

John Deere

CLICK ANYWHERE FOR MORE DETAILS

MODEL:

**350B Crawler Tractors &
Crawler Loaders**

**SERVICE
MANUAL**

purchase full manual

JENSALES.COM

or Call 800-443-0625

JENSALES®

CLICK ANYWHERE FOR MORE DETAILS

THIS IS A MANUAL PRODUCED BY JENSALES INC. WITHOUT THE AUTHORIZATION OF
JOHN DEERE OR IT'S SUCCESSORS. JOHN DEERE AND IT'S SUCCESSORS
ARE NOT RESPONSIBLE FOR THE QUALITY OR ACCURACY OF THIS MANUAL.

TRADE MARKS AND TRADE NAMES CONTAINED AND USED HEREIN ARE THOSE OF OTHERS,
AND ARE USED HERE IN A DESCRIPTIVE SENSE TO REFER TO THE PRODUCTS OF OTHERS.

JD-S-TM1032

**John Deere
350B
Crawler Tractors
and
Crawler Loaders**

MANUAL PREVIEW

TECHNICAL MANUAL

**John Deere 350B Crawler Tractors and
Crawler Loaders**

TM1032 (01JUN80) English

purchase full manual at

**JENSALES.COM
or Call 800-443-0625**

John Deere Dubuque Works

TM1032 (01JUN80)

**LITHO IN U.S.A.
ENGLISH**

JD350-B CRAWLER TRACTORS AND CRAWLER LOADERS

Technical Manual
TM-1032 (Jun-80)

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 - Diagnosing Malfunctions
- Group 10 - Basic Engine
- Group 15 - Engine Lubrication
- Group 20 - Governor and Speed Control Linkage
- Group 25 - Engine Cooling
- Group 30 - Specifications and Special Tools

SECTION 30 - FUEL SYSTEM

- Group 5 - Diagnosis
- Group 10 - Fuel Tank, Transfer Pump and Filters
- Group 15 - Air Intake System
- Group 20 - Carburetor
- Group 25 - Fuel Injection Pump

SECTION 40 - ELECTRICAL SYSTEM

- Group 5 - Description and Electrical Schematic
- Group 10 - Charging System
- Group 15 - Starting Motor
- Group 20 - Ignition System
- Group 25 - Gauges and Switches

SECTION 50 - POWER TRAIN

- Group 5 - Diagnosis
- Group 10 - Clutch Assembly
- Group 15 - Transmission
- Group 20 - Reverser
- Group 25 - Power Take-off and Winch Drive

SECTION 60 - STEERING AND BRAKES

- Group 5 - General Information, Testing, and Diagnosis
- Group 10 - Power Steering Pump
- Group 15 - Power Steering Cylinders and Reservoir
- Group 20 - Final Drive Assembly
- Group 25 - Steering and Brake Assembly

SECTION 70 - HYDRAULIC SYSTEM

- Group 5 - General Information, Testing, and Diagnosis
- Group 10 - Hydraulic Components
- Group 15 - Hydraulic Pump
- Group 20 - Loader Control Valve
- Group 25 - Dozer Control Valve
- Group 30 - Backhoe Control Valve
- Group 35 - Hydraulic Cylinders
- Group 40 - Backhoe Swing Cylinder

SECTION 80 - MISCELLANEOUS COMPONENTS

- Group 5 - Tracks
- Group 10 - Track Carrier Assembly
- Group 15 - Winch System
- Group 20 - Dozer Frames and Blades
- Group 25 - Loader Frame, Boom, and Bucket
- Group 30 - Drott 4-in-1 Bucket
- Group 35 - Log and Lumber Fork
- Group 40 - Backhoe Boom and Bucket
- Group 45 - Three-Point Hitch and Rockshaft
- Group 50 - Belt Pulley

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.

Litho in U.S.A.

Product Services Information

TEMPORARY TECHNICAL MANUAL PAGE

Filing Instructions:
Remove page 10-5-1
and 10-5-2 dated
May-73 and replace
with this temporary
page.

Crawlers - JD350-B
TM-1032 (Oct-80)

General 10
Specifications 5-1

Section 10 GENERAL

CONTENTS OF THIS SECTION

	Page		Page
GROUP 5-SPECIFICATIONS	5-1	Special Purpose Oil	20-3
GROUP 10-PREDELIVERY, DELIVERY, AND AFTER-SALES SERVICES		Greases	20-3
Predelivery Service	10-1	Storing Lubricants	20-3
Delivery Service	10-3		
After-Sales Service	10-4	GROUP 25-SEPARATION	
GROUP 15-TUNE-UP AND ADJUSTMENT		Removal and Installation	
Preliminary Engine Testing	15-1	Engine	25-1
Engine Tune-Up	15-1	Clutch Housing	25-2
Final Engine Test	15-4	Reverser Housing	25-2
Crawler Adjustments	15-4	Final Drives	25-3
GROUP 20-LUBRICATION		Steering Clutches	25-4
Lubrication Chart (capacities and lubricants)	20-1	Transmission	25-5
Engine Lubricating Oils	20-3	Loader	25-6
		9250 and 9300 Backhoe	25-7
		Torque Values	25-8
		Special Tools	25-9

Group 5 SPECIFICATIONS

Engine

Type 3-cylinder-in-line, valve-in-head, 4-stroke cycle

	Gasoline	Diesel
Flywheel horsepower (observed) at 2500 rpm (net)	42.0	42.0
Drawbar horsepower (observed)	31.2	31.2
Torque (ft-lbs) max. at 1300 rpm (observed) (nominal)	110.0	110.0
Bore and stroke, inches	3.86 x 3.86	3.86 x 4.33
Displacement, cubic inches	135.0	152.0
Compression ratio	7.5:1*	16.2:1
N.A.C.C. or A.M.A. horsepower rating for tax purposes	17.88	17.88

* 8.6:1 with high-altitude pistons

	Gasoline	Diesel
Governed speed range (rpm)	600-2770	800-2650
Engine clutch (without direction reverser)	11-inch, single disk, foot-operated	

Electrical System

Battery voltage (nominal)	12 volts
Battery specific gravity (full charge) (corrected to 80°F.)	1.260
Battery terminal grounded	Negative

Hydraulic System

Type	Open-center, includes power steering, power brakes, loader, dozer, ripper, backhoe and three-point hitch
------	--

Group 25 SEPARATION

REMOVING AND INSTALLING ENGINE

Removal

Most service procedures on the engine can be accomplished with the engine in the unit. If the crankshaft is to be removed or in event of a general overhaul, remove the engine as follows:

Remove hood and grille housing.

