125B EXCAVATOR
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CASE CORPORATION

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SAFETY RULES

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

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

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

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



780449

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

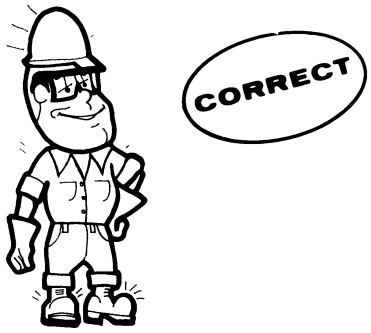
WARNING: *Operate tractor and equipment controls from the seat position only. Any other method could result in serious injury.* 48-55

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

WARNING: *Before starting engine, study operator's manual safety messages. Read all safety signs on machine. Clear the area of other persons. Learn and practice safe use of controls before operating.*

It is your responsibility to understand and follow manufacturer's instructions on machine operation, service, and to observe pertinent laws and regulations. Operator's and service manuals may be obtained from your J I Case dealer. 45-2

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



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

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TORQUE SPECIFICATIONS - METRIC HARDWARE

Use the following torques when special torques are not given.

These values apply to fasteners with coarse threads as received from supplier, plated or unplated, or when lubricated with engine oil. These values do not apply if graphite or moly-disulfide grease or oil is used.

Grade 8.8 Bolts, Nuts, and Studs

8.8

Size	Pound-Feet	Newton metres	Kilogram metres
M4 0.15 in	2-3	3-4	0.3-0.4
M5 0.19 in	5-6	6.5-8	0.7-0.8
M6 0.23 in	8-9	10.5-12	1.1-1.2
M8 0.31 in	19-23	26-31	2.6-3.2
M10 0.39 in	38-45	52-61	5.3-6.2
M12 0.46 in	66-79	90-107	9.1-10.9
M14 0.55 in	106-127	144-172	14.7-17.6
M16 0.62 in	160-200	217-271	22.1-27.7
M20 0.78 in	320-380	434-515	44.2-52.5
M24 0.94 in	500-600	675-815	69.1-83.0
M30 1.17 in	920-1100	1250-1500	127-152
M36 1.40 in	1600-1950	2175-2600	221-270

Grade 10.9 Bolts, Nuts, and Studs

10.9

Size	Pound-Feet	Newton metres	Kilogram metres
M4 0.15 in	3-4	4-5	0.4-0.5
M5 0.19 in	7-8	9.5-11	1.0-1.1
M6 0.23 in	11-13	15-17.5	1.5-1.8
M8 0.31 in	27-32	37-43	3.7-4.4
M10 0.39 in	54-64	73-87	7.5-8.8
M12 0.46 in	93-112	125-150	12.9-15.5
M14 0.55 in	149-179	200-245	20.6-24.7
M16 0.62 in	230-280	310-380	31.8-38.7
M20 0.78 in	450-540	610-730	62.2-74.7
M24 0.94 in	780-940	1050-1275	108-130
M30 1.17 in	1470-1770	2000-2400	203-245
M36 1.40 in	2580-3090	3500-4200	357-427

Grade 12.9 Bolts, Nuts, and Studs

12.9

Usually the torque values specified for grade 10.9 fasteners can be used satisfactorily on grade 12.9 fasteners.

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MAINTENANCE SCHEDULE

The items in this maintenance schedule are at maximum intervals. If you are operating the machine under severe conditions (high temperatures, mud, dust, water, etc.), shorten the intervals.

Every 10 Hours of Operation or Each Day Whichever Occurs First

Clean and replace all safety decals and instruction decals that cannot be read ..... See Operators Manual

Clean dust cup in air cleaner ..... See Operators Manual

Check the engine oil level ..... See Operators Manual

Check the fluid level in the hydraulic reservoir ..... See Section 8201

Drain water and sediment from fuel tank ..... See Operators Manual

Check the swing brake for correct operation ..... See Operators Manual

Lubricate the turntable ring gear ..... Section 9216

Lubricate the boom, arm, and bucket pivots ..... See Operators Manual

Every 50 Hours of Operation

Lubricate the turntable bearing ..... See Operators Manual

Lubricate the starter ring gear and pinion ..... See Operators Manual

Every 100 Hours of Operation

Systemgard™ testing schedule ..... See Section 8201

Clean the priming pump screen ..... See Operators Manual

Clean hydraulic cooler ..... See Operators Manual

Check track tension ..... See Section 5503

Check alternator drive belt tension ..... See Section 4007

Clean swing system ring gear ..... See Operators Manual

Change engine oil ..... See Operators Manual

Check battery fluid level ..... See Section 4005

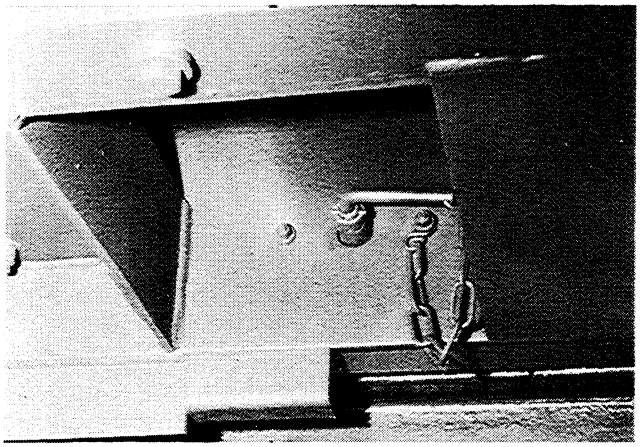
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ENGINE REMOVAL

Before you disconnect any hoses, put identification tags on the hoses. Install plugs and caps in the hoses and fittings to keep dirt out of the engine.

1. Put the battery disconnect switch in the OFF position.



A846839

2. Loosen the hose clamp that fastens the hose to the cooling intake tube of the engine.

3. Open the back door of the cowling. Loosen and remove the cap screws, flat washers, and spacers from the cooling intake adapter.

4. Pull the cooling intake adapter from the cooling intake tube of the engine.

5. Loosen the hose clamp on the inlet of the air cleaner.

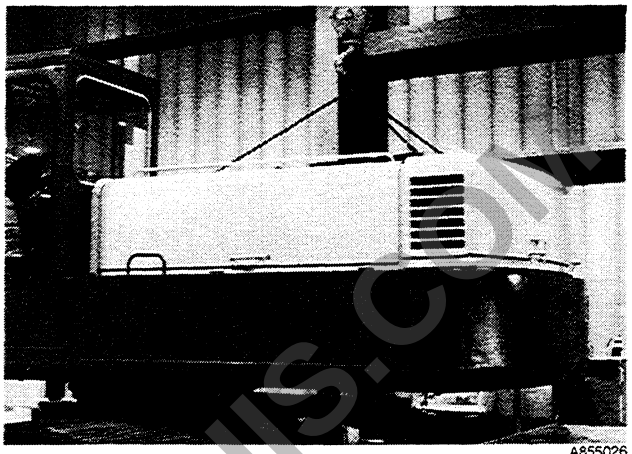
6. Remove the cooling intake adapter and hoses.

