



# 6030 Tractor



## TECHNICAL MANUAL 6030 Tractor

TM1052 (01MAR83) English

**John Deere Tractor Works**  
**TM1052 (01MAR83)**

LITHO IN U.S.A.  
ENGLISH



# 6030 TRACTOR

## TECHNICAL MANUAL

### TM-1052 (JAN-73)

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## Section 10 GENERAL

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## Group 5

### GENERAL TRACTOR SPECIFICATIONS

#### PTO HORSEPOWER:

- \* Tractors with 6531A engine ..... 175.99
- \* \* Tractors with 6531D engine ..... 141

#### ENGINE:

- Type ..... 6-cylinder, in-line, valve-in-head
- Bore and stroke ..... 4-3/4 in. x 5 in.
- Displacement ..... 531 cu. in.
- Compression ratio ..... 15.4 to 1
- Firing order ..... 1-5-3-6-2-4
- Valve clearance ..... Intake - 0.018 in.  
Exhaust - 0.028 in.

Slow idle speed ..... 800 rpm

#### Fast idle speed:

- 6531A engine ..... 2300 rpm
- 6531D engine ..... 2400 rpm

Timing (Injection Pump) ..... 27°BTDC(6531A)  
or TDC(6531D)

#### LUBRICATION SYSTEM ..... Fully pressurized

- \* Official test at 2100 rpm.
- \* \* Factory observed at 2200 rpm.

#### FUEL SYSTEM:

- Type ..... Direct injection
- Filters ..... Dual Master filters with two-stage filtration

#### Injection pump:

- Robert Bosch (6531A) ..... Multiple plunger in-line
- Roosa Master (6531D) ..... Inlet metering distributing type

#### AIR INTAKE SYSTEM:

- Air cleaner ..... Dry-type with safety filter

#### COOLING SYSTEM:

- Type ..... Pressurized with centrifugal pump, engine temperature control, heavy-duty thermostats

|   | 6531A         | 6531D         |
|---|---------------|---------------|
| <b>CAPACITIES:</b>                              |               |               |
| Fuel tank .....                                 | 73 U.S. gals. | 68 U.S. gals. |
| Crankcase (with filter<br>change) .....         | 26 U.S. qts.  | 20 U.S. qts.  |
| Transmission-<br>hydraulic system ...           | 16 U.S. gals. | 16 U.S. gals. |
| Cooling system (add 2<br>qts. for cab heater) . | 40 U.S. qts.  | 33 U.S. qts.  |

|                       |  |        |
|-----------------------|--|--------|
| <b>TRANSMISSION:</b>  |  |        |
| Type .....            | Syncro-Range, constant mesh                          |        |
| Clutch .....          | Two plates, heavy-duty, foot operated                |        |
| Size .....            | 13-1/2 in.   | 12 in. |
| Gear selections ..... | 8 forward and 2 reverse                              |        |
| Shifting .....        | 4 stations, synchronized<br>shifting within stations |        |

|                                  |                                  |          |
|----------------------------------|----------------------------------|----------|
| <b>POWER TAKE-OFF:</b>           |                                  |          |
| Type .....                       | Independent, rear                |          |
| Clutch .....                     | Wet disk, hydraulically actuated |          |
| Speed (2100 engine<br>rpm) ..... | 1024 rpm                         | 1024 rpm |

|   |        |        |
|---|--------|--------|
| <b>PTO ahead of drawbar hitch point</b> |        |        |
| 1-3/8 in. shaft .....                   | 16 in. | 16 in. |
| 1-3/4 in. shaft .....                   | 20 in. | 20 in. |

|                          |   |  |
|--------------------------|---|--|
| <b>HYDRAULIC SYSTEM:</b> |   |  |
| Type .....               | Closed center, constant pressure.<br>Includes power steering, power<br>brakes and implement control |  |
| Standby pressure .....   | 2250 psi  |  |

|   |  |  |
|---|--|--|
| <b>BRAKES</b> .....   |  |  |
| Hydraulically power actuated,<br>disk-type operating in oil                   |  |  |
| Provision for manual opera-<br>tion with brake accumu-<br>lator to supply oil |  |  |

