

FORD

**125, 145, and 165
LAWN AND GARDEN
TRACTORS**



OPERATOR'S MANUAL

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IF INCORRECTLY USED THIS MACHINE CAN CAUSE SEVERE INJURY. THOSE WHO USE AND MAINTAIN THE MACHINE SHOULD BE TRAINED IN ITS PROPER USE, WARNED OF ITS DANGERS, AND SHOULD READ THE ENTIRE MANUAL BEFORE ATTEMPTING TO SET UP, OPERATE, ADJUST OR SERVICE THE MACHINE.

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WARNING - DANGER

THIS TRACTOR IS EQUIPPED WITH AN INTERLOCK SYSTEM WHICH IS INTENDED TO PROTECT THE OPERATOR AND OTHERS FROM INJURY BY PREVENTING THE ENGINE FROM STARTING UNLESS THE PTO SWITCH IS IN "OFF" POSITION AND THE SPEED RANGE LEVER IS IN "NEUTRAL". IN THE INTEREST OF SAFE OPERATING CONDITIONS, THIS TRACTOR MUST NEVER BE OPERATED WITH THE INTERLOCK SYSTEM DISCONNECTED OR MALFUNCTIONING.

SET-UP INSTRUCTIONS

DEFINITION OF DIRECTIONS

Reference to "right" and "left" side of tractor is from operator's position when seated in normal operating position. Reference to "forward" and "rearward" is likewise from operator's position.

Put a light coating of oil on the steering wheel shaft before mounting the steering wheel.

1. Straighten the front wheels.
2. Remove the large plastic bushing, sponge washer and nut from the bag of parts.
3. Place the plastic bushing on the steering column and then the sponge washer.
4. Remove the steering wheel from the box of parts and position it on the steering column so that;
 - a. The two spokes are horizontal.
 - b. The notch is on the top half;
 - c. The serrations in the wheel hub engage properly with those on the steering shaft.
5. Thread the nut onto the steering shaft and tighten securely.
6. Remove steering wheel cap from box of parts. Insert the tab of the cap into the notch inside the hub and push cap into the groove.

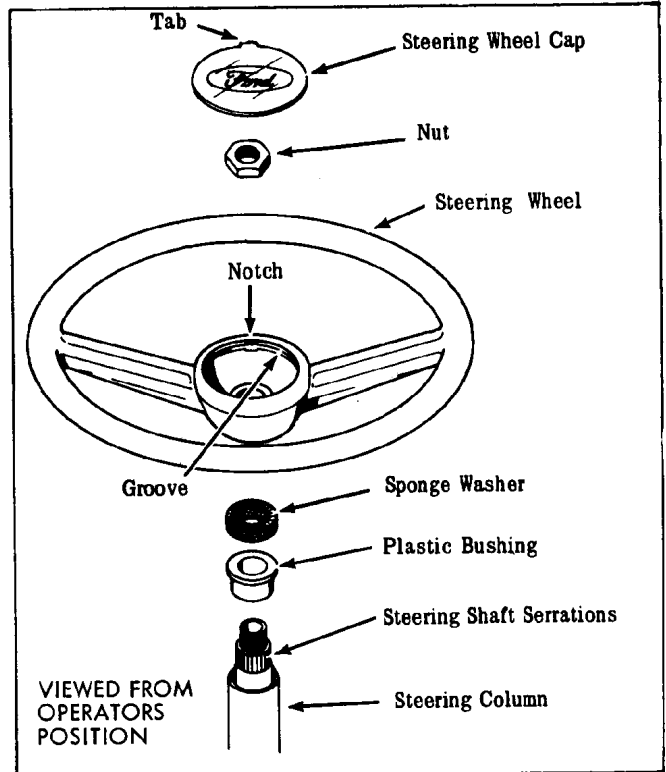


Figure 1

INSTALLING THE SEAT (See Fig. 2)

1. Remove the seat from box of parts and (4) 5/16-18 x 3/4 hex hd screws and lockwashers from bag of parts.
2. Pull seat switch leads thru hole in seat mounting plate. Position seat over holes closest to seat pan hinge and secure in place with (4) screws and lockwashers.
3. Assemble seat switch leads to connector in tool box.

