Operator's Manual

INTERNATIONAL®
650
Tractor

INTERNATIONAL HARVESTER COMPANY

180 North Michigan Ave. Chicago 1, Illinois, U.S.A.

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Reprinted

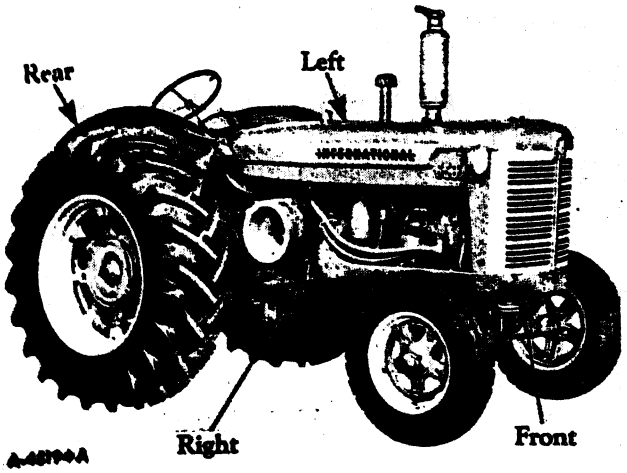
CONTENTS

INTRODUCTION

Assembled in this book are operating and maintenance instructions for the International 600 Tractor. This material has been prepared in detail in the hope that it will help you to better understand the correct care and efficient operation of your tractor.

If you should need information not given in this manual, or require the services of a trained mechanic, get in touch with the International Harvester dealer in your locality. Dealers are kept informed on the latest methods of servicing tractors. They carry stocks of IH parts, and are backed in every case by the full facilities of a nearby International Harvester District Office.

Throughout this manual the use of the terms LEFT, RIGHT, FRONT, and REAR must be understood to avoid confusion when following instructions. LEFT and RIGHT indicate the left and right sides of the tractor when facing forward in the driver's seat. Reference to FRONT indicates the radiator end of the tractor; to REAR, the drawbar end of the tractor. *See Illust. 2.*



Illust. 2

Terms of location.

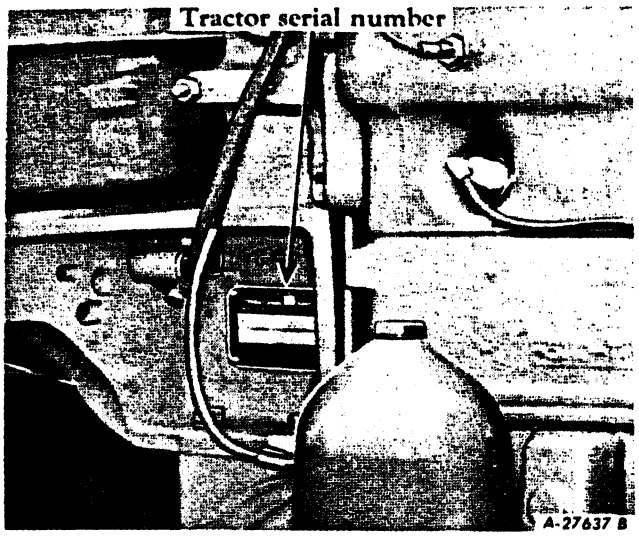
The illustrations in this manual are numbered to correspond with the pages on which they appear; for example, *Illusts. 2, 2A, and 2B are on page 2.*

In order to provide a tractor equipped as nearly as possible to suit each customer's needs, a variety of extra equipment and accessories is available.

Many of these items are illustrated and described in the Extra Equipment and Accessories section of this manual.

Where operating and maintaining instruction on these items is required, it is included in the instructions for operating and maintaining the tractor. Disregard the instructions for equipment not on your tractor.

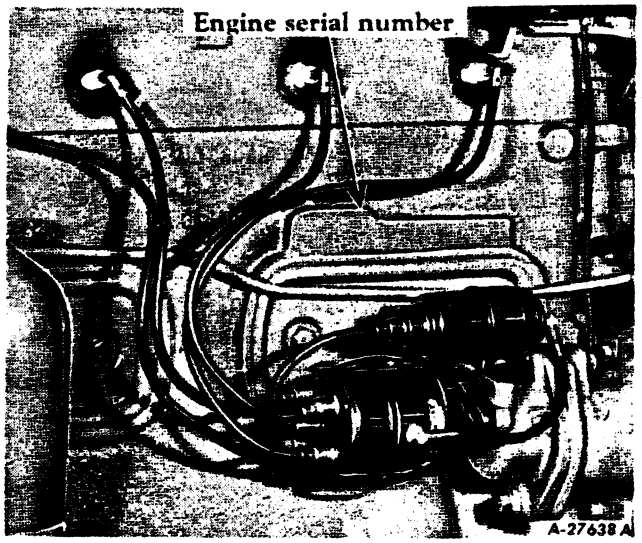
When in need of parts, always specify the tractor and engine serial numbers. The tractor serial number is stamped on a name plate attached on the right side of the fuel tank front support. *See Illust. 2A.*



Illust. 2A

Location of tractor serial number.

The engine serial number is stamped on the right side of the engine crankcase above the battery ignition unit. *See Illust. 2B.* This serial number is preceded by the prefix C-350, which indicates that it is a carbureted engine with a 350-cubic-inch piston displacement.

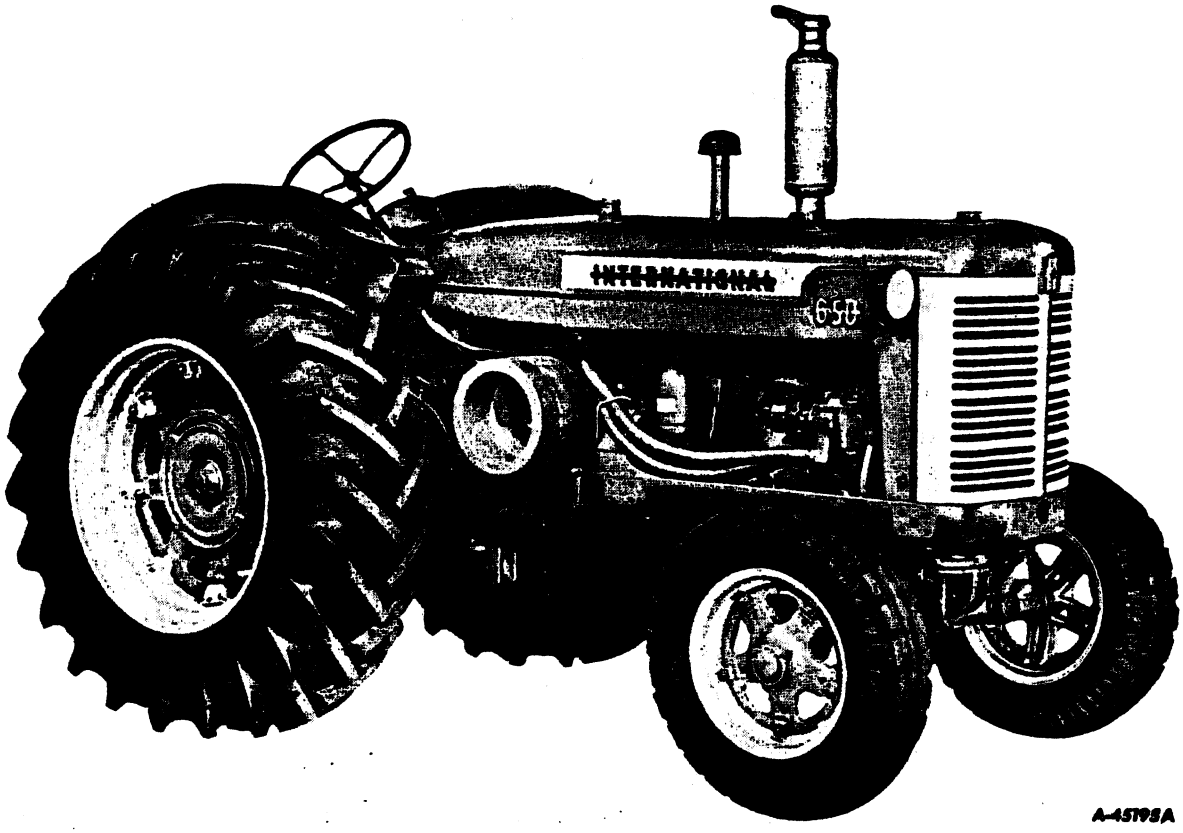


Illust. 2B

Location of engine serial number.

For ready reference, we suggest that you write these serial numbers in the spaces provided on the Delivery Report.

DESCRIPTION



Illust. 3
Right front view.

Instruments and Controls

Brake Pedals

These pedals are used to stop the tractor, to hold the tractor in a stationary position, or to assist in making sharp turns as outlined below:

To stop the tractor, depress both pedals at the same time. Before driving the tractor in high gear, always latch the pedals together.

To hold the tractor in a stationary position, latch the pedals together, depress them and lock them in this depressed position by using the brake pedal lock control rod.

To assist in making a sharp turn, operate the pedals individually, depressing the pedal on the side toward which the turn is to be made.

The brake pedal latch (*Illusts. 4 and 15*) is used to latch both brake pedals together, causing the brakes to operate simultaneously.

Caution! Always latch the brake pedals together when driving the tractor in high gear (fifth speed). To latch the pedals together, engage latch "B" located in back of the right pedal (*Illust. 15*) in the slot in back of the left pedal. When the brake pedals are not latched together, the latch should rest in the slot in back of the right brake pedal.

The brake pedal lock control rod (*Illust. 4*) is used to lock the brake pedals in the depressed position. This prevents the tractor from moving when parked on a grade or when doing belt work.

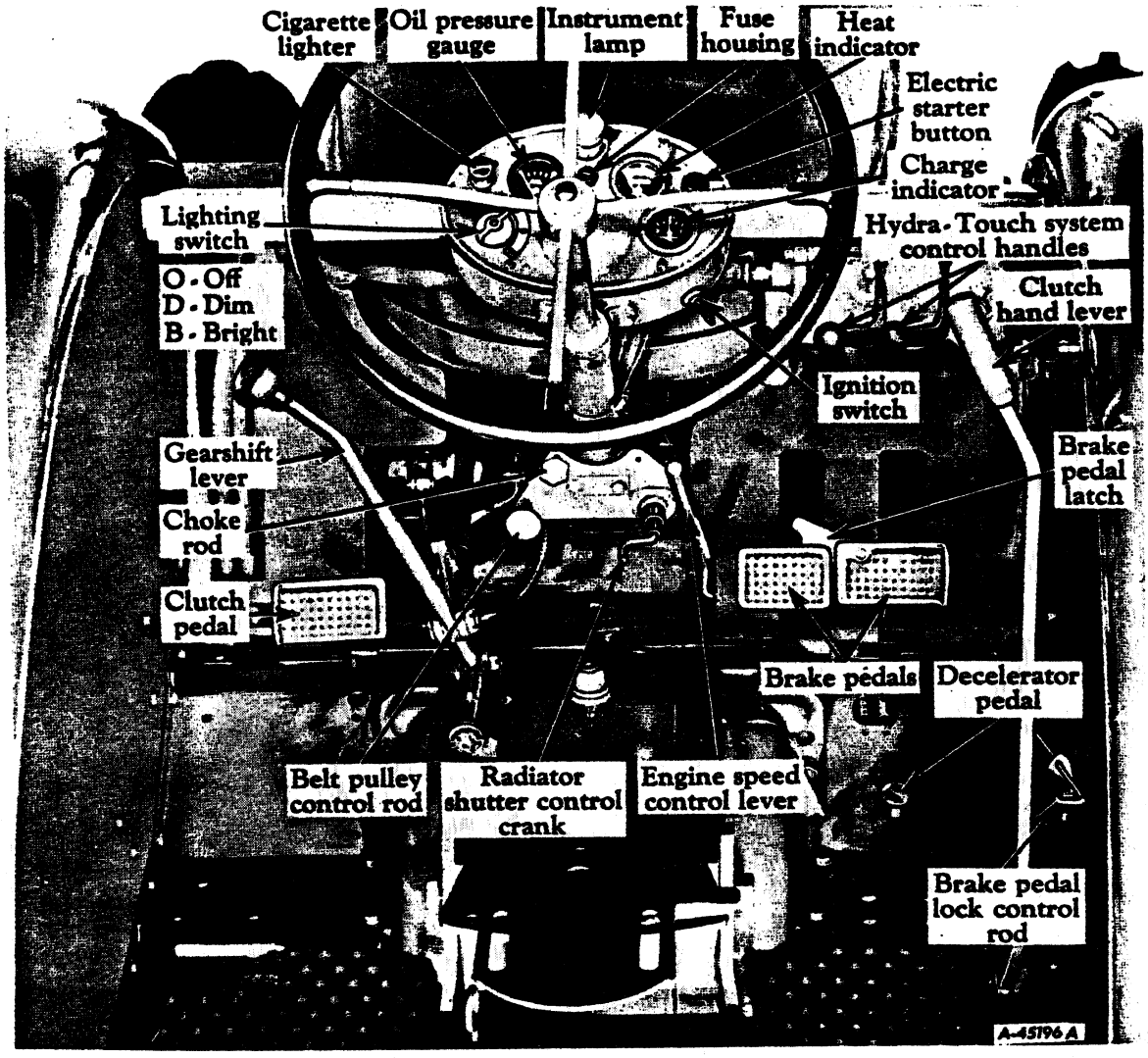
Clutch Pedal

The clutch pedal is used to disengage the engine from the transmission. Push the pedal all the way down to disengage the engine clutch.

Clutch Hand Lever

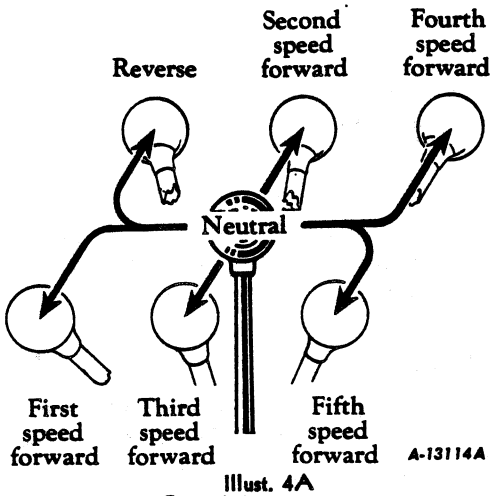
The clutch hand lever is used to disengage the engine from the transmission. Pull the lever all the way back to disengage the engine clutch.

DESCRIPTION



Illust. 4
Location of instruments and controls.
The clutch foot pedal and the clutch hand lever are not used on the same tractor.

Gearshift Lever



Illust. 4A
Gear shifting positions.

The gearshift lever is used to select the various gear ratios provided in the transmission. There are five forward speeds and one reverse speed. The fifth speed is locked out when steel wheels are used; for further instructions, *see page 14.*

Radiator Shutter Control Crank

The control crank (mounted on the steering post) opens and closes the radiator shutter, controlling the engine temperature. Turn the crank counterclockwise to close the shutter and clockwise to open it. In cold weather, close the shutter when starting the engine and adjust it as required to hold the needle of the heat indicator in the low side of the "RUN" range for best engine performance.

Choke Rod

The choke rod makes it possible to regulate the carburetor choke from the driver's seat. Pulling out on the choke rod closes the carburetor choke for starting the engine; pushing it back in opens the choke.

Engine Speed Control Lever

This lever controls the speed of the engine and, when set in a given position, will maintain a uniform engine speed even though the engine load may vary.

The rated or maximum full load governed speed is 1,500 r.p.m.; maximum idle speed is approximately 1,650 r.p.m.; minimum idle speed (hand throttle) is 400 to 450 r.p.m. with the engine speed control lever fully retarded. Never operate the engine at more than the regular governed speed. Excessive speeds are harmful.

Decelerator Pedal

The decelerator pedal is used to reduce the speed of the tractor without changing the setting of the engine speed control lever, when operating under adverse conditions.

Governor

The governor is set at the factory and should require no adjustment. Consult your International Harvester dealer if the governor does not function properly.

Ignition Switch

A key type lock ignition switch is located on the side of the instrument housing. Turn the key clockwise to a horizontal position to turn on the ignition. The key cannot be removed in this position.

Electric Starter Button

Pushing this button in completes the electrical circuit between the battery and the cranking motor solenoid and causes the cranking motor pinion to engage the flywheel ring gear, thereby cranking the engine. Refer to page 10 for starting the engine.

Lighting Switch

The switch has three positions: "D"- dim lights, "B"- bright lights, and "O"- off.

Seat Position Release Lever

This lever is used to hold the seat in the desired position. For additional information, *see page 12.*

Hydra-Touch System Control Handles

These handles (*Illust 4*) operate the Hydra-Touch System. They are used to raise, partially raise, and lower direct-connected or trailing-type implements. *See page 19* for operating instructions.

Power Take-Off Shifter Rod

The shifter rod is used to engage or disengage the power take-off. *See page 17* for operating instructions.

Belt Pulley Control Rod

This rod is used to engage or disengage the belt pulley. *Refer to page 16* for operating instructions.

Weathercap

The exhaust pipe is provided with a fully automatic weathercap which opens with the first slight pressure of the exhaust and closes the instant the engine is stopped.

Rain, dirt and insects are kept from entering the exhaust and reaching internal parts of the engine. *See Illust. 3.*

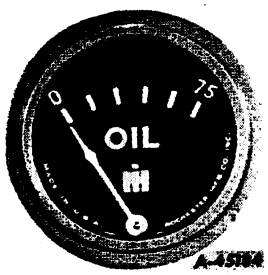
Cigarette Lighter

Push the lighter in to make electrical contact. When it pops back it is ready for use.

Oil Pressure Gauge

This gauge (located on the instrument panel) indicates whether lubricating oil is circulating through the engine.

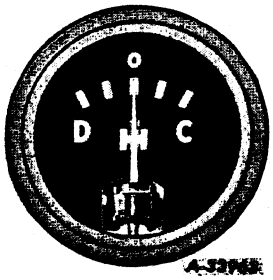
The indicator needle should be past the first mark above zero when the engine is running at speeds approximately 100 r.p.m. above slow idle speed. *See Illust. 6.* If the needle does not move past the first mark above zero, stop the engine immediately and investigate the cause of the oil pressure failure. If you are unable to find the cause, consult your International Harvester dealer before operating the engine.



Illust. 6
Oil pressure gauge.

Charge Indicator

This instrument (*Illusts. 4 and 6A*) indicates whether the generator is charging or the battery is discharging. If it shows discharge continuously, investigate the cause to avoid completely discharging the battery and possible damage to the generator. *See pages 39 and 53* for additional information on electrical equipment.



Illust. 6A
Charge indicator.

Heat Indicator

This instrument (*Illust. 6B*) indicates the relative temperature range of the liquid in the cooling system.

For the best engine performance, the indicator pointer should be on the low side of the "RUN" range.

Illust. 6B
Heat indicator.

Tachometer

The tachometer records engine hours of operation, shows normal tractor speed in miles per hour in all forward gears, and indicates engine r.p.m., which provides a means of setting the exact engine speed specified for power take-off operations.

The tachometer has a mark on the lower half of the dial indicating a p.t.o. shaft speed of 538 r.p.m. at 1,500 engine r.p.m.

Refer to the table *on page 16* for normal ground speeds according to tire sizes. Refer to "Power Take-Off Specifications" *on page 17* for power take-off speeds.

DESCRIPTION

Before Starting Your New Tractor

Lubrication

Tractors shipped to destinations in the United States of America, Canada, and Mexico have the crankcase and air cleaner filled with SAE-10W oil from October 15 to April 15, and SAE-20 oil from April 15 to October 15. If the engine is to be operated at temperatures for which these oils are recommended (see the "Lubrication Table"), this oil can be used in the engine for 150 hours of operation. Change the oil in the air cleaner oil cup daily or after every ten hours of operation. If temperatures are not within the range specified, drain the oil from the crankcase and air cleaner, and replace it with the required amount of fresh oil having the physical properties and proper viscosity suitable for the prevailing temperature and type of service.

Tractors packed for export have all the oil drained from the engine crankcase, air cleaner, and all gear cases.

Before starting the engine for the first time, remove the spark plugs and put about one teaspoonful of crankcase oil into each cylinder; replace the spark plugs and crank the engine to distribute the oil over the cylinder walls. This assures positive lubrication of the cylinders and pistons immediately after starting and eliminates the possibility of scoring them.

Lubricate the entire tractor, using the "Lubrication Guide."

Check the oil levels of the engine crankcase, air cleaner, transmission, belt pulley housing, and all gear cases to see that they are filled to the correct levels with oil of the proper viscosity for the prevailing temperature. See the "Lubrication Guide" and the specifications of lubricants *on pages 24 and 25.*

Engine Cooling System

The cooling system capacity is approximately 8½ U. S. gallons. Be sure the radiator drain and crankcase water drain are closed; then fill the radiator to a level approximately 2¼ inches below the top of the filler neck. Filling the radiator to this level will allow for expansion of the coolant under normal operating conditions. Use clean water; soft or rain water is recommended, as it does not contain alkali, which forms scale and eventually clogs the passages.

When filling the radiator for the first time or when refilling a completely drained radiator, remove the vent plug in the left side of the thermostat housing and replace the plug when water appears.

Never start or operate the engine without water or antifreeze in the cooling system except as instructed in "Cold Weather Precautions" *on page 34.*

For further information see "Cooling System" *on pages 34 to 37.* If the tractor is to be operated in freezing temperatures (+32° F. or lower), see "Cold Weather Precautions" *on pages 33 and 34.*

Fuel System

This tractor is equipped with a gasoline burning engine.

International Harvester gasoline burning engines are specifically designed for use with regular grade gasoline having an 83 minimum octane rating (research method).

To obtain best results, use the fuel for which the tractor is designed, follow the operating instructions given for that fuel and observe the following precautions:

Buy clean fuel and keep it clean. Store fuel in tanks equipped with hose and nozzle to prevent contamination of the fuel. The use of funnels, cans and drums is not recommended because they are difficult to keep clean.

During the first 100 hours of operation, mix one pint of light engine oil with every five U.S. gallons of fuel.

Battery-to-Ground Cable

Tractors shipped from the factory with starting and lighting equipment have the battery-to-ground cable disconnected and taped. Therefore, before attempting to start the engine, be sure the battery-to-ground cable is connected to the ground.

Pneumatic Tires

Before moving the tractor, check the air pressure in the pneumatic tires and inflate or deflate the front and rear tires to the correct operating pressures. See the table *on page 60.*

Steel Wheels

If your tractor is equipped with steel wheels, or has new wheel and lug installations, it is advisable to check and tighten the rear wheel bolts at intervals to be sure that the lugs seat properly.

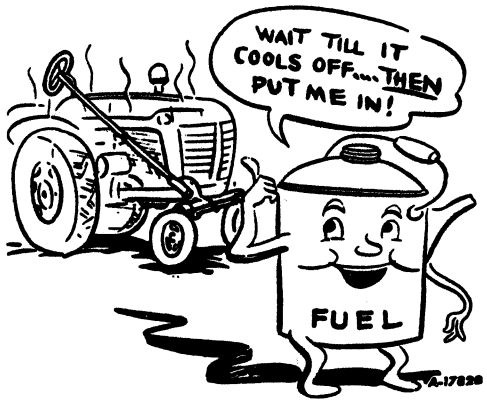
Instruments and Controls

Thoroughly acquaint yourself with all instruments and controls as described *on pages 3 to 6.*

DESCRIPTION

Preparing Your Tractor for Each Day's Work

Fuel System

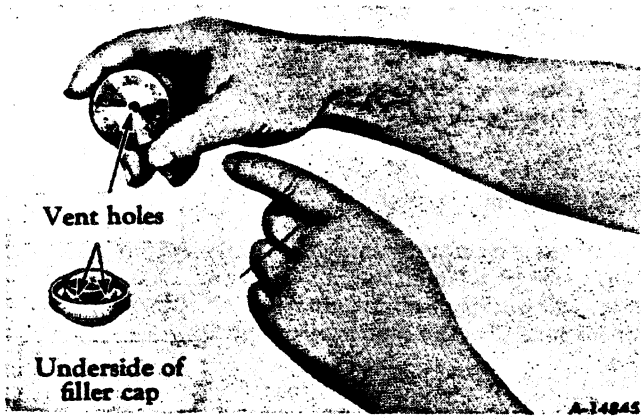


Never refuel tractor while engine is running or extremely hot.

Fill the fuel tank (capacity 36 U.S. gallons) preferably at the end of each day's work. This will force out any moisture-laden air and prevent condensation.

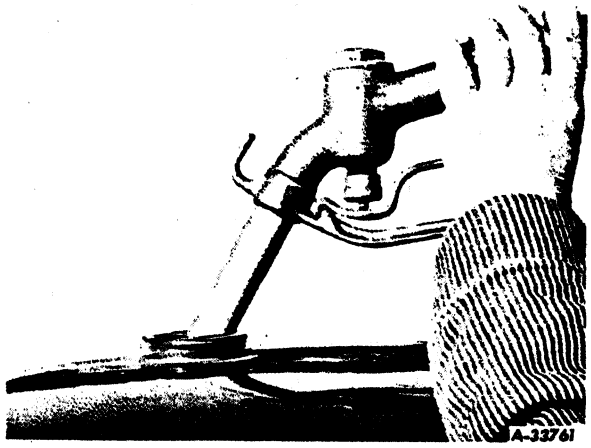
The filler cap on the fuel tank has air vents. These vents must be kept open at all times to assure proper flow of the fuels. *See Illust. 8.*

Safety First! Never fill the fuel tank when the engine is running or when near an open flame. Do not smoke or use an oil lantern when working around inflammable fuels. When refueling the tractor, keep the hoze nozzle or the funnel and container in contact with the metal of the fuel tank (*Illust. 8A*) to avoid the possibility of an electric spark igniting the gas. Do not light matches near gasoline, as the air within a radius of several feet is mixed with a highly explosive vapor.



Illust. 8

Vent holes in the filler cap.



Illust. 8A

Filling the fuel tank.

Cooling System

Remove the radiator filler cap and check the water level. Fill to a level approximately 2¼ inches below the top of the filler neck. Be sure to replace the radiator cap and tighten it to the stop.

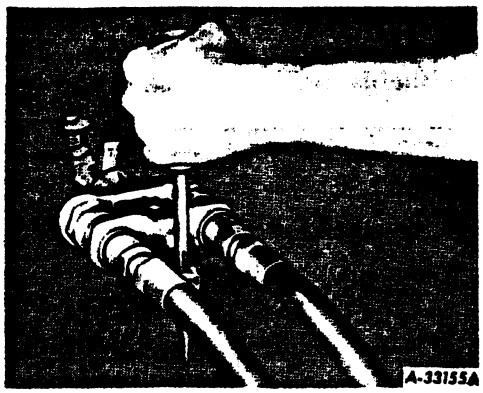
Hydra-Touch System

Before operating the Hydra-Touch system for the first time, check to see that the system is filled to the proper level as described *on page 63.*

Hydraulic Remote Control

If your tractor is equipped with a Remote Control adapter, observe the following instructions:

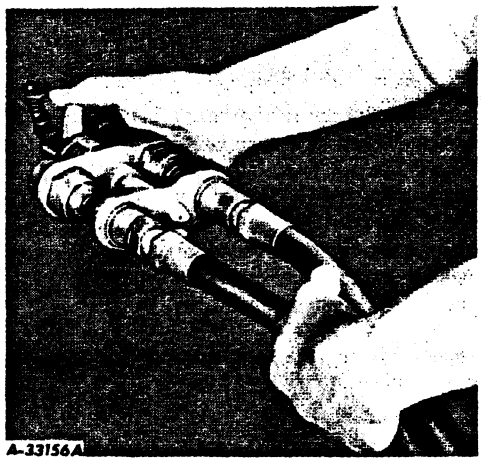
Connect the break-away coupling rear half to the break-away coupling front half by giving the rear half a light push with a small bar. Because some force is required to latch the coupling, the coupling design provides for use of a small bar to obtain the necessary pressure. *See Illust. 9.*



Illust. 9

Connecting the break-away coupling.

When connecting the break-away coupling front and rear halves, take care to keep the coupling free from dirt and grit. Use the dust caps furnished with the Remote Control to help protect the break-away coupling front half from dirt and damage when the coupling is disconnected.



Illust. 9A

Disconnecting the break-away coupling.

To disconnect the Remote Control cylinder from the tractor, press back on the break-away frame latch and pull back on the long hoses. *See Illust. 9A.*

The break-away frame has riveted hinge snap rings which permit the coupling half assemblies, front and rear, to be removed from the frame without disconnecting the hose assemblies, thereby making the break-away coupling available for other uses.

Refer to *pages 18 and 19 and pages 63 and 64* for operating and maintenance instructions.

Lubrication

Air Cleaner

Change the oil in the air cleaner oil cup. Fill to the level mark with engine oil. The capacity is 3¾ U.S. pints.

Engine Crankcase

Keep the oil level between the "FULL" mark and "LOW" mark on the bayonet type gauge, located on the right side of the engine. *See Illust. 9B.*

Do not allow the oil level to reach below the "LOW" mark or above the "FULL" mark.

When testing the oil level, the gauge must be withdrawn and wiped clean, then reinsert the gauge until the wing nut rests on top of the gauge sleeve threads. Do not screw the wing nut on the sleeve. Remove the gauge and read the oil level.

Never check the oil level when the engine is operating or operate the engine if the level of the oil is below the lower test cock or "LOW" mark on the bayonet gauge.

Illust. 9B

Oil level gauge.

Lubrication Fittings

See the "Lubrication Guide" for complete daily lubrication requirements.

Periodic Inspections

See pages 30 and 31.

Our support email:

ebooklibonline@outlook.com