|  |  |  |
|--|--|--|
| <b>STEERING</b> .....  |  |  |
| Full power, hydrostatic type<br>Provision for manual operation |  |  |

|                           |   |  |
|---------------------------|---|--|
| <b>ELECTRICAL SYSTEM:</b> |   |  |
| Type .....                | 12-volt, negative ground  |  |
| Batteries .....           | Two 6-volt, 87-plate, 204<br>ampere-hour group 6T3A,<br>tractor-type, connected in series |  |
| Alternator .....          | 12-volt, with integral<br>transistorized regulator:                                       |  |
| Capacity .....            | 55 amp. without air conditioning<br>72 amp. with air conditioning                         |  |

|                      |                        |  |
|----------------------|------------------------|--|
| <b>FRONT TIRES:*</b> |                        |  |
| Standard .....       | 11.00-16, 8-ply-rating |  |
| Row-Crop .....       | 9.50-20, 8-ply-rating  |  |

|                     |                        |
|---------------------|------------------------|
| <b>REAR TIRES:*</b> |                        |
| Standard .....      | 24.5-32, 10-ply-rating |
| Row-Crop .....      | 18.4-38, 12-ply-rating |

|   |              |
|---|--------------|
| <b>FRONT WHEEL TREAD:</b>               |              |
| Fixed tread .....                       | 69 or 71 in. |
| Adjustable tread (11.00-16 tires) ..... | 68 to 80 in. |

|                           |                |
|---------------------------|----------------|
| <b>REAR WHEEL TREAD:</b>  |                |
| Standard:                 |                |
| 24.5-32 tire .....        | 70 to 81 in.   |
| 18.4-34 tire (dual) ..... | 68 and 111 in. |
| 18.4-38 tire (dual) ..... | 65 to 119 in.  |
| Row-Crop:                 |                |
| 18.4-38 tire .....        | 60 to 119 in.  |
| 24.5-32 tire .....        | 70-111 in.     |

|  |       |
|--|-------|
| <b>GROUND SPEEDS IN MILES PER HOUR</b><br>(2100 engine rpm with 24.5-32 tires) |       |
| 1st .....  | 2.01  |
| 2nd .....  | 3.12  |
| 3rd .....  | 4.27  |
| 4th .....  | 5.29  |
| 5th .....  | 6.61  |
| 6th .....  | 8.73  |
| 7th .....  | 11.21 |
| 8th .....  | 18.50 |
| 1st reverse .....  | 4.70  |
| 2nd reverse .....  | 7.28  |

|  |                         |
|--|-------------------------|
| <b>DIMENSIONS:</b>                     |                         |
| Standard (Fixed tread front axle):     |                         |
| Wheel base .....                       | 104 in.                 |
| Over-all length .....                  | 172.3 in.               |
| * * Over-all height .....              | 98.3 in.                |
| Height to steering wheel .....         | 82.4 in.                |
| Width .....                            | Regular wheel, 95.8 in. |
| Drawbar clearance .....                | 16 in.                  |
| Turning radius .....                   | 12 ft. 6 in.            |
| Row-Crop (81.5-inch tread front axle): |                         |
| Wheel base .....                       | 102 to 106 in.          |
| Over-all length .....                  | 172.3 in.               |
| * * Over-all height .....              | 98.3 in.                |
| Height to steering wheel .....         | 82.4 in.                |
| Over-all width .....                   | 108.4 in.               |
| Turning radius .....                   | 13 ft.                  |

|  |             |
|--|-------------|
| <b>SHIPPING WEIGHT</b> (With equipment for<br>average field service, less fuel and ballast). |             |
| Add 575 lbs. if equipped with Roll-Gard.   |             |
| Standard .....   | 15,800 lbs. |
| Row-Crop .....   | 14,680 lbs. |

|   |  |
|---|--|
| * Additional tire sizes available.                                      |  |
| * * Tractors with Air Conditioned Cab<br>and 20.8-38 tires .....        |  |
| 116 in.   |  |
| Tractors with Cab and without<br>Air Conditioning (20.8-38 tires) ..... |  |
| 109 in.   |  |

## 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.

Tractors shipped from the factory with the alternator completely disconnected require an AR47860 Auxiliary Ignition Battery Kit to supply power for the fuel shutoff solenoid on tractors with a 6531D engine. The adapter on the battery harness kit plugs into the

cigar lighter. Be sure to read the instructions attached to the tractor before starting the engine.