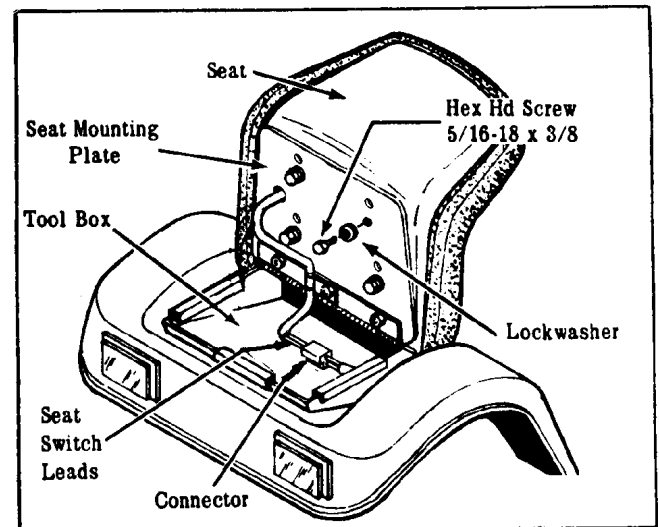


Figure 2

PUTTING BATTERY IN SERVICE

With proper care the battery should give the long service life built into it.

A battery which does not function properly is not necessarily worn out or defective. It may only need a good recharge. If battery trouble occurs, a full recharge and test by a competent battery man is recommended.

IMPORTANT

Do not use the headlights more than one hour for every two hours of operation. For more frequent use, provide a supplementary charge to the battery.

The battery needs to be charged before it can be placed in service. You can do this yourself or have it done by your Authorized Dealer or an automotive service station. Two quarts (1.89 liters) of 1.265 specific gravity electrolyte are required to fill your battery and can be purchased from your dealer or local auto supply store. Proceed as follows:

SET-UP INSTRUCTIONS

1. Make sure all switches are in "off" position.
2. Raise up the hood and remove the side panels (See Fig. 3).
3. Disconnect the ground cable (black) from the negative (-) battery terminal. Then disconnect the positive cable (red) from the positive (+) terminal. Be sure to disconnect the negative cable first. Place both cables away from the battery.
4. Remove the nut, lockwasher and washer from each battery mounting rod and remove the battery mounting bracket (See Fig. 4).
5. Remove the battery from the tractor and place it on a wooden bench or a piece of wood or plastic. **DO NOT SET THE BATTERY ON A CONCRETE FLOOR.**
6. Before installing the electrolyte, study the instructions on the carton.



WARNING - DANGER

Take care to avoid contact with the acid of the battery electrolyte. It will cause painful and dangerous injury to eyes or skin in case of external contact. It will damage clothing and other articles if spilled or spattered. Before opening the electrolyte container or handling the electrolyte, study the antidote label on the container for instructions and procedure in case of accidental contact.

6. Remove filler caps and fill battery with electrolyte to proper level (See Fig. 17). ALLOW BATTERY TO SIT FOR 20 MINUTES BEFORE PROCEEDING WITH STEP NO. 8.



WARNING

Under no conditions should battery be over-filled. We cannot be responsible for damages if this warning is not observed.

8. With the filler caps still removed, place battery on charge at 3 amperes until gravity reading is 1.265-1.275. This should take approximately four hours. If room, battery and electrolyte temperatures are below normal, a longer charging period may be necessary to bring the specific gravity up to 1.265-1.275.
9. Insert filler caps into filler holes and place battery on shelf in front of the instrument panel. **BATTERY TERMINALS MUST BE TOWARD THE GAS TANK.** (See Fig. 4).
10. Remount the battery to the tractor as shown in Figure 4. Place the battery bracket against the battery. Install the J-shaped battery rods, washers, lockwashers and nuts and tighten snugly. Do not overtighten.
11. Next, connect the two battery cables to the battery terminals (See Fig. 4). Note that the battery on the 16 H.P. model uses terminal clamps with hex nuts to secure the cables. The batteries on the 12 and 14 H.P. models use carriage bolts and nuts without the terminal clamps.



