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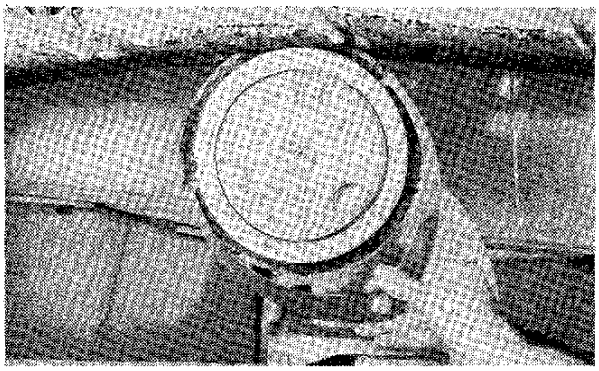
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CARRIER ROLLERS

GENERAL INFORMATION

Carrier rollers are used to support and guide the track chain between the drive sprocket and the front idler.

MEASURING CARRIER ROLLER WEAR



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Fig. 2-Carrier Roller Wear Measurement

Measure carrier roller wear of both treads using roller calipers and scale from JT05518 or JT05523 Undercarriage Inspection Service Tool Kit. Position calipers over the most worn area of the roller running surface, and close until caliper tips just touch tread surface. Measure caliper tip spread using the scale to the nearest 0.020 in. (0.5 mm).

Also check for flat spots on carrier roller tread, which indicate roller is not free to turn.

CARRIER ROLLER WEAR SPECIFICATION

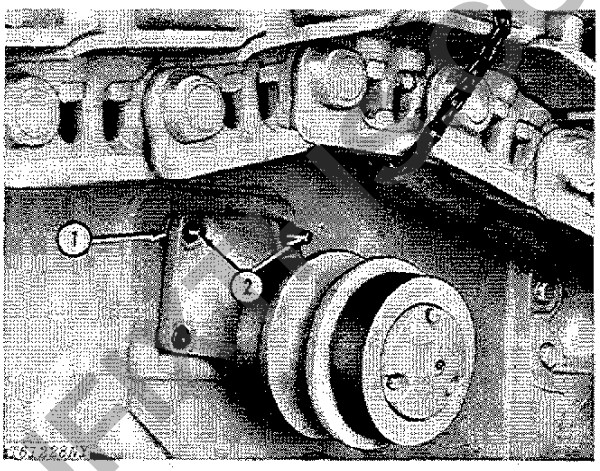
O.D. of new carrier roller	7.48 in. (190.0 m)
Minimum recommended O.D.	6.65 in. (169.0 mm)

NOTE: For additional information on measuring carrier roller wear, refer to UNDERCARRIAGE APPRAISAL MANUAL SP-326.

REMOVAL

Release tension from track chain.

Raise and support track chain so it is clear of carrier rollers.



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1—Shims **2—Guide Screws**

Fig. 3-Removing Carrier Roller

Remove top two cap screws and install two cap screws with the heads cut off to use as guide screws (2, Fig. 3).

Note the number of shims (1) used behind the carrier roller support to aid in installation.

Remove bottom cap screws and shims.

Remove carrier roller.

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Group 0201
DRIVE AXLE HOUSING AND SUPPORT

GENERAL INFORMATION

The final drive housing is attached to the outboard side of the transverse case.

The parking brake assembly is located within the final drive housing.

REMOVAL

NOTE: The reasons for removing the final drive as an assembly would be for servicing the parking brake assembly or replacing the final drive housing. When removing the components that make up the final drive, refer to Group 0250.

Refer to Group 0130 and disconnect the track chain as shown in Fig. 1.

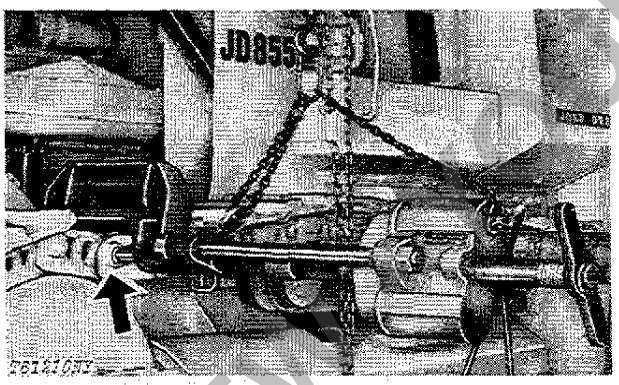


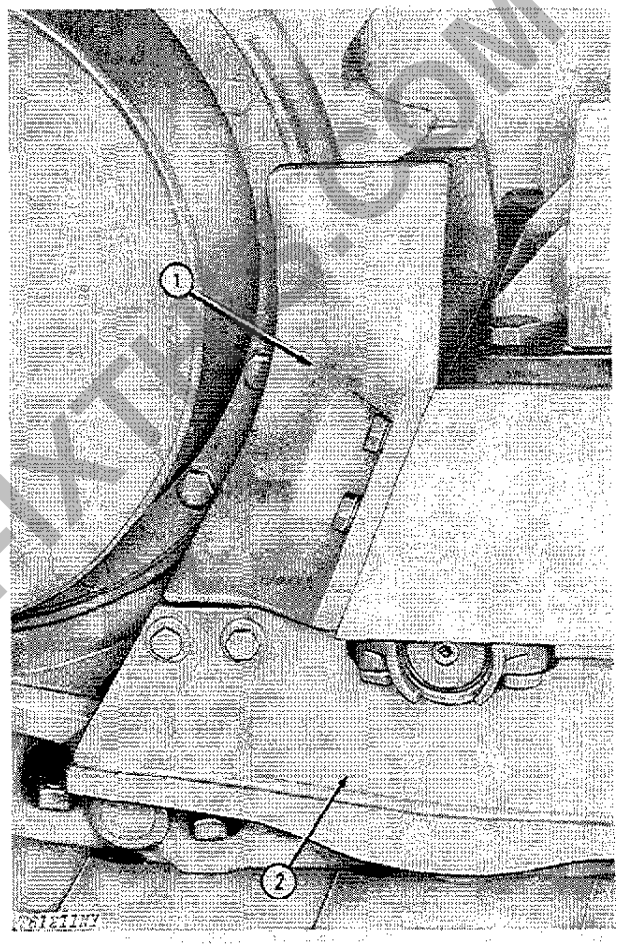
Fig. 1-Disconnecting Track Chain

Remove cap screws securing sprocket shield (1, Fig. 2) to track frame and remove sprocket shield.

Remove only the rear guide (2) from track frame.

Raise rear of crawler high enough to disengage sprocket from track chain. Securely block under crawler.

Remove transmission bottom guard.



1—Sprocket Shield **2—Rear Guide**

Fig. 2-Removing Sprocket Shield and Rear Guide

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Group 0315
CONTROLS

GENERAL INFORMATION

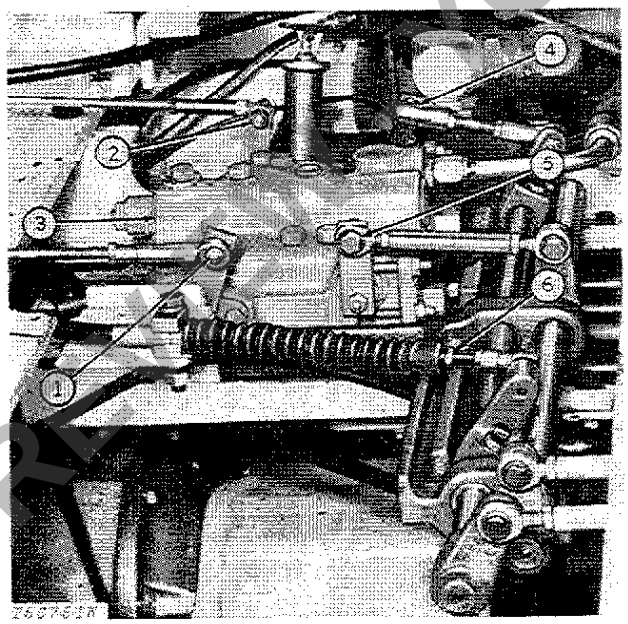
The transmission controls include the controls for steering, direction, and automatic speed control.

The steering pedals, are linked to the two levers (1 and 2, Fig. 1) at the front of the transmission control valve (3).

The forward and reverse speed control lever (2, Fig. 2), located on the left console in the operator's station, is linked to the FNR valve lever (5, Fig. 1) on the left side of the transmission control valve (3).

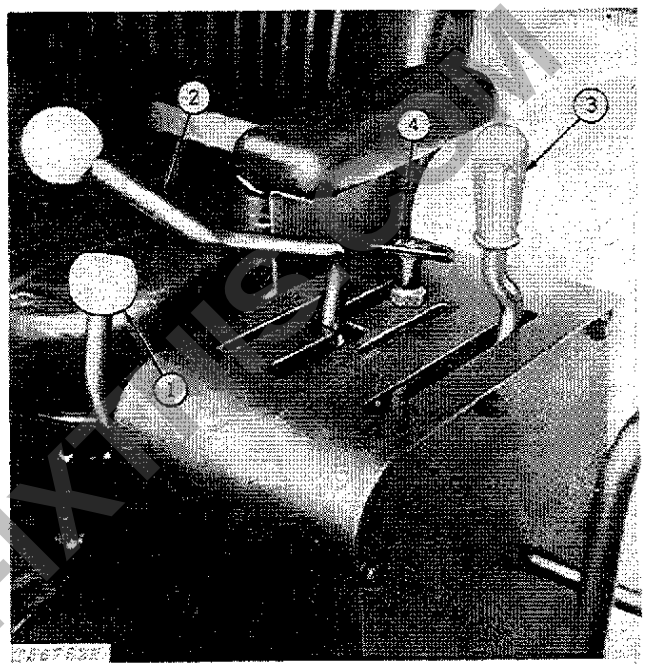
The throttle lever (3, Fig. 2) located on the left console in the operator's station, is linked to the automatic control valve variable orifice lever (4, Fig. 1) and to the engine speed cable (6).

