



4000 & 4020 TRACTORS



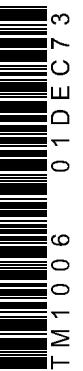
JOHN DEERE

TECHNICAL MANUAL 4000 & 4020 TRACTORS

TM1006 (01DEC73) English

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LITHO IN THE U.S.A. (REVISED)
ENGLISH



4000 AND 4020 TRACTOR (Serial No. 201,000 - Up)

Technical Manual
TM-1006 (Aug-70)

CONTENTS

SECTION 10 - GENERAL

- Group 5 - General Tractor Specifications
- Group 10 - Predelivery, Delivery, and After-Sale Services
- Group 15 - Tune-up and Adjustment
- Group 20 - Lubrication
- Group 25 - Separation

SECTION 20 - ENGINE

- Group 5 - General Information, Diagnosis, and Tests
- Group 10 - Cylinder Head and Camshaft
- Group 15 - Cylinder Block, Liners, Pistons, and Rods
- Group 20 - Crankshaft, Main Bearings, and Flywheel
- Group 25 - Lubrication System
- Group 30 - Cooling System
- Group 35 - Governor and Speed Control Linkage

SECTION 30 - FUEL SYSTEMS

- Group 5 - Diagnosing Malfunctions
- Group 10 - Diesel Fuel System
- Group 15 - Gasoline Fuel System
- Group 20 - LP-Gas Fuel System

SECTION 40 - ELECTRICAL SYSTEM

- Group 5 - Information and Wiring Diagrams
- Group 10 - Charging Circuit
- Group 15 - Starting Circuit
- Group 20 - Ignition System
- Group 25 - Lighting and Accessory Circuits

SECTION 50 - POWER TRAIN

- Group 5 - Clutches for Syncro-Range Transmission and PTO
- Group 10 - Syncro-Range Transmission
- Group 15 - Engine Disconnect Clutch
- Group 20 - Power Shift Transmission
- Group 25 - Differential
- Group 30 - Final Drive
- Group 35 - Hi-Crop Final Drive
- Group 40 - Syncro-Range PTO
- Group 45 - Power Shift PTO
- Group 50 - Belt Pulley
- Group 55 - Power Front Wheel Drive

SECTION 60 - STEERING AND BRAKES

- Group 5 - General Information

SECTION 70 - HYDRAULIC SYSTEM

- Group 5 - General Information, Diagnosis, and Tests
- Group 10 - Main Reservoir, Filters, Valves, Oil Cooler, and Oil Reservoir
- Group 15 - Hydraulic Pumps
- Group 20 - Power Steering
- Group 25 - Power Brakes
- Group 30 - Rockshaft and Implement Hitches
- Group 35 - Selective Control Valve, Breakaway Couplers, and Remote Cylinders

SECTION 80 - MISCELLANEOUS

- Group 5 - Conventional Front Axle
- Group 10 - Power Front Wheel Drive Axle

Section 10 GENERAL

CONTENTS OF THIS SECTION

GROUP 5 - SPECIFICATIONS	Page	GROUP 20 - LUBRICATION (Cont.)	Page
General Tractor Specifications	5-1	Transmission-Hydraulic Oil	20-2
		Greases	20-2
		Storing Lubricants	20-2
GROUP 10 - PREDELIVERY, DELIVERY, AND AFTER-SALE SERVICES		GROUP 25 - SEPARATION	
Predelivery Services	10-1	Removing Roll-Gard Cab	25-1
Delivery Services	10-3	Installing Roll-Gard Cab	25-3
After-Sale Services	10-4	Separating Engine from Clutch Housing	25-3
		Separating Clutch Housing from Power Shift Transmission	25-5
GROUP 15 - TUNE-UP AND ADJUSTMENT		Separating Clutch Housing from Synchro-Range Transmission	25-7
Preliminary Engine Testing	15-1	Removing Engine	25-8
Engine Tune-Up	15-1	Separating Engine from Tractor Front End	25-9
Engine Final Testing	15-4	Removing Final Drive Assembly	25-10
Tractor Tune-Up	15-4	Specifications	25-12
		Torques For Hardware	25-12
GROUP 20 - LUBRICATION		Special Tools	25-13
Lubrication Chart	20-1		
Engine Lubricating Oils	20-2		

Group 5

GENERAL TRACTOR SPECIFICATIONS

PTO HORSEPOWER (Officially observed at 2200 engine rpm with synchro-range transmission)

	4000	4020
Diesel	96.89	94.9 hp.
Gasoline	*96	96.7 hp.
LP-gas		94.6 hp.

