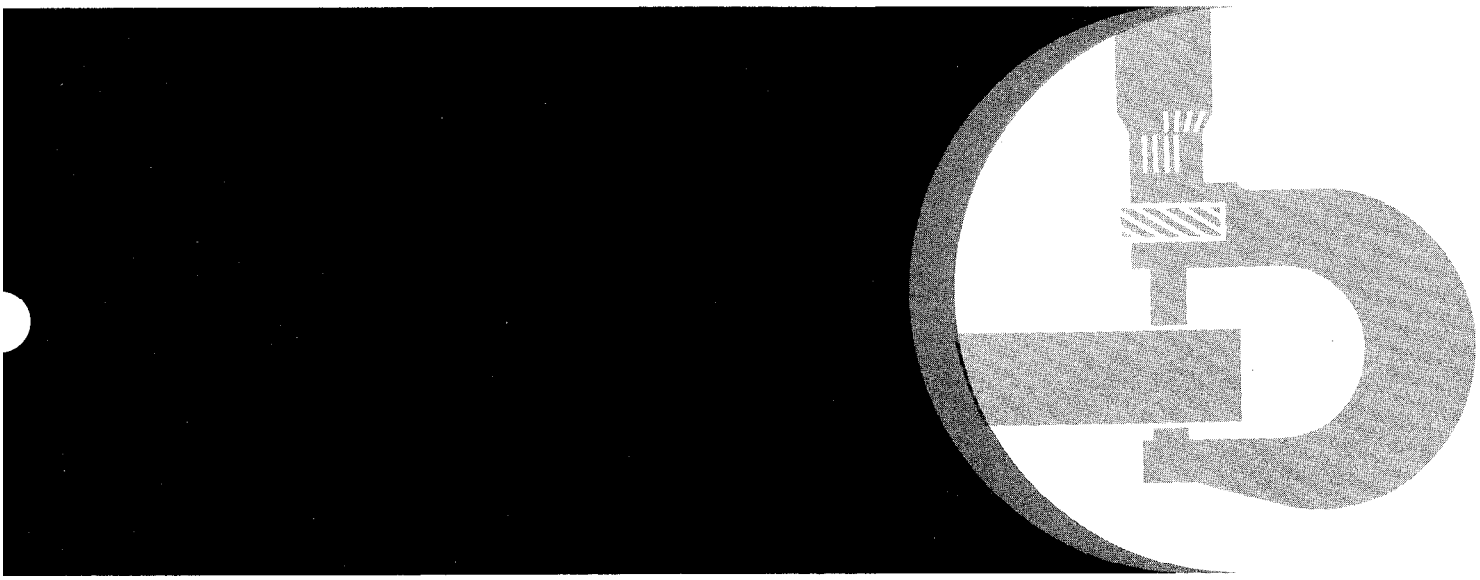
301–401
Tractors and Loaders



TECHNICAL MANUAL

John Deere Dubuque Works
TM-1034

LITHO IN U.S.A.

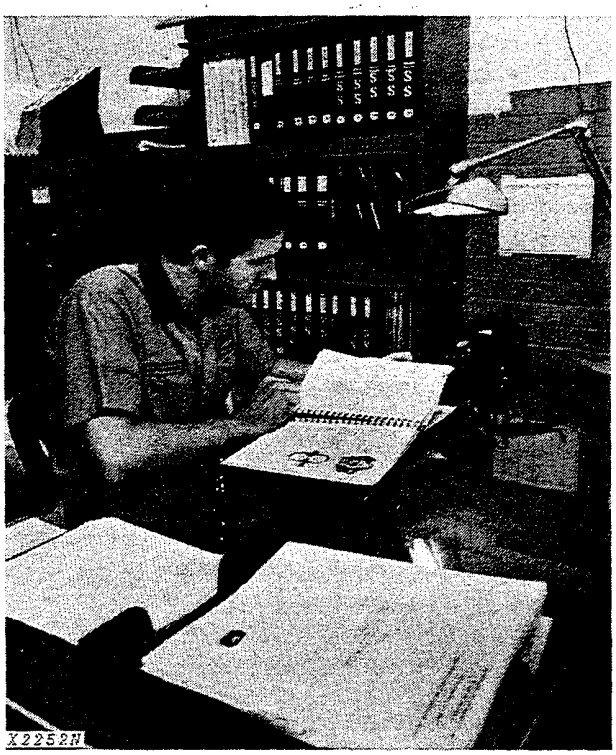
JD301-JD401 Tractors and Loaders
TECHNICAL MANUAL
TM-1034 (Feb-74)

