Section 20
SPECIFICATIONS

Group 5
TRACTOR SPECIFICATIONS

(Specifications and design are subject to change without notice)

HORSEPOWER (at 2200 rpm):
Net engine flywheel (at 500 ft. altitude and 85° F. temperature). Engine equipped with fan, air cleaner, water pump, lubricating oil pump, fuel pump, and alternator .. 143 hp

ENGINE
Type . . . Vertical, 6 cylinder, in-line, valve in head, 4-stroke cycle, full diesel
Engine speeds
Slow idle . . . . . 800 rpm
Working speeds . . . . . 1500 to 2200 rpm
Bore and stroke . . . . . 4-3/4 x 5 in.
Displacement . . . . . 531 cu. in.
Compression ratio . . . . . 16.1 to 1
Firing order 1-5-3-6-2-4
Valve clearance Intake . . . . . 0.018 in.
Exhaust . . . . . 0.028 in.

CAPACITIES
Fuel tank . . . . . 73 U.S. gal.
Crankcase . . . . . 20 U.S. qts.
Transmission-hydraulic system . . . . . 16 U.S. gal.
Cooling system . . . . . 9 U.S. gal.

LUBRICATION SYSTEM
Type . . . Force feed, pressurized with full-flow oil filter

FUEL SYSTEM
Type . . . . . Direct, solid injection
Injection pump . . Inlet metering, distributing-type
Injection pump timing . . . . . TDC
Air cleaner . . . . . Dry element type

COOLING SYSTEM
Type . . . . Pressurized, centrifugal pump
Temp. control . Two heavy duty thermostats

GROUND SPEEDS

NOTE: The ground speeds shown below are obtained with 18.00-25 or 23.5-25 Earthmover tires having a loaded radius of 28.7 inches.

Gear	1500 Rpm	1900 Rpm	2200 Rpm
1st	1.7 mph	2.2 mph	2.5 mph
2nd	2.8 mph	3.5 mph	4.1 mph
3rd	3.7 mph	4.6 mph	5.4 mph
4th	4.7 mph	6.0 mph	6.9 mph
5th	5.9 mph	7.4 mph	8.6 mph
6th	7.7 mph	9.7 mph	11.3 mph
7th	10.0 mph	12.6 mph	14.6 mph
8th	16.2 mph	20.6 mph	23.8 mph
3rd reverse	3.6 mph	4.5 mph	5.2 mph
5th reverse	5.7 mph	7.2 mph	8.4 mph
7th reverse	9.7 mph	12.3 mph	14.2 mph

8th at 2400 rpm
(fast idle no-load engine speed) 26.1 mph

TRANSMISSION CLUTCH
Type . . . Heavy-duty, two 12-in. dry plates, foot operated, hydraulic assisted.

TRANSMISSION
Type . . . . . Syncro-Range, constant mesh
Speed selections . . 8 forward, 3 reverse in 4 stations
Shifting
Within stations . . . . . Synchronized
Between stations . . . . . Collar shift

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Series 3 (S-3), or API Service DS. As further assurance of quality, use only those oils bearing the following statement on the container or words to the effect, "Passes Car Manufacturers' MS Sequence Tests."

NOTE: If, during the first 100 hours of operation on a new or rebuilt tractor engine, the crankcase oil level is low, add proper single viscosity oil meeting specification Mil-L-2104B. See page 30-5-1.

GREASES

SAE multipurpose-type grease is recommended for most grease fittings. Wheel bearing grease is recommended for rear axle bearing grease fittings and for hand packing the front wheel bearings. Application of grease as instructed will provide proper lubrication and will keep contamination out of bearings.

SAE multipurpose-type grease, made from lithium soap for extreme resistance to both heat and water washing, has a broad range of uses.

STORING LUBRICANTS

Use clean containers to store and handle all lubricants. The tractor can operate at top efficiency only if clean lubricants are used.

The tractor is equipped with safeguards, such as the air cleaner and oil filter, which are designed to keep dust, dirt, and other abrasives from reaching operating parts. Clean lubricants will help these safeguards do their jobs properly.

LUBRICATION AND SERVICE INTERVALS

The lubrication and service periods for the tractor are as required, daily or every 10 hours, every 50 hours, every 100 hours, every 200 hours, every 600 hours, every 1200 hours, and every spring and fall season. These intervals are based on operation under normal conditions. When the tractor is operated under unusual conditions, such as excessive heat, cold or dust, the tractor should be checked and serviced at more frequent intervals.

The charts below and on the following pages list in condensed form, the components to be serviced at each interval, and the service to be performed. Detailed instructions for performing each service are given in Group 10 of this Section, "Detailed Periodic Services." Each item in the charts is numbered. The corresponding detailed procedure in Group 10 bears the same number.

AS REQUIRED

Item No.	Component	Service	Capacity or Measurement	Type of Lubricant
1	Air cleaner	Clean filter element	. . . . .	. . . . .
2	Fuel filters	Replace	. . . . .	. . . . .
3	Fuel injectors	Service	See your John Deere dealer	

DAILY OR EVERY 10 HOURS

4	Engine crankcase	Check oil level	To "FULL" mark	See page 30-5-1 for type of service and viscosity of engine oil
5	Radiator	Check coolant level	Flush with baffle in radiator top tank	. . . . .
6	Pre-Cleaner	Check collector bowl	. . . . .	. . . . .
7	Fuel pump	Check sediment bowl	. . . . .	. . . . .
8	Transmission	Check oil level	To top of "SAFE" range on dipstick	John Deere Type 303 Special-Purpose Oil
9	Front axle	Lubricate grease fittings	Several shots	SAE multipurpose-type grease
10	Front wheels	Service only when tractor is being operated in extremely wet or muddy conditions.		

