

5000 SERIES TRACTOR

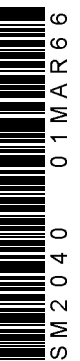


SERVICE MANUAL 5000 SERIES TRACTOR

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ENGLISH





SERVICE MANUAL

JOHN DEERE

5000 SERIES

TRACTORS

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TO THE JOHN DEERE SERVICEMAN

This service manual contains maintenance instructions for the John Deere 5000 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, this 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.

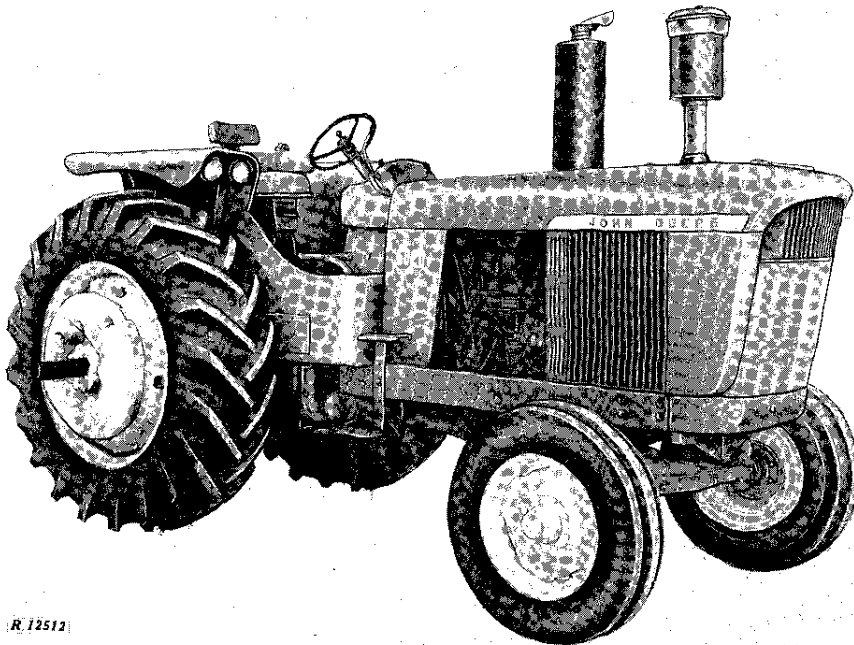
In Section 20, "Specifications," dimensions of many new wearing parts are given as an aid in determining when parts replacement is necessary.

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.

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 this Service Manual as a guide in overcoming 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.



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Right-Hand View of John Deere 5020 Row-Crop Tractor

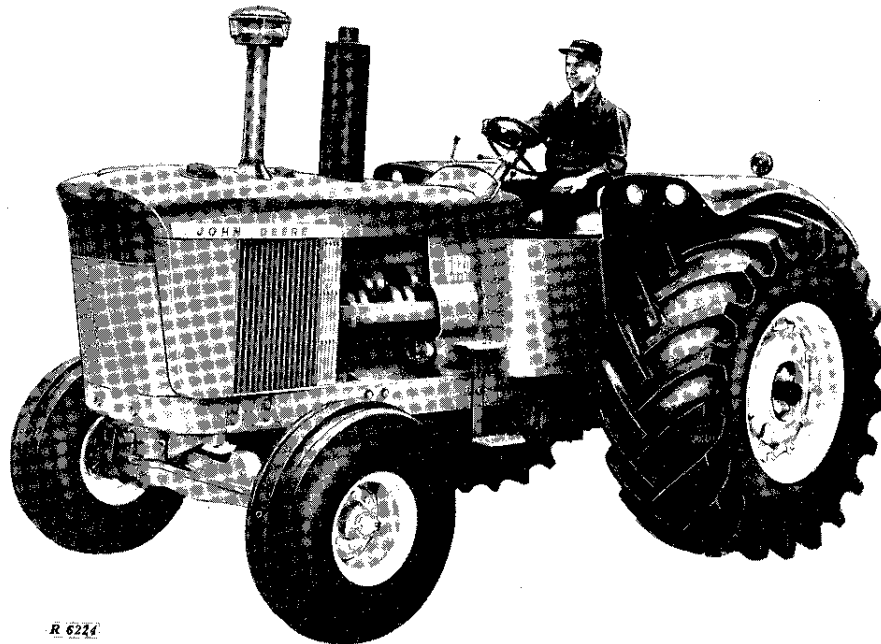


Section 10

10-5-1

DESCRIPTION, OPERATION, AND SPECIFICATIONS

Group 5 DESCRIPTION



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Fig. 10-5-1—Left-Hand View of John Deere 5020 Standard Tractor

INTRODUCTION

The John Deere 5000 Series tractors are large heavy-duty tractors designed for high capacity operation. The 5020 tractor is available as a row-crop or a standard tractor. The 5010 tractor was available as a standard tractor only.

The features of the tractor are briefly described in the paragraphs which follow. Full description of the components are given in the various sections throughout this manual.

SERIAL NUMBERS

Each engine is identified by a serial number located on the right-hand side of the cylinder block in front of the fuel filters. The engine serial numbers given in this manual are the numerical serial numbers indicated in the examples in the next column.

Engine Serial No.
Prior to 12000

33E 1000

Numerical Serial No.

Engine Serial No.
12000 and After

M33R0 012000 R

Numerical Serial No.

The tractor serial number is located at the rear center of the transmission case. The tractor serial numbers given in this manual are the numerical serial numbers indicated in the following examples.

Tractor Serial No.
Prior to 8000

32T 1000

Numerical Serial No.

Tractor Serial No.
8000 and After

T323R 008000 R

Numerical Serial No.

For brevity, when serial numbers are referred to in this manual, all zeros preceding the first significant digit are omitted.

NOTE: When ordering engine or tractor parts, record all the digits in the serial number.