Disconnect all the necessary wiring, linkage and lines from both sides of the engine.

Disconnect radiator hoses and remove radiator and pump with support as a unit.

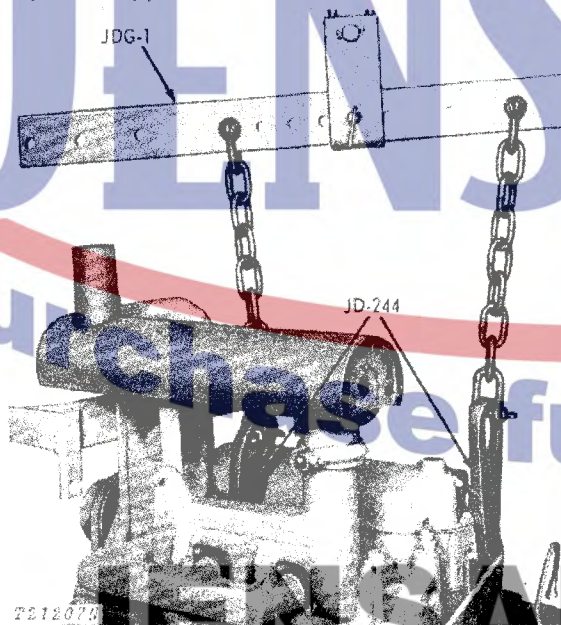


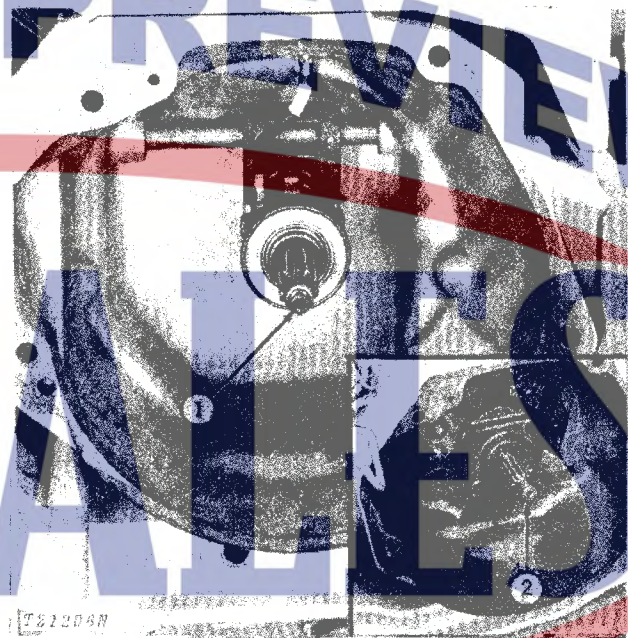
Fig. 1-Removing Engine

Install two JD-244 Lifting Brackets or JDG-19 Lifting Eyes (Fig. 1) on cylinder head.

Attach JDG-1 or JDG-23 Lifting Sling or D01043AA Load Positioning Sling to lifting adapters. Remove cap screws securing engine flywheel housing to clutch housing or reverser housing and with a hoist remove engine from unit.

NOTE: Alternate method would be to remove the engine, radiator, and pump with support as one unit.

Installation



1—Transmission Input Shaft 2—Reverser Front Shaft

Fig. 2-Engine Indexing Points

To install engine correctly, line up cap screw holes of engine with those of clutch housing. Bar engine over, holding it in a horizontal position and exerting a steady pressure on the engine toward the clutch housing until the engine clutch indexes with transmission input shaft or front spider shaft (direction reverser) (Fig. 2).

Refer to specifications for correct hardware torque values.

Install radiator and hoses.

Connect all the necessary wiring, linkage and lines to both sides of engine.

Start engine and check for oil or water leaks.

Section 20 ENGINE

CONTENTS OF THIS SECTION

	Page		Page
GROUP 5 - DIAGNOSING MALFUNCTIONS		GROUP 20 - GOVERNOR AND SPEED CONTROL LINKAGE	
Diagnosing Malfunctions	5-2	Diagnosing Malfunctions	20-1
GROUP 10 - BASIC ENGINE		Governor	20-1
Diagnosing Basic Engine Malfunctions	10-1	Speed Control Linkage	20-4
Head Assembly	10-1	Speed Control Adjustments	20-4
Adjusting Valve Clearance	10-3		
Block, Liners, Pistons, and Rods	10-4	GROUP 25 - ENGINE COOLING	
Crankshaft, Main Bearings, and Fly- Wheel	10-8	Diagnosing Malfunctions	25-1
Camshaft	10-11	Radiator	25-2
Timing Gear Train	10-13	Water Pump	25-2
GROUP 15 - ENGINE LUBRICATION		Group 30 - SPECIFICATIONS AND SPECIAL TOOLS	
Oil Pump and Filter	15-1	Basic Engine	30-1
Diagnosing Malfunctions	15-1	Lubricating System	30-6
		Governor and Speed Control Linkage	30-7
		Cooling System	30-8

purchase full manual at

JENSALES.COM
or Call 800-443-0625

Section 30 FUEL SYSTEM

CONTENTS OF THIS SECTION

	Page		Page
GROUP 5-DIAGNOSIS		Repair	20-2
Diagnosing Fuel System Malfunctions	5-1	Adjustments	20-4
		Installation	20-4
GROUP 10-FUEL TANK, TRANSFER PUMP, AND FILTERS		Specifications	20-5
Fuel Tank	10-1	GROUP 25-FUEL INJECTION PUMP	
Transfer Pump (A.C.)	10-2	General Information	25-1
(Airtex)	10-3	Diagnosing Malfunctions	25-1
Filters	10-3	Removal	25-2
		Repair	25-2
GROUP 15-AIR INTAKE SYSTEM		Installation	25-2
Air Cleaner	15-1	Adjustment	25-3
Specifications	15-2	Specifications	25-4
		Special Tools	25-6
GROUP 20-CARBURETOR		FUEL INJECTION NOZZLES	
General Information	20-1	(See SM-2045, "Testing and Servicing Fuel Injection Pumps and Nozzles.")	
Diagnosing Malfunctions	20-2		
Tests	20-2		

Group 5[®] DIAGNOSIS

DIAGNOSING FUEL SYSTEM MALFUNCTIONS

The following is a guide for diagnosing fuel system difficulties. For specific diagnosis of fuel system components, refer to the groups which cover complete servicing.

