350C, 350D Crawler Bulldozer 350C, 355D Crawler Loader

JOHN DEERE

TECHNICAL MANUAL

350C, 350D Crawler Bulldozer 350C, 355D Crawler Loader

TM1115 (01NOV86) English

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John Deere Dubuque Works
TM1115 (01NOV86)

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350C AND 350D CRAWLER BULLDOZERS
350C AND 355D CRAWLER LOADERS
TECHNICAL MANUAL
TM-1115 (NOV-86)

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All information, illustrations and specifications contained in this technical manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice. Whenever applicable, specifications and design information are in accordance with SAE and ICED standards.

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(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with ICED and SAE Standards. Except where otherwise noted, these specifications are based on a unit equipped with [3/4 cu yd (0.57 m³) digging bucket with teeth (loader)], diesel engine, roll-over protective structure, full fuel tank, 175 lb (79 kg) operator, and standard equipment.)

Engine:

John Deere 3-cylinder diesel, valve-in-head, 4-stroke cycle	SAE net 48 hp (36 kw)
Bore and stroke	4.19 x 5 in. (106.5 x 127 mm)
Piston displacement	179 cu. in. (2.9 L)
Lubrication	Pressure system with full-flow filter
Cooling	Pressurized with thermostat and fixed bypass
Fan	Blower
Air cleaner with restriction indicator	Dry
Electrical system	12-volt with alternator
Battery	180 minutes reserve capacity

Transmission ..... Selective sliding gear

Hydraulic Direction Reverser ..... Multiple-disk oil clutches

Travel Speeds (Forward or Reverse)	**mph**	**km/h**
1	1.4	2.3
2	1.9	3.1
3	3.3	5.3
4	6.5	10.4

Steering:

Clutches	Oil cooled, hydraulically-activated, multiple-disk 9 in. (228 m) disk; 16 friction surfaces per clutch.
Brakes	Self-adjusting, self-energizing, oil-cooled contracting band with bonded lining.

Hydraulic System (Dozer):

Pump	Gear, 15 or 23 gpm (57 or 87 L/min)
Pressure (6305)	2250 psi (15514 kPa)
Pressure (6310)	1750 psi (12066 kPa)

Hydraulic System (Loader):

Pump	Gear, 23 gpm (87 L/min)
Pressure	2250 psi (15514 kPa)

Tracks (5 roller track frame with rock guards):

Grousers:	
Loader	12 in. (305 mm)
Dozer	14 in. (356 mm)
Wide-Track	33 in. (838 mm)
Track shoes, each side	36
Ground contact area:	
Loader	1662 sq. in. (10 723 cm²)
Dozer	1939 sq. in. (12 510 cm²)
Wide-Track	4574 sq. in. (29 510 cm²)
Ground pressure:	
Dozer	5.5 psi (37.9 kPa)
Loader	7.2 psi (49.6 kPa)
Wide-Track	2.7 psi (18.6 kPa)

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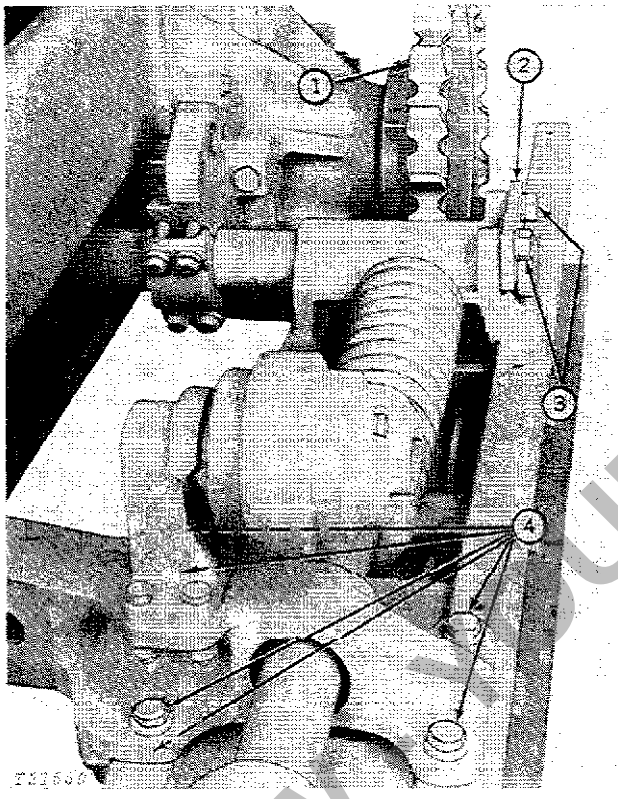
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TRACK FRAMES AND UNDERCARRIAGES

TRACK FRAME ASSEMBLY

Removal



1—Drive Sprocket
2—Retainer
3—Rear Attaching Points Cap Screws
4—Front Attaching Points Cap Screws

Fig. 2-Removing Track Frame

Remove track as directed on page 0130-15.

Slip entire idler assembly off front end of track carrier frame.

Remove sprocket shield or sprocket weight.

Remove sprocket (1, Fig. 2) from flanged axle shaft (or axle extension on units with wide tread option).

Remove cap screws attaching inner rock guard to final drive housing.

IMPORTANT: Do not permanently remove rock guards or cut out portions of rock guards on the track roller frames to aid in clearing dirt out of the roller area. The rock guards add much strength to the track roller frame construction and should not be "cut out" or left off the machine.

Remove cap screws (4) attaching front crossbar to track frame (Fig. 2).

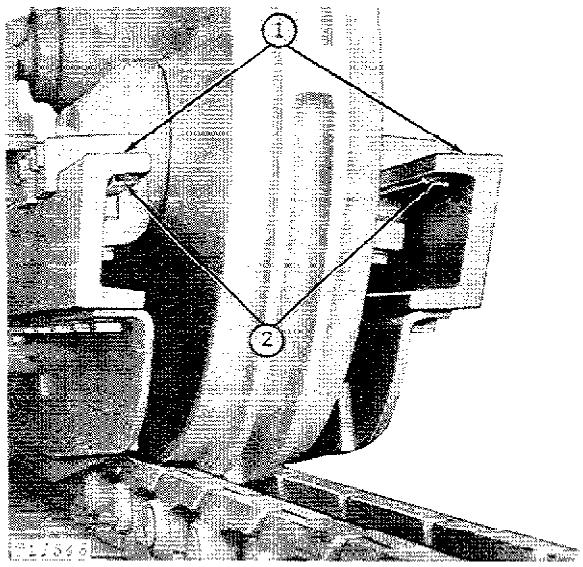
Remove cap screws (3) and retainer attaching track frame to rear crossbar (Fig. 2).

Raise crawler with jack or hoist under both crossbars until roller flanges clear track. Pull track carrier assembly from rear crossbar.

Due to the welded construction of the track frame no further disassembly of the frame should be attempted unless wear strips are worn and require replacing.

Repair

Inspect for bent channel frames, excessive wear on track frame channel wear strips, and cracks or broken welds. If wear strips (Fig. 3) are excessively worn, they must be removed and replaced.



1—Track Frames
2—Track Frame Channel Wear Strips

Fig. 3-Track Frame Channel Wear Strips

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Replacing Track Frame Channel Wear Strips

IMPORTANT: Disconnect battery ground strap or turn master battery disconnect switch to the "off" position if so equipped before doing any welding on the crawler. Failure to do so may damage the electrical system.

Release track cylinder pressure to loosen track. Remove master track pin and split track.

Remove and replace worn track wear strips as follows:

Grind off the old wear strip inside the track frame channel (Fig. 3) so that none of the strips or welds remain.

Clamp new wear strips evenly but not tightly to track frame channel. A secure clamping which still allows a slight wear strip shift will prevent cracking of weld fillet during cooling.

Using a low hydrogen electrode (0.125 inch [3.18 mm] dia. rec.) and a fairly low melting current (100-115 amp), melt as little as possible of the wear strip by starting and maintaining the arc primarily on the track frame channel. The wear strip is a high carbon steel, so best results are obtained by washing the weld metal toward the wear strip. This will produce a slightly convex weld fillet.

