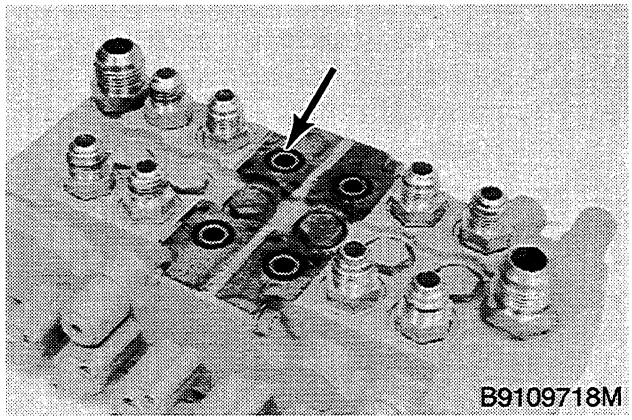
Loosen the Allen head screws from the check valve assemblies.

STEP 13



Remove the Allen head screws and the check valve assemblies.

STEP 14

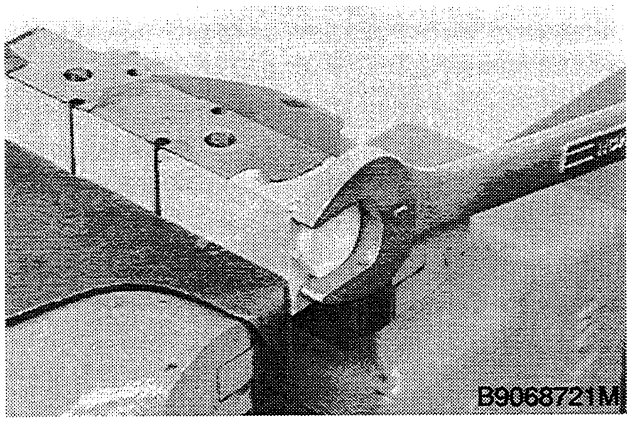


Remove the O-rings for the check valve assemblies.

CHECK VALVE ASSEMBLY

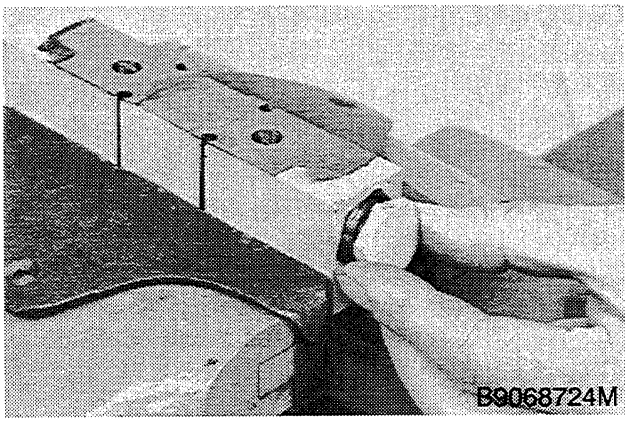
Disassembly

STEP 41



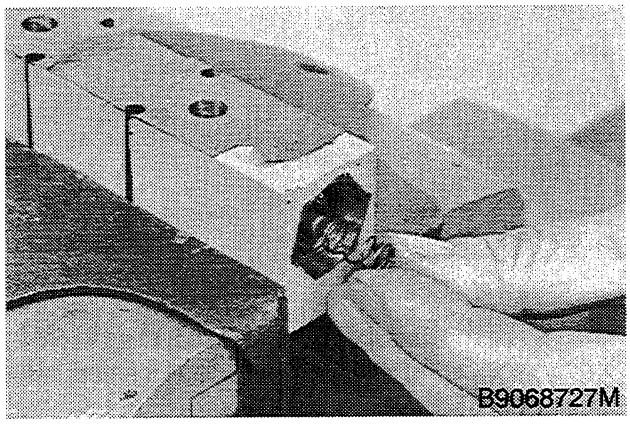
Fasten the check valve assembly in a vise with soft jaws. Loosen the plug at one end of the check valve assembly.