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REMOVAL

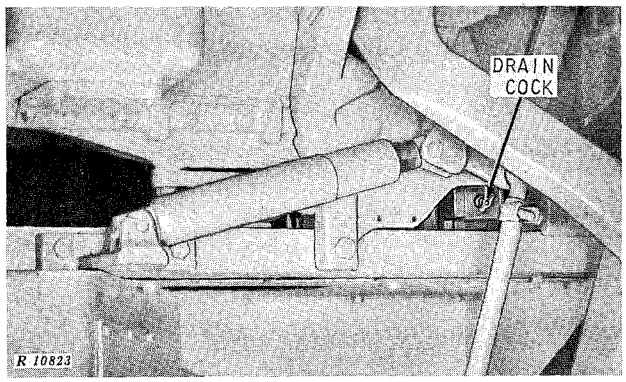


Fig. 50-5-2—Radiator Drain Cock

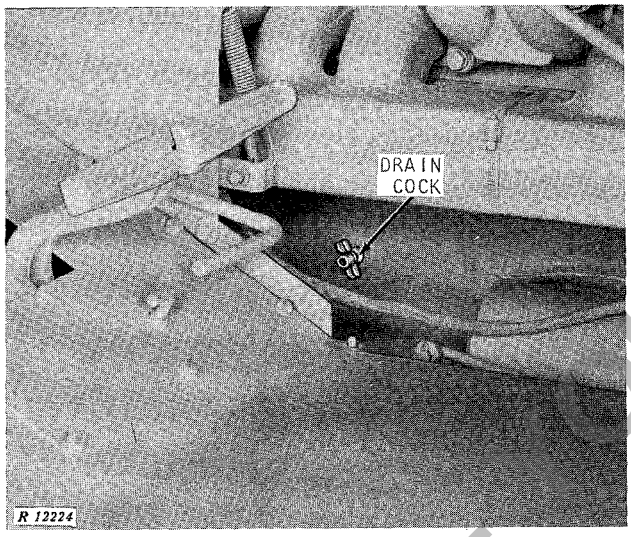


Fig. 50-5-3—Engine Block Drain Cock

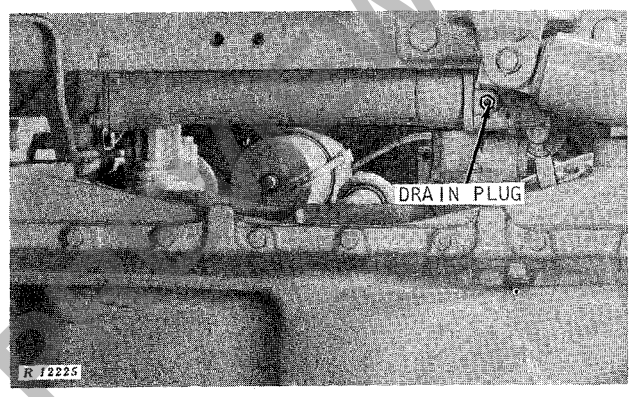


Fig. 50-5-4—Oil Cooler Drain Plug

Drain tractor cooling system (Figs. 50-5-2, 50-5-3, and 50-5-4).

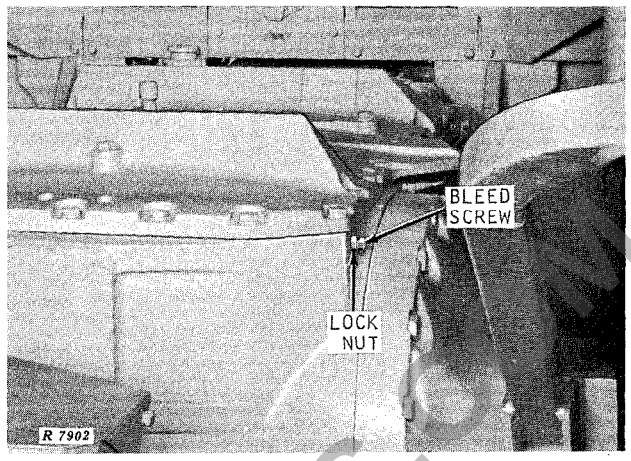


Fig. 50-5-5—Brake Bleed Screw and Lock Nut

Bleed accumulator pressure by loosening the right-hand brake bleed screw (Fig. 50-5-5) and applying the right-hand brake pedal until it bottoms.

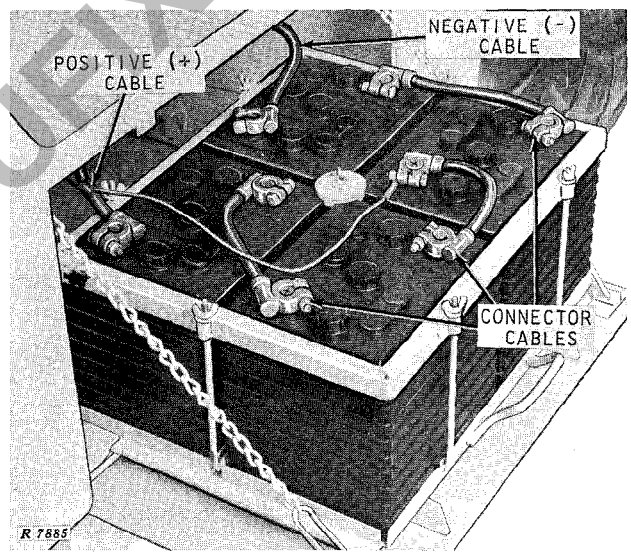


Fig. 50-5-6—Battery Assembly

Disconnect battery cables (Fig. 50-5-6) (ground cable first) and 12-volt accessory wire connected to positive post of outside rear battery.

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Section 250
TROUBLE SHOOTING

Group 5
INDEX TO DIFFICULTIES

INTRODUCTION

Whenever tractor service is required due to complaint or failure, you must be able to determine the cause or causes of the trouble and find the quickest and easiest solution.

If you can do this without costly and time-consuming removal or disassembly, the job will go faster, costs will be reduced, and customer-irritating delays may be avoided.

The purpose of this Section is to help you diagnose quickly and easily most of the problems or failures with which you will be faced. Individual Groups of this Section contain difficulties that may develop in a specific component or system of the tractor. For instance, faults or failures that may be found in the tractor engine are given in one Group (Group 10), those that may be found in the electrical system are given in another Group (Group 20), etc. Following each difficulty is a list of the possible causes and their remedies, plus supplementary service information references to other Sections and Groups of this manual.

Using this information as a guide, you can diagnose the trouble by an orderly process of eliminating probable causes one by one until the solution is found.

For ready reference, an index for this Section is provided below.

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SERVICE MANUAL

JOHN DEERE
JD760
TRACTOR

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TO THE JOHN DEERE SERVICEMAN

This service manual contains maintenance instructions for John Deere JD760 Tractors. Included are complete instructions for removal, disassembly, inspection, repair, assembly and installation of the major parts and assemblies of the tractor.

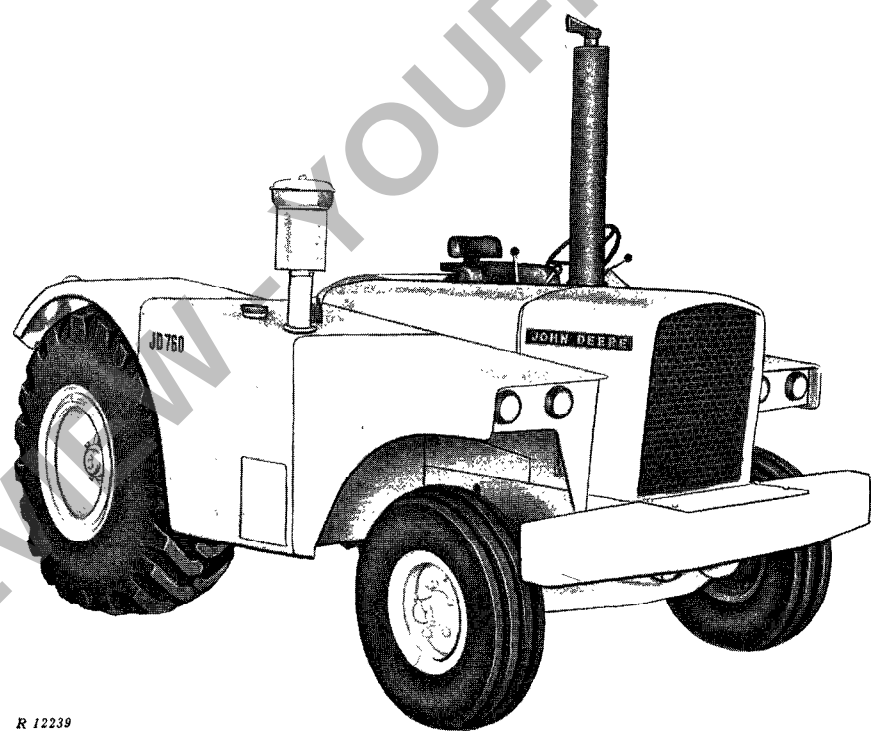
In addition, the manual contains brief descriptions of the more complicated systems of the tractor, and tells how they operate.