7. Loosen and remove the cap screws, flat washers, and spacers that fasten the cowling to the upper structure.

8. Close the doors on the cowling.

9. Connect lifting equipment to the cowling.

10. Remove the cowling from the machine.



A855026

11. Disconnect the pump drive shaft from the engine. Move the pump drive shaft out of the way.

12. Loosen and remove the cap screws and flat washers from the rear engine mounts.

13. Put identification tags on all the electrical wires connected to the engine.

14. Disconnect the wires from all the switches and senders on the engine.

15. Cut the tie straps that fasten the wires to the engine. Move the wires out of the way.

16. Disconnect the turbocharger inlet hose from the turbocharger.

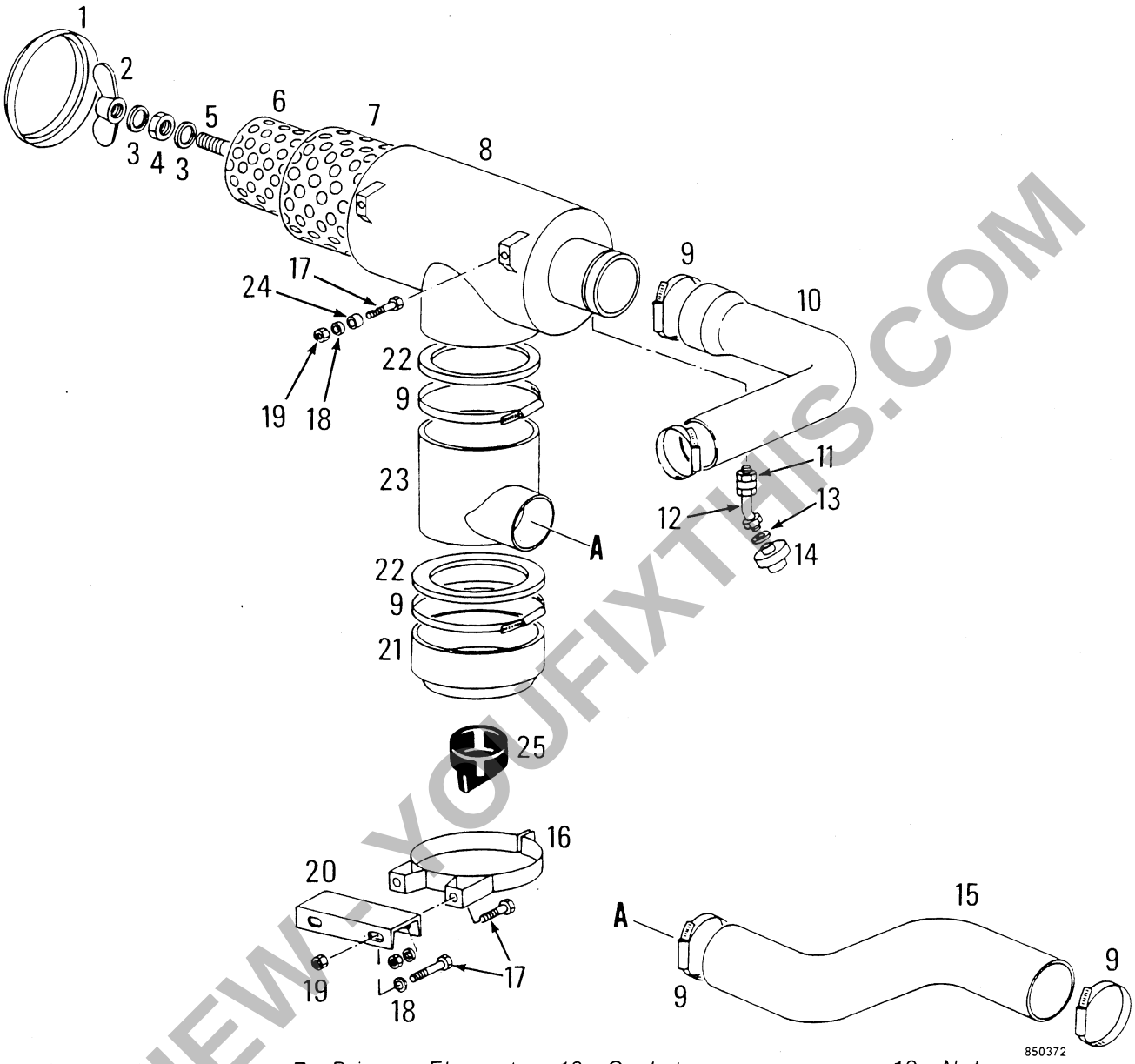
17. Disconnect the battery cable and ground strap from the starter.

18. Remove the clamps that fasten the fuel lines to the front of the engine.

19. Disconnect the fuel lines from the engine.

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1. *Cover*
2. *Wing Nut*
3. *Seal*
4. *Nut*
5. *Tie Bolt*
6. *Secondary Element*
7. *Primary Element*
8. *Body, Air Cleaner*
9. *Hose Clamp*
10. *Hose to Engine*
11. *Air Restrictor*
12. *Tube*
13. *Gasket*
14. *Air Restrictor Indicator*
15. *Intake Hose*
16. *Clamp*
17. *Bolt*
18. *Flat Washer*
19. *Nut*
20. *Bracket*
21. *Dust Cap*
22. *Seal*
23. *Body, Precleaner*
24. *Spacer*
25. *Dust Valve*

Illustration of Air Cleaner

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General engine data

English	NOTE! For comparison purposes only, we have included decimal equivalents in the brackets near the metric figures. We recommend you use the metric figures when working on DEUTZ engines.					
Engine type	F2/3/4/5/6L 912	F2/3/4/5/6L 912 W	F3/4/6L 911	BF6L 912	F4/6L 913	BF6L 913/C
Total piston displacement cm^3	F2L = 1885 F3L = 2827 F4L = 3770 F5L = 4712 F6L = 5655		F3L 2473 F4L = 3297 F6L 4946	5652	F4L 913 = 4086 B/F6L 913 = 6128 **B/F6L 913 — (374 Cu. In.)**	
Working cycle	Fourstroke diesel					
Combustion system	1)	2)	1)			
Bore mm	100 **(3.937 in.)**				102 **(4.015 in.)**	
Stroke mm	120 **(4.724 in.)**		105 **(4.134 in.)**	120	125 **(4.921 in.)**	
Weight of engine according to VDMA kg	**(518 lbs.)** F2L = 235 F3L = 270 **(595 lbs.)** **(662 lbs.)** F4L = 300 F5L = 380 **(838 lbs.)** F6L = 410 **(905 lbs.)**		F3L = 300 F4L = 315 F6L = 410	410	F4L = 307 F6L = 420	**(1069 lbs.)** 485 BF6L913C = 510
Direction of rotation	when facing flywheel, counter-clockwise					
Rated speed max. (RPM) 1/min	F2L 912/W = 2500 BF6L 912 = 3000 FL 911/912/W = 3000 B/FL 913 = 2800 BF6L913C = 2500					
Minimum idle speed 1/min (RPM)	650 - 700 F2L = 750 - 800		850 - 900	650 - 700	650 - 700	
Compression ratio	17 : 1	19 : 1	17 : 1	15,5 : 1	17 : 1	15,5 : 1
Compression pressure bar	**(290-406 PSI)** 20 - 28	**(362 - 435)** 25 - 30	**(290 - 406)** 20 - 28	**(319 - 362)** 22 - 25	26 - 30	**(348 - 406)** 24 - 28
Valve clearance Inlet Exhaust mm	**(0.006 in.)** 0,15					

1) Direct injection 2) 2-stage combustion system

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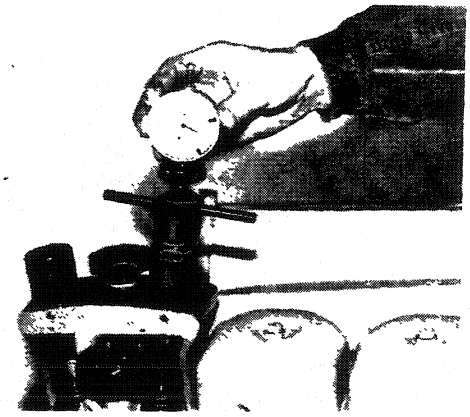
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Gearcase

