Section 10
GENERAL

CONTENTS OF THIS SECTION

Page

GROUP 5 - SPECIFICATIONS
Machine Specifications 5-1
Dimensions 5-3
Serial Numbers 5-4

GROUP 10 - PREDELIVERY, DELIVERY, AND AFTER-SALE SERVICES
Predelivery Service 10-1
Delivery Services 10-3
After-Sale Services 10-4

GROUP 15 - TUNE-UP AND ADJUSTMENT
Preliminary Engine Testing 15-1
Engine Tune-Up 15-1
Tractor Tune-Up 15-2

Page

GROUP 20 - LUBRICATION
General Information 20-1
Lubrication Chart 20-1
Lubricants 20-2

GROUP 25 - SEPARATION
Removing and Installing
Operator's Station 25-1
Engine 25-4
Clutch Housing 25-6
Transmission 25-9
Scraper 25-10
Rear Axle Housing Assembly 25-11
Specifications 25-12

Group 5
SPECIFICATIONS

Horsepower (at 2200 rpm)
Net engine flywheel (at 500 ft. altitude and 85°F. temperature) 152

Engine
Type . . . . . Diesel, 6-cylinder, in-line, valve-in-head 4 stroke-cycle
Bore and stroke . . . . . 4-3/4 in. x 5 in.
Displacement . . . . . 531 cu. in.
Compression ratio . . . . . 16.5 to 1
Firing order 1-5-3-6-2-4

Fuel System
Type . . . . . Direct injection
Injection pump . . . . . Inlet metering distributor-type

Cooling System
Type . . . . . Pressurized with centrifugal pump
Engine temperature control . . . . . 2 thermostats

Engine Lubricating System . . . . . Force feed, pressurized, with full flow oil filter

Electrical System
Type . . . . . 12-volt with 55 amp. alternator and transistorized regulator
Batteries . . . . . two 6-volt, group 7D, tractor type, connected in series

Hydraulic System
Type . . . . . Closed-center, constant pressure, includes power steering, power brakes, scarifier and scraper functions

Steering
Type . . . . . Full power, hydrostatic type, provision for manual operation

Service Brakes
Tractor . . . . . Foot operated, wet-disk type, hydraulically actuated
Tractor . . . . . Hand emergency, hydraulically actuated shoe type
Scraper . . . . . Hand-lever or foot-operated, hydraulically actuated shoe type

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

Group 25
SEPARATION

REMOVING AND INSTALLING OPERATOR'S STATION

Remove left rear fender.

Disconnect line from emergency brake cylinder and from tee on panel in front of left rear fender. Remove line.

Loosen left-hand service brake bleed screw and depress brake pedal to discharge accumulator.

Remove muffler and hood.

Drain the engine cooling system.

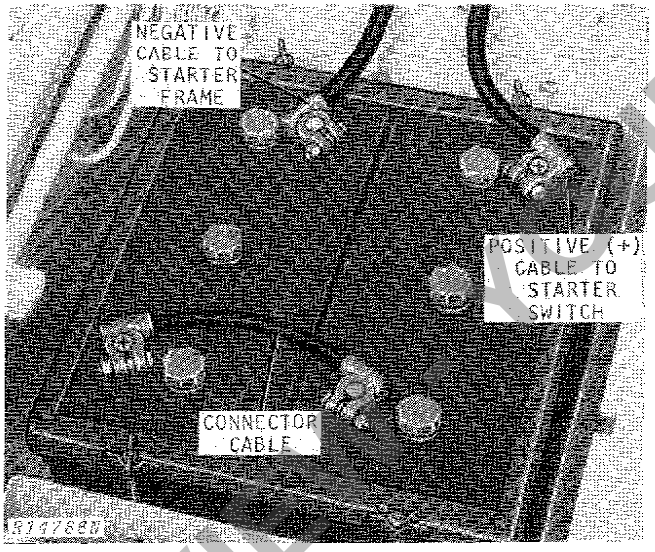


Fig. 1-Battery Connections

Remove seat.

Remove battery door.

Disconnect cables and remove batteries (Fig. 1). Remove battery cables from operator's station.

Disconnect tachometer cable, heat indicator tube, and steering lines (Fig. 2).

Remove disconnect clutch pedal and left-hand engine cover.