In Section 20, "Specifications," dimensions of many new wearing parts are given as an aid in determining when parts replacement is necessary. Section 260, "Special Service Tools," describes the tools necessary for proper servicing of JD760 Tractors.

Section 40, "Tune-Up and Adjustment," contains instructions for performing the services necessary to help the tractor perform efficiently and economically after it has been in the field for some time.

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.



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John Deere JD760 Tractor

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Brakes

Item	*Specification*
I.D. of brake pedal bushing	0.688 to 0.692 in.
O.D. of brake pedal shaft	0.6855 to 0.6875 in.
O.D. of brake valve plunger	0.5595 to 0.5605 in.
I.D. of brake valve plunger bore in manual piston	0.561 to 0.563 in.
O.D. of brake manual piston	0.933 to 0.935 in.
I.D. of brake manual piston bore in valve housing	0.9365 to 0.9375 in.
O.D. of upper end of brake valve	0.120 to 0.130 in.
O.D. of lower end of brake valve (radius)	0.120 to 0.130 in.
Strength of brake valve spring compressed to 2-3/16 inches	0.6 to 0.8 lbs.
Strength of brake valve plunger spring compressed to 1-11/16 inches	39 to 47 lbs.
Strength of pressure line valve spring compressed to 1-inch	7 to 9 oz.
O.D. of right- and left-hand check valve disks	41/64 in.
Thickness of check valve disks	3/64 in.
Check valve disks flat within	0.001 in.
O.D. of brake piston	2.2495 to 2.2505 in.
I.D. of brake cylinder in transmission case	2.253 to 2.256 in.
Brake disks flat within	0.012 in.
Torque, brake valve nipple in valve housing	40 ft-lbs

Brake Accumulator

I.D. of accumulator cylinder	2.9980 to 3.0010 in.
O.D. of accumulator piston	2.9930 to 2.9960 in.
Specified pressure (dry nitrogen)	500 psi

Scraper Brake Valve

I.D. of plunger bore in housing	0.3735 to 0.3745 in.
O.D. of plunger	0.3727 to 0.3733 in.
I.D. of operating shaft bore in housing	0.893 to 0.895 in.
O.D. of operating shaft	0.888 to 0.890 in.
O.D. of upper end of brake valve	0.120 to 0.130 in.
O.D. of lower end of brake valve—radius	0.120 to 0.130 in.
Strength of brake valve return spring compressed to 2-3/16 inches	0.6 to 0.8 lbs.
Strength of brake valve plunger return spring compressed to 1-11/16 inches	39 to 47 lbs.
Strength of operating valve spring compressed to 0.69 inches	183 to 203 lbs.

Selective Control Valve

I.D. of bore in housing	0.8745 to 0.8755 in.
O.D. of spool	0.8742 to 0.8752 in.

Spool is selective fit in housing; not furnished separately.

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REAR AXLE BEARINGS

Raise tractor with jack until weight of wheel is just supported by axle bearing. While raising and lowering jack, observe axle for movement at end of axle housing.

If movement is excessive, bearings must be adjusted. Refer to Section 130 of this manual for service instructions. Axle end play should not exceed 0.004 inch.

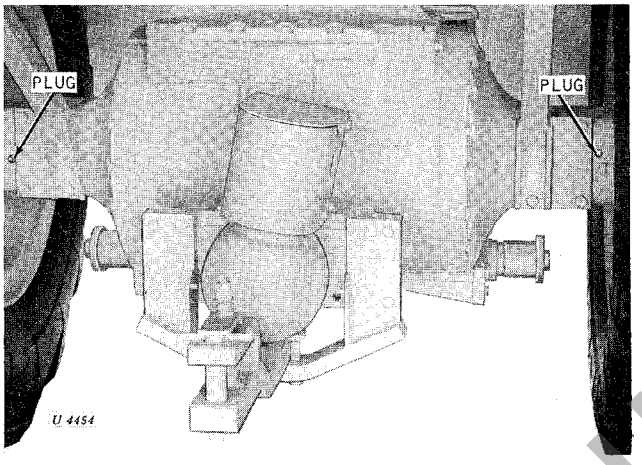


Fig. 40-15-3—Rear Axle Bearing Lubrication Plugs

To lubricate outer rear axle bearing, remove plugs (Fig. 40-15-3) and install grease fittings. Put wheel bearing grease into each fitting until grease appears at the seal at the outer end of the housing (25 shots if weight obscures grease seal). Remove fittings and install plugs.

HYDRAULIC SYSTEM

Check all parts of the hydraulic system.

TRANSMISSION-HYDRAULIC SYSTEM OIL LEVEL

With the tractor on level ground, remove the dipstick (Fig. 40-15-4). Wipe it off and insert it in the opening with the cap resting on top of the threads. Remove the dipstick and check the oil level. If the oil is down to the "ADD" mark at the bottom of the "SAFE" range on the dipstick, remove the transmission-hydraulic system filler cap. Then add sufficient John Deere Type 303 Special-Purpose Oil to bring the oil up to the mark at the top of the "SAFE" range.

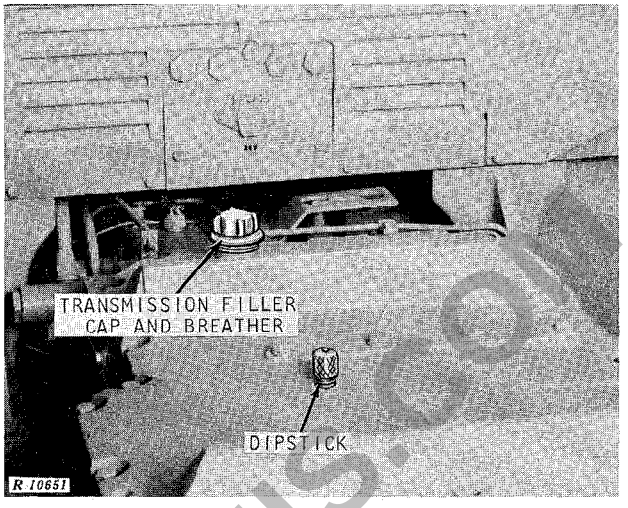


Fig. 40-15-4—Transmission-Hydraulic System Dipstick and Filler Cap with Breather

Remove the transmission-hydraulic system filler cap and wash the breather filter inside the cap in diesel fuel.

MAIN HYDRAULIC PUMP

Check main hydraulic pump for correct pressure and settings. See Section 190 for detailed information.

POWER STEERING

With tractor engine running, turn steering wheel full right and full left to make sure the front wheels are synchronized with steering wheel. If constant steering synchronization is noticed at end of either turn, See Section 210 of this manual.

POWER BRAKES AND ACCUMULATORS

Bleed the power brakes before checking the brake accumulator. (Brakes should also be bled after every 200 hours of tractor operation, whenever pedal travel exceeds 3 inches with the engine stopped. or whenever the brake pedal does not feel solid.)