The automatic control valve shut off handle (4, Fig. 2) is located on the left console between the throttle lever and the forward and reverse speed control lever. This cable shuts off the automatic control valve and allows the transmission to be operated during cold weather warm-up.



1—L.H. Steering Valve Lever
2—R.H. Steering Valve Lever
3—Transmission Control Valve
4—Automatic Control Valve Variable Orifice Lever
5—FNR Valve Lever
6—Engine Speed Cable

Fig. 1-Transmission Controls



1—Neutral Lock Lever
2—Forward and Reverse Speed Control Lever
3—Throttle Lever
4—Automatic Control Valve Shut off Handle

Fig. 2-Transmission Control Levers

STEERING LINKAGE

REMOVAL

Pedal Steering Linkage

The pedal steering upper linkage consists of the steering pedals connected to the pedal steering support. A ball joint connects the pedal steering support shaft to the steering pedal lever.

Remove floor boards.

Disconnect necessary linkage to remove defective parts.

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Group 0400
ENGINE REMOVAL, AND INSTALLATION

REMOVAL

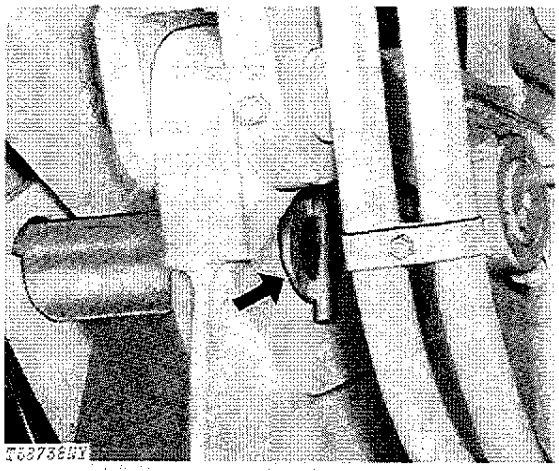


Fig. 1-Loader Boom Locking Pin

Raise boom and secure in place with the loader boom locking pin (Fig. 1).

Disconnect battery negative (-) ground strap or turn battery disconnect switch to "OFF".

Remove grille and baffle.

Drain cooling system.

Drain the transmission hydraulic and loader hydraulic systems oil cooler. A drain cock is provided at the front of the oil cooler.

Remove engine side shields and hood.

Disconnect aspirator hose at the muffler. Remove muffler at exhaust elbow.

Remove air cleaner.

Remove bottom guards.

Support the bottom guards using a floor jack. Remove cap screws. Slowly lower floor jack only enough to pull guard from under the crawler. Doing this will give you control of the guard if it is not centered on the jack pad.



Fig. 2-Transmission and Loader Hydraulic Systems Oil Cooler

Disconnect hoses from the oil cooler (Fig. 2). Plug and cap hoses and fittings.

Disconnect horn wire.

Disconnect upper and lower radiator hoses.

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Group 0505
COLD WEATHER STARTING AIDS

GENERAL INFORMATION

The cold weather starting aid on the Crawler consists of a starting aid solenoid with fluid container, a tube from the solenoid to a nozzle in the air intake manifold and a button switch.

The starting aid solenoid will spray fluid as long as the switch button is depressed when the transmission is in neutral.

The starting aid switch (Fig. 1) is located on the instrument panel. The solenoid (1, Fig. 2) and fluid can (2) are located in the transmission oil filter compartment.

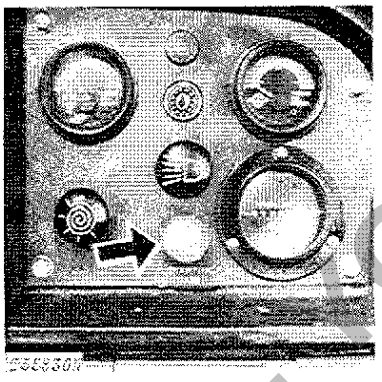
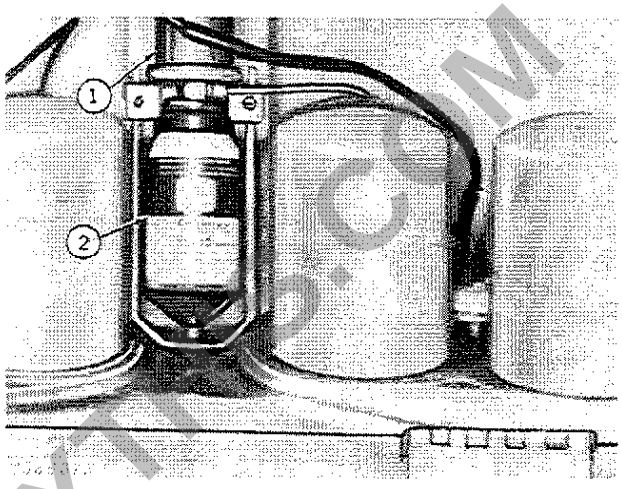


Fig. 1-Starting Aid Switch



1—Solenoid 2—Fluid Can

Fig. 2-Starting Aid Location

IMPORTANT: To avoid engine damage, crank engine one or two revolutions before depressing starting aid switch. Depress starting fluid switch only when the engine is cold and cranking.

IMPORTANT: To prevent dirt from entering the engine, a container of starting fluid should be in place on the solenoid at all times.

STARTING AID SOLENOID

Removal

Disconnect wires and tube from solenoid, remove attaching hardware and remove solenoid.

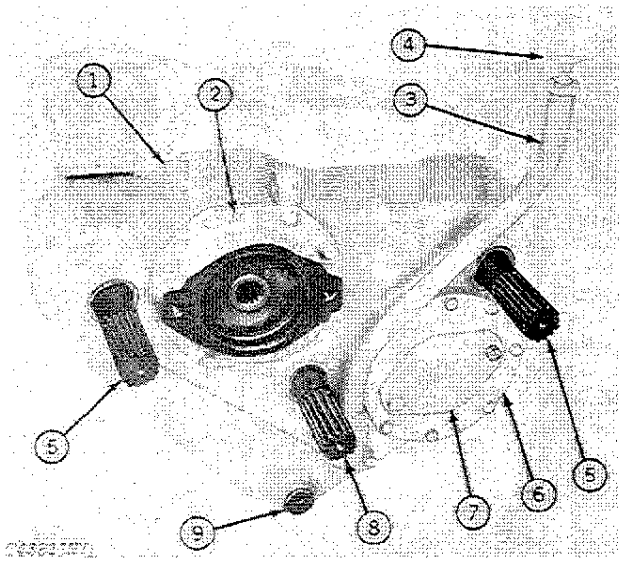
Repair

The solenoid is not repairable. If the solenoid is defective, it should be replaced.

Test solenoid as described in Section 90, Group 9015.

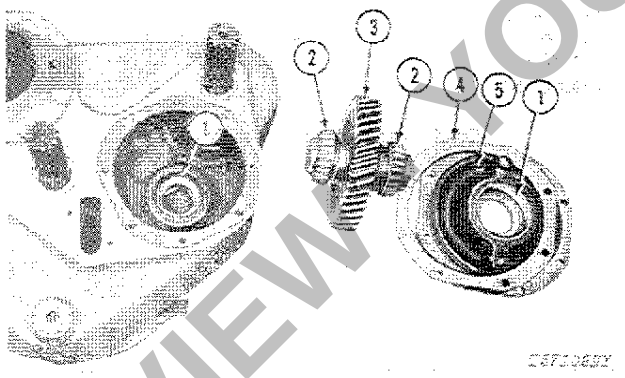
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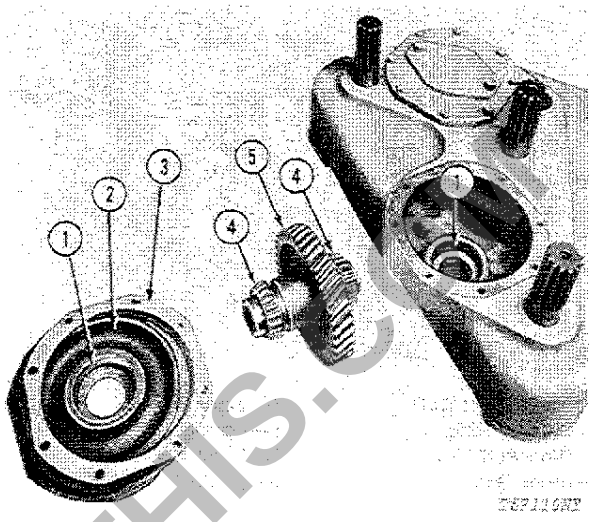
1—Splitter Housing
2—Pump Drive Shaft Quill
3—Filler Dipstick Tube
4—Dipstick
5—Output Shaft (2 used)
6—Idler Shaft Quill
7—Cover
8—Winch Drive
9—Plug

Fig. 3-Splitter Housing



1—Bearing Cup
2—Bearing Cone
3—Idler Gear
4—Shims
5—Bearing Quill

Fig. 4-Idler Gear Assembly



1—Bearing Cup
2—Bearing Quill
3—Shim
4—Bearing Cone
5—Pump Drive Gear

Fig. 5-Pump Drive Gear Assembly

Drain oil from splitter housing.

