Models AR-AO Tractors (Serial No. 272000-Up)

JOHN DEERE

OPERATORS MANUAL

Models AR-AO Tractors
(Serial No. 272000-Up)

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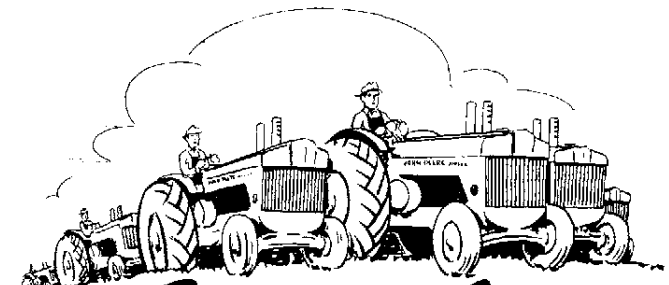

Congratulations

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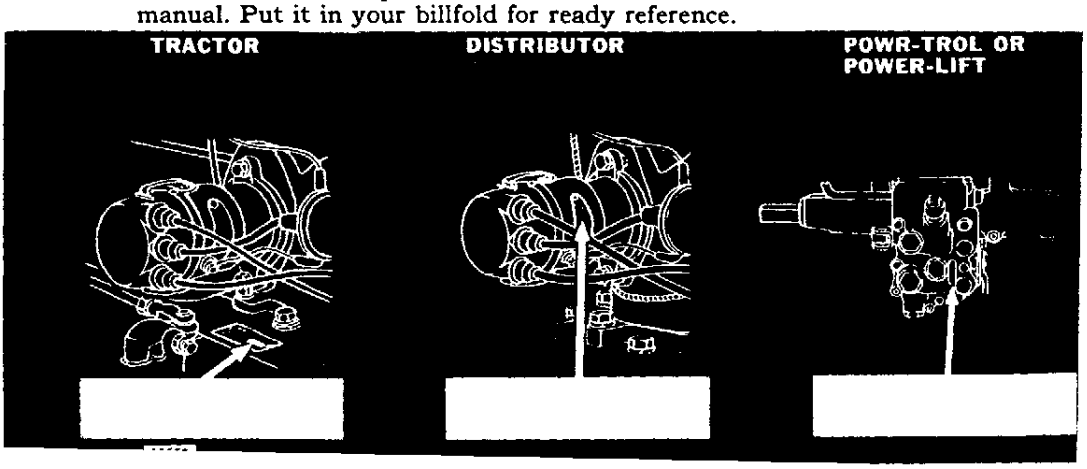
WE welcome you to our ever-growing family of John Deere Tractor owners. We are confident that the dependable and economical performance of your new tractor will prove that you made a wise choice.

Back of your tractor is an organization that has been building farm equipment for more than one hundred years. The plant in which your tractor was built is the largest single tractor plant in the world. In this modern factory, equipped with the finest precision machinery, fine materials, high-grade workmanship, thorough inspection, and complete testing are combined to give you the best in dependable tractor performance and economical tractor operation.

The way you operate your tractor and the care you give it have much to do with the service and satisfaction you will get from it. This manual has been carefully prepared and profusely illustrated to show you what to do and when to do it. It has been written by the best engineers in the John Deere tractor factory. Make it your guide. Study it carefully. Refer to it often. Only by following the suggestions it contains can you hope to get the most from your investment.

If you find that you need information not covered in this manual, or if your tractor requires special servicing, which it will periodically, take advantage of the facilities offered by your John Deere dealer. He has trained mechanics, who are kept informed on the best methods of John Deere tractor servicing and can give you prompt, "know-how" service in the field or in his shop.

When in need of parts, go to your John Deere dealer. Be sure to give him the serial number of your tractor. The illustrations, below, will show you where to find the serial numbers of your tractor, magneto, and Powr-Trol. Obtain these serial numbers from your tractor—NOW—and insert them in the spaces provided in the illustrations below. Also, be sure they are written on the special identification card which is included with the manual. Put it in your billfold for ready reference.



Even though your dealer has carefully inspected this tractor before delivering it to you, it is always good business to recheck the items which are encircled 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:

- ☑ Wheel equipment; (Tire pressure;) Wheel weights; Install calcium chloride if requested by new owner.
- ☑ Radiator; (Fill with water) or anti-freeze; Inspect shutter control.
- ☑ Air cleaner (oil level.)
- ☑ Crankcase (oil level.)
- ☑ Transmission oil level.
- ☑ Powr-Trol oil level.
- ☑ Powr-Trol operation.
- ☑ Grease tractor.
- ☑ Brakes.
- ☑ Clutch operation.
- ☑ Spark plug gaps.
- ☑ Carburetor setting (may require adjusting later according to fuel burned.) (See Instructions in Manual.)
- ☑ Engine speed and oil pressure.
- ☑ Inspect rubber hose connections.
- ☑ Connect battery ground terminal; (Check water level;) Grease terminal posts.
- ☑ Check charging rate.
- ☑ Check lights.
- ☑ Check starting motor for operation.
- ☑ Serial numbers entered in owner's register.

