Group 40
WIRING DIAGRAMS

Figure 100-40-1 is a schematic diagram of the negative-ground electrical system on tractors to 15484. One or two 12-volt batteries supply current for the 12-volt system.

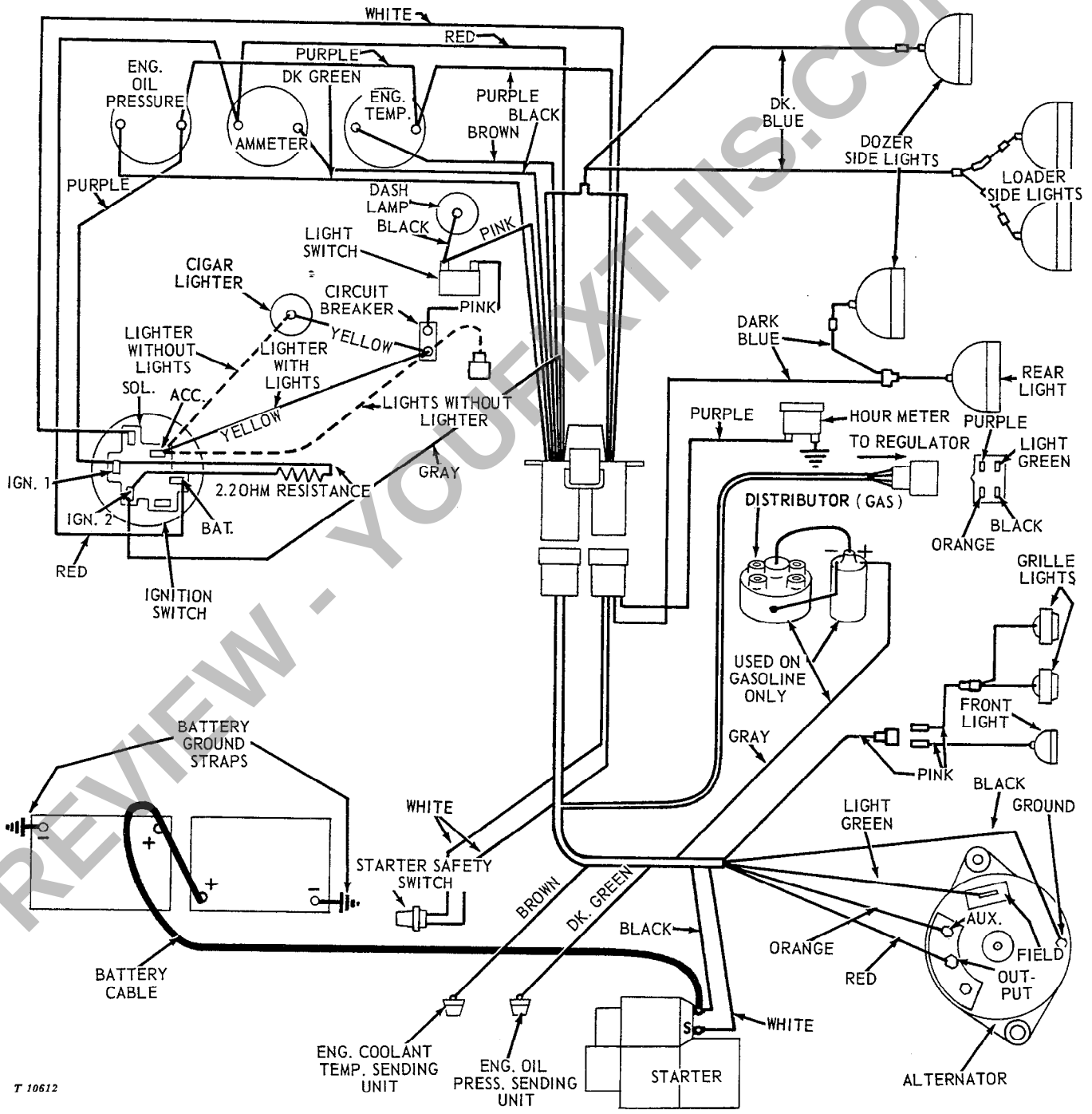
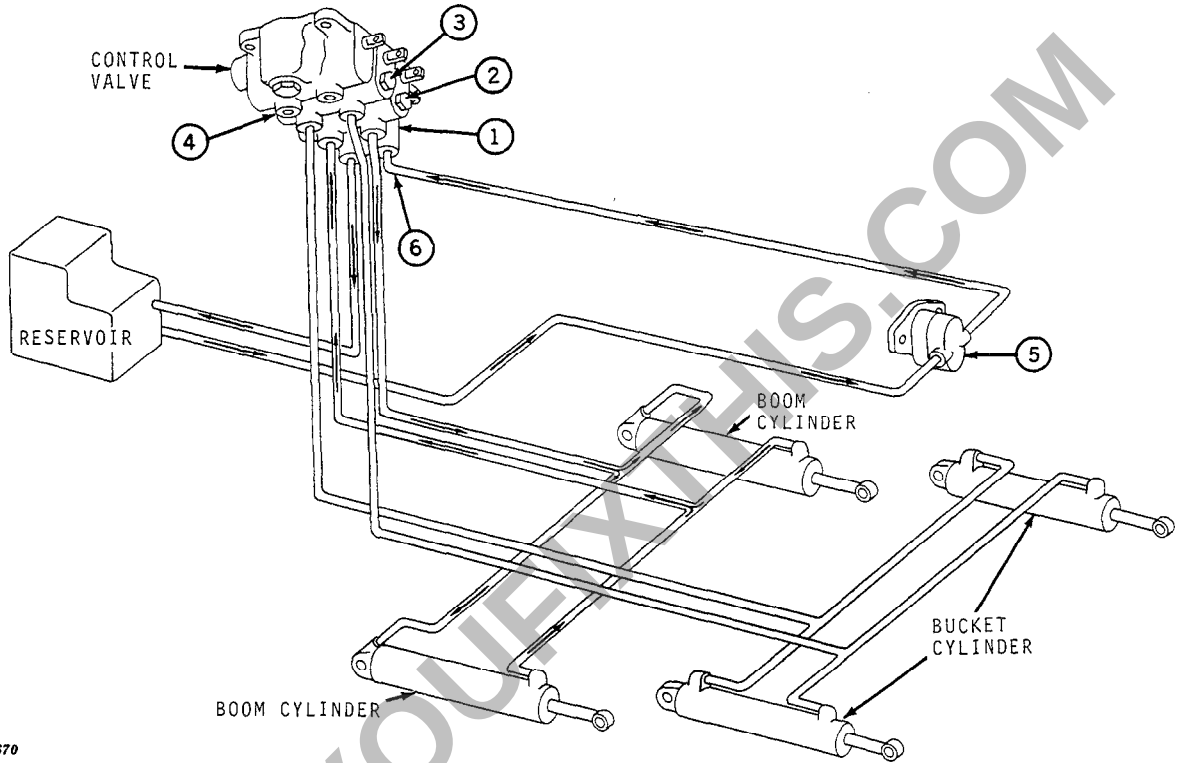


Fig. 100-40-1—Schematic Diagram of the Electrical System (JD350 Tractors to 15484)

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Group 25
HYDRAULIC CIRCUIT DIAGRAMS



1 – System Relief
2000 psi (-600)
2250 psi (601-up)

2 – Circuit Relief (Boom)
2500 psi (-600)
2000 psi (601-up)

3 – Circuit Relief (Bucket)
2500 psi (-600)
2000 psi (601-up)

4 – Circuit Relief (Bucket)
1000 psi

5 – 23 gpm Pump

6 – Pressure Test Tap (601-up)

Fig. 190-25-1—Crawler-Loader Hydraulic Circuit

Oil is drawn from the reservoir by the pump and is moved to the control valve. With the boom spool retracted to raise the boom, the inlet port to the next valve spool is blocked (see Group 15). Oil then is diverted to the boom cylinders by the boom valve spool.

As oil flows to the piston end of the cylinder, oil from the cylinder rod end is forced back through the control valve to the reservoir. Oil in the remaining cylinders and lines is trapped by the other control valve spools.