None of the other integral parts of the frame are furnished as repair parts. It will be necessary to replace the entire carrier if damage is such that it cannot be repaired by straightening or welding the damaged parts.

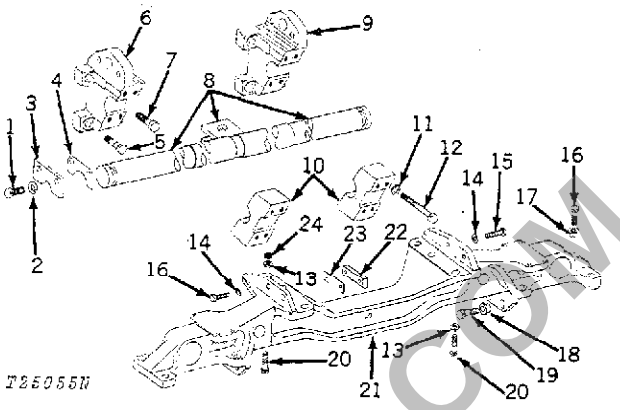
Join track and install master pin and snap ring.

NOTE: To adjust track tension and to check track alignment, refer to Section 90, Group 9030.

Connect negative battery ground strap.

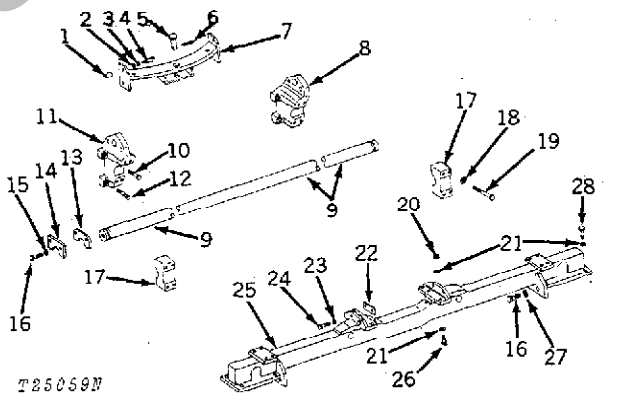
Disassembly and Assembly

Refer to Fig. 4 or 5 for position of parts during disassembly and assembly.



1—Cap Screw (4 used)
2—Lock Washer (4 used)
3—Rear Bar Retainer (2 used)
4—Shim (approx. 6 used)
5—Special Cap Screw (4 used)
6—Rear Bar Right Bracket
7—Cap Screw (4 used)
8—Rear Crossbar
9—Rear Bar Left Bracket
10—Rear Bar Cap (2 used)
11—Special Washer (8 used)
12—Cap Screw (8 used)
13—Special Washer (8 used)
14—Special Washer (4 used)
15—Cap Screw (2 used)
16—Cap Screw (10 used)
17—Flanged Spacer (8 used)
18—Flanged Spacer (4 used)
19—Cap Screw (4 used)
20—Cap Screw (6 used)
21—Front Crossbar
22—Tapping Bar
23—Shim (approx. 2 used) (early units)
24—Nut (2 used)

Fig. 4-Crossbar Assembly



1—Hollow Dowel (4 used)
2—Special Washer (4 used)
3—Lock Washer (4 used)
4—Cap Screw (4 used)
5—Pin
6—Pin
7—Bracket
8—Rear Bar Left Bracket
9—Rear Crossbar
10—Cap Screw (4 used)
11—Rear Bar Right Bracket
12—Cap Screw (4 used)
13—Shim (approx. 6 used)
14—Retainer (2 used)
15—Lock Washer (4 used)
16—Cap Screw (8 used)
17—Rear Bar Cap (2 used)
18—Special Washer (8 used)
19—Cap Screw (8 used)
20—Lock Nut (2 used)
21—Special Washer (16 used)
22—Shim (approx. 2 used)
23—Special Washer (4 used)
24—Cap Screw (4 used)
25—Front Crossbar
26—Cap Screw (6 used)
27—Special Washer (4 used)
28—Cap Screw (8 used)

Fig. 5-Wide Tread Crossbar Assembly

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HARDWARE TORQUE SPECIFICATIONS

Check cap screws and nuts to be sure they are tight. If hardware is loose, tighten to torque shown on the following charts unless a special torque is specified.

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NOTE: Torques shown are for dry (no lubrication on threads) hardware.

NOTE: Torque wrench tolerance is ± 10 per cent of specified torque.

Customary Hardware

Cap Screw Size-Inches	Grade B		Grade D		Grade F	
	lb-ft.	(N-m)	lb-ft.	(N-m)	lb-ft.	(N-m)
1/4	----	----	10	(14)	14	(19)
5/16	----	----	20	(27)	30	(41)
3/8	----	----	35	(47)	50	(68)
7/16	35	(47)	55	(75)	80	(108)
1/2	55	(75)	85	(115)	120	(163)
9/16	75	(102)	130	(176)	175	(237)
5/8	105	(142)	170	(230)	240	(325)
3/4	185	(251)	300	(407)	425	(576)
7/8	160	(217)	445	(603)	685	(929)
1	250	(339)	670	(908)	1030	(1396)
1-1/8	330	(447)	910	(1234)	1460	(1979)
1-1/4	480	(651)	1250	(1695)	2060	(2793)

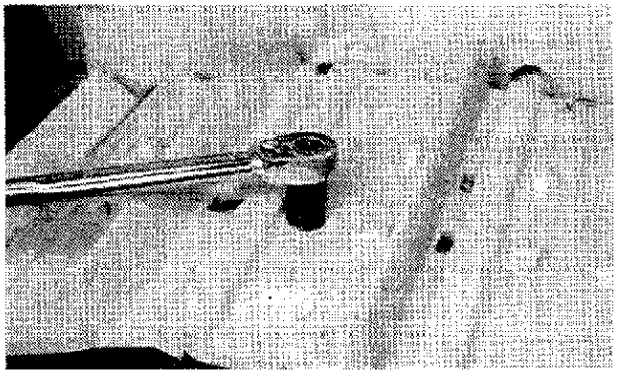
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CHECK TRACK SHOE TORQUE

Track shoe cap screws should be checked periodically for tightness.

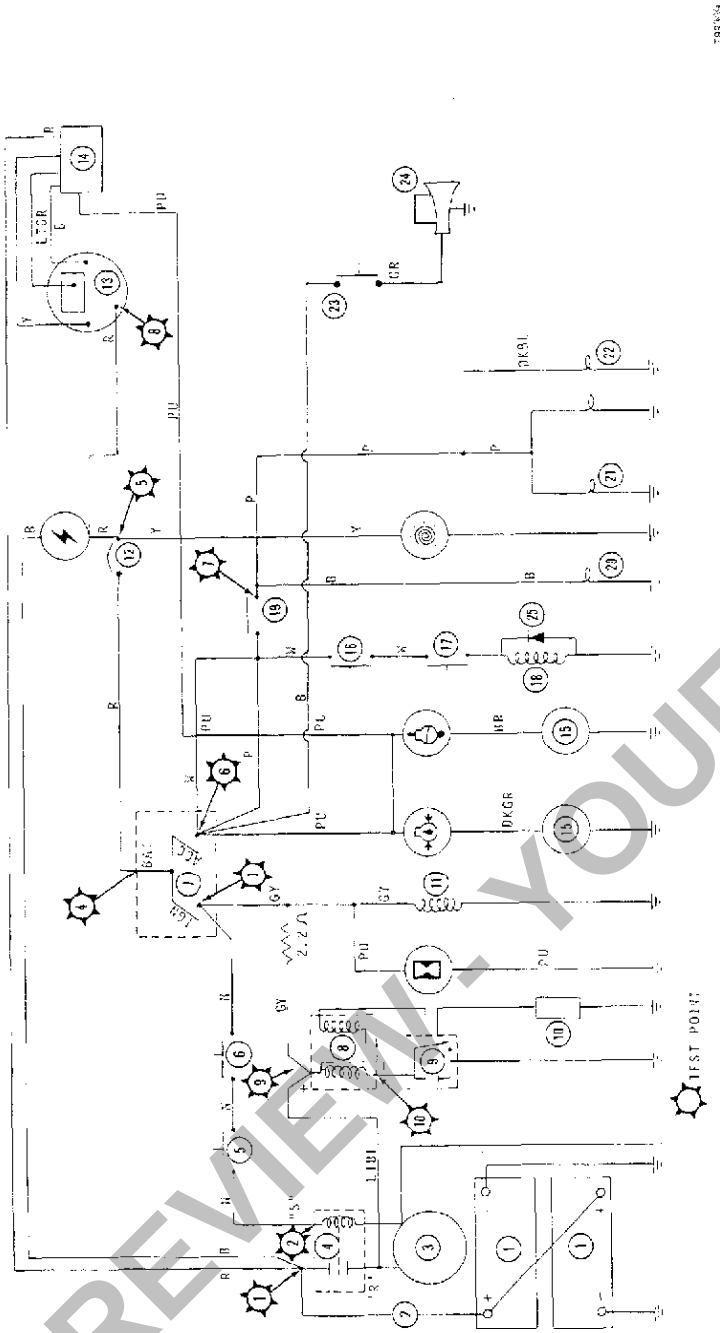
Tighten cap screws to 110 lb-ft (149 N·m) torque.