Remove bearing quills (2 and 6, Fig. 3). Remove the idler gear (3, Fig. 4) and pump drive gear (5, Fig. 5).

Turn the splitter housing over and remove the clutch fork support. Remove the pump cover (7, Fig. 6), sealing ring (2) and pump gears (4 and 5).

Remove the input shaft quill (1) and pull the input shaft (4, Fig. 7) from the housing.

Remove the output shaft quills (8, Fig. 8) and (2, Fig. 9). Pull output shafts from housing.

Pull bearing cups and oil seals from housing if required.

Pull bearing cones from shafts and gears.

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Group 1111
ACTIVE ELEMENTS

GENERAL INFORMATION

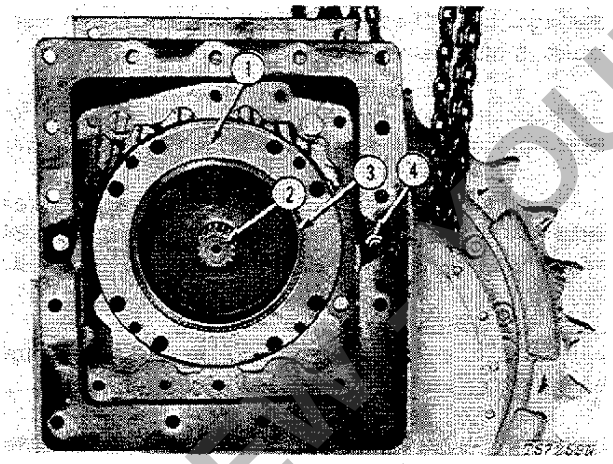
The parking brakes are of the spring applied, hydraulic release type. When the engine is running, the hydrostatic charge pump supplies pressure oil to release the parking brakes. A hand pump is also provided to release the parking brakes when the engine is not running so the crawler can be towed.

REMOVAL

Refer to Group 0130 and remove the track.

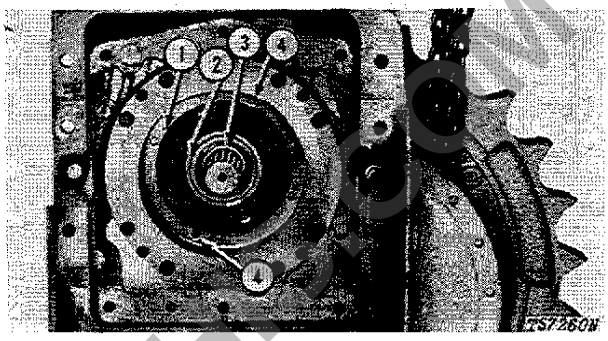
Refer to Group 0250 and remove the final drive housing.

Pull the brake hub from the final drive shaft.



1—Disk Cover
2—Final Drive Shaft
3—Brake Hub
4—Brake Line Connector

Fig. 1-Parking Brake Hub



1—Brake Plate
2—Snap Ring
3—Spacer
4—Tapped Holes

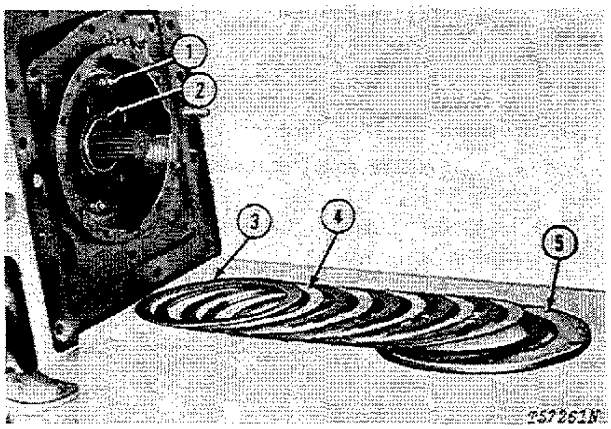
Fig. 2-Removing Disk Cover

Install two 3/8 - 16 full threaded cap screws at least 1-1/2 in. (38 mm) long into the tapped holes (4, Fig. 2) to compress the brake springs.

Remove the disk cover (1, Fig. 1) and remove the plates and disks.

Tighten cap screws (1, Fig. 3) until the snap ring (2) can be removed.

Remove snap ring (2) and back cap screws (1) out alternating between the two.



1—Cap Screws
2—Snap Ring
3—Brake Disk (6 used)
4—Separator Plate (5 used)
5—Disk Cover

Fig. 3-Plates and Disks

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Section 15
EQUIPMENT ATTACHING

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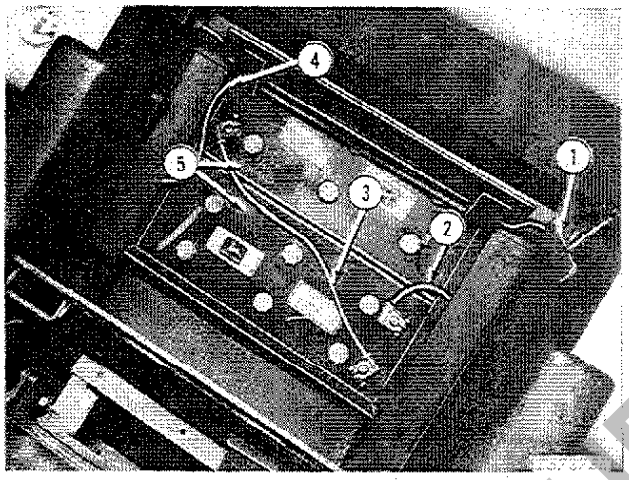
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Group 1671
BATTERIES, SUPPORT AND CABLES

16

BATTERIES

GENERAL INFORMATION



1—Seat Latch
2—Battery to Starting Motor Cable
3—Battery Connecting Cable
4—Battery to Disconnect Switch Cable
5—12 Volt Batteries

Fig. 1-Battery Connections

Two battery options are available on the JD855 Crawler Loader.

Batteries are located under the seat. To gain access to the batteries, release seat latch (1, Fig. 1) and lean seat forward.

When replacing a battery, use the John Deere battery or its equivalent shown in the following chart:

(2 used)
Volts 12
John Deere Part Number AT29160
BCI Group 30H
Cold Cranking Amps (0°F) (−18°C) 570
(−20°F) (−28°C) 450
Reserve Capacity (minutes at 25 amps) 180

(2 used)
Volts 12
John Deere Part Number AU42915
BCI Group 4D
Cold Cranking Amps (0°F) (−18°C) 800
(−20°F) (−28°C) 640
Reserve Capacity (minutes at 25 amps) 310

There are two important things that must be done periodically in order to obtain long life from a battery.

First, the electrolyte must at all times be kept above the plates and separators. The electrolyte level should be checked once a week, or after fifty hours of operation. See "Checking Electrolyte Level" in this group.

Second, be sure the battery is kept nearly charged at all times. The state of charge should be checked at frequent intervals by making specific gravity readings with a battery hydrometer. See "Specific Gravity Cell Comparison Test" in this group.

FOS

For additional information on batteries, refer to "Storage Batteries" in FOS Manual - ELECTRICAL SYSTEM.

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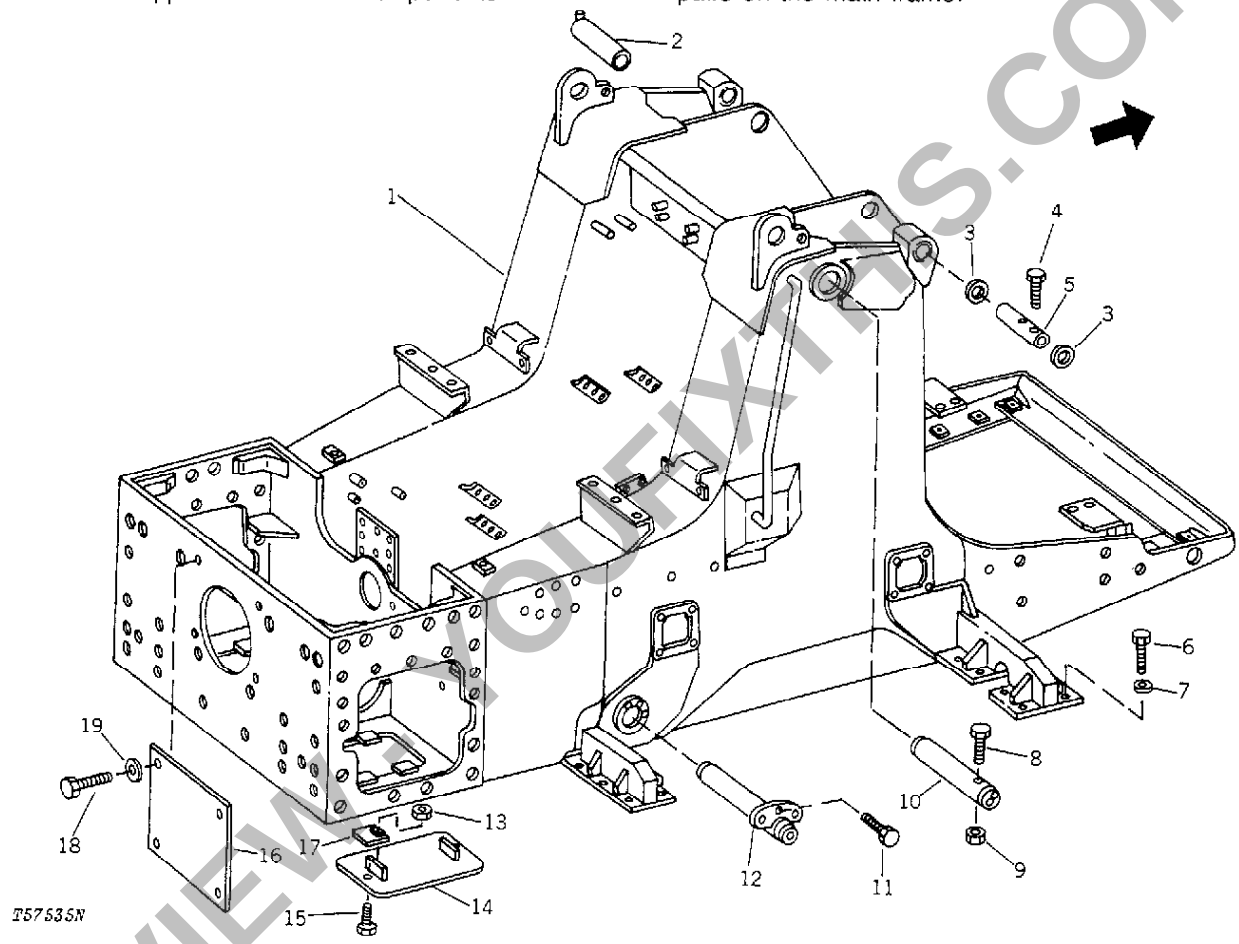
Group 1740
FRAME INSTALLATION