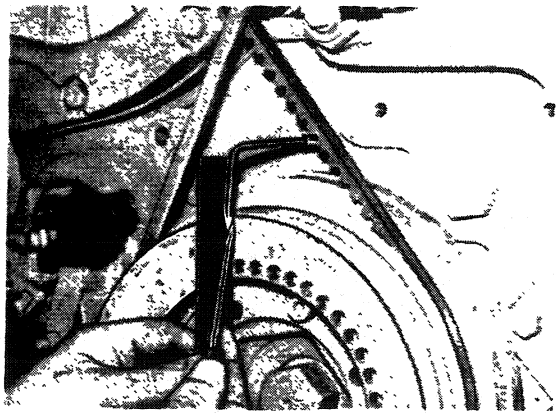
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Dismantling and installing vee-belt tensioner (as from 3 cylinder engine)	83
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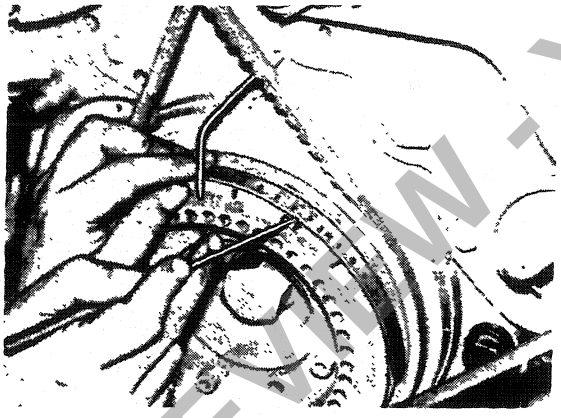
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2-13



2-14



2-15

DETERMINING TDC W/O GRADUATED SCALE

Mounted are tuning unit No. 100640 and dial gauge No. 100400. Dial gauge is pre-tensioned. See Fig. 2-13

1. Extend dowel sleeve by a piece of wire.

2. Turn crankshaft carefully in nominal direction until piston pushes up the valve. Slowly turn farther until gauge pointer changes the direction. Set gauge at "0".

3. Turn back crankshaft through about one revolution of gauge pointer, then again in original direction up to 0.1 mm (10 graduations) from 0-position. Provide on V-belt pulley a mark agreeing with dowel sleeve.

Fig. 2-14

4. Turn crankshaft in running direction beyond "0" through about one revolution of the gauge and turn back up to 0.1 mm (10 graduations) before "0". Provide second mark on belt pulley.

5. Measure and mark the half-way position between the two marks.

Fig. 2-15

Note:

The mid-way mark will be the dead centre mark. When it is opposite the retainer sleeve, cylinder 1 will be in the top dead centre position.

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Crankshaft assembly

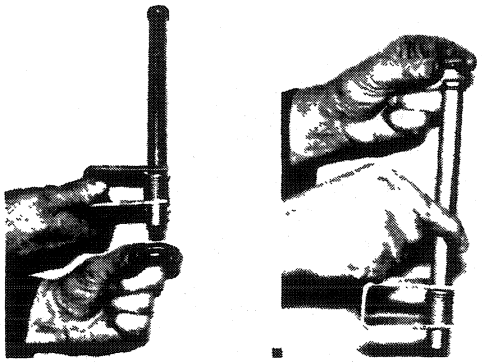
English	F2/3/4/5/6L 912	F2/3/4/5/6L 912 W	F3/4/6L 911	BF6L 912	F4/6L 913	BF6L 913 C
Engine type						
Width of bearing mm	(0.9843 $^{-0.0018}$) 25 $^{-0,2}$		(1.0236 $^{-0.0078}$)	26 $^{-0,2}$	(0,9843 $^{-0,0079}$) 25 $^{-0,2}$	
Width of connecting rod mm	(1.3228 $^{-0.0031}_{-0.0056}$) 33,6 $^{-0,080}_{-0,142}$		(1 4016 $^{-0.0031}_{-0.0056}$)	35,6 $^{-0,080}_{-0,142}$	33,6 $^{-0,080}_{-0,142}$	
Big-end bearing clearance						(1 3228 $^{-0.0031}_{-0.0056}$)
Radial clearance normal mm	0,04 - 0,098 (0,0016 - 0,0039)					
Radial clearance limit value mm	0,3 1) (0,0118)					
Side clearance normal mm	0,48 - 0,581 (0,0019 - 0,0229)					
Side clearance limit value mm	0,8 (0,0315)					
Idler gear and journals						
Bearing bush internal diameter (pressed in) mm	(1.5748 $^{+0.0016}_{+0.0010}$) 40 $^{+0,041}_{+0,025}$ 2)		40 $^{+0,025}_{+0,009}$ (1,5748 $^{+0,0010}_{+0,0004}$)			
Journal diameter mm			40 $^{-0,009}_{-0,025}$ (1.5748 $^{-0.0004}_{-0.0010}$)			
Journal clearance in bearing bush mm	0,034 - 0,066 2) (0 0013 - 0 0026)		0,018 - 0,05 (0,0007 - 0,0020)			
Limit value mm	0,1 2) (0.0039)		0,2 (0,0079)			

1) Replacement is governed by oil pressure,

2) F 5/6L 912, NOT TRACTOR ENGINE,

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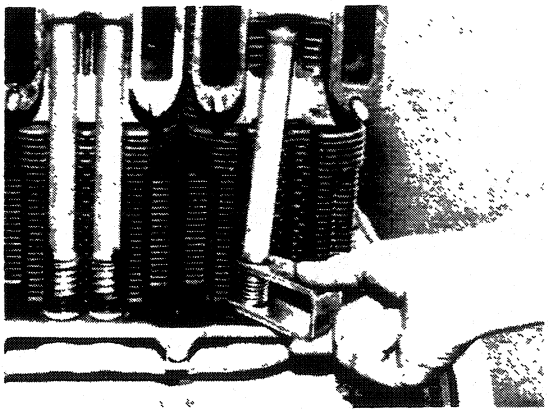
3-13

12. Assemble the profile washer with the open side towards the end of the pushrod shroud. Fit a new gasket with the wide end face towards the end of the pushrod shroud.

Fig. 3-13, left

13. Fit a new gasket on the opposite end with the wide end face towards the shoulder.

Fig. 3-13, right



3-14

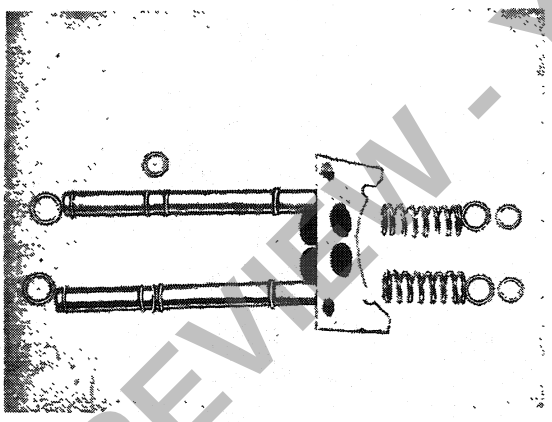
14. Insert the spring ends of the two pushrod shrouds in the pushrod holes in the crankcase and locate the upper ends with gaskets in the cones of the cylinder head. Remove the spring tensioner.

Fig. 3-14

FITTING PUSHROD COVER TUBES ON ENGINE PROVIDED WITH EXHAUST AIR HEATING

Special tool:

Spring tensioner ..... No. 125300 (2x)

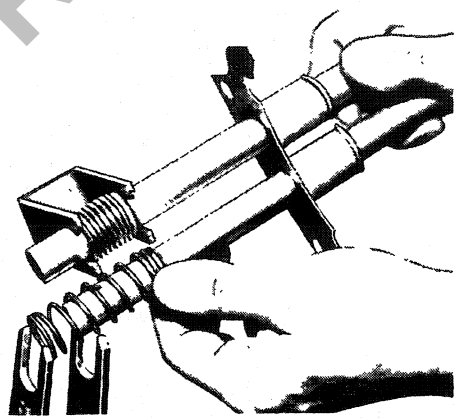


3-15

15. Fit O-seals between the two grooves of the pushrod cover tubes as well as cover plate with gasket adhered thereto. Fitting order see Fig. 3-15.

