300
UTILITY TRACTOR

Operators Manual

1004400R4

Reprinted

CASE

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SPECIFICATIONS

Capacities (U. S. Measure - Approximate)

Cooling system	4 gal.
Fuel tank	11-1/4 gal.
Crankcase pan	6 qt.
Transmission and differential case	Approx. 7 gal.
Steering gear housing	1-1/4 pt.
Steering gear housing (tractors with hydraulic power steering)	1-3/4 pt.
Belt pulley drive unit	2 qt.
Air cleaner oil cup	1-5/8 pt.
Hydra-Touch system	13-1/2 qt.
Hydra-Touch system and hydraulic power steering	13-3/4 qt.
Independent power take-off housing	2 qt.

Engine

Cylinders	4
Bore	3-9/16 in.
Stroke	4-1/4 in.
Engine speeds: Minimum speed (governed)	400 to 450 r.p.m.
Maximum idle speed (no load)	Approx. 2,200 r.p.m.
Maximum (full load)	2,000 r.p.m.
Battery ignition unit (counterclockwise rotation) gasoline engine (22° advance distributor)	IH
Spark plug gap	.023 in.
Valve clearance (engine hot)	.017 in.
Carburetor	IH 1-1/4 in. updraft
Magneto (when so equipped) (fixed spark, clockwise rotation)	IH type H-4

Power Take-Off Shaft Speeds

Power take-off (transmission-driven) (tractors with torque amplifier): Maximum (full load) (1,750 engine r.p.m.)	536 r.p.m.
Low idle (no load) (425 engine r.p.m.)	130 r.p.m.
Fast idle (no load) (2,030 engine r.p.m.)	622 r.p.m.
Power take-off (transmission-driven) (tractors without torque amplifier): Maximum (full load) (1,650 engine r.p.m.)	541 r.p.m.
Low idle (no load)(425 engine r.p.m.)	139 r.p.m.
Fast idle (no load) (2,030 engine r.p.m.)	638 r.p.m.
Independent power take-off: Maximum (full load) (1,750 engine r.p.m.)	541 r.p.m.
Low idle (no load) (425 engine r.p.m.)	131 r.p.m.
Fast idle (no load) (2,030 engine r.p.m.)	628 r.p.m.

Belt and Belt Pulley Speeds

	Belt Pulley r.p.m.	Belt Speed (ft. per min.)
Transmission-driven power take-off (tractors with torque amplifer): Maximum (full load) (2,000 engine r.p.m.)	1073	3089
Low idle (no load) (425 engine r.p.m.)	228	
Fast idle (no load) (2,200 engine r.p.m.)	1180	
Transmission-driven power take-off (tractors without torque amplifier): Maximum (full load) (1,900 engine r.p.m.)	1091	3139
Low idle (no load) (425 engine r.p.m.)	244	
Fast idle (no load) (2,120 engine r.p.m.)	1217	
Independent power take-off (tractors with or without torque amplifier): Maximum (full load) (2,000 engine r.p.m.)	1082	3115
Low idle (no load) (425 engine r.p.m.)	230	
Fast idle (no load) (2,200 engine r.p.m.)	1190	

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This symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED. The message that follows the symbol contains important information about your safety. Carefully read the message. Make sure you fully understand the causes of possible injury or death. SB001

IF THIS MACHINE IS USED BY AN EMPLOYEE, IS LOANED, OR IS RENTED, MAKE SURE THAT THE OPERATOR UNDERSTANDS THE TWO INSTRUCTIONS BELOW.

BEFORE THE OPERATOR STARTS THE ENGINE:

1. GIVE INSTRUCTIONS TO THE OPERATOR ON SAFE AND CORRECT USE OF THE MACHINE.
2. MAKE SURE THE OPERATOR READS AND UNDERSTANDS THE OPERATOR'S MANUAL FOR THIS MACHINE.

WARNING

IMPROPER OPERATION OF THIS MACHINE CAN CAUSE INJURY OR DEATH.

BEFORE STARTING THE ENGINE, DO THE FOLLOWING:

1. READ THE OPERATOR'S MANUAL.
2. READ ALL SAFETY DECALS ON THE MACHINE.
3. CLEAR THE AREA OF OTHER PERSONS.

LEARN AND PRACTICE SAFE USE OF MACHINE CONTROLS IN A SAFE, CLEAR AREA BEFORE YOU OPERATE THIS MACHINE ON A JOB SITE.