GENERAL INFORMATION

The main frame is of welded steel construction and is used to support the crawler components.

REMOVAL

Remove components only as needed to make repairs on the main frame.



1—Main Frame
2—Boom Lock Pin
3—Seal
4—Cap Screw
5—Pin
6—Cap Screw
7—Washer
8—Cap Screw
9—Nut
10—Pin
11—Cap Screw
12—Pin with Lock
13—Lock Nut
14—Cover
15—Cap Screw
16—Cover
17—Cover Retainer
18—Cap Screw
19—Washer

Fig. 1-Main Frame

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Group 1810
OPERATOR ENCLOSURE

CAB

GENERAL INFORMATION

The crawler cab has been designed for the best operator safety and access to controls.

The cab may have a field installed windshield washer. The washer reservoir is in the condenser compartment.

REMOVAL

NOTE: If the shop facility has only a stationary hoist, position the crawler under the hoist so the front turning point of the ROPS is directly under the hoist.

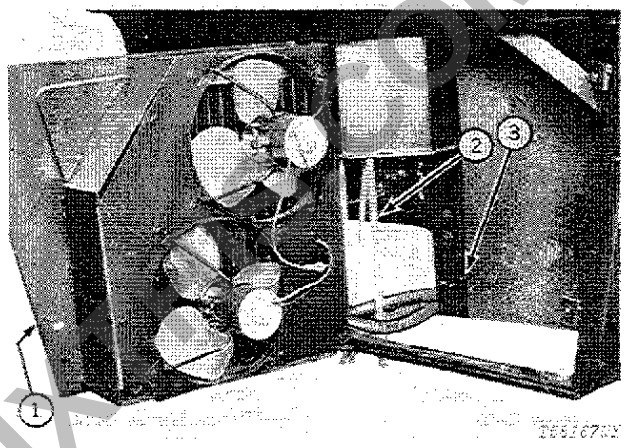
Remove muffler extension, muffler and precleaner.

Remove floor boards.

Remove battery cable from battery disconnect switch.

Remove tool box from under the seat.

Open air conditioning condenser and fan compartment door (1, Fig. 1) and remove the clutch disconnect cable from bracket (3) in condenser and fan compartment. Disconnect control linkages (2) from under the cab at the same time. Disconnect cable from brake valve.



1—Condenser Compartment Door
2—Bucket Control Linkages
3—Disconnect Clutch Cable Bracket

Fig. 1-Removing Cab

Remove speed control linkage.

CAUTION: Discharge air conditioning system as directed in Group 9031.

Disconnect air conditioning and heater hoses as directed in Group 1830.

Disconnect transmission oil pressure and temperature gauge sending unit lines.

Disconnect engine oil pressure and water temperature gauge sending unit lines.

Disconnect cables for return to neutral and cold weather anti stall.

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Group 2003
FIRE EXTINGUISHER

GENERAL INFORMATION

A fire extinguisher is provided with the crawler loader. Be sure it is properly maintained.

The fire extinguisher is located on the front of the left hydraulic reservoir (Fig. 1).

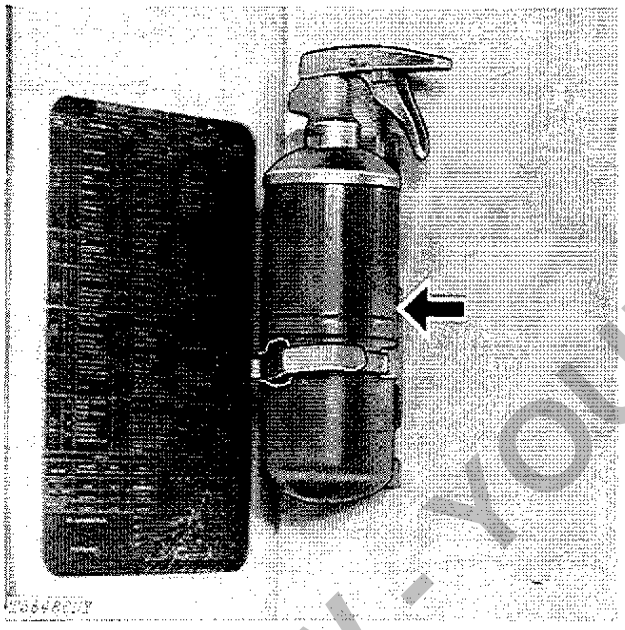


Fig. 1-Fire Extinguisher

Two red plastic indicators and a gauge are your at-a-glance assurance that the fire extinguisher is in working condition (Fig. 2 and 3).

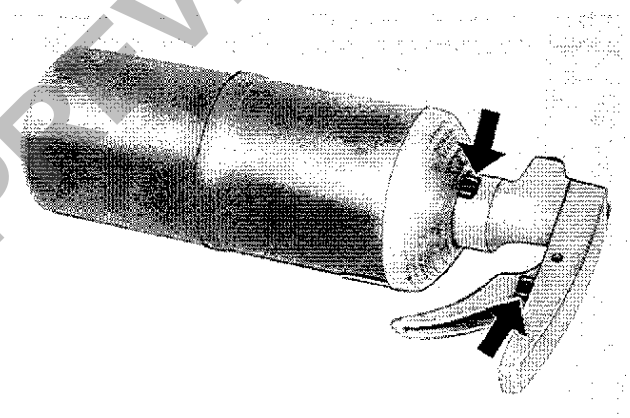


Fig. 2-Red Plastic Indicators

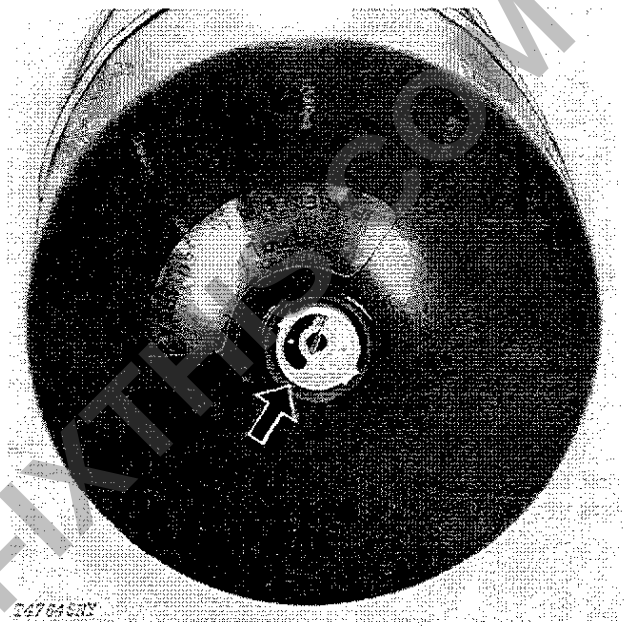


Fig. 3-Canister Gauge

The red plastic indicators are located on the head unit (Fig. 2). The gauge is located on the bottom of the canister (Fig. 3). Inspect the fire extinguisher; if either red plastic indicator is missing, replace canister. Replace canister if gauge needle is in the red area.

IMPORTANT: To be effective, fire extinguisher canister must be replaced after ANY use, regardless of duration. Once the canister seal is broken, the valve will only hold pressure for a short period of time. After using, replace with a new canister immediately.

⚠ CAUTION: Never incinerate an extinguisher or canister. When discarding, remember it is a pressure vessel that could explode if incinerated. Discharge fully. Remove caps and valves. Dispose of safely.

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Group 3102
BUCKETS

GENERAL INFORMATION

There are three buckets available on the JD855 Crawler Loader: a 2.75 cubic yard (2.1 m³), a 3.25 cubic yard (2.5 m³) and a 2.75 cubic yard (2.1 m³) multipurpose bucket.

All buckets are equipped with replaceable cutting edges and can have teeth mounted on the lower cutting edge to assist digging.

REMOVAL

Bucket removal and installation requires moving machine and loader linkage while bucket sets flat on ground.