MODEL NUMBERS

Fuel injection pumps, main hydraulic pumps, and remote cylinder selective control valve housings, starters and generators or alternators each carry a model number.

ENGINE

The tractor is powered by a variable-speed, full-diesel engine. At 2200 rpm a 5010 engine develops up to 121 horsepower at the PTO shaft. At 2200 rpm a 5020 engine develops up to 132 horsepower at the PTO shaft.

The engine is a six-cylinder, in-line, four-stroke-cycle engine. The cylinder liners are the wet-sleeve type, and the crankshaft bearings are the precision-insert type.

The lubrication system has a full-flow filter with a replaceable element. The engine oil cooler is designed to cool the oil to a safe operating temperature.

A liquid seal, impeller-type, crankcase ventilating pump draws clean air from the air cleaner and circulates it through the engine for crankcase ventilating.

COOLING SYSTEM

The pressure-type cooling system has a centrifugal pump to provide continuous circulation of the engine coolant. Proper engine temperature is maintained by two thermostats in the upper water manifold.

When the thermostats are closed, the system is designed to permit circulation of the coolant through the engine without passing through the radiator. This feature results in the engine reaching operating temperature in a shorter length of time. When the engine reaches operating temperature, the thermostats open to control the flow of coolant through the radiator to maintain a constant operating temperature.

FUEL SYSTEM

The fuel tank is located at the front of the tractor, just ahead of the radiator.

A fuel pump, driven by the camshaft, assures a constant supply of fuel to the injection pump.

The large capacity fuel filter is connected between the fuel pump and injection pump. It contains two replaceable filtering elements.

Fuel is injected by a distributor-type, solid injection pump through high pressure nozzles into the cylinders. A common pipe, connected to each nozzle, returns leak-off fuel from the nozzles to the fuel tank.

ELECTRICAL SYSTEM

The electrical system is of the 24-volt split-load-type. A 24-volt alternator with regulator or generator with a three-unit regulator supplies current to maintain the charge in four 6-volt batteries, connected in series.

An enclosed solenoid-shift, 24-volt starter is used to crank the engine.

The current in both the charging and starting circuits is carried entirely by wires, using no part of the tractor as a conductor.

The lighting and accessory circuits are of the grounded type, using current at 12 volts.

CLUTCH

The transmission clutch is of the spring-loaded, dry disk-type, and is contained in a recess in the rear of the flywheel. It is operated by a pedal at the left side of the clutch housing.

TRANSMISSION

The tractor is equipped with a Syncro-Range, constant mesh transmission. The transmission has four shift "stations" with synchronized shifting within stations and collar shifting between stations. Helical cut gears are used in the transmission.

The transmission on tractors prior to Serial No. 4500 provides eight forward speeds and three reverse speeds. The transmission on tractors with Serial No. 4500 and after provide eight forward speeds and two reverse speeds. The transmission is shifted by a lever located at the right of the instrument panel.

An oil cooler maintains the transmission oil temperature at a satisfactory level.

DIFFERENTIAL AND FINAL DRIVE

A conventional differential with spiral bevel ring gear and pinion is used in the tractor. A planetary gear assembly for final drive provides the final gear reduction in the drive gear train.

A differential lock, incorporated in the differential assembly, is available as optional equipment.

POWER TAKE-OFF (PTO)

The tractor can be purchased with or without a power take-off.

The PTO clutch is hydraulically actuated and is engaged or disengaged by a lever located to the left of the instrument panel.

The PTO operates at 1000 rpm (at 1900 engine rpm) and can be disconnected when it is not being used and for easier cold weather starting.

DRAWBAR

The tractor is furnished with either regular or wide swing drawbar. The regular drawbar is used when tractors are equipped with rockshaft and 3-Point Hitch. The wide swing drawbar is used on tractors not so equipped.

FRONT AXLE

The heavy-duty fixed-tread front axle on 5010 Tractors has a tread of 67 inches. On 5020 Tractors the tread is 68-1/2 or 70-1/2 inches. Tractors with an adjustable-tread front axle have a tread range of 68 to 80 inches for standard tractors and 64-1/2 to 81-1/2 or 71 to 88 for row-crop tractors.

REAR WHEEL TREAD

Rear wheel tread may be adjusted as follows: Standard tractor with 24.5-32 tires - 70 to 82 inches; with 18.4-34 dual rear tires - 68 inches and 112 inches; 18.4-38 dual rear tires - 65 inches minimum, 120 inches maximum, and 5 inches minimum clearance between tires. Row-crop tractors have a minimum rear wheel tread of 60 inches and a maximum tread of 120 inches.

HYDRAULIC SYSTEM

The John Deere hydraulic system is a closed

center, constant pressure system, which supplies oil under pressure to operate the various hydraulic functions on the tractor. These include power steering, power brakes, and selective control for operation of remote cylinders, and the rear rockshaft with 3-Point Hitch and Quik-Coupler, that provide an easy means of attaching and controlling various implements.

Pressure and flow of hydraulic oil are maintained by a variable displacement, constant pressure pump, driven at engine speed by the engine crankshaft. The reservoir for the system is the transmission case. Oil is carried to each hydraulic function through external steel pipes. All oil in the system is filtered through a replaceable, full-flow filter.

BRAKES

The power brakes are hydraulically actuated by oil from the main hydraulic pump. They are applied by pedals at the right front of the operator's platform. The brakes can be applied independently or simultaneously. If desired, the two brake pedals can be temporarily locked together for simultaneous operation.

The brake system is equipped with an accumulator which stores energy for operation of the brakes if (1) the hydraulic pump should fail or (2) for several applications after the engine is stopped.

STEERING

Hydraulic power steering is regular equipment on the tractor. Movement of the steering wheel actuates a valve to direct a flow of oil (under pressure) to the steering cylinders, which turn the front wheels to steer the tractor.

SEATS

The 5010 Tractor may be furnished with a regular seat, which is cushioned with no-sag springs and foam rubber padding.