CONTENTS

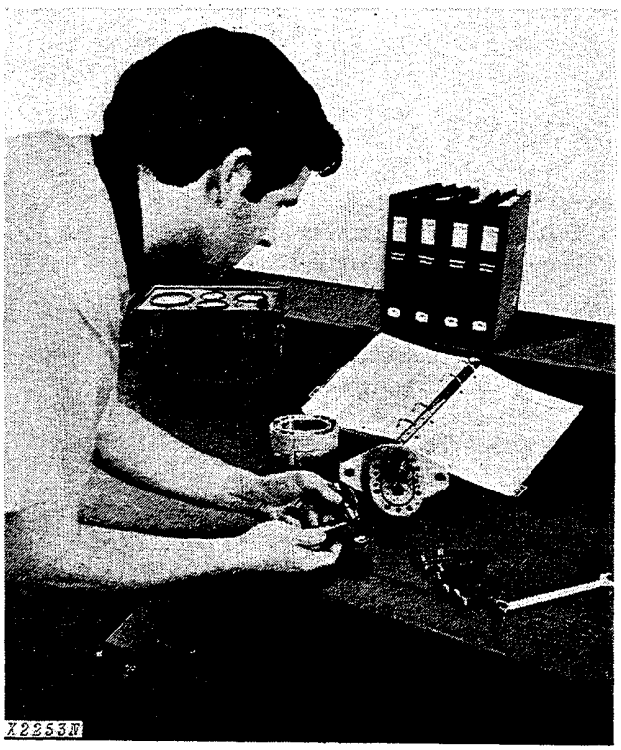
The specifications and design information contained in this manual were correct at the time it was printed. It is John Deere's policy to continually improve and update our machines. Therefore, the specifications and design information are subject to change without notice. Wherever applicable, specifications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

Litho in U.S.A.

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.

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Section 10
GENERAL

CONTENTS OF THIS SECTION

Litho in U.S.A.

Group 5
SPECIFICATIONS

	JD301 Gasoline	JD301 Diesel	JD401 Gasoline	JD401 Diesel
ENGINE				
Net flywheel horsepower (observed) at 2500 rpm	43.0	43.0	59.0	59.0
Gross flywheel horsepower	46	46	63	63
Maximum torque in ft-lbs at 1300 rpm (observed) (nominal)	110.0	110.0	145.0	145.0
Number of cylinders	3	3	4	4
Bore and stroke, inches	3.86x3.86	3.86x4.33	3.86x3.86	3.86x4.33
Displacement in cubic inches	135.0	152.0	180.0	202.0
Compression ratio	7.5 to 1*	16.2 to 1	7.5 to 1*	16.2 to 1
Firing order	1-2-3	1-3-4-2	1-3-4-2	1-2-3
N.A.C.C. or A.M.A. horsepower rating for tax purposes	17.88	17.88	23.84	23.84
Intake valve clearance	0.014-in.	0.014-in.	0.014-in.	0.014-in.
Exhaust valve clearance	0.022-in.	0.018-in.	0.022-in.	0.018-in.
Full engine power	2500 rpm		2500 rpm	

CLUTCH . . . . . Single stage spring-loaded, dry disk foot-operated.

ELECTRICAL SYSTEM
- Battery voltage . . . . . 12 volts
- Battery terminal grounded . . . . . Negative

TRANSMISSION
- Type . . . . . Collar shift
- Gear selections . . . . . 8 forward and 4 reverse
- Shifting . . . . . 4 speeds each in high, low, and reverse ranges. Mechanical park lock included.

REVERSER (OPTIONAL)
- Type . . . . . Planetary gear and wet clutch
- Number reverse speeds . . . . . 4 (in low range speeds only)

DIFFERENTIAL AND FINAL DRIVES
- Type . . . . . Planetary reduction final drives wet spiral bevel gear drive differential

Differential Lock . . . JD301 . Foot operated mechanical lock, spring-loaded out of engagement

JD401 . . Foot-operated mechanical lock, spring-loaded out of engagement.

POWER TAKE-OFF
- Type . . . . . Continuous running or transmission-driven types available in 540 and/or 1000 rpm options

HYDRAULIC SYSTEM
- Type . . . . . Closed-center, constant-pressure

BRAKES . . . . . Hydraulically activated wet-disk types

* *8.6 to 1 High Altitude Pistons*

Litho in U.S.A.