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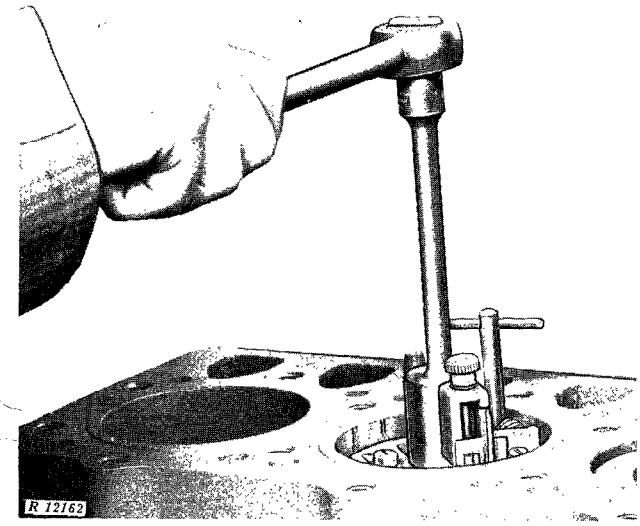


Fig. 60-15-3–Removing Ridge from Cylinder Liner

Remove any ridges from top of cylinder liner bore with a ridge reamer (Fig. 60-15-3). This will prevent damage to ring grooves of the pistons, when they are removed.

Remove pistons with connecting rods through the top of the block.

Clamp connecting rod in a vise to prevent damaging or burring piston. Remove and discard old rings.

Remove snap rings from each end of the piston pin, and push pin out of piston and connecting rod. Identify pin, piston, and rod for reassembly purposes.

INSPECTION AND REPAIR

PISTONS

Remove all dirt and carbon from pistons by using Immersion-Solvent Type T-234 and Hydra-Jet Rinse Gun. Both the chemical and rinse gun may be ordered through the service department of your branch house.

NOTE: Use chemical and rinse gun according to manufacturer's instructions. AVOID CONTACT OF CHEMICAL WITH YOUR SKIN OR EYES; chemical contains cresols which can be very harmful.

Inspect pistons for scores, cracks, or other damage. Check ring grooves for excessive wear. On regular pistons, insert a new ring in the proper groove (Fig. 60-15-4) at several points around

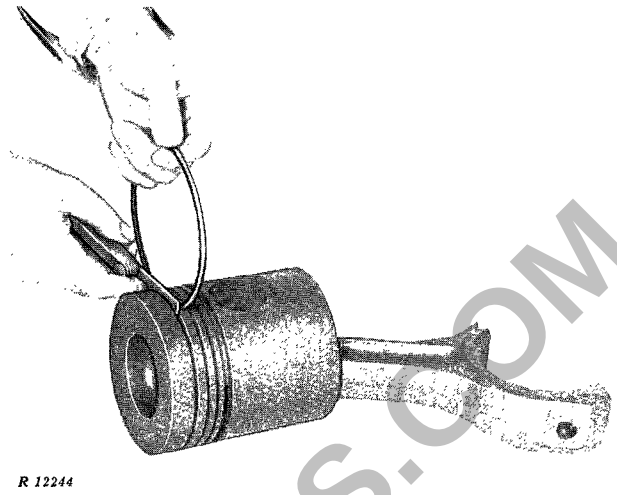


Fig. 60-15-4–Measuring Ring Clearance

piston and measure clearance between ring and groove with a feeler gauge. If clearance exceeds 0.008 inch in any of the first three grooves or 0.007 inch in the fourth groove, replace piston.

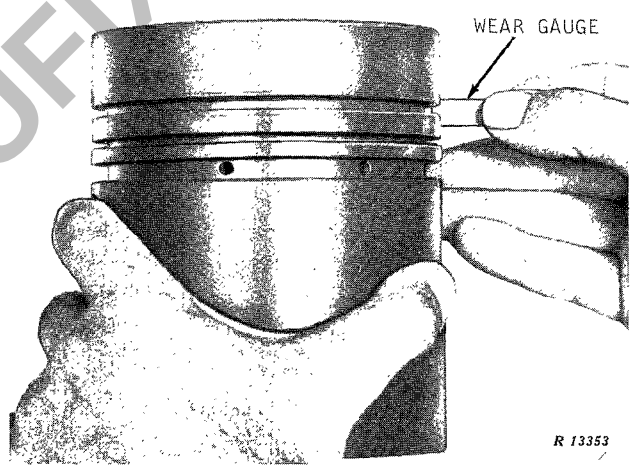


Fig. 60-15-5–Checking Keystone Ring Groove

NOTE: Use a wear gauge on pistons with a Keystone ring to measure the top groove (Fig. 60-15-5). If the gauge goes in all the way, wear is excessive and the piston should be replaced. Measure the bottom two grooves in the usual manner allowing a maximum wear tolerance of 0.007 inch. Wear gauge available from Branch House.

Using a micrometer, measure the pistons for wear (Figs. 60-15-6 and 60-15-7). New piston diameters are given in the chart on the next page. Pistons are cam ground with the largest diameter at right angles to the piston pin as indicated in the chart.

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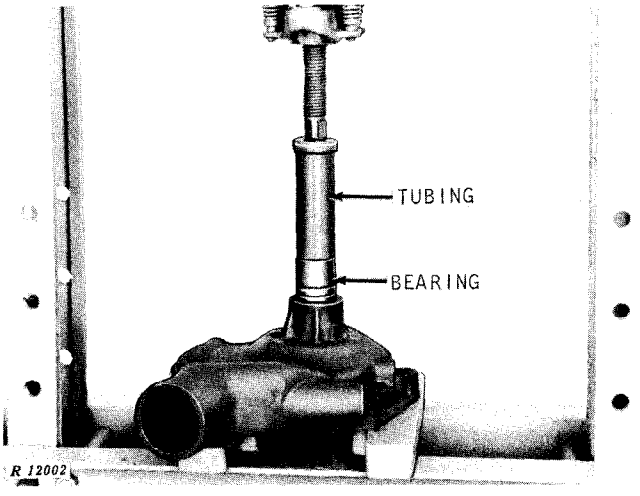