Engine Hard to Start or Will Not Start

- No fuel.
- Old gasoline in tank.
- Fuel shut off valve closed.
- No gasoline in carburetor.
- Clean fuel line, filter, and carburetor.
- Air leak on suction side of fuel system.
- Look for leaks at all connections.
- Improper type of fuel.
- See operator's manual for correct fuel.
- Water, dirt, or air in fuel system.
- Drain, flush, and refill. Bleed system (diesel).
- Water in gasoline.
- Drain gasoline and clean spark plugs.
- Fuel tank filter clogged.
- Drain fuel tank and clean fuel tank and filter.

Litho in U.S.A.

- Clogged fuel filter (diesel).
- Replace first-stage filter element and bleed system.
- Clogged fuel filter (gasoline).
- Replace filter.
- Dirty or faulty injection nozzles (diesel).
- Service injection nozzles (See SM-2045).
- Cranking speed too slow.
- Check starting circuit to increase cranking speed.
- Incorrect timing.
- See Group 25.
- Fuel pump primer lever left on upward end of stroke.
- Move lever to lowest point of stroke.

Engine Knocks

- Dirt in air intake system.
- Clean filter.
- Injection pump or distributor out of time.
- Low octane gasoline.

Engine Runs Irregularly or Stalls Frequently

- Air leak on suction side of fuel system.
- Look for leaking connections.
- Improper type of fuel.
- See operator's manual for correct fuel.

Section 40

ELECTRICAL SYSTEM

CONTENTS OF THIS SECTION

	Page
GROUP 5 - DESCRIPTION AND ELECTRICAL SCHEMATIC	
General Information.....	5-2
Wiring Diagrams.....	5-3
Removing Body Connectors from Wires.....	5-3
Diagnosing Malfunctions.....	5-4
Electrical Schematic.....	5-5
Component Wire Routing.....	5-6
Specifications.....	5-10

GROUP 10 - CHARGING SYSTEM	
Test and Diagnosis.....	10-1
Repair.....	10-5
Component Tests.....	10-9
Assembly.....	10-10
Specifications.....	10-11

GROUP 15 - STARTING MOTOR	
General Information.....	15-1
Diagnosis and Tests.....	15-1

GROUP 15 - STARTING MOTOR (Continued)	
Repair.....	15-3
Assembly.....	15-8
Installation.....	15-10
Specifications.....	15-11

GROUP 20 - IGNITION SYSTEM	
Distributor.....	20-1
Distributor Tests.....	20-1
Repair.....	20-2
Coil.....	20-4
Specifications.....	20-4

GROUP 25 - GAUGES AND SWITCHES	
Tests.....	25-1
Specifications.....	25-1

purchase full manual at

JENSALES.COM
or Call 800-443-0625

Section 50 POWER TRAIN

CONTENTS OF THIS SECTION

	Page		Page
GROUP 5 - DIAGNOSIS		Shafts and Gears	15-8
Diagnosing System Malfunctions	5-2	Specifications	15-18
GROUP 10 - CLUTCH ASSEMBLY		Group 20 - REVERSER	
General Information	10-1	General Information	20-1
Diagnosing Malfunctions	10-2	Testing	20-9
Repair	10-3	Diagnosing Malfunctions	20-11
Specifications	10-9	Removal	20-12
GROUP 15 - TRANSMISSION		Repair	20-13
General Information	15-1	Specifications	20-20
Diagnosing Malfunctions	15-3	Group 25 - POWER TAKE-OFF AND WINCH DRIVE	
Shifter Mechanism	15-4	General Information	25-1
		Repair	25-1

purchase full manual at

JENSALES.COM
or Call 800-443-0625



- 1—Bearing Cup
- 2—Bearing Cone
- 3—Input Shaft
- 4—Woodruff Key
- 5—Rear Washer

- 6—First- and Second-Speed Cluster Gear
- 7—Bearing (2 used)
- 8—Spacer
- 9—Thrust Washer
- 10—Fourth-Speed Gear

- 11—Third-Speed Gear
- 12—Snap Ring
- 13—Input Shaft Bearing Spacer
- 14—Bearing Cone
- 15—Bearing Cup

- 16—Shim (as required)
- 17—Quill
- 18—Oil Seal
- 19—Cap Screw (3 used)
- 20—Special Cap Screw
- 21—Special Washer (4 used)

Fig. 11—Input Shaft Assembly

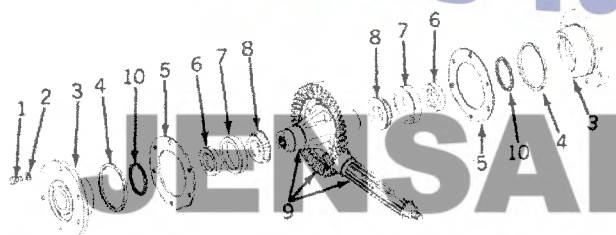
Ring Gear and Hub (Fig. 12).

Remove quills and roll ring gear assembly out of housing. Mark quills right and left for assembly purposes.

Inspect ring gear and hub as a unit for cracks or excessive wear.

Inspect gear and pinion teeth for excessive wear and tooth damage.

If wear is excessive, it will be necessary to replace the ring gear and output shaft.



T25034N

- 1—Cap Screw (12 used)
- 2—Lock Washer (12 used)
- 3—Quill (2 used)
- 4—O-Ring (2 used)
- 5—Shim (as required)

- 6—Oil Seal (2 used)
- 7—Bearing Cup (2 used)
- 8—Bearing Cone (2 used)
- 9—Pinion Shaft and Ring Gear
- 10—Sealing Ring (2 used)

Fig. 12—Ring Gear Assembly

NOTE: Ring gears and pinions must always be replaced as a unit. They are furnished in matched sets and are not available individually for replacement.