CAPACITIES (U.S. Standard Measures)

	JD301	JD401
Fuel Tank	16-1/2 gals.	19-1/2 gals.
Engine cooling system	2.75 gals.	3 gals.
Engine crankcase (including filter)	1.5 gals.	1.5 gals. (401) 1.75 gals. (401-A)
Transmission-hydraulic system	10 gals.	10 gals.

TRACTOR DIMENSIONS

JD301 Tractor Dimensions with 11.2-24, 4-ply Rear Tires, and 5.00-15, 4-ply Front Tires.

Height to top of hood ..... 4 ft. 0.9 in.
Clearance (front axle) ..... 1 ft. 5 in.
Over-all width, min. ..... 6 ft.
Over-all length (with 3-point hitch) ..... 11 ft. 1.4 in.
Wheelbase ..... 74.4 in.
Turning radius (with brakes applied) ..... 10 ft. 2 in.
Curb clearance circle ..... 20 ft. 9 in.
Operating weight (approx.)
(gasoline) ..... 3,740 lbs.
(diesel) ..... 3,860 lbs.

JD401 Tractor Dimensions with 11.2-24 Rear Tires, and 5.00-15 Front Tires.

Height to top of hood ..... 4 ft. 4.3 in.
Clearance (front axle) ..... 1 ft. 4.8 in.
Over-all width ..... 6 ft.
Over-all length (with 3-point hitch) ..... 11 ft. 6.9 in.
Wheelbase ..... 79.4 in.
Turning radius (with brakes applied) ..... 10 ft. 7 in.
Curb clearance circle ..... 22 ft. 7 in.
Operating weight (approx.)
(gasoline) ..... 4,100 lbs.
(diesel) ..... 4,170 lbs.

JD401-A Loader Dimensions with 16.9-24, 6-ply Rear Tires, and 7.50-16, 6-ply Front Tires.

Height to top of hood ..... 4 ft. 7.3 in.
Over-all height to top of canopy ..... 7 ft. 3.3 in.
Over-all width ..... 6 ft. 8 in.
Over-all length (with 3-point hitch) ..... 14 ft. 9.25 in.
Ground clearance (minimum) ..... 1 ft. 1.25 in.
Turning radius (brakes applied) ..... 11 ft. (approx.)
Curb clearance circle ..... 22 ft. 8 in.
Operating weight (approx.)
(gasoline) ..... 7,600 lbs.
(diesel) ..... 7,700 lbs.
Wheelbase ..... 82 in.

7310 LOADER OPERATING INFORMATION

Pump capacity (2500 engine rpm) ..... 13 gpm
System pressure ..... 2350 psi
Bucket capacity ..... 5/8 or 3/4 cu. yd.
Breakout force ..... 3600 lbs.
Lift (full height) ..... 2500 lbs.
Raising time ..... 4.5 sec.
Lowering time (power) ..... 2.6 sec.
Dumping time ..... 2.6 sec.
Bucket rollback time ..... 2.6 sec.

JD401-A LOADER OPERATING INFORMATION

Pump capacity (2500 engine rpm) ..... 28 gpm
System pressure (stand by) ..... 2350 psi
Bucket capacity ..... 5/8, 3/4 and 1 cu. yd.
Breakout force ..... 4800 lbs.
Lift (full height) ..... 3200 lbs.
Raising time ..... 3.5 sec.
Lower time (power) ..... 2.3 sec.
Dumping time ..... 1.3 sec.

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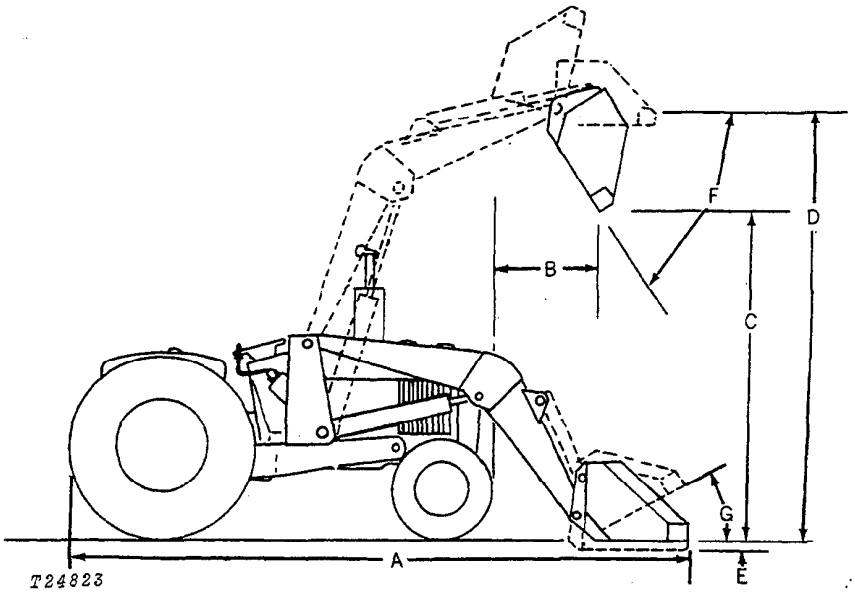