16. Put springs on pushrod cover tubes and tension springs.
Spring tensioner No. 125300 (2x).

Fig. 3-16



3-16

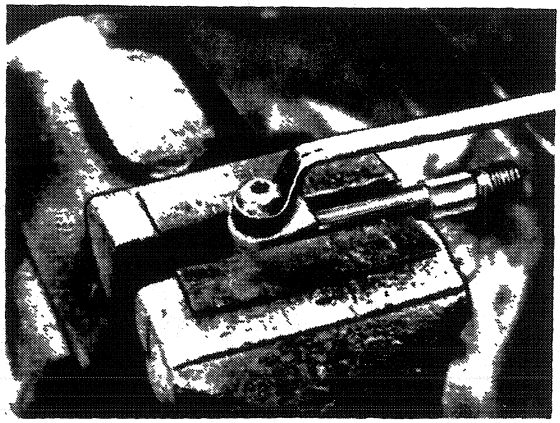
17. Fit sectional washers and gaskets.

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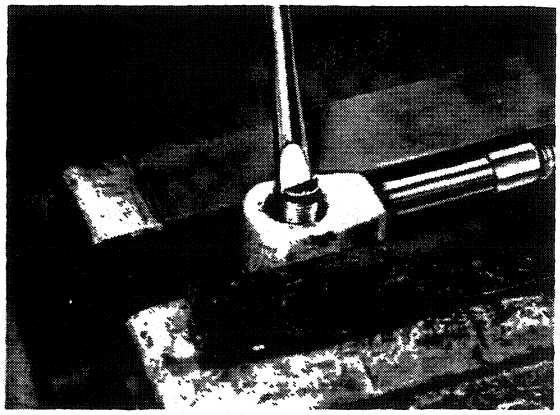
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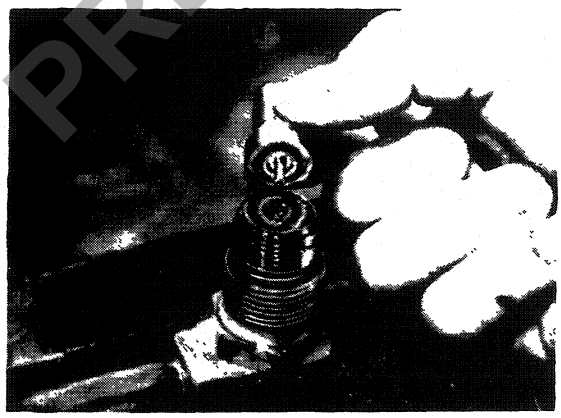
7-67



7-68



7-69



7-70

REMOVING AND FITTING THE INJECTOR NOZZLE
(two stage combustion)

The injector has been removed.

REMOVAL:

1. Loosen the sealing cap and unscrew.
See Fig. 7-67

2. Unscrew the adjusting screw, and remove the pressure spring and the plunger.
See Fig. 7-68

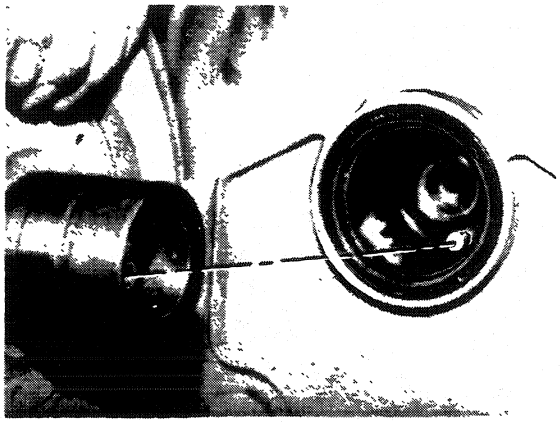
3. Unscrew the screw cap from the injector
See Fig. 7-69

4. Remove the nozzle body with the nozzle needle.

See Fig. 7-70

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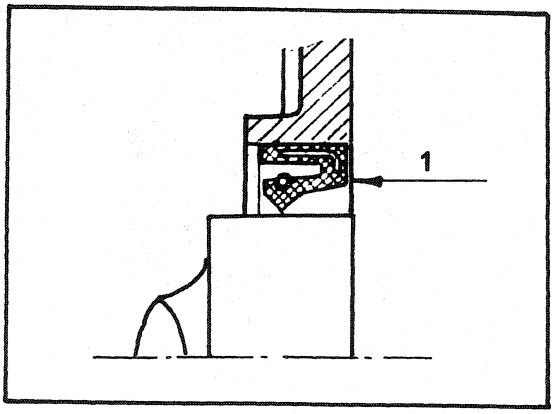
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9-91

43. Grease the lip of the radial packing ring in the front cover and the contact surface of the vee-belt pulley. Install the vee-belt pulley, having brought the locating hole into alignment with the locating pin in the crankshaft gearwheel.

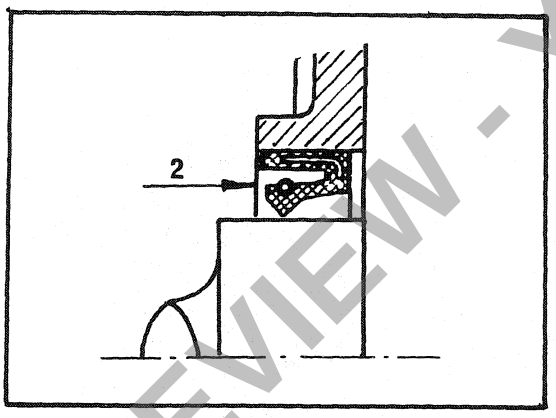
Fig. 9-91



9-92

Note:

Check the contact surface of the radial packing ring. If the shaft exhibits a groove, change the position of the radial packing ring in the front cover.



9-92.1

Note:

When moving radial seal, observe correct depth of installation (pressed in). Depth 1 see Fig. 9-92, outside flush with front-end cover.

Depth 2 (after shifting in front-end cover to be flush inside) : max. 1.5 mm.

Fig. 9-92.1

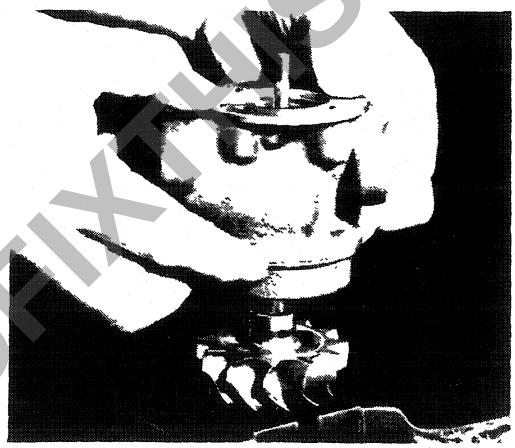
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3. REASSEMBLY

Apply oil to bearings and rotor shaft before installation. Install turbine bearing components 2 and 3 in bearing housing. Fit compressor circlip 2 to locate bearing. Fit heat guard 31 on bearing housing 1.