If inspection shows that bearing cones or cups are no longer serviceable remove them and install new parts (Fig. 13).

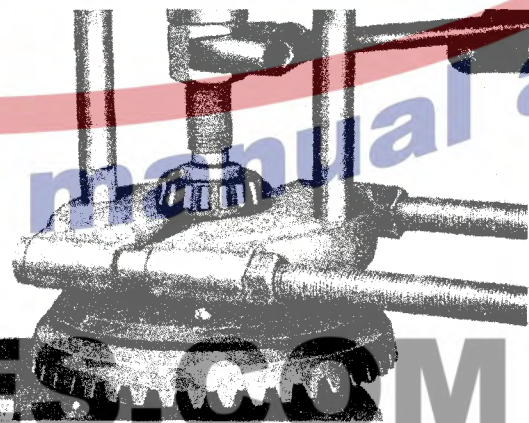


Fig. 13—Pulling Bearing Cone from Ring Gear and Hub

When new bearings are installed, always check bearing preload and ring gear backlash. See "Transmission Assembly" page 50-15-12.

If oil seal in quill is worn or damaged, install a new one with lip to inside of quill.

Section 60 STEERING AND BRAKES

CONTENTS OF THIS SECTION

	Page		Page
GROUP 5 - GENERAL INFORMATION, TESTING AND DIAGNOSIS		GROUP 15 - POWER STEERING CYLINDERS AND RESERVOIR	
General Information	5-1	General Information	15-1
Testing	5-3	Repair	
Diagnosing Malfunctions	5-4	Cylinders	15-2
Specifications	5-4	Reservoir	15-4
		Specifications	15-4
GROUP 10 - POWER STEERING PUMP		GROUP 20 - FINAL DRIVE ASSEMBLY	
General Information	10-1	General Information	20-1
Repair	10-2	Repair	
Specifications	10-4	Final Drive Housing	20-2
		Steering Clutch Assembly	20-5
		Specifications	20-7
		GROUP 25 - STEERING-BRAKE ASSEMBLY	
		General Information	25-1
		Repair	25-2
		Adjustment	25-4
		Specifications	25-6

Group 5

GENERAL INFORMATION, TESTING AND DIAGNOSIS

GENERAL INFORMATION

CAUTION: Escaping fluid under pressure can have sufficient force to penetrate the skin causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines and hoses are not damaged. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than the hands, to search for suspected leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

The steering and brakes (Fig. 1) are controlled by multiple-disk clutches and contracting-band type brakes located in the steering-brake assembly. These clutches and brakes are operated by steering levers.

When a steering lever is operated, a clutch throw-out bearing disengages the steering clutches which disconnects transmission power flow to the track drive sprockets.

Any further movement of the steering levers will engage the brake bands which stop the tracks.

The brakes can also be applied by means of a foot brake. When this brake pedal is operated the brake bands are activated, but the steering clutches are not disengaged. Therefore, when the foot brake is applied the unit will not stop unless the engine or steering clutches are disengaged.

Section 70 HYDRAULIC SYSTEM

CONTENTS OF THIS SECTION

	Page		Page
GROUP 5 - GENERAL INFORMATION, TESTING AND DIAGNOSIS		GROUP 25 - DOZER CONTROL VALVE	
General Information	5-1	General Information	25-1
Testing	5-7	Repair	25-3
Diagnosing Malfunctions	5-11	Specifications	25-6
Specifications	5-12	GROUP 30 - BACKHOE CONTROL VALVE	
GROUP 10 - HYDRAULIC COMPONENTS		General Information	30-1
Reservoir and Filters	10-1	Repair	30-3
Selector Valve	10-2	Specifications	30-6
Flow Divider	10-3	GROUP 35 - HYDRAULIC CYLINDERS	
Drott Bucket Clam Relief Valve	10-4	General Information	35-1
Breakaway Couplers	10-5	Repair	
Specifications	10-6	Loaders, Dozer and Backhoe	35-1
GROUP 15 - HYDRAULIC PUMP		Drott Cylinders	35-3
General Information	15-1	Remote Cylinders	35-4
Diagnosing Malfunctions	15-1	Specifications	35-6
Repair		GROUP 40 - BACKHOE SWING CYLINDER	
Pump	15-2	General Information	40-1
Pump Disconnect	15-3	Removal	40-1
GROUP 20 - LOADER CONTROL VALVE		Repair	40-3
General Information	20-1	Assembly	40-4
Repair	20-5	Specifications	40-5
Specifications	20-9		

Group 5

GENERAL INFORMATION, TESTING AND DIAGNOSIS

GENERAL INFORMATION

CAUTION: Escaping fluid under pressure can have sufficient force to penetrate the skin causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines and hoses are not damaged. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than the hands, to search for suspected leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

The hydraulic system for all crawler functions is of the open center type.

Basic crawler hydraulic systems consist of an engine driven gear type hydraulic pump, oil reservoir, filters, control valve and cylinders.

The following hydraulic circuit diagrams give a brief description of each hydraulic system and its components.

Study the circuit diagrams when diagnosing hydraulic system difficulties.