Fig. 80-15-6—Installing Bearing

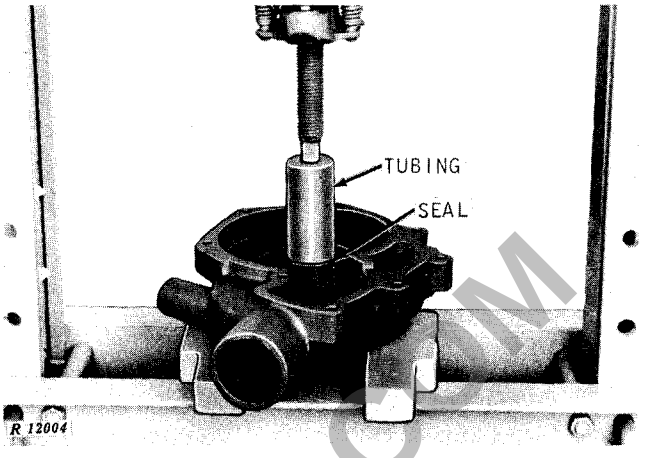


Fig. 80-15-8—Installing Seal

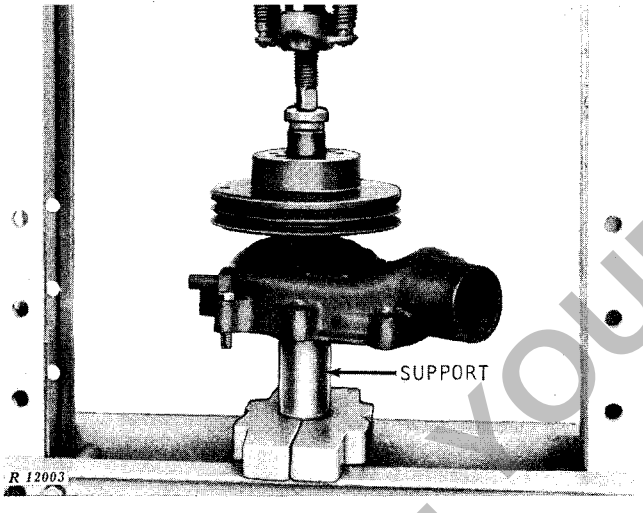


Fig. 80-15-7—Installing Fan Pulley

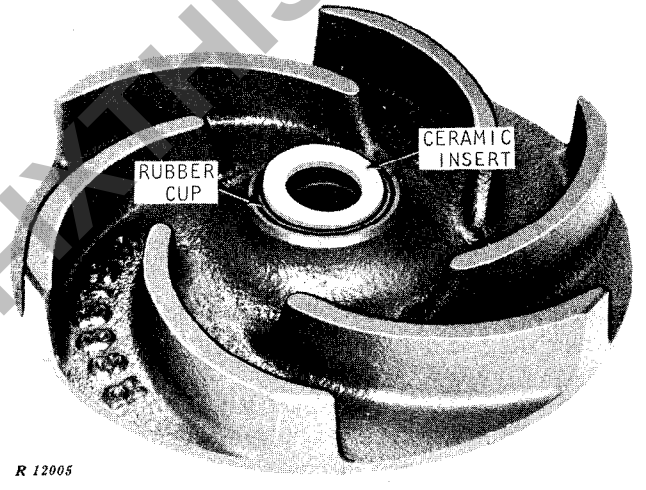


Fig. 80-15-9—Rubber Cup and Ceramic Insert

Place three cap screws in housing (installed pulley prevents their removal or installation). Support bearing shaft (not the housing) and press fan pulley on shaft (Fig. 80-15-7) until the pulley is flush with the end of the shaft.

Prior to installing the seal, inspect the lip for scratches. Do not use if scratched. Coat the outside diameter of the brass shell with Permatex. (The Permatex used must be resistant to heat or ethylene glycol type antifreeze.) Press the seal in place (Fig. 80-15-8). Be sure it is fully seated.

Install a new rubber cup and ceramic insert in the impeller. Inspect recess in impeller and remove any rust or foreign material. Apply a light coat of clean 10W engine oil to the bore.

Install ceramic insert into rubber cup with the polished side out. (The back side of the insert will have a groove or three small dots for identification.)

Place the rubber cup and ceramic insert in the impeller at an angle (Fig. 80-15-9) and press in position by hand. The parts should snap easily into place and should be pressed firmly in the bore.

IMPORTANT: The seal lip and ceramic insert face must be perfectly clean because both surfaces are lapped to an extremely fine finish.

Coat the bearing shaft bore in the impeller with a light coat of Permatex. Apply the Permatex from the side opposite the ceramic insert to prevent getting any Permatex on the insert.

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Be sure that special screw (10) is present and in good condition.

Examine pressure and return oil hoses and hose connections. Replace any that are defective.

ASSEMBLY AND ADJUSTMENT

Install pressure valve stem (20, Fig. 100-10-5) and return valve stem (13) in housing.

Install adjusting screws (11 and 12) and set screw (14) in operating rod block (19), but do not tighten set screw. Place operating rod block in housing.

Coat operating rod (26) with hydraulic oil and carefully insert rod into housing bore and operating rod block. Install pin (18) through operating rod block and operating rod.

Place pressure valve ball (22) in housing. Insert spring (23) into 90° adjustable elbow (25) and install elbow in housing with hose connection pointing toward bottom of housing.

Install return valve ball (29), spring (30), and spring guide (33) in housing bore.

Coat piston (3) with hydraulic oil and carefully insert piston through oil seal and O-ring packing in piston cap (8). Install special screw (10) in piston. Insert piston into housing and screw piston cap into place. Tighten piston cap securely, and position cap so that one corner retains return valve spring guide in the housing.

Actuate both valve stems to make sure that the valve balls are seating properly.

With the pressure valve ball tight against the seat, and with the pressure valve adjusting screw just touching the pressure valve stem, turn the pressure valve adjusting screw in or out to set the operating rod block 0.069 to 0.075 inch from pressure side of housing cavity (Fig. 100-10-6). Use a feeler gauge to make correct adjustment.

With pressure and return balls tight against their respective seats, turn the return valve adjusting screw (Fig. 100-10-7) in or out to give the operating rod block 0.005 to 0.010 inch end play. Tighten set screw securely and recheck both adjustments.