CAUTION: Be sure all personnel near machine are alert when moving loader linkage and/or machine.

Place blocks and lower boom and bucket until bucket is level on the blocks.

If loader is equipped with a multipurpose bucket disconnect the hydraulic lines.

Remove main pin locking hardware and drive out main pins being careful not to damage dirt seals and bushings.

After main pins are out, start crawler and move machine back away from bucket while retracting loader cylinders. Raise boom above links.

Remove all five link bolts and separate links. Be careful not to damage dirt seals.

REPAIR

Disassemble bucket as necessary to repair.

Inspect all bushings and dirt seals for wear or damage, replace as necessary.

Inspect all bucket parts for cracks, wear and other damage.

Bucket Teeth

Drive out pin and remove tooth from shank.

Hand fit new tooth to shank.

Drive tooth on shank until pin can be assembled or until center of hole in shank aligns with center of slot in top (1, Fig. 1).

Secure tip to tooth shank with grooved pin.

IMPORTANT: Pin should not contact front edge of slot (Point "2", Fig. 1). Point must fit tight with no movement between tooth shank and tip when twisted by hand.

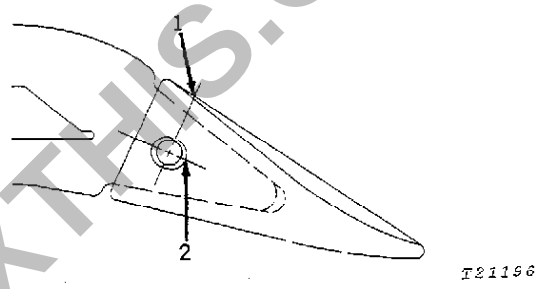


Fig. 1-Installing Tooth Tip

Shank Repair

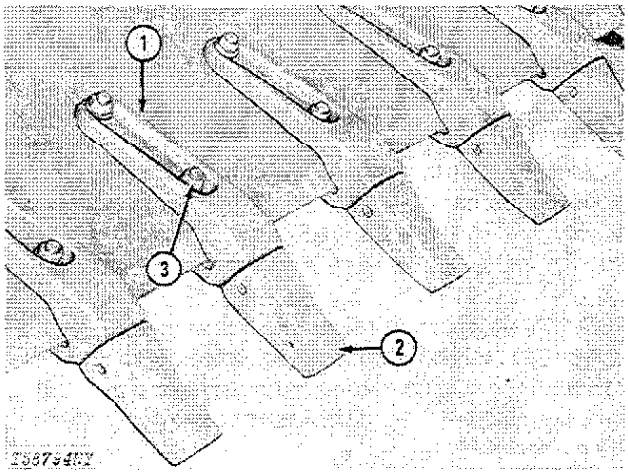
Remove shank attaching hardware (3, Fig. 2).

Remove shank.

Inspect shank for damage. Replace as necessary.

Place shank on cutting edge.

Install locking hardware.



1—Shank
2—Tooth
3—Shank Attaching Hardware

Fig. 2-Shank Attaching Hardware

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Group 4041
HOUSING AND COVERS

40

PTO DRIVE COVER

GENERAL INFORMATION

There are two types of PTO covers available. If machine is equipped with weights, a round cover (Fig. 1) is used. If machine is equipped with a drawbar or no attachments a square cover is used as in Fig. 2.

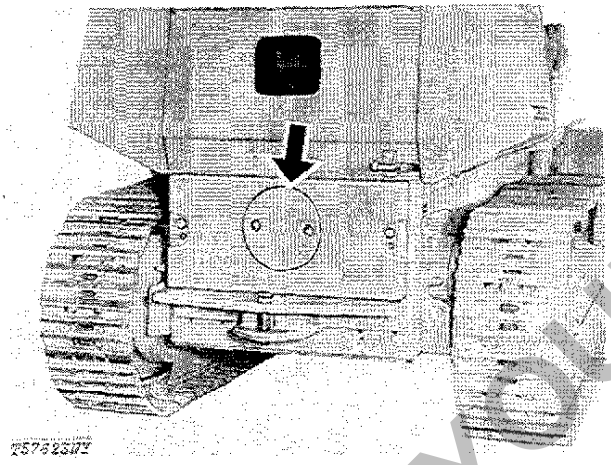


Fig. 1-Round Cover

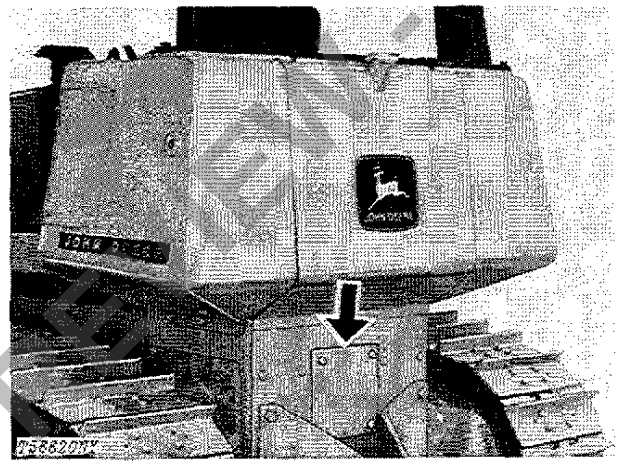


Fig. 2-Square Cover

REMOVAL

Square Plate

Remove four cap screws holding plate on.

Remove cover.

Circular Plate

Remove two cap screws holding plate to weights.

Remove plates.

REPAIR

Check plate for cracks and other damage.

Replace as necessary.

INSTALLATION

Square Plate

Place plate on rear of tractor.

Replace cap screws.

Circular Plate

Position retaining bar over plate.

Start cap screws.

Place cover over hole.

Turn cover 90 degrees.

Tighten cap screws.

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USE THESE SEVEN BASIC STEPS TO DIAGNOSE AND TEST MACHINE

1. Know the system. In other words 'Do your homework." Study this manual to know how the individual components work and what their function is in the over-all system.

Keep up with the latest service information. Read and then file in a handy place. Information received today may have the cause and remedy of a problem being encountered.

2. Ask the operator. Question the operator as to how the machine acted when it started to fail. Find out what was unusual about it.

Also find out if any do-it-yourself service was performed. (You may find out later that the trouble is somewhere else, but you should know if any components were tampered with.) Ask how the machine is used and when it is serviced. Many problems can be traced to poor maintenance or abuse.

3. Operate the machine. Get on the machine and operate it. Warm it up and put it through its paces. Don't completely rely on the operator's story; check it yourself.

Are the gauges reading normal? (If not, it may be that the component being monitored is not functioning correctly or it may mean that the gauge is faulty.)

How's the performance? Is the action slow, erratic, or nil? Do the controls feel solid or "spongy"? Do they seem to be "sticking"?

Smell anything? Any signs of smoke? Hear any unusual sounds? Where? At what speeds or during what cycles?

4. Inspect the machine. Get off the machine and make a visual check. Use your eyes, ears, and nose to spot signs of trouble.

Look closely at the components. Inspect for cracked welds, loose tie bolts, damaged linkages, worn or broken lines, etc.

During the inspection, make a note of all the trouble signs.

5. List the possible causes. With the information obtained during steps 1 through 4, make a list of the possible causes.

What were the signs you found while inspecting the machine? What is the most likely cause?

6. Reach a conclusion. Look over the list of possible causes and decide which are the most likely and which are the easiest to verify.

"Diagnosing Malfunctions" given in the following groups will be a helpful guide.

Reach your decision on the leading causes and plan to check the first.

7. Test your conclusion. Before repairing components in the system, test your conclusions to make sure they are correct.

Some of the possible causes can be verified without further testing. Check these possibilities first.

Test will soon narrow the remaining list of possible causes and soon the actual source of trouble will be pin pointed.

With the trouble accurately located, it is now a simple matter to remove and repair the component at fault.

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Block Diagram (Fig. 2)

A block diagram is an easy-to-understand drawing of the power flow in the electrical system. It gives an easy-to-follow description of the system components and their relation to other components.

The components in each of these circuits can be understood very easily by following the connecting lines.

Starting at the batteries, follow the line to the starting motor, to the circuit breaker and to the "BAT" terminal on the key switch.