The above inspection made by *John Doe*

Date *7/13/49* Dealer *Good Business Implement Co*

HANG THIS BOOK IN A HANDY PLACE

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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 17.

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Hello dear friend!
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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.
- ☐ Breaking-In Period—Part Load, Open Throttle, Changing Oil.
- ☐ Method of Starting and Stopping Engine.
- ☐ Lubrication—Engine, Transmission, Grease Fittings, Air Cleaner, and Oil Gauge.
- ☐ Cooling System—Adding Water, Shutter Control, Cleaning.
- ☐ Fuel System—Fuel, Fuel Control, Sediment Bowl and Trap, Carburetor Adjustment.
- ☐ Crankcase Ventilator.
- ☐ Tires—Inflation, Inspection, Wheel Weights.
- ☐ Drawbar—Adjustment; pull from no other place.
- ☐ Ignition System—Terminals Tight, Cleaning, Oiling, Adjusting Points.
- ☐ Brakes—Adjustment.
- ☐ Clutch—Adjustment, Pulley Brake.
- ☐ Front Wheels—Cleaning and Adjusting.
- ☐ Starter and Lights—Starting, Charging Rate, Battery Care.
- ☐ Tightening Bolts and Nuts—Caution on Governor Cover Cap Screws.
- ☐ Safety in Operation—Selecting Proper Speed, Power Shaft.
- ☐ Keeping the Tractor Clean.
- ☐ Have Farmer Operate the Tractor.
- ☐ Appointment for After-Sales Service—not later than two weeks after delivery.

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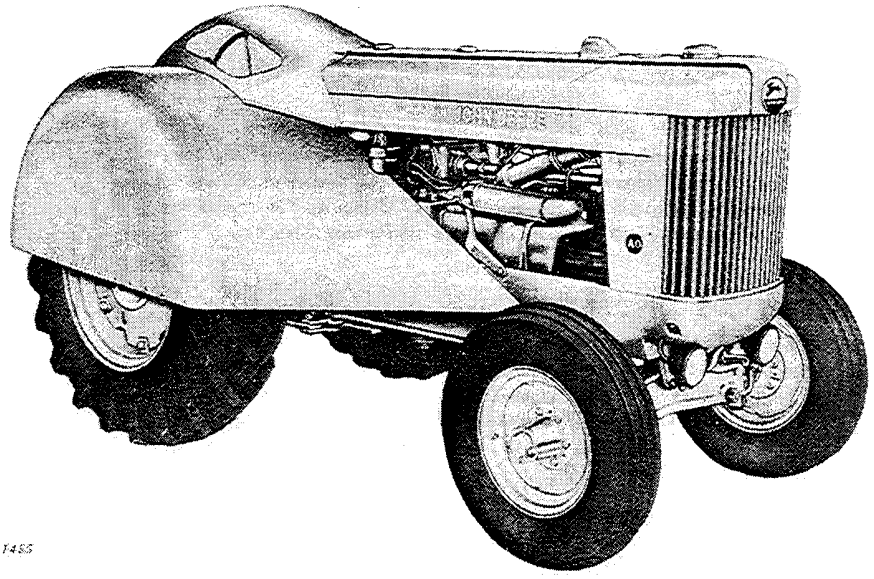
John Deere
Model "AO" Tractor
—Pulley Side



SPECIFICATIONS

CAPACITY:

2—16″ plow bottoms under normal soil conditions, or 3—14″ plow bottoms under favorable conditions.

Maximum Belt Horsepower:*
- Gasoline....39.10.
- All-Fuel....30.94.

Maximum Drawbar Horsepower:*
- Gasoline....34.88.
- All-Fuel....27.13.

Maximum Pull:
- Gasoline....4431 lbs. at 2.15 mph.
- All-Fuel....4248 lbs. at 1.75 mph.

*Sea level (calculated): Maximum H. P. based on 60°F. and 29.92 in. Hg.

(Nebraska Test Nos. 378 All-Fuel and 429 Gasoline)

SPEEDS:

Forward with 13-26 Tires: 1-1/3, 2-1/2, 3-1/4, 4-1/2, 6-1/4, and 11 mph.

Reverse: 2-3/4 mph.

ENGINE:

Engine...Two-cylinder, cast-in-block, valves in head.

Engine Speed....975 rpm (Load).

Bore and Stroke....5-1/2″ x 6-3/4″.

Displacement....321 cubic inches.

Compression Ratio:
- Gasoline....5.60 to 1.
- All-Fuel....4.50 to 1.

Carburetor....Natural-draft type.