Fig. 1-Loader Operating Dimensions

LOADER DIMENSIONS

	7310 (JD301)	7310 (JD401)	JD401-A
A. Over-all length	15 ft. 5 in.	15 ft. 1 in.	14 ft. 9-1/4 in.
B. Dumping reach (full height)	2 ft. 6.3 in.	2 ft. 6.3 in.	2 ft. 5 in.
C. Dumping clearance (full height)	7 ft. 4.5 in.	7 ft. 4.5 in.	8 ft. 3 in.
D. Height to bucket pivot pin (maximum lift)	9 ft. 9 in.	9 ft. 9 in.	10 ft. 2 in.
E. Digging depth below ground (bucket level)	11.8 in.	11.8 in.	4 in.
F. Dump angle (full height)	41°	41°	45°
G. Bucket roll-back (ground level)	16°	16°	30°
H. Maximum height (excluding muffler) (not illustrated)	4 ft. 0.9 in.	4 ft. 10 in.	6 ft. 8.25 in.
I. Operating weight (without counter-weights) (not illustrated)			
Gasoline	5230 lbs.	5580 lbs.	7600 lbs.
Diesel	5350 lbs.	5650 lbs.	7700 lbs.
J. Bucket width (not illustrated)			
(5/8 cu. yd.)	73.8 in.	73.8 in.	65.5 in.
(3/4 cu. yd.)	86.0 in.	86.0 in.	81.125 in.
(1 cu. yd.)	---	---	81.125 in.

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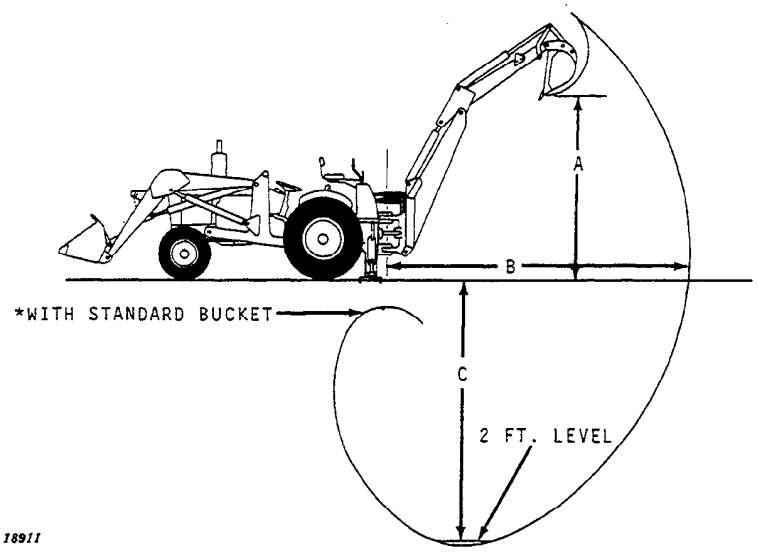
9250 BACKHOE SPECIFICATIONS

Maximum swing	180 deg.
Bucket rotation	138, 136, or 164 deg.
Bucket rollback	26 or 11 deg. rollback and 11 deg. forward
Digging force (bucket cylinders)	6750 lbs.
Controls	Two-lever
Transport height	11 ft. 2 in.
Shipping weight less bucket (approx.) (JD401-A)	2680 lbs.
Loading height (IEMC)	11 ft. 3 in.
Reach from center of rear axle (IEMC)	17 ft. 5 in.
Reach from center of rear axle (JD401-A)	20 ft. 5-1/4 in.
Digging depth maximum	13 ft. 10 in.
Digging depth (IEMC)	13 ft. 4 in.
Stabilizer width	
Transport position	6 ft. 8 in.
Operating position (overall)	9 ft. 8 in.
Operating position (IEMC)	8 ft. 6 in.
Hydraulic system	
System pressure	2250 psi
Pump (2500 engine rpm)	28 gpm

OPERATING DIMENSIONS



9250 Backhoe

"A" . . . 11 ft. 3 in.
"B" . . . 17 ft. 5 in.
"C" . . . 13 ft. 4 in.