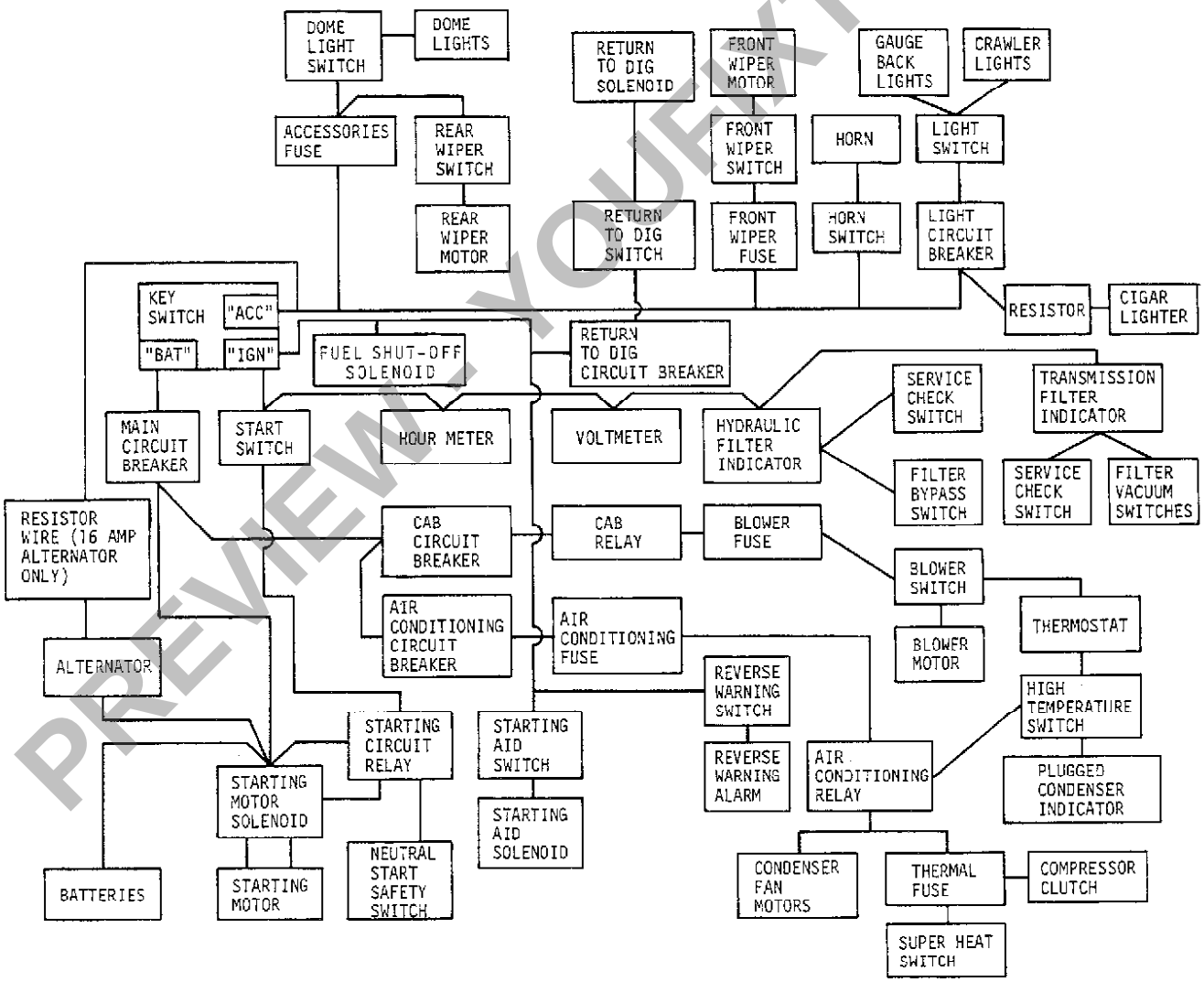
The key switch has two output circuits: Accessory (ACC) and Ignition (IGN).

A block diagram will not necessarily separate a problem to a specific component, but it will make it easier most of the time to separate a problem to one specific circuit.

An example of how the block diagram can be used in troubleshooting to rapidly separate the problem to a specific circuit follows:

Problem: Cigar lighter works, but lights do not.

Solution: By turning to the block diagram, we can see the cigar lighter and lights are on the same circuit. The problem then is the light circuit breaker, light switch or wiring.

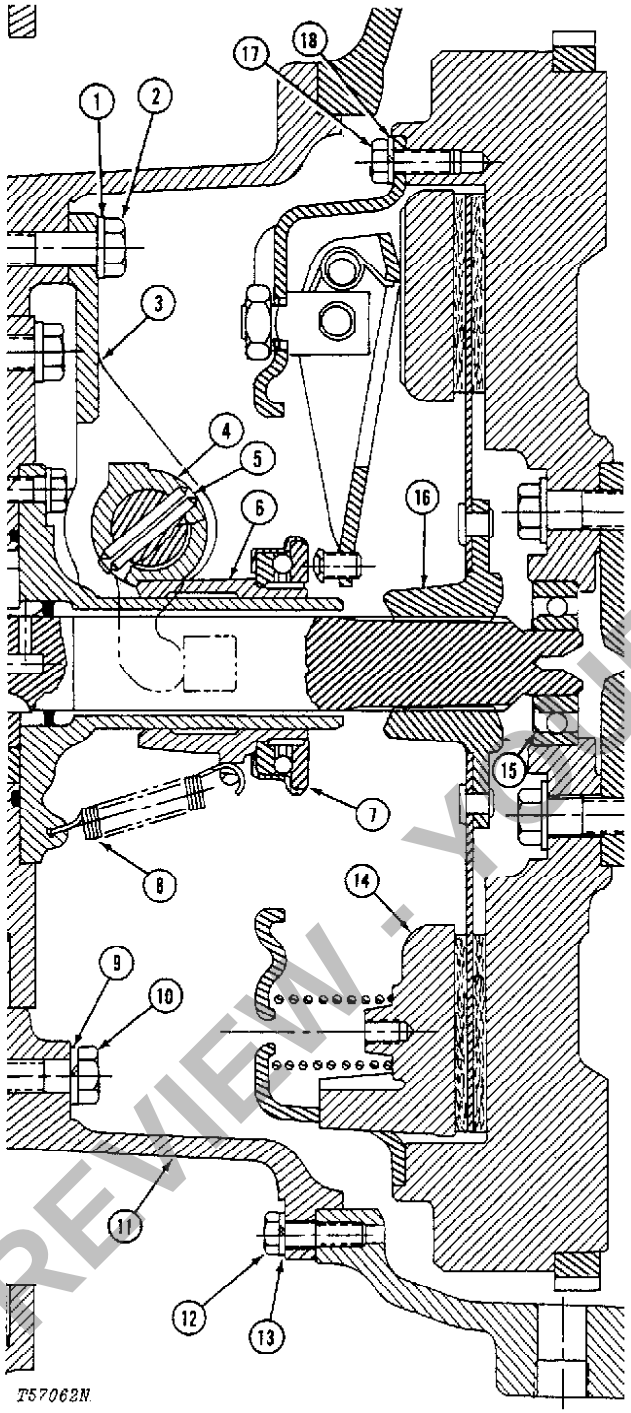


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Fig. 2-Electrical Block Diagram

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Engine Disconnect Clutch



1—Lock Washer
2—Cap Screw
3—Clutch Fork Support
4—Clutch Fork
5—Spring Pin
6—Release Bearing Carrier
7—Release Bearing
8—Spring
9—Cap Screw
10—Lock Washer
11—Clutch Housing
12—Cap Screw
13—Lock Washer
14—Pressure Plate
15—Pilot Bearing
16—Driven Disk
17—Cap Screw
18—Lock Washer

Fig. 2-Clutch Assembly

The engine disconnect clutch allows the engine to be disengaged from the splitter drive assembly for cold weather engine starting.

As the clutch control lever is pulled upward, the clutch cable actuates the control linkage rotating the clutch fork shaft. This forces the release bearing forward against the pressure plate release levers. The clutch release levers retract the clutch pressure plate, releasing the driven disk from the pressure plate and driving surface of the flywheel, thus disconnecting the engine from the splitter drive assembly.

IMPORTANT: Instruct the operator to engage the engine disconnect clutch slowly after the engine has started and warmed up.

Transmission Drive Shaft

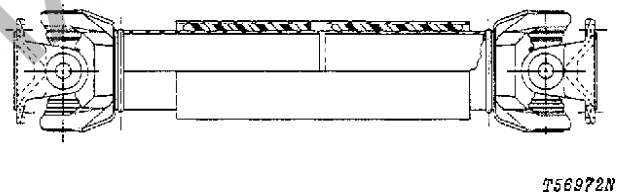


Fig. 3-Cross Sectional View of Drive Shaft

The drive shaft is composed of three major parts: the drive end, the main tube and the driven end.

A universal joint is located at each end of the drive shaft and is retained by clips. Each joint has a grease fitting for lubrication.

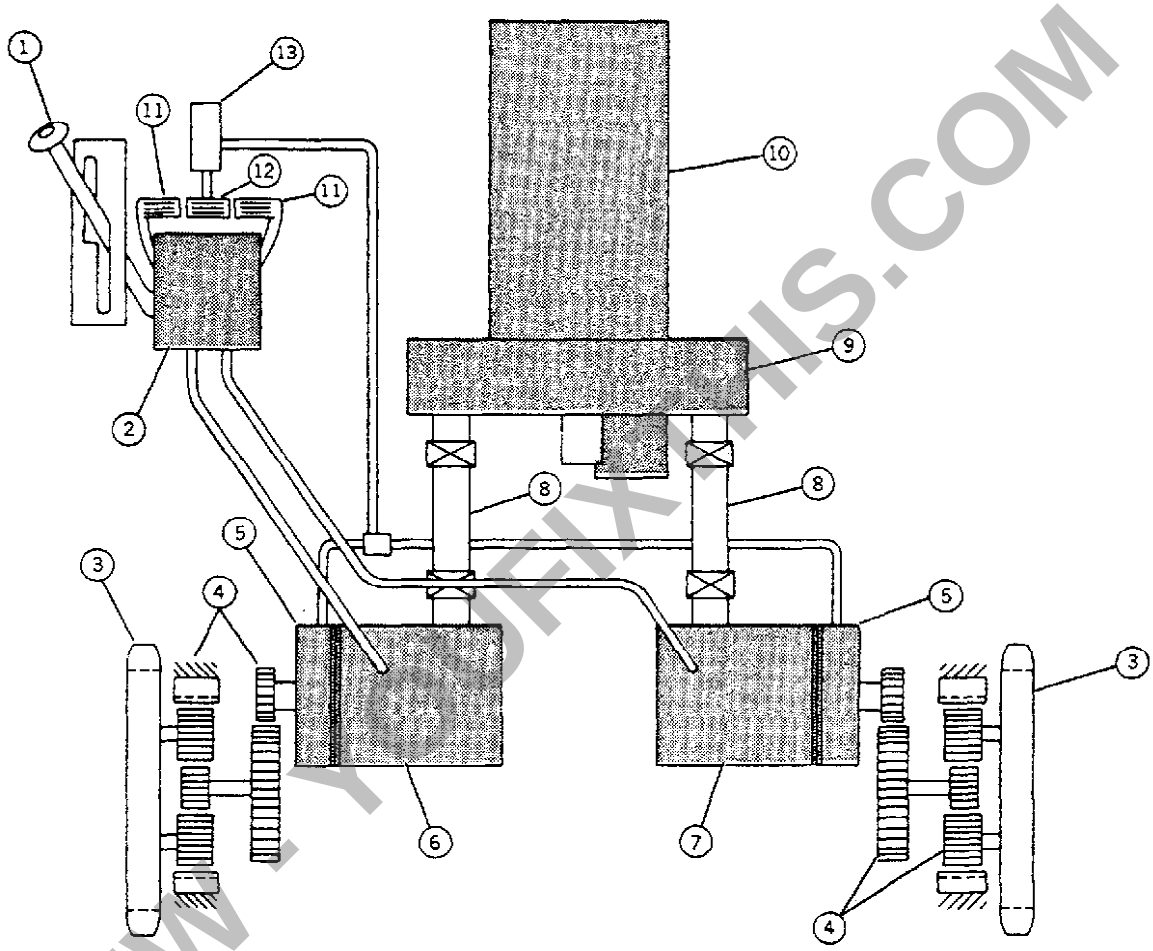
The drive shaft is torsionally dampened to absorb drive line shock and vibration.