NOTE: Replacement hardware should be lubricated and tightened to above specification.



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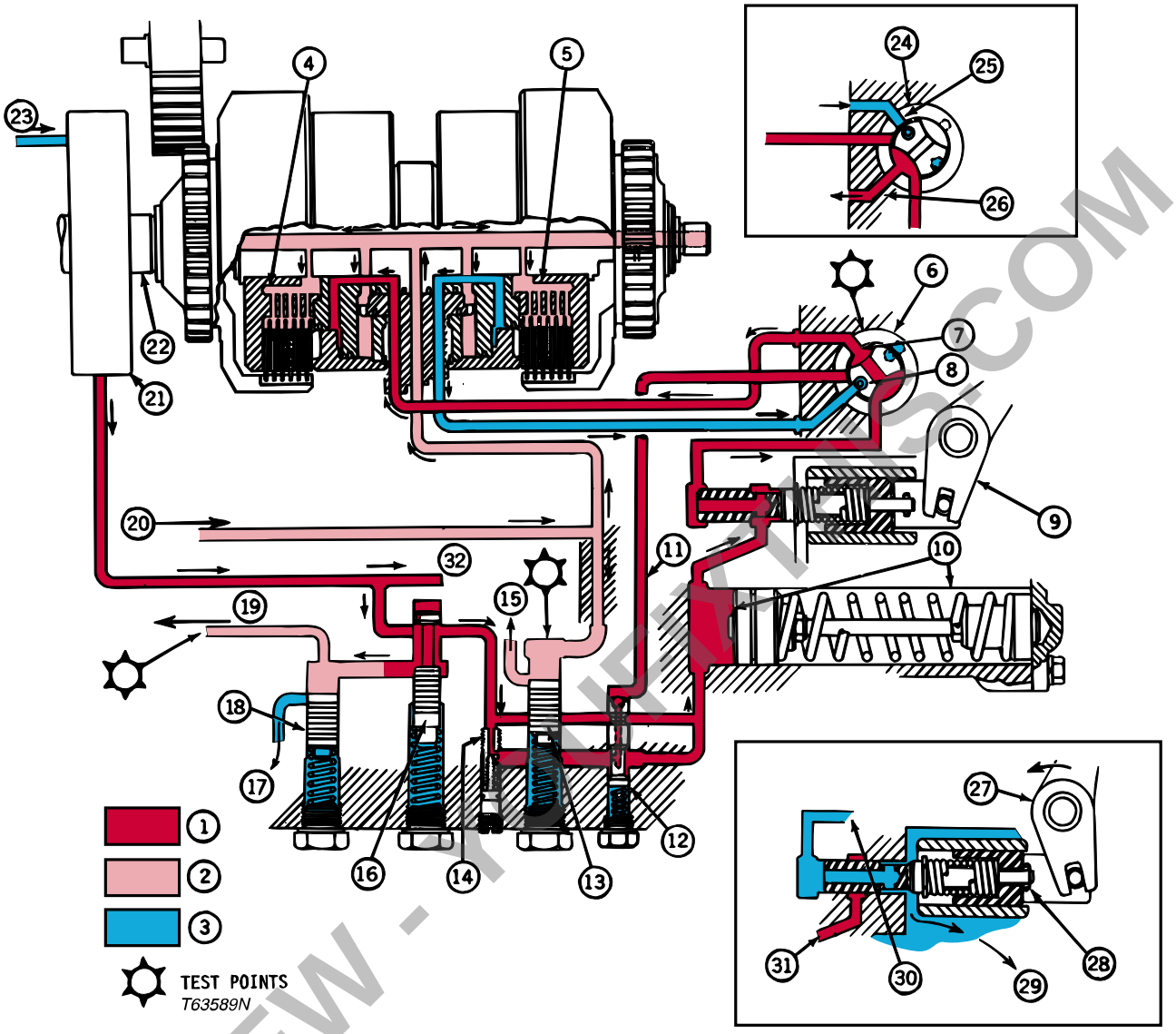
1—Battery
2—Battery Disconnect
3—Starting Motor
4—Solenoid
5—Neutral Start Switch
6—Start Switch
7—Key Switch
8—Coil (gas)
9—Distributor (gas)
10—Spark Plug (gas)
11—Fuel Shut-Off Solenoid (diesel)
12—Circuit Breaker
13—Alternator
14—Regulator
15—Sending Unit
16—Bucket Switch
17—Spool Switch (-294007)
18—Spool Solenoid (-294007) Electro-Magnet (294008-)
19—Light Switch
20—Gauge Lights
21—Front Lights
22—Rear Light
23—Horn Switch (249090-)
24—Horn (249090-)
25—Diode (-294007)

B—Black
BR—Brown
DKBL—Dark Blue
DKGR—Dark Green
GY—Gray
LTBL—Light Blue
OR—Orange
N—Neutral
P—Pink
PU—Purple
R—Red
W—White
Y—Yellow

Fig. 8-Electrical System (-343540)

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1—Pressure Oil (Clutch Pressure Oil)
2—Low Pressure Oil (Lube Oil)
3—Pressure-Free Oil
4—Forward Clutch (Engaged)
5—Reverse Clutch
6—Rotary Valve (Forward Position)
7—To Forward Clutch
8—From Reverse Clutch To Sump
9—Clutch Pedal (Engaged)
10—Accumulator
11—To Rotary Valve
12—Bypass Valve
13—Lube Regulating Valve
14—Restricting Orifice
15—To Reservoir
16—Clutch Pressure Regulating Valve
17—To Reservoir
18—Cooler Pressure Regulating Valve
19—To Cooler
20—From Cooler
21—Pump
22—Spider Shaft
23—From Sump
24—Rotary Valve (Reverse Position)
25—From Forward Clutch To Sump
26—To Reverse Clutch
27—Clutch Pedal (Depressed)
28—Clutch Valve
29—To Reservoir
30—Oil From Engaged Clutch
31—From Accumulator
32—To Steering Valves

Fig. 3-Operation of Reverser Control Valve (Forward Position Shown)

NOTE: The original orifice (14, Fig. 3) has one hole. The orifice used for a replacement part has two holes.