3.1 Clamp down rotor 5 to hub. Install piston rings 6 in groove. Guide bearing housing 1 carefully over shaft.

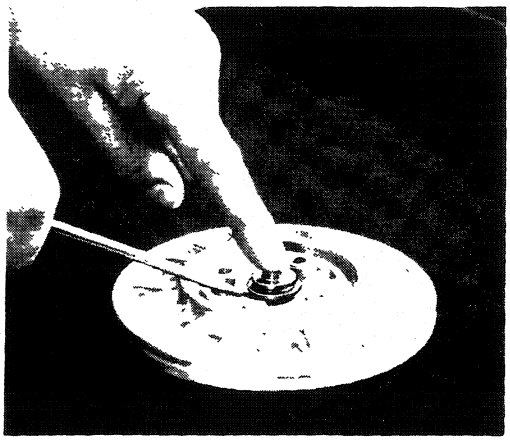


3.1

Fig. 3.1

Give particular attention to centred position of piston rings. Ring gaps should be offset through 90° toward oil inlet. Check that assembly of bearing housing and rotor did not press piston rings out of their grooves. (Heat guard must be easy to move) Install compressor bearing bush 3 in bearing housing 1and fit circlip 2. Install bearing collar 8, thrust bearing 10 and oil deflector 13.

3.2 Before fitting rear wall, install sealing bush 11 with piston rings 12. Ring gaps to be offset through 90° towards oil inlet.



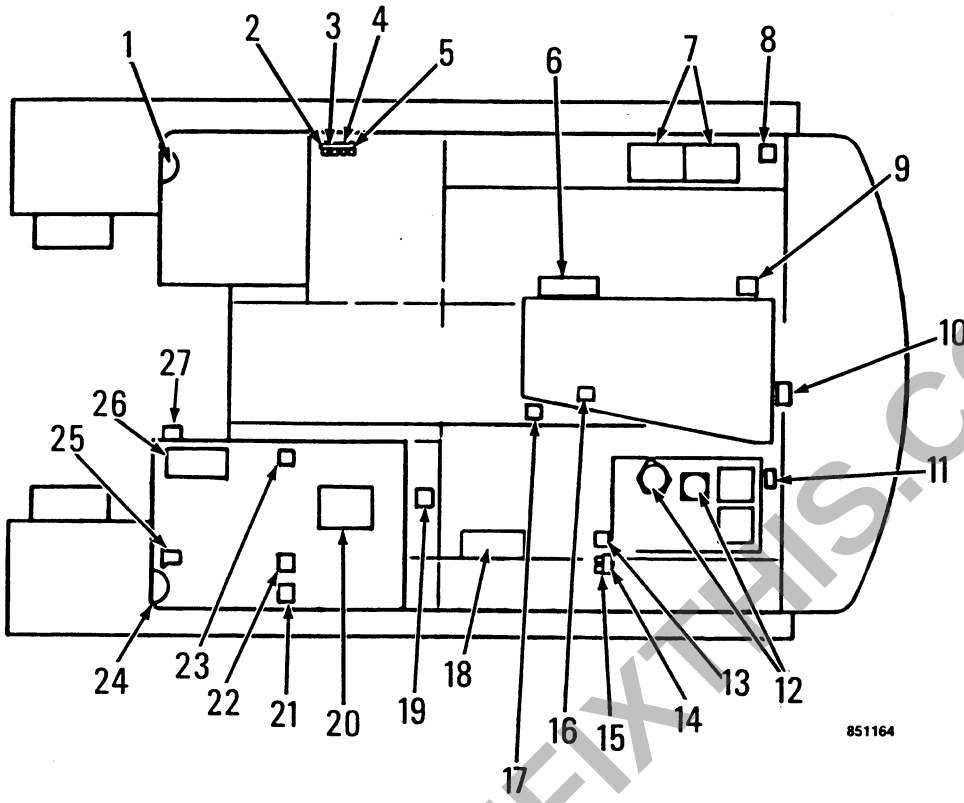
3.2

Fig. 3.2

Apply Loctite 573 to rear wall sealing face. Apply Loctite 640 to threads of screws 18. Tighten screws through the torque tabulated.

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1. *Head Lamp*
2. *Hi Speed Solenoid*
3. *Heavy Lift Solenoid*
4. *Optional Solenoid*
5. *Low Speed Solenoid*
6. *Starter*
7. *Batteries*
8. *Battery Disconnect Switch*
9. *Alternator*
10. *Cooling Belt Switch*
11. *Oil Minimum Temperature Switch*
12. *Oil Filter Switches*
13. *Swing Brake Solenoid*
14. *Control Shutoff Solenoid*
15. *Drive Brake Solenoid*
16. *Engine Temperature Sender*
17. *Engine Oil Pressure Switch*
18. *Electric Box*
19. *Low Speed Pressure Switch*
20. *Blower*
21. *Hourmeter*
22. *Control Cutout Switch*
23. *Key Switch*
24. *Head Lamp*
25. *Horn*
26. *Control Panel*
27. *Outside Power Connection*

Electrical Component Locations

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IDLER AND TRACK ADJUSTER

Removal

1. Do steps 1 through 8 under Track Removal in Section 5503.

2. The weight of the idler is 340 pounds (155 kg). Connect lifting equipment to the idler.

3. Pull the idler and track adjuster from the track frame.

4. Lower the idler and track adjuster to the floor.

5. Loosen and remove the cap screws and flat washers that fasten the track adjuster to the idler.

6. Remove the track adjuster.

7. If the track adjuster is leaking grease, remove the piston and replace the seals.

Installation

1. Install the track adjuster on the idler with cap screws and flat washers. Tighten the cap screws to 320 to 380 pound-feet (434 to 515 N m, 44 to 53 kg/m).

2. Connect lifting equipment to the idler.

3. Install the idler and track adjuster in the track frame.

4. Do steps 2 through 8 under Track Installation in Section 5503.

CARRIER ROLLERS

Removal

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

2. Stop the engine.

3. Release the track tension by loosening the adapter in the track adjuster three turns.



440125R

4. Put a hydraulic jack between the track frame and track near the carrier roller.

5. Operate the hydraulic jack to lift the track from the carrier roller.

6. Loosen the nut on the mounting bolt.

7. Remove the carrier roller from the track frame.

8. Release the hydraulic jack.

Installation

1. Put a hydraulic jack between the track frame and track near the mount for the carrier roller.

2. Operate the hydraulic jack to lift the track so the carrier roller can be installed.

3. Install the carrier roller.

4. Align the carrier roller with the track.

5. Tighten the nut on the mounting bolt to 500 to 600 pound-feet (675 to 815 N m, 69 to 83 kg/m).

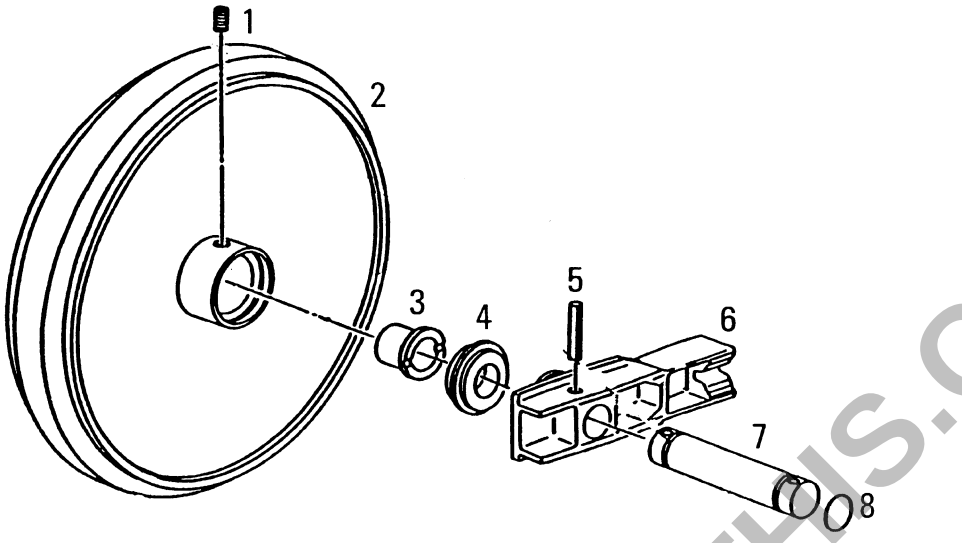
6. Release the hydraulic jack.