ENGINE

Type . . 4-stroke cycle, 6-cylinder in-line, valve-in-head

Bore and Stroke:

Diesel 4-1/4 x 4-3/4 in.
Gasoline and LP-gas . . 4-1/4 x 4-1/4 in.

Displacement:

Diesel 404 cu. in.
Gasoline and LP-gas 362 cu. in.

Compression ratio:

Diesel 16.3 to 1
Gasoline 7.5 to 1
LP-gas 9.0 to 1

Firing order 1-5-3-6-2-4

ENGINE (Continued)

Engine Speeds:

Working range 1500 to 2200 rpm
Maximum transport speed . . . 2500 rpm
Slow idle 800 rpm

COOLING SYSTEM

Type . Pressurized system with centrifugal pump

Engine temperature control . . . Heavy-duty thermostat

LUBRICATION SYSTEM

Type . Force-feed, pressurized with full-flow oil filter.

FUEL SYSTEM

Diesel . . . Direct injection, inlet metering, distributing-type.
Diaphragm-type fuel pump.

*Factory observed.

FUEL SYSTEM (Continued)

Gasoline . . . Pressure system, diaphragm-type fuel pump, single barrel, updraft carburetor with electrical shut-off
LP-gas . . . Fuel strainer with electrical shut-off, convertor, and single barrel, updraft carburetor with fuel metering valve

CAPACITIES

Fuel tank
Diesel and gasoline 34 U.S. gals.
LP-gas (80% full) 45 U.S. gals.
Cooling system 24 U.S. qts.
Crankcase
Gasoline, LP-gas, and Hi-Crop diesel engines
Dry measurement 9 U.S. qts.
At 100 hour service interval 7 U.S. qts.
At 200 hour service interval 8 U.S. qts.
Row-Crop and standard diesel engines
Dry measurement 13 U.S. qts.
At 100 hour service interval 11 U.S. qts.
At 200 hour service interval 12 U.S. qts.
Transmission-Hydraulic system*
Syncro-Range
Dry measurement 13 U.S. gals.
At service intervals . . . 10 U.S. gals.
Power Shift
Dry measurement 17 U.S. gals.
At service intervals . . . 14 U.S. gals.
Belt pulley 2-1/2 U.S. pints
Hi-crop final drive housing. 1-3/4 U.S. qts.

ELECTRICAL SYSTEM

Type 12-volt, negative ground
Alternator 12-volt, 55 amps
Air Conditioned Cab . . . 12-volt, 72 amps
4000 tractors 12 volt, 35 amps
Battery:
Diesel Two, 6-volt, 75-plate 172-ampere-hour
Gasoline and
LP-gas One, 12-volt, 78-plate 78-ampere-hour

SYNCRO-RANGE TRANSMISSION

Transmission clutch . . . One dry-disk, foot operated
PTO clutch . . . One dry-disk, hydraulically actuated, lever operated

**Add approx. 4-1/2 gallons to capacity if equipped with Power Front Wheel Drive.*

SYNCRO-RANGE TRANSMISSION(Continued)

Transmission type . . . Constant-mesh, helical gear, synchronized shifting within stations
4000 tractors . . . Synchronized shifting in forward gears within stations
Speeds 8 forward; 2 reverse

POWER SHIFT TRANSMISSION

Engine disconnect . . . One dry-disk, lever operated clutch
PTO clutch . . . Wet disk, hydraulically actuated, lever operated
Transmission type . . . Planetary gears, clutches and brakes wet disk, hydraulically actuated, controlled by speed selector
Speeds 8 forward; 4 reverse

GROUND SPEED (Row-Crop Tractor with 18.4-34 Rear Tires and 1900 Engine Rpm)

Gear	Syncro-Range	Power Shift
1st	1.6 mph	1.5 mph
2nd	2.6 mph	2.2 mph
3rd	3.4 mph	3.4 mph
4th	4.4 mph	4.4 mph
5th	5.5 mph	5.7 mph
6th	7.2 mph	7.3 mph
7th	9.3 mph	9.7 mph
8th	15.2 mph	16.2 mph
1st reverse	3.3 mph	1.8 mph
2nd reverse	5.3 mph	2.6 mph
3rd reverse	. . . . .	4.0 mph
4th reverse	. . . . .	5.1 mph

POWER FRONT WHEEL DRIVE

Type . . . Hydraulic motor driven with planetary gear reduction in wheel hub, uses pressure oil from hydraulic system
Torque Low (series operated) and high (parallel operated)
Controls . . . Solenoid operated control valves, synchronized with transmission controls

Planetary disconnect . . . Hydraulic wet brake on ring gear releases when drive is disengaged

POWER TAKE-OFF

Type... Single 1-3/8-inch PTO shaft with mid and rear power take-off. Rear output shafts changed for rear PTO speed conversion.