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DIAGNOSING MALFUNCTIONS

Engine Will Not Start or Starting Hard

- Fuel System Malfunction
  - Fuel tank empty
  - Improper type of fuel
  - Foreign material in fuel
  - Fuel lines clogged or restricted
  - Air leak on suction side of fuel system
  - Fuel transfer pump malfunction
  - Fuel filter restricted
  - Restricted air intake system
  - Faulty injection pump (diesel)
  - Faulty injection nozzles (diesel)
  - Water, dirt, or air in fuel system
  - Carburetor malfunction (gasoline)
- Electrical System Malfunction
  - Corroded or loose battery cables
  - Weak or dead battery
  - Cranking speed too slow

Uneven Running or Frequent Stalling

- Basic Engine Malfunction
  - Improper valve clearance
  - Cylinder head gasket leaking
  - Valves sticking or burned
  - Worn or broken compression rings
  - Low compression
  - Incorrect timing
  - Dirty air intake system
  - Exhaust system restricted
  - Engine overheating
- Fuel System Malfunction
  - Improper type of fuel
  - Air leak on suction side of fuel system
  - Fuel line clogged or restricted
  - Fuel transfer pump malfunction
  - Fuel filter restricted (diesel)
  - Faulty injection pump (diesel)
  - Faulty injection nozzles (diesel)
  - Water, dirt, or air in fuel system
  - Injection nozzle leak-off lines clogged (diesel)
  - Injection pump or distributor out of time
  - Exhaust system restricted
  - Improper carburetor setting (gasoline)

Engine Misses

- Basic Engine Malfunction
  - Weak valve springs
  - Incorrect valve clearance
  - Burned, warped, pitted or sticking valves
  - Low compression
  - Worn camshaft lobes
  - Engine overheating
- Fuel System Malfunction
  - Water, air or dirt in fuel
  - Faulty injection nozzles (diesel)
  - Faulty injection pump (diesel)
  - Faulty transfer pump
  - Detonation
  - Mixture of gasoline and diesel fuels
  - Carburetor out of adjustment (gasoline)

Lack of Power

- Basic Engine Malfunction
  - Blown cylinder head gasket
  - Worn camshaft lobes
  - Incorrect valve clearance
  - Incorrect valve timing
  - Burned, warped, pitted, or sticking valves
  - Weak valve springs
  - Low compression
  - Dirty air intake system
  - Incorrect timing
  - Engine overheating
- Fuel System Malfunction
  - Improper type of fuel
  - Air leak on suction side of fuel system
  - Fuel line clogged or restricted
  - Fuel transfer pump malfunction
  - Speed control linkage not adjusted properly
  - Fuel filter restricted (diesel)
  - Fuel injection pump malfunction (diesel)
  - Fuel injection nozzle faulty (diesel)
  - Water, dirt or air in fuel system
  - Injection nozzle leak-off line clogged (diesel)
  - Injection pump or distributor out of time
  - Clogged manifold system
  - Carburetor adjusted too lean (gasoline)

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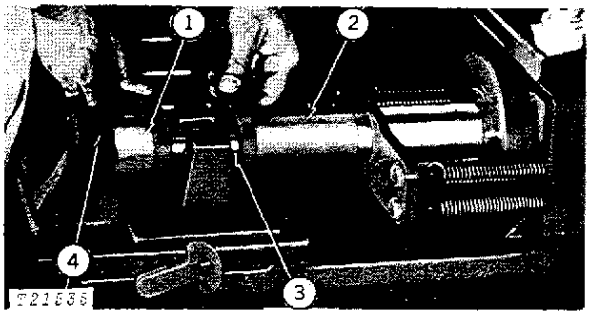
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Insert long forcing pin into ram cylinder head (Fig. 32). Place bushing forcing adapter on end of long forcing pin. Place link assembly, with track shoe removed and track shoe bolt holes up, in bottom of saddle adapter with bushing in place. Apply pressure and force bushing from side link closest to ram.

To remove bushing from remaining link, rotate link and bushing so that bushing rests in bottom of adapter and link is on side of adapter closest to ram. Apply pressure and force bushing from side link.

Assembling Side Links and Bushings

Insert bushing forcing pin into ram piston head (Fig. 33).



1—Bushing Adapter
2—Bushing Forcing Pin
3—Bushing
4—Adjusting Shims

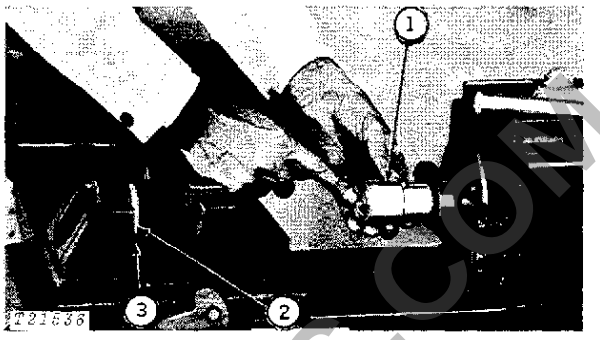
Fig. 33-Installing Bushing in Links

Insert bushing adapter with adequate number of spacing washers into saddle adapter.

NOTE: Before continuing, check bushing installation to determine whether or not proper number of spacers on bushing adapter are being used. Ends of bushing must be flush with sides of side links to allow ample clearance for free track link action.

Place a right and left side link in position on each side of saddle adapter. Position bushing in bottom of saddle adapter between side links (Fig. 33).

Apply pressure, being sure that all parts are held in alignment until pressed together.



1—Track Pin Forcing Adapter
2—Pin Adapter
3—Adjusting Shims

Fig. 34-Preparing Press for Installation of Track Pins

Assembling Track

Insert track pin forcing adapter having 0.0625 inch (1.58 mm) recess, into ram piston head (Fig. 34).

Insert pin adapter with adequate number of spacers into saddle adapter (Fig. 34).

NOTE: Due to friction wear on the side links, the number of shims required will vary. Experimentation will show correct number to use. Allow as little space as possible between side link and pin adapter, to be sure pins will be positioned properly when installed. This will allow ample clearance for free track link action.

Place master link assembly in position in saddle adapter so that bushing rests in bottom of adapter.

Place second link assembly in position so that side links straddle bushing end of master link assembly (Fig. 35). Leave aligning pin in position.

Coat track pins with 80W-90 gear oil before assembly.

Hold new track pin in position. Apply pressure and guide pin into hole in side link and into recess of track pin forcing adapter. The new pin will push aligning pin out as it is inserted. Stop pressure when track pin forcing adapter butts against side link.

Continue these steps with each link assembly until the track is completely assembled.

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REPAIR

Remove shift cover assembly.

Remove transmission rear cover.

If so equipped, remove PTO shifter detent spring and ball.

To service input shaft, remove coupling from front of input shaft.

Remove the input shaft front bearing quill.

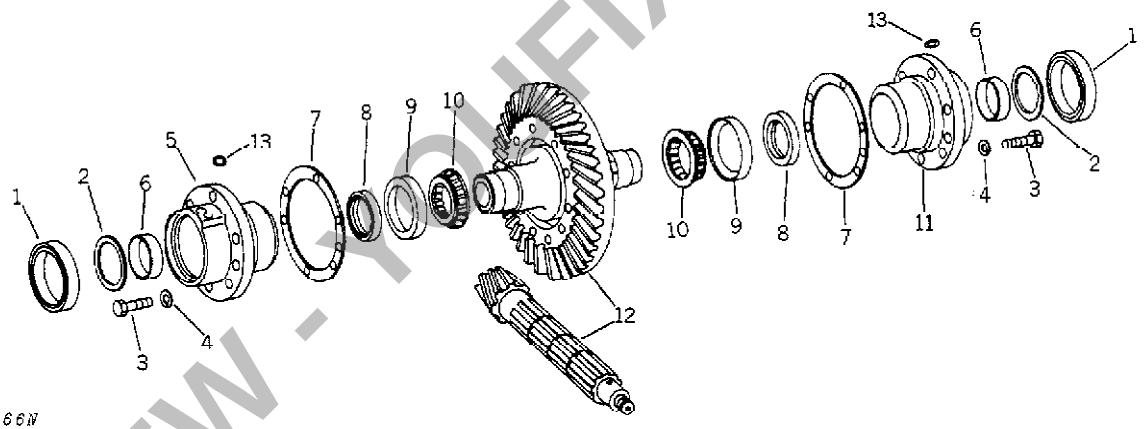
Move the PTO lever to the left (if used).

Slip input shaft forward and work rear end of shaft up through top of transmission case.