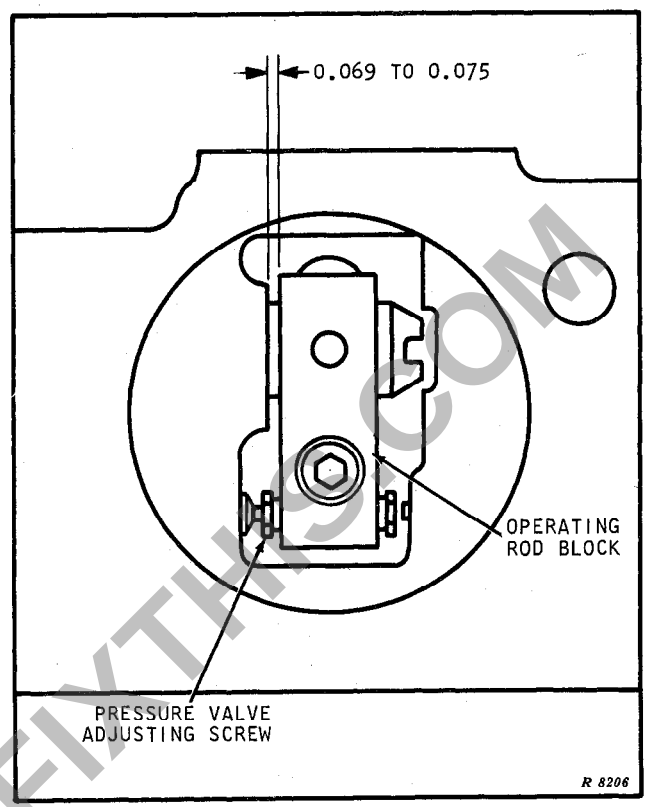


Fig. 100-10-6—Pressure Valve Adjustment

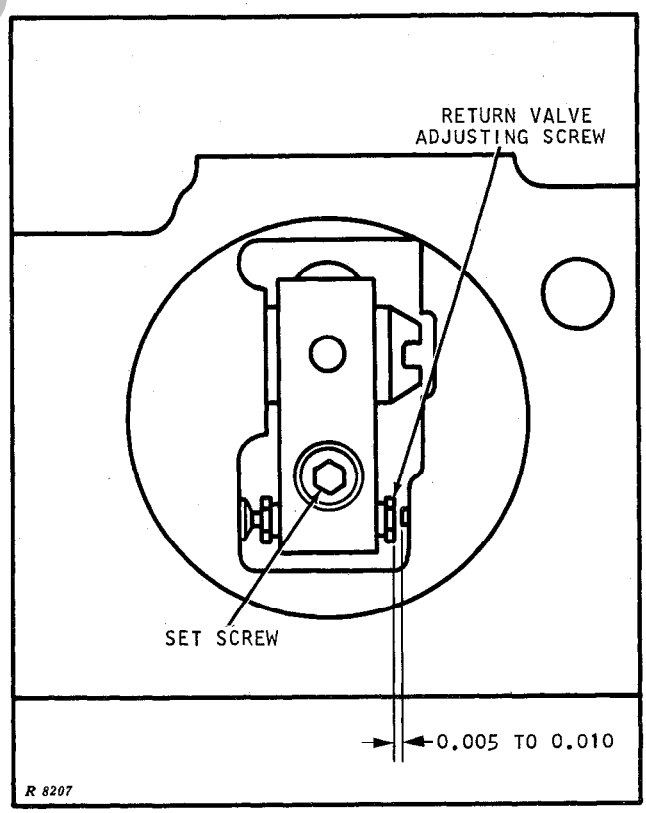


Fig. 100-10-7—Return Valve Adjustment

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Move front shifter gear (18, Fig. 110-15-17), shifter collar (17), and fourth and seventh speed gear (19) into position on shaft, and install fourth and seventh speed gear retaining thrust washer (20). Install the original front bearing shims (21) plus an additional 0.010-inch shim.

Install front bearing cup in transmission case. Heat front bearing cone not to exceed 300° F., and install on shaft.

Install plate (24) with lock plate (25) and cap screws. Tighten cap screws to 35 ft-lbs but do not bend up lock plate.

Mount a dial indicator to touch the retaining plate, and measure end play of shaft. If no end play is found, remove front bearing cone and add one or more shims until a measurable amount of end play is obtained.

Correct preload is 0.004 to 0.006 inch. Therefore, it will be necessary to remove shims in the amount of the measured end play plus the desired preload. For example, if the measured end play is 0.005 inch, removal of one 0.010-inch shim will provide a correct preload of 0.005 inch.

When the correct preload has been established, tighten the bearing retaining plate cap screws to 35 ft-lbs and bend up the lock plate.

Install range selector shifters as instructed in Group 10 of this Section.

TRANSMISSION DRIVE SHAFT

Install front bearing cup and spacer in transmission case if they have been removed.

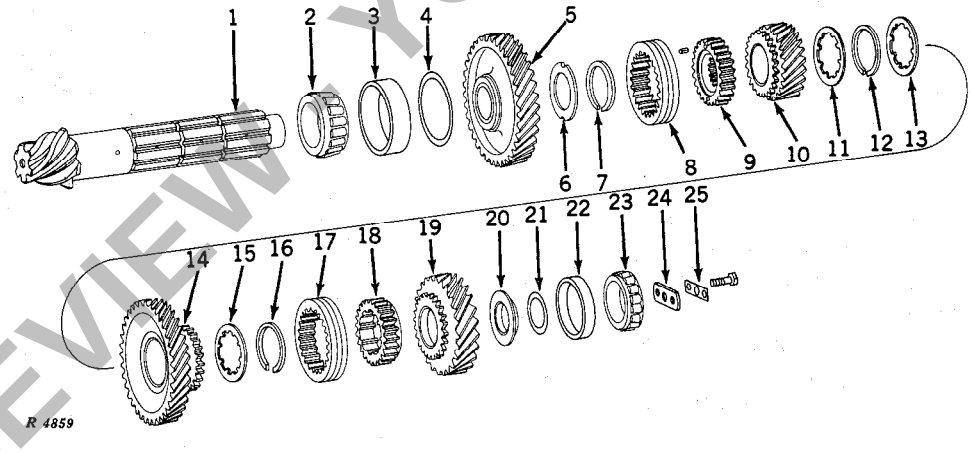
Place assembled transmission drive shaft in transmission case.

Install Hi-Lo shifters as instructed in Group 10 of this Section.

Install rear bearing quill with bearing cup and shims (Fig. 110-15-9).

Mount a dial indicator with extension at front end of transmission drive shaft and measure end play of shaft. Correct end play is 0.004 to 0.006 inch.

Adjust end play, if necessary, by adding or removing shims under rear bearing quill.



1 – Differential Drive Shaft
2 – Rear Bearing Cone
3 – Rear Bearing Cup
4 – Rear Bearing Cup Shim
5 – First and Third Speed Gear
6 – Notched Thrust Washer
7 – Rear Snap Ring
8 – Rear Shifter Collar
9 – Rear Shifter Gear
10 – Sixth and Eighth Speed Gear
11 – Splined Thrust Washer
12 – Center Snap Ring
13 – Splined Thrust Washer
14 – Second and Fifth Speed Gear
15 – Splined Thrust Washer
16 – Front Snap Ring
17 – Front Shifter Collar
18 – Front Shifter Gear
19 – Fourth and Seventh Speed Gear
20 – Fourth and Seventh Speed Gear Retaining Thrust Washer
21 – Front Bearing Shim
22 – Front Bearing Cup
23 – Front Bearing Cone
24 – Plate
25 – Lock Plate

Fig. 110-15-17–Differential Drive Shaft

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are distorted, rusted, or defective, replace them.

Inspect switch contact on field wire and remove any irregularities that may puncture switch cover gasket and short circuit the starter.

See Section 50, Group 10 of SM-2029, "John Deere Electrical Systems" for detailed field coil or armature servicing procedures.

BUSHINGS

To prevent bushing collapse when installing a prelubricated or absorbant bronze bushing, use correct arbor to obtain proper bearing fit. Arbor is usually several ten-thousandths larger than starter shaft.

When possible, soak bushing in medium weight engine oil for 24 hours before installation. Saturate felt at commutator end bushing with medium weight engine oil.

ASSEMBLY

See Figure 150-20-7 for parts identification.

Install washer (14), felt washer (13) (neoprene-backed side toward drive housing), washer (14), spring (12), and collar (11) in drive housing. Place neoprene washer (18) on motor drive (20), apply light film of engine oil on motor drive, and install it in drive housing (17) while compressing spring to hold washers in their recess. Place 1-inch spacer under pinion and depress collar (11) to install lock wire (10). Remove spacer.

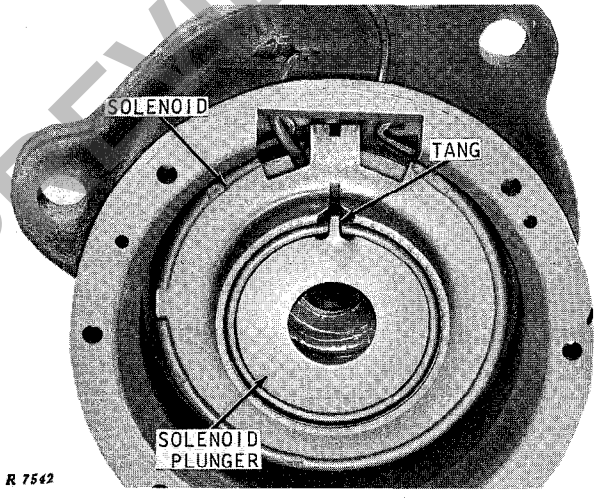


Fig. 150-20-10—Solenoid Plunger Installed

Install solenoid plunger (9), making sure tang enters its groove in solenoid bore (Fig. 150-20-10).