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 certify 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   | Specification   | Reference         |
|---|---|-------------------|
| Check radiator for coolant loss and antifreeze protection ..... | Within 3/4-inch from bottom of filler neck (6531A), 1-1/2-inch above baffle (6531D) |                   |
| Reduce shipping pressure of tires .....                         |   | Operator's manual |
| Cover tractor and tires for protection and cleanliness .....    |   |                   |

## Before Delivering Tractor

### Electrical System

|   |                                       |                   |
|---|---------------------------------------|-------------------|
| Install electrolyte and charge batteries .....                | FOS-20                                |                   |
| Punch date code on battery tag .....                          |                                       |                   |
| Connect Motorola alternator. Do not attempt to polarize ..... | Section 40, Group 10                  |                   |
| Install light switch knob .....                               |                                       |                   |
| Clean terminals and connect battery cables .....              | Section 40, Group 5                   |                   |
| Check alternator belt adjustment                              |                                       |                   |
| Tractors with 6531A engine .....                              | 1-inch deflection, 25 lb. force ..... | Operator's manual |
| Tractors with 6531D engine .....                              | 1-inch deflection, 20 lb. force ..... | Operator's manual |

## Before Delivering Tractor—Continued

| Service  | Specification  | Reference            |
|--|--|----------------------|
| <b>Cooling System</b>  |  |                      |
| Inspect radiator for coolant loss .....  | Within 3/4-inch from bottom of filler neck (6531A); 1-1/2 in. above baffle (6531D) .....         |                      |
| Check antifreeze protection .....  | .....  |                      |
| <b>Tires and Wheels</b>  |  |                      |
| 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 - 100 ft-lbs<br>Rear hub bolts - 300 ft-lbs<br>Rim clamp nuts - 170 ft-lbs ..... |                      |
| <b>Lubrication</b>   |  |                      |
| 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 .....  | John Deere Multipurpose-Lubricant .....  | Operator's manual    |
| <b>Engine</b>  |  |                      |
| Check air cleaner .....  | .....  | Operator's manual    |
| Fill fuel tank and start engine .....  | Capacity - 73 U.S. gallons (6531A)<br>68 U.S. gallons (6531D) ..                                 | Operator's manual    |
| Check operation of gauges and indicator lamps .....  | .....  | Operator's manual    |
| Check speed control linkage for free operation .....   | .....  | Section 30, Group 20 |
| Check engine idle speeds .....   | .....  | Section 30, Group 20 |
| <b>Operation</b>   |  |                      |
| Shift transmission through all speeds .....  | .....  | Operator's manual    |
| Check transmission clutch operation .....  | Clutch pedal free travel should be 1-1/2 inches .....  | Operator's manual    |
| Check power take-off operation .....   | .....  | Operator's manual    |
| Check differential lock operation .....  | .....  | Operator's manual    |
| Check hydraulic system operation: Rockshaft, steering, remote cylinder, and brakes .....                       | .....  | Operator's manual    |

## Before Delivering Tractor—Continued

| Service  | Specification  | Reference         |
|--|--|-------------------|
| Check 3-point hitch operation .....  | .....  | Operator's manual |
| Check seat operation .....   | .....  | Operator's manual |
| Check cab pressurizer and wind-<br>shield wiper operation, air<br>conditioner and heater system<br>operation (if equipped) ..... | .....  | Operator's manual |
| Adjust headlights and check<br>operation .....   | .....  | Operator's manual |
| <b>General</b>   |  |                   |
| Adjust air conditioner drive<br>belt tension .....   | 1/4-inch deflection, 15 lb.<br>force (6531A); 1-inch<br>deflection, 25 lb. force (6531D) ..... | Operator's manual |
| Tighten accessible nuts and cap<br>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.