When servicing ring gear (12, Fig. 1) and spiral bevel pinion, refer to Section 2, Group 0201 and remove drive axle housing. Next remove the steering clutch assemblies. Refer to Section 2, Group 0250.

Remove right and left hand bearing quills (5 and 11). Remove ring gear assembly out of housing.

Remove pinion shaft front bearing cover, pull cotter pin from end of shaft and remove nut retainer. Lock transmission gears and remove bearing retainer nut and special washer. Support pinion shaft with one hand and tap front end of shaft to free front bearing cone. Slide shaft rearward. Continue to slide shaft rearward removing the three sliding gears as they slip off the end of the shaft. Pull shaft and rear bearing from rear end of case.



1—Oil Seal (2 used)
2—Thrust Washer
3—Cap Screw (12 used)
4—Lock Washer (12 used)
5—Bearing Quill, R.H.
6—Bushing
7—Shim (as required)
8—Oil Seal (2 used)
9—Bearing Cup
10—Bearing Cone
11—Bearing Quill, L.H.
12—Pinion Shaft with Ring Gear
13—O-Rings (4 used)

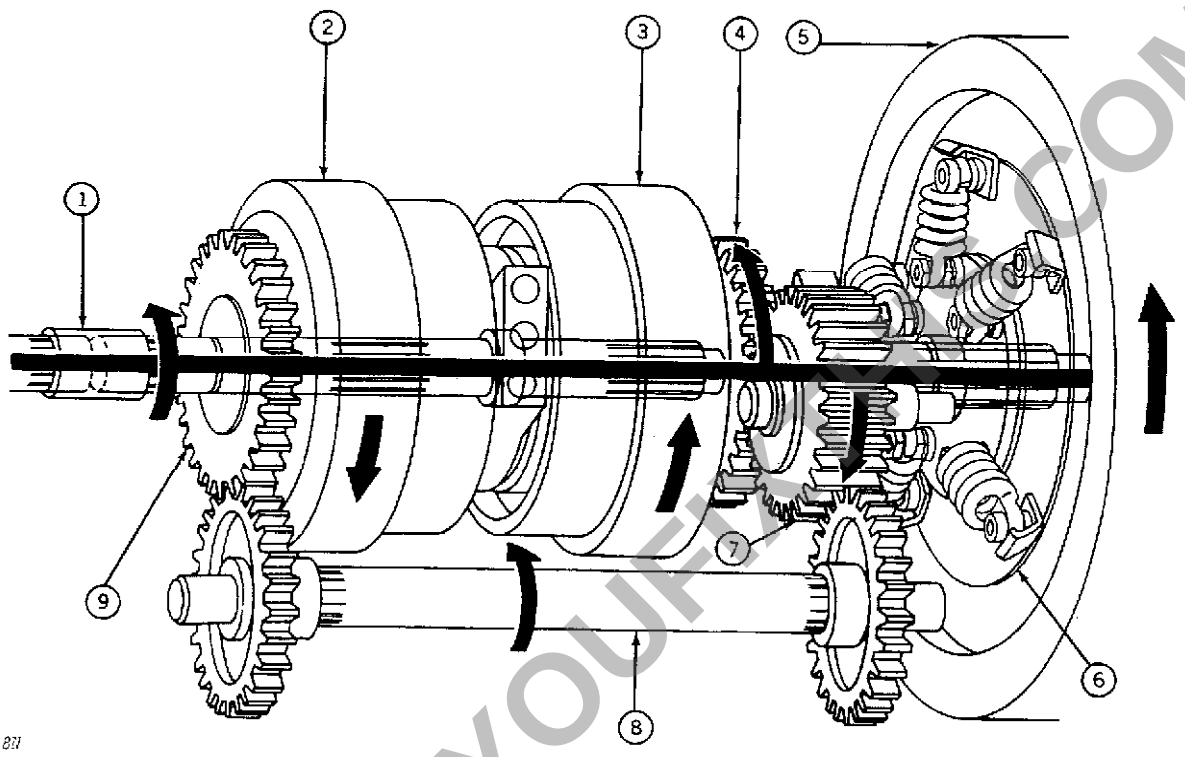
Fig. 1-Ring Gear and Hub

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HYDRAULIC DIRECTION REVERSER

GENERAL INFORMATION



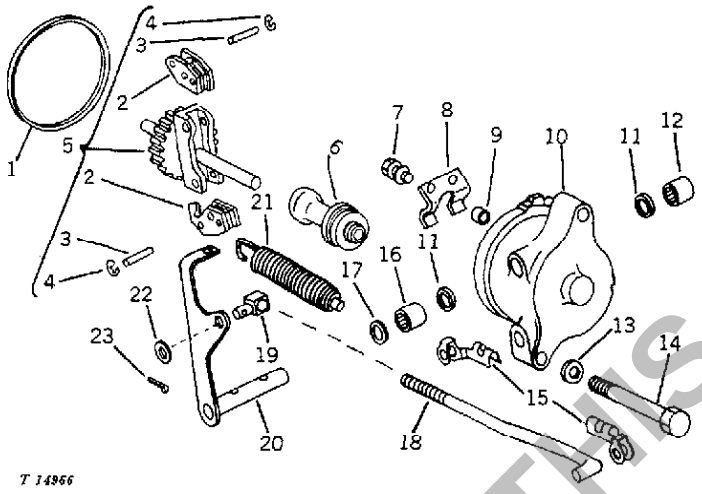
1—Coupling
2—Rear Clutch Assembly (Disengaged)
3—Front Clutch Assembly (Engaged)
4—Front Spider Gear
5—Flywheel
6—Isolator
7—Idler Gear
8—Countershaft
9—Rear Spider Gear (Idling)

Fig. 8-Power Flow in Forward Operation

The front spider shaft, being splined to the isolator, always follows engine rotation. In the forward position, since the forward clutch is engaged, the front spider drives the clutch shaft and engine power flows directly through the clutch shaft to the transmission input shaft. The idler gear is in constant mesh with the front spider gear and the countershaft, and so drives the countershaft in the direction of the flywheel rotation. The rear gear of the countershaft is in constant mesh with the rear spider gear and turns it in the opposite direction. However, since the reverse clutch is disengaged, the rear spider "idles" on the clutch shaft, and engine power is allowed to flow directly from the forward clutch to the transmission input.

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1—Packing
2—Weight (2 used)
3—Special Pin (2 used)
4—Retainer (2 used)
5—Weight Carrier Assembly
6—Thrust Bearing
7—Screw and Washer (2 used)
8—Yoke
9—Bushing
10—Housing
11—Thrust Washer (2 used)
12—Needle Bearing (Closed)
13—Washer (2 used)
14—Cap Screw (2 used)
15—Clevis Clip
16—Needle Bearing (Open)
17—Oil Seal
18—Throttle Rod
19—Trunnion
20—Lever with Shaft
21—Spring Assembly
22—Washer
23—Cotter Pin

Fig. 3-Governor Assembly

Examine feet of weights (portion which bears against thrust bearing). If curved surface has flat spots worn on it, weights should be replaced. This is the most frequent cause of governor failing to open throttle at rated speeds or failing to operate properly. Replace all worn or damaged parts as necessary.

Check all other parts. Contact surface of moving parts must be smooth. If there are indications of wear, replace parts.

ASSEMBLY

Install needle bearing (16, Fig. 3) in governor housing with numbered end of bearing toward JD241 driver. Press bearing in flush with inside of housing.

Coat sealing lip of new oil seal (17) with Lubriplate and install with lips inward to flush with housing.

Before installing needle bearing (12), coat outside surface with sealing compound. Drive on closed side of bearing using JD245 driver until flush with inside of housing.

Weights must be free on pins, but pins must be tight in weight carrier.

After weights are assembled to weight carrier, hold assembly horizontally and rotate shaft slowly to be sure governor weights are free on pins. As shaft is rotated, weights should fall away from shaft under their own weight.

Position new packing (1) on flange of governor body.