Section 80

MISCELLANEOUS COMPONENTS

CONTENTS OF THIS SECTION

	Page		Page
GROUP 5-TRACKS		GROUP 25-LOADER FRAME, BOOM, AND BUCKET	
General Information	5-2	General Information	25-1
Diagnosing Track Malfunctions	5-3	Repair	25-1
Inspecting Track	5-4	Adjustments	25-3
Removal	5-5	Torque Values	25-4
Repair	5-9		
Installation	5-16	GROUP 30-DROTT 4-IN-1 BUCKET	
Track Adjustment	5-19	General Information	30-1
Specifications	5-21	Repair	30-1
Torque Values	5-21	Adjustments	30-2
Special Tools	5-22	Specifications	30-2
GROUP 10-TRACK CARRIER ASSEMBLY		GROUP 35-LOG AND LUMBER FORK	
General Information	10-1	General Information	35-1
Tests and Diagnosis	10-2	Repair	35-1
Repair	10-3	Adjustments	35-2
Assembly	10-7	Torque Values	35-2
Installation	10-9		
Specifications	10-13	GROUP 40-BACKHOE BOOM, AND BUCKET	
		General Information	40-1
GROUP 15-WINCH SYSTEM		Repair	40-1
General Information	15-1	Torque Values	40-4
Testing and Diagnosis	15-3		
Repair		GROUP 45-3-POINT HITCH AND ROCKSHAFT	
Control Valve	15-5	General Information	45-1
Pump	15-6	Repair	45-1
Winch Housing	15-8	Adjustments	45-2
Fairlead	15-16	Specifications	45-2
Specifications	15-17		
		GROUP 50-BELT PULLEY	
GROUP 20-DOZER FRAMES AND BLADES		General Information	50-1
General Information	20-1	Repair	50-1
Repair	20-2	Adjustments	50-1
Adjustment	20-3	Specifications	50-2
Specifications	20-4		

or Call 800-443-0625

INDEX

A	
Accumulator housing, reverser	50-20-14
Air cleaner	30-15-1 - 30-15-2
Air intake system	30-15-1 - 30-15-2
Air restriction indicator	30-15-1
Alternator:	40-10-2 - 40-10-6
Bearings	40-10-6
Brushes	40-10-2, 40-10-6
Diode heat sink	40-10-3, 40-10-6
Diodes	40-10-3, 40-10-6
Housings	40-10-3, 40-10-6
Pulley	40-10-6
Rotor	40-10-4
Slip rings	40-10-3
Stator	40-10-3, 40-10-6
Tests	40-10-5
Armature, starting motor	40-15-4

B	
Backhoe (9250):	80-40-3 - 80-40-5
Boom and dipperstick	80-40-4
Bucket	80-40-3
Bucket tooth assembly	80-40-5
Main frame	80-40-3
Stabilizer	80-40-3
Tapered pins and wedge bushings	80-40-5
Backhoe (9300):	80-40-1 - 80-40-5
Boom and dipperstick	80-40-2
Boom pivot	80-40-2
Bucket	80-40-1
Main frame	80-40-1
Stabilizer	80-40-1
Backhoe control valve:	70-30-1 - 70-30-5
Anti-cavitation check valves	70-30-3
Components	70-30-1, 70-30-3
Housing	70-30-3
Lift checks	70-30-3
Linkage	70-30-5
Oil flow	70-30-1 - 70-30-2
Orifice plates	70-30-3
Quick-disconnect couplers	70-30-5
Relief valve	70-30-4
Spool	70-30-3
Backhoe swing cylinder:	70-40-1 - 70-40-4
Components	70-40-3
Oil flow	70-40-1
Shaft vane	70-40-2, 70-40-4
Timing coupling and shaft	70-40-4

Basic engine	20-10-1 - 20-10-14
Battery precautions	40-5-1
Bearings, main	20-10-8 - 20-10-9
Belt pulley	80-50-1 - 80-50-2
Bleeding remote cylinder	70-35-5
Break-in, engine	20-10-7
Breakaway coupler, hydraulic	70-10-5
Bucket, Drott 4-in-1	80-30-1 - 80-30-2

C	
Cam advance adjustment	30-25-3 - 30-25-4
Camshaft	20-10-11
Carburetor:	30-20-1 - 30-20-4
Adjustment	30-20-4
Choke assembly	30-20-3
Components	30-20-1
Malfunctions	30-20-2
Needle bearings	30-20-4
Tests	30-20-2
Throttle assembly	30-20-3
Charging system	40-10-1 - 40-10-6
Charging system tests	10-10-1 - 40-10-2
Choke assembly, carburetor	30-20-3
Clutch assembly	50-10-1 - 50-10-8
Adjustment	50-10-4 - 50-10-5, 50-10-8
Components	50-10-1, 50-10-3
Controls and housing	50-10-5 - 50-10-7
Driven disk	50-10-4
Flywheel and pilot bearing	50-10-4
Malfunctions	50-10-2
Pressure plate	50-10-3 - 50-10-4
Torsional isolator	50-10-4
Coil, ignition	40-20-4
Cooling system	20-25-1 - 20-25-4
Cooling system, after-sales inspection	10-10-4
Cooling system malfunctions	20-25-1
Cooling system, predelivery inspection	10-10-1
Crankshaft	20-10-8 - 20-10-9
Crawler adjustments	10-15-4
Cylinder block	20-10-4
Cylinder head	20-10-1 - 20-10-3
Cylinder liners	20-10-4 - 20-10-7
Cylinder liners, deglazing	20-10-5
Cylinders, hydraulic	70-35-1 - 70-35-5

D	
Deglazing cylinder liners	20-10-5
Delivery service	10-10-3

Diode heat sink	40-10-3	40-10-6
Diodes, alternator	40-10-3	40-10-6
Distributor:	40-20-1	40-20-4
Components	40-20-2	
Indexing	40-20-3	
Malfunctions	40-20-1	
Shaft and drive gear	40-20-2	
Tests	40-20-1	
Timing	40-20-3	40-20-4
Dozer:	80-20-1	80-20-4
Angling adjustment	80-20-3	80-20-4
Blade	80-20-3	
Booms and angling arms	80-20-2	80-20-3
Lift frames	80-20-2	
Tilting, leveling blades	80-20-4	
Dozer control valves:	70-25-1	70-25-6
Auxiliary valve	70-25-4	
Check poppets	70-25-4	
Linkages	70-25-5	
Oil flow	70-25-1	70-25-2
Power beyond sleeve	70-25-1	
Relief valve	70-25-4	
Spool assemblies	70-25-4	
Three-spool valve	70-25-3	
Three-spool valve handle	70-25-6	
Valve housing	70-25-3	
Drott-4-in-1 bucket:	80-30-1	80-30-2
Adjustments	80-30-2	
Bucket cutting edges	80-30-1	