STEP 42



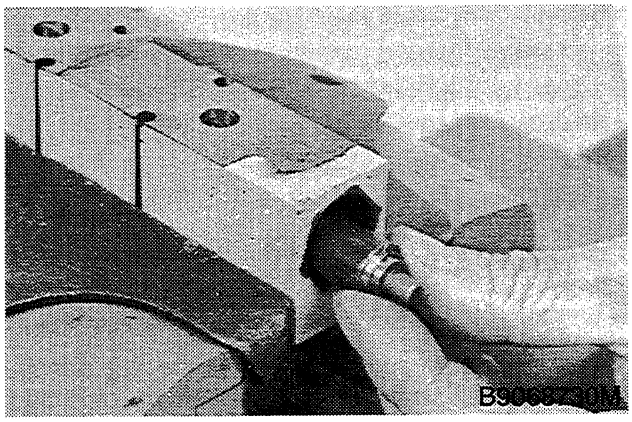
Remove the plug.

STEP 43



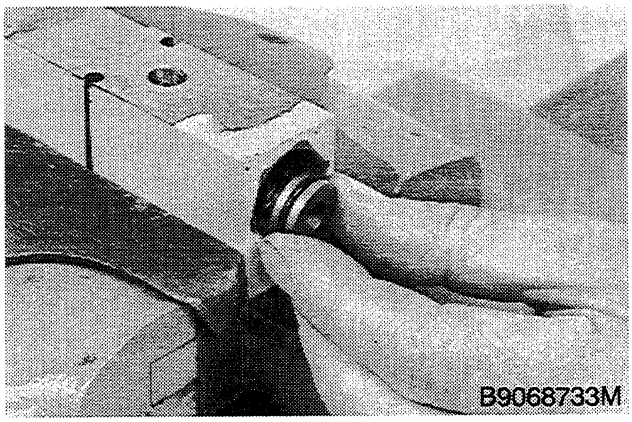
Remove the spring.

STEP 44



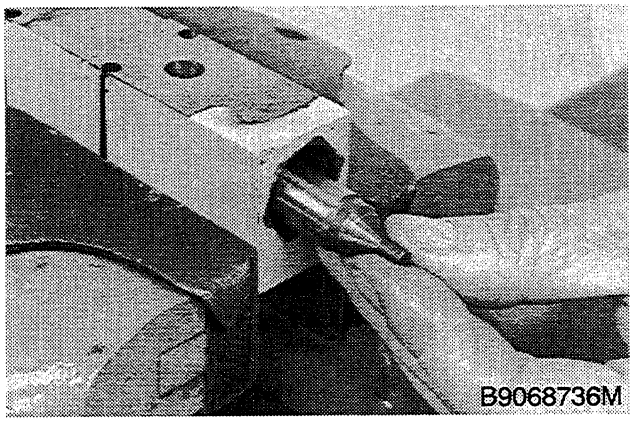
Remove the poppet, spacer, and steel ball.

STEP 45



Remove the seat.

STEP 46



Remove the plunger.