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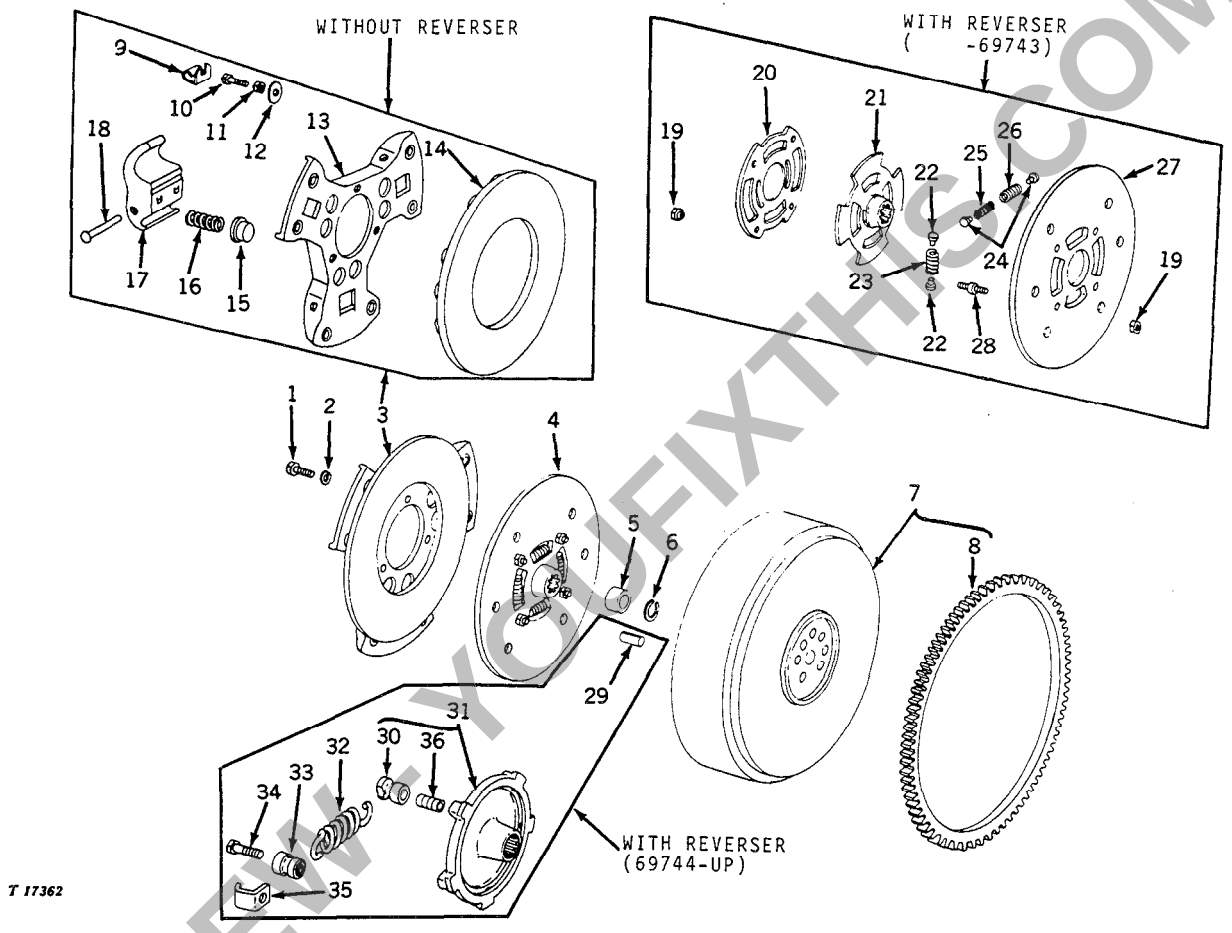
REMOVAL

Remove engine (see Group 5 of Section 20).

Remove pressure plate and driven disk from flywheel (units without reverser).

On units with reverser remove driven disk assembly or torsional isolation assembly (later models).

REPAIR



1 – Cap Screw (6 used)
2 – Lock Washer (6 used)
3 – Pressure Plate (without reverser)
4 – Driven Disk (without reverser)
5 – Bearing
6 – Snap Ring
7 – Flywheel
8 – Ring Gear
9 – Clip (3 used)
10 – Adjusting Screw (3 used)
11 – Jam Nut (3 used)
12 – Washer (3 used)
13 – Bracket
14 – Pressure Plate
15 – Spring Cup (6 used)
16 – Pressure Spring (6 used)
17 – Clutch Lever (3 used)
18 – Pivot Pin (3 used)
19 – Nut (8 used)
20 – Disk
21 – Hub
22 – Cup
23 – Spring (2 used)
24 – Cap (4 used)
25 – Spring (2 used)
26 – Spring (2 used)
27 – Driven Disk
28 – Spacer (4 used)
29 – Pin (5 used)
30 – Anchor (5 used)
31 – Isolator Assembly
32 – Spring (5 used)
33 – Anchor (5 used)
34 – Cap Screw (5 used)
35 – Retainer (5 used)
36 – Stud (5 used)

Fig. 110-5-2–Exploded View of Clutch Assembly

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MINIMUM COMPRESSION READINGS
(At Full Cranking Speed)

Gasoline Engines	120 psi*
Diesel Engines	300 psi*

**The most important factor in compression readings is the difference between cylinders. This difference should be no more than 30 psi on gasoline engines or 50 psi on diesel engines. See Section 40, Group 10 for compression testing details.*

TORQUE AND TIGHTNESS SPECIFICATIONS
(All Torques in Ft-Lbs Unless Otherwise Noted)

	Diesel	Gasoline
Camshaft thrust plate to cylinder block	35	35
Crankshaft upper and lower idler gear shaft to cylinder block cap screws (Early Engines)	85	85
Crankshaft upper idler gear shaft to cylinder block cap screw (Later Engines)	65	65
Crankshaft lower idler gear shaft to cylinder block screw (Later Engines)	95	95
Cylinder block plate to cylinder block	20-25	20-25
Governor housing to front plate		23
Rocker arm support to cylinder head screws	35	35
Flywheel-to-crankshaft cap screws	85	85
Crankshaft main bearing cap screws	85	85
Connecting rod cap screws (dip in oil)	60-70	40-45
Cylinder head to block cap screws	110	110
Oil pump drive gear to oil pump drive shaft, nut (stake nut)	35-45	35-45
Oil pan to block and timing gear cover	30	30
Fan drive pulley to crankshaft, screw	85	85
Spark plugs		32-38
Injection pump drive gear to shaft, nut (DB Pump)	35	
Injection pump drive gear to shaft screws (C and CB Pump)	15	
Injection pump drive screws retainer screw (C Pump)	9	
Fan assembly to fan hub, cap screws	20	20
Injection nozzle to cylinder head, nuts	14-17	
Injection line to injection pump	35	
Manifold cap screws (intake)	35	35
Manifold cap screws (exhaust)	35	35
Timing gear cover hex. nuts and screws	35	35
Rocker arm cover to cylinder head hex. head screws (later models)	25 in-lbs	25 in-lbs
Piston cooling orifices or plugs	85 to 110 in-lbs	

SPECIAL SERVICE TOOLS

The special service tools shown in this section may be obtained as a set by ordering JD257 Engine Service Tool set from Service Tools Inc., 1901 Indiana Avenue, Chicago, Illinois 60616.

An itemized listing of these and other special tools is contained in Section 220 of this manual.

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Section 20
TRACTOR SEPARATION

Group 5
ENGINE REMOVAL AND INSTALLATION

ENGINE REMOVAL

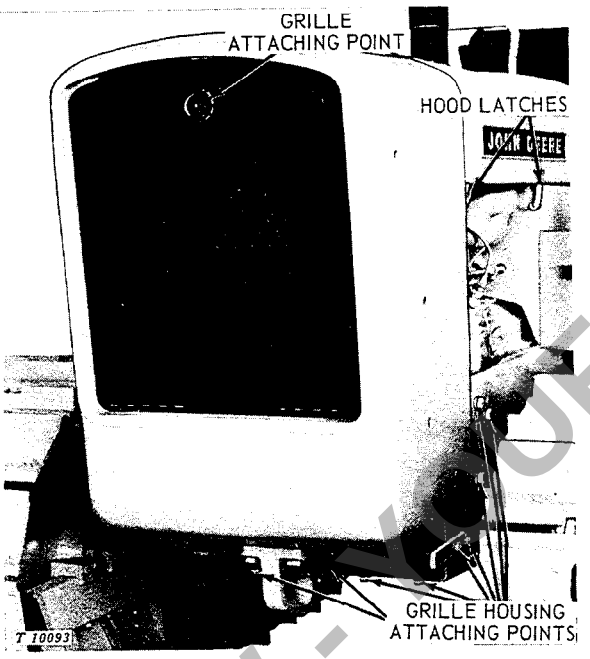


Fig. 20-5-1–Hood and Grille Housing Attaching Points

Disconnect battery ground straps for safety.

On crawler-loaders, support loader boom (Group 30 of this Section).

Remove engine side shields if equipped.

1. On each side of hood, unhook latches attaching hood to radiator and cowl supports. Remove muffler stack and lift off hood.

2. Remove grille by unscrewing knob (Fig. 20-5-1). Attach chain hoist to grille housing (Fig. 20-5-2).

3. Disconnect front light leads from headlights.

4. Remove cap screws attaching grille housing to bottom plate and side frames (Fig. 20-5-1). With the aid of a chain hoist remove grille housing (Fig. 20-5-2).

5. Drain radiator and disconnect water inlet and outlet hoses (Fig. 20-5-3). On units with direction reverser, also disconnect oil cooler lines.

6. Remove cap screws which secure upper radiator support to radiator.

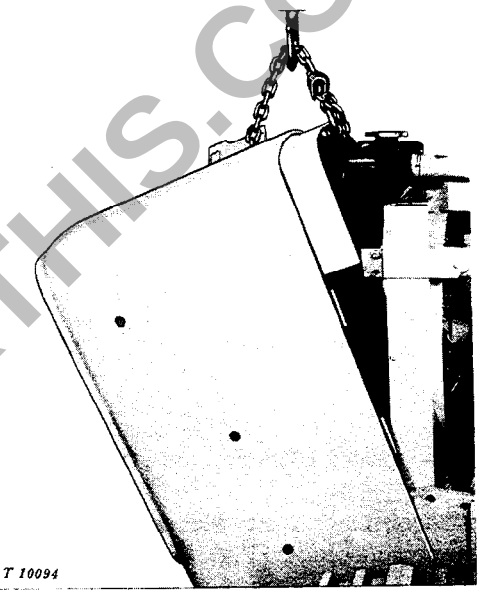


Fig. 20-5-2–Removing Grille Housing

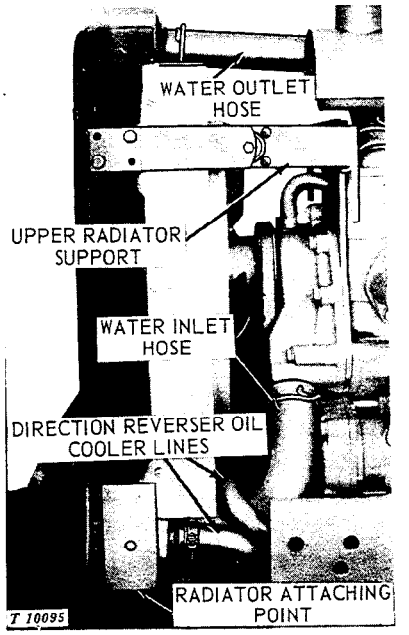


Fig. 20-5-3–Removing Radiator

7. Remove two hex. nuts which secure radiator to front end support mounts. Lift radiator from tractor. Remove front end support from engine if necessary.