Rubber rings are located between the main tube and the two end shafts. These rings are bonded to both the main tube and the ends. These are non-serviceable parts because they are compressed inside the tube.

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DUAL-PATH HYDROSTATIC DRIVE SYSTEM GENERAL INFORMATION



T45915N

1—FNR Speed Control Handle
2—Transmission Control Valve
3—Sprocket
4—Final Drive
5—Parking Brake
6—Left Transmission
7—Right Transmission
8—Drive Shaft
9—Splitter Drive
10—Engine
11—Steering Pedals
12—Parking Brake Pedal
13—Brake Valve

The dual path hydrostatic drive system consists of left and right transmissions (6 and 7), transmission control valve (2), brake valve (13), hydrostatic reservoir, filter, oil cooler and oil cooler bypass valve.

The hydrostatic transmission drive is infinitely variable from 0 to 6.5 mph (0 to 10.5 km/h) in forward or reverse.

Power from splitter drive (9) turns the two drive shafts (8) which are connected to transmission pumps. Oil flow generated from pumps turns transmission motors. The transmission are two separate, hydrostatic drives controlled by transmission control vlave. One transmission drives each track.

The operator controls dual-path hydrostatic transmission by FNR speed control handle (1), steering pedals (11) or levers, the parking brake pedal (12), and engine speed control handle (not shown).

The transmission control valve compares operator's inputs and work load conditions to control two transmissions hydraulically by a circuit of low pressure oil.

The brake vlave (13) releases charge pressure to brake piston and allows springs to mechanically apply parking brakes (5) when parking brake pedal is pressed down.

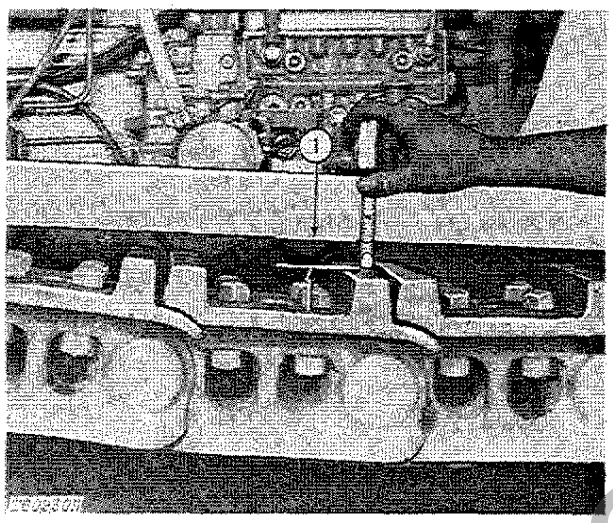
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ADJUSTMENT

Track Tension

Track tension is determined by measuring the sag in the track between the front carrier roller and the front idler. Tension of each track is adjusted by a hydraulic track adjuster.



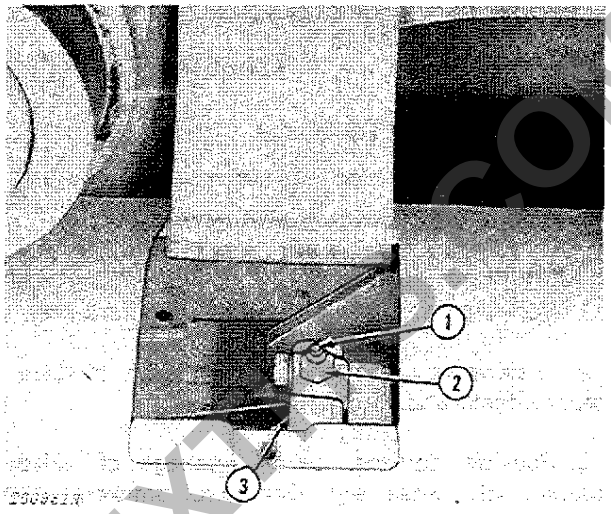
1—1 to 1-1/2 in. Sag (25 to 38 mm) (Non-Lubricated Chain)
1-1/2 to 2 in. Sag (38 to 51 mm) (Lubricated Chain)

Fig. 1-Measuring Track Sag

Track tension for non-lubricated chain should be adjusted so there is 1 to 1-1/2 inch (28 to 38 mm) sag. Track tension for lubricated chain should be adjusted so there is 1-1/2 to 2 in. (38 to 51 mm) sag. When measuring sag, a pin and bushing must be lined up over the center of the front carrier roller.

Adjust track tension by fastening a grease gun to the grease fitting on the track adjuster. Use a grease gun that has a maximum capacity of 8000 psi (552 bar) (562 kg/cm²).

IMPORTANT: Never, at any time, use a grease gun having a capacity higher than 8000 psi (552 bar) (562 kg/cm²) to adjust track. Break the line, fit in connector, and put in a pressure gauge (0 to 10,000 psi [0 to 689 bar] [0 to 703 kg/cm²] capacity) in grease gun tube to check pressure. If piston cannot be moved with this type of grease gun, disassemble track adjuster and release seized parts.



1—Grease Fitting
2—Check Valve
3—Vent Hole

Fig. 2-Track Adjuster Fitting

To tighten track, apply grease with gun to the correct tension.

To loosen track, turn the check valve one to three turns counterclockwise. This will allow grease to flow out through the vent hole.

CAUTION: There may be high pressure in the track adjuster cylinder. Do not visually inspect the check valve. Always note track tension. If grease does not immediately flow out the vent hole, drive the unit forward and backward slowly, then tighten check valve.

IMPORTANT: Never lubricate fitting on hydraulic track adjusting cylinder unless track is in need of adjustment.

When operating track in conditions where dirt is pushed into the track system, check track tension as much as necessary. Tension may increase when dirt is pushed into the track. Check coils of recoil springs too. Dirt in the recoil spring can cause slowdown of the idler travel and recoil action. This slowdown can result in too much load on the track link assemblies, recoil unit and final drive components.

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Mark all lines and fittings on transmission and bulkhead plate. Disconnect all lines from transmission. Disconnect lines from bulkhead plate. Cap all lines and all fittings with clean caps. Set lines to one side.

Remove transmission operating pressure valve. Cap fittings and plug ports.

Remove bottom access cover.

Disconnect drive shaft from transmission.

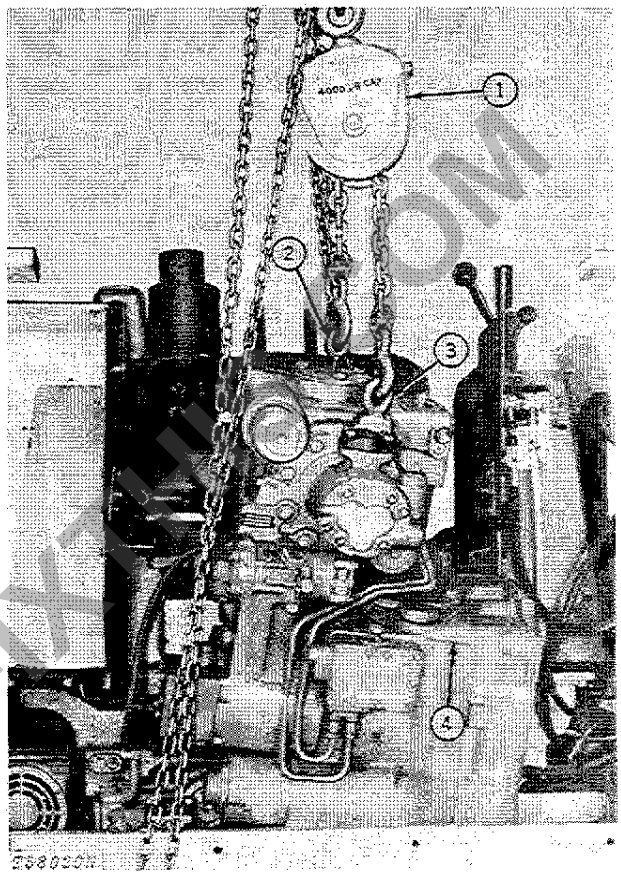
If unit is equipped with winch, remove winch drive shaft.