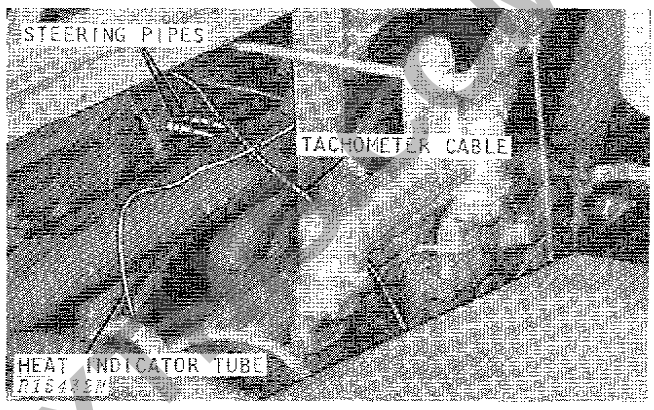


Fig. 2-Steering Lines, Tachometer Cable, and Heat Indicator Tube

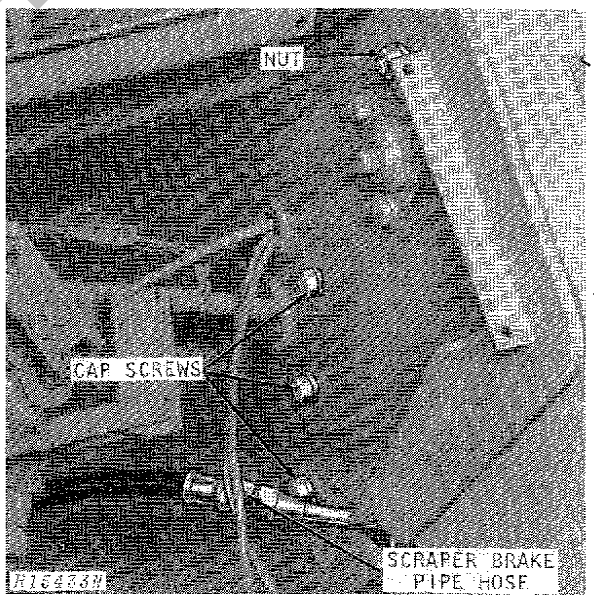
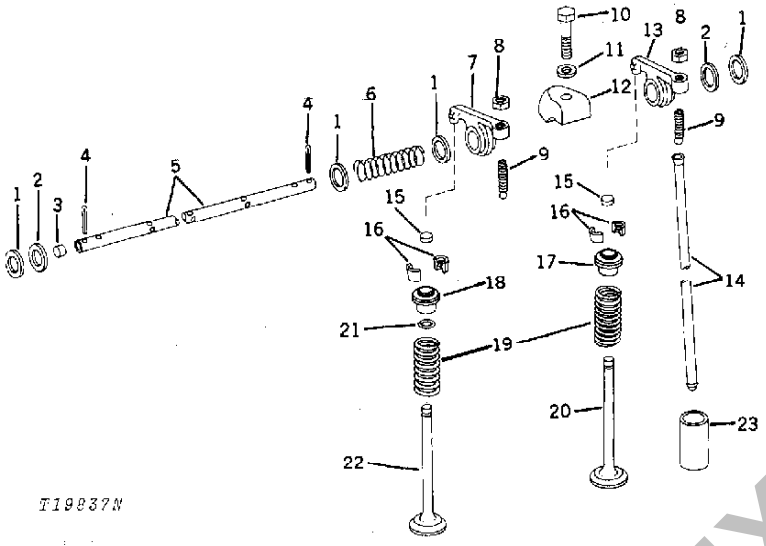


Fig. 3-Scraper Brake Hose, Cap Screws, and Nut (Instrument Panel Removed for Illustration Purposes)

Remove lower instrument panel cover. Disconnect hose from scraper brake line and remove cap screws and nut securing upper station to control support (Fig. 3).

Download full manual at youfixthis.com

CYLINDER HEAD, VALVES, AND ROCKER ARMS



1-Washer (12 used)
2-Spring Washer (2 used)
3-Plug (2 used)
4-Cotter Pin (2 used)
5-Rocker Arm Shaft
6-Spring (5 used)
7-Rocker Arm (Intake - 6 used)
8-Nut (12 used)
9-Adjusting Screw (12 used)
10-Cap Screw (6 used)
11-Washer (6 used)
12-Clamp (6 used)
13-Rocker Arm (Exhaust - 6 used)
14-Push Rod (12 used)
15-Valve Stem Cap (12 used)
16-Retainer Lock (24 used)
17-Exhaust Valve Rotator (6 used)
18-Intake Valve Spring Cap (6 used)
19-Valve Spring (12 used)
20-Exhaust Valve (6 used)
21-O-Ring (6 used)
22-Intake Valve (6 used)
23-Cam Follower (12 used)

Fig. 1-Rocker Arm Assembly

REMOVAL

Remove battery ground straps.

The engine need not be removed to service cylinder head, valves, and related parts.

Identify all parts during removal for reassembly.

Remove rocker arm assembly (Fig. 1) from head. Plug all open injection lines. Remove injection nozzles from head. (Nozzle tips extend below face of cylinder head and may be accidentally damaged.)

Do not rotate crankshaft with cylinder head removed unless all cylinder liners are secured with cap screws and washers.

REPAIR

Cylinder Head

FOS

Clean carbon from cylinder head and inspect for damage. See "Basic Engine" in FOS Manual - ENGINES.

Check to determine if cylinder head is flat and smooth. If it is necessary to resurface the bottom deck of the head, remove no more material than absolutely necessary (not to exceed 0.030 inch).

Check distance from the bottom deck of the cylinder head to the valves when seated. The distance for intake valves must be 0.047 to 0.061 inch, the distance for exhaust valves must be 0.087 to 0.101 inch.

If seats are not repairable use JDE-77 Seat Puller to remove seats being careful not to damage cylinder head. Use JDE-72 and JDE-73 Valve Seat Driver Set to install new seats. Chill both inserts and drivers in dry ice before installing inserts.