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Group 10
ENGINE AND ENGINE CLUTCH
ENGINE

ENGINE HARD TO START, WILL NOT START

Possible Cause	Possible Remedy	Section-Group Reference
No fuel.	Fill tank with proper fuel.	90-5
Old gasoline in tank.	Drain tank and refill with new regular grade gasoline.	90-5
Fuel shut-off valves closed.	Open valves.	90-5
No gasoline in carburetor.	Clean fuel line, filter, and carburetor.	90-15 90-25
Low battery output.	Check electrolyte level and specific gravity of each cell. Recharge if necessary.	100-35
Excessive resistance in starting circuit.	Clean and tighten all connections on battery and starter.	100-35
Too high viscosity crankcase oil.	Drain and fill crankcase with oil of proper viscosity and quality.	30-5
Improper type of fuel.	Use correct grade of fuel.	90-5
Water, dirt, or air in fuel system.	Drain, flush, fill, and bleed system.	- - -
Water in gasoline.	Drain gasoline, clean plugs.	90-5 40-10
Clogged fuel filter (diesel).	Replace first-stage filter element and bleed system.	90-15
Clogged fuel filter (gasoline).	Replace filter.	90-5
No spark (gasoline).	Check points and plugs.	100-25
Dirty or faulty injectors (diesel).	Service injectors.	90-35
Fuel pump primer lever left on upward end of stroke (diesel).	Move lever to lowest point of stroke.	- - -

ENGINE KNOCKS

Insufficient crankcase oil.	Add proper oil.	30-5
Dirt picked up by air intake system.	Check air cleaner for clogging.	90-20
Injection pump or distributor out of time.	Check timing.	40-10
Low octane gasoline.	Change to regular grade gasoline.	90-5

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Group 10
SPECIFICATIONS

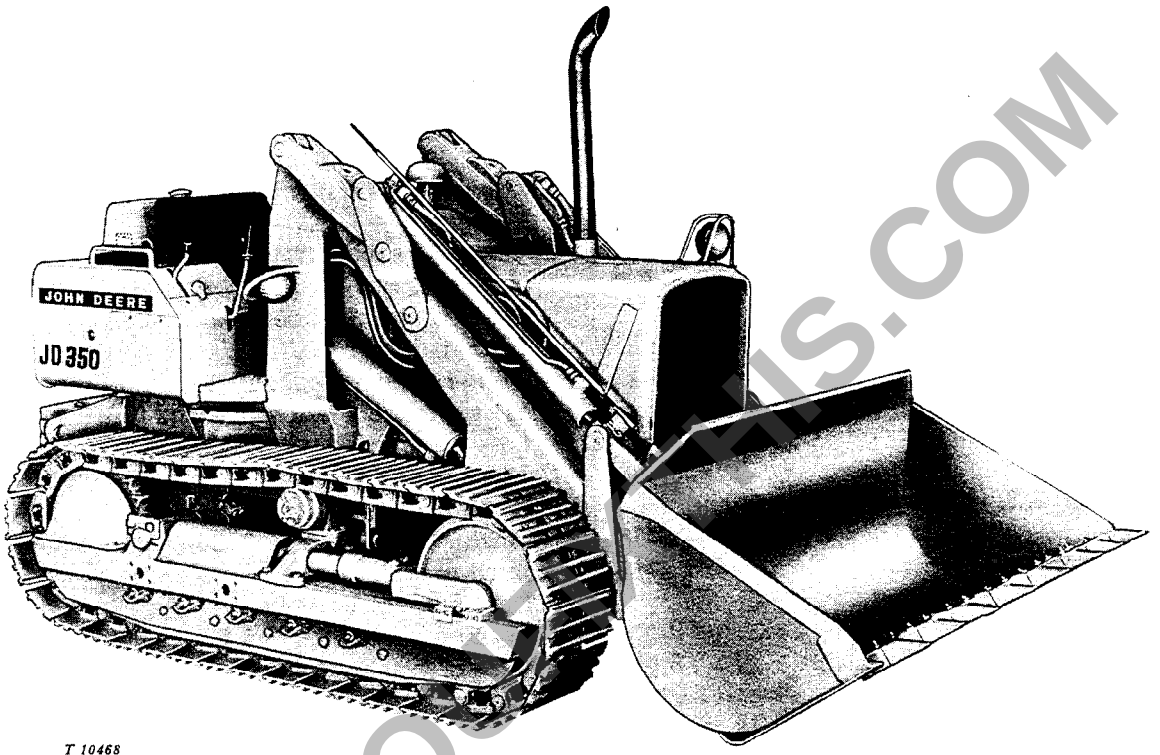


Fig. 10-10-1—Right-Hand View of JD350 Crawler Loader

TRACTOR SPECIFICATIONS

ENGINE	Diesel	Gasoline
Flywheel horsepower (observed) at 2500 rpm	42.0	42.0
Torque in ft-lbs, max. at 1300 rpm (observed) (nominal)	110.0	110.0
Number of cylinders	3	3
Bore and stroke, inches	3.86 x 4.33	3.86 x 3.86
Displacement in cubic inches	152.0	135.0
Compression ratio	16.3 to 1	7.5 to 1*
N.A.C.C. or A.M.A. Horsepower rating for tax purposes	17.88	17.88
Intake valve clearance	0.014-inch	0.014-inch
Exhaust valve clearance	0.018-inch	0.022-inch

**8.6 to 1 with high altitude pistons.*

ENGINE (Cont.)	Diesel	Gasoline
Slow-idle (rpm)	800	375 (-15905) 600 (15906-Up)
Fast-idle (rpm)	2650 (DB Pumps) 2660 (C Pumps)	2770
Governed speed range (rpm)	800-2650 (DB Pump) 800-2660 (C Pump)	375-2770 (-15905) 600-2770 (15906-)
Engine clutch	11-inch, single dry disk, foot operated.	

DIRECTION REVERSER	
Type	Hydraulic wet clutches reversing "on the go" without clutching.
TRANSMISSION	
Type	Manually selected, sliding gear type with directional reverser. 4 forward speeds and one reverse speed.

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TRAVEL SPEEDS, MPH (No Slip)

Gear	1500 RPM	2100 RPM	2500 RPM
1st	.9	1.2	1.4
2nd	1.2	1.6	1.9
3rd	2.0	2.8	3.3
4th	3.9	5.5	6.5
Rev.	1.2	1.6	1.9

STEERING

System type. . Manually or hydraulically operated clutch and brake type
Clutch type. . . . . Dry multiple disk
No. of friction surfaces (each clutch. 16
Brake type . . . . . Contracting band
Turning clearance circle. . . . . 156 in. (tractor)
234 in. (loader)

CAPACITIES (U.S. Standard Measures)

Fuel tank . . . . . 22 gals.
Cooling system . . . . . 3-1/4 gals.
Engine crankcase (including filter) . . . . . 9 qts.
Transmission case. . . . . 9 qts.
Hydraulic system. . . . . 4 gals. (min.)
12-1/2 gals. (loader)
Direction reverser case . . . . . 3 gals.
Final drives, each . . . . . 3 qts.
Rockshaft housing . . . . . 1 pt.

DIMENSIONS

Maximum height (inches) (with exhaust stack). . . . . 76 inches
Height to top of hood. . . . . 52 inches
Over-all width (at bucket) . . . . . 66 inches
Over-all length (5 roller). . . . 99-1/8 inches
159-3/16 inches (loader)
(4 roller). . . . 96-5/8 inches
Ground clearance at rear crossbar . . . . . 13-1/4 inches
Drawbar height (above ground) . 13-3/16 inches
Total weight (approx.) 7895 lbs. (diesel tractor)
11,570 lbs. (diesel loader)

TRACK EQUIPMENT

Track frame. . . . . 4 or 5 roller (tractor)
5 roller only (loader)
Diameter of track roller. . . . . 8-3/8 inches
Type of bushing. . . . . Bronze
Diameter of track carrier (5 roller) . . . . . 5-7/8 inches
Type of bushing. . . . . Bronze
Track shoes (types and sizes)
open center notched grouser (snow shoe) . . . . . 12 or 14-inch
all-purpose semi-grouser . . . . . 12 or 14-inch*
open center grouser . . . . . 12 or 14-inch
grouser . . . . . 10, 12, or 14-inch
rubber. 10-inch*

**Crawler loader track options.*

Track gauge (center to center) . . . . . 48 inches (fixed)
Number of track shoes (each side):
Four-roller type. 32
Five-roller type. 36
Total ground contact area (sq. in.):

	4-Roller	5-Roller
10-inch shoes	1226	1350
12-inch shoes	1357	1628
14-inch shoes	1588	1904
Ground pressure (lbs. per sq. in. with 12-inch shoes) . .	5.5	4.6*
Length of track on ground (inches). .	57-3/4	69-1/4

**7.1 on loader units*

FINAL DRIVES

Type . . . Induction hardened pinion and final drive spur gears.
Gear reduction ratio in first gear (engine to axle). . . . . 112 to 1
Gear reduction ratio in high gear (engine to axle). . . . . 24 to 1

WINCHES (Manual and Power Types)

Drum speed (at 2100 rpm engine speed). . . . . 57-1/2 rpm
Drum diameter . . . . . 6 inches
Drum capacity (no allowance for looseness or uneven spooling)
(with 1/2-inch cable) . . . . . 195 feet
(with 5/8-inch cable) . . . . . 125 feet
Cable speed (at 2100 rpm engine speed)
(with full drum) . . . . . 157 fpm*
(with bare drum) . . . . . 98 fpm*
Cable pull (at 2100 rpm engine speed)
(with bare drum). . . . . 10,600 lbs.
(with full drum) . . . . . 6,650 lbs.