Lubricate armature shaft with a thin film of SAE-10 engine oil. Place intermediate bearing (24) and new gasket (15) on armature shaft. Flat side of bearing assembly and the gasket should be toward end of shaft. Be sure gasket holes match holes in bearing assembly. Slide armature into solenoid plunger and motor drive. Place pinion stop (21) on shaft with cupped end away from pinion. Place retaining ring (22) and thrust washer (23) on shaft. Flat side of thrust washer should be toward bearing surface on drive housing. Squeeze retaining ring into its groove and force cupped end of pinion stop over retaining ring.

Install new gasket (15) and main frame carefully on armature so as not to damage brushes or field lead. Make sure locating pins on main frame will be in proper holes in gaskets, intermediate bearing, and drive housing.

Push brushes against commutator and place brush springs on brushes (Fig. 150-20-11). Check brush spring tension. With scale parallel to brushes, the tension should be 32 to 40 ounces when spring pressure is removed from brush. Bend spring holders if necessary to adjust tension. New brushes should be properly seated by wrapping a strip of 00 sandpaper around commutator and slowly turning armature in direction of rotation. After sanding, blow ALL the dust from starter.

Check all brush leads to make sure that they will not be grounded or shorted.

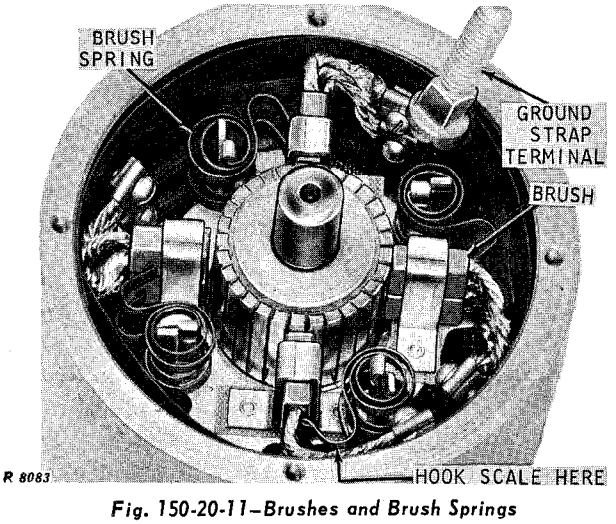


Fig. 150-20-11—Brushes and Brush Springs

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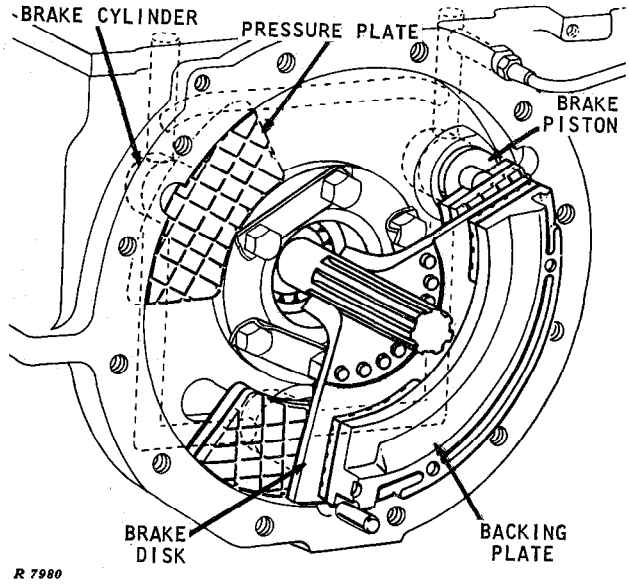


Fig. 190-5-3—Brake Linings, Pressure Plates, and Brake Backing Disk

SELECTIVE CONTROL VALVES

Three control valves for operating a scraper or auxiliary equipment are mounted on the engine side of the dash (Fig. 190-5-4).

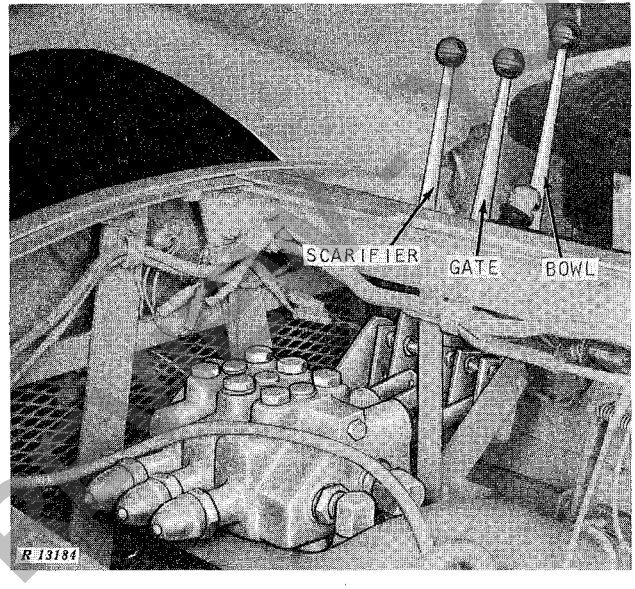


Fig. 190-5-4—Selective Control Valves

Push the bowl lever away from you to lower the bowl into working position and to apply down pressure on the cutting edge for proper penetration. Pull the lever toward you to raise the bowl into transport or eject position.

When the lever is pulled all the way toward you, a detent will hold it in that position until it is moved back to neutral.

When the lever is pushed away from you it must be held there until the desired bowl position is reached.

Push the gate lever away from you to open the bowl floor and advance the ejector gate so that the load is pushed out of the bowl. Pull the lever toward you to retract the ejector gate and close the bowl floor.

When the lever is moved all the way away from or all the way toward you, a detent will hold it in that position until it is moved back to neutral. This is advantageous in dump-spreading since the operator can free his hand for other operations by engaging the eject lever detent at the start of the cycle.

Leaving the lever in detent after either the eject or close cycle has been completed is permissible. In some cases, if the control valve is worn, it is desirable to leave the lever in detent to prevent cylinder creep.

Push the scarifier lever away from you to lower the scarifier. Lever must be held until the desired penetration of the scarifier is reached. Pull the lever all the way toward you to raise the scarifier. A detent will hold the lever in this position until it is moved to neutral. A third lever position (float) is obtained by turning the float lock-out lever down. Push lever away from you until it detents. This is "float" position.

PIPES

All hydraulic pipes are externally mounted to facilitate checking, servicing, and replacement, if necessary.

TRANSMISSION-HYDRAULIC OIL

Use only John Deere Type 303 Special-Purpose Oil in the hydraulic system. This oil has the special properties necessary to (1) provide hydraulic force for all hydraulic components, (2) lubricate the transmission and hydraulic pump, (3) prevent brake chatter, and (4) operate satisfactorily under prevailing temperatures.

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Before installing discharge valves, springs, and guides, place stroke control valve housing, with adjusting shims, on pump housing, and tighten cap screws to 85 ft-lbs torque. Check pump shaft for 0.002- to 0.006-inch end play. Add or deduct adjusting shims in the stroke control valve housing to obtain correct adjustment.

Remove stroke control valve housing. Install discharge valves, springs, and guides, in main pump housing. Replace packings in stroke control valve housing and install control valve housing using 85 ft-lbs torque on each cap screw.

Further adjustment on the pump is made after the pump is installed on the tractor.

INSTALLATION

Slide the pump shaft into the splined pump drive shaft, install nuts securing pump to pump support studs and tighten each nut to 85 ft-lbs torque.

Tighten cap screws of pump drive shaft to 35 ft-lbs torque.

Install inlet and pressure hoses to connections on pump.