INSTALLATION

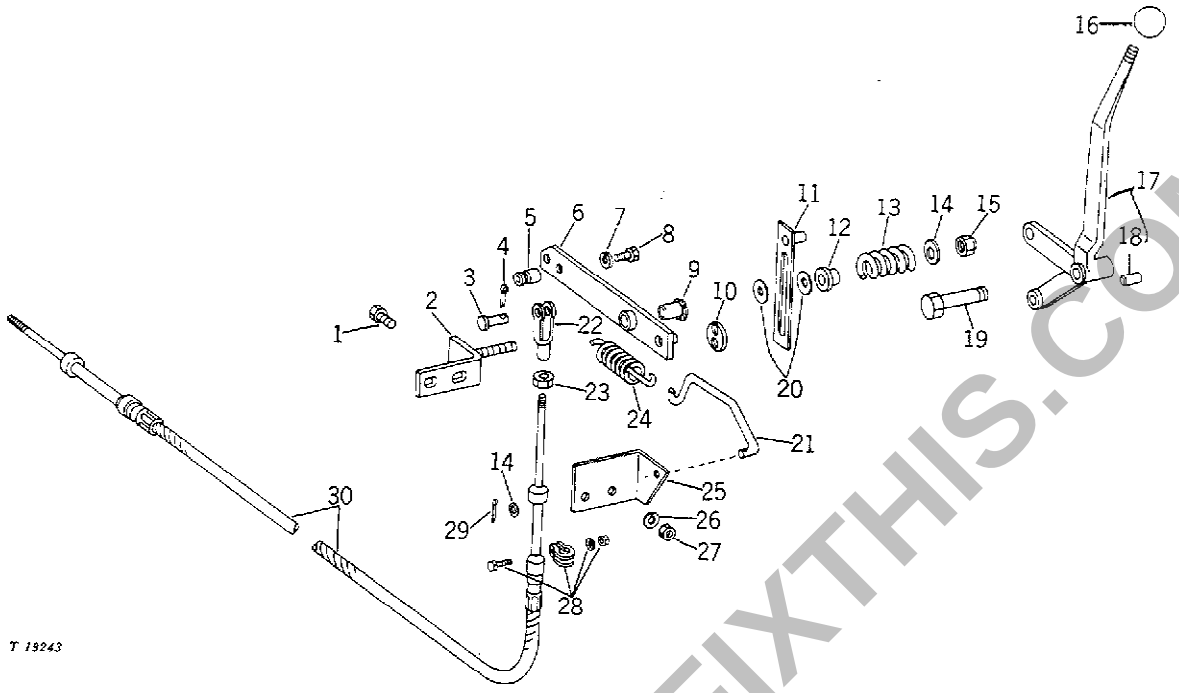
Install governor assembly into position on engine (Fig. 4). Be sure housing is seated properly before tightening attaching hardware.

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1—Cap Screw (2 used)
2—Pivot Bracket
3—Pin
4—Cotter Pin
5—Anchor
6—Lever
7—Lock Washer
8—Cap Screw
9—Bushing
10—Link
11—Friction Link
12—Friction Disk
13—Spring
14—Washer (2 used)
15—Stop Nut
16—Knob
17—Lever
18—Pin
19—Special Cap Screw
20—Special Washer (2 used)
21—Rod
22—Yoke
23—Nut
24—Spring
25—Anchor Bracket
26—Lock Washer (2 used)
27—Nut (4 used)
28—Clamp with Hardware
29—Cotter Pin
30—Cable

Fig. 4-Speed Control Lever (Gasoline)

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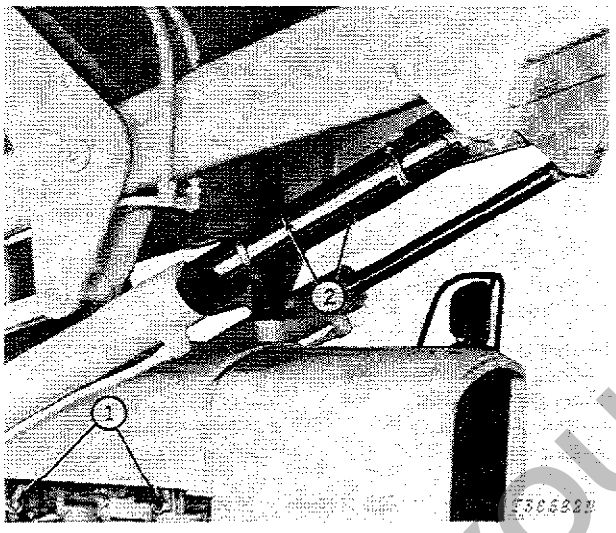
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HOOD AND COWL

Removal

Raise boom to full height.

CAUTION: Support boom before working underneath it.



1—Hood Latches 2—Loader Support

Fig. 3—Removing Hood

Remove engine side shields.

Remove limb risers (if equipped).

Remove the muffler exhaust stack and the air cleaner, pre-cleaner.

Pull down on the two spring-loaded latches on each side of the hood. Release latches and lift off hood.

Remove hood-to-cowl cap screws, release hood latches and lift hood from unit.

Remove cowl-to-cowl support cap screws (9, Fig. 5) to remove cowl from support.

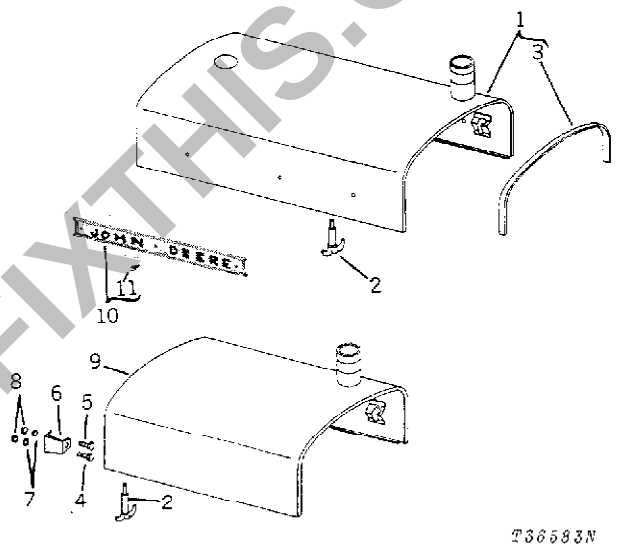
If necessary, disconnect instrument panel instruments and the indicators as described in Group 1823.

Remove cap screws (7) to remove cowl support from the clutch housing.

Repair

Examine parts for damage and replace if necessary.

Refer to Figs. 3 and 4 during disassembly and assembly.



1—Hood (with or without dozer)
2—Hood Latch (4 used)
3—Rubber Bumper (2 used)
4—Cap Screw (2 used with loader)
5—Cap Screw (2 used with loader)
6—Rear Hood Latch Retainer (2 used) with loader)
7—Lock Washer (4 used) with loader)
8—Nut (2 used with loader)
9—Hood (loader)
10—Name Plate with Attaching Screws (2 used)
11—Special Screw (6 used)