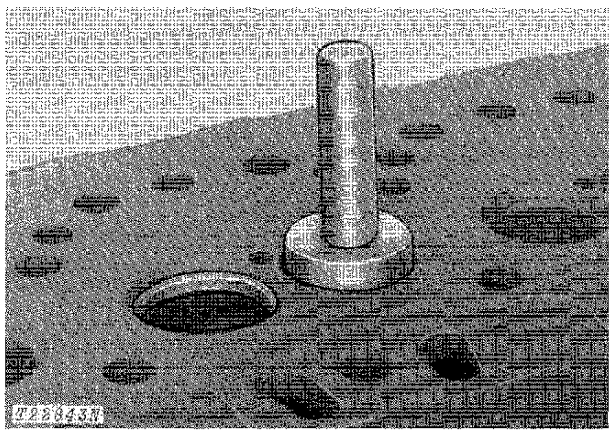
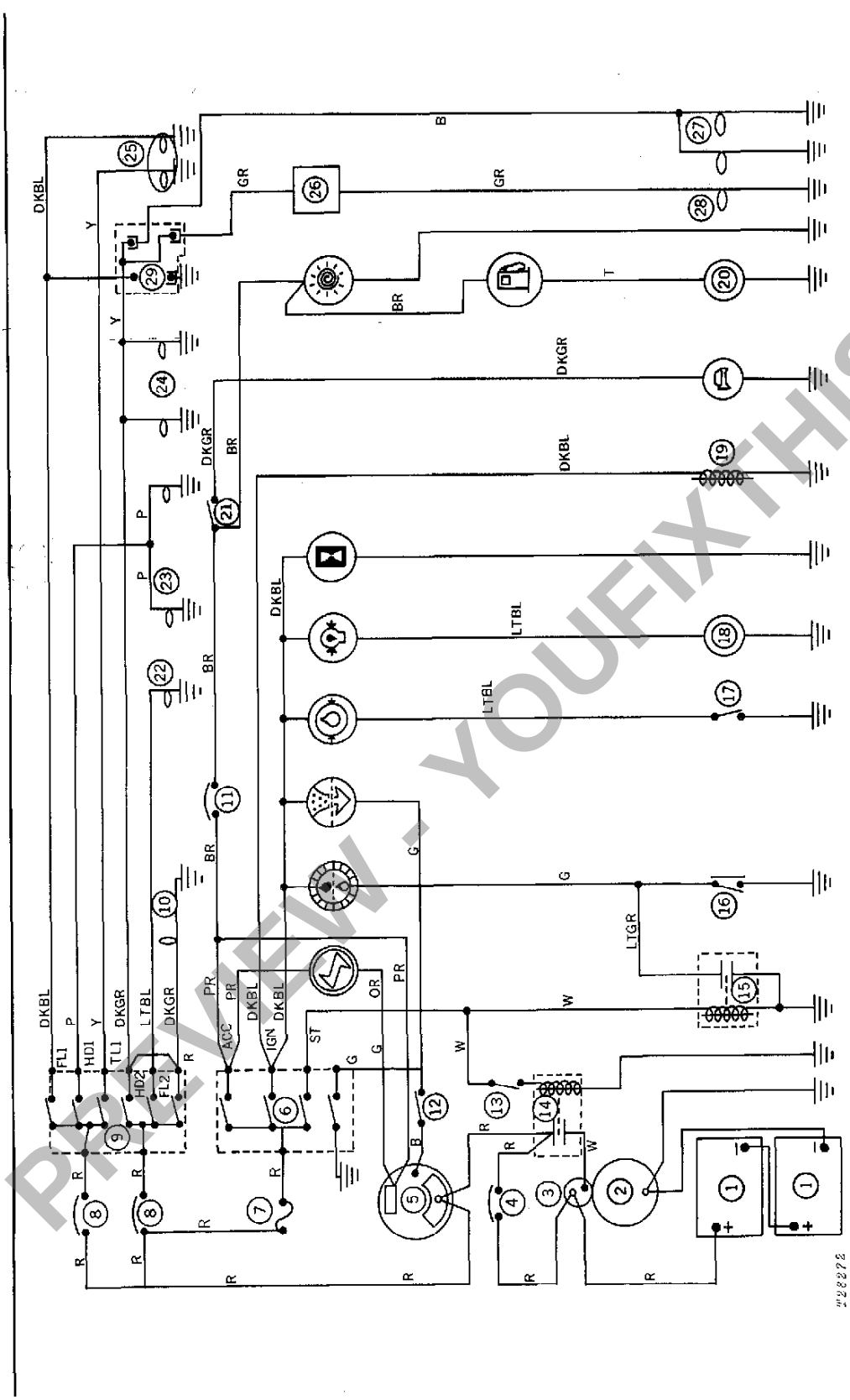


Fig. 2-Installing Valve Seat Inserts

Litho in U.S.A.