E

Electrical schematic diagram	40-5-2
Electrical system	40-5-1, 40-5-6
Electrical system after-sales inspection	10-10-4
Electrical system malfunctions	40-5-3
Electrical system, predelivery inspection	10-10-1
Engine after-sales inspection	10-10-5
Engine break-in	20-10-7, 20-30-4
Engine components:	20-10-1 - 20-10-14
Camshaft	20-10-11
Connecting rods	20-10-4 - 20-10-7
Crankshaft	20-10-8 - 20-10-9
Cylinder block	20-10-4
Cylinder head	20-10-1 - 20-10-3
Cylinder liners	20-10-4 - 20-10-7
Flywheel	20-10-8 - 20-10-9
Gear train	20-10-13
Main bearings	20-10-8 - 20-10-9
Oil pan	20-10-7
Piston rings	20-10-6
Piston	20-10-4 - 20-10-7
Rocker arm assembly	20-10-2
Valve rotators	20-10-2
Valves	20-10-2 - 20-10-3

Engine cooling system	20-25-1 - 20-25-4
Engine lubricating oils	10-20-3
Engine lubrication system	20-15-1 - 20-15-4
Engine malfunctions	20-5-2, 20-10-1
Engine oil pressure adjustment	20-15-4
Engine oil pressure check	20-15-1
Engine predelivery inspection	10-10-2
Engine test, final	10-15-4
Engine test, preliminary	10-15-1
Engine tune-up	10-15-1 - 10-15-3

F

Fan belt	20-25-2
Field coils, starting motor	40-15-4
Filter, engine oil	20-15-1, 20-15-4
Filter, reverser oil	50-20-12
Filters, fuel	30-10-3 - 30-10-4
Final drive assembly:	60-20-1 - 60-20-6
Adjustment	60-20-6
Components	60-20-1 - 60-20-3
Facing and plates	60-20-5
Final drive shaft	60-20-4
Flanged axle and shaft	60-20-2, 60-20-4
Housing	60-20-2
Steering clutch assembly	60-20-2, 60-20-5
Steering clutch pressure plate	60-20-6
Final engine test	10-15-4
Flywheel	20-10-8 - 20-10-9
Fuel filters	30-10-3 - 30-10-4
Fuel injection pump	

(Roosa-Master Model JDB):	30-25-1 - 30-25-4
Adjustments	30-25-3 - 30-25-4
Components	30-25-1
Drive shaft and gear	30-25-2
Malfunctions	30-25-1
Timing	30-25-3

Fuel system	30-5-1
Fuel system after-sales inspection	10-10-4
Fuel system malfunctions	30-5-1 - 30-5-2
Fuel tank	30-10-1 - 30-10-2
Fuel transfer pump (AC)	30-10-2
Fuel transfer pump (Airtex)	30-10-3
Fuel transfer pump malfunctions (AC)	30-10-2
Fuel transfer pump malfunctions (Airtex)	30-10-3

G

Gauges and switches	40-25-1
Gauges and switches, testing	40-25-1
Gear train, engine	20-10-12 - 20-10-14
Gear train, timing	20-10-13

General after-sales inspection	10-10-5
General predelivery inspection	10-10-3
Governor:	20-20-1 - 20-20-3
Components	20-20-1, 20-20-2
Linkage	20-20-3
Linkage adjustment	20-20-3
Malfunctions	20-20-1
Grapple	80-35-2
Greases	10-20-3

H

Hydraulic backhoe control valve	70-30-1 - 70-30-5
Hydraulic backhoe swing cylinder	70-40-1 - 70-40-4
Hydraulic breakaway coupler	70-10-5
Hydraulic breakaway coupler malfunctions	70-10-5
Hydraulic cylinders:	70-35-1 - 70-35-5
Clam cylinder (Drott)	70-35-3
Loader bucket cylinder	70-35-1
Remote cylinder bleeding	70-35-5
Remote cylinder malfunctions	70-35-4
Remote cylinders	70-35-4 - 70-35-5
Rod guide components	70-35-2
V-packing	70-35-2
Hydraulic direction reverser	50-20-1 - 50-20-19
Hydraulic dozer control valve	70-25-1 - 70-25-6
Hydraulic Drott bucket clam relief valve	70-10-4
Hydraulic filters	70-10-1
Hydraulic flow divider valve	70-10-3
Hydraulic loader control valve	70-20-1 - 70-20-8
Hydraulic pump:	70-15-1 - 70-15-3
Components	70-15-1 - 70-15-2
Malfunctions	70-15-1
Pump disconnect	70-15-3
Hydraulic pump, reverser	50-20-2, 50-20-12, 50-20-19
Hydraulic pump, winch	80-15-6 - 80-15-7
Hydraulic reservoirs	70-10-1
Hydraulic selector valve	70-10-2
Hydraulic system:	70-5-1 - 70-5-11
Circuit diagrams	70-5-2 - 70-5-6
Malfunctions	70-5-11
Tests	70-5-7 - 70-5-10

I

Ignition coil	40-20-4
Ignition coil tests	40-20-4
Ignition system	40-20-1 - 40-20-4
Indexing distributor	40-20-3
Injection pump, fuel (Model JDB)	30-25-1 - 30-25-4
Inspection, after-sales	10-10-4 - 10-10-5
Inspection, predelivery	10-10-1 - 10-10-3

L

Loader:	80-25-1 - 80-25-4
Adjustments	80-25-3
Bucket	80-25-2
Bucket teeth	80-25-3
Frame	80-25-2
Linkage	80-25-1
Loader control valve:	70-20-1 - 70-20-8
Circuit relief valve	70-20-4
Control valve components	70-20-5
Linkage	70-20-8
Oil flow	70-20-1 - 70-20-2
Return-to-dig mechanism	70-20-3, 70-20-7
Return-to-dig mechanism adjustment	70-20-7
System relief valve	70-20-4
Log and lumber fork:	80-35-1 - 80-35-2
Adjustments	80-35-2
Main frame and forks	80-35-1
Mast and grapple	80-35-2
Lubricants, storage	10-20-3
Lubrication, after-sales inspection	10-10-5
Lubrication chart	10-20-1 - 10-20-2
Lubrication, predelivery inspection	10-10-2
Lubrication system	20-15-1 - 20-15-4
Lubrication system malfunctions	20-15-1 - 20-15-2