Fig. 4-Hood

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Section 31
LOADER

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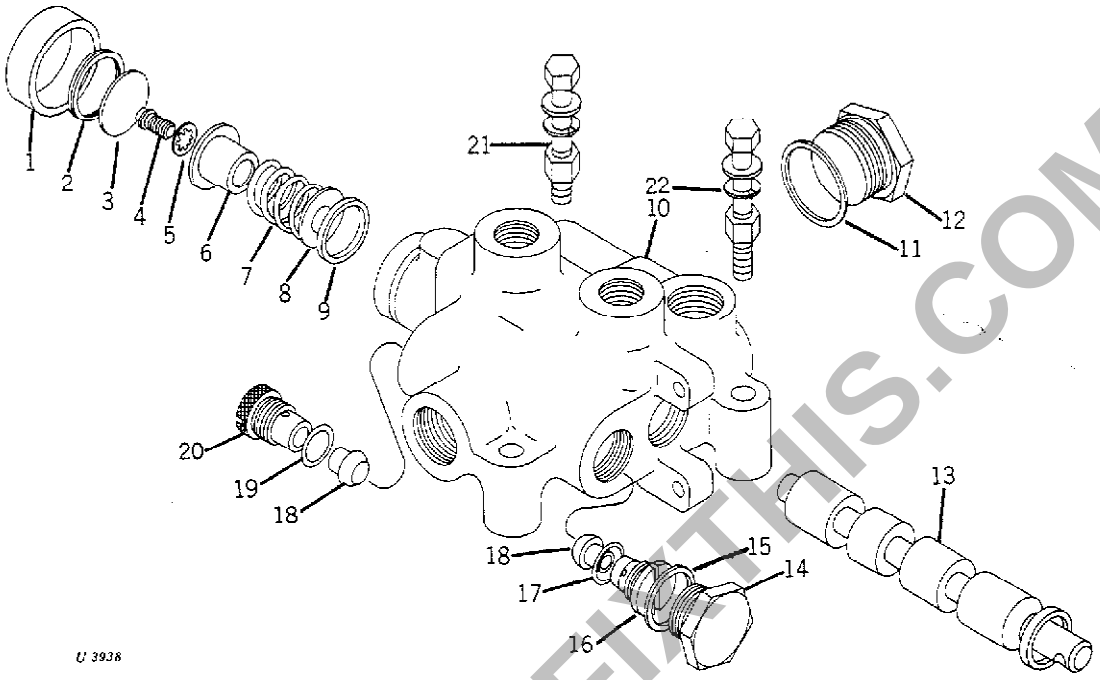
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1—Bonnet Cap
2—Snap Ring
3—Stop Disk
4—Screw
5—Lock Washer
6—Stop Collar
7—Spring
8—Stop Washer
9—Quad Ring (2 used)
10—Valve Housing
11—Gasket
12—Plug
13—Spool
14—Plug
15—Gasket
16—Seat
17—O-Ring
18—Check (2 used)
19—O-Ring
20—Check Plug
21—Cap Screw (2 used)
22—Cap Screw

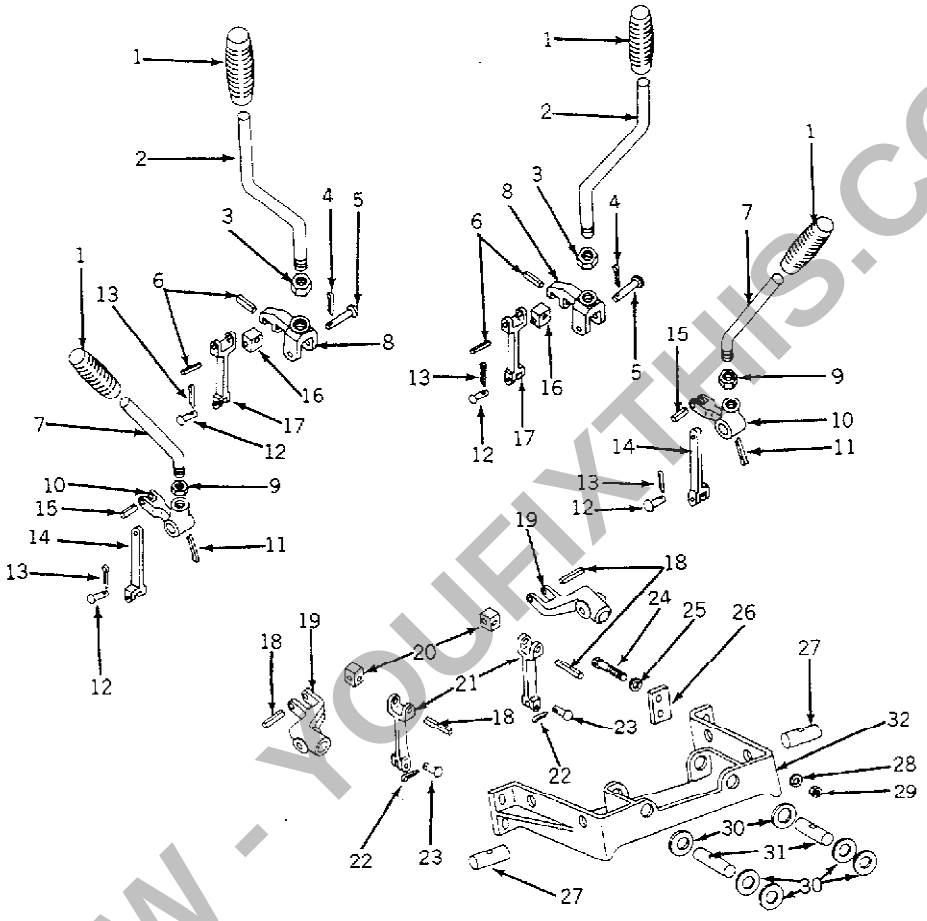
Fig. 7-Single Spool Auxiliary Valve (6305 Bulldozer)

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Group 3315
CONTROLS LINKAGE

REPAIR



1—Hand Grip (4 used)
2—Lever (2 used)
3—Hex. Nut (2 used)
4—Cotter Pin (2 used)
5—Pivot Pin (2 used)
6—Spring Pin (4 used)
7—Stabilizer Lever (2 used)
8—Handle Mount (2 used)
9—Nut (2 used)
10—Handle Mount (2 used)
11—Cotter Pin (2 used)
12—Pin (4 used)
13—Cotter Pin (4 used)
14—Link (2 used)
15—Spring Pin (2 used)
16—Lever Block (2 used)
17—Link (2 used)
18—Spring Pin (4 used)
19—Pivot Block (2 used)
20—Lever Block (2 used)
21—Lever Link (2 used)
22—Cotter Pin (2 used)
23—Pin (2 used)
24—Cap Screw (4 used)
25—Washer (4 used)
26—Spacer (2 used)
27—Pivot Shaft (2 used)
28—Lock Washer (4 used)
29—Nut (4 used)
30—Washer (6 used)
31—Pivot Shaft (2 used)
32—Mounting Frame

Fig. 1-Backhoe Control Valve Levers and Linkage

Refer to Fig. 1 during disassembly and assembly of control linkage.

Inspect control valve linkage for worn or damaged parts.

Coat shafts and movable linkage parts with grease before assembly.

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When installing tapered pins use the following procedure:

1. Before inserting pins and bushings, be sure bushing bores are clean, dry and unpainted.

2. Assemble parts loosely. Center pin assembly in pin joint within 0.12 inch (3.05 mm).

3. Tighten bolts as follows:

A. Tighten all bolts associated with the tapered pin assembly to a minimum of one-half the standard torque.

B. Shock both wedge bushings with a brass, lead, or aluminum hammer.

a. If the washers are accessible and large enough, strike both washers in three places.

b. If the washers are not accessible or are too small to strike directly, place a spacer over the bolt head or bolt nut and strike the spacer three times.

NOTE: Do not pound on bolt head or nut.

C. Tighten bolts to full torque.

D. Repeat step B.

E. Check torque.

F. Repeat steps B and C alternately until shocking the assembly does not reduce the torque reading on bolts.

G. Recheck for centered position.

INSTALLATION

Install boom and dipperstick by reversing removal procedure.

STABILIZERS

REMOVAL

Operate control lever to fully extend stabilizers.

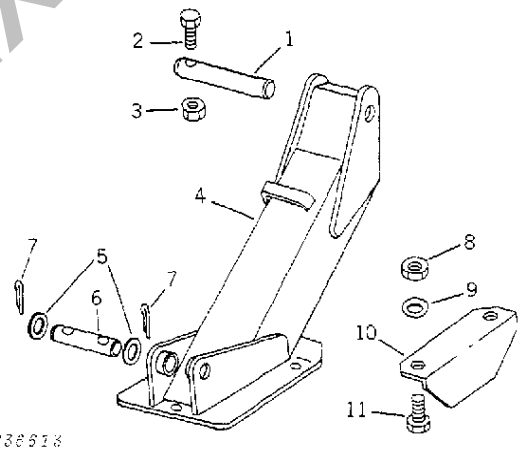
⚠ CAUTION: Stop engine and operate the stabilizer control lever to release hydraulic pressure.

