

John Deere

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MODEL:

**3000 Series; 3010,
3020 (S/n 0-122,999)**

Volume 1 of 2

**SERVICE
MANUAL**

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JOHN DEERE 3000 SERIES TRACTORS

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TO THE JOHN DEERE SERVICEMAN

This service manual contains maintenance instructions for John Deere 3000 Series tractors. Included are complete instructions for removal, disassembly, inspection, repair, assembly and installation of the major parts and assemblies of the tractor.

In addition, the manual contains brief descriptions of the more complicated systems of the tractor, and tells how they operate. Tests and adjustments, required to keep the tractor operating efficiently, are explained in detail.

A section on "Specifications" lists dimensions of many new wearing parts as an aid in determining when parts replacement is necessary.

A section on "Tune-Up and Adjustment" contains instructions for performing the services necessary to help the tractor perform efficiently and economically after it has been in the field for some time.

A section on "Special Tools" lists special tool equipment which enables the serviceman to service the tractor efficiently with a minimum of time expended.

This manual was planned and written for the Service Department; its place is in the shop. Use the manual whenever in doubt about correct maintenance procedures. Use it as a text book for training new Service Department personnel who are unfamiliar with John Deere Tractors.

Daily use of the Service Manual as a guide for any and all service problems will reduce error and costly delay to a minimum and assure you the best in finished service work. In many instances your customer's confidence in your work will be improved when he sees you using the Service Manual. He knows you are following approved maintenance procedures and making proper adjustments. There is no guesswork when you use the manual.



John Deere 3020 Row-Crop Tractor with Diesel Engine

TRANSMISSION	3020	3010
Type		
Syncro-Range	Constant mesh, helical gears, synchronized shifting within stations	
Power Shift.	Planetary, hydraulically actuated	
Speeds		
Forward.	8	8
Reverse		
Syncro-Range.	2	3
Power Shift.	4	
Shifting		
Syncro-Range	4 stations, synchronized shifting within stations	
Power Shift.	Independent, selective, hydraulically actuated	

GROUND SPEEDS

Row-Crop

Syncro-Range Transmission

Shift Lever Position

	(15.5-38 Tire and at 2100 Engine rpm)	(13.6-38 Tire and at 1900 Engine rpm)
1st	1.7 mph	1.7 mph
2nd	2.6 mph	2.7 mph
3rd	3.4 mph	3.5 mph
4th	4.4 mph	4.5 mph
5th	5.4 mph	5.6 mph
6th	7.2 mph	7.5 mph
7th	9.0 mph	9.4 mph
8th	14.7 mph	15.3 mph
1st Reverse	3.3 mph	3.4 mph
2nd Reverse	5.2 mph	5.4 mph
3rd Reverse		9.1 mph

Standard Tread

Syncro-Range Transmission

Shift Lever Position

	(18.4-30 Tire and at 2100 Engine rpm)	(18.4-30 Tire and at 1900 Engine rpm)
1st	1.6 mph	1.7 mph
2nd	2.5 mph	2.6 mph
3rd	3.3 mph	3.4 mph
4th	4.2 mph	4.4 mph
5th	5.2 mph	5.4 mph
6th	7.0 mph	7.2 mph
7th	8.7 mph	9.1 mph
8th	14.3 mph	14.9 mph
1st Reverse	3.2 mph	3.3 mph
2nd Reverse	5.0 mph	5.3 mph
3rd Reverse		8.8 mph



Fig. 50-15-2—Removing Rocker Arm Assembly

Remove muffler, intake manifold, exhaust manifold, crankcase ventilator pipe, and rocker arm cover.

Remove rocker arm assembly (Fig. 50-10-2), push rods, and cylinder head cap screws.

Remove cylinder head and gasket from cylinder block (Fig. 50-15-3).



Fig. 50-15-3—Removing Cylinder Head

SPARK IGNITION ENGINE

When removing spark ignition engine heads, do the following which is not applicable to removing diesel engine heads:

Disconnect wires from ignition coil and spark plugs. Remove coil and bracket.



Fig. 50-15-4—Tank-to-Strainer Fuel Hose and Strainer-to-Ignition Wire

Disconnect air cleaner hose at carburetor and choke wire from choke arm on carburetor.

Disconnect fuel pipe at carburetor (gasoline).

LP-Gas Only

If engine is LP-Gas, disconnect fuel hose and wire at fuellock strainer (Fig. 50-15-4).