8009

CYLINDERS

TABLE OF CONTENTS

Section

9001

CONTROL LINKAGES, PEDALS, LEVERS AND CHAINS

1845C Skid Steer

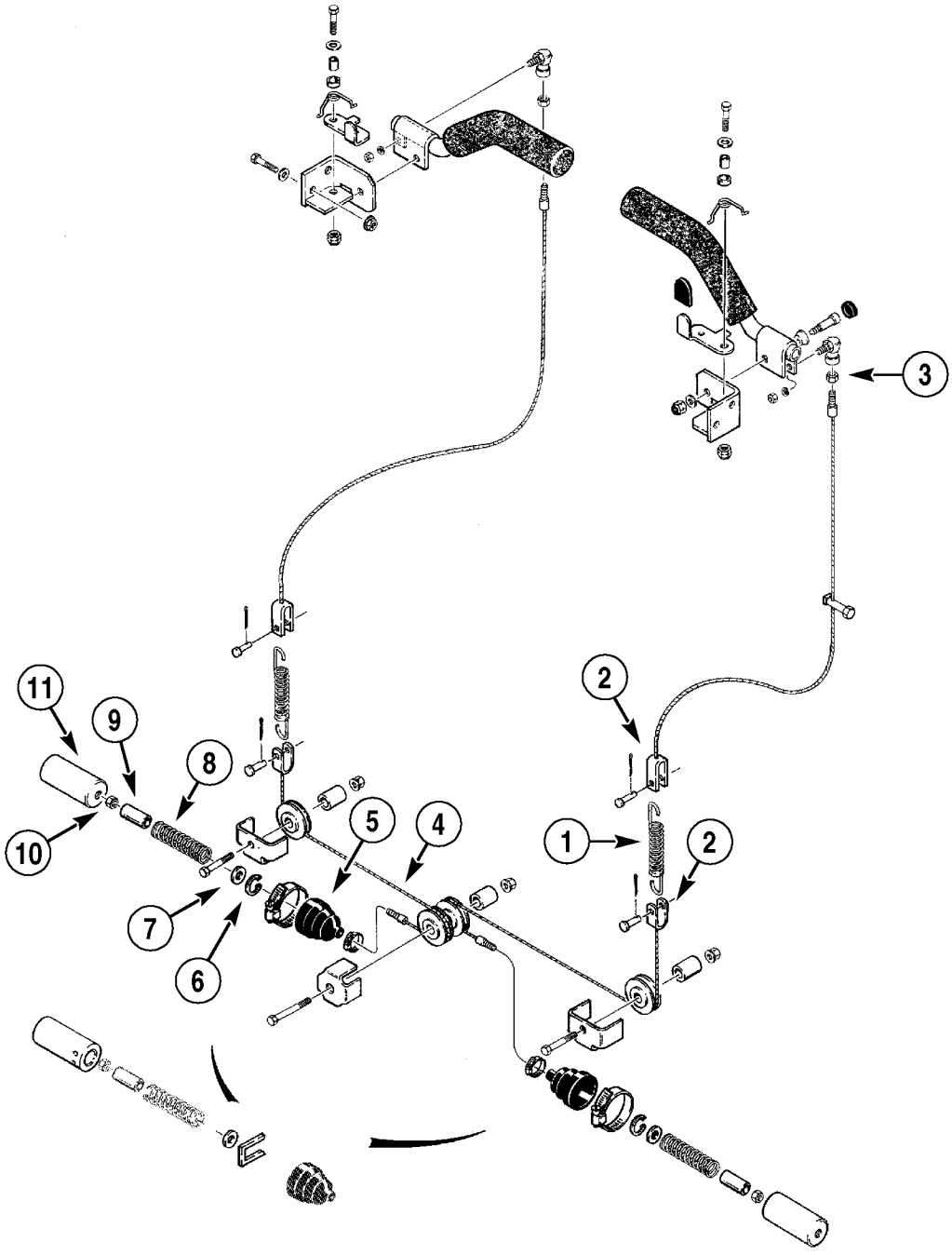
CASE CORPORATION
700 State Street
Racine, WI 53404 U.S.A.

CASE CANADA CORPORATION
450 Sherman Avenue
Hamilton, ON L8N 4C4 CANADA

Bur 8-17782

Printed in U.S.A.
December, 1998

Illustration of Parking Latch with Dual Seat Bar Levers Prior to P.I.N. JAF0040228



ts98j010

1. SPRING
2. YOKE
3. JAM NUT
4. CABLE
5. BOOT
6. RETAINING CLIP
7. WASHER
8. SPRING
9. SPACER
10. JAM NUT
11. PARKING LATCH PIN

16. Check the steering control levers (1) for clearance in the front panel (2) See Page 23 in this section. Adjust the ball joint (3) on the neutral control rod (4) as required to obtain the correct clearance.

NOTE: *The dimensions 38 to 42 mm (1.50 to 1.65 inches) for clearance of the steering control levers in the front panel are INITIAL adjustment minimum dimensions. Some units may require more clearance to avoid an interference to control lever operation.*

17. For units with a Single (one piece) Seat Bar go to step 20.

Units with Dual Seat Bars

18. Check to see that the steering control levers (1 and 2) can be moved all the way rearward without touching the Dual Seat Bar levers