A deluxe seat is optional equipment on 5010 Tractors and standard equipment on 5020 Tractors. This seat uses a steel compression spring and hydraulic shock absorber to provide "Float-Ride" suspension. The deluxe seat is also equipped with a flexibly mounted, padded back rest and semi-circular foam padding which surrounds the operator.

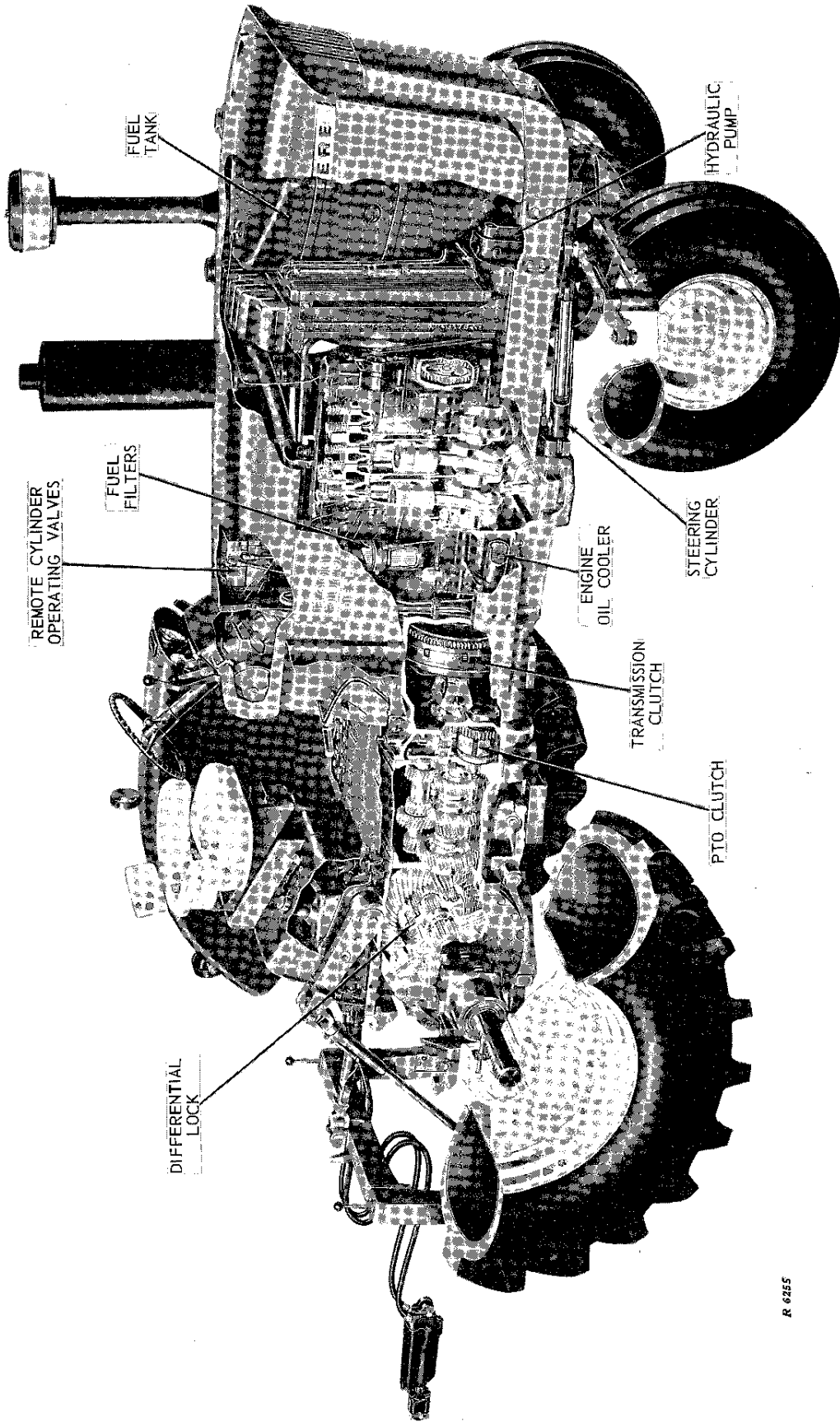


Fig. 10-5-2—Cutaway View of John Deere 5020 Standard Tractor

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Group 10

OPERATION

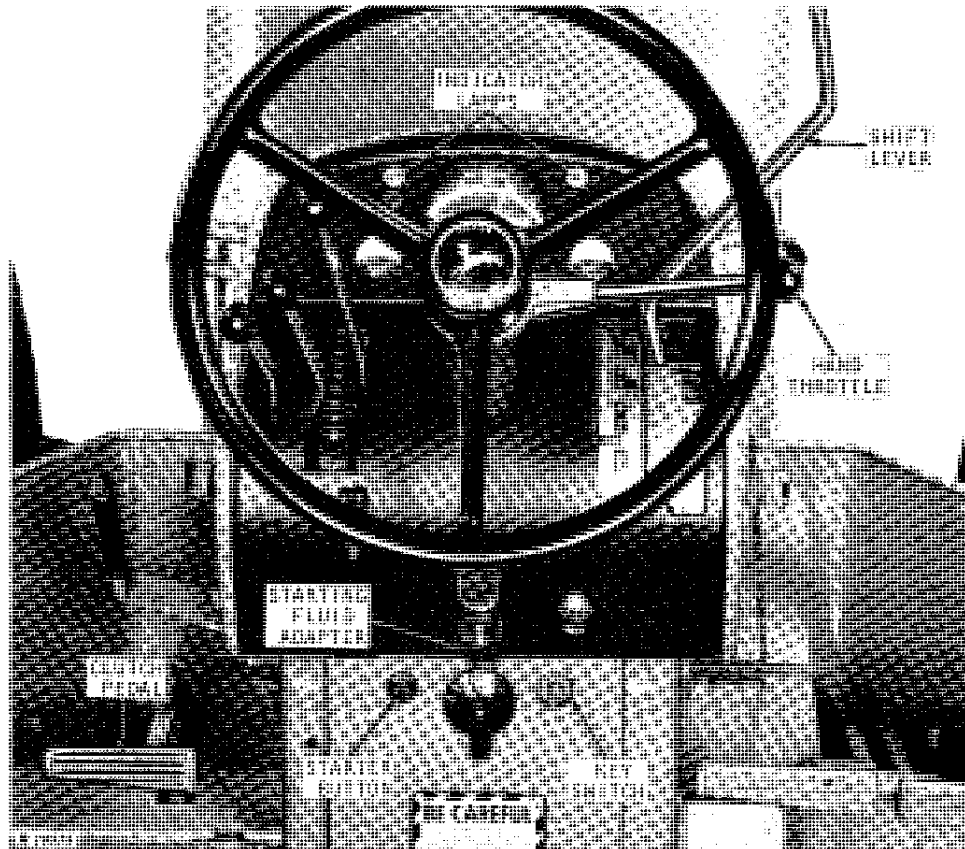


Fig. 10-10-1—Starting Controls

PRE-STARTING INSPECTION

- (1) Check engine crankcase oil level.
- (2) Check radiator coolant level.
- (3) Check amount of fuel in fuel tank. Turn key switch clockwise to first position and note reading on fuel gauge.
- (4) Make sure fuel shut-off valve at bottom of fuel tank is open.
- (5) Visually inspect the tractor and tires for any irregularities which might affect operation.

STARTING THE ENGINE

Figure 10-10-1 illustrates the controls for starting the engine.

- (1) Place the gear shift lever in park or any neutral position.
- (2) Place the hand throttle in the 1200 rpm position, approximately one-third of the way downward.
- (3) Turn the key switch clockwise to the first position. The generator and oil pressure indicator lamps should light. If either lamp fails to light, turn the switch to the "OFF" position and determine the cause. See Section 150 of this manual.
- (4) On tractors prior to Serial No. 8000, turn the key switch clockwise as far as it will go to crank the engine.

On tractors with Serial No. 8000 and after, press the starter button to crank the engine.

CAUTION: Do not hold the switch in the start position more than 30 seconds at a time. To do so may overheat the starter.

If the engine does not start the first time, wait a minute or two before trying again. If it does not start after four such attempts, refer to Section 270, "Trouble Shooting," of this manual.