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com



1 - Batteries
2 - Starting Motor
3 - Solenoid
4 - Main Circuit Breaker
5 - Alternator
6 - Ignition Switch
7 - Fuse
8 - Circuit Breaker (2 used)
9 - Light Switch
10 - Tachometer Light
11 - Accessory Circuit Breaker
12 - Air Restriction Switch
13 - Starter Safety Switch
14 - Starter Relay
15 - Tran. Filter Relay
16 - Tran. Oil Pressure Switch
17 - Engine Oil Pressure Switch
18 - Engine Oil Pressure Gauge Sender
19 - Injection Pump Solenoid
20 - Fuel Gauge Sender
21 - Horn Switch
22 - R.H. Rear Light
23 - Inner Front Lights
24 - Outer Front Lights
25 - L.H. Rear Lights
26 - Flasher
27 - Scraper Tail Lights
28 - Scraper Warning Light
29 - Electrical Outlet Socket

P - Pink
PR - Purple
R - Red
T - Tan
W - White
Y - Yellow
BR - Brown
B/W - Black and White
DKGR - Dark Green
DKBL - Dark Blue
G - Gray
GR - Green
LTBL - Light Blue
LTGR - Light Green

Fig. 2-Electrical Schematic (Tractor Serial No. -30542)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Transmission Control System

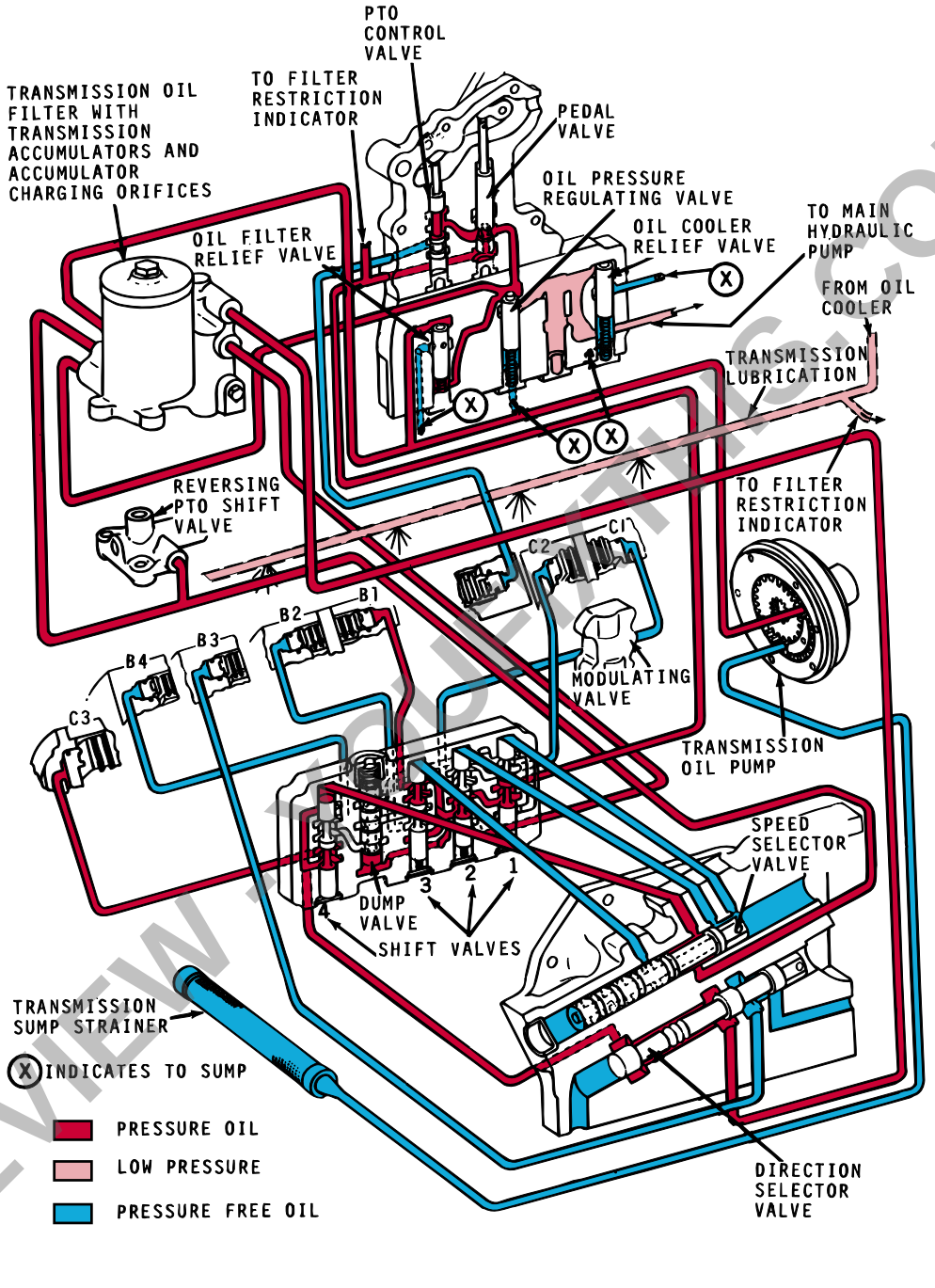


Fig. 8-Transmission Control System (Early Units)

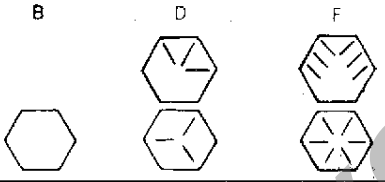
PREVIEW ONLY - YOUFIXTHIS.COM

Download full manual at youfixthis.com

TORQUE VALUES

Item	Torque (ft-lbs)
Hydraulic pump drive screw to crankshaft pulley (with Loctite)	20
Hydraulic pump drive coupling (with safety wire)	25
Hydraulic pump support to cylinder block	85
Side frames to clutch housing	300
Side frames to front frame	300
Side frame to frame bracket	300
Frame bracket to cylinder block	300
Clutch housing to cylinder block	300
Oil pan to clutch housing	300
Clutch housing to transmission 3/4-inch	300
7/8-inch	445
Axle housing to transmission case	170
Seat attaching cap screw	150
Suspension linkage nut	40
Pivot bracket to frame cap screw	300
Oil filter cover cap screws to bracket	45
Steering cylinder bracket to side frame cap screw	300

RECOMMENDED TORQUE IN FT-LBS
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

Fig. 17-Standard 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.