M

Main bearings	20-10-8 - 20-10-9
Malfunctions:	
Carburetor	30-20-2
Clutch assembly	50-10-2
Cooling system	20-25-1
Distributor	40-20-1
Electrical system	40-5-3
Engine	20-5-2, 20-10-1
Fuel injection pump (Model JDB)	30-25-1
Fuel transfer pump (AC)	30-10-2
Governor and speed control linkage	20-20-1
Hydraulic pump	70-15-1
Hydraulic system	70-5-11
Lubrication system	20-15-1 - 20-15-2
Remote cylinder, hydraulic	70-35-4
Reverser	50-20-11
Starting motor	40-15-1
Steering-brake system	60-5-4
Track carrier assembly	80-10-2
Track system	80-5-3
Transmission	50-15-3
Winch	80-15-4

N

Needle bearings, carburetor	30-20-4
-----------------------------	---------

O

Oil cooler, reverser	50-20-12
Oil filter, engine	20-15-1, 20-15-4
Oil filter, reverser	50-20-12
Oil pan	20-10-7
Oil pressure adjustment, engine	20-15-4
Oil pressure check, engine	20-15-1
Oil pressure regulating valve	20-15-1
Oil pump, engine:	20-15-1 - 20-15-3
Components	20-15-2
Cover	20-15-2
Drive shaft	20-15-2
Gears	20-15-3
Housing and idler shaft	20-15-2
Oils, engine lubricating	10-20-3
Oils, transmission-hydraulic	10-20-3
Operation, predelivery service	10-10-2
Overrunning clutch, starting motor	40-15-4

P

PTO	50-25-1 - 50-25-2
Piston rings	20-10-6
Pistons	20-10-4 - 20-10-7
Polarity precautions	40-5-1
Power train	50-5-1
Power train malfunctions	50-5-2
Pre-cleaner	30-15-1 - 30-15-2
Predelivery inspection	10-10-1 - 10-10-3
Predelivery service	10-10-1
Preliminary engine test	10-15-1
Pulley, alternator	40-10-6
Pulley, belt:	80-50-1 - 80-50-2
Adjustment	80-50-2
Components	80-50-1
Pinion shaft	80-50-1
Ring gear and pinion	80-50-2
Pump, engine oil	20-15-1 - 20-15-3
Pump, fuel injection (Model JDB)	30-25-1 - 30-25-4
Pump, fuel transfer (AC)	30-10-2
Pump, fuel transfer (Airtex)	30-10-3
Pump, hydraulic	70-15-1 - 70-15-3
Pump, power steering	60-10-1 - 60-10-3
Pump, water	20-25-1 - 20-25-4

R

Radiator	20-25-1 - 20-25-2
Refacing valves	20-10-2
Reservoir, hydraulic	70-10-1
Reservoir, power steering	60-15-4

Reverser (hydraulic):	50-20-1 - 50-20-19
Accumulator housing	50-20-14
Case	50-20-18
Clutch assembly and countershaft	50-20-15 - 50-20-17
Components	50-20-1
Control valve	50-20-12
Control valve housing	50-20-2
Control valve operation	50-20-4
Direction reverser case	50-20-3
Direction reverser clutches	50-20-6 - 50-20-8, 50-20-12
Hydraulic pump	50-20-2, 50-20-12, 50-20-19
Malfunctions	50-20-11
Oil cooler	50-20-12
Oil filter	50-20-12
Oil flow, control valve	50-20-4 - 50-20-5
Oil flow, direction reverser	50-20-6 - 50-20-8
Oil supply system	50-20-2
Relief valve housing	50-20-13
Tests	50-20-9 - 50-20-10
Rings, piston	20-10-6
Rockshaft	80-45-1
Rods, connecting	20-10-4 - 20-10-7
Rotators, valve	20-10-2
Rotor, alternator	40-10-4

S

Separation:	10-25-1 - 10-25-6
Clutch housing and reverser case	10-25-2
Engine	10-25-1
Final drive	10-25-3 - 10-25-4
Loader	10-25-6
Steering clutch	10-25-4 - 10-25-5
Transmission	10-25-5
Service, after-sales	10-10-4
Service, delivery	10-10-3
Service, predelivery	10-10-1
Solenoid switch, starting motor	40-15-5
Special tools:	
Backhoe swing cylinder	70-40-5 - 70-40-6
Belt pulley	80-50-2
Carburetor	30-20-5
Charging system	40-10-8
Clutch assembly	50-10-9
Cooling system	20-30-8
Engine, basic	20-30-5
Final drive assembly	60-20-7
Fuel injection pump	30-25-4
Governor and speed control linkage	20-30-6
Hydraulic cylinders	70-35-6
Lubrication system	20-30-6