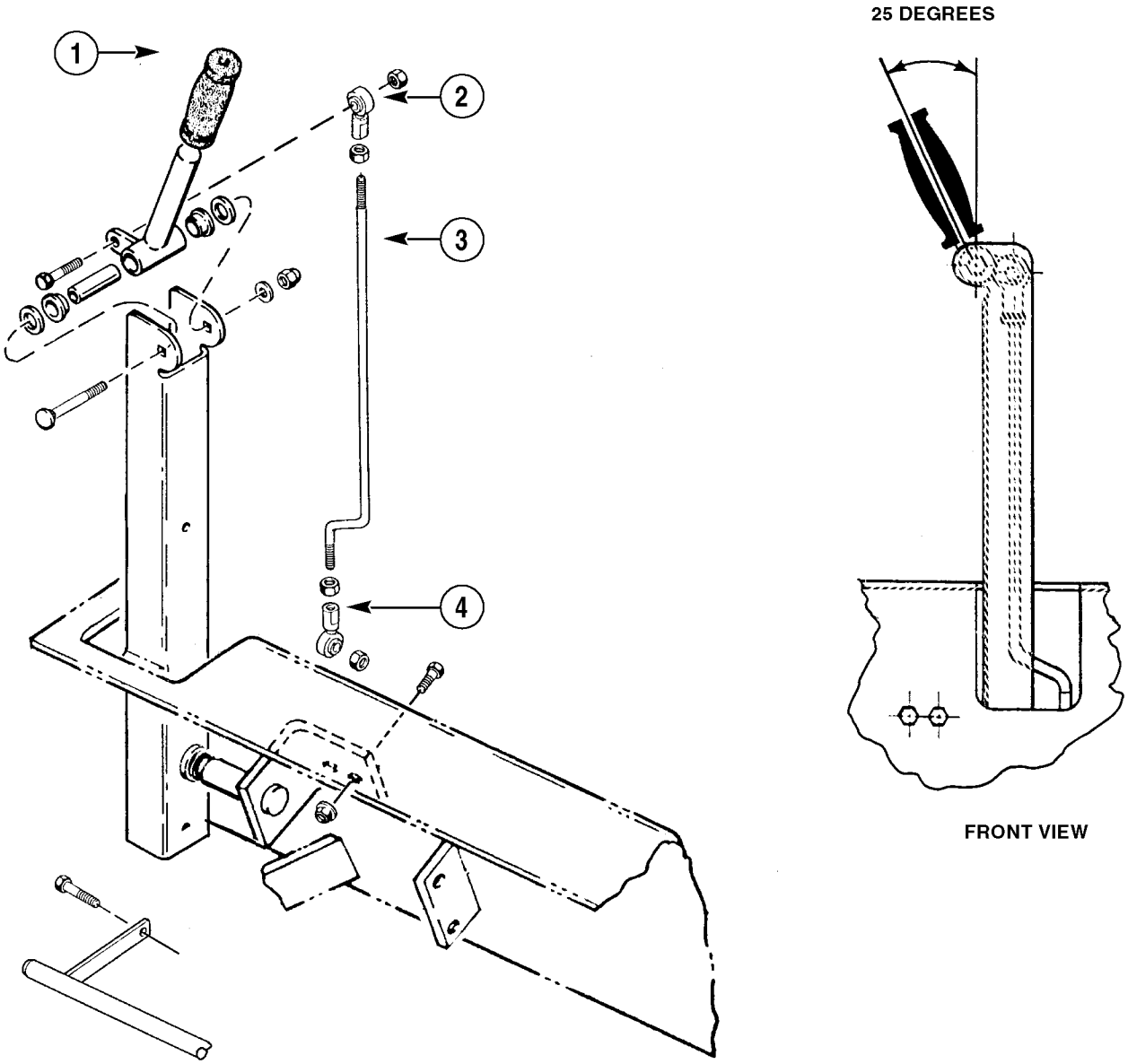
19. If the steering control levers (1or 2) touched the Dual Seat Bar levers, turn the ball joint (3 or 4) at the front of the neutral control rod (5 or 6) onto the neutral control rod (5 or 6).

20. Connect the ball joints (18 and 19) for the shock absorbers to the cross shafts (14 and 15) and tighten securely.

21. Install the seat assembly, (Plug in the operators presence system harness if equipped.) lower the loader frame and lower the wheels to the ground.