**With 5/8-inch cable.*

(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with IEMC Standards.)

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AS REQUIRED

Component	Description of Service	Capacity or Measurement	Description of Lubricant
Air cleaner element	Clean element when: (1) Indicator shows red with engine shut off, or excessive smoke or loss or power is noted. (2) If indicator is not used; each 50 to 250 hours, or as needed.	Install new element annually. See operator's manual.	Cleaning agents: 100 psi maximum compressed air or lukewarm water with non-sudsing detergent. Use R36757 John Deere Cleaner or an equivalent.
Track tension	Adjust track tension.	7/8 to 1-1/8 inch sag between carrier roller and sprocket.	John Deere Track Idler and Roller Lubricant or an equivalent.
Steering clutches	Adjust steering lever free travel.	. . . . .	See Section 140, Group 5
Brake bands	Adjust brake bands.	. . . . .	See Section 140, Group 5.
Engine clutch (units without reverser)	Adjust pedal free travel.	1-3/8 inch free travel.	See Section 110, Group 10.

DAILY OR EVERY 10 HOURS

Radiator	Check coolant level. Remove trash from screen.	Midway between core and filler neck.	See Section 80.
Loader boom and bucket cylinders and pivot points.	Lubricate grease fittings.*	Two strokes of grease gun.	John Deere Multi-Purpose Lubricant or an equivalent.
Engine crankcase	Check oil level with dipstick fully inserted.	Between marks on dipstick.**	See page 30-5-1 for the recommended viscosity of engine oil and type of service.
Air cleaner	Empty dust cup.	. . . . .	. . . . .
Pre-cleaner	Clean out if necessary.	. . . . .	. . . . .
Fuel transfer pump sediment bowl	Check sediment bowl for water or dirt deposits.	. . . . .	. . . . .
Fuel filter sediment bowls (diesel)	Drain any water or dirt deposits.	. . . . .	. . . . .
Winch fairlead	Lubricate grease fittings.	Two strokes of grease gun.	John Deere Multi-Purpose Lubricant or an equivalent.
Hydraulic system	Check oil level at sight gauge.	Full mark (half circle of oil on window)	John Deere Type 303 Special-Purpose Oil or an equivalent.

**Lubricate bucket pivot points every 5 hours under extreme conditions.*
***Check crankcase oil level at least 10 minutes after engine is shut off.*

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John Deere JD350 Crawler Tractors and Crawler Loaders



Service Manual

John Deere Dubuque Works
SM-2063 (Jan-74)

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SERVICE MANUAL

JOHN DEERE
JD 350 CRAWLER TRACTORS AND CRAWLER LOADERS

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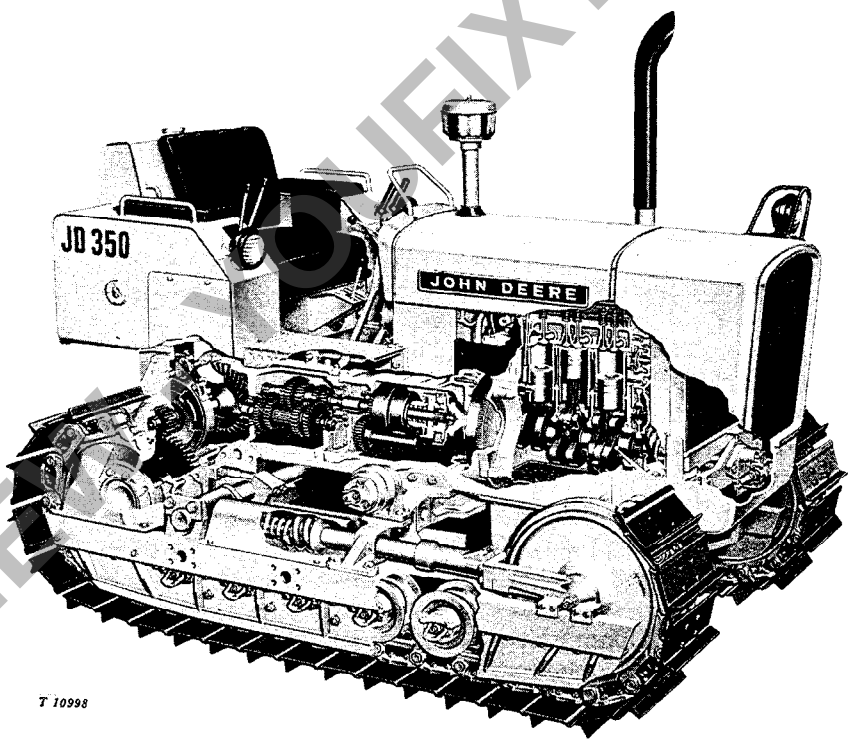
TO THE JOHN DEERE SERVICEMAN

This service manual contains maintenance instructions for John Deere JD350 Crawler Tractors and Loaders. Included are complete instructions for removal, disassembly, inspection, repair, assembly and installation of the major parts and assemblies of the tractor.

In addition, the manual contains brief descriptions of the more complicated systems of the tractor, and tells how they operate. Dimensions of many new wearing parts are given as an aid in determining when parts replacement is necessary. Tests and adjustments, required to keep the tractor operating efficiently, are explained in detail.

This manual was planned and written for the Service Department; its place is in the shop. Use the manual whenever in doubt about correct maintenance procedures. Use it as a text book for training new Service Department personnel who are unfamiliar with John Deere Tractors.

Daily use of the Service Manual as a guide for any and all service problems will reduce error and costly delay to a minimum and assure you the best in finished service work. In many instances your customer's confidence in your work will be improved when he sees you using the Service Manual. He knows you are following approved maintenance procedures and making proper adjustments. There is no guesswork when you use the manual.



T 10998

Right-Hand View of John Deere JD350 Crawler Tractor

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Group 10
ENGINE TUNE-UP

INTRODUCTION

First of all, determine whether a tune-up will restore the operating efficiency of the engine.

For efficient diesel engine performance, an adequate supply of air, sufficient compression and injection of the correct amount of fuel at the proper time are required. Gasoline engines require an adequate supply of the correct air-fuel mixture, sufficient compression, and the introduction of an ignition spark at the proper time.

Since engine performance depends upon the above combination of requirements, failure or decreased performance of any one of them will make it impossible for a tune-up to fully restore engine performance.

Therefore, if engine parts are worn or damaged, the engine cannot be satisfactorily tuned until it is reconditioned.

For proper engine tune-up, perform the operations listed in the following tune-up schedule. A detailed description of each operation follows the schedule.

NOTE: The numbers in the "Item No." column refer to like numbered paragraphs in the detailed instructions which follow the schedule.

TUNE-UP SCHEDULE

Item No.	Operation	Gasoline	Diesel
1	AIR INTAKE SYSTEM Remove and clean element and dust cup.	X	X
	Remove hose from air cleaner and swab out inlet tube.	X	X
	Check breather pipe for restrictions.	X	X
2	ENGINE Perform vacuum test	X	X
	Check radiator for bubbles and oil to check for leaking cylinder head gasket.	X	X
	Retorque cylinder head cap screws.	X	X
	Check and adjust valve clearance.	X	X
	Check compression on each cylinder.	X	X

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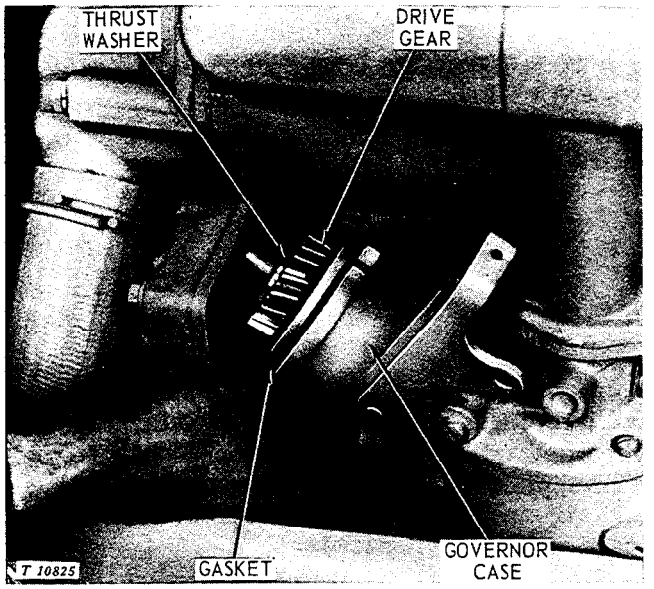


Fig. 70-5-3–Removing Governor

Lift governor housing and drive shaft with weight carrier and gear free of engine (Fig. 70-5-3).

DISASSEMBLY

NOTE: Refer to Fig. 70-5-5 to identify parts.

Slide weight carrier assembly from governor body. Remove cap screws (C) attaching yoke (D) to governor lever and shaft (O) and remove yoke.

Pull lever and shaft from housing (F).

Remove packing (B) from flange on open end of governor housing and discard.

Remove oil seal (J) from shaft bore and discard it.

To remove shaft bearings (K) and (H), drive from outside governor boss to inside governor case. Use JD241 tool to remove open end bearing (K) and JD245 tool to remove sealed bearing (H).

Remove thrust washers (G) from housing.

Remove weights from weight carrier by removing retaining rings and driving out attaching pins.

INSPECTION AND REPAIR

NOTE: Refer to Fig. 70-5-5 for identification and location of parts.

Check thrust washers (G) and lever and shaft assembly (O) for excess wear or for burrs or rough spots on the shaft.

Examine yoke (D) for worn or bent conditions.