Remove stabilizer pivot pin and stabilizer cylinder pin.

Lower stabilizer to ground.

REPAIR

Refer to Fig. 6 during disassembly and assembly of stabilizers.



1—Stabilizer Pivot Pin (2 used)
2—Cap Screw (2 used)
3—Lock Nut (2 used)
4—Stabilizer (2 used)
5—Washer (4 used)
6—Stabilizer Cylinder Pin (2 used)
7—Cotter Pin (4 used)
8—Nut (4 used)
9—Lock Washer (4 used)
10—Stabilizer Cleat (2 used)
11—Cap Screw (4 used)

Fig. 6-Stabilizer

INSTALLATION

Install stabilizers by using removal procedure in reverse order.

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Section 90
SYSTEM TESTING

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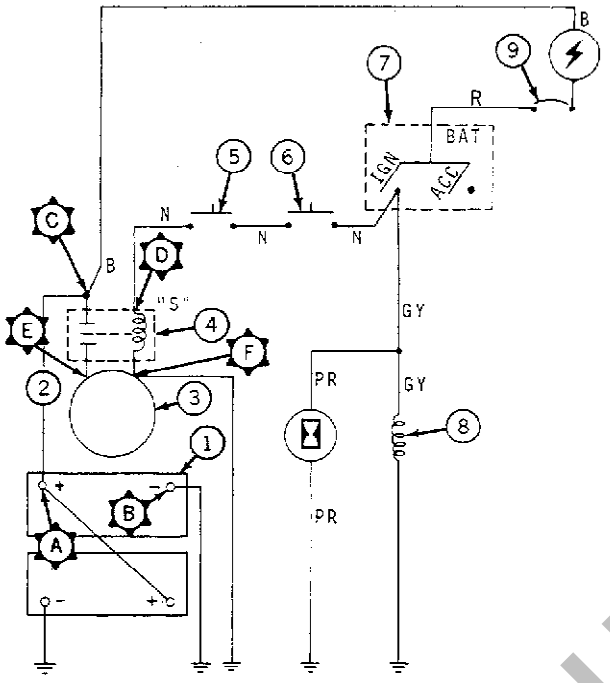
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High Resistance Test



T36639N

1—Batteries
2—Battery Disconnect
3—Starting Motor
4—Solenoid
5—Neutral Start Switch
6—Start Switch
7—Key Switch
8—Injection Pump Solenoid
9—Circuit Breaker

Fig. 19-High Resistance Test Points

Disconnect wire from injection pump solenoid shut-off terminal.

Connect voltmeter to ground and to solenoid battery terminal. Operate starter and compare voltage with a similar reading at battery. Always use a pin connector at battery post. If difference is more than 0.8 volt, make the tests indicated in Fig. 19. Check for defective wires or faulty connections.

RESISTANCE TEST VALUES

Test Points	Maximum Voltmeter Reading
B-F	0.2
A-C	0.2
C-D	1.0
C-E	0.2

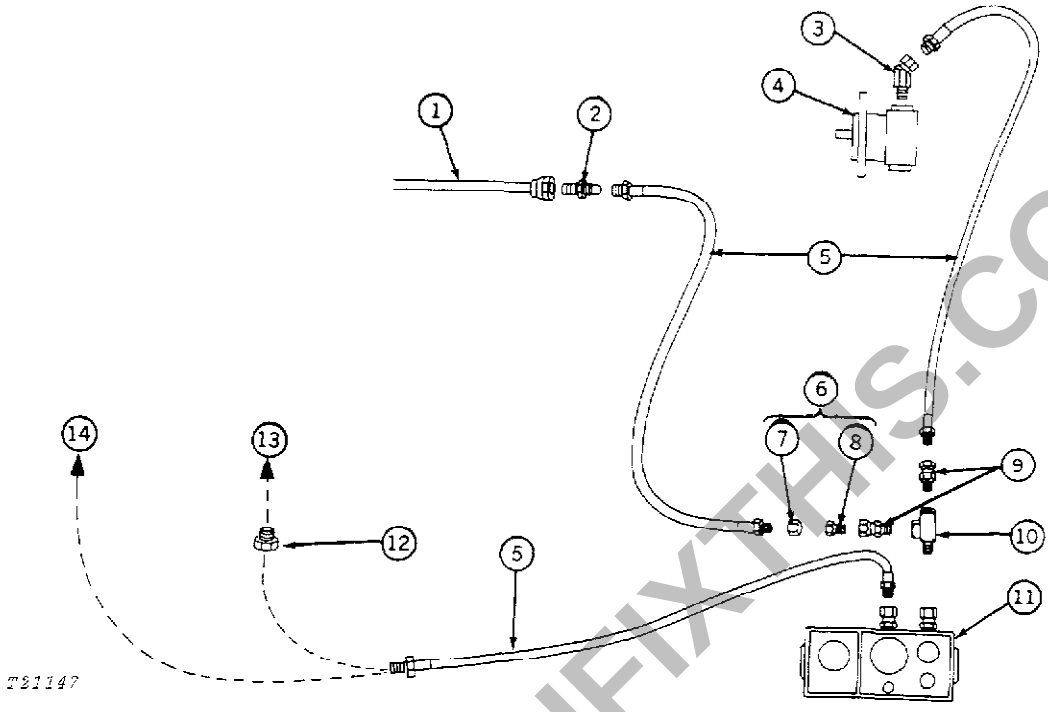
Engine Starts But the Starting Motor Drive Does Not Disengage From the Flywheel

This indicates a defect in the drive mechanism, or solenoid pull in windings, or solenoid contacts, or solenoid control circuit which will not allow the drive to disengage.

The starting motor or solenoid needs repair. See Section 4, Group 0422.

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Hydraulic Pump Test



1—Pressure Line to Control Valve
2—D-88
3—D-99, Y3019
4—Pump
5—D-91, Y21-10
6—Use with Pump Test To Plug Hose and Tee
7—D-93, Y3019
8—D-94, Y3020
9—D-96, Y3018
10—D-92, Y3013
11—Hydraulic Tester
12—D-101, Y3012
13—To Loader Control Valve Return Line
14—To Dozer Control Valve or Tee into Return Line

Fig. 22-Installing Hydraulic Tester

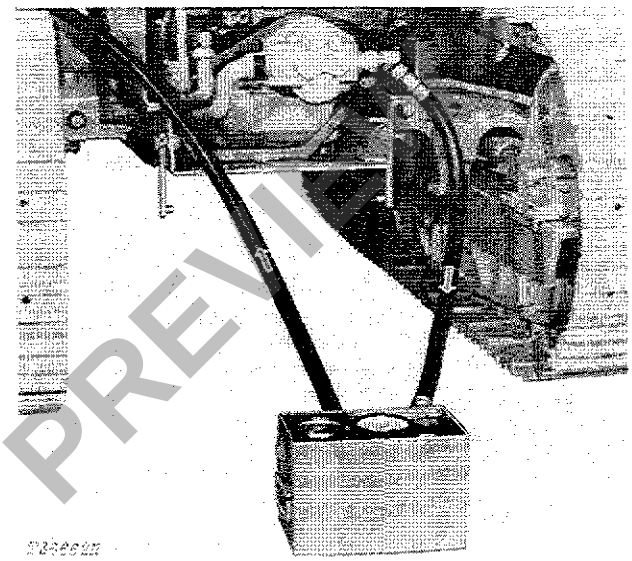


Fig. 23-Hydraulic Tester Hook-Up

Connect hydraulic tester for pump test as shown in Figs. 22 and 23. Connect the tester inlet to the pump outlet. Connect the tester outlet into the system return line at the control valve. Cap pump pressure line to control valve to prevent oil loss during the test.

IMPORTANT: With this hookup there is no protection for the pump from high pressure. The system relief valve is located in the control valve and if the hydraulic tester pressure loader valve is closed, the pump will be damaged.

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