John Deere JD570 and JD570A Motor Grader



TECHNICAL MANUAL

TM-1001 (Dec-87)

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JD570 AND JD570-A MOTOR GRADERS

Technical Manual
TM-1001 (Dec-87)

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The specifications and design information contained in this manual were correct at the time it was printed. It is John Deere's policy to continually improve and update our machines. Therefore, the specifications and design information are subject to change without notice.

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Group 5
SPECIFICATIONS

(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 13.00-24, 8-ply-rating, tubeless tires and standard equipment.)

JD570-A

Power @ 2300 engine rpm):	**SAE**	**DIN**
Gross	92 hp (68.6 kW*)	
Net	85 hp (63.4 kW)	86.2 PS

Net engine flywheel power is for an engine equipped with fan, air cleaner water pump, lubricating oil pump, fuel pump, alternator and muffler. The gross engine power is without fan. Flywheel power ratings are under SAE standard conditions of 500-ft. altitude and 85°F. temperature, and DIN 70 020 conditions (non-corrected). No derating is required up to 10,000 feet (3000 m) altitude.
*In the international system of units (SI), power is expressed in kilowatts (kW).

Engine: John Deere turbocharged diesel, vertical 6-cylinder, valve-in-head, 4-stroke cycle

Bore and stroke	4.02x4.33 in. (102x110 mm)
Piston displacement	329 cu. in. (5392 cm³)
Compression ratio	16.2 to 1
Maximum torque @ 1300 rpm	238 lb-ft (323 Nm) (32.8 kg-m)
NACC or AMA (U.S. Tax) horsepower	38.6
Main bearings	7
Lubrication	Pressure system w/full-flow filter
Cooling	Pressurized w/thermostat and fixed bypass
Fan	Suction
Air cleaner w/restriction indicator	Dry
Electrical system	12-volt w/alternator
Batteries (2)	Reserve capacity: 360 minutes

Transmission... Power Shift, 8 forward and 4 reverse selections

Differential Lock..... Foot-operated, hydraulically actuated

Travel Speeds (2300 engine rpm, no tire slip):

Shift Lever Position	**mph**	**km/h**
Forward 1	2.0	3.3
2	2.9	4.6
3	4.5	7.2
4	5.8	9.4
5	7.6	12.2
6	9.8	15.8
7	12.8	20.6
8	21.6	34.8
Reverse 1	2.5	4.0
2	3.5	5.6
3	5.5	8.8
4	7.1	11.4

Final Drives ..... Inboard planetary

Brakes:
Service ..... Foot-operated, hydraulically actuated, wet-disk, effective on 4 tandem wheels
Parking..... Hand-operated, mechanical, expanding dry shoe, effective on 4 tandem wheels

Steering:
Front ..... Full hydraulic power system
Rear ..... Hydraulically articulated frame steering (22 deg. left or right)
Turning radius..... 18 ft. (5.49 m)
Range..... 51 deg. left or right

Hydraulic System: Closed-center
Pressure..... 2000 psi (137.9 bar) (140.6 kg/cm²)
Pump ..... Variable displacement, 27 gpm (102 L/min) @ 2300 engine rpm

Circle: 5.50x1x4.62x1 in. (140x25x117x25 mm) welded angle, 4 ft. 6 in. (1.37 m) dia.
Rotation ..... 360 deg.
Drive ..... Hydraulic motor and worm gear

Drawbar..... Tapered box, max. 3x7x0.375 in. (76x178x9.5 mm) wall, w/universal swivel

Blade:	**Standard**	**Optional**
Length	12 ft. (3.66 m)	12 ft. (3.66 m)
Height	22 in. (559 mm)	22 in. (559 mm)
Thickness	0.62 in. (15.8 mm)	0.75 in. (19.1 mm)

Blade Lifting Mechanism:
Control ..... Dual-lever, hydraulic
Cylinders (2) ..... 3 in. (76 mm) dia. bore; 42 in. (1.07 m) stroke

Blade Range:
Lift above ground..... 1 ft. 1 in. (330 mm)
Blade side-shift:
Right..... 2 ft. 2.75 in. (679 mm)
Left..... 2 ft. 7.25 in. (794 mm)
Shoulder reach outside wheels:
Right..... 5 ft. 11.5 in. (1.82 m)
Left..... 6 ft. 5.25 in. (1.96 m)
Pitch ..... 32 deg. total

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Group 10
PREDELIVERY, DELIVERY, AND AFTER-SALE SERVICES

TEMPORARY UNIT STORAGE

After receiving your unit from the factory and before putting the machine into temporary storage, perform the following checks and services.

For long term storage (over 30 days) information, consult your JD570-A operator's manual.

1. Check battery electrolyte level and charge the battery, if necessary.

2. Check coolant level: Maintain 4 inches below the top of the filler neck.

3. Fill the fuel tank.

4. Check crankcase oil level. Oil should be between marks on dipstick after machine has been shut down for 10 minutes.

5. Relieve hydraulic pressure by stopping engine, lowering blade and operating control levers until system fails to respond.

6. Reduce shipping pressure of all tires to inflation pressure shown on page 10-10-9.

7. Cover unit for protection and cleanliness.

PREDELIVERY SERVICE

Because of the shipping factors involved, plus extra finishing touches that are necessary to promote customer satisfaction, proper predelivery service is of prime importance to the dealer and the customer.

If adjustments are required, procedures are found in the after-sale section.

Use the following list when preparing a motor grader for delivery to the customer.

1. Pre-Cleaner



Fig. 1-Pre-Cleaner

Check pre-cleaner bowl. Clean if necessary.

Pre-cleaner checked *Yes* *No*

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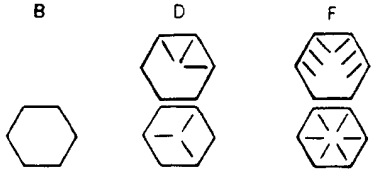
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31. Accessible Hardware Torque Values

Check all accessible bolts and nuts for proper tightness. If hardware is loose, tighten it to the proper torque. The table below gives correct torque values for various bolts and cap screws. Most hardware used is high-strength (note dashes on hex. heads).

STANDARD TORQUE CHART

RECOMMENDED TORQUE IN LB-FT
COARSE AND FINE THREADS



Bolt Diameter	Plain Head	Three Dashes	Six Dashes
1/4	Not used	10	14
5/16	Not used	20	30
3/8	Not used	35	50
7/16	35	55	80
1/2	55	85	120
9/16	75	130	175
5/8	105	170	240
3/4	185	300	425
7/8	160	445	685
1	250	670	1030
1-1/8	330	910	1460
1-1/4	480	1250	2060

T28433

Fig. 46-Torque Chart

The types of bolts and cap screws are identified by head markings as follows:

Plain Head: regular machine bolts and cap screws.

3-Dash Head: tempered steel high-strength bolts and cap screws.

6-Dash Head: tempered steel extra high-strength bolts and cap screws.

Machine bolts and cap screws 7/8-inch and larger are sometimes formed hot rather than cold, which accounts for the lower torque.

All accessible hardware torqued *Yes* *No*

32. Final Check

The final predelivery procedure is the overall clean-up of the motor grader. Make the motor grader LOOK like a new motor grader with the proper touch-up of chipped paint and a good wash job. Deliver to the customer a motor grader anyone would be proud to own.

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Group 5
DIAGNOSING ENGINE MALFUNCTIONS

The following is a quick guide for diagnosing engine malfunctions. Diagnosis of each malfunction is elaborated further in the section or group in this manual pertaining specifically to the component or system.

Engine Starts Hard, Will Not Start

Check fuel system (Section 30).
Check electrical system (Section 40).
Check air intake system (Section 30).
Low compression (Group 10).

Engine Starts, Won't Continue To Run

Check fuel system (Section 30).
Check electrical system (Section 40).
Check air intake system (Section 30).

Engine Lacks Power

Too high viscosity oil in crankcase.
Check fuel system (Section 30).
Check electrical system (Section 40).
Check air intake system (Section 30).
Low compression (Group 10).

Engine Emits Black or Gray Exhaust Smoke

Check air intake system (Section 30).
Check fuel system (Section 30).
Low compression (Group 10).

Engine Oil Pressure is Low

Check lubrication system (Group 15).

Engine Speed is Erratic

Check fuel injection pump (Section 30).
Check speed control linkage (Group 20).