It is your responsibility to observe pertinent laws and regulations and to follow manufacturer's instructions on machine operation and maintenance.

See your Authorized Case dealer for additional operator's manuals, parts catalogs, and service manuals.

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Description - Continued

When the electrical equipment is installed at the factory, the battery ground cable is disconnected and taped. Before attempting to start the tractor, make certain that the ground cable is connected.

Lighting Switch

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

Instrument Lamp

A 6-8 volt—2 candlepower (No. 125588) lamp, located on the instrument panel, is provided for illuminating the instruments at night and is lighted whenever the headlights and rear light are on.

Headlights

The headlights on your tractor are sealed-beam lights especially developed for farming operations. The parts are so constructed that the filament, reflector, lens and gasket are all assembled in a unit permanently sealed against dirt, moisture and corrosion. Should a filament burn out or a lens break, the complete unit must be replaced. See your International Harvester dealer.

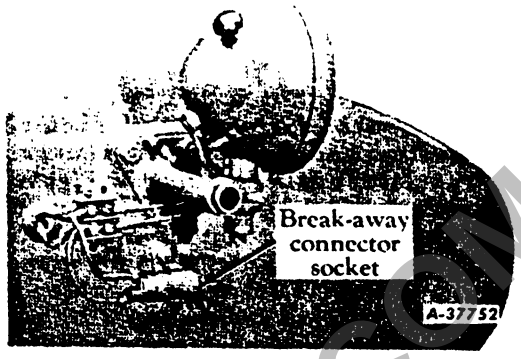


Illust. 54
Headlights on the tractor.

Combination Rear Light and Tail Light

The rear light on your tractor is a combination light with both white and red lamps for field or highway use. It is turned on by the lighting switch on the instrument panel. A selective switch on top of the light gives you a choice of the red as a tail light or white as a rear light.

To replace the rear lamp, remove the molding and lens and replace with a 6-8 volt—32 candlepower (No. 142309) lamp. To replace the tail lamp, remove the red jewel and replace with a 6-8 volt—1 candlepower (No. 115273) lamp. Replace the jewel, lens and molding.



Illust. 54A
Combination rear light and tail light and break-away socket.

Fuse

A cartridge-type SFE-20 fuse is located in the fuse housing to the left of the lighting switch. If a short circuit occurs in the lighting circuit, the fuse will burn out and break the circuit, preventing damage to the electrical system.

It is important to use the same capacity fuse for replacement. If the lights fail, check the fuse. If the fuse continually burns out, check the electrical wiring for short circuits.

To install a new fuse, unscrew the fuse housing on the instrument panel *(Illust. 53A)*, pull out the old fuse, and replace it with a new one.

Generator and Regulator

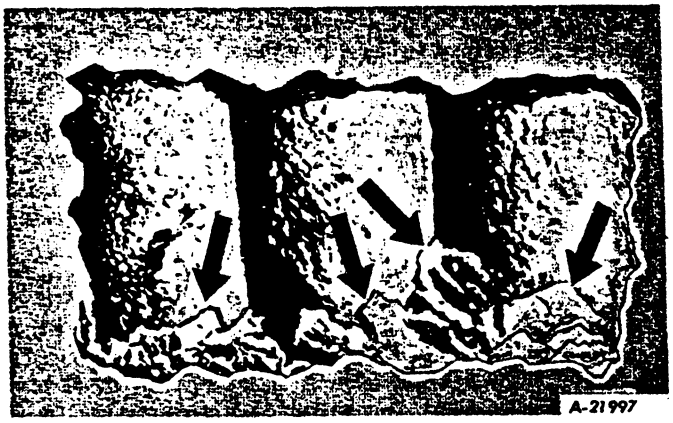
The generator supplies current to keep the battery in a charged condition and to replace the energy consumed by the cranking motor and lights. The generator on your tractor is sealed to prevent the entrance of dirt and moisture. It is hinge-mounted on the right side of the engine crankcase and is driven by a V-belt from the fan pulley. The generator, as received from the factory, has a fixed third brush which is set to give the maximum generator output.

The generator charging rate is controlled by a voltage regulator which controls the generator output, thereby maintaining a satisfactory charging rate, and prevents the battery from overcharging under varying temperatures and operating conditions. It should not require adjustment or attention. If the regulator fails to operate correctly, see your International Harvester dealer.

Caution! Never place a jumper lead between or accidentally bridge the battery terminal and the field terminal on the regulator Serious damage to the regulator may result.

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Cleaning the Cooling System - Continued



Illust. 42
Rust and corrosion accumulation

Note: Do not use chemical mixtures to stop radiator leaks, except in an emergency

Never use such solutions instead of needed radiator repair.

If the radiator is clogged with insoluble salt formations, take it to a reputable concern specializing in removing such formations. Reliable radiator service stations are familiar with local conditions and are equipped to apply the proper treatment.

The example of extreme rust clogging *(Illust. 42)* is convincing proof that flushing the system by forcing water from a hose in the radiator filler neck, without the use of cleaning solutions, may be only a waste of time. Iron corrosion is greater than that of any other cooling system metal, which accounts for the large quantities of rust found in neglected water jackets. Heavy rust deposits in the water jacket hold in heat and create local hot spots, especially around the exhaust valve seats. Under these conditions, the metal may get so hot that the valves will stick or burn, or the cylinder block or head may be damaged by heat cracking.

Rust Prevention

One of the most common causes of engine overheating is a rust-clogged cooling system. Rust interferes with circulation and cooling, which causes overheating.

In localities where alkaline, acid, or sali. waters are the only kind available, the addition of a rust preventive or "inhibitor" will tend to minimize the corrosive action of such water

For rust prevention during winter use of the engine, a fresh filling of antifreeze containing an effective corrosion preventive should be used. In the spring, drain and discard the old antifreeze solution, as the rust preventive or "inhibitor" may be exhausted from contamination and continued use.

After draining the antifreeze, a rust preventive should be added to the cooling water to protect the cooling system during warm weather operations. This inhibitor solution should be drained and discarded in the fall when danger of freezing again makes necessary the use of an antifreeze.

Thermostat

The water is circulated through the engine block, cylinder head and radiator by a centrifugal pump. Circulation is controlled by a thermostat that prevents the water from flowing through the radiator until the engine has reached operating temperature. With the thermostat closed, water circulates only through the engine block.

Radiator Core

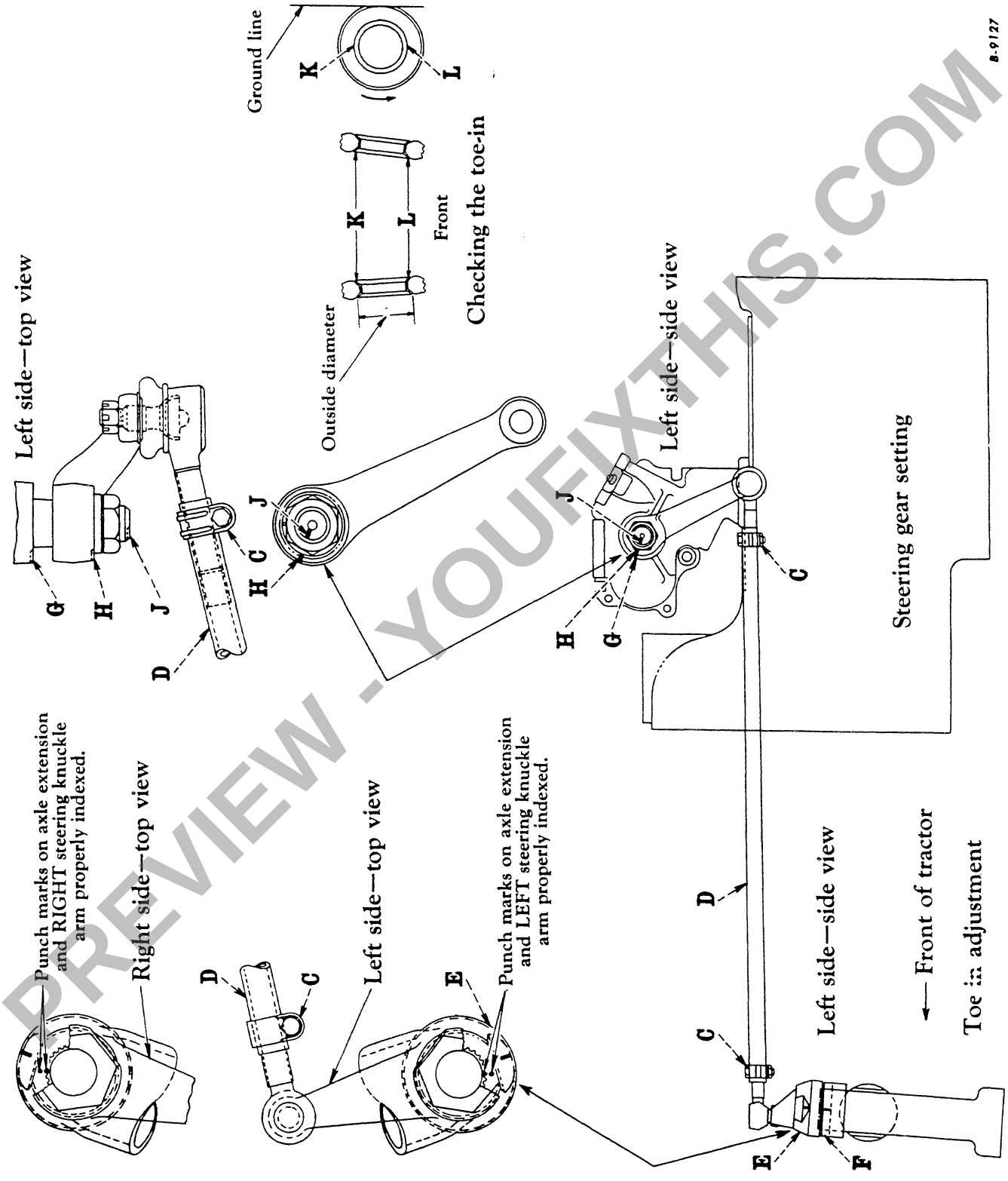
Overheating is often caused by bent or clogged radiator fins. If the spaces between the radiator fins become clogged, clean them with forced air or water. When straightening bent fins, be careful not to injure the tubes or to break the bond between the fins and the tubes.

Fan Belt

Fan Belt Tension

The slack of the fan belt should be checked after every sixty hours of operation to assure maintenance of the correct tension. The tension is correct when the belt can be depressed without effort by your thumb approximately 3/4 inch to one inch midway between the two pulleys. *See Illust. 43.* If the slack is more than one inch, adjust the belt as follows:

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Illust. 71
Toe-in adjustment diagram.

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Hydra-Touch System

Draining and Refilling the Reservoir

When it is necessary to drain and refill the reservoir for any reason, proceed as follows:

1. Wipe off dirt and grit from the reservoir and filler plug. *See Illust. 78.*

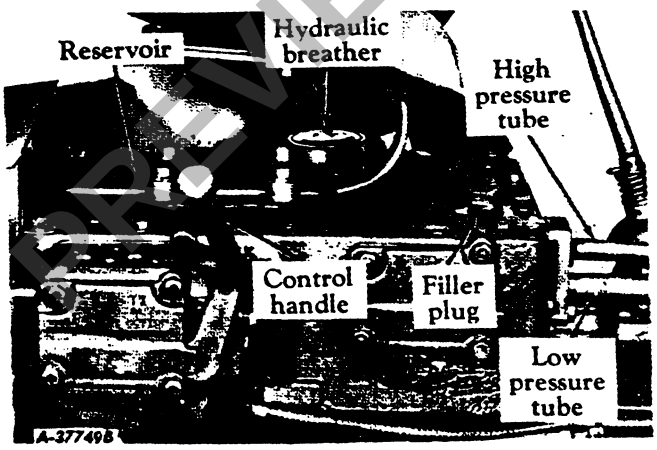
2. Remove the filler plug and drain plug *(Illusts. 78 and 78A)* and place them in a clean container.

When the fluid has stopped draining, run the engine very briefly to drain the fluid from the pump and connecting tubes.

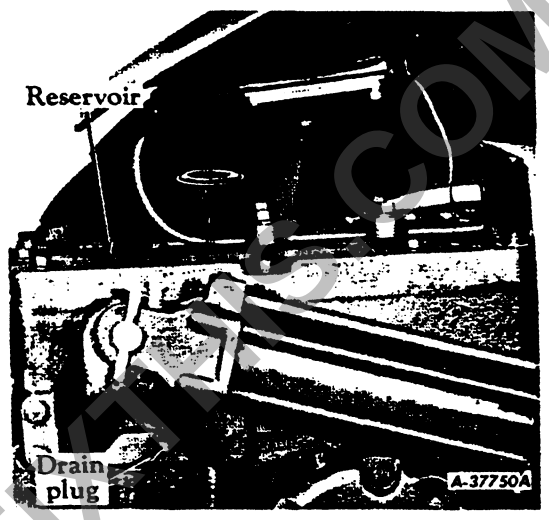
The refill capacity of the hydraulic system (less cylinders), when drained as instructed above is approximately 13-1/2 U.S. quarts. To fill the cylinders, refer to "Adding Fluid after Connecting Cylinders and Hoses".

3. Remove and clean the hydraulic breather *(Illust. 78)* after every 500 hours of operation or whenever the reservoir is drained.

To clean, remove the hydraulic breather, wash in kerosene, dip in clean Touch Control Fluid and replace after wiping off excess fluid.



Illust. 78
Reservoir showing filler plug and hydraulic breather.



Illust. 78A
Reservoir showing drain plug.

4. After the system has drained completely, replace the drain plug *(Illust. 78A)* and fill the reservoir with clean IH Touch-Control Fluid to the "Full" mark on the dip stick attached to the filler plug. *See Illust. 78B.*

NOTE: If it is necessary to flush the system, use only IH Touch-Control Fluid so the necessary lubrication of the pump and control system is maintained without adulteration. Never use kerosene or any other oils.

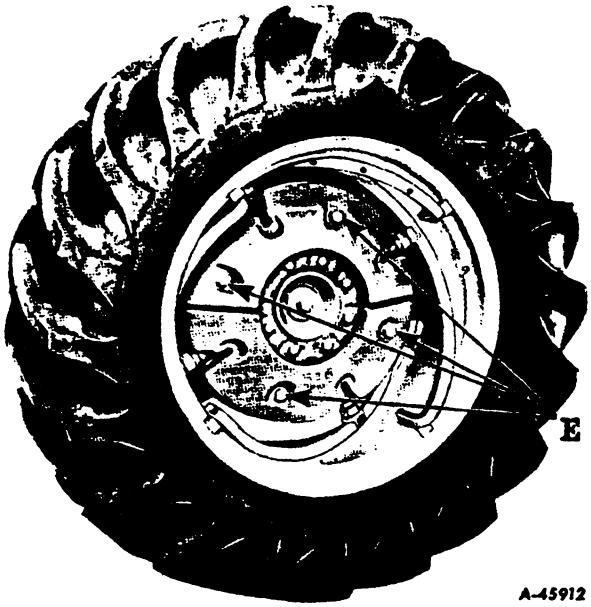


Illust. 78B
Dip stick attached to filler plug.

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EXTRA EQUIPMENT AND ACCESSORIES

Rear Wheel Weights (Split Type)
(For Power-Adjusted and 24-inch One-Piece Disc Wheels)



Illust. 94 - First set of rear wheel weight halves assembled on power-adjusted wheels.



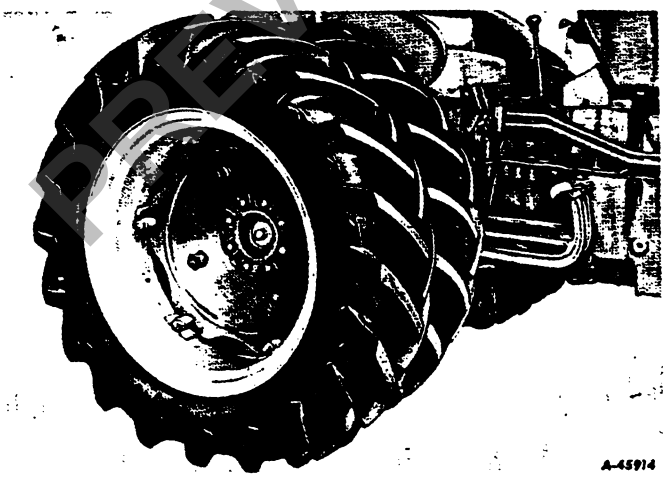
Illust. 94A - First and second set of rear wheel weight halves assembled on power - adjusted wheels.

Rear wheel weights of the split type (each half weighing approximately 75 pounds) can be attached to each drive wheel to reduce slippage and increase drawbar pull. Either two halves or four halves can be attached to each drive wheel. The increase in drawbar pull with a proportionate reduction in slippage varies with the type of soil.

The first set of rear wheel weights consists of a set of four weight halves, eight 5/8NC x 3 inch carriage bolts, sixteen nuts and lock washers for attaching the weights to the wheels at "E". *See Illust. 94.*

The second set of rear wheel weights consists of a set of four weight halves and eight 5/8 x 4 inch hex. head bolts, sixteen nuts and eight lock washers for attaching the second set of weights at "F". *See Illust. 94A.*

Dual Rear Wheel Mounting Bolt Package



Illust. 94B
Dual rear wheels mounted on tractor.

This package, consisting of 16 bolts and 2 studs for use as locating tools when mounting discs to wheel hub, is available for tractors already having W 10-28 rims, to equip them with dual rear wheels. The rear wheels with W 10-28 rims (for 10-28 or 11-28 tires) must be ordered separately from your International Harvester dealer.

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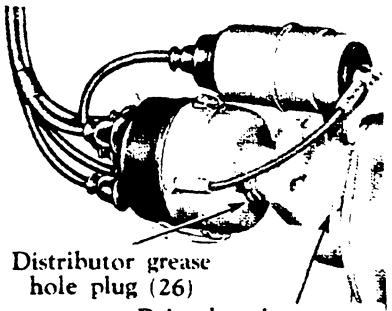
Illust. 34
Cranking motor.

◇ - After Every 150 Hours of Operation

24 - Oil filter element. — Remove the drain plug and allow the oil filter to drain completely. Replace the oil filter element at the same time the engine crankcase oil is changed. *See page 27.* For the correct lubricating oil to use, see the table *on page 29. See Illust. 33C.*

□ - Every Six Months or After Every 500 Hours of Operation

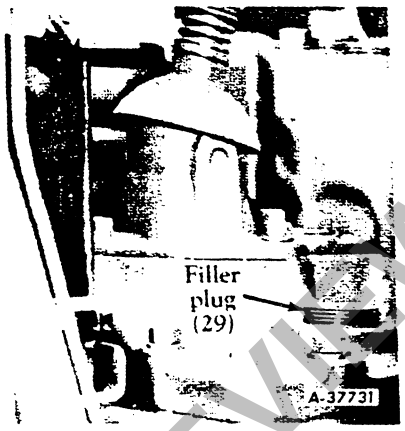
25 - Cranking motor. — Put a few drops of SAE-20 oil in the cranking motor oil cup. *See page 60* for further information. *See Illust. 34.*



Illust. 34A
Distributor.

26 - Distributor. — Remove the grease plugs and insert lubrication fittings. Apply pressure-gun grease (chassis lubricant) to the distributor fitting until a small quantity comes out the relief hole opposite the plug. Apply several strokes of the lubricator to the drive housing fitting. *See Illust. 34A.*

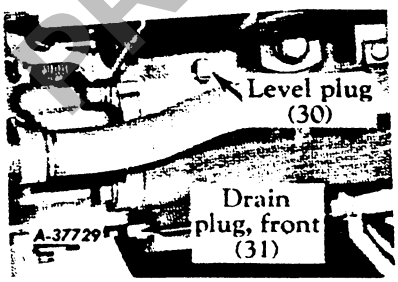
Remove the distributor cap and the distributor rotor, and apply one or two drops of light engine oil to the felt in the oil hole at the end of the breaker cam. *See page 46* for complete information on distributor lubrication.



Illust. 34B
Transmission oil filler.

27 - Magneto distributor bearings (tractors with magneto). — Fill the distributor bearing oil cup with very light oil, such as cream separator or sewing machine oil. *See pages 50 to 52* for complete information on magneto lubrication. *See Illust. 33D.*

28 - Front wheels. — Remove, clean, and repack the front wheel bearings and grease retainers with fiber grease. *See page 28* for further instructions.



Illust. 34C
Transmission oil level and front drain plugs.

Transmission

29 - Oil filler.

30 - Oil level plug.

31 - Oil drain plugs (2).

◎ - Periodic

Use a mixture of one quart IH Torque Amplifier Transmission Lubricant Additive to each four gallons of SAE-10 or SAE-10W engine oil. Keep the lubricant up to level of plug (30) on the left side of the transmission case. *See Illust. 34C.* Also on tractors with independent power take-off and/or torque amplifier, keep the lubricant up to the level of plug (32) on left side of the clutch housing. *See Illust. 35A.* To add lubricant to the transmission case, remove the filler plug (29) *(Illust. 34B).*

Change the oil in the transmission case at least once a year. However, do not drive the tractor more than 1,000 hours without changing the oil in the transmission case.

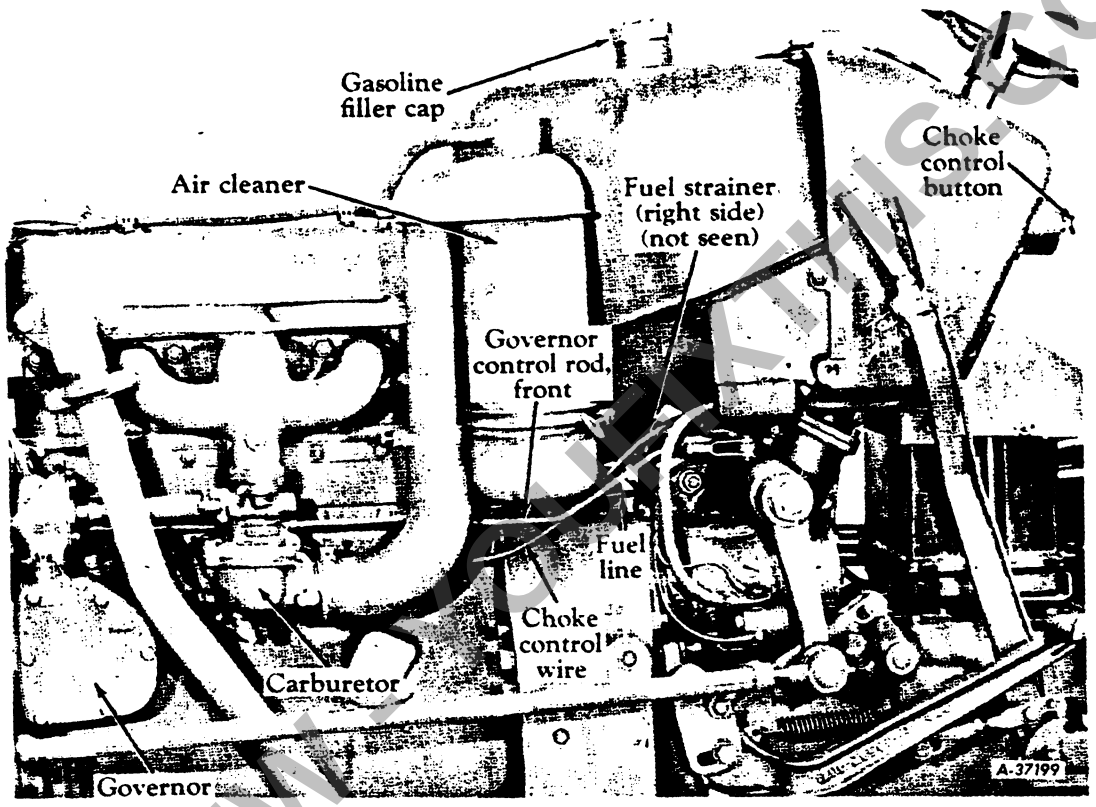
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OPERATING YOUR TRACTOR

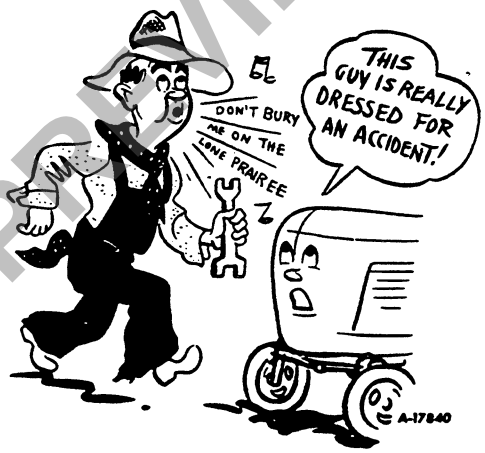
Before attempting to start or operate the tractor, be sure you review the instructions for the new tractor and thoroughly familiarize yourself with the instruments and controls.

Operating the Engine

This engine is designed to operate on gasoline with a 75 minimum octane rating.



Illust. 10
Fuel system.



Loose or "floppy" clothing should not be worn by the operator because of the danger of it wrapping on or getting into the moving parts.

Fuel System

Check the gasoline tank to make sure it is full; also be sure the shut-off valve on the fuel strainer under the gasoline tank is open.

To assure against leakage or seepage when the valve is in its full open position, be sure to screw the needle stem (shut-off valve) out until the seat on the stem is tight against the stop. Use a good grade of gasoline.

Starting the Engine with the Cranking Motor

1. Put the gearshift lever in the neutral position. *See Illust. 5A.*

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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 and lock them in this depressed position by using the brake pedal lock.

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.

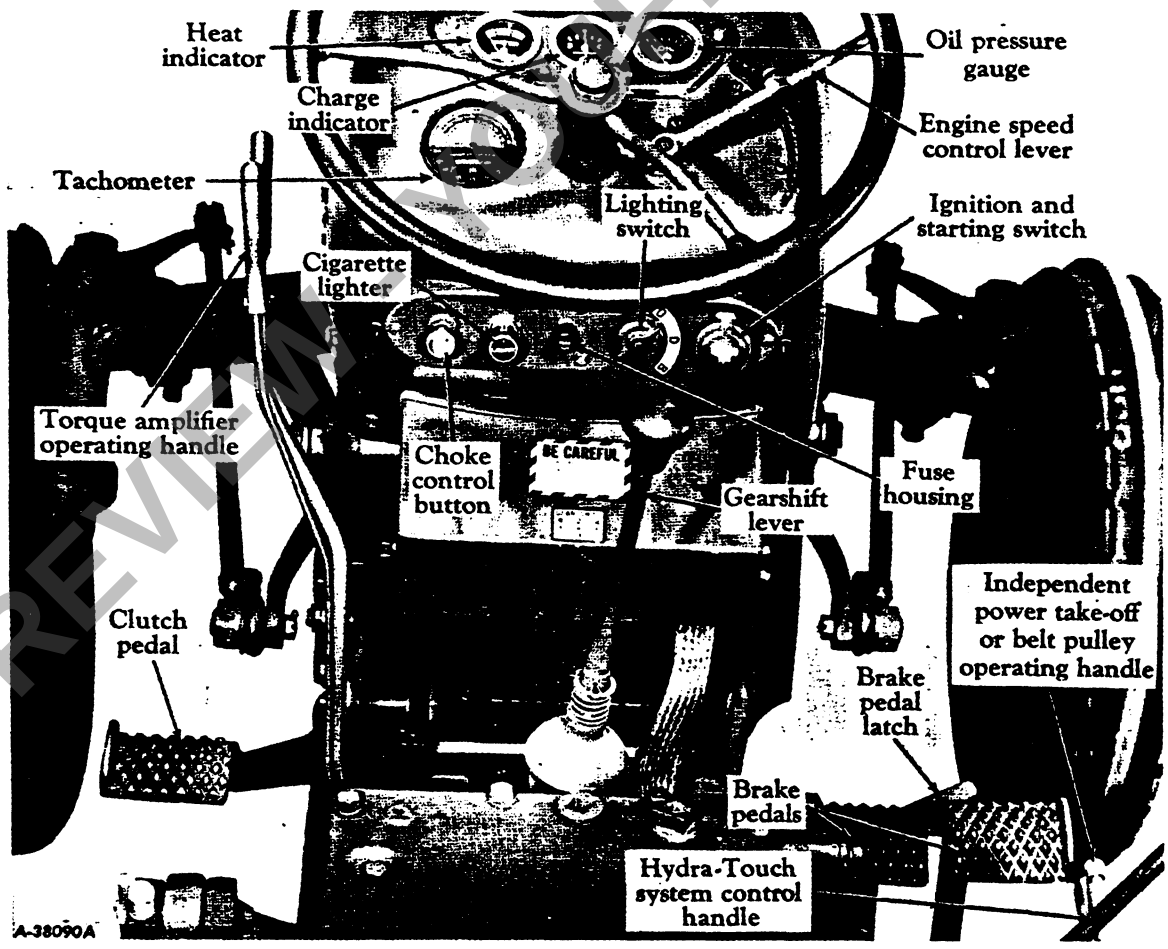
The brake pedal latch *(Illusts. 4 and 14)* is used to latch both brake pedals together, causing the brakes to operate simultaneously.

Caution! Always latch the brake pedals together when driving the tractor in high gear (fifth speed). To latch the pedals together, engage the latch (located in back of the left pedal), *(Illust. 14)* in the slot in back of the right pedal. When the brake pedals are not latched together, the latch should rest in the slot in back of the left brake pedal.

The brake pedal lock *(Illust. 14)* is used to lock the brake pedals in the depressed position; this prevents the tractor from moving.

Clutch Pedal

This pedal, when depressed all the way, disengages the engine from the transmission.



Illust. 4
Location of instruments and controls.

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