Ignition System....High-Tension Magneto or Distributor.

Spark Plugs:
- Gasoline....18mm., AC88L Comm.
- All-Fuel....18mm., Champion No. 8 Comm. C.

Lubrication...Full force-feed pressure system with Purolator oil filter element. Total oil capacity—8 U. S. quarts.

Cooling System....Thermo-siphon with water capacity of 8-3/4 U. S. gallons.

Air Cleaner....Oil-wash type.

Fuel System....Gravity-feed.

Gasoline Tank Capacity:
- Gasoline....20 U. S. gallons.
- All-Fuel....1-3/4 U. S. gallons.

Fuel Tank Capacity:
(All-Fuel only)....20 U. S. gallons.

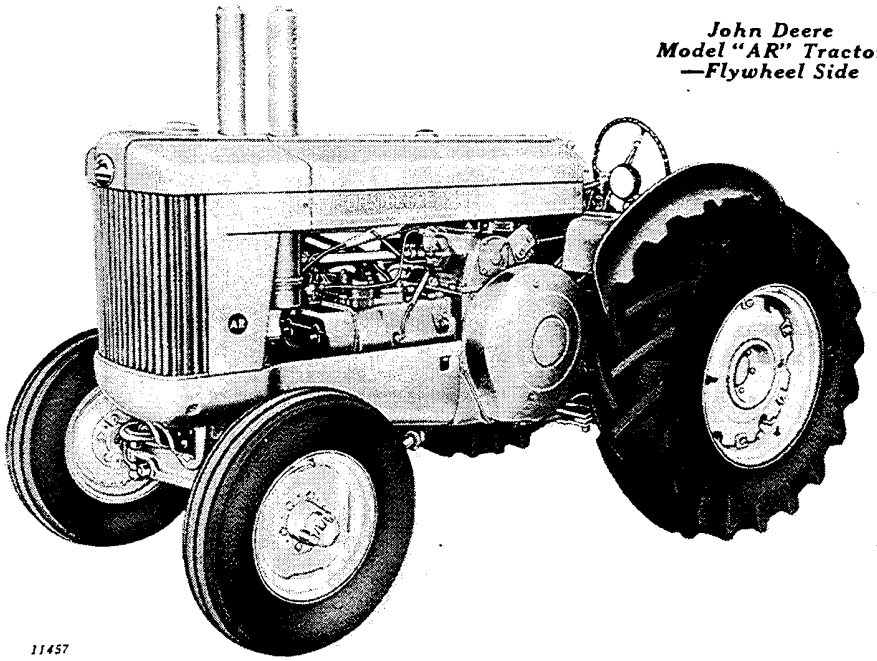
Clutch....Hand-operated, dry disks.

Belt Pulley:
- Diameter....12-13/16″.
- Width....7-3/8″.
- R.P.M....(Load) 975.
- Belt Speed....3270 fpm.

TRANSMISSION:

Transmission....Six speeds forward and one in reverse.

John Deere
Model "AR" Tractor
—Flywheel Side



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AND DATA...

Gears....Selective-type, straight spur-cut gears, forged and heat-treated.

Bearings.....Shafts operated on 2 straight roller bearings, 4 tapered-roller bearings, and 5 ball bearings.

Oil Capacity.....8 U. S. gallons.

REAR AXLES:

2-3/4" diameter. Mounted on 4 tapered-roller bearings.

REAR WHEELS:

13-26, 6-ply tires, mounted on cast wheels, recommended for average field conditions. Steel spoke wheels with lugs available as special equipment. Diameter 42-3/4". Face 10".

BRAKES:

Foot-operated, individual, automotive-type, internal expanding.

FRONT WHEELS:

6.00 x 16", 4-ply tires. Mounted on 4 tapered-roller bearings. Steel spoke wheels with guide bands available as special equipment. Diameter 28" Face 6".

DIMENSIONS:

On regular 13-26 pneumatic tires: Wheel base 75-3/4"; height to radiator cap 57"; maximum width "AR" 72-1/2"; "AO" 75-5/8"; over-all length 125-1/2"; rear wheel tread 54-7/16" narrow, 58-7/16" wide; turning radius 13' 8".

DRAWBAR:

Conforms with A.S.A.E. standards. Vertical adjustment 12-1/8" and 14-5/8".