7. Adjust the track tension according to the instructions in Section 5503.

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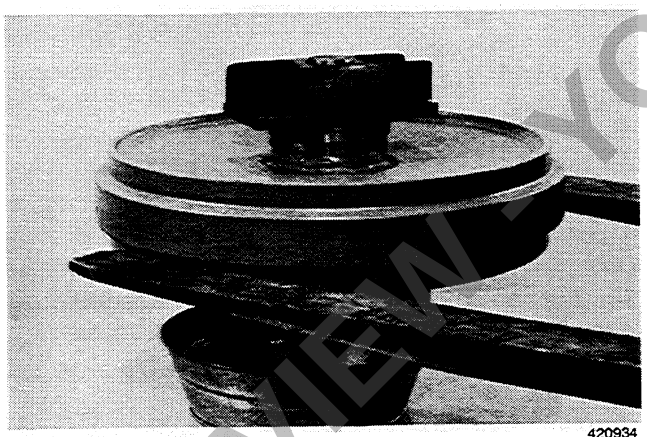
IDLER



1. *Plug*
2. *Idler*
3. *Bushing*
4. *Rubber Rings and Metal Rings*
5. *Roll Pin*
6. *Mounting Bracket*
7. *Shaft*
8. *O-ring*

Disassembly

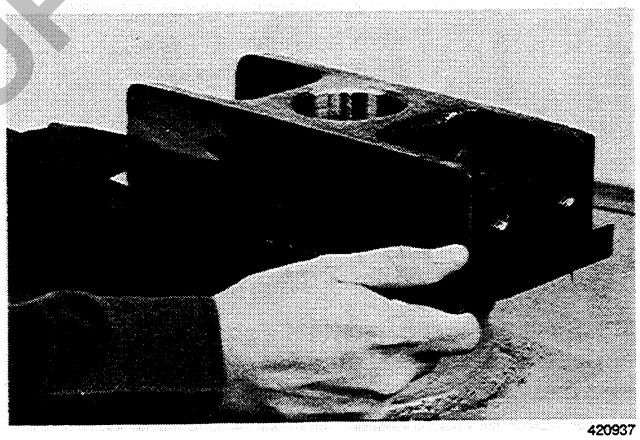
1. Drain the oil from the idler.



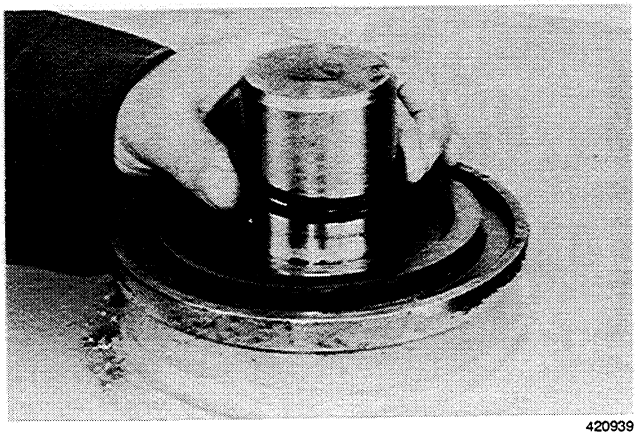
2. Put the idler on support blocks. Drive the roll pin from the mounting bracket and shaft.



3. Remove the mounting bracket.



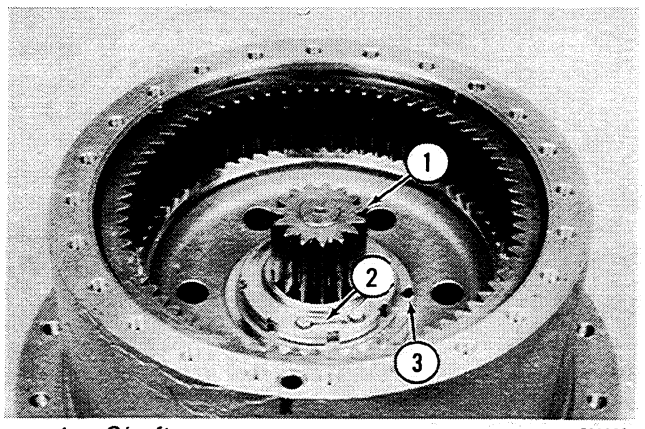
4. Remove the O-ring.



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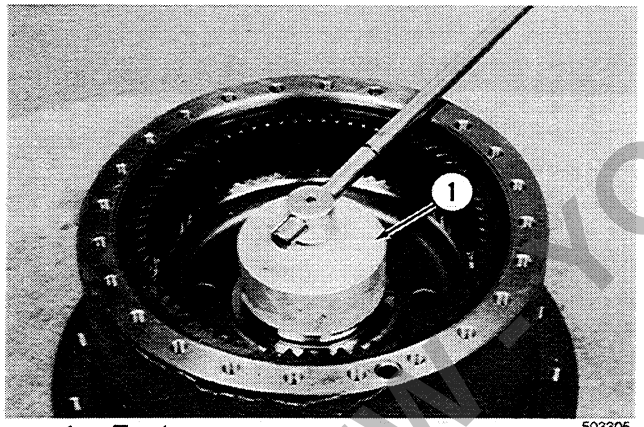
3. Lift the shaft from the housing. Cut the lock wire and remove the lock screws. Make alignment marks on the spindle, lock nut, and hub.



503306

1. *Shaft*
2. *Lock Wire*
3. *Alignment Marks*

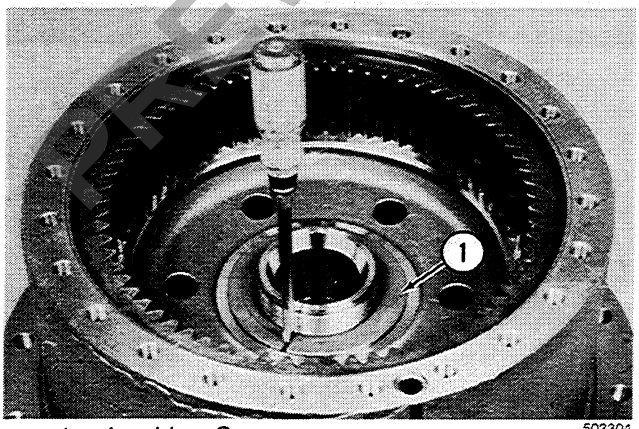
4. Use the tool shown on page 6317-2. Loosen and remove the lock nut.



503305

1. *Tool*

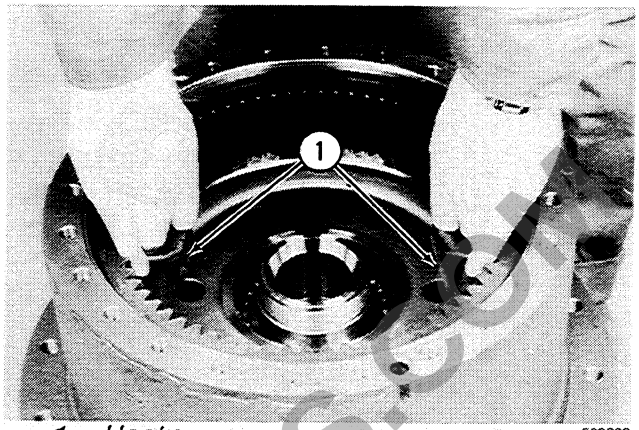
5. Install a chisel in the slot of the locking cone. Hit the chisel to release the locking cone. Remove the locking cone.