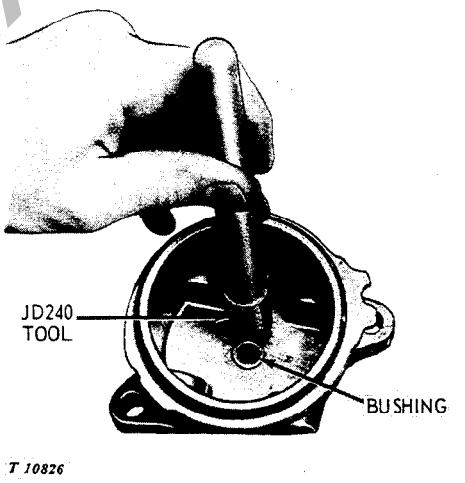


Fig. 70-5-4–Governor Bushing Installation

Inspect bushing (E) in governor body for galling or excessive wear and replace if necessary. Bushing is located properly when seated against back of bore in governor case. Install new bushing using JD240 tool (Fig. 70-5-4).

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Group 30
FUEL INJECTION PUMPS

Roosa-Master, Model DB Pumps (Early Units)

DESCRIPTION AND OPERATION

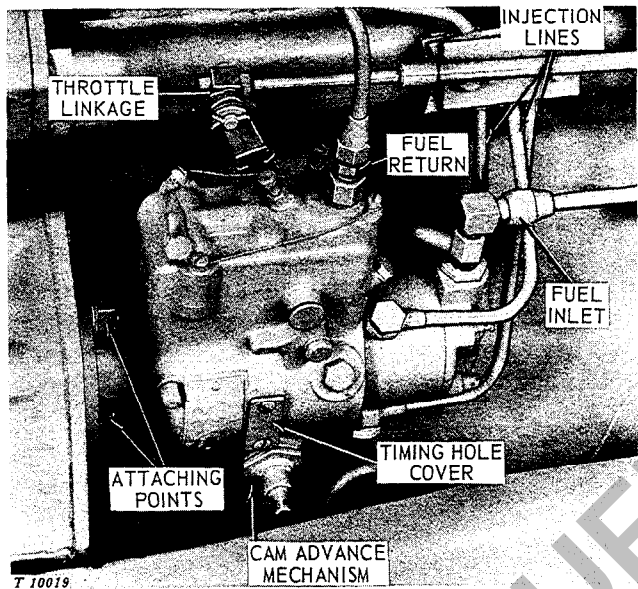


Fig. 90-30-1—Fuel Injection Pump

The fuel injection pump is mounted horizontally on the left side of the engine front plate (Fig. 90-30-1).

The pump is a speed advance, single cylinder, opposed plunger, inlet metering, distributor type. Its rotating parts (drive shaft, governor weights and retainer, rotor assembly, and transfer pump) revolve on a common axis. The pump contains its own mechanical or flyweight-type governor, capable of close speed regulation. The transfer pump, on the opposite end of the rotor assembly from the pumping cylinder, is of the positive displacement, vane type.

The function of the pump is to meter fuel with extreme accuracy to each cylinder, injecting at high pressure through nozzles into the combustion chamber at precisely timed intervals. Air is drawn into the cylinder through the intake valve and compressed. A metered quantity of fuel is then injected into the cylinder, producing a combustible mixture which expands when self-ignited by its own high temperature. This action forces the piston downward and powers the engine.

Diesel fuel is delivered from the fuel tank to the fuel filter by a diaphragm-type fuel pump. Fuel is then pulled from the fuel filters by the vane type transfer pump located in the head end of the injection pump.

IDENTIFICATION

The pump model and its characteristics are shown in code form on the name plate of the pump. The fuel injection pump on the 3-cylinder diesel engine carries the code DBGFC331-2DH. (On later models, the pump has the code DBGFC331-13DH.) This code, broken down, identifies the pump as follows: DB-model of pump; G-Flyweight-type governor; F-flange mounting; C-clockwise rotation (as viewed from drive end of pump); 3-three cylinder engine; 31-0.310-inch diameter plunger, and 2DH or 13DH---JD application numbers. The later 13DH pump may be identified by the three head volume screws located radially on the pump hydraulic head between the injection line connectors.

REMOVAL

REMOVING INJECTION PUMP FROM DRIVE SHAFT

Clean the pump, fittings, and all connections to be broken (Fig. 90-30-1) with diesel fuel or a steam cleaner. This will eliminate any chance of dirt entering the fuel system when the lines are disconnected.

CAUTION: Never steam clean or spray cold water on a warm injection pump. This could cause seizure of the pump.

Remove the timing hole cover on name plate side of pump (Fig. 90-30-2). Install JD-259 or No. 13366 timing window.

Bar the engine in the direction of rotation (counterclockwise as viewed from the flywheel end) until the timing line on the governor weight retainer hub registers with the timing line on the cam.

Remove the timing cover and screw from the engine flywheel housing. Reverse the screw and insert the smooth end of the screw into the hole in flywheel as the flywheel is rotated and comes in registry. The engine is now set at "top dead center" (No. 1 cylinder on compression stroke).

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INSTALLING BRUSH ASSEMBLY

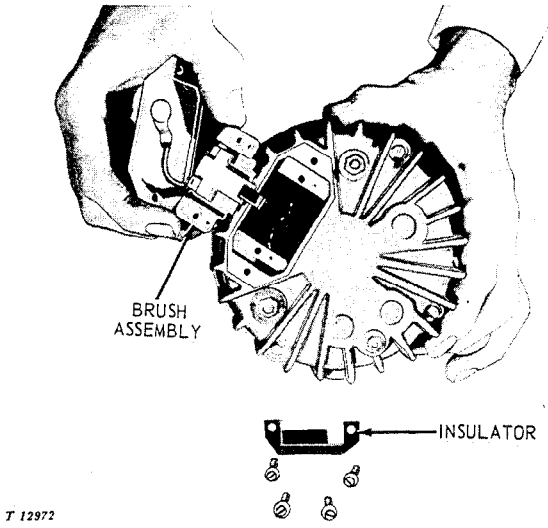


Fig. 100-20-17—Installing Brush Assembly

Install brush assembly, insulator, and brush cover (Fig. 100-20-17). Be sure insulator is properly positioned above brush assembly. Use new gasket if damaged.

INSTALLING PULLEY

To facilitate tightening pulley retainer lock washer and nut, position Woodruff key, fan, and pulley on shaft.

Grasp pulley in vise with a belt protecting the pulley as shown in Fig. 100-20-3. Tighten pulley nut to 40 to 50 ft-lbs torque.

INSTALLING ALTERNATOR

NOTE: Install alternator so field terminal is on top.

Attach bottom flange of alternator to the bottom bracket using the long bolt. Put spacer on bolt and attach to bracket using hex. nut.

Attach top alternator flange to top bracket using short bolt, hex. nut, and washer.

CONNECTING WIRES TO ALTERNATOR

Connect the wires to alternator as shown in Fig. 100-20-18.

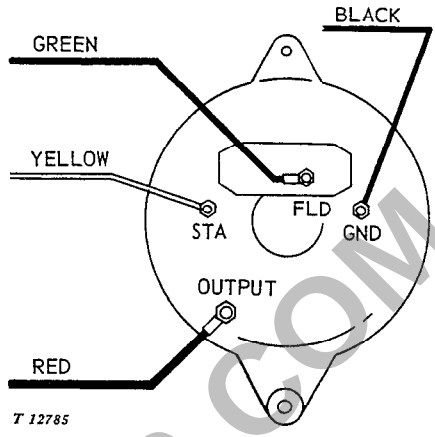


Fig. 100-20-18—Alternator Connections

ADJUSTING ALTERNATOR BELT TENSION

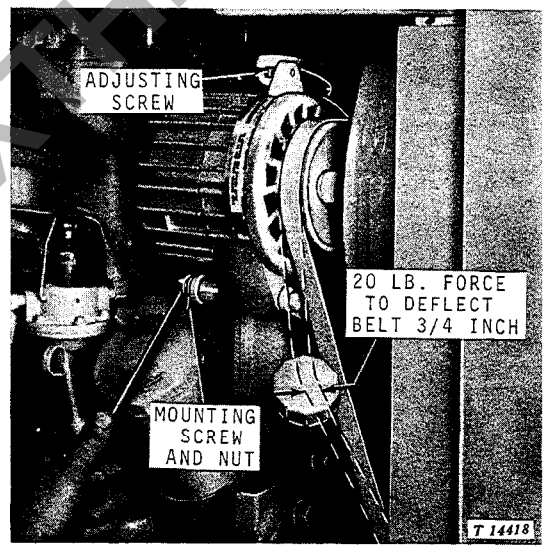


Fig. 100-20-19—Alternator Belt Tension

Check alternator belt tension (Fig. 100-20-19). Loosen the alternator bracket and adjusting cap screws and apply outward force to the front of the alternator frame until a firm push (20 pounds force) on the belt midway between the pulleys will deflect the belt 3/4 inch.

CAUTION: Do not pry on the rear half of the alternator as this may bend the through bolts and throw the alternator housing out of alignment, causing excessive bearing wear. Pry only on front bracket to avoid damage.

REPLACING ALTERNATOR-FAN BELT

To replace fan belt, loosen the alternator. Then push the hydraulic pump disconnect lever forward, pull lever out and push on past the roll pin. Remove and replace fan belt. Return lever to detent position.