SPECIAL TOOLS

Convenience Tools

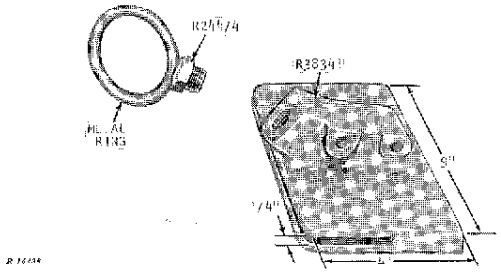


Fig. 18-Operator's Station Lift Bracket

Make lift bracket as shown above.

No.	Name	Use
JDG-1*	Engine sling	Engine removal
JDG-1-9*	Engine lift brackets	Engine removal
JDG-2M*	Spliting Stand	Clutch housing and transmission removal

** Order from: Service Tools, Inc., 1901 Indiana Avenue, Chicago, Illinois 60616.*

Litho in U.S.A.

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

JD760 SERIES-A SCRAPER

Technical Manual
TM-1018 (Jan-74)

CONTENTS

SECTION 10 - GENERAL
- Group 5 - Specifications
- Group 10 - Predelivery, Delivery and After-Sales Services
- Group 15 - Tune-up and Adjustment
- Group 20 - Lubrication
- Group 25 - Separation

SECTION 20 - ENGINE
- Group 5 - Basic Engine
- Group 10 - Lubrication System
- Group 15 - Cooling System
- Group 20 - Speed Control Linkage

SECTION 30 - FUEL SYSTEM
- Group 5 - Diagnosing Malfunctions
- Group 10 - Fuel Tank, Transfer Pump, and Filters
- Group 15 - Air Intake System
- Group 20 - Fuel Injection Pump

SECTION 40 - ELECTRICAL SYSTEM
- Group 5 - Information and Diagrams
- Group 10 - Charging Circuit
- Group 15 - Starting Circuit
- Group 20 - Lighting and Accessory Circuits

SECTION 50 - POWER TRAIN
- Group 5 - Transmission Disconnect Clutch
- Group 10 - Power Shift Transmission
- Group 15 - Differential
- Group 20 - Final Drives
- Group 25 - Reversible Power Take-Off

SECTION 60 - STEERING AND BRAKES (SEE SECTION 70)

SECTION 70 - HYDRAULIC SYSTEM
- Group 5 - General Information, Diagnosis and Testing
- Group 10 - Filters, Valves, Oil Cooler, and Accumulators
- Group 15 - Hydraulic Pump
- Group 20 - Power Steering
- Group 25 - Power Brakes
- Group 30 - Control Valve (Functions)
- Group 35 - Cylinders

SECTION 80 - MISCELLANEOUS
- Group 5 - Elevator
- Group 10 - Drive Shafts
- Group 15 - Draft Frame Gearbox
- Group 20 - Elevator Gearbox
- Group 25 - Wheels and Axle Assemblies
- Group 30 - Bowl Components
- Group 35 - Seat Assembly
- Group 40 - Cab Pressurizer

INDEX

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. Wherever applicable, specifications and design information are in accordance with SAE and IEMC standards.

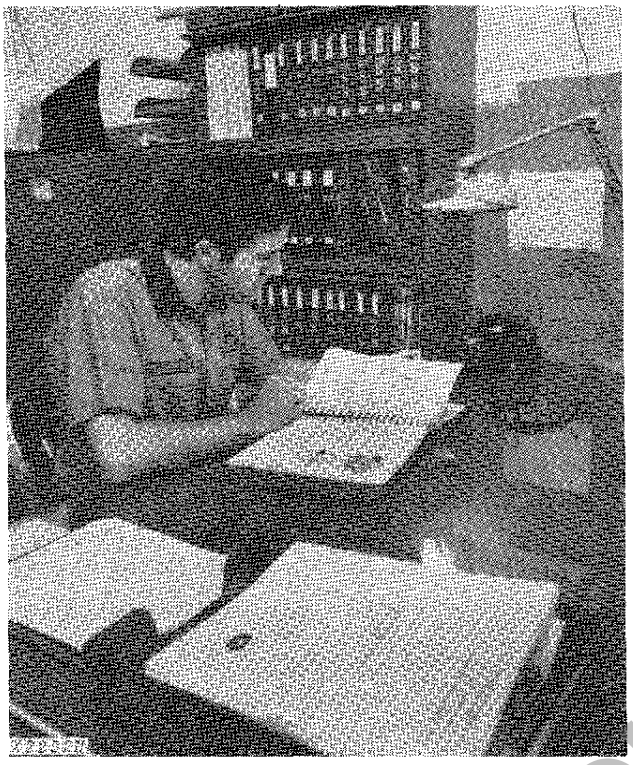
Copyright 1969
DEERE & COMPANY
Moline, Illinois
All rights reserved

Litho in U.S.A.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

INTRODUCTION



Use FOS Manuals for Reference



Use Technical Manuals for Actual Service

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

- **FOS Manuals—for reference**
- **Technical Manuals—for actual service**

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

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 men and for reference by experienced men.