POWER TAKE-OFF:

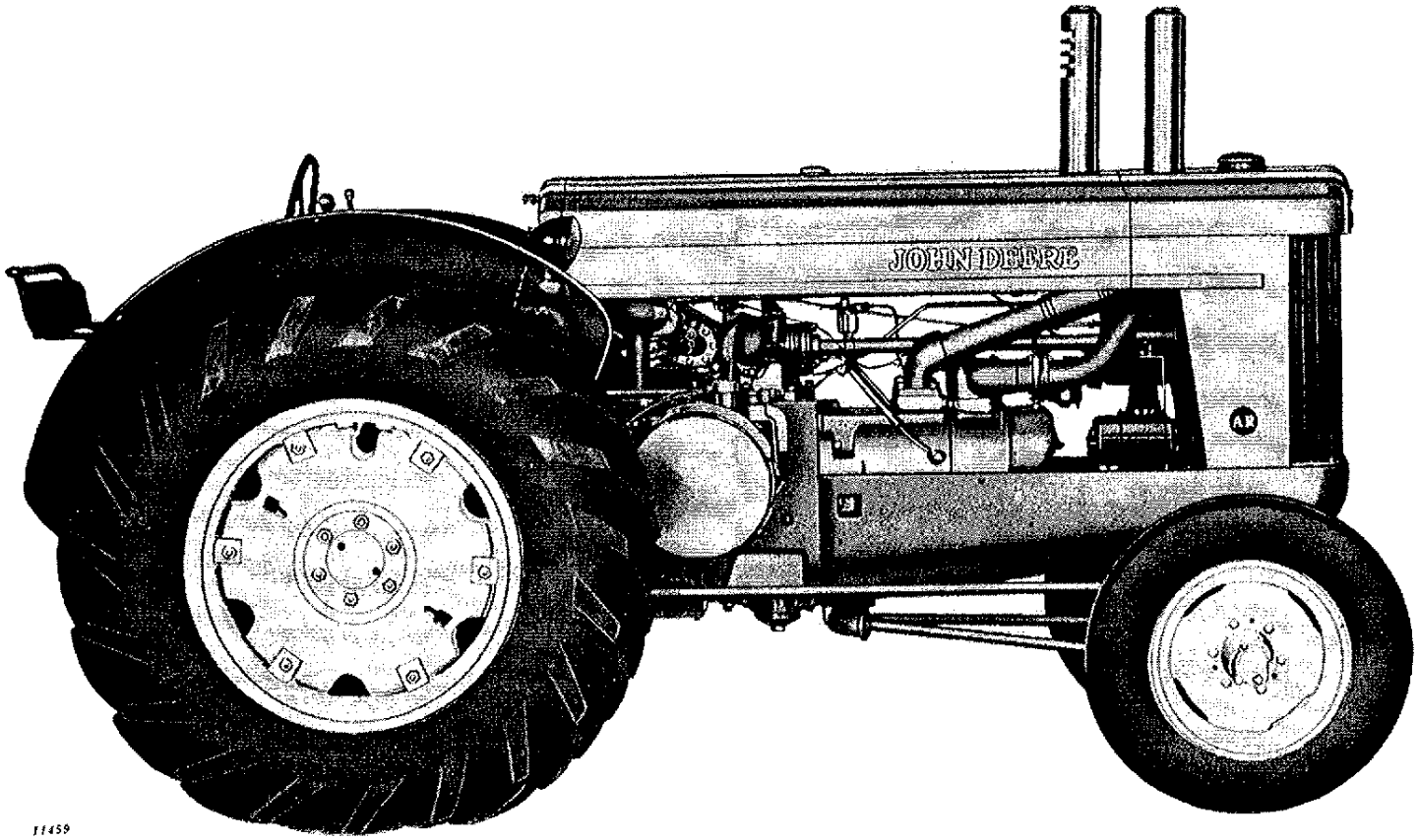
Shaft diameter 1-3/8"; R.P.M. 536; conforms with A.S.A.E. standards.

POWR-TROL:

Engine-driven pump.

SHIPPING WEIGHT:

"AR".....5,244 lbs.
"AO"...with citrus fenders, complete.....5,502 lbs.