Fig. 2-Backhoe Operating Dimensions

(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with SAE and IEMC standards)

Thank you very much for your reading. Please Click Here Then Get More Information.

NOTE:

If there is no response to click on the link above, please download the PDF document first and then click on it.

Group 10

PREDELIVERY, DELIVERY, AND AFTER-SALES SERVICES

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.

A tag pointing out the factory-recommended procedure for predelivery service is attached to each new machine before it leaves the factory.

After completing the factory-recommended dealer checks and services listed on the predelivery tag, remove the tag from the machine and file it with the shop order for the job. The tag will then serve as a basis for certifying that the unit has received the proper predelivery service when that portion of the customer's John Deere Delivery Receipt is completed.

TEMPORARY STORAGE

Service	Specifications	Reference
Check radiator for coolant loss and antifreeze protection.	Midway between core and filler neck.	----
Drain fuel system (gasoline).	----	Operator's manual.
Remove and store battery.	Store at room temperature.	----
Reduce shipping pressure of tires.	----	Operator's manual.
Cover machine and tires for protection and cleanliness.	----	----

PREDELIVERY INSPECTION

Cooling System

Inspect radiator for coolant loss.	Midway between core and filler neck.	----
Check antifreeze protection.	----	Operator's manual.

Electrical System

Charge batteries and check terminals to be sure they are tight.	----	Operator's manual
Punch warranty tag on top of battery.	----	----
Check alternator belt tension.	----	Operator's manual

Tires and Wheels

Adjust pressure of tires.	----	Operator's manual.
Check front and rear wheel retainers for tightness.	----	Operator's manual.

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Service	Specifications	Reference
Lubrication		
Check crankcase oil level.	To upper marks on dipstick.	Operator's manual.
Check transmission-hydraulic system oil level.	----	Operator's manual.
Lubricate grease fittings.	----	Operator's manual.
Check distributor lubrication (gasoline).	----	Operator's manual.
Engine		
Check air cleaner oil level (oil bath).	Oil to "OIL LEVEL" line on cup.	Operator's manual.
Check air cleaner (dry type).	----	Operator's manual.
Fill fuel tank and start engine.	Capacity - U.S. gallons. JD301 - 16-1/2 gals. JD401 - 19-1/2 gals	Operator's manual.
Check operation of lights, gauges, and indicator lights.	----	Operator's manual.
Check speed control and governor linkage for free operation.	----	Section 20, Group 20.
Check engine idle speeds.	----	Section 20, Group 20.
Operation		
Check engine clutch operation (without reverser).	1 in. free travel.	Section 50, Group 10.
Clutch pedal wear adjustment (with reverser).	----	Section 50, Group 20.
Check Hi-Lo shift unit operation.	----	Section 50, Group 25.
Shift transmission through all gears.	----	Operator's manual.
Check power take-off operation.	----	Operator's manual.
Check differential lock operation.	----	Operator's manual.
Check operation of 3-point hitch.	----	Operator's manual.
Check hydraulic system operation.	----	Section 70, Group 5.
Check brake operation.	----	Section 60, Group 5.
Check steering operation.	----	Section 60, Groups 10 and 15.
Check seat operation.	----	Operator's Manual.
General		
Tighten accessible nuts and cap screws.	Torque Chart	Section 10, Group 25.
Clean machine and touch up paint.	----	----

DELIVERY SERVICE

A thorough discussion of the operation and service of a new machine at the time of delivery helps to assure complete customer satisfaction. Proper delivery should be an important phase of a dealer's program. A portion of the John Deere Delivery Receipt emphasizes the importance of proper delivery service.

It is a well-known fact that many complaints have arisen simply because the owner was not shown how to operate and service his new machine properly. Enough time should be devoted, at the customer's convenience, to introducing the owner to his new machine and explaining to him how to operate and service it.

The following procedure is recommended before the serviceman and owner complete the delivery acknowledgments portion of the Delivery Receipt.

Using the operator's manual as a guide, be sure that the owner understands these points thoroughly:

1. Controls and instruments.
2. How to start and stop the engine.
3. The importance of the break-in period.
4. How to use cast-iron ballast.
5. All functions of the hydraulic system.
6. The importance of safety.
7. The importance of lubrication and periodic services.

After explaining and demonstrating the above features, have the owner sign the Delivery Receipt and give him the operator's manual.