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



When a serviceman 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.

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*

This technical manual was planned and written for you—a journeyman mechanic. 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.

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

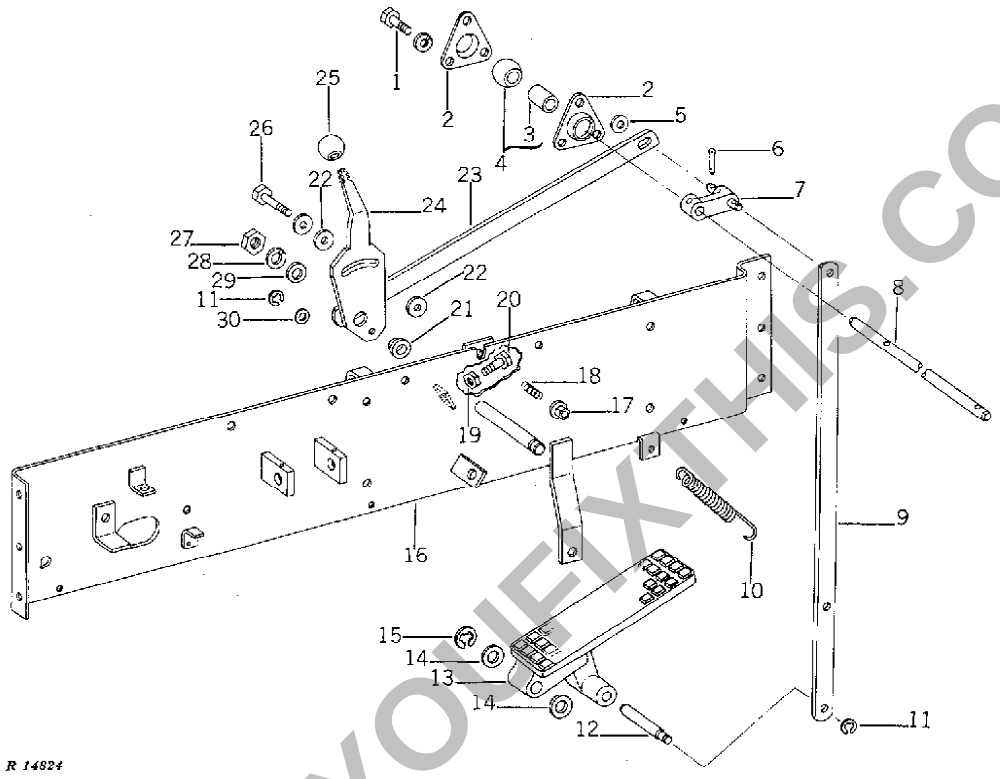
This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

Litho in U.S.A.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Group 20
SPEED CONTROL LINKAGE



1-Cap Screw (3 used)
Washer (3 used)
2-Bushing Retainer (2 used)
3-Bushing
4-Bearing
5-Washer (2 used)
6-Cotter Pin (2 used)
7-Arm
8-Shaft
9-Link
10-Spring
11-Retaining Ring (2 used)
12-Special Pin
13-Pedal
14-Washer (2 used)
15-Retaining Ring
16-Control Support
17-Lock Nut
18-Spring
19-Nut
20-Cap Screw
21-Bushing
22-Friction Disk (2 used)
23-Link
24-Lever
25-Knob
26-Cap Screw
Washer
27-Jam Nut
28-Lock Washer
29-Washer
30-Washer (2 used)

Fig. 1-Exploded View of Speed Control Linkage

LINKAGE ADJUSTMENTS

Check the injection pump speed advance, if not already done, and adjust the engine speed as follows:

(1) Adjust the injection pump fast-idle stop screw to obtain 2400 ± 10 rpm and seal the screw.

(2) Adjust jam nuts (9 and 12, Fig. 2) on each side of ball joint (11) to assure that the injection pump arm contacts the injection pump fast-idle stop screw with the pedal completely depressed.

(3) With the hand throttle lever set in the approximate center of its travel, lengthen the speed control rod 1/2 turn to assure full throttle.

(4) Move the hand throttle lever to the rear until 800 rpm slow idle is obtained. Adjust stop screw leaving one turn clearance between the lever and the lock.

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

Armature

Check armature for opens, shorts and grounds. Burned edge of commutator bar indicates an open circuit.