Engine Makes Abnormal Noise

Check fuel injection pump timing (Section 30).
Improper fuel.
Worn or improperly adjusted engine parts (Group 10).
Plugged injection nozzles (Section 30).

Engine Operating Temperature is Abnormal

Check cooling system (Group 25).
Check fuel injection timing (Section 30).

Fuel Consumption is High

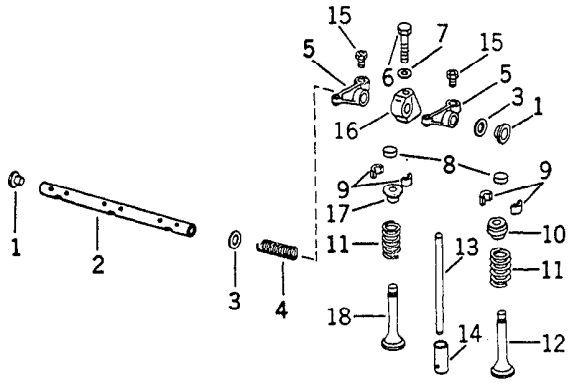
Check fuel system (Section 30).
Check air intake (Section 30).
Low compression (Group 10).

Engine Misses

Low compression (Group 10).
Check fuel system (Section 30).

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1 – Plug (2 used)
2 – Rocker Arm Shaft
3 – Washer (2 used)
4 – Spring (5 used)
5 – Rocker Arm (12 used)
6 – Cap Screw (6 used)
7 – Washer (6 used)
8 – Valve Stem Cover (12 used)
9 – Retainer Lock (24 used)
10 – Exhaust Valve Cap
11 – Valve Spring (12 used)
12 – Exhaust Valve (6 used)
13 – Push Rod (12 used)
14 – Tappet (12 used)
15 – Adjusting Screw (12 used)
16 – Support (6 used)
17 – Intake Valve Cap (6 used)
18 – Intake Valve (6 used)

Fig. 1–Exploded View of Rocker Arm Assembly

Valve guides must be precision reamed to matched oversized valves. Make sure valves fit freely in guides.

Worn valve guides must be sized by knurling. Use knurling tool exactly as recommended by the manufacturer.

REFACING VALVES

Replace valve stem caps if worn or damaged.

INSPECTING VALVE SPRINGS

Check compression strength of springs.

INSPECTING ROCKER ARM ASSEMBLY

Make sure that rocker arm oil holes are not plugged.

If ends of arms are worn, resurface them.

Clean holes in rocker arm mounting brackets. This is especially important for the rear bracket, because it is through this hole that oil is fed to the rocker arm shaft.

If a valve has been replaced, the rocker arm and push rod for that valve may also have to be replaced.

ASSEMBLY

ROCKER ARM ASSEMBLY

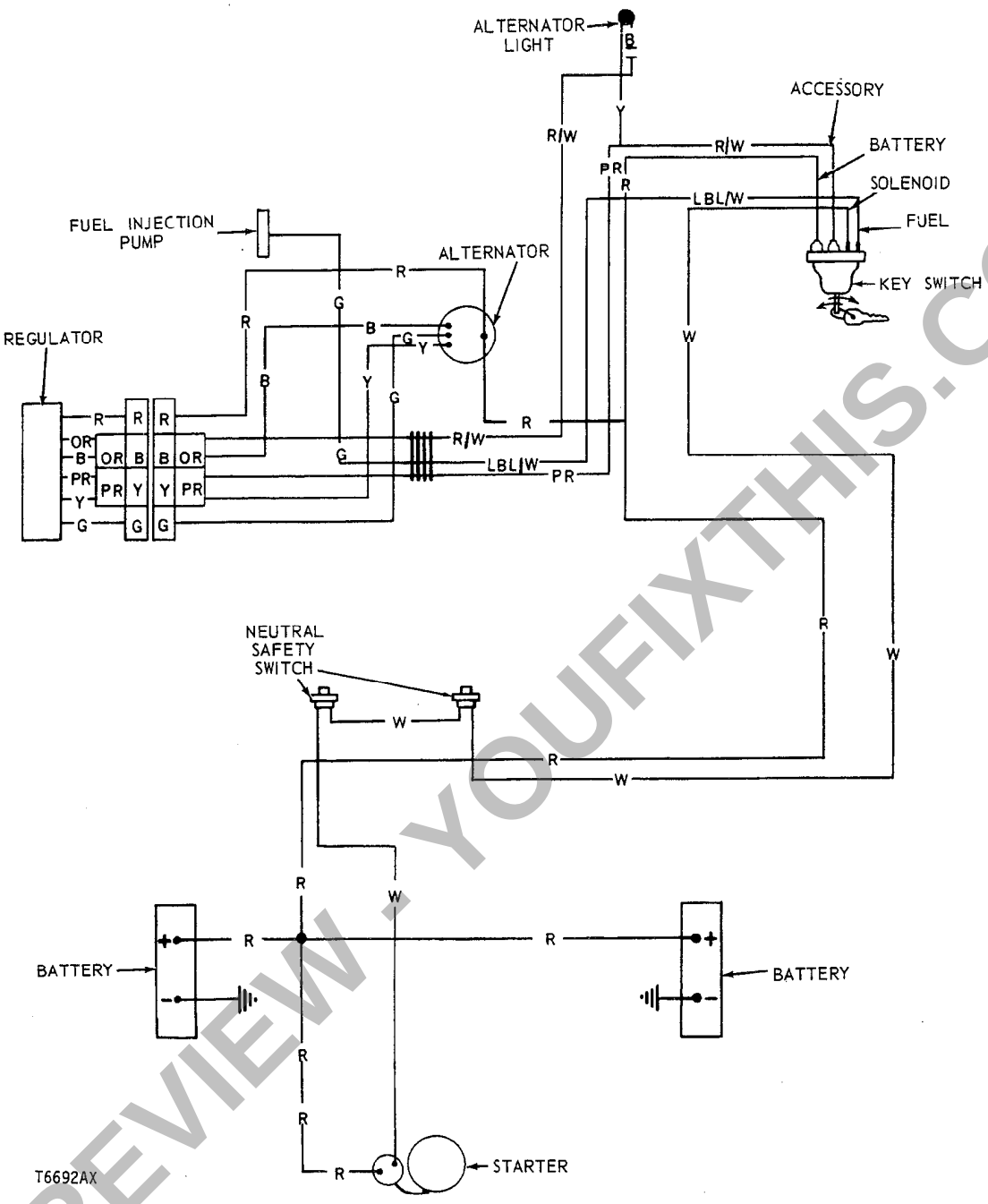
Assemble parts to rocker arm shaft in sequence that they were removed (Fig. 1).

Oil hole in rocker arm shaft to shaft support must face downward when assembly is installed on cylinder.

Apply John Deere Valve Stem Lubricant (AR44402) or an equivalent to valve stems and install valves in valve guides, working them back and forth to make sure they slip through the ports easily and seat properly. Be sure to use new valve retainer locks (9, Fig. 1).

After assembly, "pop" each spring and valve assembly three or four times by tapping the end of each valve stem with a soft mallet.

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WIRING COLOR CODE

B	- BLACK	OR/B	- ORANGE AND BLACK
BR	- BROWN	P/B	- PINK AND BLACK
BR/W	- BROWN AND WHITE	PR	- PURPLE
DBL	- DARK BLUE	PR/W	- PURPLE AND WHITE
DG	- DARK GREEN	R	- RED
G	- GREEN	R/W	- RED AND WHITE
LBL	- LIGHT BLUE	T	- TAN
LBL/W	- LIGHT BLUE AND WHITE	W	- WHITE
LG	- LIGHT GREEN	Y	- YELLOW
LG/W	- LIGHT GREEN AND WHITE	Y/B	- YELLOW AND BLACK
OR	- ORANGE		U 6160

Fig. 8–Starting and Charging Circuits
(12-Volt Batteries Connected in Parallel)
Engine Ser. No. (-130705)

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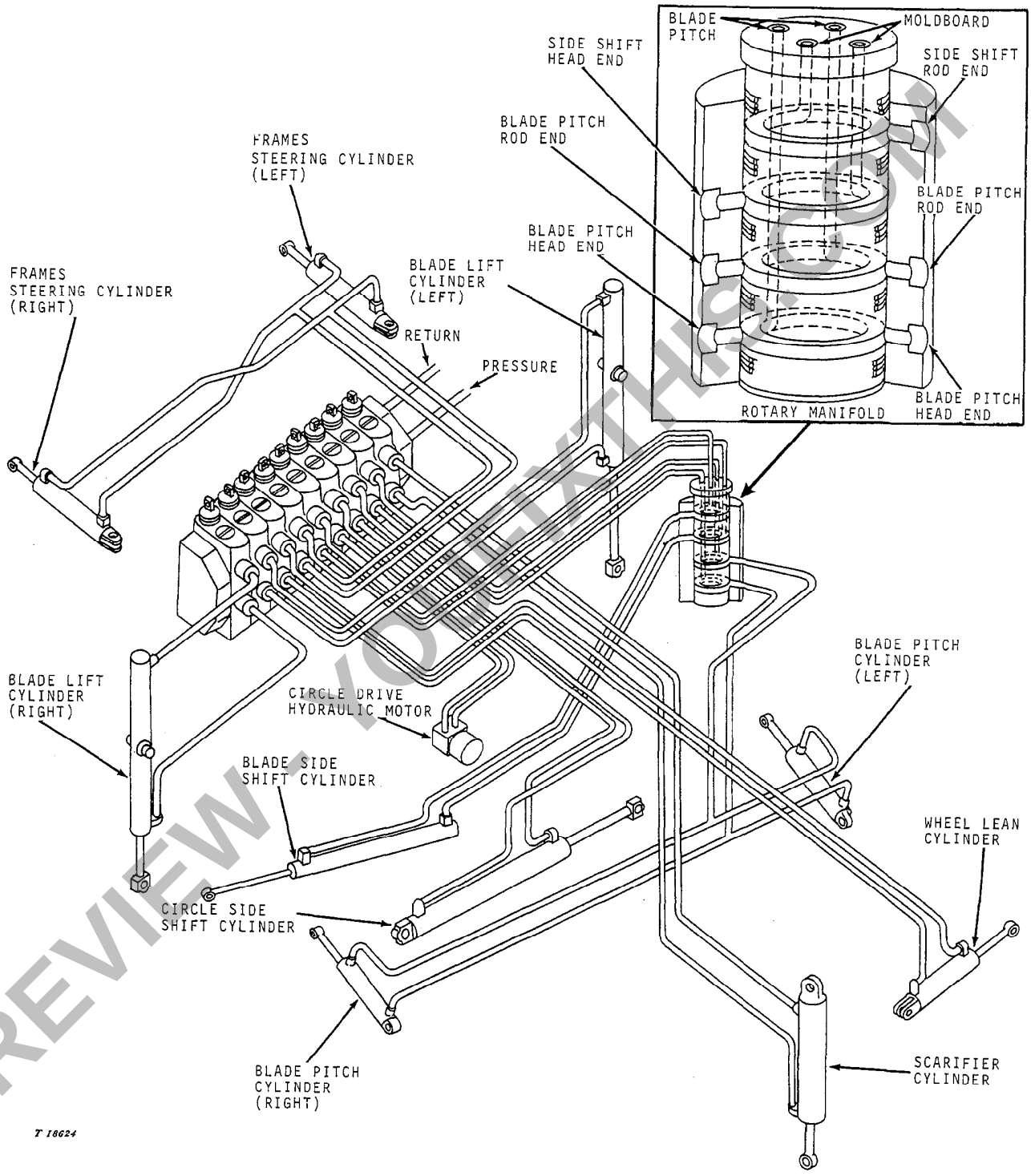
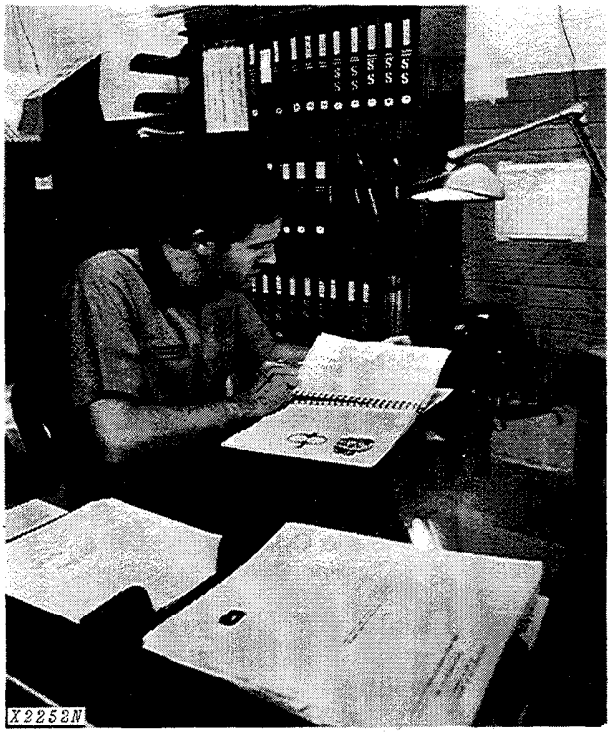


Fig. 2–Grader Functions Hydraulic System Circuit

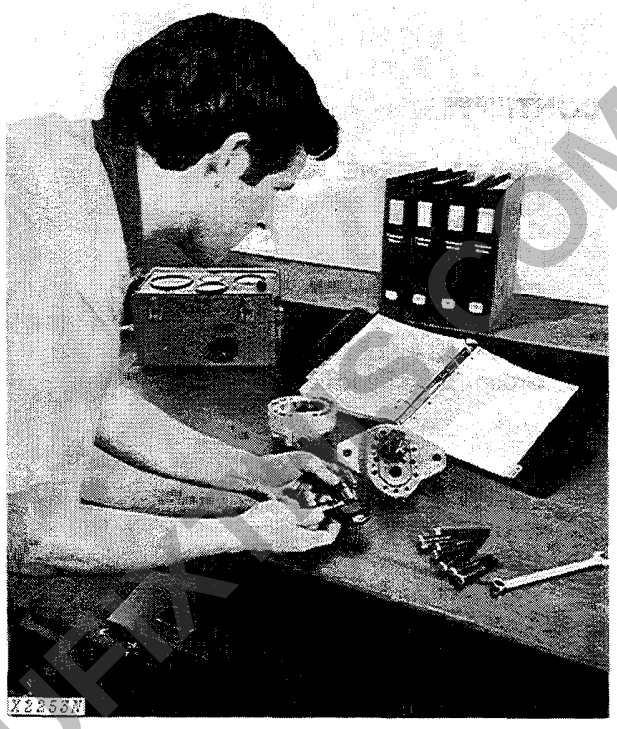
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INTRODUCTION



Use FOS Manuals for Reference



Use Technical Manuals for Actual Service

This technical manual is part of a twin concept of service:

The two kinds of manuals work as a team to give you both the general background and technical details of shop service.

- **FOS Manuals—For Reference**

Fundamentals of Service (FOS) Manuals cover *basic* theory of operation, *fundamentals* of trouble shooting, *general* maintenance, and *basic* types of failures and their causes. FOS Manuals are for training new personnel and for reference by experienced personnel.



When a service technician should refer to a FOS Manual for more information, a FOS symbol like the one at the left is used in the TM to identify the reference.

- **Technical Manuals—For Actual Service**

Technical Manuals are concise service guides for a *specific* machine. Technical Manuals are on-the-job guides containing only the vital information needed by an experienced service technician.

This technical manual was planned and written for you—an experienced service technician. Keep it in a permanent binder in the shop where it is handy. Refer to it whenever in doubt about correct service procedures or specifications.

Some features of this technical manual:

- *Table of contents at front of manual*
- *Exploded views showing parts relationship*
- *Photos showing service techniques*
- *Specifications grouped for easy reference*

Using the technical manual as a guide will reduce error and costly delay. It will also assure you the best in finished service work.

This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

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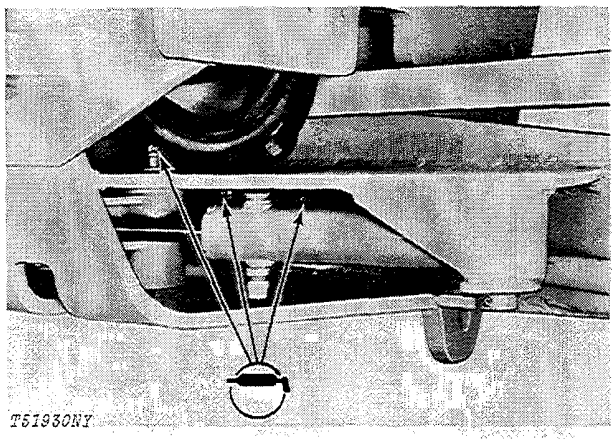


Fig. 71-Steering Arms (3 points)

Lubricant required Yes No

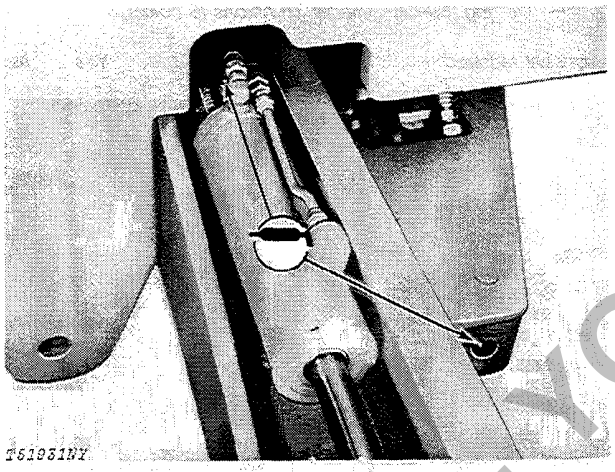


Fig. 72-Wheel Lean Cylinder and Pivot (2 points)

Lubricant required Yes No



Fig. 73-Front Wheels (2 points)

Lubricant required Yes No

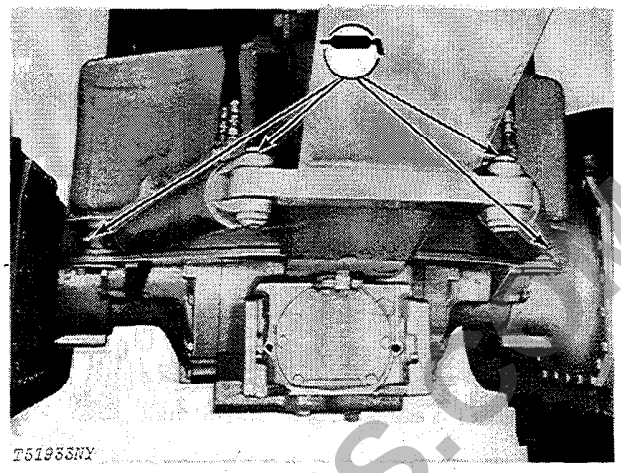


Fig. 74-Steering Cylinders (4 points)

Lubricant required Yes No

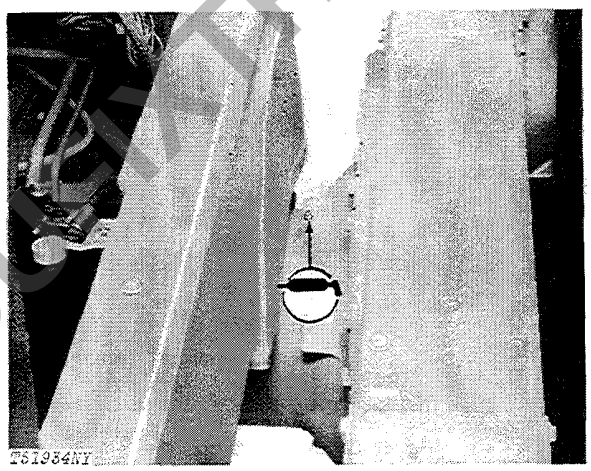


Fig. 75-Rear Axle Bearings (2 points)

Lubricant required Yes No

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SPECIFICATIONS

Item	Specification
RADIATOR	
Coolant capacity	7-1/2 U.S. gallons
Radiator cap relief pressure	6-1/4 to 7-1/2 psi
Thermostat	195°F
WATER PUMP	
Distance between impeller fins and rim of pump	Flush (± 0.010-inch)
Fan surface on pulley to rear surface of pump housing (without rear plate or gasket)	6.63 inch
OIL COOLER (External)	
Relief valve setting	12 to 15 psi

TORQUE VALUES

Item	Torque (lb-ft)
Fan-to-pulley	35
Thermostat cover and housing	20
Water pump rear cover	35
Oil cooler nipple	20 to 25

SPECIAL TOOLS

No.	Name	Use
ESSENTIAL TOOLS		
JD-262A	Driver	To remove and install water pump bearing.

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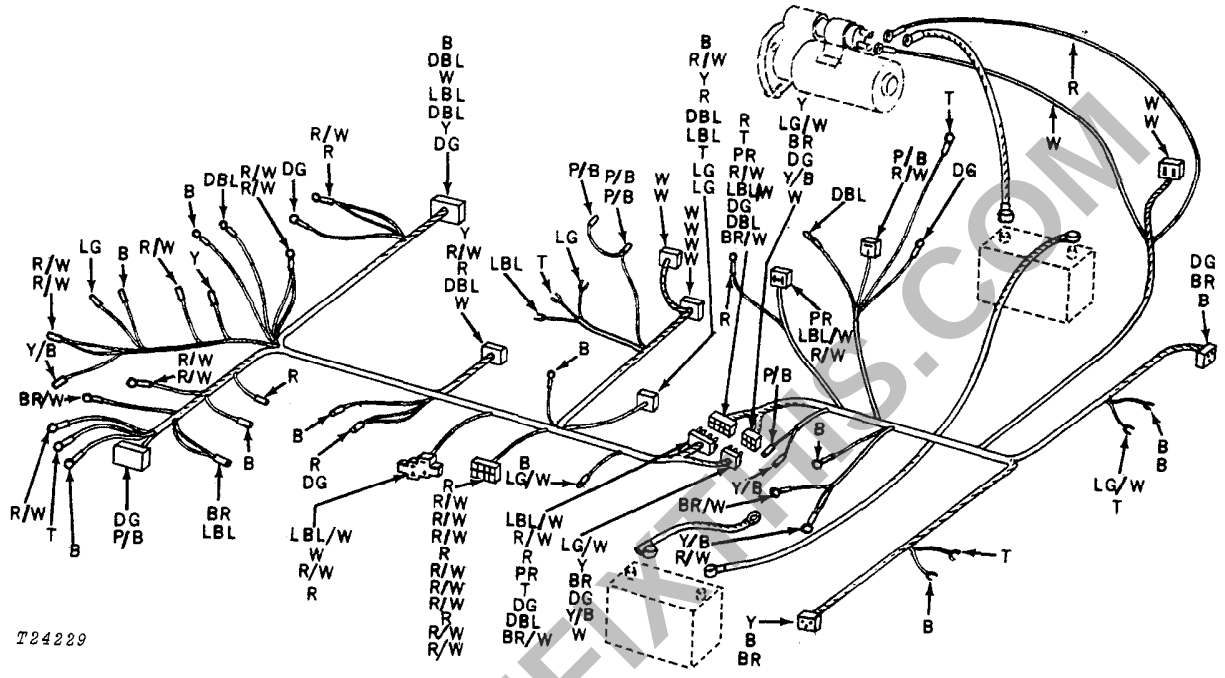


Fig. 2–Main Wiring Harness – Two-Piece Type (Used Above Unit Serial Number 000681)

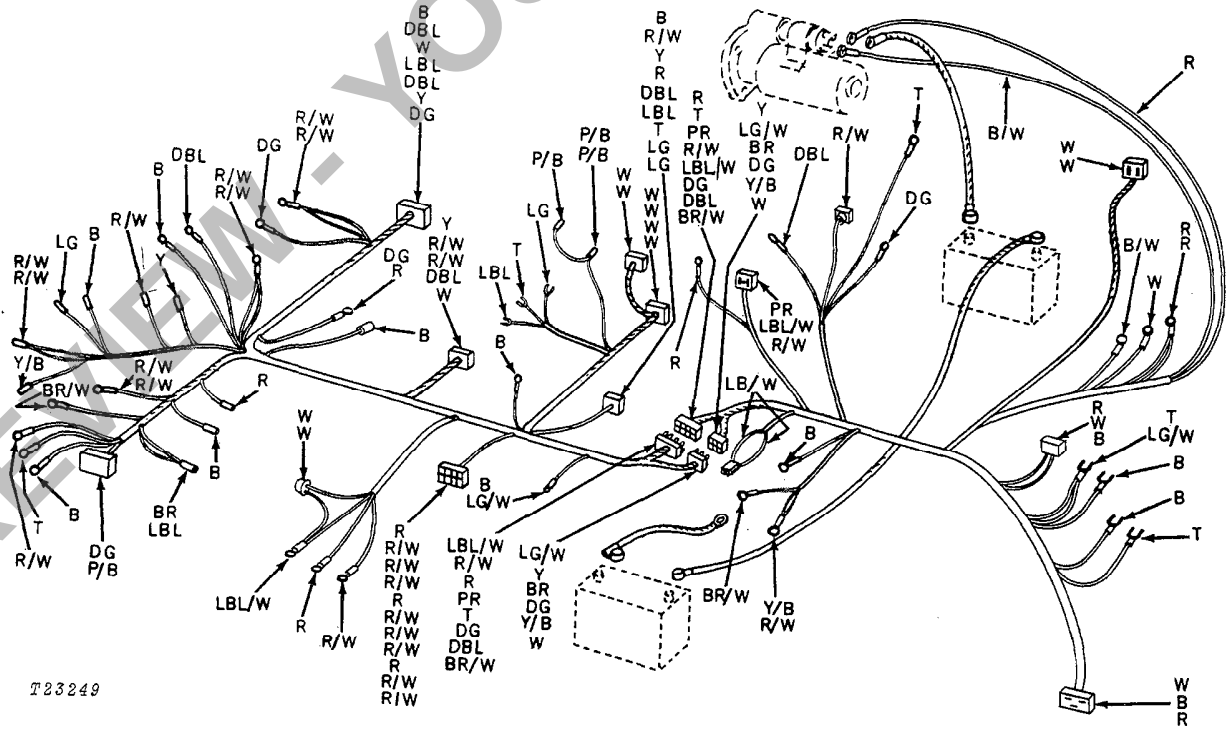


Fig. 3–Main Wiring Harness – Two-Piece Type (Used Above Unit Serial Number 001699)

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DANGERS WITH BATTERIES

Gas from battery electrolyte is flammable; keep away from all sparks or fires.

Disconnect battery negative (-) ground straps when working on any part of the electrical system or engine to avoid injury from sparks or a short circuit.

Disconnect battery cables from positive (+) terminals before quick charging batteries on the grader. Failure to do so may burn out the alternator diodes or the regulator.

TESTS AND DIAGNOSIS

The electrical system in this unit is negatively grounded. When servicing the battery or components, disconnect the negative ground terminal first.

LIGHT LOAD TEST

Do not make light load tests on batteries with one-piece cell covers as this will damage the cover.

Inspect the battery visually. Add distilled water to bring electrolyte to its proper level.

Remove battery surface charge by operating starter for three seconds (150-ampere load if battery is off the unit). Prevent engine starting by disconnecting injection pump shut-off.

Turn grader lamps on for one minute (10-ampere load if battery is off the machine).

After one minute and with lights still on, check individual cell voltages of the battery with an expanded scale voltmeter (calibrated one-hundredths of a volt).

On a good battery, sufficiently charged, the voltmeter will read 1.95 volts or more, and the difference between the highest and lowest cell will be less than 0.05 volt.

Readings above and below 1.95 volts and with a difference between cells of less than 0.05 volt indicate a good battery that needs charging.

If any cell reads 1.95 volts or more and there is a DIFFERENCE of 0.05 volt or more between the highest and lowest cell, the battery is probably defective.

If all cells test below 1.95 volts, the battery charge condition is too low for this test. Boost-charge the battery by placing it on a charger at 60 amperes for 30 minutes and repeat the test.

Disconnect positive battery terminals when charging batteries in the grader.

If charger will not charge 60 amperes, charge at the highest rate available until battery has been charged 1,800 ampere-minutes. For example, highest charger rate is 40 amperes; then charge battery at 40 amperes for 45 minutes (40 amperes x 45 minutes equal 1,800 ampere-minutes).

SPECIFIC GRAVITY CELL COMPARISON TEST

Use this test only on batteries having one-piece cell covers. Measure specific gravity of each cell, regardless of state of charge.

If specific gravity readings show a difference between the highest and lowest cell of .050 (50 points) or more, the battery is defective and must be replaced.

If the maximum difference between cell readings is less than .050 (50 points) and the lowest cell reading is 1.200 or above, corrected for temperature, the battery is in good condition and may be returned to service.

If the maximum difference between cell readings is less than .050 (50 points) but the lowest cell reading is below 1.200, the battery is good but needs to be charged by the slow charge method.

CONNECTING BATTERIES

With key and light switch "OFF" and positive terminals of batteries connected, tap the negative battery strap to negative battery terminal. No arcing should occur. If arcing occurs, do not make the connection. Check wiring system for loose and corroded connections. Repeat the test.

Never attempt to polarize the alternator. To do so may damage it.

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If starter has an AR66778 Armature (Fig. 22), install armature without bakelite washer or thrust washers. It is not necessary to check end play of AR66778 Armature.

Tighten drive end housing bolts to 10 ft-lbs.

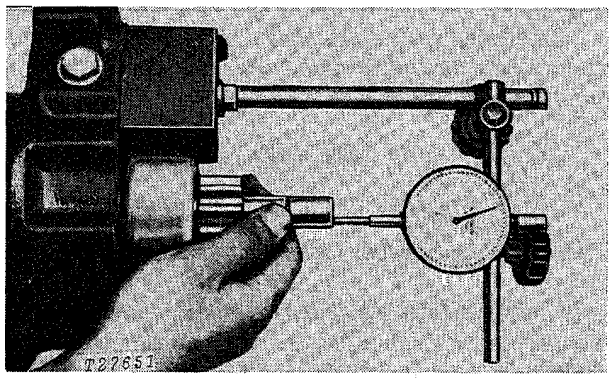
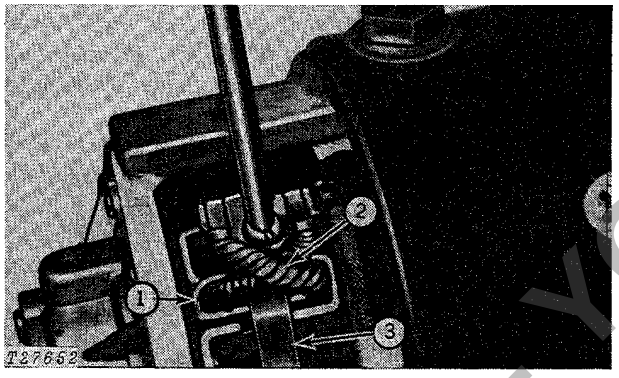


Fig. 23–Checking Armature End Play



1 – Brush
2 – Brush Leads
3 – Brush Spring

Fig. 24–Brush Installation

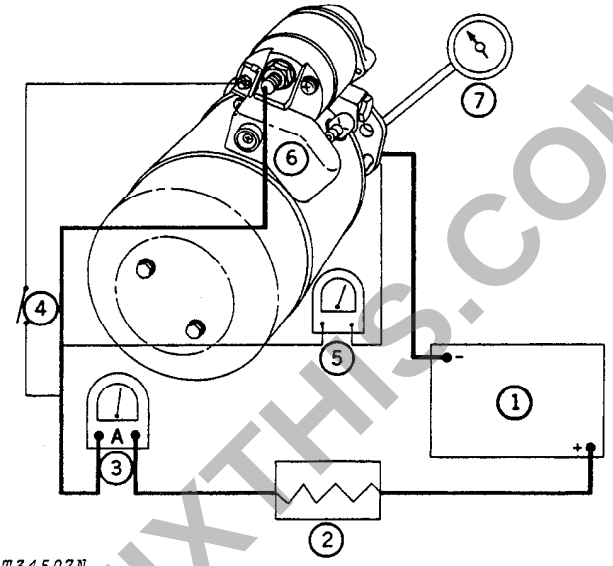
When installing the brushes, twist brush leads 180 degrees (Fig. 24). Press the leads of the insulated brush down against the brush.

Give the assembled starter a no-load test. Solenoid action during the test should be satisfactory.

NO LOAD TEST (After Assembly)

Connect a fully charged 12 volt battery with a reserve capacity rating of 290 minutes, rheostat, ammeter, control switch, voltmeter and tachometer to starting motor as shown in Fig. 25.