- (5) As the engine starts and runs, make sure the generator or alternator and oil pressure lights go out. If either light does not go out, stop the engine and determine the cause. See Section 150 of this manual.

AFTER STARTING INSPECTION

- (1) Check generator or alternator and oil pressure indicator lights to be sure they go out.
- (2) Check for oil, water, and hydraulic leaks.

COLD WEATHER STARTING

COLD WEATHER STARTING FLUID ADAPTER

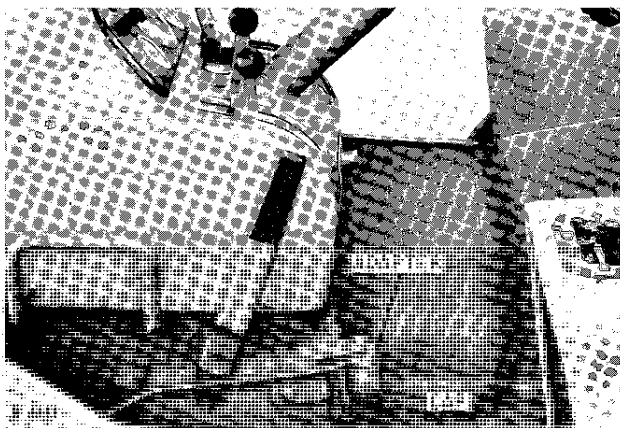


Fig. 10-10-2—Cold Weather Starting Fluid Adapter
(Prior to Serial No. 8000)

Cold weather starting fluid should be used when the air temperature is 40° F. or below.

The tractor is equipped with the starting fluid adapter (Fig. 10-10-2) which is used to inject atomized starting fluid into the engine air intake system to facilitate cold weather starting. The starting fluid is furnished in pressurized containers.

To use the can of starting fluid, remove the safety cap and plastic spray button from the can. Remove the cap from the adapter and position the can under the adapter.

To inject starting fluid, push up on the can.

CAUTION: To avoid damage, turn engine with starter one or two revolutions before injecting starting fluid. Inject starting fluid only while the engine is turning.

Relax pressure on the can between "shots" of starting fluid. Stop injecting fluid after the engine starts. If the engine begins to die during the first few minutes of operation, inject another "shot" of fluid. When the engine is operating satisfactorily, remove the can from the adapter and replace the safety cap on the can.

Be sure to install the cap on the adapter when it is not in use. This will prevent dust from being drawn into the engine.

Store starting fluid cans where they will not be subject to extreme cold or warm temperatures. For best results, store fluid at room temperature.

CAUTION: Ether starting fluid is highly flammable.

CRANKCASE OIL HEATER

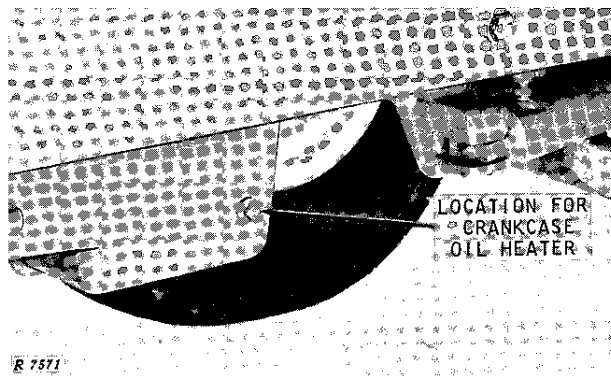


Fig. 10-10-3—Location for Crankcase Oil Heater

The tractor is designed to permit the use of a 240-watt electrical crankcase heater. The heater warms the oil to facilitate engine starting.