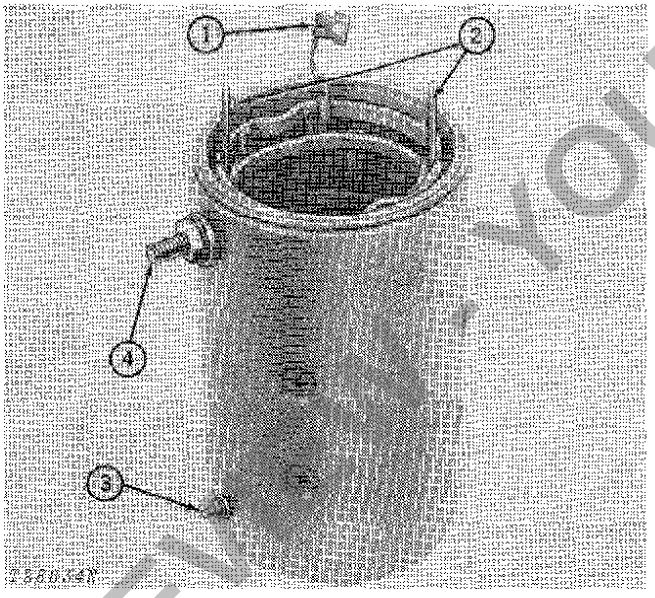
Check armature for straightness. Runout should not exceed 0.006 inch. Maximum commutator runout is 0.016 inch. If necessary, turn commutator and undercut insulation to 1/32 inch. Undercut should never be less than 0.008 inch. Commutator O.D. must be 1.77 inches or more. Clean copper dust from between the segments.

Overrunning Clutch Drive



See Chapter 5 of FOS Manual 20—ELECTRICAL SYSTEMS—for overrunning clutch service information.

Field Coils



1—Shunt Winding Lead
2—Series Winding Leads
3—Shunt Winding Terminal
4—Series Winding Terminal

Fig. 23-Field Coils

The series field coil windings are of copper strap and the shunt field coil windings are of small wire. Check the series windings and the shunt windings for an open circuit and for grounded windings. Check series field winding for an open circuit by connecting a carbon pile resistor in series with an ammeter to the large series winding terminal and to a lead that was connected to the brushes. Adjust carbon pile resistor to obtain 100 amps. No magnetism at the pole shoe indicates an open-circuited field winding.

The shunt winding should draw 15 to 18 amps at 12 volts.

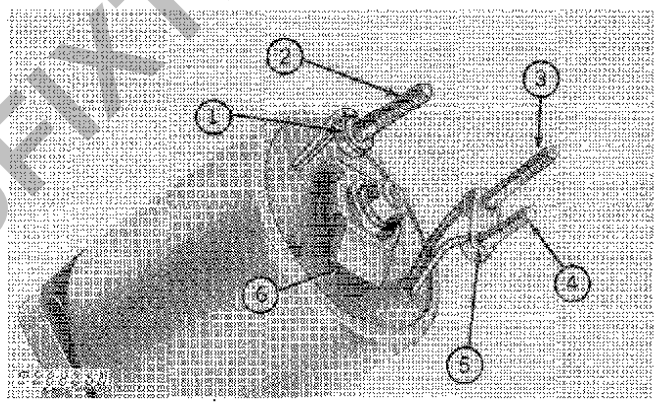
Before removing pole shoes, scribe a mark on the pole shoe and the field frame to be sure they will be assembled in their original position. Tighten pole shoe screws to 30 ft-lbs torque.

Brushes

Replace brushes if they are oil soaked or if they are worn shorter than 5/8-inch. Check the brush holders for grounds.

Brush spring tension should be 70 ounces or more as the spring just leaves the brush holder.

Solenoid



1—Packing
2—Control Terminal
3—Return Terminal
4—Pull-In Terminal
5—Gasket
6—Main Contact

Fig. 24-Solenoid Terminals

Remove nuts from solenoid control terminal, return terminal and pull-in terminal (Fig. 24). Then remove switch cover. When installing switch cover, place packings on the solenoid switch cover and the solenoid control terminal. Place the gasket on the solenoid return terminal and pull-in terminal. Align the main contact vertically and install the solenoid cover.

Solenoid contacts and plunger will be damaged if current is applied to solenoid when it is removed from the starter.

Download full manual at youfixthis.com

SPECIFICATIONS

Item	New Part Dimension	Wear Tolerance
O.D. of bearing seat on housing	3.3765 to 3.3781 in.	
I.D. of hole in bevel gear housing for bevel gear hub	3.1275 to 3.1295 in.	
O.D. of ring gear seat on housing	12.000 to 12.002 in.	
I.D. of ring gear	11.998 to 12.000 in.	
Thickness of bevel pinion thrust washer	0.030 to 0.032 in.	
Preload of differential quill bearings	0.002 to 0.005 in.	
Backlash between ring gear and pinion	0.011 to 0.015 in.	
O.D. of return valve	0.5593 to 0.5603 in.	
Return valve spring		
Free length	1.265 to 1.275 in.	
Load to compress to 1.13 inches	190 to 210 lbs.	
Shim thickness	0.005 in.	
O.D. of flow control valve	0.5610 to 0.5616 in.	
O.D. of check valve	0.3727 to 0.3733 in.	
Check valve spring		
Free length	1.750 in.	
Load to compress to 1.3125 inches	12.25 to 15 lbs.	
Differential housing cover		
O.D. of sealing ring hub	5.490 to 5.494 in.	
O.D. of bearing hub	3.3765 to 3.3785 in.	
I.D. of counterbore in hub	3.1275 to 3.1295 in.	
I.D. of piston bore	9.013 to 9.017 in.	
Clutch piston		
O.D. of piston	8.999 to 9.005 in.	
I.D. of piston	7.073 to 7.076 in.	
Thickness of piston	0.700 to 0.710 in.	
Differential bevel gear		
O.D. of gear hub	3.1245 to 3.1255 in.	
Differential bevel lock gear		
O.D. of inner hub	3.1245 to 3.1255 in.	
O.D. of splines	5.980 to 5.990 in.	
Spider and bevel pinion		
O.D. of spider at pinion	1.3745 to 1.3755 in.	
I.D. of bevel pinion bore	1.378 to 1.380 in.	
Clutch piston return spring		
Free length	1.69 in.	
Load to compress to 1.14 to 1.19 inch	45 to 55 lbs.	
Clutch drive disk (5 used)		
Thickness	0.112 to 0.118 in.	0.100 in. min.
Clutch backing plate and separator plates		
Thickness of new plate	0.120 in.	
Oil pressure (at 1900 rpm engine speed and oil at 100°F.) (lock engaged)	400 to 525 psi	
Clearance for pedal adjusting screw	0.085 to 0.105 in.	