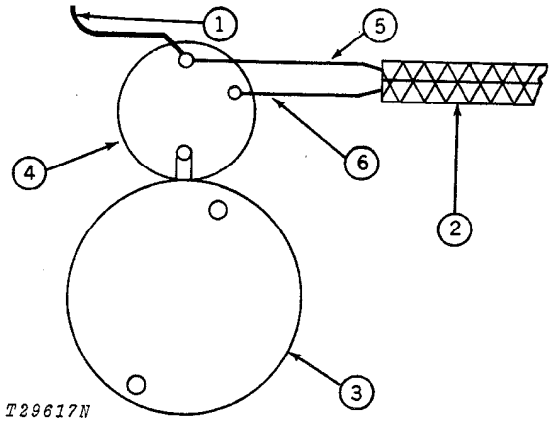
Starting motor should rotate smoothly at a constant speed of at least 3,100 rpm at 11.7 volts with a current draw of less than 110 amperes.



1 – Battery
2 – Rheostat
3 – Ammeter
4 – Control Switch
5 – Voltmeter
6 – Starting Motor
7 – Tachometer

Fig. 25–No Load Test (After Assembly)

INSTALLATION



1 – Positive Starter Cable
2 – Wiring Harness
3 – Starter
4 – Solenoid Switch
5 – Red
6 – White (Up to Serial No. 001700) Black and White (Serial No. 001700-Up)

Fig. 26–Starter Connections

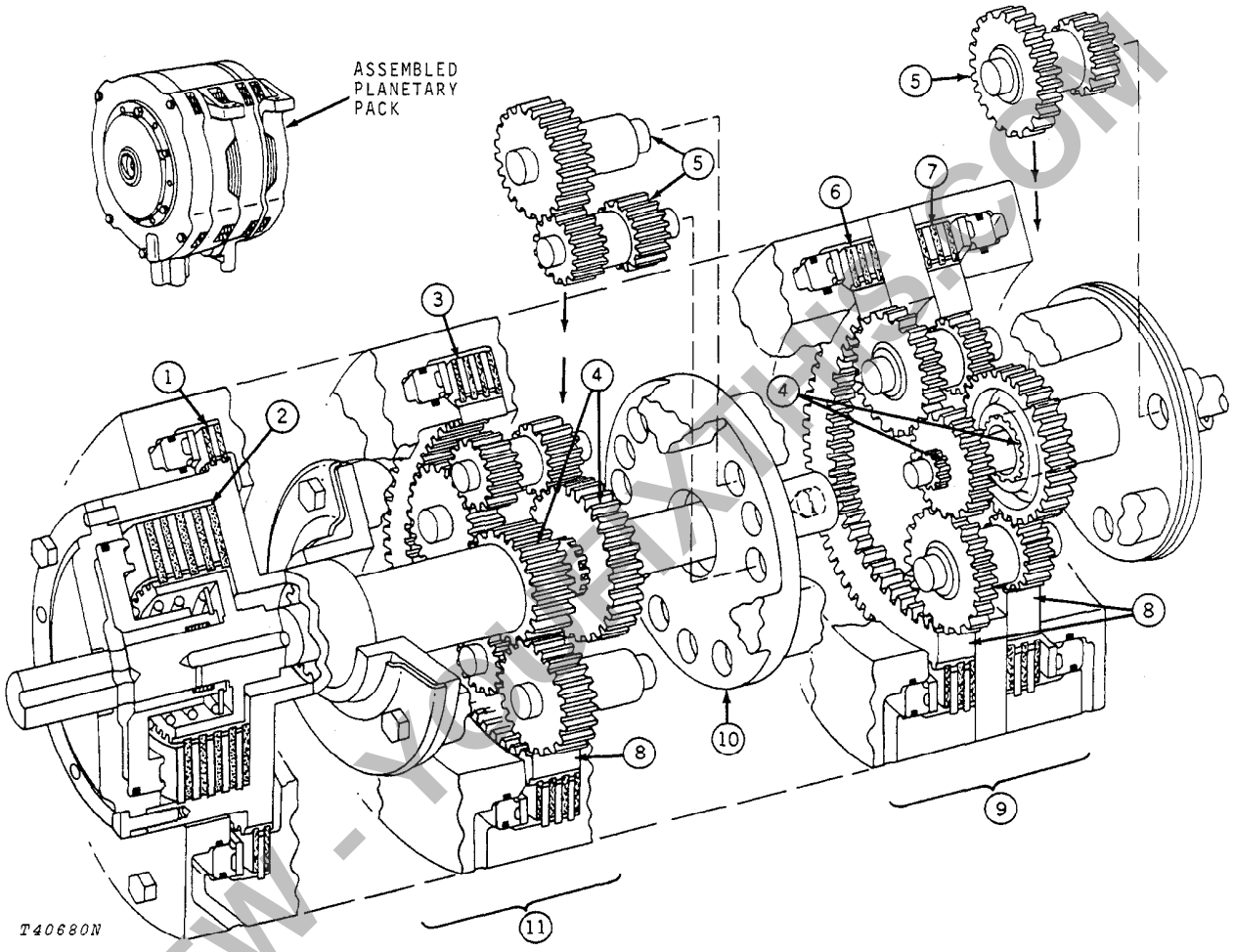
Install starter. Connect wiring harness and positive battery cable (Fig. 26).

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Planetary Pack



1—B4
2—C3
3—B3
4—Sun Pinions
5—Planet Pinions
6—B2
7—B1
8—Ring Gear
9—Compound Planetary Set
10—Planet Pinion Carrier
11—Overdrive and Reverse Planetary Set

Fig. 3-Planetary Pack

The planetary pack (Fig. 3) is mounted in the transmission case. It contains four planetary systems combined into two sets of two each. All the planet pinions are mounted on shafts in a single carrier which rotates as a solid unit.

Engine power from the clutch pack output shafts is transmitted by the planetary pack at different speeds and direction of rotation to the reduction gear train.

The planetary pack contains four disk-type brakes for the planetary systems as follows:

B1 - 1st planetary reduction brake
B2 - 2nd planetary reduction brake
B3 - Reverse brake
B4 - Overdrive brake

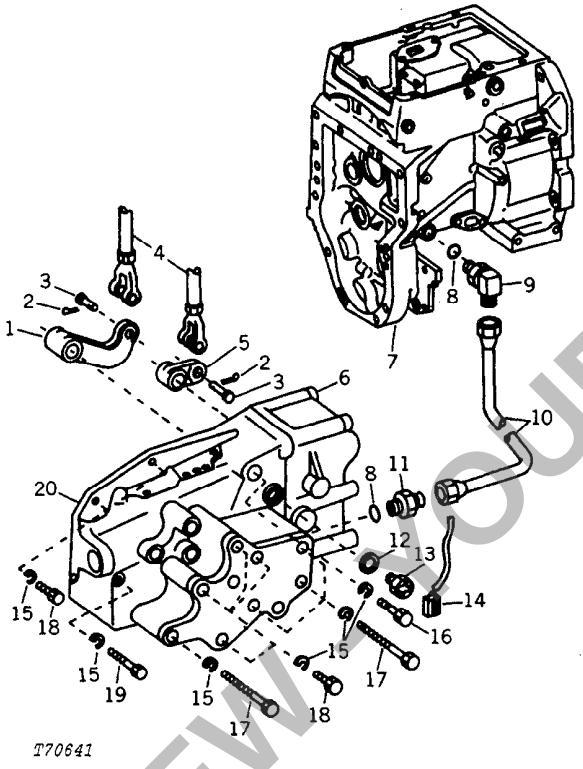
A clutch (C3) is provided for direct drive applications. This clutch operates independently of the clutches in the clutch pack.

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TRANSMISSION CONTROL VALVE ASSEMBLY

The transmission control valve assembly consists of the transmission control valve housing, accumulators, and shift valve housing, all of which are located on the left-hand side of the transmission case.