To install the heater, drain the crankcase oil and remove the pipe plug from the right-hand side of the engine crankcase. Apply thread paste to the threads of the heater and install heater into the crankcase. Refill the crankcase. When the heater is to be put into use, remove the protective cap,

attach cord and plug into a 115-volt electrical source with a suitable ground. The connector on the cord has a release lever to lock the heater and terminal connection. Press the release lever when connecting or disconnecting heater cord.

PTO DISCONNECT



Fig. 10-10-4—PTO Disconnect Lever and Differential Lock Pedal

In cold weather, drag on the engine can be reduced by disconnecting the power take-off drive. This is accomplished by lifting the lever (Fig. 10-10-4) and rotating 180°. When the beveled edge of the lever is showing, the PTO drive is engaged.

If the tractor will be used for PTO work, engage the PTO disconnect by rotating the disconnect lever 180 degrees with the engine stopped. If the drive does not engage easily, momentarily engage the engine starter while maintaining pressure on the lever.

NOTE: Always disconnect the power take-off drive when the PTO is not being used.

HYDRAULIC PUMP SHUT-OFF

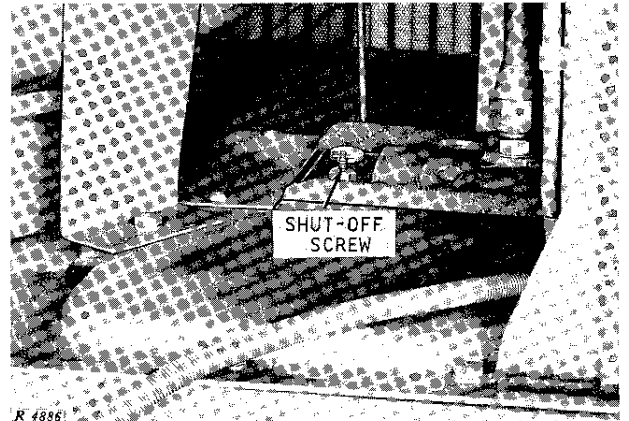


Fig. 10-10-5—Hydraulic Pump Shut-Off Screw

As an additional aid to cold weather starting on some tractors, the main hydraulic pump can be adjusted out of stroke. Figure 10-10-5 shows the shut-off screw for this purpose.

To adjust the pump out of stroke, turn the screw in (clockwise) a few turns with a screwdriver. Then turn the screw in by hand until resistance is felt. Turn the screw in one more turn. After the engine is started, use the screwdriver to back the shut-off screw all the way out. The pump will not build up pressure.

NOTE: The shut-off screw must be backed all the way out against the internal stop or oil will leak past the shut-off screw.

ENGINE BREAK-IN

With the following exceptions, the engine is ready for normal operation. To facilitate break-in, avoid prolonged periods of engine idling, particularly for the first 100 hours of service.

After the first 100 hours of service change the engine oil and oil filter of the diesel engine. Thereafter, change the oil and filter at the normal 200-hour interval. If, during the first 100 hours service, it is necessary to add engine oil, use SAE 10W-30, Service DM oil.

NOTE: Observe the engine coolant temperature carefully during the break-in period. If the temperature rises above the normal operating range, shift to a lower speed to reduce the load on the engine.

The tractor is now ready for normal operation.

STOPPING THE ENGINE

Operate the engine at least one or two minutes at slow idle speed before stopping. This will permit the interior of the engine to cool gradually. This prevents parts damage due to uneven cooling, as well as, possible coking of the oil on pistons, valves, valve guides, etc.

Pull out the knob on the hand throttle lever and move the lever counter-clockwise as far as it will go. This cuts off fuel injection to the engine. After a few revolutions the engine will stop.

After stopping the engine, shut the key switch off and remove the key from the switch to prevent tampering or unauthorized operation. Removing the key also prevents battery discharge in the event that the switch was accidentally left in the "ON" position.

OPERATING THE TRACTOR

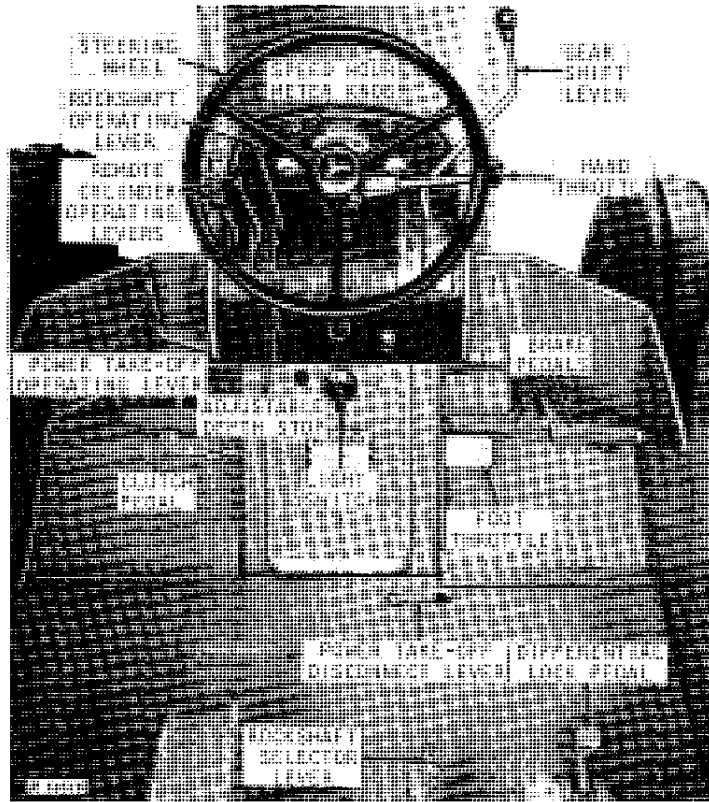


Fig. 10-10-6—Operating Controls

Operating controls are illustrated in Figure 10-10-6.