Fig. 50-15-5—Fuel Converter Unit (LP-Gas)

Group 15

CLUTCH ASSEMBLIES

SEPARATING THE TRACTOR

Separate the clutch housing from the engine as follows:

Disconnect battery cables and ground straps at the batteries.

Remove cowl and hood.



Fig. 100-15-1—Points of Disconnection

Disconnect oil pressure gauge sender wire and tachometer cable (Fig. 100-15-1).

On diesel tractors disconnect throttle rod (Fig. 100-15-1). 3010 Tractors also have a fuel shut-off cable. Disconnect ether starting aid tube from intake manifold.

On gasoline and LP-Gas tractors disconnect the throttle rod (Fig. 100-15-2) and ignition coil wire (Fig. 100-15-3).

On all tractors disconnect heat indicator cable from engine (Fig. 100-15-4).



Fig. 100-15-2—Gasoline and LP-Gas Throttle Rod



Fig. 100-15-3—Gasoline and LP-Gas Ignition Coil Wire



Fig. 100-15-4—Heat Indicator Cable

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Group 15**DIFFERENTIAL LOCK****DIFFERENTIAL****REMOVAL**

Remove the seat and rockshaft housing assembly as instructed in Section 270, Group 10.



Fig. 140-15-1—Differential

Disconnect oil pipes and outer link. Remove differential lock control valve (Fig. 140-15-1).

Remove all parts from top end of load control arm.

Disconnect and remove oil pressure inlet pipe.

If tractor has Syncro-Range transmission, remove transmission oil pump inlet and outlet tubes and blocks as instructed in Section 240, Group 10.

Remove both rear axle housings and final drive units from the tractor as instructed in Section 150, Group 10.

Rotate differential to obtain maximum clearance between flat side of differential housing and the load control arm. Place a chain around the differential housing, and hoist differential assembly enough to relieve weight on quill bearings.



Fig. 140-15-2—Removing Bearing Quills

Remove cap screws and lock plates, and remove both bearing quills (Fig. 140-15-2). Be sure to keep bearing quill shims with their respective bearing quills. Pivot load control arm to extreme forward position, and hoist differential out of case.

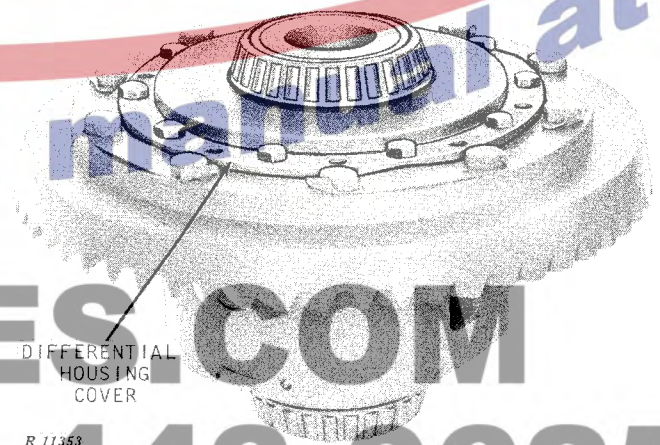
DISASSEMBLY

Fig. 140-15-3—Differential Assembly

Remove cap screws and lift differential housing cover (Fig. 140-15-3) off differential housing. Be careful not to lose the two small springs which are mounted on dowel pins in the inner side of the differential housing cover. Take care to keep all parts clean.

Section 310

TROUBLE SHOOTING

Group 5

INDEX TO DIFFICULTIES

INTRODUCTION

Whenever tractor service is required due to complaint or failure, you must be able to determine the cause or causes of the trouble and find the quickest and easiest solution.

If you can do this without costly and time-consuming removal or disassembly, the job will go faster, costs will be reduced, and customer-irritating delays may be avoided.

The purpose of this Section is to help you diagnose quickly and easily most of the problems or failures with which you will be faced. Individual Groups of this Section contain difficulties that may develop in a specific component or system of the tractor. For instance, faults or failures that may be found in the tractor engine are given in one Group (Group 10), those that may be found in the electrical system are given in another Group (Group 20), etc. Following each difficulty is a list of the possible causes and their remedies, plus supplementary service information references to other Sections and Groups of this manual.

Using this information as a guide, you can diagnose the trouble by an orderly process of eliminating probable causes one by one until the solution is found.

For ready reference, an index to the common difficulties listed in this Section is provided below.

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DIFFERENTIAL LOCK

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