REMOVAL



1—Speed Selector Arm
2—Cotter Pin (2 used)
3—Pin (2 used)
4—Speed and Direction Cable (2 used)
5—Direction Selector Arm
6—Control Valve Cover
7—Clutch Housing
8—O-Ring (2 used)
9—Elbow, 90°
10—Tube
11—Connector
12—Special Washer
13—Neutral Start Switch
14—Wiring Harness
15—Lock Washer (12 used)
16—Cap Screw, 3/8 x 3-1/4
17—Cap Screw, 3/8 x 6-1/4 (4 used)
18—Cap Screw, 3/8 x 1-1/4 (6 used)
19—Cap Screw, 3/8 x 3
20—Housing

Fig. 22-Transmission Control Valve (JD570A)

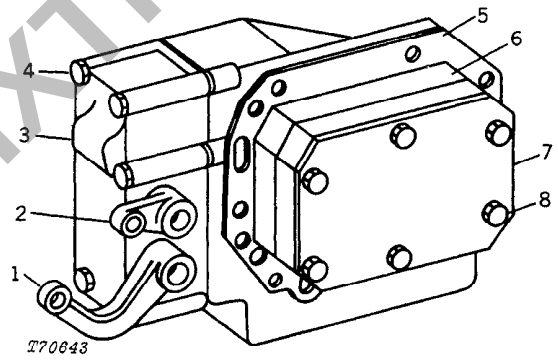
Disconnect harness (14, Fig. 22) from neutral start switch (13).

Remove cotter pins (2) and pins (3) from speed selector arm (1) and direction selector arm (5) and disconnect cables (4).

Disconnect oil tube (10) from control valve (20) and clutch housing (7) and remove tube.

Remove necessary cap screws.

Remove control valve.



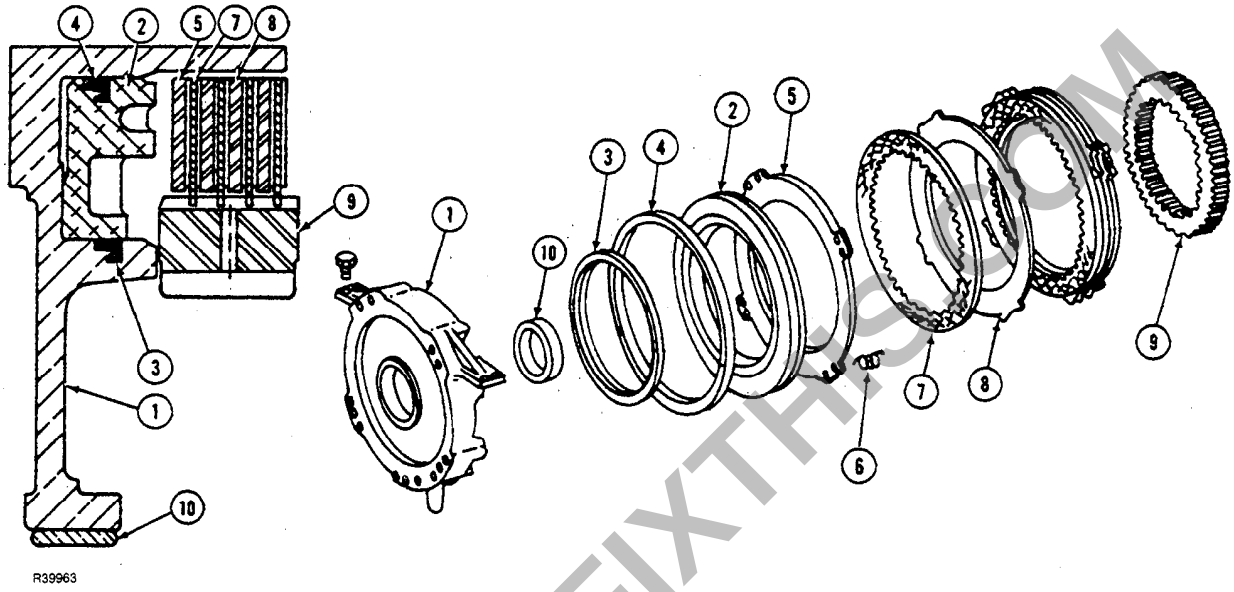
1—Speed Selector Arm
2—Direction Selector Arm
3—Cover
4—Cap Screw (5 used)
5—Gasket
6—Shift Valve Housing
7—Cover
8—Cap Screw (6 used)

Fig. 23-Transmission Control Valve Removed

Remove cap screws (4, Fig. 23) to remove cover assembly. See Transmission Control Valve Cover Assembly in this group to disassemble and assemble cover.

Remove cap screws (8) to separate shift valve housing (6) from control valve.

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1—B3 Housing
2—Piston
3—Inner Seal
4—Outer Seal
5—Piston Return Plate
6—Springs (8 used)
7—Disks Inner Splined (4 used)
8—Separator Plates (3 used)
9—Ring Gear
10—Bushing

Fig. 47-B3 Planetary Pack

Remove parts in the order they are numbered.

B3 PLANETARY PACK SPECIFICATIONS

Item	Measurement	Specification
Piston Return Plate	Thickness (New)	0.117—0.123 in.
Return Spring	Free Length (approx.) Test Length at 22.5—27.5 lb force	1.0 in.
Disks Inner Splined (4 used)	Thickness (New)	0.117—0.123 in.
Separator Plates (3 used)	Thickness (New)	0.117—0.123 in.

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Adjusting Pedal Valve

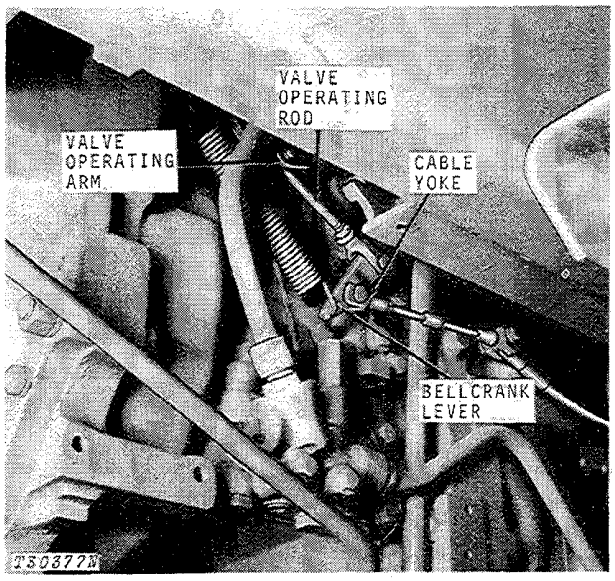


Fig. 62-Pedal Valve Adjustment

Remove return spring from the bell crank lever and disconnect the cable yoke (Fig. 62). Rotate both the valve operating arm and the bell crank lever counterclockwise until they hit the stops.

With the operating arm and the bell crank lever against the stops, adjust the yoke on the operating arm so that the hole in the yoke aligns with the hole in the bell crank lever. Then turn yoke 1/2 turn counterclockwise to lengthen the rod.

Replace the return spring and block the clutch pedal in its uppermost position. Adjust the yoke on the cable to connect cable to the bell crank lever.

IMPORTANT: Insure that the clevis from the clutch cable at the transmission is pinned into the lower hole in the bell crank lever. Position the clevis from the valve operating rod in the upper hole. Refer to Fig. 62.

Be sure to tighten jam nuts against the yokes.

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SPECIFICATIONS

STEERING VALVE (Units with Serial Nos. up to 001440, 001442-001446, 001451-001469, and 001476-002365)

Item	New Part	Tolerance
O.D. steering valve piston	3.370 to 3.372 in.	---
I.D. steering valve cylinder	3.3740 to 3.3770 in.	---
O.D. piston rod	1.1220 to 1.1230 in.	---
I.D. cylinder cover piston rod	1.126 to 1.128 in.	---
O.D. control valves	0.7480 to 0.7490 in.	---
I.D. control valve bore in valve housing	0.750 to 0.752 in.	---
I.D. steering shaft bushing - installed	0.880 to 0.884 in.	0.003 in.
O.D. steering shaft at bushing	0.874 to 0.876 in.	---
Included angle of control valve	100°	---
Included angle of control valve seat	90°	---
O.D. steering shaft at oil seal	0.874 to 0.876 in.	---

Steering valve operating shaft spring (test length)	90 to 110 lbs at 3/4 in.
Steering valve operating bearing race spring (test length)	153 to 187 lbs at 9/16 in.
Dowels protruding from surface of cylinder	1/8 in.
Synchronizing valve position in housing with centerline of piston rod horizontal to ground	One o'clock
Distance between valve operating shaft nut and piston rod collar	1/8 in.
Steering valve operating lever shaft maximum end play	0.003 in.