ENGINE WARM-UP

Always be sure that the engine is at operating temperature before subjecting it to a full load.

A good way to do this is to operate the engine at about 1500 rpm for a few minutes, then at a very light load (such as driving to the field) for the next five or ten minutes.

It is good practice, when the tractor is put to work, to operate for the first 30 minutes in a lower speed than is normally used for the load.

The above procedure permits the engine oil to reach operating temperature and prevents undue wear on engine and transmission parts.

ENGINE SPEEDS

The engine is designed to operate at working speeds ranging from 1500 to 2200 rpm. These are variable governed speeds. The engine can be operated efficiently at any speed between the two extremes to meet various working conditions.

When using the power take-off, operate the engine at 1900 rpm.

Slow idle speed on tractors prior to Serial No. 012000 is 600 rpm. On tractors Serial No. 012000 and after, slow idle speed is 800 rpm.

In addition, by using the foot throttle, engine speeds can be varied between 2200 and 2500 rpm to save time when traveling on highways or smooth surfaced roads.

Using the Hand Throttle

Use the hand throttle to select the "stop" or "slow idle" positions and any of the variable governed speeds from 1500 to 2200 rpm (Fig. 10-10-7).

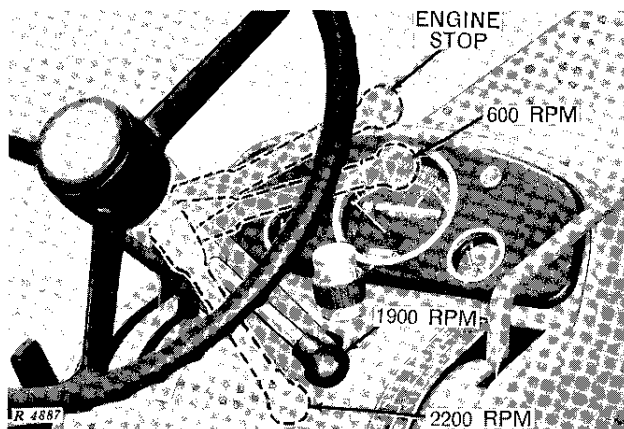


Fig. 10-10-7—Hand Throttle Positions

Move the lever counter-clockwise as far as it will go with the knob in to obtain the slow idle speed. To obtain rated engine load speed (1900 rpm), move the lever clockwise to the first stop. Placing the lever midway between the slow idle and 1900 rpm positions gives the 1500 rpm speeds. Engine speeds between 1500 and 1900 rpm can be selected by moving the lever between these two positions.

To obtain working speeds above 1900 rpm, pull out on the knob at the end of the hand throttle lever and move the lever clockwise as far as it will go. This is the 2200 rpm position. Engine speeds between 1900 and 2200 rpm can be selected by moving the lever between these two positions.

Using the Foot Throttle

The foot throttle (Fig. 10-10-6) is used to select transport speeds up to 2500 rpm or to increase engine speeds momentarily.

The foot throttle operates independently of the hand throttle. When it is not in use, engine speed is determined by the position of the hand throttle.

NOTE: The foot throttle is not intended as a means of increasing the normal working speed of the engine.

SHIFTING THE TRANSMISSION

SELECTING GROUND SPEED

The tractor has eight forward gear selections which can be used in any throttle position. These combinations enable the operator to balance speed and power for maximum economy and allow him flexibility to meet varying working conditions. For example, for a given ground speed the operator can elect to work in a low gear at high engine speed for maximum reserve power or in a higher gear at a lower engine speed for maximum fuel economy.

Examples of ground speeds are shown in Group 15 of this Section. Engine working speeds can be varied between 1500 and 2200 rpm and transport speed can be varied up to 2500 rpm.

CAUTION: Avoid overloading the tractor. Overloading causes undue strain on parts, eventually resulting in poor operation and repair expense.

SHIFTING INTO GEAR

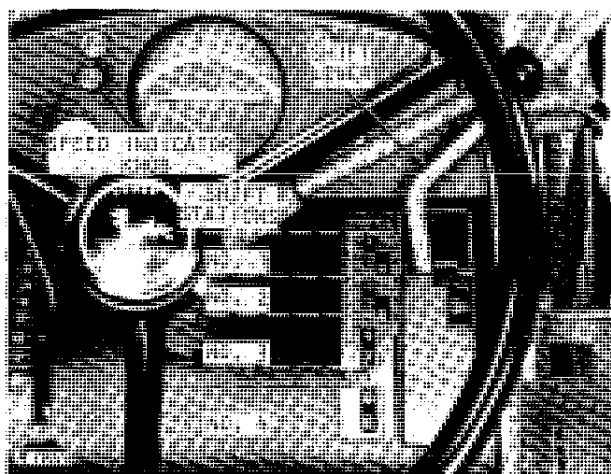


Fig. 10-10-8—Gear Shift Stations
(Serial No. 4500 and After)

Depress the clutch pedal to disengage the clutch, and move the shift lever to the gear desired.

SHIFTING FROM ONE SPEED TO ANOTHER

The shift quadrant has four "stations" (Fig. 10-10-8). On tractors prior to Serial No. 4500 stations 1, 2, and 3 have two forward and one reverse speeds. Station 4 has two forward speeds only.

On tractors Serial No. 4500 and after stations 1 and 2 have two forward speeds and one reverse speed. Stations 3 and 4 have two forward speeds only.

When the clutch pedal is depressed, the transmission can be shifted, within the same station, from one forward speed to the other forward speed, or to reverse while the tractor is in motion at slow speeds. Shifting can be accomplished between 1st, 3rd, and 3rd reverse speeds; 2nd, 5th, and 5th reverse speeds; 4th, 7th, and 7th reverse speeds and 6th and 8th speeds without stopping the tractor.