PTO Speed (1900 engine rpm):

Mid PTO (4020) 1000 rpm

Rear PTO 540 or 1000 rpm

Rear PTO Ahead of Drawbar Hitch Point:

540 rpm 13.8 in.

1000 rpm 15.9 in.

BELT PULLEY

Diameter 12 in.

Width 8-1/2 in.

Pulley speed (1900 engine rpm) 966 rpm

Belt speed 3034 fpm

HYDRAULIC SYSTEM

Type... Closed center, constant pressure. Actuates power steering, power brakes, Power Front Wheel Drive, and implement control.

Standby pressure 2250 psi

BRAKES

Type... Hydraulically actuated power disk type operating in oil.

STEERING

Type... Hydraulically actuated power, manual operation in case of hydraulic failure.

REAR AXLES

Types available Regular, long, extra long, and special dual

FRONT TIRES

Row-Crop 6.00-16, 6-ply

7.50-15, 6-ply

7.50-15, 8-ply

7.50-16, 10-ply

7.50-18, 6-ply

10.00-16, 6-ply

11.00-12, 12-ply

11.00L-15, 6-ply

11.00-16, 8-ply

11.2-24, 6-ply

12.4-24, 6-ply

12.4-24, 6-ply C&R

Standard 7.50-18, 6-ply

10.00-16, 6-ply

Hi-Crop 7.50-20, 6-ply

*Additional tires sizes available.

REAR TIRES*

Row-Crop 13.6-38, 6-ply

15.5-38, 6-ply

15.5-38, 8-ply

16.9-34, 6-ply

16.9-34, 8-ply

16.9-38, 8-ply

18.4-34, 6-ply

18.4-34, 8-ply

23.1-30, 8-ply

Standard 18.4-34, 6-ply

18.4-34, 8-ply

23.1-30, 8-ply

Hi-Crop 15.5-38, 8-ply

18.4-34, 6-ply

18.4-34, 8-ply

FRONT WHEEL TREAD

Row-Crop

Regular tread. 6.00 tire - 48.5 to 82.3 in.

7.50 tire - 50.8 to 79.9 in.

10.00 tire - 54.5 to 78.5 in.

11.00 tire - 52.8 to 77.9 in.

Wide tread . . . 6.00 tire - 56.5 to 90.3 in.

7.50 tire - 58.8 to 87.9 in.

10.00 tire - 62.5 to 86.5 in.

11.00 tire - 60.8 to 85.9 in.

Power Front Wheel Drive

6-ply R-1 tire 64 to 82 in.

6-ply C&R tire 66 to 82 in.

Standard

Fixed tread 55.5 and 60.8 in.

Adjustable tread 50 to 79.3 in.

Hi-Crop 60 to 89.3 in.

REAR WHEEL TREAD

Row-Crop

Regular axle

Regular wheel 60 to 91 in.

Offset wheel 60 to 96 in.

13.6-38 tires 60 to 99 in.

23.1-30 tires 66 to 94 in.

Long axle

Regular wheel 60 to 97 in.

Offset wheel 60 to 102 in.

13.6-38 tires 60 to 105 in.

23.1-30 tires 66 to 100 in.

Extra long axle

Regular wheel 67 to 105 in.

Offset wheel 60 to 110 in.

13.6-38 tires 67 to 113 in.

23.1-30 tires 67 to 108 in.

Special dual axle

Offset wheel 60 to 120 in.

18.4-34 tires 66 to 115 in.

REAR WHEEL TREAD (Continued)

Standard	
Regular axle.	66 to 94 in.
Long axle.	66 to 100 in.
Hi-Crop.	73 to 97 in.

DIMENSIONS

Row-Crop:	
Wheel Base:	
Adjustable-tread front axle. .	100.3 in.
Double front wheel, Roll-O-Matic, and single front wheel.	97.5 in.
Over-all height:	
Without cab	90.7 in.
Cab without Air Conditioning:	
Stolper	110.0 in.
Hinson	105.3 in.
Cab with Air Conditioning:	
Stolper	112.0 in.
Hinson	113.0 in.
Height to steering wheel.	79.8 in.
Over-all length.	152.7 in.
Width:	
Regular axle.	89.6 in.
Long axle.	95.9 in.
Extra long axle.	103.9 in.
Special dual axle.	113 in.
Clearance (crop):	
Adjustable axle.	24.8 in.
Rear axle housing.	27.1 in.
Rear axle.	27.9 in.
Clearance (drawbar).	16 in.
Turning Radius:	
Double front wheel, Roll-O-Matic, and single front wheel.	9 ft. 2 in.
Adjustable tread front axle	10 ft. 8 in.
**Shipping Weight:	
Diesel	8555 lbs.
Gasoline	8305 lbs.
LP-gas	8490 lbs.
Standard:	
Wheelbase	
Short.	89 in.
Long.	100.3 in.
Over-all height.	90.4 in.
Height to steering wheel.	79.4 in.