STEERING VALVE (Units with Serial Nos. 001441, 001447-001450, 001470-001475, and 002366-)

Item	Specification
Valve leakage (with oil at 150°F., cylinders against stops, and 60-in-lbs applied to steering shaft)	1.5 revolutions per minute maximum.
Steering cylinder rod travel with steering valve in neutral position	1.50 inches maximum.

ADJUSTMENT

(Units with Serial Nos. up to 001440, 001442-001446, 001451-001469, and 001476-002365)

Valve operating shaft (fore and aft movement) . . . 0.060 in. (0.030 in. either way from center)
Specifications sequence for adjusting steering control valves:

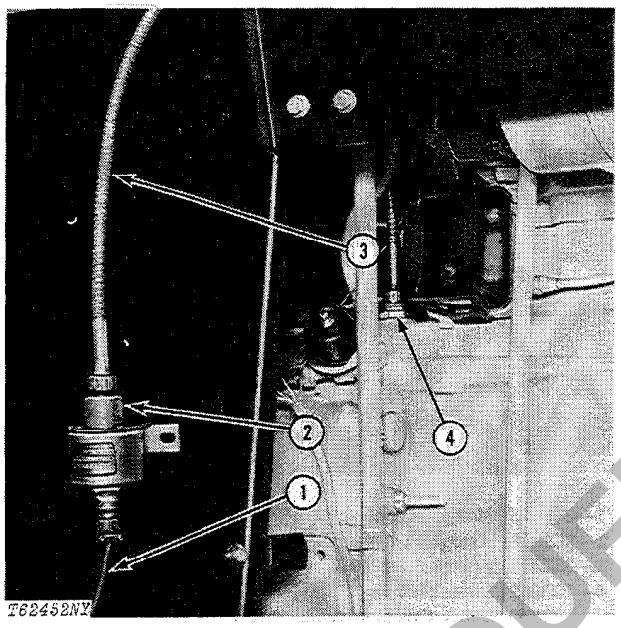
Adjusting screw location with valve operating collar on top	Valve operating lever movement measured on adjusting screw
Upper left	0.0030 ± 0.0005 in.
Upper right	0.0010 ± 0.0005 in.
Lower right	0.0030 ± 0.0005 in.
Lower left	0.0010 ± 0.0005 in.

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TESTING AND ADJUSTMENT

SYSTEM TEST (JD570-A ONLY)

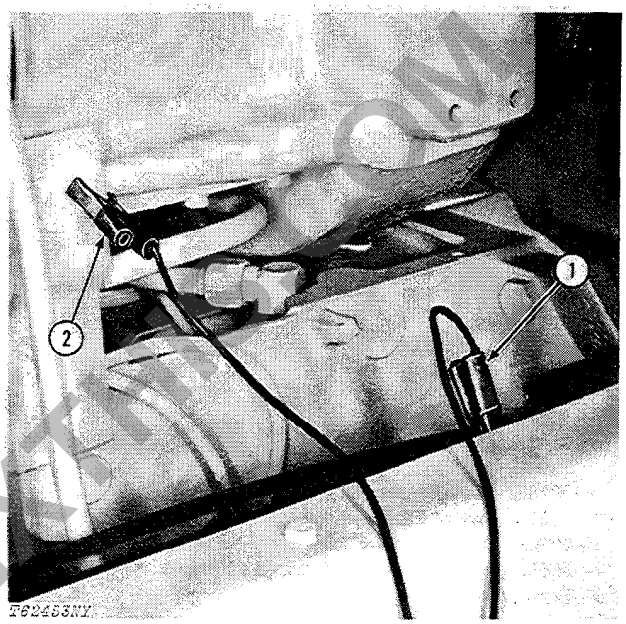


1—Power/RPM Cable
2—Tachometer Generator
3—Tachometer Drive Cable
4—Tachometer Drive

Fig. 3-Tachometer Generator Hookup

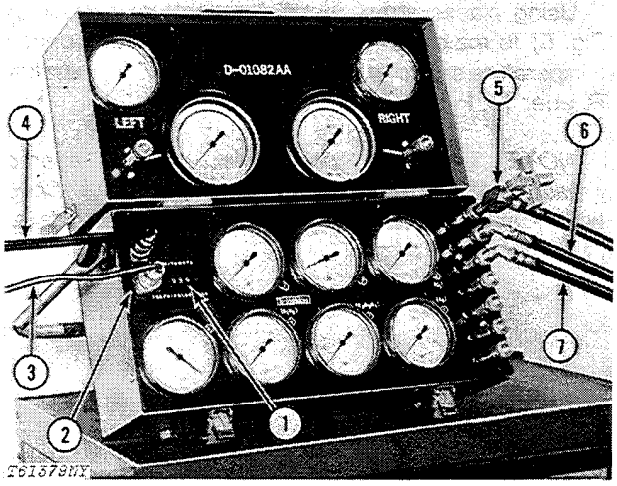
Install tachometer generator (2, Fig. 3) and drive cable (3) to tachometer drive (4) on engine.

Connect power/rpm cable (1) to tachometer generator and Tachometer/Temperature Reader (2, Fig. 5). Set thumb dials (1) to read 030. Attach red clip (1, Fig. 4) to positive post on battery and black clip (2) to ground on engine frame.



1—Red Clip, Positive Post
2—Black Clip, Ground

Fig. 4-Electrical Hookup



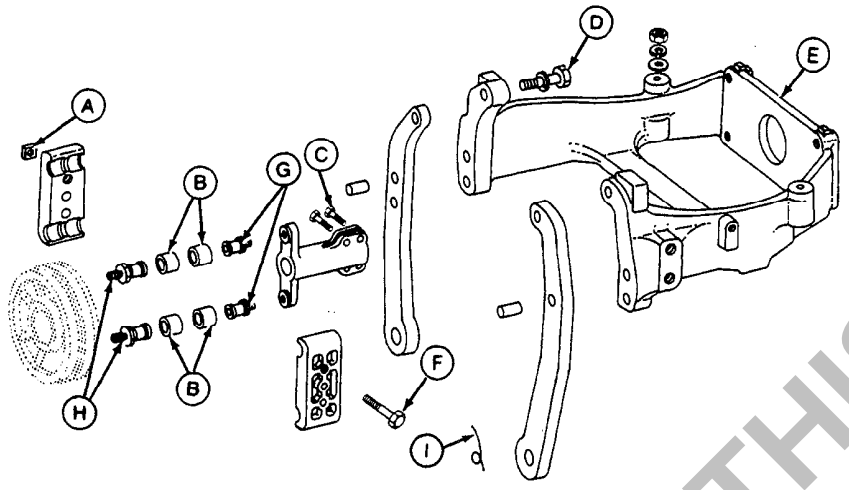
1—Thumb Dials
2—Tachometer/Temperature Reader
3—Temperature Sensor Cable
4—Power/RPM Cable
5—Pump Outlet Pressure
6—Pump Inlet Pressure
7—Transmission Pump Outlet Pressure

Fig. 5-Hydraulic Analyzer

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HYDRAULIC PUMP DRIVE AND ENGINE SUPPORT (Serial No. -010078)



T6680AP

A—Lock Nut (2 used)
B—Bushing (4 used)
C—Cap Screw (2 used)
D—Cap Screw (4 used)
E—Support
F—Cap Screw (2 used)
G—Special Screw (2 used)
H—Special Screw (2 used)
I—Locking Wire (Early Units)

Fig. 1-Pump Drive and Engine Support

REMOVAL

Remove main hydraulic pump.

Refer to Fig. 1 to disassemble.

REPAIR

Inspect all parts for wear or damage. Replace parts as necessary.

INSTALLATION

If support (E, Fig. 1) is removed, install on unit. Tighten pump support cap screws (D) to 85 lb-ft.

Apply two to three drops of T43513 John Deere Thread Lock and Sealer (High Strength) or an equivalent to special screws (G). Tighten to 35 lb-ft.

Tighten special screws (H) to 75 lb-ft.

Loosley install hydraulic pump on pump support. Install pump drive shaft on hydraulic pump shaft. Then tighten hydraulic pump-to-pump support screws to 85 lb-ft.

Install bushings (B) on special screws (G and H), and position coupler halves on bushings.

Adjust pump drive shaft to relieve any axial strain on bushings.

IMPORTANT: There must be a minimum clearance of 0.08 in. between the ends of the special screws (G and H).

Early Units — Tighten cap screws (F) to 25 lb-ft. Insert locking wire (I) through cap screw heads and tie ends of wire together.

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