22. Check and adjust the steering control levers for straight tracking, See Page 24 in this section.

ADJUSTING THE LOADER CONTROL - HAND LEVERS



ts98h067

1. L.H. CONTROL LEVER
2. BALL JOINT
3. LOADER CONTROL ROD
4. BALL JOINT

NOTE: *Put the Seat Bar(s) in the UP position so that the pivot lock plate is locking the loader controls in the NEUTRAL position. Adjust the ball joints (2 and 4) for the loader control rod (3) so the hand control lever (1) is in the position shown, 25 degrees tilt from the center line. Do the same for right hand not shown.*

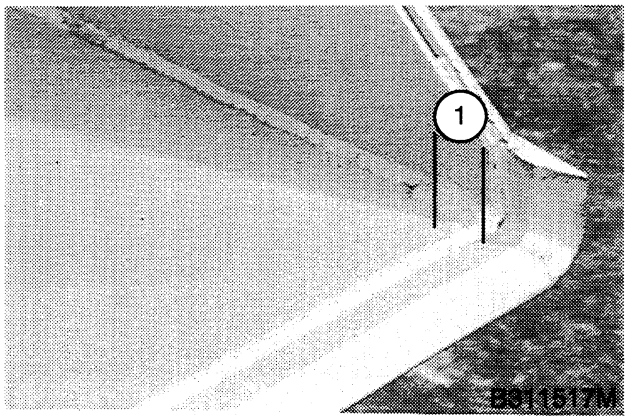
REPLACING THE CUTTING EDGE

1. Raise the bucket to an acceptable height and use acceptable supports to hold the bucket in place.

2. Use carbon arc rod or an acetylene cutting torch to remove the welds that hold the cutting edge. Keep distortion to a minimum amount.

3. When removing the weld at the rear of the cutting edge, do not cut through the bottom of the bucket.

4. Cut through each corner of the cutting as shown.



1. 1-5/16 Inch (33 mm)

5. Use a grinder to remove any welds or extra metal on the bucket that will prevent the new cutting edge from fitting correctly.

6. Use C-clamps to hold the cutting edge in place.

7. See the next page for weld specifications for the bucket being repaired. Use E7018 welding rod or equivalent welding wire.

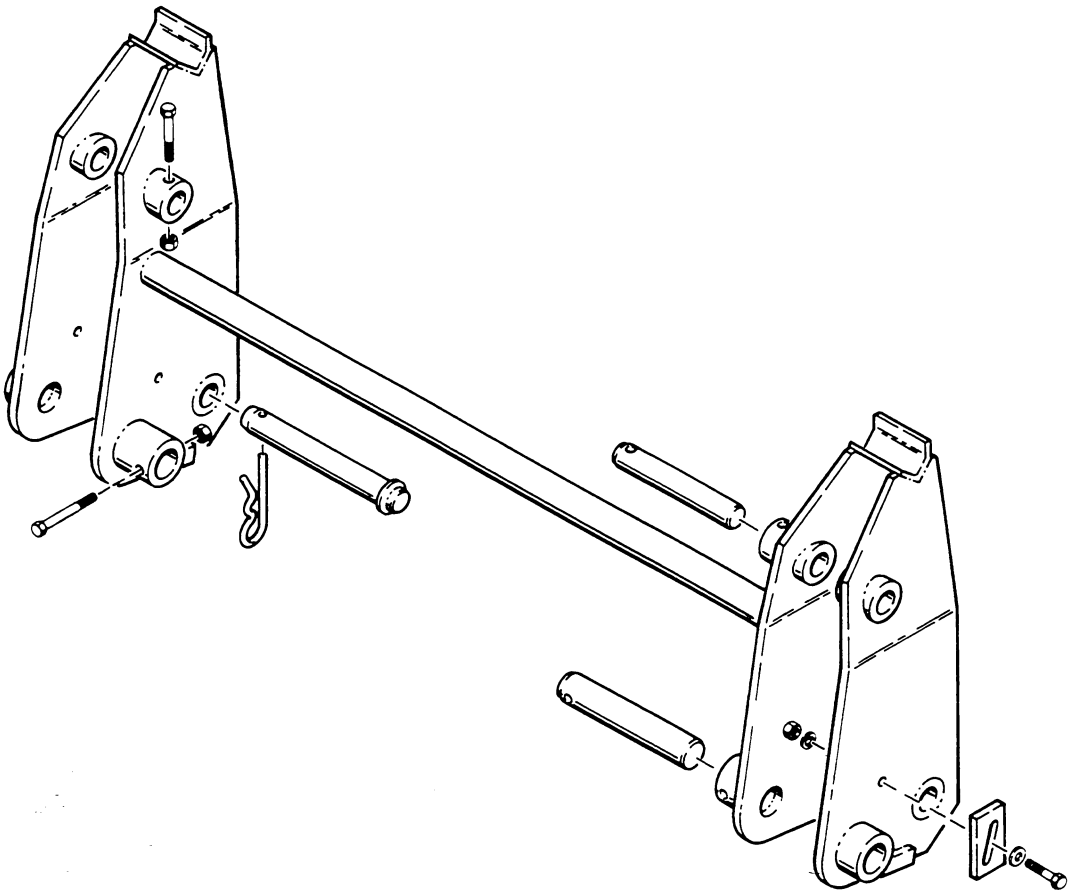
8. When welding the top of the cutting edge to the floor of the bucket:

a. Start at one end of the bucket and weld toward the center until one welding rod has been used.

b. Start at the center of the bucket and weld in both directions from center until welding rod has been used.

c. Start at the other end of the bucket and weld toward the center until one welding rod has been used.

d. Continue welding using this method until the cutting edge is welded to the bucket.



B911878J

Case Pinned Coupler

ACCIDENT DAMAGE TO ROPS CANOPY

If the machine has rolled over or the ROPS canopy has been in some type of accident (such as hitting an overhead object during transport), you must replace the ROPS canopy to have the same protection you had with the original ROPS canopy.

After the accident check for damage to the ROPS canopy, seat belt, accessories, and wiring in the ROPS canopy. Before operating the machine, replace all damaged parts.

DO NOT try to weld or straighten the ROPS canopy.

MAINTENANCE AND INSPECTION OF ROPS CANOPY

After every 500 hours of operation or every six months, whichever occurs first, do the following:

1. Check the torque for the mounting bolts of the ROPS canopy. See illustration on page 4 or page 6 for torque specifications.

2. Check the torque for the mounting bolts for the seat belts. See illustrations on pages 7 through 11 for torque specifications.

3. If a seat belt is damaged in any way, replace the seat belt.

Do not install attachments that will make the total weight of the machine more than the weight shown in the maximum gross vehicle weight section of the ROPS serial number plate. 47-26

Do not change the ROPS in any way. Changes made to the ROPS which are not authorized, such as welding, drilling or cutting, will make the ROPS weaker and decrease your protection. Replace the ROPS if it becomes damaged in any way. DO NOT TRY TO MAKE REPAIRS TO THE ROPS. 47-25

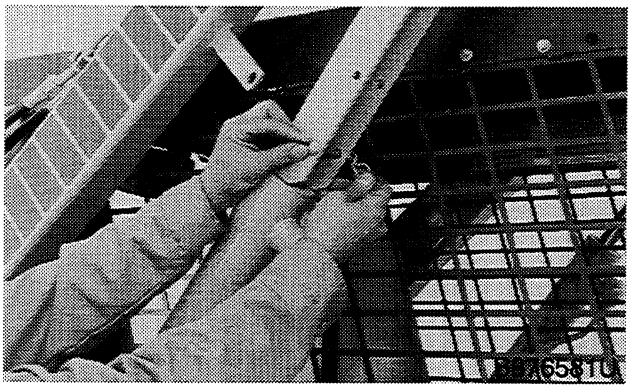
MOVING THE OPERATORS COMPARTMENT FORWARD

STEP 1
Remove the pins that hold the strut in position and lower the strut onto the lift cylinder.