503304

1. *Locking Cone*

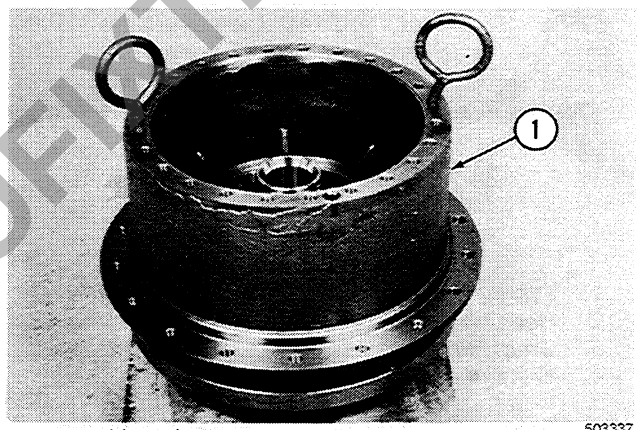
6. Install two hooks in opposite holes of the hub. Lift the hub and ring gear from the housing.



503303

1. *Hooks*

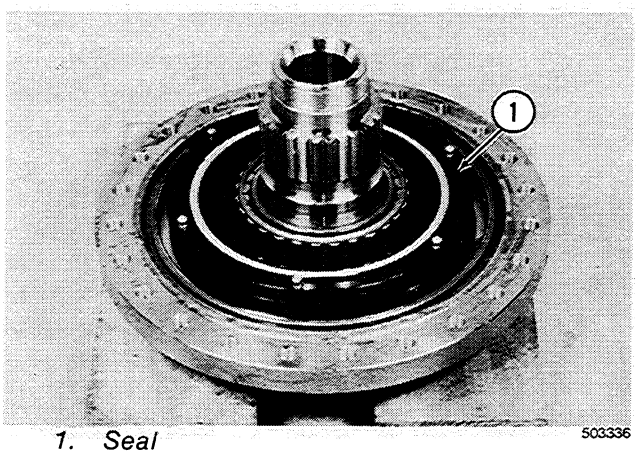
7. Install two lifting rings in the housing. Lift the housing from the spindle.



503337

1. *Housing*

8. Remove the seal from the spindle.



503336

1. *Seal*

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SOLENOID CONTROL VALVE FOR SWING BRAKE

Removal

1. Park the machine on a level surface.

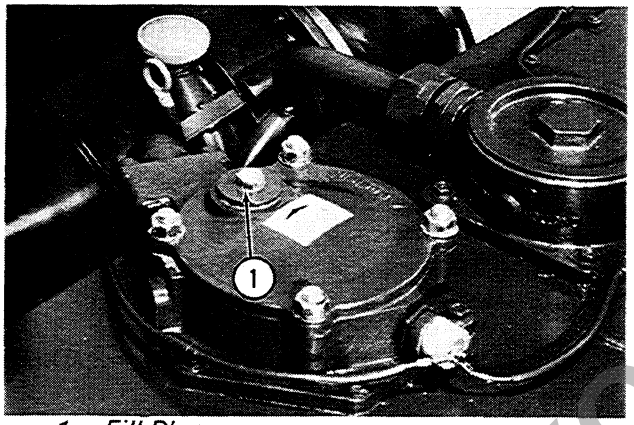
2. Completely extend the bucket cylinder.

3. Put the arm in the vertical position.

4. Lower the boom until the bucket is on the floor.

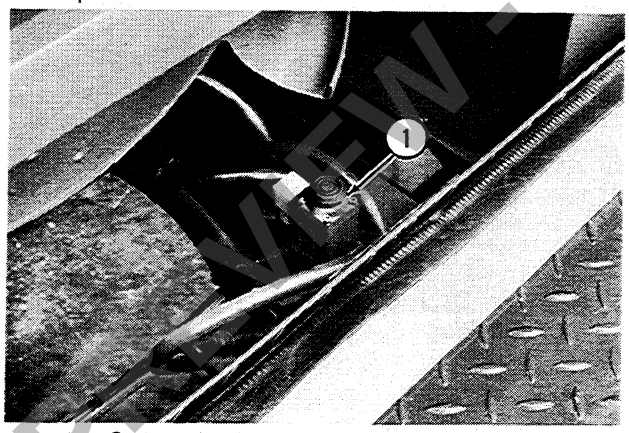
5. Stop the engine.

6. Remove the fill plug from the hydraulic reservoir.



1. Fill Plug A846842

7. Open the access cover.



1. Solenoid Control Valve 440202

8. Fasten identification tags to the hoses at the solenoid control valve.

9. Loosen and remove the screw from the electrical connector.

10. Disconnect the electrical connector from the solenoid control valve.

11. Disconnect the hoses from the fittings in the solenoid control valve.

12. Hold the solenoid control valve in position on the mounting bracket. Loosen and remove the cap screws and washers that fasten the solenoid control valve to the mounting bracket.

13. Remove the solenoid control valve from the machine.

Installation

1. Hold the solenoid control valve in position on the mounting bracket. Install the cap screws that fasten the solenoid control valve to the mounting bracket.

2. Connect the hoses to the fittings in the solenoid control valve.

3. Install the electrical connector in the solenoid control valve.

4. Install the screw that fastens the electrical connector to the solenoid control valve.

5. Install the fill plug in the hydraulic reservoir.

6. Start the engine.

7. Stop the engine.

8. Check for oil leakage at the solenoid control valve.

9. Close the access cover.

10. Check the oil level in the hydraulic reservoir. Add oil as required. See Section 8201.

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OIL IN THE HYDRAULIC SYSTEM BECOMES TOO HOT

CHECK	INSTRUCTIONS
1. Oil specifications	1. See Section 8201 and make sure the correct oil is used.
2. Oil cooler filled with dirt	2. Clean the oil cooler so that air can move freely through the oil cooler.
3. Speed of oil cooler motor	3. Use a photo tachometer to check the speed of the oil cooler motor. See page 8202-27 and check the speed of the oil cooler motor.
4. Cooler bypass valve	4. Disassemble the cooler bypass valve. Clean and inspect the parts of the cooler bypass valve.
5. Contaminated oil	5. See Section 8201 and clean the hydraulic system.
6. Pressure for hand and foot valves	6. See page 8202-27 and check the pressure for the hand and foot valves.

VIBRATION OF OIL COOLER AND LINES OR OIL COOLER LEAKAGE

CHECK	INSTRUCTIONS
1. Accumulators	1. See page 8202-27. Check the pressure in the accumulators.

NOISE AND VIBRATION IN THE SWING OR A DRIVE MOTOR

CHECK	INSTRUCTIONS
1. Air in the swing motor	1. Check to make sure the anticavitation valves in the swing valve are not worn or damaged. See page 8202-21 and check the poppets on the ends of the circuit relief valves.
2. Damaged wear plates or damaged pistons	2. See Section 6312 for a drive motor or Section 8215 for the swing motor.