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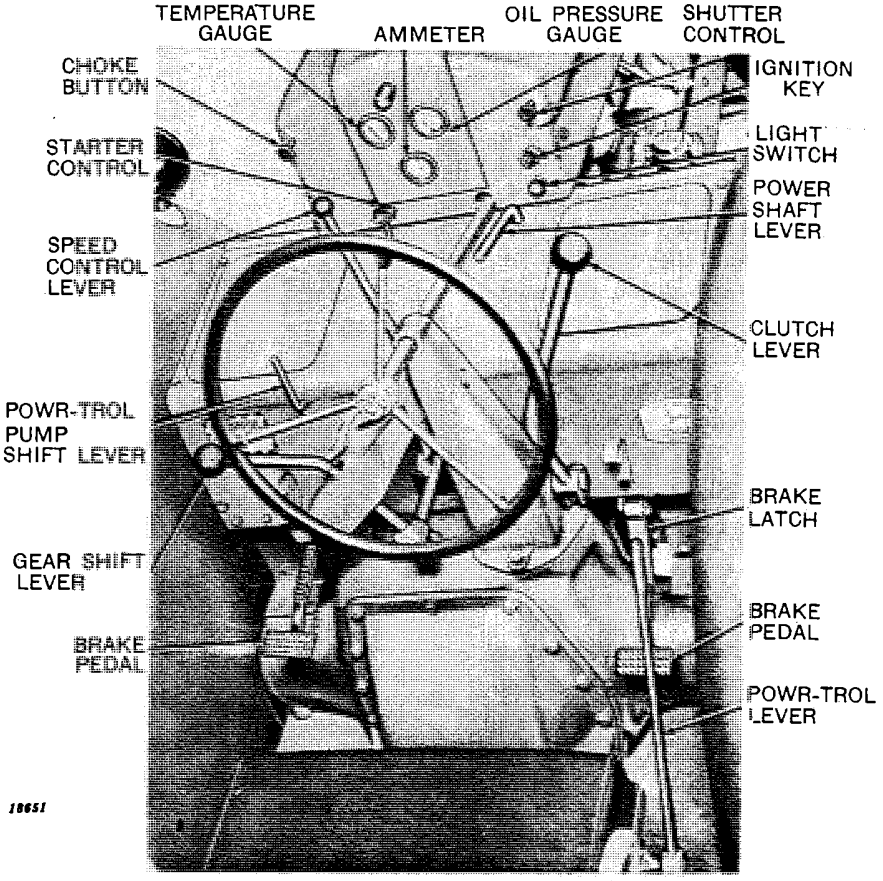
John Deere Model "AR" Tractor—Pulley Side

CONTROLS



Operating Controls

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

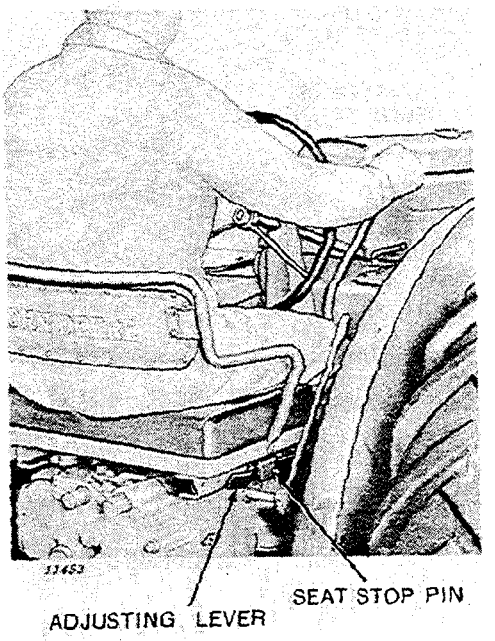
Your John Deere Tractor is as convenient to handle as your automobile. All controls are readily accessible. Clutch lever, throttle, fuel control, and radiator shutter control are easily reached from the operator's seat. Under your feet are the convenient brakes and a comfortable platform on which you can stand if you so desire.

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

SEAT

The deep-cushion seat increases operator comfort and reduces fatigue at the wheel. It can quickly and easily be adjusted to suit the operator by simply pulling out on the seat latch and pushing seat to any desired position. Arm and back rests safeguard the operator when traveling over rough ground.

The seat location affords the operator an unexcelled view of his work.



Seat

STEERING

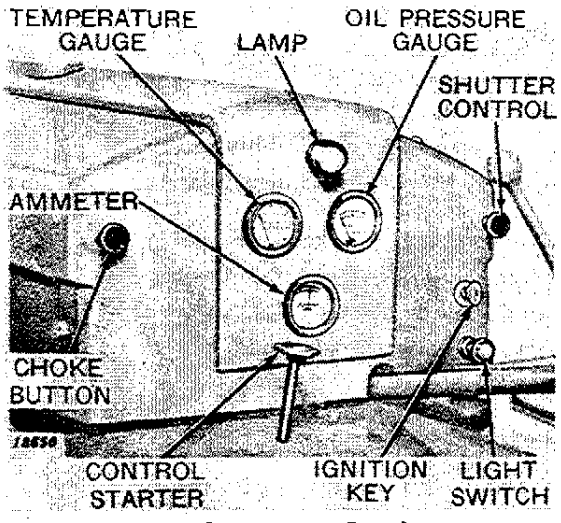
The seat location and general design permit you to easily see what you are doing at either side. This design, coupled with a steering mechanism built to eliminate objectionable wobble, backlash, or whipping of the steering wheel, even in the roughest going, permits you to work in freedom and comfort.

Steering

Smooth, responsive steering can be maintained throughout the life of your tractor by means of the adjustments provided for this purpose.

Adjustments can quickly and easily be made by your John Deere dealer's serviceman.