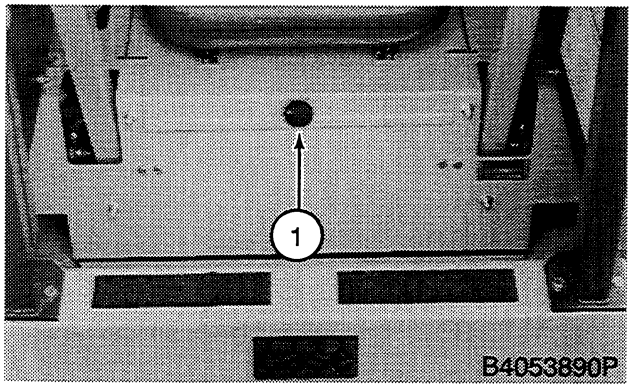
STEP 2
Start and run the engine at low idle.

STEP 3
Move the machine forward and backward as required to make sure the pin in each parking latch engages the cluster sprocket.

STEP 4
Raise the loader frame until the strut falls onto the piston rod. Then lower the loader frame until the strut touches the end of the lift cylinder. Stop the engine.

STEP 5

Install the pins that hold the strut.

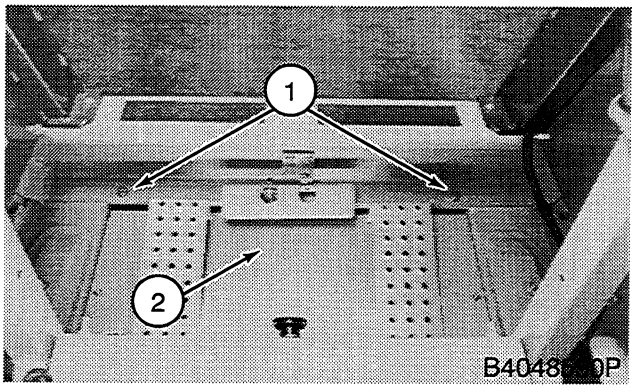
NOTE: *Clean all dirt and foreign material from the slide rails between the ROPS pod frame and the frame.*

STEP 6


1. Knob

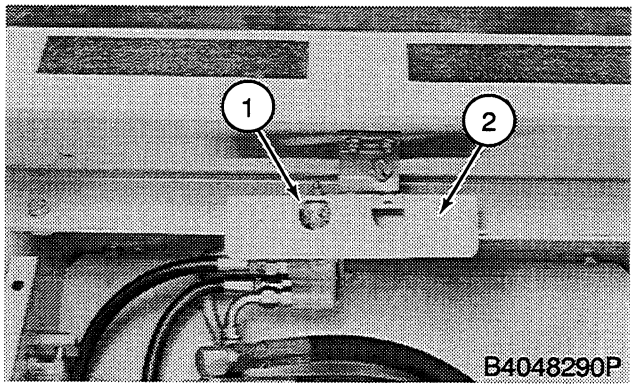
Loosen the screw (knob) that holds the mounting plate for the seat.

STEP 7
Remove the seat from the machine.

STEP 8


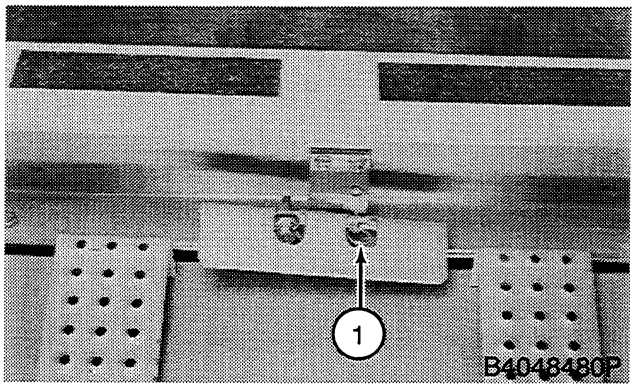
1. Mounting Bolts
2. Floor Plate

Remove the floor plate and remove the two front mounting bolts for the ROPS.