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THIRD SPEED POWER FLOW

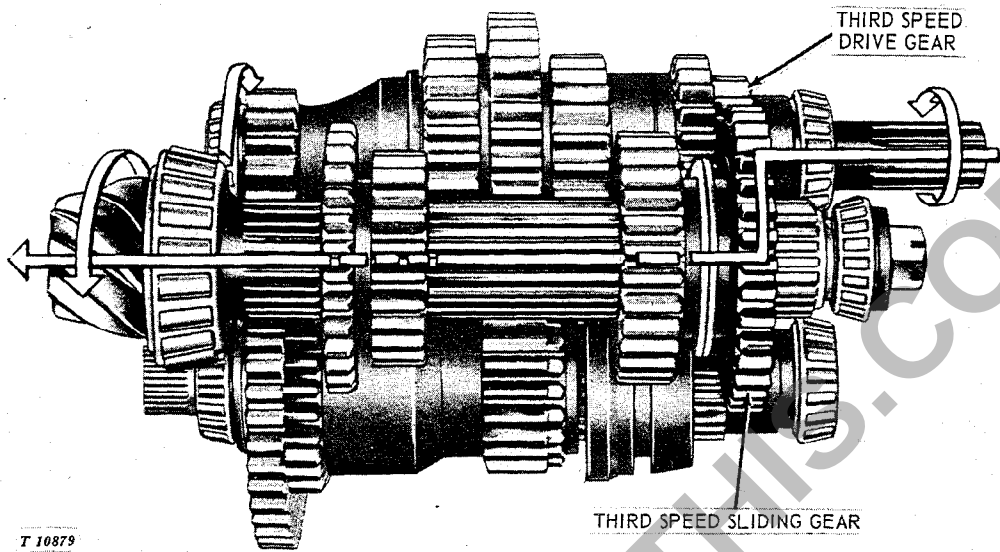


Fig. 120-5-6—Transmission in Third Speed

In third speed, the third-speed sliding gear on the output shaft meshes with the third-speed drive gear which is splined to the input shaft. Power then flows through the output shaft directly to the ring gear.

FOURTH SPEED POWER FLOW

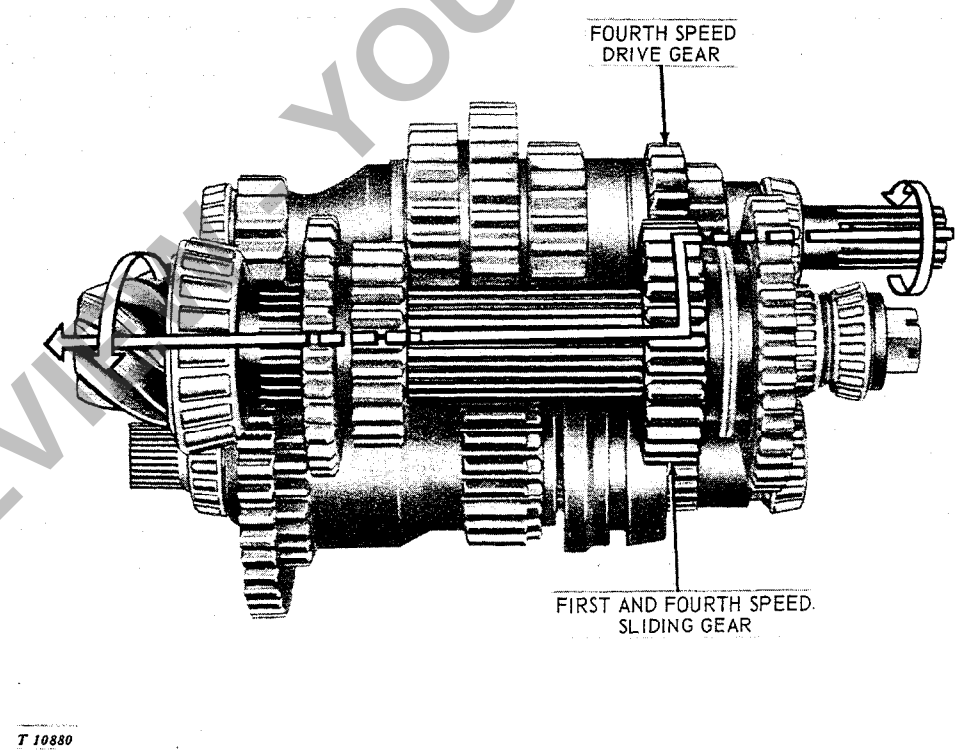
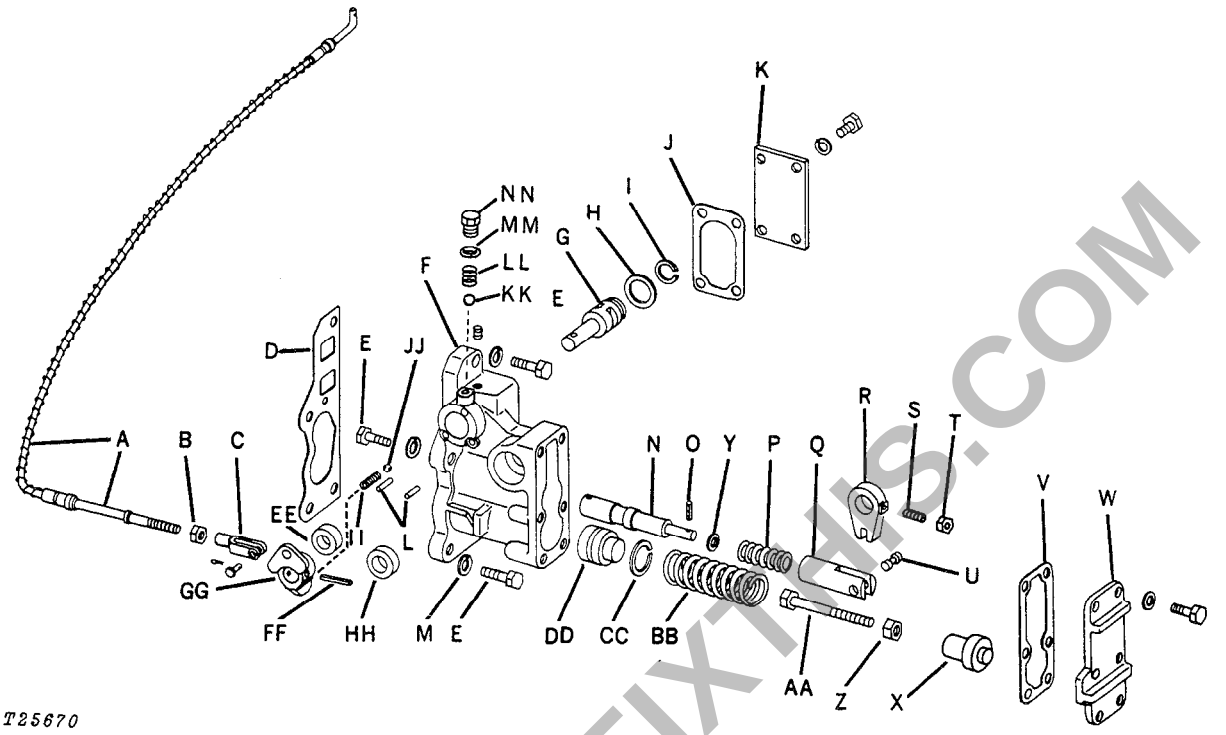


Fig. 120-5-7—Transmission in Fourth Speed

In fourth speed the first- and fourth-speed sliding gear on the output shaft meshes with the fourth speed-drive gear which is keyed to the input shaft. Power flows through the output shaft directly to the ring gear.

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A. Control Cable
B. Lock Nut
C. Yoke
D. Gasket
E. Mounting Cap Screw (4 Used)
F. Accumulator Housing (-142199)
Accumulator Housing (142200-)
G. Rotary Valve
H. Washer
I. Snap Ring
J. Gasket
K. Back Cover
L. Roll Pins
M. Lock Washer
N. Clutch Valve
O. Roll Pin
P. Spring
Q. Clutch Valve Piston
R. Clutch Valve Lever
S. Set Screw
T. Jam Nut
U. Pin
V. Gasket
W. End Cover
X. Accumulator Cap
Y. Washer
Z. Jam Nut
AA. Accumulator Stop Bolt
BB. Spring
CC. Sealing Ring
DD. Accumulator Piston
EE. Oil Seal
FF. Roll Pin
GG. Rotary Valve Arm
HH. Oil Seal
II . Spring (-142199)
JJ . Detent Ball (-142199)
KK. Steel Ball (142200-)
LL. Spring (142200-)
MM. O-Ring (142200-)
NN. Plug (142200-)

Fig. 130-10-23—Accumulator Housing Assembly

ACCUMULATOR HOUSING ASSEMBLY (Fig. 130-10-23)

Housing

Swab out all passages in housing (F) with solvent and dry with compressed air. Inspect housing bores and cover mounting surfaces for cracks, chips, or burrs. Discard and replace old gaskets (D, J, and V).

Inspect oil seal in clutch pedal shaft bore. If replacement is necessary, press in new oil seal to bottom of bore with sealing lips facing inward using M614T Tool (Fig. 130-10-24).

Inspect oil seal in rotary valve bore. If replacement is necessary, press in new oil seal (lips inward) to chamfer of bore using M614T Tool (Fig. 130-10-24).

Valve and Piston Assemblies

Examine accumulator piston ring (CC) for wear. Inspect accumulator piston spring (BB) for weak or broken coils.

Clean rotary valve (G) and its passages and inspect for any wear or clogging which might affect the true operation of the valve in gauging oil. Check .060-inch washer (H) for wear or warping. Replace parts as necessary.

Examine clutch valve spring (P) for worn or broken coils. Check ground-surfaces of valve for wear or burring.

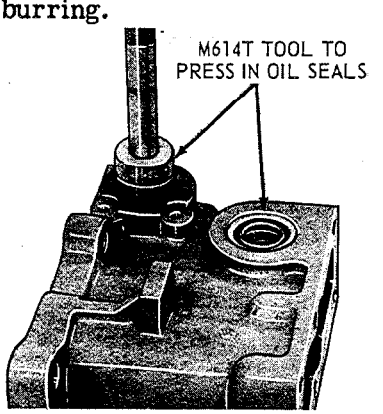


Fig. 130-10-24—Installing Oil Seals

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Group 10
POWER STEERING PUMP

DESCRIPTION

Refer to Group 5 of this Section for description and operation.