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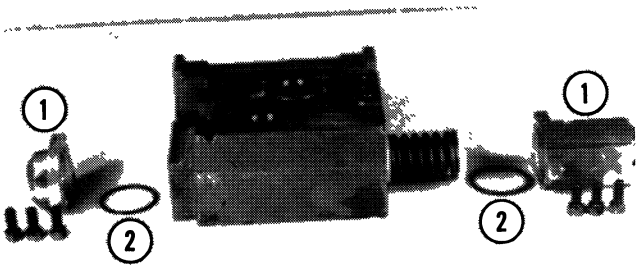
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PARALLEL ARM SECTION

Disassembly

1. Make a mark on the end of the parallel arm section that has the long end cap.

2. Remove the end caps and O-rings.



503411

1. *End Caps*
2. *O-rings*

3. Remove the spool from the parallel arm section.



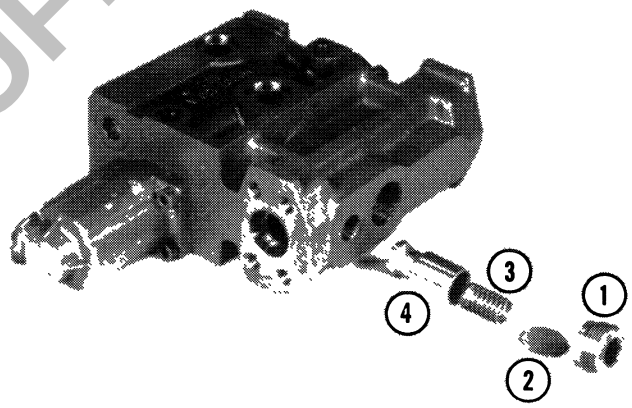
503425

4. Loosen and remove the cap screw from the spring end of the spool. Separate the spring seats, springs, and washer.



503424

5. Loosen and remove the plug, spacer, spring, and poppet.



503423

1. *Plug*
2. *Spacer*
3. *Spring*
4. *Poppet*

6. Remove and discard all O-rings. See Inspection on page 8206-14.

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REXROTH HAND CONTROL VALVE

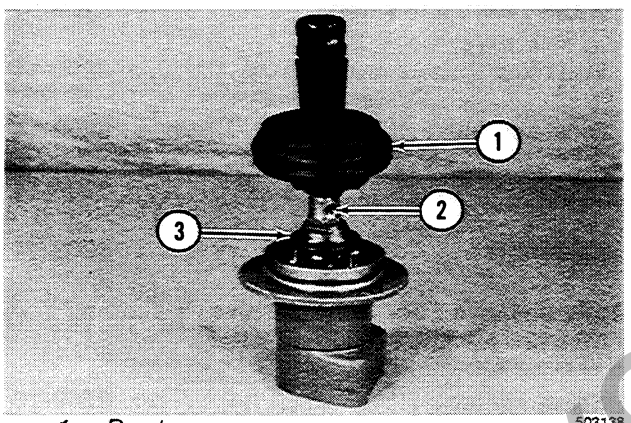
Specifications

Torques

Screw	18 to 26 pound-feet (25 to 35 N m, 2.6 to 3.6 kg/m)
Stud	18 to 26 pound-feet (25 to 35 N m, 2.6 to 3.6 kg/m)
Lever	18 pound-feet (25 N m, 2.6 kg/m)
Fittings	22 to 30 pound-feet (30 to 40 N m, 3 to 4 kg/m)

Disassembly

1. Slide the boot up out of the way.



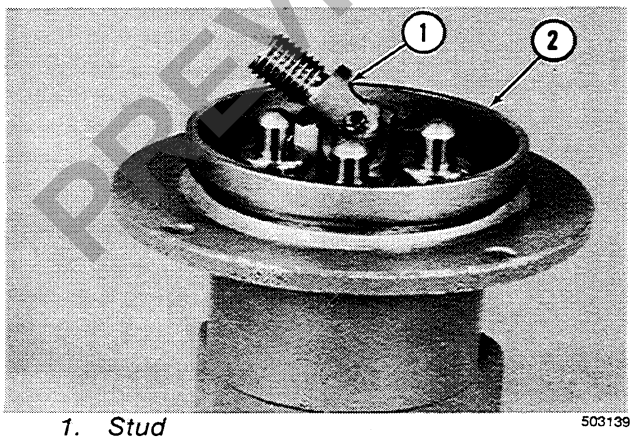
503138

1. *Boot*
2. *Lever*
3. *Control Cam*

2. Loosen and remove the lever from the stud.

3. Loosen and remove the control cam from the stud.

4. Loosen and remove the stud.



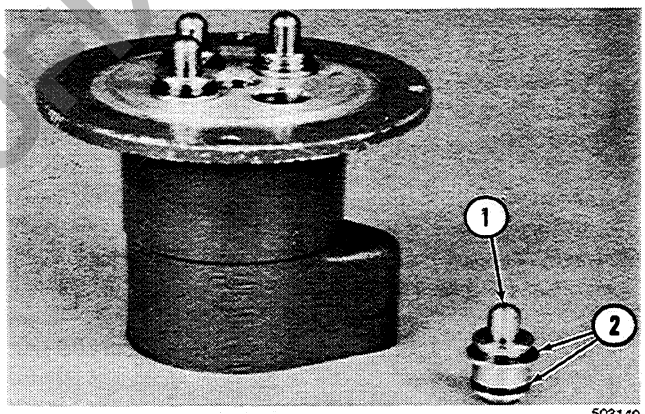
503139

1. *Stud*
2. *Cover Plate*

5. Remove the cover plate. If equipped, remove the spacer.

NOTE: *Do not mix the parts. Make sure that all assemblies are installed in the same ports that the assemblies were removed from.*

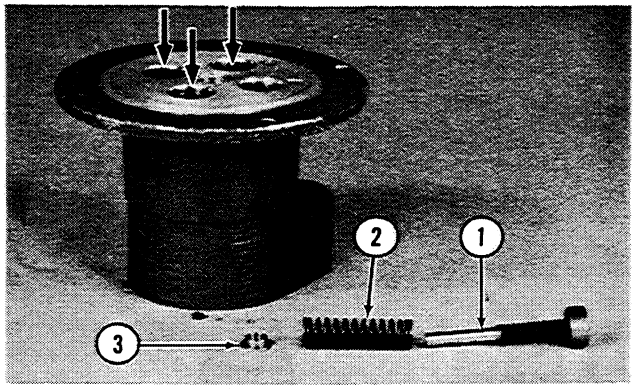
6. Remove the control cartridge assemblies. Remove and discard the O-rings from the control cartridge assemblies.



503140

1. *Control Cartridge Assembly*
2. *O-rings*

7. Remove the spool and spring assemblies, large springs, and spring seats.



503134

1. *Spool and Spring Assembly*
2. *Large Spring*
3. *Spring Seat*

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SPECIFICATIONS

Wear Specifications ..... See Inspection, page 8215-6

Weight ..... 548 pounds (249 kg)

Special Torques

Cap screws for motor housing ..... 243 pound-feet (330 N m, 33 kg)

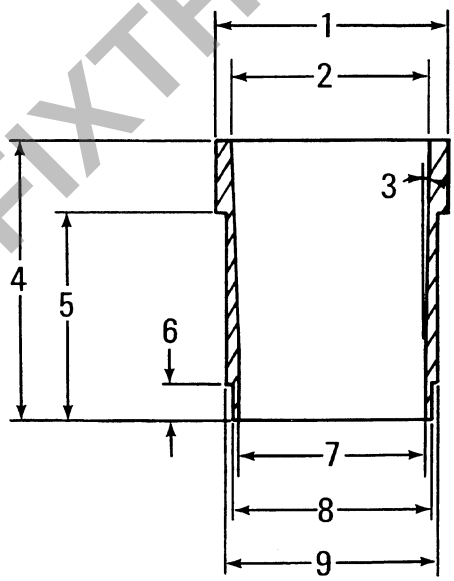
Cap screws for distributor housing .....177 pound-feet (240 N m, 24 kg/m)

Cap screws for coupling ..... 84 pound-inches (10 N m, 1 kg/m)

Cap screws for brake housing .....450 pound-feet (610 N m, 61 kg/m)

SPECIAL TOOLS

This tool must be made locally. The tool is used to install the pistons in the rotor.



1. *2.362 Inches (60 mm)*
2. *1.890 Inch (48 mm)*
3. *3 Degrees*
4. *3.268 Inches (83 mm)*
5. *1.968 Inch (50 mm)*
6. *.354 Inch (9 mm)*
7. *1.705 Inch (43.3 mm)*
8. *1.791 Inch (45.5 mm)*
9. *1.890 Inch (48 mm)*

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