STEP 9


1. Linkage
2. Foot Pedal

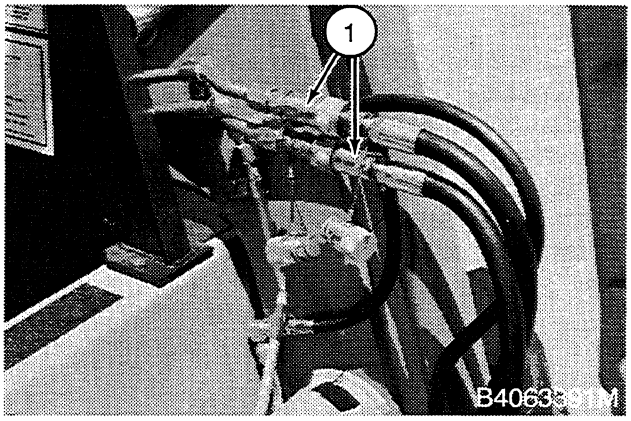
If equipped, disconnect the linkage from the auxiliary hydraulic foot pedal (upper linkage).

STEP 10


1. Pin

Install the pin in the auxiliary hydraulic foot pedal (power position) to prevent the pedal from moving.

9. Before disconnecting the supply and return hoses, stop the engine and relieve all backhoe valve spools and the machines auxiliary circuit. When all pressure has been relieved, disconnect supply and return hoses and return machines auxiliary valve to neutral.



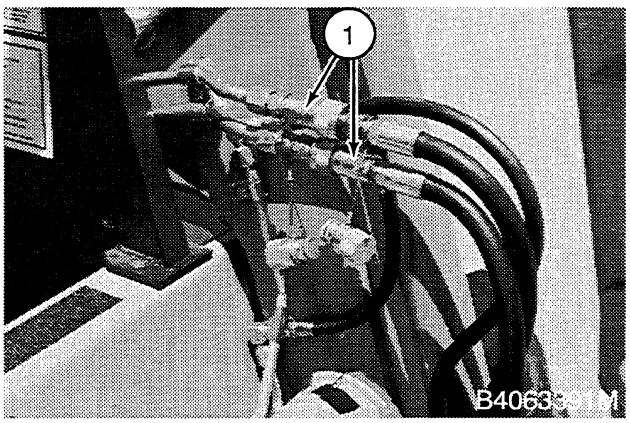
1. Quick Disconnects

Installation

NOTE: *Make sure you install two 50 pound (23 kg) rear counterweights on the machine.*

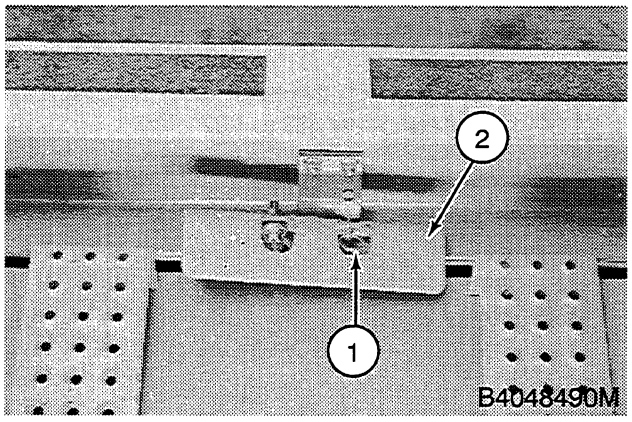
1. Carefully align the machine to the backhoe. Roll the backhoe onto the coupler and engage the coupler latches.

2. Connect the supply and return hoses.



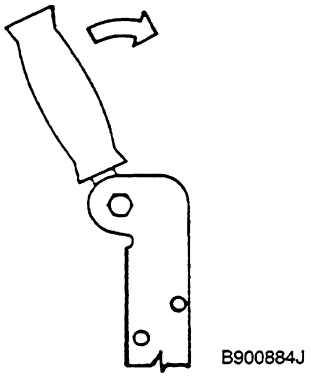
1. Quick Disconnects

3. Push down the right side of the auxiliary control pedal and install the lock pin as shown.



1. Lock Pin
2. Push Down for Power Position

NOTE: *If your machine has loader control foot pedals, put the right-hand control lever in the continuous power position and install the pin.*



NOTE: *Carefully check the backhoe for correct hydraulic function. If stabilizers move opposite to that indicated on the control decal, reverse the supply and return hoses and check the operation again. Do not operate the backhoe with supply and return lines reversed. Reversed oil flow can damage the valve and couse unpredictable backhoe movement possibly resulting in serious injury to personnel.*