REMOVAL

Disconnect battery ground strap for safety.

Remove engine side shields (if equipped).

On each side of hood, unhook latches attaching hood to radiator and cowl supports. Remove muffler stack and lift off hood.

Remove cap screws attaching grille housing to bottom plate and side frames. Remove grille by unscrewing knob and disconnect front light lead. Tip grille housing forward on pivot pins.

Loosen alternator adjusting link and slip fan drive belt from alternator pulley.

Disconnect pump inlet and pressure lines. Remove nylon bleed tube from pump.



Fig. 145-10-1—Removing Power Steering Pump

Remove cap screws securing pump to timing gear cover and engine front plate and remove pump from tractor as shown in Fig. 145-10-1.

DISASSEMBLY

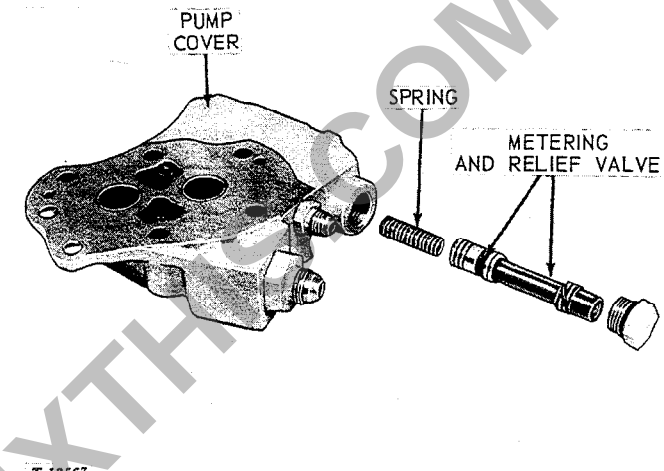


Fig. 145-10-2—Removing Pump Metering Valve Assembly

Remove metering valve plug and slide metering valve assembly and spring from bore in pump cover (Fig. 145-10-2).

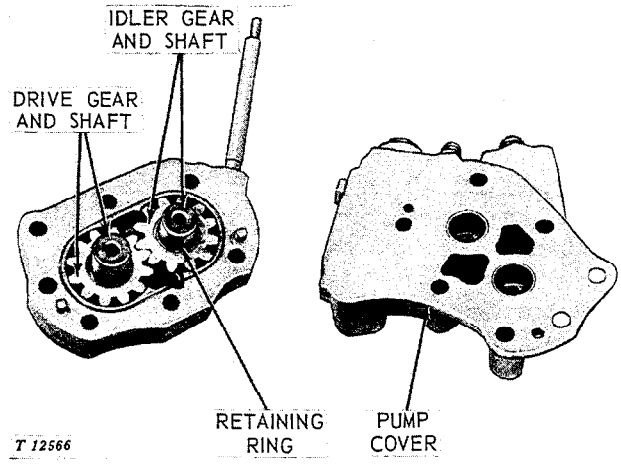


Fig. 145-10-3—Removing Pump Gears

Separate cover from pump housing and bore (Fig. 145-10-3).

Remove gear keyed to drive shaft.

Remove Woodruff key and slide pump drive shaft from pump base. Remove idler gear shaft and idler gear. Remove retaining ring and slide gear from idler shaft.

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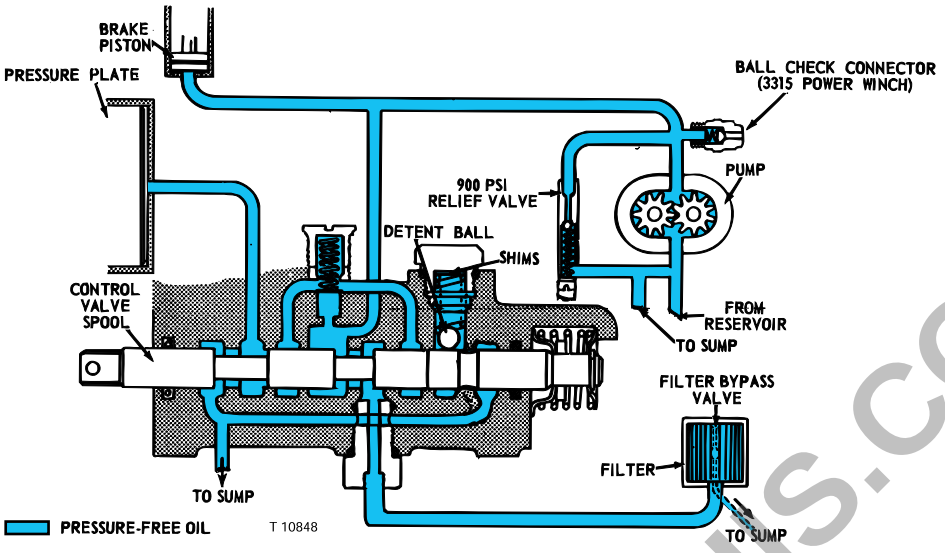


Fig. 170-5-4–Winch Control Valve Spool in "HOLD" Position

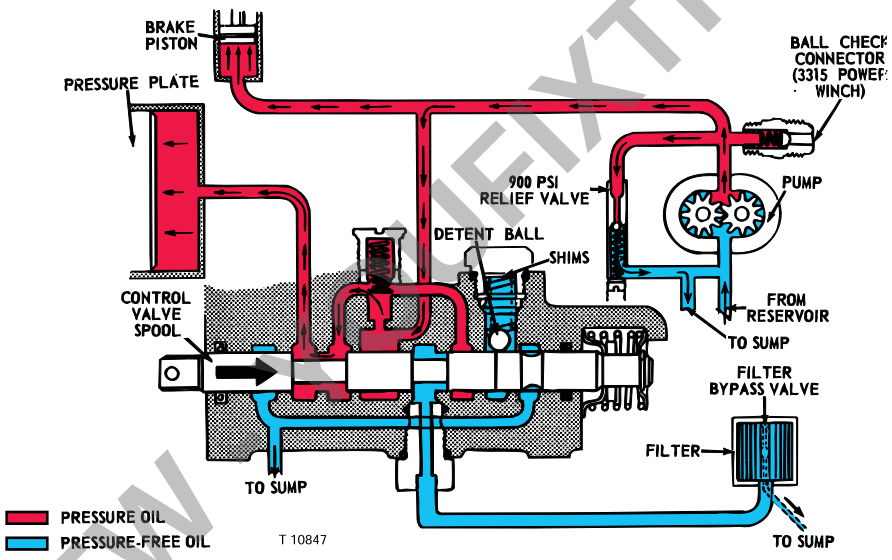


Fig. 170-5-5–Winch Control Valve Spool in "WIND" Position

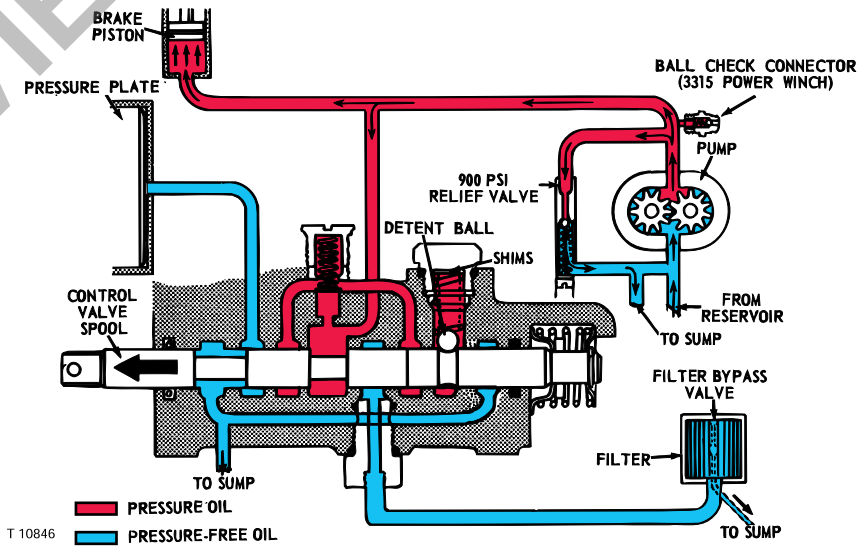


Fig. 170-5-6–Winch Control Valve Spool in "FREE SPOOL" Position

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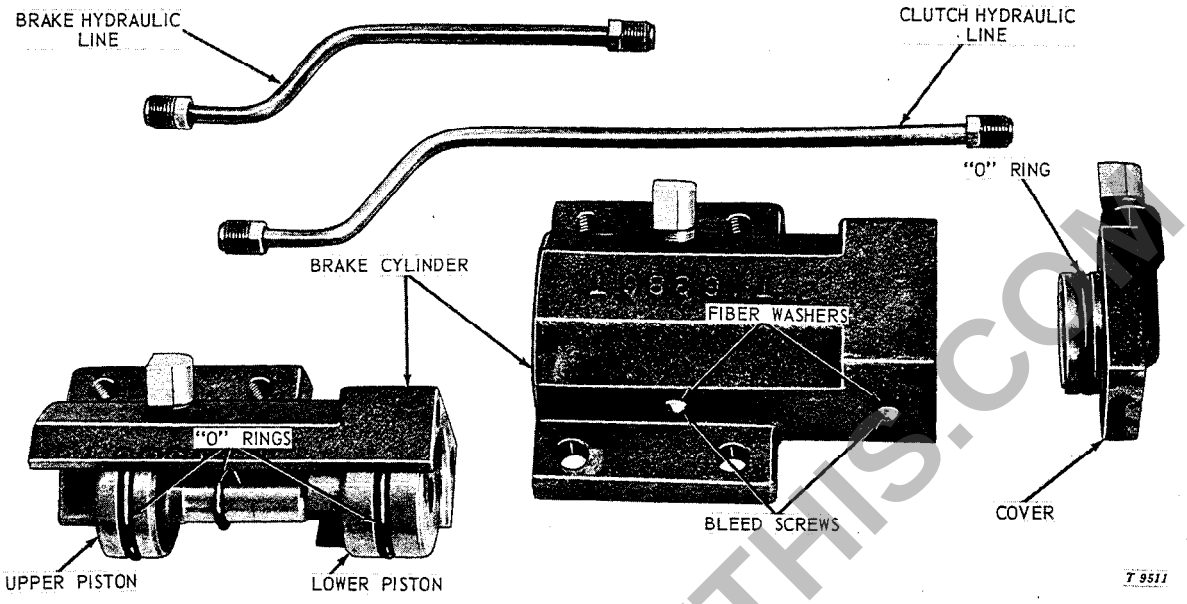


Fig. 180-15-16—Exploded View of Brake Cylinder

Inspect the brake cylinder for cracks or other damage.