RADIATOR SHUTTER, INSTRUMENT PANEL, AND CONTROLS



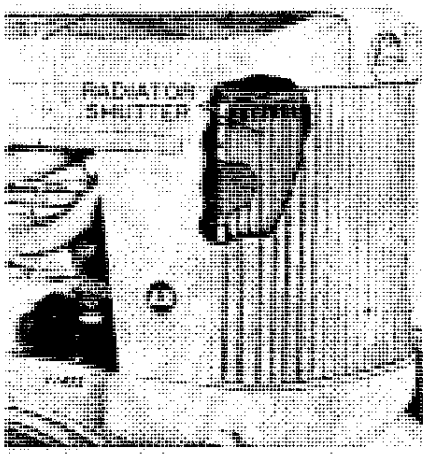
Instrument Panel

For greater all-around economy, better lubrication, and more power, All-Fuel engines should be operated at a temperature of 190°F. Engine temperature is effectively controlled from the driver's seat by means of a manually-operated radiator shutter. The engine temperature gauge on the instrument panel indicates when to adjust the shutter.

A convenient, three-way fuel control lever on the All-Fuel tractor is located on the instrument panel, enabling the operator to switch from gasoline to low-cost fuel or to shut off the fuel supply entirely without leaving his position at the wheel.

While engine temperature is not so important when burning gasoline, it is good practice to maintain an operating temperature of at least 180°F.

The oil pressure gauge is also located on the instrument panel. This gauge does not in any way tell the amount or condition of the oil in the crankcase. It only indicates whether the oil pump is working. The indicator hand of the gauge should rest between the letters "M" and "H" when the engine is running fast idle. If pressure is not registered on the oil gauge when the engine is started, stop the engine immediately.



Shutter

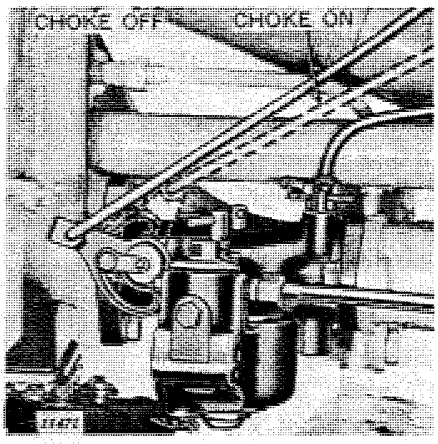
If your tractor is equipped with battery ignition, it is necessary to use the ignition key when starting or stopping the engine. Ignition is "on" when key is turned to the right.

The ammeter indicates whether or not the generator is charging.

CHOKE

When starting the engine, set choke in full-choke position. Choking is accomplished by a button mounted on the instrument panel.

Over-choking or excessive use of the choke will flood the engine, causing hard starting. It is not always necessary to choke a hot engine.

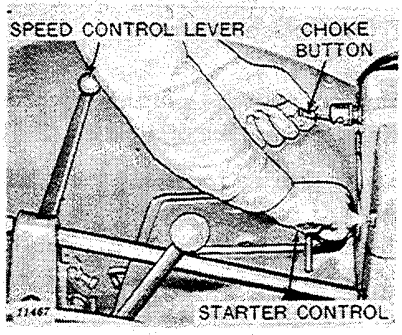


Choke

ENGINE CRANKING

To start the engine, pull choke, put speed control lever in about half-speed position and push down on starter control. If your tractor is equipped with distributor, first turn key to the right ("on" position).

The starter motor is geared into the flywheel which is protected by a guard.



Starting

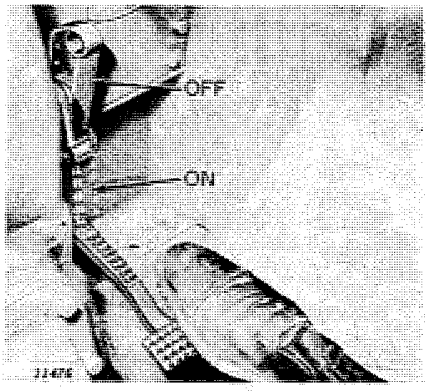
For additional information on starting, see section "Starting the New Tractor," page 14.

BRAKES

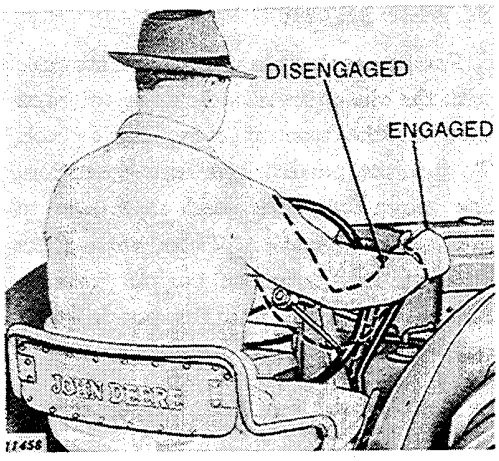
Individually foot-operated brakes make possible short turns to right or left when desired.

If brakes are pressed simultaneously with both feet, they assure you safer stopping at high transport speeds.

A brake latch is conveniently located for locking each brake when doing belt work or when stopping the tractor on a hill or incline.



Brake Operation



Clutch Lever

CLUTCH LEVER

The power required in putting the tractor in motion is gradually and smoothly applied to the drive system by slowly pushing the clutch lever forward. When the tractor picks up speed, give the lever a quick forward thrust until the clutch snaps into engagement.

By pulling back on the clutch lever, the clutch is released and the engine disconnected from the transmission. The pulley brake, which is a part of the clutch lever, stops the pulley from rotating, permitting easy shifting of the transmission gears.

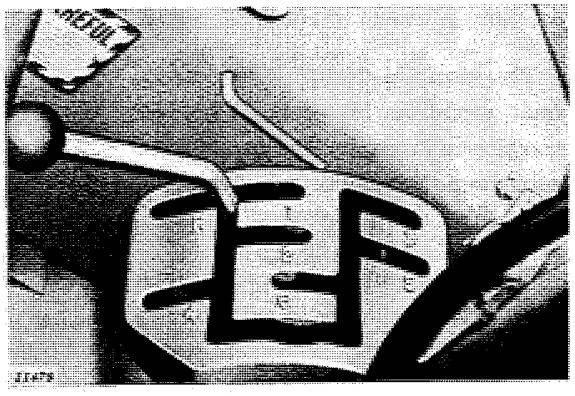
When the engine is running and the tractor is not moving, the life of the clutch parts and pulley bearings can be prolonged by shifting the gear shift lever into neutral and engaging the clutch. This allows the pulley and crankshaft to turn as one unit, reducing frictional wear, and lengthening the life of clutch parts.

GEAR SHIFT

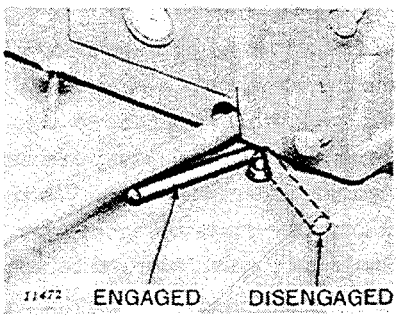
Familiarize yourself with the shifting diagrams before you attempt to operate the tractor.

If gears do not shift freely, move clutch lever forward until pulley turns slowly. This allows gear teeth to line up for shifting.

Attempting to shift gears while tractor is in motion may cause clashing of gears, unnecessary wear, and possible breakage.



Gear Shift



Power Shaft Shift Lever

POWER SHAFT

The power shaft is started and stopped with the clutch lever and can be operated whether the tractor is moving or not. To put the power shaft into operation, first move the power shaft shift lever to the engaged position. Then, with gears in mesh and with the engine running, engage the clutch and the power shaft will operate.

Whenever the use of the power shaft is not required, disengage the power shaft shift lever.

NOTE: Make it a standing rule never to dismount from the tractor without first disengaging the power shaft lever.

POWR-TROL

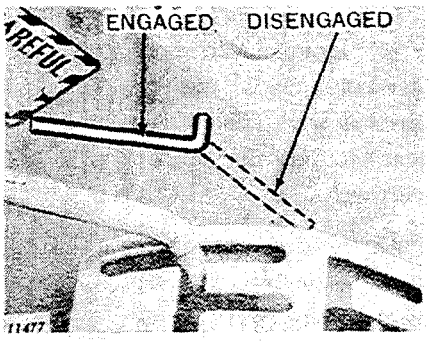
The Powr-Trol system is used with remote cylinder.

Oil pressure for the Powr-Trol is supplied by an independent pump mounted at the rear of the governor housing. To engage the pump, rotate the shift rod located on the tractor cowl in a counter-clockwise direction while turning the engine with the starter.

The pump drive gear is fully engaged when the lever is in the engaged position as shown in the illustration.

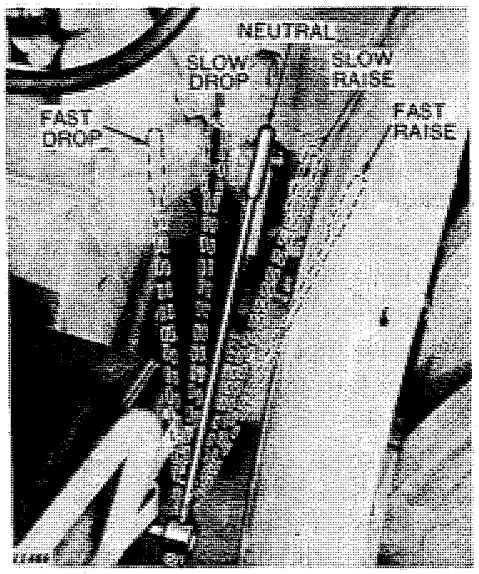
The pump is designed for continuous operation. However, it is good practice to disengage the pump drive gear when the remote cylinder is not being used.

To disengage pump, rotate shift rod clockwise at slow idle engine speed until drive gear is disengaged.



Powr-Trol Pump Shift Rod

To operate the Powr-Trol move lever to one of five positions: 1—neutral, 2—slow raise, 3—fast raise, 4—slow drop, and 5—fast drop.



Powr-Trol Lever

(1) The neutral position of the lever is approximately 30° forward of vertical.

(2) To decrease depth of the implement or to raise it slowly, move the lever forward approximately one-half of its travel. The lever must be held in this position until the desired adjustment s reached.

(3) To raise implement fast, move lever forward to its farthest position (not necessary to hold). The lever will return to neutral position automatically on completion of lifting stroke.

(4) To increase depth of the implement or to drop it slowly, move the lever to the rear approximately one-half of its travel. The lever must be held in this position until the desired adjustment is reached.

(5) To drop implement fast, move the lever to the rear as far as possible. The control lever returns automatically to neutral upon completion of the lowering stroke.

Be Careful

THE LIFE YOU SAVE MAY BE YOUR OWN...

NATIONAL SAFETY COUNCIL

OPERATING INSTRUCTIONS

STARTING THE NEW TRACTOR

FUELS

Now that you are familiar with the controls, your next consideration before starting your tractor is the type of fuel you are going to use.

The gasoline engine is designed to operate economically on regular-grade gasoline. Third-grade gasoline or power fuels are not satisfactory for use in this engine.

The All-Fuel engine is designed to operate on gasoline, power fuel, tractor fuel, or kerosene, and no difficulty will be experienced with these fuels if the simple operating directions are followed.

These low-octane, lower-cost fuels are manufactured to a variety of specifications; therefore, the All-Fuel tractor owner should investigate available fuels to determine which will give the most satisfactory results under the prevailing operating conditions, making sure that the directions are followed for adjusting carburetor and maintaining temperature.

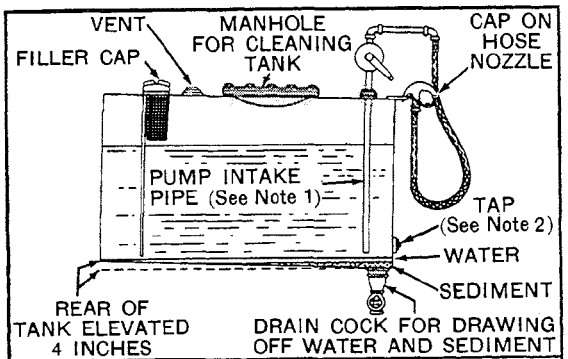
In all communities where these-low-octane fuels are available, they are generally used in All-Fuel tractors because these tractors will burn them successfully without any detrimental effect to the working parts of the tractor and at a saving in fuel costs.

FUEL STORAGE

Many engine difficulties can be traced to dirty fuel.

The importance of proper fuel storage cannot be too highly stressed.

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.



One Type of Storage Tank

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The storage tanks, drums, service tanks, or other containers must be free from foreign matter of any sort which might contaminate the fuel.

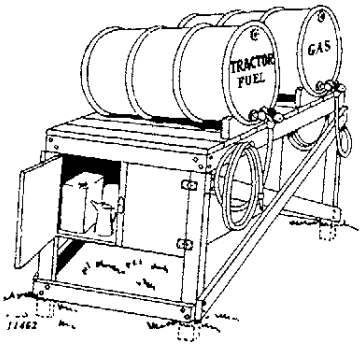
A storage tank provides the best means of storing fuel. Most storage tanks have a sump or other means of draining water, dirt, or other foreign matter from the bottom. After refilling storage tank, sufficient time should be allowed for any foreign matter which might be present to settle to the bottom before filling the tractor fuel tank.

Some fuel companies supply adequate storage tanks on a purchase or rental basis.

Storage of fuel in barrels is not recommended because they are often a source of fuel contamination. However, in many instances, the fuel supply will necessarily be received in barrels. In such cases, some of the following precautions will help to insure clean fuel for the tractor.

Place barrel in such a position that it will not have to be moved to remove fuel, since moving barrel will stir up water and dirt in bottom of barrel.

When barrel is placed on side, keep rear end of barrel lower so water and dirt will tend to settle out at the back.



Fuel Storage Rack

The fuel and gasoline drums should be tilted slightly towards the rear as shown in illustration so that any metal that might flake from inside the drum or any other sediment will settle to the rear and will not get out of the drum through the spigot. The hose nozzle should be capped when not in use so that no dust can get in. Be sure the drum vent plug is screwed in tightly after using it. By cutting out the bottoms of two drums and welding them together, the capacity of each fuel storage tank will be doubled.

RUN-IN PERIOD FOR THE NEW TRACTOR

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

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