DIMENSIONS (Continued)

Over-all length.	152.7 in.
Width:	
Regular axle.	89.6 in.
Long axle.	95.9 in.
Extra long axle.	113.1 in.
Clearance (crop):	
Adjustable axle.	22.5 in.
Rear axle.	27.9 in.
Rear axle housing.	27.1 in.
Clearance (drawbar).	16 in.
Turning Radius:	
Short wheel base.	9 ft. 7 in.
Long wheel base.	10 ft. 10 in.
**Shipping Weight:	
Diesel	8185 lbs.
Gasoline	7935 lbs.
LP-gas	8120 lbs.
Hi-Crop:	
Wheel base.	100.3 in.
Over-all height.	105.6 in.
Height to steering wheel.	94.8 in.
Over-all length.	150.9 in.
Width.	95.4 in.
Clearance (crop):	
Front axle.	39.3 in.
Rear axle.	28.9 in.
Rear housing.	37.6 in.
Turning radius.	11 ft. 3 in.
**Shipping Weight:	
Diesel	9235 lbs.
Gasoline	8985 lbs.
LP-gas	9170 lbs.

***Weights are for diesel tractors with Power Shift transmission, 3-point hitch, and regular cast wheel equipment. Deduct approximately 225 pounds for tractors with Syncro-Range transmissions. Add approximately 1000 pounds for tractor with Power Front Wheel Drive. Shipping weight for the 4000 gasoline - 7699 lbs; diesel - 7900 lbs.*

(Specifications and design subject to change without notice.)

Group 10

**PREDELIVERY, DELIVERY, AND
 AFTER SALE 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 tractor before it leaves the factory.

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

TEMPORARY TRACTOR STORAGE

Service	Specifications	Reference
Check radiator for coolant loss and antifreeze protection.	1-1/2 inches above baffle.	. . . . .
Drain fuel system (gasoline). . . . .	. . . . .	Operator's manual
Reduce shipping pressure of tires . . .	. . . . .	Operator's manual
Cover tractor and tires for protection and cleanliness . . . . .	. . . . .	. . . . .

BEFORE DELIVERING TRACTOR

<u>Cooling System</u>		
Inspect radiator for coolant loss	1-1/2 inches above baffle.	. . . . .
Check antifreeze protection . . . . .	. . . . .	. . . . .
<u>Electrical System</u>		
Install electrolyte and charge batteries . . . . .	. . . . .	FOS-20
Stamp date code on battery . . . . .	. . . . .	FOS-20
Connect alternator. Remove resistor if present. Do not attempt to polarize . . . . .	. . . . .	Section 40, Group 10
Connect Power Front Wheel Drive wiring harness at connector near control valves . . . . .	. . . . .	Section 40, Group 5
Install light switch knob . . . . .	. . . . .	. . . . .
Clean terminals and connect battery cables . . . . .	. . . . .	Section 40, Group 5

BEFORE DELIVERING TRACTOR—Continued

Service	Specifications	Reference
<u>Tires and Wheels</u>		
Adjust pressure of tires. . . . .	. . . . .	Operator's manual
Check front wheel hub bolts, rear wheel rim clamp nuts, and rear wheel retainer cap screws for tightness.	Front hub bolts - 85 ft-lbs Rear hub bolts - 300 ft-lbs Rim clamp nuts - 170 ft-lbs. . . . .	. . . . .
<u>Lubrication</u>		
Check crankcase oil level.	To upper marks on dipstick.	Operator's manual
Check transmission-hydraulic system oil level	To top of "SAFE" range on dipstick. Type 303 Special-Purpose Oil.	Operator's manual
Lubricate grease fittings	SAE multipurpose-type grease	Operator's manual
Check distributor lubrication	Distributor cam lubricant	Section 40, Group 20
<u>Engine</u>		
Check air cleaner. . . . .	. . . . .	Operator's manual
Fill fuel tank and start engine.	Diesel and gasoline - 34 U.S. gallons; LP-Gas - 45 or 39 U.S. gallons	Operator's manual
Check operation of flasher, gauges, and indicator lamps. . . . .	. . . . .	Operator's manual
Check throttle linkage for free operation . . . . .	. . . . .	Section 20, Group 35
Check engine timing	Diesel - TDC Gasoline - 20° BTDC, 2000 rpm LP-gas - 25° BTDC, 2000 rpm	Section 40, Group 20
Check engine idle speeds.	Diesel - 800 rpm, 2150 rpm, 2400 rpm, and 2650 rpm Gasoline, LP-Gas - 800 rpm, 2170 rpm, 2440 rpm, and 2690 rpm	Section 20, Group 35
<u>Operation</u>		
Check transmission clutch free travel (Synchro-Range transmission)	Approximately 1-1/2-inch free travel (at least 3/4 in).	Operator's manual
Check engine disconnect clutch (Power Shift transmission).	No tendency for tractor to creep when clutch is disengaged.	Section 50, Group 15