Inspect the brake cylinder cover and O-ring for damage and replace if necessary.

Inspect the lower and upper pistons and their O-rings and replace if worn or damaged.

Inspect the O-ring inside the brake cylinder bore and replace if necessary.

Examine the brake fluid lines and connectors for damage and replace if necessary.

Inspect the bleeder screws and the fiber washers for wear or damage.

Inspect the brake lever for damaged condition.

Inspect brake lever spring pack. If spring washers are damaged, place spring pack in a press and relieve spring pack pressure from snap ring. Remove snap ring and retaining washer. Carefully relieve pressure on press. When assembling, the pairs of spring washers are stacked in series with the concave sides of the washers facing each other. Using a press, compress spring pack; install retaining washer and snap ring.

Inspect winch housing for cracks or other damage.

Inspect the brake fluid line connectors for wear or defective condition.

Examine the filler plug, drain plugs, and gaskets for wear or damaged condition, and replace if necessary.

INPUT SHAFT AND BEARINGS

Inspect the input shaft bearing quill for cracks or damage (Fig. 180-15-17).

Inspect the sealing ring on the outer surface of the input shaft bearing quill and replace if necessary.

Inspect the input shaft bearing quill oil seal. If replacement is necessary, press in new oil seal, lips of seal facing in, flush with input shaft bearing quill bore, using a JD 630-11 Tool.

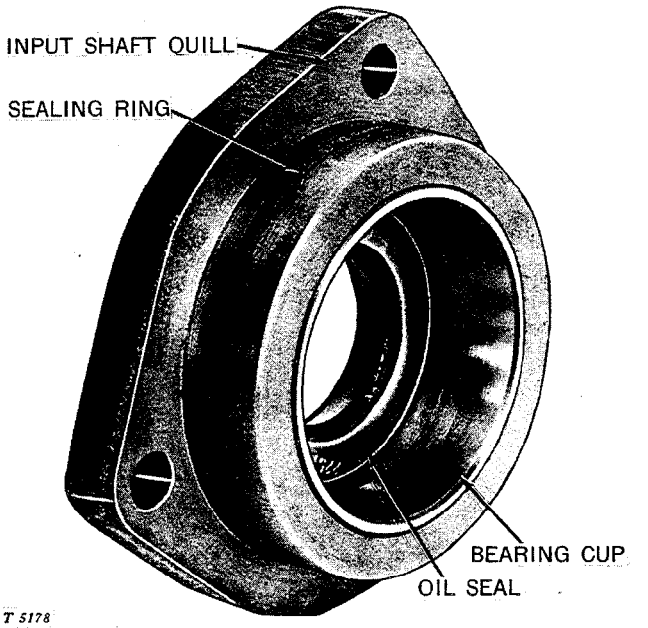


Fig. 180-15-17—Installing Input Shaft Bearing Quill Oil Seal

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RELIEF VALVES

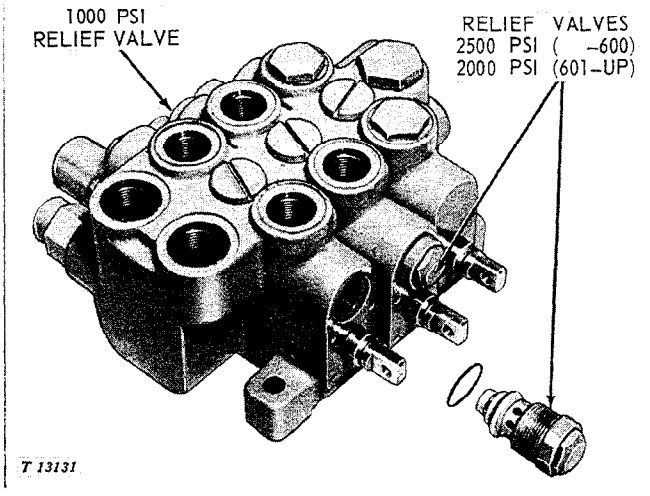


Fig. 190-15-20—Boom and Bucket Relief Valves

Relief valve cartridges in the valve stack (Fig. 190-15-20) differ only in the pressure required to activate them. The relief pressure on each cartridge is stamped on the head end of the cartridge. These relief valve cartridges are factory set and should not be adjusted. When installing the boom and bucket relief valves, torque to 20 ft-lbs.

NOTE: When installing boom and bucket relief valve O-rings, insert the O-rings into the valve body casting, not on the relief valve threads. Forcing the O-rings over the relief valve threads will damage the O-rings.

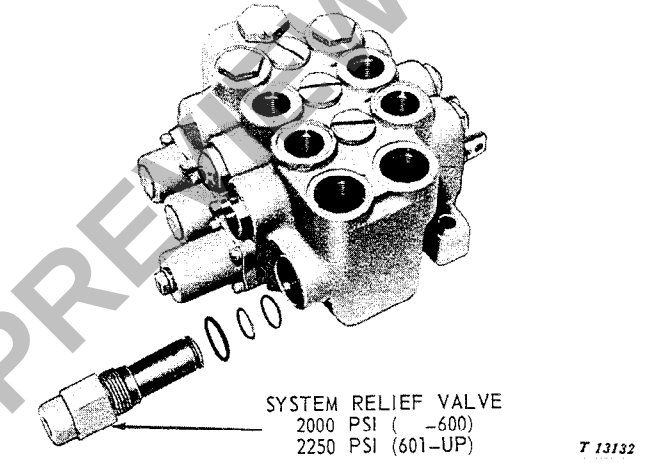


Fig. 190-15-21—System Relief Valve

The system relief valve (Fig. 190-15-21) is set at 2000 psi (-600) or 2250 psi (601-up). The valves can be repaired.

If a drop off in pressure occurs, replace the lower relief assembly (Fig. 190-15-22).

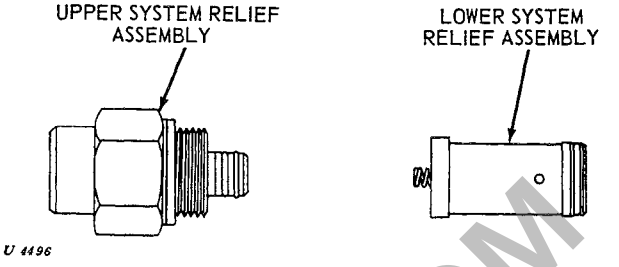


Fig. 190-15-22—Upper and Lower System Relief Assembly

If the system pressure is low, replace the upper relief assembly (Fig. 190-15-22).

If there is no pressure, replace the complete system relief valve (Fig. 190-15-22).

Replace all O-rings as new parts.

When installing the system relief valve, tighten to 40 ft-lbs torque.

INSPECTION AND REPAIR

VALVE HOUSINGS

Inspect valve housings for cracks or damaged threads. If a housing is damaged, replace the housing and valve spool as a matched assembly.

Use new O-rings when assembling valve housings.

SPOOLS

Remove burrs from spool assembly parts using fine emery cloth. If a spool is worn or damaged, replace the spool and valve housing as a matched assembly.

If a spool spring is worn or broken, replace it. Use new O-rings and backup washers when reassembling the spools.

LIFT CHECK CAGE AND POPPET

Inspect the lift check cage, spring, and poppet, and replace damaged or worn parts.

Use new O-rings and backup washers when reassembling the lift check cage.

ANTI-CAVITATION VALVE AND CHECK BALL

Inspect anti-cavitation valve and replace if worn or damaged.

Use new O-ring and aluminum check ball when reassembling the anti-cavitation check valve.

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Area (A) designates a 1/4 inch fillet weld along the upper portion of clam cutting edge (1) and lower flat surface of reinforcing plate (2).

Area (B) points out that a 6 inch long x 3/16 inch fillet weld is used between the bottom plate (3) and the upper portion of cutting edge (1). This fillet weld is centered on the cutting teeth holes.

Area (C) illustrates a 1/4 inch fillet weld joining the support runners (4) and the bottom plate (3) to the rear surface of the cutting edge (1).

Area (D) shows the compaction plate (5) and the support runners (4) joined by a 1/4 inch bevel weld.

NOTE: The support runners have a 1/4 inch x 45° bevel.

Area (E) designates a 1/4 inch fillet skip weld between the bottom plate (3) and the compaction plate (5). The welds are 6 inches long and are 12 inches between centers.

Area (F) shows a 3 inch long x 3/16 inch fillet weld joining the compaction plate (5) to bottom plate (3) and rear surface of cutting edge (1) to bottom plate (3). Welds are centered between runners.

Area (G) illustrates a 1/4 inch fillet weld joining cutting edge (6) to blade (7).

Area (H) designates a 3/16 inch fillet skip weld between upper edge of cutting plate (6) and moldboard (8). Welds are 4 inches long and 8 inches between centers.

Area (I) shows a 3/16 fillet skip weld between the lower edge of the cutting plate (6) and moldboard (8). Welds are 4 inches long and 8 inches between centers.

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