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.
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 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 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 needless 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 sale of other new equipment.

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

### Inspection Procedure

| Service   | Specification  | Reference         |
|---|--|-------------------|
| <b>Cooling System</b>   |  |                   |
| Check radiator coolant level .....  | Within 3/4-inch from bottom of filler neck (6531A); 1-1/2 in. above baffle (6531D) .....           |                   |
| Clean external surface of radiator core .....   | .....  |                   |
| Check hoses and connections for leaks .....   | .....  |                   |
| <b>Fuel System</b>  |  |                   |
| Remove water and foreign matter from filter sediment bowl .....                         | .....  | Operator's manual |
| Bleed fuel system .....   | .....  | Operator's manual |
| Tighten loose connections and check entire system for leaks. Correct if necessary ..... | .....  |                   |
| Check air cleaner element and clean it if necessary .....                               | .....  | Operator's manual |
| <b>Electrical System</b>  |  |                   |
| Check specific gravity and electrolyte level of batteries .....                         | Full charge - 1.260 at 80°F. ....  | Operator's manual |
| Check belt tension .....  | 1-inch deflection with a 25-pound force (6531A); 1-inch deflection with 20 lb. force (6531D) ..... | Operator's manual |
| Start engine and check operation of starter, lights, and indicator lamps .....          | .....  | Operator's manual |



## Inspection Procedure—Continued

| Service   | Specification   | Reference                       |
|---|---|---------------------------------|
| Lubrication   |   |                                 |
| Check crankcase oil level . . . . .   | To upper marks on dipstick. . . . .   | Operator's manual               |
| Check transmission-hydraulic<br>system oil level . . . . .                  | In "SAFE" range on dipstick.<br>Use John Deere Type 303 Spe-<br>cial-Purpose Oil . . . . .  | Operator's manual               |
| Engine  |   |                                 |
| Check valve clearance . . . . .   | Intake - 0.018 inch. . . . .<br>Exhaust - 0.028 inch. . . . .   | Operator's manual               |
| Check injection pump timing   |   |                                 |
| Tractors with 6531A engine . . . . .  | "INJ" Mark . . . . .  | Section 30, Group 15            |
| Tractors with 6531D engine . . . . .  | "TDC" Mark . . . . .  | Section 30, Group 15            |
| Check engine speed under load, fuel<br>consumption, and horsepower. . . . . | Specification . . . . .   | Group 15 of this sec-<br>tion   |
| Clutches and<br>Differential Lock   |   |                                 |
| Check transmission clutch free travel . . . . .                             | Approximately 1-1/2-inch free<br>travel . . . . .   | Operator's manual               |
| Check PTO clutch and brake opera-<br>tion . . . . .                         |   | Section 50, Groups<br>35 and 40 |
| Check differential lock operation . . . . .                                 |   | Operator's manual               |
| Hydraulic System  |   |                                 |
| Check rockshaft and remote cyl-<br>inder operation . . . . .                |   | Operator's manual               |
| Check power steering . . . . .  | Smooth, easy operation . . . . .  | Section 70, Group 20            |
| Check power brakes and accumulator . . . . .                                | The accumulator should supply<br>oil to each brake for at least<br>20 applications at 5 second in-<br>tervals after the engine has<br>been stopped for 15 minutes,<br>when applied individually . . . . . | Operator's manual               |
| Cab   |   |                                 |
| Check operation of cab controls . . . . .                                   |   | Operator's manual               |
| Check air conditioning compressor<br>drive belt tension . . . . .           | 1/4-inch deflection, 15-lb force (6531A);<br>1-inch deflection, 25-lb force (6531D) . . . . .   | Operator's manual               |
| Nuts and Cap Screws   |   |                                 |
| Tighten accessible nuts and cap<br>screws that require adjustment . . . . . |   |                                 |

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