If left transmission is being removed, remove the reverse warning alarm.

Attach a load positioning sling to an overhead hoist, minimum capacity, one ton (1000 kg) and to the transmission (Fig. 2).

Remove the six cap screws holding the transmission to the final drive housing. The top three cap screws go through the final drive housing into the transmission housing. The bottom three cap screws go through the transmission housing into final drive housing.

Slide the transmission off final drive output shaft.



1—Load Positioning Sling
2—Eyebolt
3—Transmission Eyebolt
4—R.H. Transmission

Fig. 2-R.H. Transmission Removal

Remove transmission (Fig. 2).

Remove the two socket head cap screws from the front cover of the transmission motor.

Mount transmission on DSD130284 Hydraulic Transmission Motor Repair Stand. (See Group 0399 for instructions to make tool.)

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REPAIR

General Information

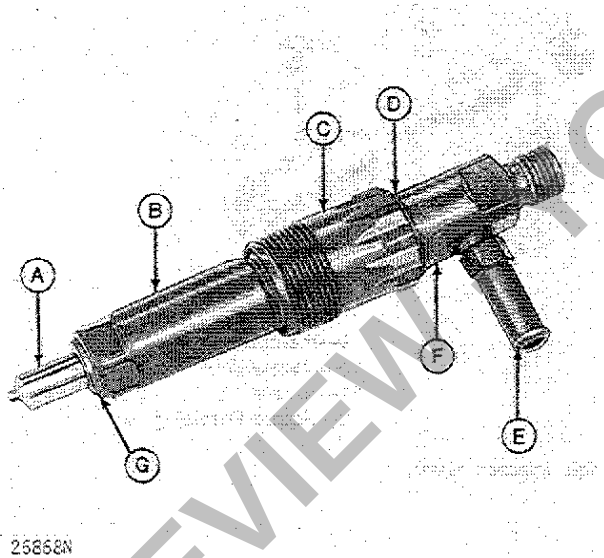
Since dirt and water are the worst contaminants in the fuel injection system, the working area, tools, and cleaning materials must be kept spotlessly clean. Whenever possible, work in an isolated, dust-free area.

Cover the work bench with clean paper before beginning disassembly of injection nozzle.

As parts are disassembled, place them in a pan of clean diesel fuel and leave them there until needed. Do not permit these parts to strike each other.

Use a separate pan of clean diesel fuel for washing parts just before assembly.

Disassembly



R 25868N

A—Nozzle
B—Nozzle Retaining Nut
C—Gland Nut
D—O-Ring and Upper Snap Ring
E—Leak-Off Connector
F—Nozzle Holder
G—Washer

Fig. 16-Assembled KDEL-21 mm Injection Nozzle

NOTE: While the KDEL injection nozzle is a metric unit, only one size metric wrench is required for disassembly (a 11 mm box-end or open-end for use on leak-off connector).

Unscrew the leak-off connector (E, Fig. 16) out of nozzle holder (F).

Remove the O-ring and upper snap ring (D) from nozzle holder. Also see 1 and 2, Fig. 15.

Slip gland nut (C) off nozzle holder.

Remove lower snap ring (4, Fig. 15).

Clamp the two flats of nozzle holder (fuel inlet end) in a soft-jawed vise and remove the nozzle retaining nut (B), using 12-point, 3/4 in. (19 mm) wrench.

Remove the nozzle assembly (A).

Pull off intermediate plate (9, Fig. 15). Remove spring seat (8), spring (7), and shims (6).

Withdraw nozzle valve from nozzle. If valve is stuck, it may be necessary to soak the nozzle assembly in Bendix cleaner, acetone, or other commercial cleaners sold especially for freeing stuck valves.

⚠ CAUTION: Use these nozzle cleaning fluids in accordance with the manufacturer's instructions.

The valve and nozzle are individually fitted and hand lapped. Keep these mated parts together, and do not permit the lapped surfaces to come in contact with any hard substance. Do not touch the valve unless hands are wet with fuel.

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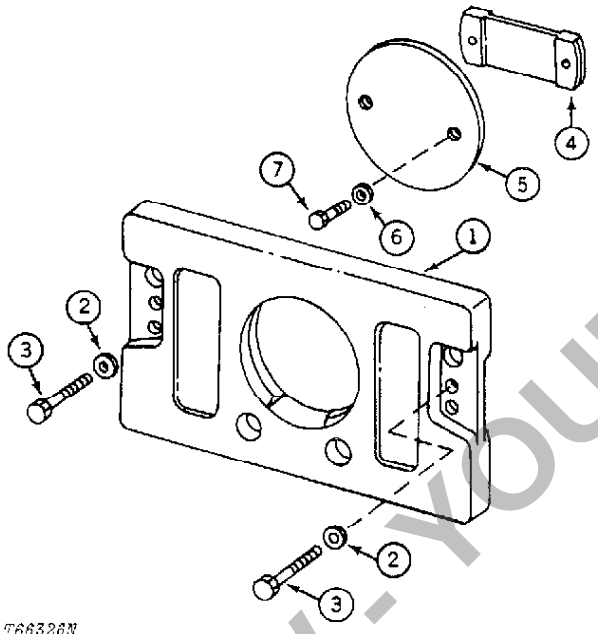
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Group 1749
CHASSIS WEIGHTS

GENERAL INFORMATION

Counterweights are used to balance out the weight of a loaded bucket.

Counterweights are not used if the crawler loader is equipped with rear mounted equipment such as a ripper or winch.



T66326N

1—Counterweight
2—Washer (2 used)
3—Cap Screw (3 used)
4—Retaining Bar
5—Cover
6—Lock Washer (2 used)
7—Cap Screw (2 used)

Fig. 1-Counterweights

REMOVAL

Use a hoist to remove counterweights. They weigh 500 lbs. (2 225 N) (227 kg) each.

REPAIR

Repair or replace any counterweights that may have a defect.

INSTALLATION

Install counterweights using a hoist.

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Control Valve

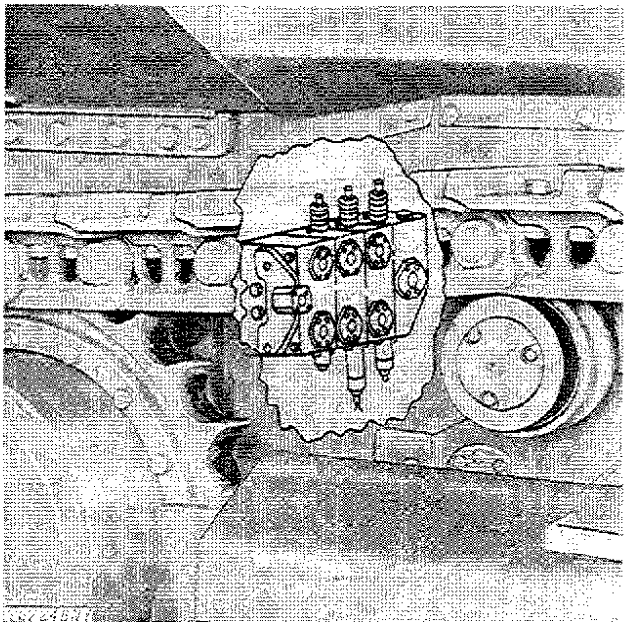


Fig. 13-Loader Control Valve Location

The loader control valve assembly (Fig. 13) is located below the operator's station fastened to the main frame.

The loader control valve assembly is an open-center two or three spool, stack-type valve. In an open-center valve, pressure oil will flow through the control valve (Fig. 7) to the hydraulic sump when the control valve spools are in neutral.

The valve sections of the loader control valve are connected in parallel (Fig. 7). In the parallel connection the loader functions can be combined such as leveling the bucket and lowering the boom. When two functions are operated at once, the function needing the least pressure will operate first.

FOS

Refer to FOS Manual - HYDRAULICS for more information on the operation of open-center control valves.

Valve Construction

The loader control valve has a boom and bucket section (two spool valve) or boom, bucket and auxiliary sections (three spool valve). All sections are separate bodies containing single spools.

All three sections use lift checks and circuit relief valves. Lift checks function as one-way valves to prevent oil on the applied side of the cylinders from flowing back through the valve. The lift checks also prevent interaction between activated spools.

Circuit relief valves provide relief when high pressure is created by some force other than the pump. This force could be caused by the weight of the bucket when it is dropped from a raised position or when a partially rolled-back bucket is used as a bulldozer. Each section uses two circuit relief valves. Circuit pressure is limited to 3000 psi (207 bar) (211 kg/cm²) by the circuit relief valves.

The boom lower, bucket dump and bucket rollback functions contain anti-cavitation check valves. The purpose of an anti-cavitation check valve is to eliminate oil voids in cylinders when pump output is not great enough to keep up with the speed of the cylinders or when external forces move the cylinders, causing the circuit relief valves to open. When these conditions occur, a vacuum is created in the section of cylinders being cavitated. Oil in the return circuit will then open the anti-cavitation check valve to fill the cavitated portions of the cylinders.

The bucket section contains a return-to-dig mechanism. As the valve spool is put into the rollback position, the detent balls are forced up an incline and then into the groove on the spool detent. A solenoid-applied detent release locks the detent balls in the groove, holding the valve spool in the rollback position.

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