To shift from one station to another, depress the clutch pedal, stop the tractor, move the shift lever to neutral and then to the desired station. Gradually release the clutch pedal to engage the clutch.

PARKING THE TRACTOR

When the tractor is stopped for parking, holding it on an incline, or for holding it while doing PTO work, move the shift lever as far forward as it will go from neutral into the "PARK" position.

CAUTION: Be sure the tractor is stopped before placing the lever in the "PARK" position.

Shifting from "PARK" to neutral or any operating gear releases the parking mechanism.

TOWING THE TRACTOR

The shift lever **MUST** be placed in the "TOW" position when towing the tractor. This reduces transmission drag and assures proper lubrication. Have an operator steer the tractor.

CAUTION: Observe all safety precautions when towing the tractor. Do not tow at excessive speed. Always attach a tow bar or chain to the tractor frame. When possible, run the engine to maintain hydraulic pressure for power operation of steering and brakes.

POWER TAKE-OFF (PTO)

Fig. 10-10-9—PTO Disconnect Lever and Differential Lock Pedal

PTO DISCONNECT

The power take-off is disengaged when the straight edge of the lever is up as shown in Figure 10-10-9.

The drive can be disconnected, when the engine is stopped or running at slow speed, by lifting the lever and rotating it 180°.

To connect the PTO drive, rotate the lever 180° with the engine stopped. If the lever does not rotate easily, momentarily engage the engine starter while maintaining pressure on the disconnect lever.

NOTE: Always disconnect the power take-off drive when the PTO is not being used.

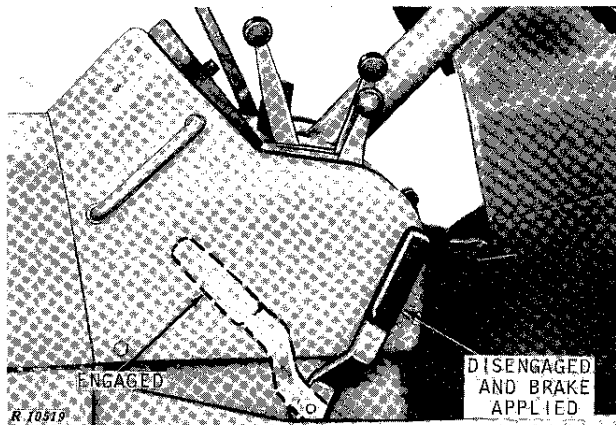


Fig. 10-10-10—Positions of PTO Clutch Operating Lever

OPERATING LEVER

The PTO clutch is engaged or disengaged by a lever located at the left of the tractor cowl (Fig. 10-10-10). Moving the lever all the way forward engages the clutch; moving the lever all the way to the rear disengages the clutch and applies the PTO brake.

NOTE: The purpose of the PTO brake is to prevent the power shaft from turning when the PTO clutch is disengaged.

The PTO drive should always be disengaged when the power shaft is not being used.

DIFFERENTIAL LOCK

A lock (optional in tractors Serial No. 8000 and after) located in the differential assembly, enables the operator to lock the differential. This causes both rear wheels to turn at the same speed, moving the tractor under conditions where one drive wheel has lost its traction.

The lock is operated by a pedal (Fig. 10-10-9). Depressing the pedal locks the differential. The lock is released by depressing either or both brake pedals slightly. The front wheels should be in the straight ahead position when disengaging the differential lock.

CAUTION: Do not operate the tractor at high speeds or attempt to turn the tractor with the differential lock engaged.

HYDRAULIC SYSTEM

MAIN PUMP

The main hydraulic pump supplies oil under pressure to operate the hydraulic functions such

as power steering, power brakes, and selective control for operation of remote cylinders, and the rockshaft with 3-point hitch for implement attachment and control.

POWER STEERING

Turning the steering wheel directs pressure oil to each of the two steering cylinders, which act to turn the front wheels, thus steering the tractor.

POWER BRAKES

The power brakes are fully hydraulically operated. The two brake pedals can be applied individually to assist in making sharp turns or together for slowing or stopping the tractor. The pedals can also be latched together for transport operation.

An accumulator is incorporated in the brake system to provide energy to operate the brakes for several applications after the engine is stopped or should the hydraulic pump fail.

SELECTIVE CONTROL

Selective control valves for operation of remote cylinders are operated by levers at the left of the instrument panel (Fig. 10-10-11). Remote cylinder hoses are normally connected so that pushing the lever forward extends the cylinder.

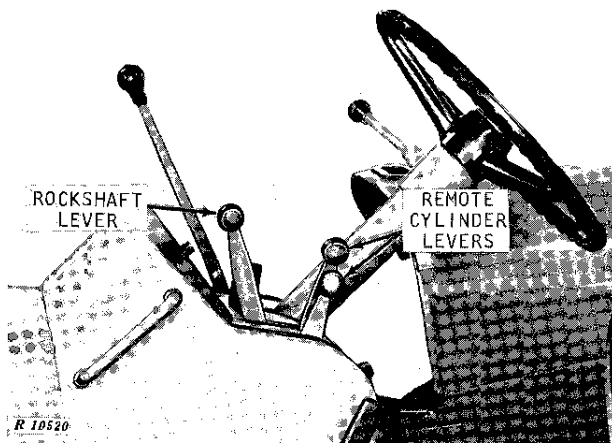


Fig. 10-10-11—Remote Cylinder Operating Levers

ROCKSHAFT AND IMPLEMENT HITCH

The rockshaft can be used to raise, lower, and control a wide variety of integral, 3-point hitch implements attached to the quik-coupler. Push the rockshaft control lever (Fig. 10-10-11) forward to raise the implement and rearward to lower the implement.

Group 15 SPECIFICATIONS

(Specifications and design are subject to change without notice.)

HORSEPOWER

5010*
Measured at the PTO:
2200 engine rpm 121 hp
1900 engine rpm 109 hp
Drawbar (2200 engine rpm). 108 hp
5020**
Measured at the PTO:
2200 engine rpm 132 hp

ENGINE

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

Engine speeds:

Slow idle . . . (5010-600 rpm) 5020-800 rpm
Working speeds 1500 to 2200 rpm
Maximum transport speed*** . . . 2500 rpm
Bore and stroke 4-3/4 x 5 in.
Displacement 531 cu. in.
Compression ratio 5010 - 16.1 to 1
5020 - 16.5 to 1
Firing order 1-5-3-6-2-4

Valve clearance:

5010:
Intake 0.015 in.
Exhaust 0.022 in.
5020:
Intake and exhaust 0.018 in.

LUBRICATION SYSTEM

Type Force feed, pressurized with full-flow oil filter

FUEL SYSTEM

Type Direct, solid injection
Injection pump timing TDC
Air Cleaner 5010 - Oil-wash type
5020 - Dry-type

**Above observed horsepower figures are official*

***Factory observed horsepower*

****Controlled by foot throttle*

COOLING SYSTEM

Type Pressurized, centrifugal pump
Temp. Control . . . Two heavy duty thermostats

CAPACITIES

Fuel Tank. 5010 - 48 U.S. gal.
5020 - 68 U.S. gal.
Crankcase 5010 - 12 or 20 U.S. qts.†
5020 - 20 U.S. qts.
Transmission-hydraulic system . . 16 U.S. gal.
Cooling System 5010 - 37 U.S. qts.
5020 - 33 U.S. qts.
Air Cleaner 5010 only - 4 U.S. qts.

CLUTCH

Type Heavy-duty, two dry plates, foot-operated

GROUND SPEEDS

24.5-32-INCH REAR TIRE, 31.6-INCH LOADED ROLLING RADIUS				
Gear	1500 rpm	1900 rpm	2200 rpm	Transport Speed ***2500 rpm
1st	1.3 mph	1.7 mph	1.9 mph	2.2 mph
2nd	2.1 mph	2.6 mph	3.0 mph	3.5 mph
3rd	2.7 mph	3.5 mph	4.0 mph	4.6 mph
4th	3.5 mph	4.5 mph	5.2 mph	5.9 mph
5th	4.4 mph	5.6 mph	6.5 mph	7.3 mph
6th	5.8 mph	7.3 mph	8.5 mph	9.6 mph
7th	7.4 mph	9.4 mph	10.9 mph	12.4 mph
8th	12.2 mph	15.4 mph	17.8 mph	20.3 mph
3rd Rev.	2.7 mph	3.4 mph	3.9 mph	4.5 mph
5th Rev.	4.3 mph	5.4 mph	6.3 mph	7.1 mph
7th Rev.	7.2 mph	9.2 mph	10.6 mph	12.1 mph

† Some 5010 crankcases with replacement pans take 20 U.S. quarts. When in doubt, use sufficient oil to bring its level up to the "FULL" mark on the dipstick.

ELECTRICAL SYSTEM

Type 24-volt, split load
 Starter and generator or
 alternator voltage 24 volts
 Lights, accessory voltage 12 volts
 Batteries Four 6-volt, 51 plate,
 115 amp. hr. Connected
 in series

TRANSMISSION

Type Syncro-Range, constant mesh
 Gear sections:
 Prior to Serial No. 4500 8 forward,
 3 reverse
 Serial No. 4500 and after. 8 forward,
 2 reverse
 Shifting 4 stations, synchronized
 shifting within stations

PTO CLUTCH

Type Wet-disk, hydraulically
 actuated, provision
 made to disconnect

POWER TAKE-OFF

Type Independent rear power take-off
 Speed (1900 engine rpm) 1010 rpm
 PTO shaft ahead of hitch point 16 in.
 PTO shaft above ground 25-1/2 in.

HYDRAULIC SYSTEM

Type Closed center, constant pressure,
 includes power steering, power
 brakes, implement control and
 transmission-differential lu-
 brication; full flow oil filter
 Maximum pump pressure 2250 psi
 Pump capacity 20 gpm at 1900 rpm

STEERING

Type Hydraulically actuated by two
 steering cylinders

BRAKES

Type Hydraulically actuated, disk-
 type, operating in oil, equip-
 ped with accumulator

FRONT TIRES

Standard 11.00-16, 8 ply
 Row-Crop 9.50-20, 8 ply

REAR TIRES

Standard 18.4-34, 8 ply
 18.4-38, 8 ply
 24.5-32, 10 ply
 Row-Crop 18.4-38, 12 ply
 24.5-32, 10 ply

FRONT WHEEL TREAD

Fixed tread 5010-67 in.
 5020-68-1/2 or 70-1/2 in.
 Adjustable tread Standard - 68 to 80 in.
 Row-Crop - 64-1/2 to
 81-1/2 in. or 71 to 88 in.

REAR WHEEL TREAD

Standard:
 24.5-32 tire 70 to 82 in.
 18.4-34 tire (dual) 68 and 112 in.
 18.4-38 tire (dual) 65 to 120 in.
 Row-Crop:
 18.4-38 tire 60 to 120 in.
 24.5-32 tire 70 to 112 in.

DIMENSIONS

Standard (fixed tread front axle):
 Wheel base 104 in.
 Over-all length 172-1/4 in.
 Over-all height 96-7/8 in.
 Height to steering wheel 81-1/2 in.
 Over-all width 95-3/4 in.
 Turning radius 12 ft.-6 in.
 Row-Crop:
 Wheel base 102 to 106 in.
 Over-all length 172-1/4 in.
 Over-all height 96-7/8 in.
 Height to steering wheel 81-1/2 in.
 Over-all width 108-3/8 in.
 Turning radius 14 ft.

SHIPPING WEIGHT (less fuel and extra ballast)

Standard 13,400 lbs.
 Row-Crop 13,450 lbs.