BEFORE DELIVERING TRACTOR—Continued

Service	Specifications	Reference
Shift transmission through all speeds.	Operator's manual
Check Power Front Wheel Drive operation.	Operator's manual
Check power takeoff operation.	Operator's manual
Check differential lock operation.	Operator's manual
Check brakes and brake accumulator	Not to exceed 3 in. immediately after stopping engine.	Section 70, Group 25
Check hydraulic system operation: Rockshaft, steering, and remote cylinder	Operator's manual
Check implement hitch operation	Operator's manual
Check seat operation.	Operator's manual
Check operation of air conditioning system and heater system (if equipped)	Operator's manual
Check air conditioner compressor drive belt	1/4 in. deflection, 15 lb. pull	Operator's manual
Adjust headlights and check operation	Operator's manual
<u>General</u>		
Tighten accessible nuts and cap screws.
Clean tractor and touch up paint

DELIVERY SERVICE

A thorough discussion of the operation and service of a new tractor 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 tractor properly. Enough time should be devoted, at the customer's convenience, to introducing the owner to his new tractor 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 tractor 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 liquid or cast-iron ballast.
5. All functions of the hydraulic system.
6. Using the power takeoff and belt pulley.
7. The importance of safety.
8. 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 tractor is entitled to a free inspection within the warranty period after the equipment has been "run in". The terms of this after-sale inspection are outlined on the back of 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 tractor. At the same time, the inspection should reveal whether or not the tractor 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 arisen 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.

The following inspection program is recommended within the first 100 hours of tractor operation.

INSPECTION PROCEDURE

Service	Specifications	Reference
<u>Cooling System</u>		
Check radiator coolant level	1-1/2 inches above baffle.	. . . . .
Clean external surface of radiator core
Check hoses and connections for leaks
<u>Fuel System</u>		
Remove water and foreign matter from fuel pump and filter sediment bowls	Operator's manual
Bleed fuel system	Operator's manual

INSPECTION PROCEDURES—Continued

Service	Specifications	Reference
Tighten loose connections and check entire system for leaks correct if necessary . . . . .	.....	.....
Check air cleaner cup, element, and unloading valve. Clean element if necessary . . . . .	.....	Operator's manual
<u>Electrical System</u>		
Check specific gravity of battery(s) . .	Full charge - 1.260 at 80°F.	Operator's manual
Check level of battery electrolyte . . .	To bottom of filler neck in each cell.	Operator's manual
Check belt tension.	1-inch deflection with a 25-pound force.	Operator's manual
Start engine and check action of starter, lights, and indicator lamps . .	.....	Operator's manual
<u>Lubrication</u>		
Check crankcase oil level.	To upper marks on dipstick.	Operator's manual
Check transmission-hydraulic system oil level	In "SAFE" range on dipstick. Use John Deere Type 303 Special-Purpose Oil.	Operator's manual
Check distributor lubrication	Distributor cam lubricant	Section 40, Group 20
<u>Engine</u>		
Check valve clearance (static, hot). . .	Diesel - 0.018 in. Gasoline, LP-Gas - Intake - 0.015 in. Exhaust - 0.028 in. (hot) 0.031 in. (cold)	Operator's manual
Check engine speed under load, fuel consumption, and horsepower . . . . .	.....	Group 15 of this Section.
<u>Hydraulic System</u>		
Check rockshaft and remote cylinder operation. . . . .	.....	Operator's manual
Check power steering	Smooth, easy operation.	Section 70, Group 20
Check brakes and brake accumulator.	Not to exceed 3 in. immediately after stopping engine.	Operator's manual Section 70, Group 25



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