TORQUE VALUES

Item	Torque (ft-lbs)
Control valve housing attaching cap screws	170

Download full manual at youfixthis.com

PREVIEW - YOUFIXTHIS.COM

DIAGNOSING MALFUNCTIONS

To test the brake selector valve, refer to hydraulic system tests.

No Power Brakes to Scraper

Hydraulic pump not operating.
Test pump to specifications (Group 5).

No oil from brake valve to selector valve.
Inspect brake valve.

With selector valve in tractor and scraper position, valve operating shaft not unseating ball.
Replace damaged valve operating shaft.

With selector valve in scraper position only, brake valve not opening.
Replace worn or damaged valve.

Ball in cross-drilled passage damaged.
Clean and repair selector valve.

Bypass valve worn or damaged.
Inspect and replace bypass valve.

Scraper Brakes Dragging

Scraper return passage plugged.
Clean and repair selector valve.

With selector valve in "tractor position only", oil leaking into selector valve.
Inspect for leakage past ball seat.
Inspect for leakage past brake valve.

Excessive Brake Chatter

Air in system.
Bleed system.

Low, incorrect, or contaminated oil in system.
Drain and fill.

Oil trapped within selector valve.
Clean bleed passages within valve.

REPAIR

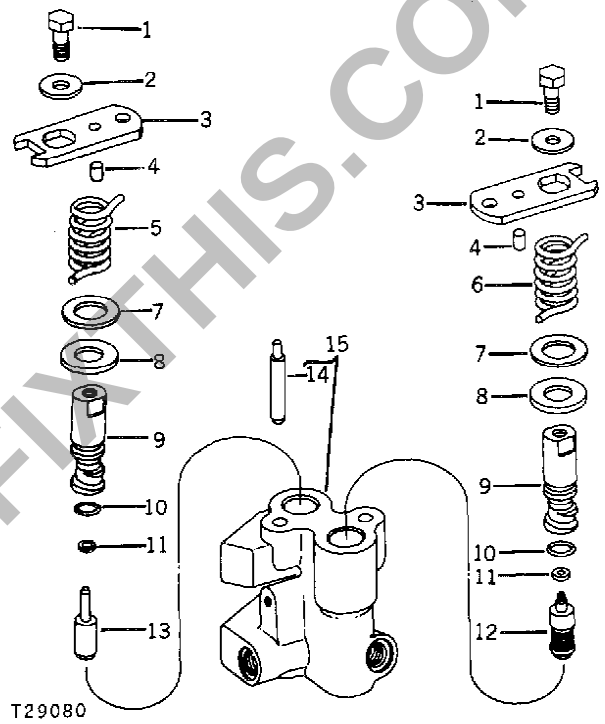
CAUTION: Discharge brake accumulator by activating steering and brake valves until no response is felt before disconnecting hoses.

Disconnect all brake selector valve hoses from the valve.

Disconnect valve control rods and remove valve from operator's station.

Refer to Figs. 10 and 11 and remove operating levers, springs, washers and felt washer from the valve housing.

Remove the operating shafts by turning clockwise. Don't lose adjusting shims which may stick to the shafts when they are removed.



1-Cap Screw (2 used)
2-Washer (2 used)
3-Lever (2 used)
4-Pin (2 used)
5-Spring (tractor brake)
6-Spring (equipment brake)
7-Washer (2 used)
8-Felt Washer (2 used)
9-Shaft (2 used)
10-O-Ring (2 used)
11-Shim
12-Guide
13-Rod
14-Stop (2 used)
15-Housing

Fig. 10-Exploded View of Brake Selector Valve (Upper)

Turn the housing upside down to allow guides, springs, retainers and operating rods to drop out.

Remove connectors at the bottom. Springs, brake valve, steel ball and valve operating shafts will come out.

Remove the adjustable adapters, springs, plungers, and guide assembly.

NOTE: Use a brass drift to remove guide assembly.

Remove check valve seat and steel ball.

Download full manual at youfixthis.com
PREVIEW - YOUFIXTHIS.COM

PREVIEW ONLY

You're viewing 12 of 296 pages

The full manual includes:

- All 296 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

John Deere JD760 Series-A Technical Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual