

# TRACTOR MODEL "MC"



JOHN DEERE

## OPERATORS MANUAL TRACTOR MODEL "MC"

OMTMC2551 E1 English

JOHN DEERE WATERLOO WORKS  
OMTMC2551 E1

LITHO IN THE U.S.A.  
ENGLISH



## TO THE PURCHASER

We welcome you to our ever-growing family of John Deere tractor owners. We are confident that the dependable and economical performance of the John Deere Model "MC" Tractor will prove that you made a wise choice.

The purpose of this manual is to acquaint you with the John Deere Model "MC" Tractor. The manual explains how to operate and service your tractor, and how to maintain its high operating efficiency. Instructions are given clearly, with the intention of making these operations as easy as possible.

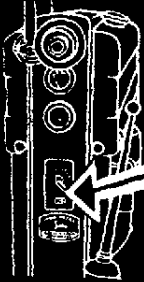
Keep this manual in a convenient place for quick and easy reference. Use it as a guide whenever questions arise. You have purchased a dependable, sturdy tractor, but only by operating and caring for it properly can you expect to receive the service and long life for which it was designed.

If in the future you need new parts to replace those that may be worn, insist on genuine John Deere parts. They are exact duplicates of the originals, made from the same patterns and of the same high-quality materials.

When ordering parts, be sure to give the serial number of your tractor. The illustration below shows where to find this serial number, which should be written NOW in the space provided in the illustration. Also write in date purchased and owner's name.

Serial number of hydraulic attachment should also be recorded as indicated.

TRACTOR



JOHN DEERE MODEL "MC"  
SERIES TRACTOR

Serial No.

Date Purchased

Owner

Serial No. of Hydraulic Attachment

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Hello dear friend!

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Even though your dealer has carefully inspected this tractor before delivering it to you, it is always good business to re-check the items which are circled on the reproduction below of the envelope which contains this manual.

### TO THE NEW JOHN DEERE TRACTOR OWNER

Each John Deere Tractor is carefully designed, assembled, and given a complete test and final inspection at the factory before it is shipped. Our main ambition is to deliver tractors to new owners in the same mechanical condition as when shipped from the factory.

To enable us to fulfill this one ambition, this tractor was carefully inspected for irregularities that may have occurred in shipment. This inspection included a complete checking of the following:

- Track tension and alignment.
- Radiator; Fill with water or anti-freeze.
- Air cleaner oil level.
- Crankcase oil level.
- Transmission oil level.
- Steering clutches and brakes.
- Power clutch operation.
- Spark plug gaps.
- Carburetor setting (May require adjusting later, see Instructions in Manual).
- Engine speed and oil pressure.
- Inspect Rubber Hose connections.

#### Starter and Lighting Equipment

- Install new battery; Check water level; Grease terminal posts.
- Check charging rate.
- Check starting motor for operation.
- Serial number entered in owner's register.

The above inspection made by *John Doe*  
Date *1/27/50* Dealer *Good Business Supply Co.*



**HANG THIS BOOK IN A  
HANDY PLACE**

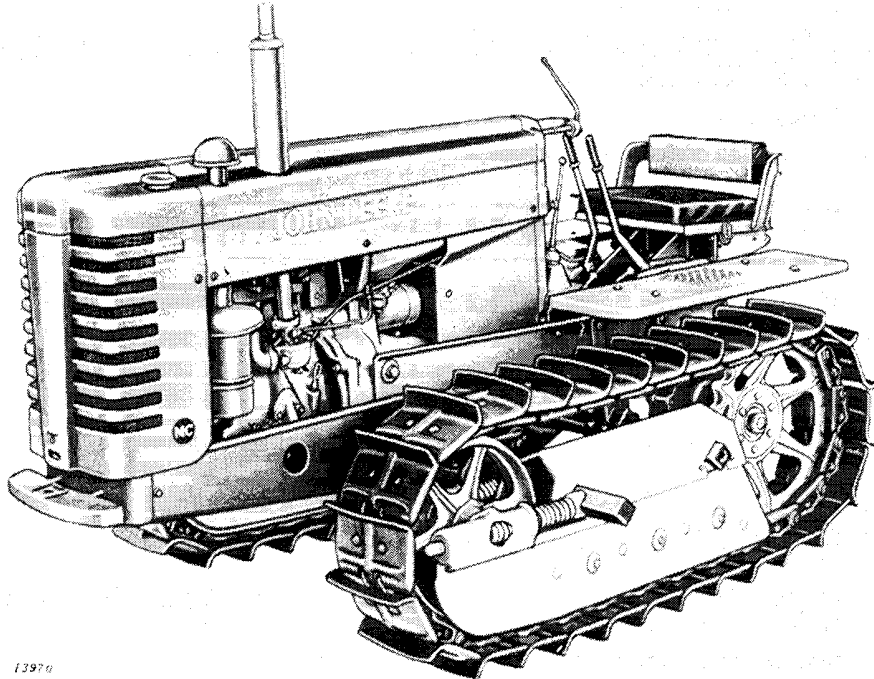
We suggest this rechecking especially during freezing weather or when a period of time has elapsed between delivery and when you are ready to operate it. For complete starting information, see page 15.



13969

We, your John Deere dealer, are mighty proud to add your name to our list of John Deere Tractor owners. Because we are interested in having you obtain from this new tractor all the comfort and long life that are built into it, we are pleased to discuss the following important maintenance operations:

- Controls and Instruments—Operation and Care.
- Breaking-in Period—Part Load, Open Throttle, Changing Oil.
- Method of Starting and Stopping Engine.
- Lubrication—Engine, Transmission, Air Cleaner, Track, Hydraulic System and Oil Gauge.
- Cooling System—Adding Water, Cleaning.
- Fuel System—Gasoline, Sediment Bowl and Trap, Carburetor Adjustment.
- Crankcase Breather Cap—Servicing.
- Track Tension and Alignment.
- Drawbar—Adjustment; pull from no other place.
- Distributor Care—Keeping Terminals Tight, Cleaning, Adjusting Points, Timing.
- Steering Clutches and Brakes.
- Power Clutch—Adjustment.
- Starter and Lights—Starting, Charging Rate Adjustment, Changing Fuse, Battery Care.
- Tightening Bolts and Nuts.
- Safety in Operation—Selecting Proper Speed, Keeping Guards on Power Shaft.
- Keeping the Tractor Clean.
- Operating the Tractor.
- Appointment for After-Sales Service—not later than two weeks after delivery.



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*John Deere Model "MC" Tractor—Left Side View*

## SPECIFICATIONS

### CAPACITY:

Two 16" or three 12" plow bottoms, 8 foot double-action disk harrow.

### SPEEDS:

Forward: .8, 2.2, 2.9, 4.7 M.P.H.  
Reverse . . . . . 1.0 M.P.H.  
(Governed Speeds)

### ENGINE:

Engine . . . . . Two vertical cylinders, cast-in-block; valve in head.  
Engine speed . 1650 R.P.M. at rated load  
Bore and stroke . . . . . 4" x 4"  
Displacement . . . . . 101 cubic inches  
Carburetor . . . . . Natural-draft type (adjustable load and idle jets)  
Air cleaner . . . . . Heavy-duty, oil-wash type, center tube with stack.

Lubrication . . . . . Force-feed pressure system. Total capacity of oil system —5 quarts, including oil filter.

Cooling system . . . . . Thermo-siphon system. Total capacity 3½ gallons.

Fuel system . . . . . Gravity-feed system. Gasoline tank capacity—9 gallons.

Clutch . . . . . Single 10" plate automotive type, foot-operated.

Oil filter . . . . . Replaceable cartridge

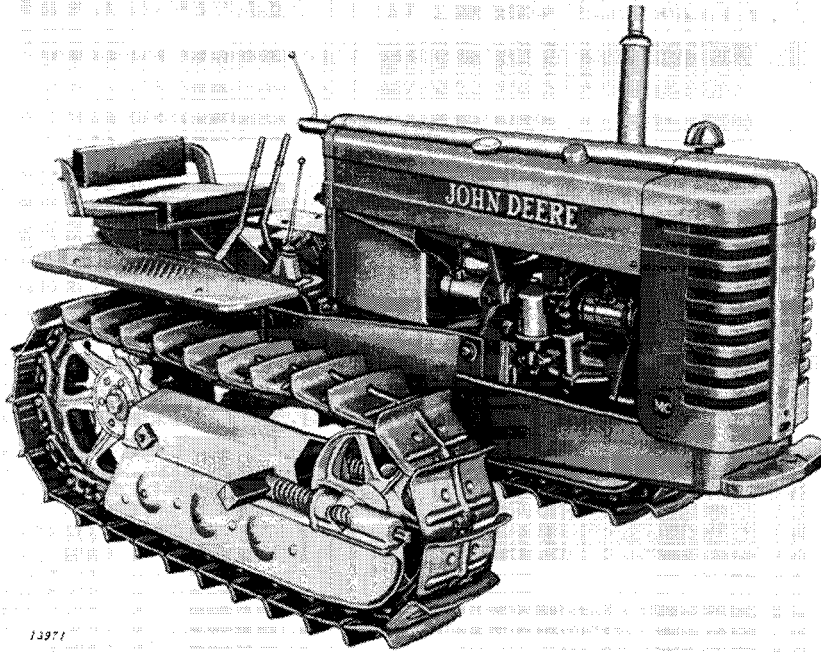
### TRANSMISSION:

Four speeds forward and one in reverse. Selective type spur gears, alloy steel, forged, cut and heat-treated.

Bearings . . . . . Constructed with 4 roller and 6 tapered roller bearings.

Oil capacity . . . . . approx. 6 U. S. Quarts.

Transmission, ring gear and drive pinion are included in same case.



*John Deere Model "MC" Tractor—Right Side View*

## AND DATA...

### STEERING CLUTCHES:

Two multiple dry disk clutches and internal contracting band-type brakes.

### TRACKS:

10", 12", or 14" Track Shoes or 12" Snow Shoes; 56 shoes per track.

Three track rollers, and spring adjusted idler.

### TRACK TREADS:

36"-46" and 38"-44", dependent upon size sprocket and track shoe.

46" tread is standard with 12" shoe.

### DIMENSIONS:

Over-all Height—64"

Over-all Length—102"

Over-all Width—67"

Clearance—14"

SHIPPING WEIGHT (APPROX.)—  
4000 lbs.

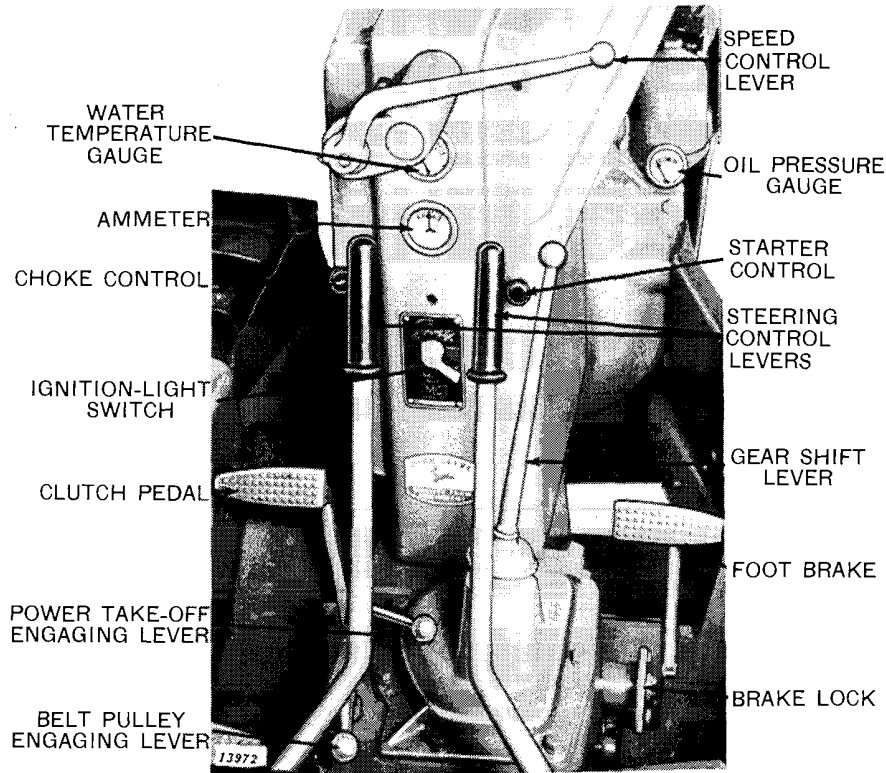
### POWER TAKE-OFF:

Shaft diameter 1 $\frac{3}{8}$ "; R.P.M. 550; Splined end is 25" above ground. Drawbar conforms with A.S.A.E. standards.

### REGULAR EQUIPMENT:

Starter, Generator, Battery; Oil Filter, Gasoline Filter, Oil Wash Air Cleaner; Idle and load adjustable Carburetor; Distributor Ignition System; Dry plate semi-self adjusting Clutch; Individually operated Band-Type Brakes; Oil Pressure Gauge, Temperature Gauge, Ammeter, Generator Charge Control Switch, Thermo-Siphon Cooling System; Pressure Lubricating System; Exhaust Muffler, Power Take-Off, Air-Bladder Seat, "Air-Loc" Sheet Metal Fasteners; Swinging Drawbar, 12" Track Shoes, and Sod Pan.

## CONTROLS ... INSTRUMENTS



*Starting and Operating Controls*

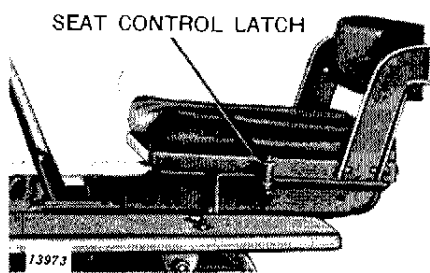
The quality and amount of work you do with your tractor not only depend on the use of proper equipment, but also upon ease and convenience of tractor operation. If you are in an uncomfortable position, if you have to fight the steering levers, or if you can't see what you are doing, you are definitely handicapped.

Your John Deere Crawler Tractor is as convenient to handle as your automobile; all controls are readily accessible. Shift lever, throttle, steering levers, power take-off control, and pulley drive control are easily reached from the operator's seat. A foot brake and clutch control are conveniently located at your feet.

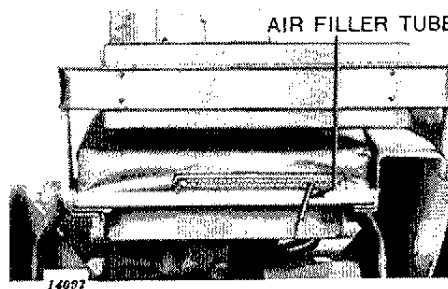
Familiarize yourself with all controls provided for safe and easy operation of your new tractor. Regardless of your previous experience, study carefully this section covering Controls before you operate your tractor.

## STEERING LEVERS

No previous experience in driving a crawler tractor is necessary to do a good job. No damage can result to tractor due to lack of experience if the operator familiarizes himself with all controls before starting tractor. To turn tractor to right, pull back on right steering lever, or, to turn to the left, pull back on left lever. Pulling back on one lever disengages a steering clutch, stopping flow of power to the track on the same side. Pulling the lever farther back applies a brake which retards or stops the track, making short turns possible. The steering levers are connected to steering clutches and brakes in such a way that it is impossible to apply brakes without first releasing corresponding steering clutch. This assures proper operation of clutches and brakes when steering.



*Seat Control Latch*



*Air Filler Tube*

## SEAT

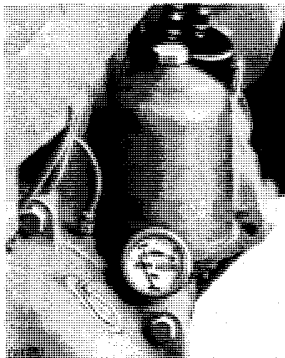
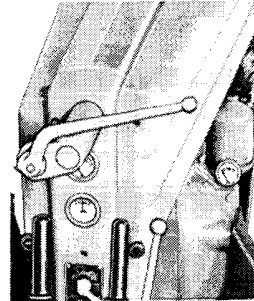
The large air-bladder seat on this tractor gives you riding comfort which has been lacking on many tractors. When inflated properly, the seat will cushion any shock or jar you may receive when operating on rough or boggy ground. It also gives a self-leveling effect when operating on an incline.

To increase or decrease amount of air in bladder, open slide fastener located at rear of seat and extend filler tube. It is not necessary to use a tire pump to inflate bladder. When adding air, be careful not to over-inflate. To remove air, depress valve.

The seat is mounted on slide rails and is adjustable forward and backward to most comfortable operating position. Movement is controlled by a latch located on lower left-hand side of seat. When latch is depressed, seat may be moved to desired position. A safety stop screw is installed in slide to prevent seat from sliding off rails.

## ENGINE SPEED CONTROL LEVER

The engine speed control lever is located on the steering shaft support. Engine speed is controlled by raising lever to increase and lowering to decrease. This lever controls operation of governor, which in turn governs mixture of air and gasoline fed through the carburetor. (Linkage is adjusted at factory and should not be changed in field.)



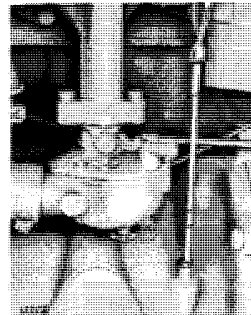
*Oil Pressure Gauge*

## OIL PRESSURE GAUGE

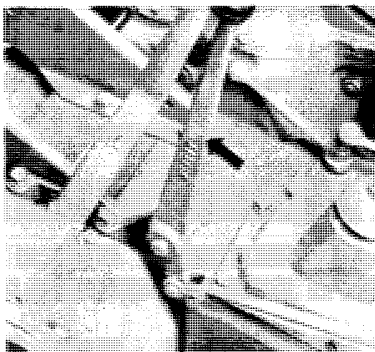
The oil pressure gauge is located on distributor side of engine and is attached to oil filter base. It has been placed in this position so it can easily be observed by tractor operator, while operating tractor. The oil pressure gauge, as its name implies, shows oil pressure through oil passages. **It is not intended to show quality or quantity of oil in crankcase.**

## BAYONET OIL GAUGE

This gauge is located to rear and below carburetor and shows quantity of oil in crankcase. It is extremely important that bayonet gauge be checked each time before starting engine, in order to insure proper engine lubrication. If gauge shows oil level at "ADD 1 QT." mark or below, oil **MUST BE ADDED** before starting engine. (Crankcase capacity 5 U.S. quarts, including 1 quart for oil filter.)



*Bayonet Oil Gauge*

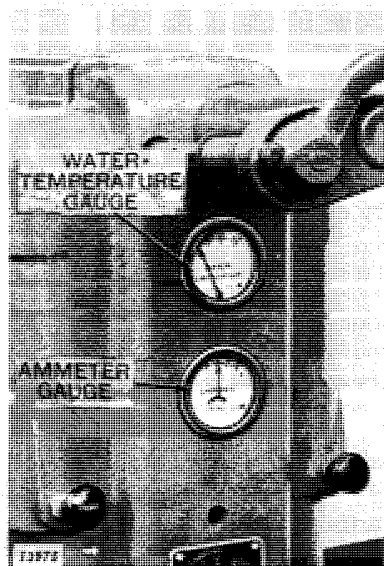


*Hydraulic Control Lever*

## HYDRAULIC CONTROL LEVER

The hydraulic control lever is located on front of transmission case to the right of shift lever.

**CAUTION:** Before attempting to operate hydraulic system, operator should be thoroughly familiar with operating instructions on page 20.



Gauges

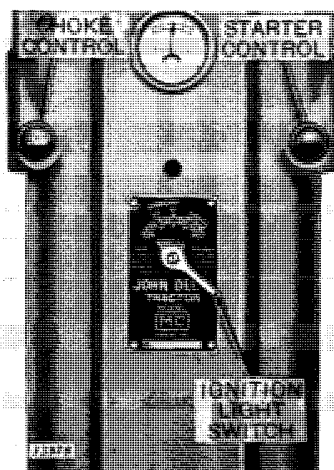
## INSTRUMENT PANEL

### WATER TEMPERATURE GAUGE

The temperature gauge is located at top of the instrument panel just below speed control lever. It shows temperature of water in cooling system at the water outlet manifold, where heated water comes from engine. This gauge will show a temperature between 190° and 210° F. during normal operation. It is not unusual during prolonged operation for the temperature gauge to remain at 210° F., because the engine and thermo-siphon cooling system have been designed to operate efficiently at that temperature.

### AMMETER

This gauge shows if generator is supplying a charge to battery and also the rate of charge or discharge of battery. The generator should be adjusted so that ammeter will show correct charge rate when engine is operating at fast idle, with lights off. Proper readings are approximately 2 amperes with switch at low charge position (2nd position) and approximately 8 to 10 amperes at high charge position (3rd position). If ammeter should show no charge, it is a sign of possible generator failure. Engine should be stopped and cause of trouble ascertained. (See "Electric Generator" on Page 62 for correction.)



Starting Controls

### IGNITION-LIGHT SWITCH

The ignition and light switch controls ignition system as well as charge rate between generator and battery. It also is used to operate lighting system. The switch has five different operating positions as follows:

- 1.—(Starting with pointer of switch at far left.) Ignition is off. This position should always be used whenever shutting off engine so as to prevent discharge of battery when engine is not running.

2.—Ignition on and generator charging **low** rate (approximately 2 amperes). This position should be used except when battery charge is very low, thus making additional charging necessary.

3.—Ignition on and generator charging at **high** rate (approximately 8 to 10 amperes). This position is used if battery charge has become low due to excessive use of starter or lights. Do not operate on this position for too long a period of time; overcharge of battery will result.

4.—Ignition on and lights on. This position is used when it is necessary to use lights while operating tractor. This position also gives a high rate of charge to eliminate drain of stored energy from battery by lights.

5.—Ignition off and lights on. This position is used when lighting system is used, without operating engine. **This position must be used sparingly as it will sap strength from battery.** If battery should become run down from this use, it may be necessary to use starting crank to start engine. Run on high charge rate until battery is recharged.

*NOTE: Keep these various positions in mind at all times. (While operating tractor, it is essential to know which of the positions will keep battery charged to its peak without overcharging.)*

## CHOKE CONTROL AND STARTER CONTROL

These controls are located on either side of instrument panel slightly above the ignition-light switch. Starter control should be used sparingly so as not to weaken battery charge. Be careful when operating choke, as overchoking will flood carburetor.

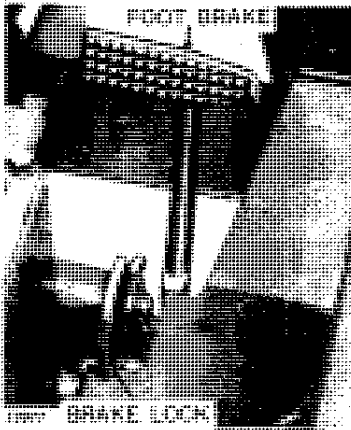
## HAND CRANK

A hand crank is furnished with every tractor. It is used only in case of a weak battery or for turning engine when servicing or adjusting.

## FOOT BRAKE

Your tractor is equipped with new band-type adjustable brakes to make your tractor safer and easier to operate. The foot brake, located on right side of tractor, just in front of right footrest, is provided to slow tractor when it is in motion. Depressing foot brake pedal applies both steering brakes evenly without disengaging steering clutches, thereby allowing tractor engine to help slow or stop tractor. A cam lock is provided for locking brake pedal in depressed position. This cam lock is engaged by pushing into position with the right foot. Locking foot brake holds your tractor in place for belt

work, or when parking on rough or uneven ground. The brakes require no adjusting by the operator other than lengthening or shortening of the brake linkage to give proper free running clearance. (Yearly check of brakes

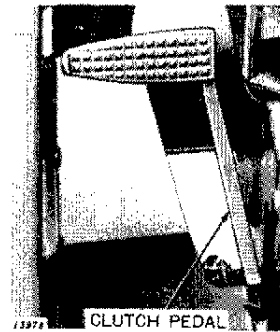


*Foot Brake*

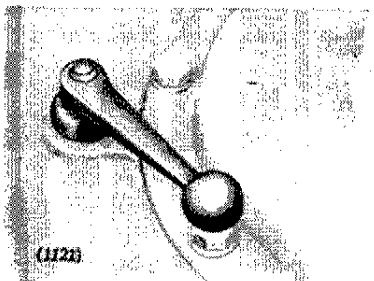
should be made by your John Deere dealer.) Brakes may be individually controlled by steering control levers by pulling each separately to their maximum travel. Individual control of brakes allows you to use them for making shorter turns. Use caution in turning tractor when using steering control levers. By pulling maximum travel of right steering control lever the right track will stop completely and tractor will turn or pivot in small radius. To stop left track pull left steering control lever to its maximum travel and tractor will pivot to left.

## CLUTCH PEDAL

This tractor is equipped with a foot-operated clutch, located on the left side and to the front of the transmission case.



*Clutch Pedal*



*Power Shaft Control Lever*

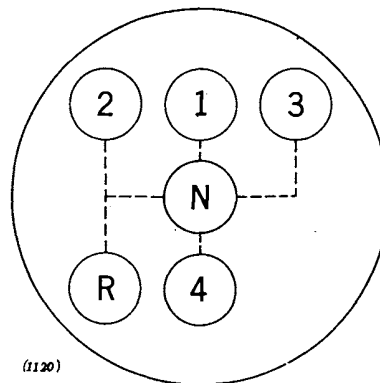
## POWER SHAFT CONTROL LEVER

The power shaft is operated by a control lever located on left front of transmission case. Power shaft, located at rear of transmission case, is engaged by moving lever to the left.

## GEAR SHIFT LEVER

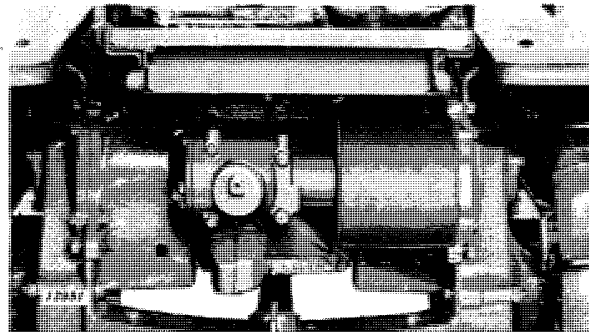
Familiarize yourself with shifting diagram before you attempt to operate your tractor. Shifting diagram is cast on transmission shifting cover for your convenience.

If gears do not mesh freely when shifting, release clutch pedal, allowing clutch to engage slightly, and again depress clutch pedal. This permits gears to rotate until gear teeth line up better for easier shifting. Avoid clashing gears. This causes unnecessary wear on gears and possible gear tooth breakage.



*Shifting Diagram*

## BELT PULLEY



*Belt Pulley Attachment*

Your tractor may be equipped with a belt pulley if desired. Although belt pulley is considered an attachment, a greater use for your tractor can be made if this attachment is obtained.

Belt pulley engaging lever is located on transmission case just to rear of power take-off engaging lever, and is operated in same manner, but in opposite direction, as power take-off engaging lever.

# **OPERATION OF TRACTOR**

## **FUEL**

The engine of this tractor has been designed to operate on gasoline only. It is not necessary, however, to use a special premium-grade gasoline, as engine will give its best performance using a regular-grade gasoline.

In order to be assured of high-quality gasoline, lubricating oils and greases for your new tractor, it is recommended that all purchases of these items be made from a reliable dealer.

## **FUEL STORAGE**

Fuel should be stored in a convenient place outside of buildings. If fuel drums are used, they should be located in a shady spot to prevent undue evaporation. Drums should be tilted slightly toward rear so that sediment will settle to rear and will not get out of drum through spigot. Hose nozzle should be capped when not in use so that dirt cannot get into it. Be sure drum vent plug is screwed in tight after using.

## **RUN-IN PERIOD FOR NEW TRACTOR**

Before your new tractor was shipped from the factory, all bearings and friction surfaces were correctly fitted, and crankcase filled with a "breaking-in" oil.

To be sure that all bearing surfaces will be properly lubricated, operate tractor on part load for first 20 hours of operation. It will not be necessary to drain oil at this time; however, check should be made periodically to be sure that an adequate supply of oil is maintained in crankcase. If it becomes necessary to add oil during run-in period, SAE 10W should be used. At end of 100 hours, "breaking-in" oil should be drained and crankcase filled with new oil in accordance with recommendations on page 32.

## **BEFORE STARTING ENGINE**

Before attempting to start engine or operate tractor, familiarize yourself with tractor and its various controls. Your John Deere dealer has shown you the important features of its operation and called your attention to various maintenance points which should be continually watched. There are, however, certain checking points which should be called to your attention.

The following instructions are very important. Make it a hard and fast rule to follow them before starting tractor; you will be compensated for this effort by longer tractor life and fewer field delays.

**(1) Radiator.**

Check water level in radiator and, if necessary, add water to top of reservoir. (Use soft or rain water if possible.) When water has been drained to prevent freezing, **do not** start engine before drain cock in lower water elbow has been closed and radiator refilled with water. (Capacity of cooling system is 3½ U. S. gallons.)

**(2) Fuel Tank.**

Check amount of gasoline in fuel tank. Always use clean fuel. Regular grade gasoline is recommended. (Capacity of fuel tank is 9 U. S. gallons.)

**(3) Air Cleaner.**

Check oil in air cleaner for quality, weight, and amount. See recommendations on pages 31 and 34.

**(4) Crankcase.**

Check crankcase oil level. If necessary, add a good grade of oil of the viscosity recommended in "*Lubrication Chart*" on page 31.

**(5) Tracks.**

Check track roller and idler bearings for lubrication. There are four grease fittings on each track assembly to be greased every 10 hours of operation. For recommended lubrication see chart on page 31.