AFTER-SALE INSPECTION

The purchaser of a new John Deere machine is entitled to a free inspection at some mutually agreeable time within the warranty period after the equipment has been "run in." The terms of this after-sale inspection are outlined on the customer's John Deere Delivery Receipt.

The purpose of this inspection is to make sure that the customer is receiving satisfactory performance from his machine. At the same time, the inspection should reveal whether or not the machine is being operated, lubricated, and serviced properly.

If the recommended after-sale service inspection is followed, the dealer can eliminate a needless volume of service work by preventing minor irregularities from developing into serious problems later on. This will promote strong dealer-customer relations and present the dealer an opportunity to answer questions that may have risen during the first few days of operation.

During the inspection service, the dealer has the further opportunity of promoting the possible sale of other new equipment.

Service	Specifications	Reference
Cooling System		
Check radiator coolant level.	Midway between core and filler neck.	----
Clean external surface of radiator core.	----	----
Check hoses and connections for leaks.	----	----
Fuel System		
Remove water and foreign matter from filter sediment bowls.	----	Operator's manual.
Check fuel line connections.	----	Operator's manual.

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AFTER-SALES INSPECTION—Continued

Service	Specifications	Reference
Electrical System		
Check specific gravity of battery.	Full charge at 80° F. is 1.26.	Operator's manual.
Check level of battery electrolyte.	To bottom of filler neck in each cell.	Operator's manual.
Check alternator belt tension.	3/4-inch deflection with a 20-pound force.	Operator's manual.
Start engine and check action of starter, lights, indicator lamps, and gauges.	----	Operator's manual.
Lubrication		
Check crankcase oil level.	To upper marks on dipstick.	Operator's manual.
Check air cleaner cup oil level (oil bath types).	To "OIL LEVEL" line on cup.	Operator's manual.
Check air cleaner dust cup, unloading valve, and element (dry type).	----	Operator's manual.
Check transmission-hydraulic system oil level.	----	Operator's manual.
Check manual steering housing oil level.	To level of filler hole	Operator's manual.
Check distributor lubrication (gasoline).	----	Operator's manual.
Lubricate clutch throw-out bearing.	----	Operator's manual.
Lubricate 3-point hitch.	----	----
Engine		
Check valve tappet adjustment.	----	Operator's manual.
Check engine speed and horsepower under load.	----	Section 10, Group 15.
General		
Check clutch pedal free travel (without reverser).	1-inch free travel.	Section 50, Group 10.
Check clutch wear adjustment (with reverser).	----	Section 50, Group 20.
Check PTO clutch operation.	----	Section 50, Group 10.
Check differential lock operation.	----	Operator's manual.
Check hydraulic system operation.	----	Section 70, Group 25.
Check steering.	----	Section 60, Group 20.
Check brakes.	----	Section 60, Group 5.
Tighten accessible nuts and cap screws.	Torque chart	Group 25.
Tighten accessible hydraulic oil lines.	----	----
Visual inspection.	----	----

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Group 15
TUNE-UP

GENERAL INFORMATION

Before tuning up a tractor, determine whether a tune-up will restore operating efficiency. When there is doubt, the following preliminary tests will help to determine if the engine can be tuned up. If the condition is satisfactory, proceed with the tune-up. Choose from the following procedures only those necessary to restore the unit.

PRELIMINARY ENGINE TESTING

Operation	Specification	Section-Group Reference
Dynamometer Test (at 2500 engine rpm.)	Compare with previous recorded output; compare with output after tune-up.	FOS-30 Engines
Compression Test.	.....	FOS-30 Engines 20-10
Manifold Depression Test (gasoline).	.....	FOS-30 Engines 20-10
Engine Coolant Check Test.	No air bubbles or oil film in radiator.	FOS-30 Engines

ENGINE TUNE-UP

Operation	Specification	Section-Group Reference
Air Intake System		
Service air cleaner and check system for leaks.	.....	FOS-30 Engine
Check system for restrictions using water manometer (inches of water).	.....	FOS-30 Engines 30-15
Exhaust System		
Check system for leaks.	.....	FOS-30 Engines
Check muffler and exhaust pipe for restrictions.	.....	FOS-30 Engines
Crankcase Vent Tube		
Check tube for restrictions.	.....	FOS-30 Engines
Cooling System		
Clean grille screen, radiator core, and oil cooler core.	.....	20-25
Clean and flush system; check thermostat.	.....	20-25
Check pressure cap.	.....	20-25

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