Special tools—Continued		
Separation	10-25-8	
Starting motor	40-15-6	
Track carrier assembly	80-10-14	
Tracks	80-5-15	
Winch	80-15-18	
Specifications:		
Belt pulley	80-50-2	
Carburetor	30-20-5	
Charging system	40-10-7	
Clutch assembly	50-10-9	
Cooling system	20-30-8	
Dozer control valve	70-25-6	
Engine, basic	20-30-1 - 20-30-3	
Final drive assembly	60-20-7	
Fuel injection pump	30-25-4	
Fuel system	30-10-4	
General:	10-5-1 - 10-5-3	
Capacities	10-5-2	
Dimensions	10-5-3	
Direction reverser	10-5-2	
Electrical system	10-5-1	
Engine	10-5-1	
Hydraulic system	10-5-1	
PTO	10-5-2	
Steering and brakes	10-5-2	
Track and track frame	10-5-2	
Transmission	10-5-2	
Weight distribution	10-5-2	
Governor and speed control linkage	20-30-7	
Hydraulic components	70-10-6	
Loader control valve	70-20-9	
Hydraulic cylinders	70-35-6	
Hydraulic pump	70-15-4	
Hydraulic system	70-5-12	
Lubrication system	20-30-6	
Reverser	50-20-20	
Starting motor	40-15-6	
Steering-brake assembly	60-25-6	
Steering-brake system	60-5-4	
Steering cylinders	60-15-4	
Steering pump, power	60-10-4	
Track carrier assembly	80-10-13	
Tracks	80-5-14	
Transmission	50-15-18	
Winch	80-15-17 - 80-15-18	
Speed control linkage:	20-20-4 - 20-20-6	
Diesel linkage	20-20-5	
Diesel speed control		
adjustments	20-20-5 - 20-20-6	
Gasoline linkage	20-20-4	
Gasoline speed control		
adjustments	20-20-4 - 20-20-5	
Starting motor:	40-15-1 - 40-15-5	
Armature	40-15-4	
Brushes	40-15-4 - 40-15-5	
Diesel components	40-15-2	
Field coils	40-15-4	
Gasoline components	40-15-3	
Malfunctions	40-15-1	
Overrunning clutch	40-15-4	
Solenoid switch	40-15-5	
Tests	40-15-1, 40-15-4 - 40-15-5	
Steering and brake system:	60-5-1 - 60-5-4	
Hydraulic oil flow	60-5-2	
Malfunctions	60-5-4	
Tests	60-5-3 - 60-5-4	
Steering-brake assembly:	60-25-1 - 60-25-5	
Adjustments	60-25-4 - 60-25-5	
Brake band	60-25-2	
Brake linkage	60-25-2 - 60-25-3	
Clutch shaft fork assembly	60-25-2	
Components	60-25-1	
Steering clutch housing	60-25-2	
Steering linkage	60-25-2 - 60-25-3	
Throw-out bearing	60-25-2	
Steering cylinders:	60-15-1 - 60-15-3	
Components	60-15-2 - 60-15-3	
Flow divider assembly	60-15-3	
Oil flow	60-15-1	
Yoke adjustment	60-15-3	
Steering pump, power:	60-10-1 - 60-10-3	
Components	60-10-2	
Oil flow	60-10-1	
Steering reservoir	60-15-4	
Storage, lubricants	10-20-3	
Storage, temporary machine	10-10-1	
T		
Temporary storage	10-10-1	
Thermostat	20-25-2	
Three-point hitch:	80-45-1 - 80-45-2	
Adjustments	80-45-2	
Center link	80-45-2	
Drawbar	80-45-1	
Lift and drag links	80-45-2	
Throttle assembly, carburetor	30-20-3	
Timing distributor	30-20-3 - 30-20-4	
Track carrier assembly:	80-10-1 - 80-10-12	
Cross bars	80-10-6	
Front idlers	80-10-4 - 80-10-5, 80-10-7 - 80-10-10	
Idler tension spring	80-10-3	
Lubrication	80-10-5, 80-10-10	

Track carrier assembly—Continued

Malfunctions	80-10-2	Valve, hydraulic Drott bucket clam relief	70-10-4
Side frames	80-10-6	Valve, hydraulic flow divider	70-10-3
Tests	80-10-2 - 80-10-3	Valve, hydraulic loader control	70-20-1 - 70-20-8
Track adjusting assembly	80-10-4 - 80-10-5, 80-10-8 - 80-10-9	Valve, hydraulic selector	70-10-2
Track carrier assembly	80-10-3 - 80-10-5, 80-10-9	Valve lift check	20-10-10
Track carrier roller	80-10-4 - 80-10-5, 80-10-7	Valve, oil pressure regulating	20-15-1
Track rollers	80-10-3 - 80-10-5, 80-10-7, 80-10-10	Valve, reverser control	50-20-12
Wear strips	80-10-5	Valve rotators	20-10-2
Wide tread installation	80-10-11 - 80-10-12	Valve springs	20-10-2
Track predelivery inspection	10-10-2	Valve tappet clearance adjustment	20-10-3
Tracks:	80-5-1	Valve, winch control	80-15-5
Transmission:	50-15-1 - 50-15-17	Valves, engine	20-10-2 - 20-10-3
Adjustments	50-15-12 - 50-15-14	Valves, refacing	20-10-2
Case	50-15-12		
Input shaft	50-15-8 - 50-15-9, 50-15-16		
Malfunctions	50-15-3		
Neutral position gearing	50-15-2		
Output shaft	50-15-8, 50-15-10, 50-15-15		
Power flow	50-15-2		
Power shaft	50-15-10 - 50-15-11, 50-15-14 - 50-15-15		
Powershaft shifter	50-15-11, 50-15-14		
Rear cover	50-15-1, 50-15-7		
Ring gear and hub	50-15-9, 50-15-15 - 50-15-16		
Shafts and gears	50-15-1, 50-15-8 - 50-15-11		
Shift cover	50-15-7		
Shift shafts and forks	50-15-4 - 50-15-6		
Shifter mechanism	50-15-4 - 50-15-7		
Starter safety switch	50-15-1		
Throw-out bearing sleeve	50-15-17		
Transmission-hydraulic oils	10-20-3		
Tune-up, engine	10-15-1 - 10-15-3		

V

Valve, hydraulic backhoe control	70-30-1 - 70-30-5
Valve, hydraulic dozer control	70-25-1 - 70-25-6

W

Water pump	20-25-1 - 20-25-4
Winch drive shaft	50-25-1 - 50-25-3
Winch system:	80-15-1 - 80-15-16
Brake band adjustment	80-15-14
Brake band and clutch cover	80-15-8, 80-15-10, 80-15-13
Brake cylinder	80-15-10
Burnishing brake facings	80-15-14
Cable attachment	80-15-15
Clutch and brake drum	80-15-8, 80-15-11
Clutch disks	80-15-8
Clutch pressure plate assembly	80-15-8, 80-15-11, 80-15-13
Control lever adjustment	80-15-3
Control valve	80-15-5
Fairlead assembly	80-15-16
Gear train	80-15-9
Housing assembly	80-15-8 - 80-15-14
Hydraulic pump	80-15-6 - 80-15-7
Main drive shaft	80-15-8, 80-15-13
Malfunctions	80-15-5
Oil flow	80-15-1 - 80-15-2
Relief valve adjustment	80-15-5
Ring gear and pinion adjustment	80-15-11 - 80-15-13
Shafts and bearings	80-15-10, 80-15-12
Tests	80-15-3
Winch drum	80-15-9, 80-15-11
Winch drum bearing quills	80-15-11
Wiring harnesses	40-5-4 - 40-5-5