Install hoses from main hydraulic pump to oil reservoir and the oil reservoir return pipe.

NOTE: Be sure all hydraulic connections are tight. Check reservoir for proper oil level and fill to mark on dipstick. See Section 30 of this manual.

Install grille.

ADJUSTMENT

Install the hydraulic test unit (control valve handle "CLOSED") to the main hydraulic pump as illustrated in Section 190, Group 15, of this manual.

Turn the adjusting screw of the stroke control valve out (Fig. 240-15-16) until the spring pressure on the screw is relieved.

Place all hydraulic controls in neutral positions and the transmission in "PARK." Start the engine and run at fast idle to pressurize the hydraulic system.

Turn the adjusting screw of the stroke control valve in until a reading of 2250 to 2300 psi is recorded on the gauge. Tighten jam nut. Run the tractor engine at fast idle for 5 or 10 minutes and then recheck the adjustment.

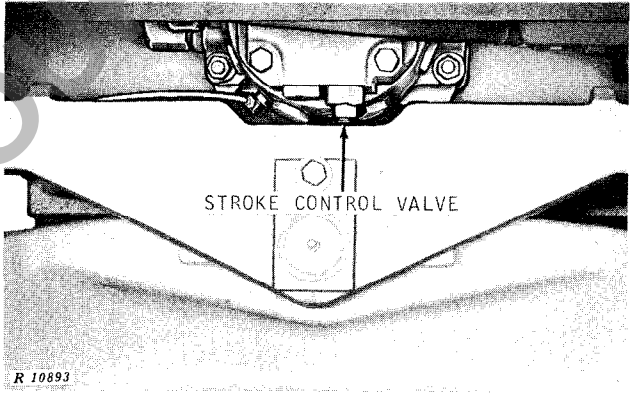
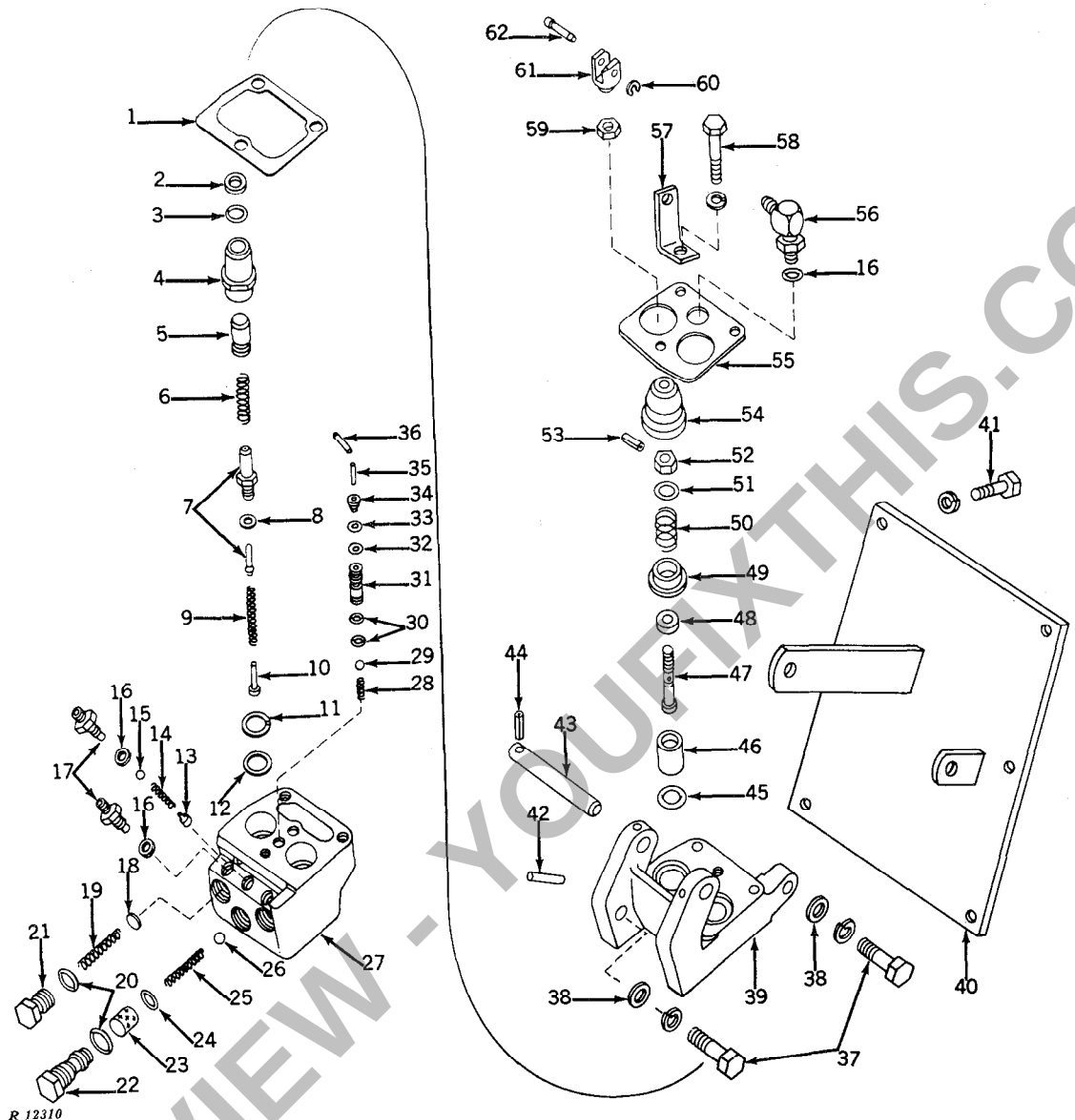


Fig. 200-10-16—Stroke Control Valve

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1 – Gasket
2 – Treated Paper Washer
3 – O-Ring
4 – Manual Brake Piston
5 – Brake Valve Plunger
6 – Spring
7 – Inlet Valve Nipple with Valve
8 – O-Ring
9 – Spring
10 – Spring Guide Pin
11 – Back-Up Ring
12 – O-Ring
13 – Check Valve Stop
14 – Spring
15 – Steel Ball
16 – O-Ring
17 – Connector
18 – Check Valve Disk
19 – Spring
20 – O-Ring
21 – Plug
22 – Plug
23 – Filter Screen
24 – O-Ring
25 – Spring
26 – Steel Ball
27 – Brake Valve Housing
28 – Spring
29 – Steel Ball
30 – O-Ring
31 – Equalizing Valve Guide
32 – O-Ring
33 – Packing Washer
34 – Equalizing Valve Shaft Sleeve
35 – Equalizing Valve Shaft
36 – Equalizing Valve Pin
37 – Cap Screw
38 – Lock Washer
39 – Pedal Bracket
40 – Brake Valve Support
41 – Cap Screw
42 – Spring Pin
43 – Pedal Shaft
44 – Spring Pin
45 – O-Ring
46 – Operating Rod Guide
47 – Operating Rod
48 – Operating Rod Stop
49 – Operating Rod Stop Retainer
50 – Spring
51 – O-Ring
52 – Operating Rod Sleeve
53 – Spring Pin
54 – Operating Rod Boot
55 – Retainer
56 – Elbow
57 – Clip
58 – Cap Screw
59 – Jam Nut
60 – Retaining Ring
61 – Yoke
62 – Pin

Fig. 220-10-8–Exploded View of Brake Valve Assembly

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