**(6) Battery.**

Check solution level of battery. Battery condition should be checked at least once each week.

**(7) Fan.**

Check fan bearing for oil supply. Fan reservoir should be filled approximately half full at all times. Fan oil supply should be checked after every 20 hours of operation. To fill fan reservoir see "*Lubrication*" on pages 31 and 36.

**(8) Gasoline Filter.**

Check gasoline filter located beneath gasoline tank. If filter shows sediment in glass bowl, clean by first turning off gasoline supply at valve above filter bowl. Remove bowl and screen. Wash bowl and screen. Make certain a new gasket is in place before replacing filter bowl

**(9) Hydraulic System.**

Check oil supply in hydraulic system. If supply is low, add oil until reservoir is filled to proper level. Use oil of proper viscosity as recommended in "*Lubrication Chart*" on page 31.

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## STARTING ENGINE

1. Open shut-off valve above gasoline filter bowl.
2. Advance speed control lever to halfway open position.
3. Pull choke button outward full distance. (If tractor engine has been running a short time previously, it may not be necessary to use choke. It is advisable to try starting engine without choking in this case.)
4. Turn ignition and light switch to desired operating position. (See "Ignition and Light Switch," page 9, for explanation of different positions.)
5. Set gear shift lever in neutral position and release clutch by depressing clutch pedal.
6. Pull starter button outward. While operating this control, hold it in outward position until engine has had time to rotate several revolutions. Do not use a jerking action which places undue strain on starter drive spring as well as on operating parts of engine.
7. After engine has started, or after it has turned 4 or 5 revolutions, push choke button to its normal operating position. This will prevent flooding of carburetor. Usually enough gasoline for starting purposes has been drawn into combustion chamber by this time.
8. With engine running and speed control lever in the full open position (lever toward top) oil pressure gauge pointer should be within "NORMAL" markings on gauge. Allow engine to operate a few minutes before checking gauge. If pressure should show below normal or at red "STOP" position, ignition should be turned off immediately and cause of reduced oil pressure determined. (See "Tractor Difficulties," Page 69.)
9. Regulate engine speed by using speed control lever.
10. The governor is adjusted to run engine at correct speed when tractor leaves factory—**1650 rpm** for full load and **1800 to 1850 rpm** for fast idle. **CAUTION: Under no circumstances should engine be permitted to operate at an idle speed above 1850 rpm.** If idle speed seems high, have your John Deere dealer check it and make proper adjustment.



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11. If crank is used for starting, set choke and switch controls before moving to front of tractor for cranking. Controls should be set in same position as for electric starting. Insert crank at front of tractor at bottom of radiator grille. **CAUTION: Make certain tractor is in neutral before attempting to crank.**

### WARM-UP PERIOD

Before putting your tractor on full load or into high gear, be sure it is warmed up sufficiently. Oil will then circulate freely, preventing excessive wear on piston rings, cylinders, and bearings. Do not race engine during warm-up period. This wastes fuel.

## OPERATING TRACTOR

Your John Deere Model "MC" tractor has a range of four forward speeds and one reverse speed. Since this tractor was designed to give its greatest horsepower with speed control in full open position, it is advisable to select the gear which gives the desired speed rather than to adjust the speed control lever. Following this rule will give better performance, because engine will operate at its most efficient speed.

### DRIVING TRACTOR

1. With engine running, release foot brake.
2. Depress clutch pedal and shift gear lever into gear speed desired. If gears do not shift freely or refuse to engage, release clutch pedal slightly, permitting gears in transmission to turn slowly. **Shift gears carefully. Clashing gears causes unnecessary wear and possible breakage. Be sure gear shift lever is moved far enough to place gears in full mesh.**
3. When gears have been shifted, **release clutch pedal with slow easy action, as you would in your automobile, allowing tractor to pick up speed slowly.** Releasing clutch with a jerk will result in excessive wear on clutch and transmission, as well as causing front of tractor to jump.
- (4) Steer tractor through use of steering levers. The right steering lever is connected to right steering clutch and brake, while the left is connected to left clutch and brake. To turn tractor to right, use right lever, or, to turn to the left, use left lever. If extremely short turns are to be made, pull lever as far to the rear as possible. This not only releases steering clutch, but also applies steering brake so that track is stopped to insure short turns. After turn is made, release lever to allow tractor to move in a straight-ahead path.

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