WARNING - DANGER

Always connect the "ground" (black) cable last and remove it first whenever performing any battery maintenance. When the battery is being removed or reinstalled, make sure the positive and negative terminals do not contact metal tractor parts at the same time or arcing will result. Battery connections must be kept tight at all times. Loose cables will cause arcing and pitting of the connections and cause eventual failure.

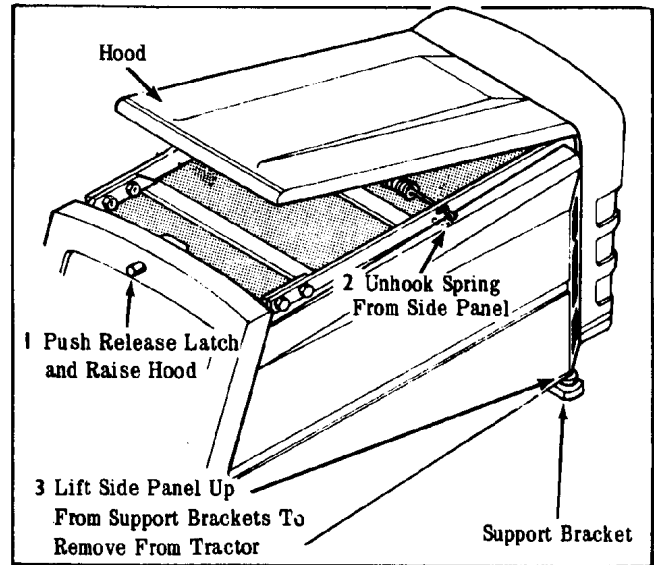


Figure 3

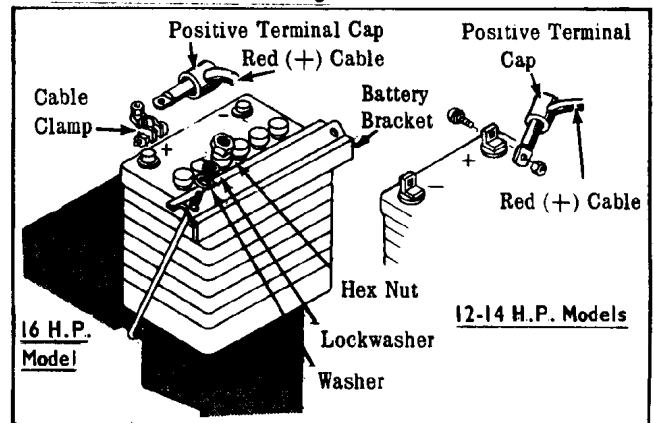


Figure 4

IMPORTANT

- Note that the positive (+) terminal on the 16 H.P. battery is on the left hand side with the filler caps toward the front. The positive terminal on the 12-14 H.P. battery is on the right.
12. The cable leading to the ignition components of the engine is the "hot" cable (red in color) and should be attached to the positive (+) battery terminal in the following manner: Insert the cable end through the positive terminal cap as shown in Fig. 4. Remove the nut from the carriage bolt or clamp provided and place cable eye onto threads. Secure cable eye in place with the nut.
 13. The cable attached to the tractor chassis is the ground cable (black in color) and is connected to the negative (-) battery terminal in the following manner: Remove the nut from the carriage bolt or clamp and place cable eye onto threads. Secure cable eye in place with nut just removed.
 14. Now apply a light coat of petroleum jelly or chassis lubricant to both terminals and cable ends to prevent corrosion.
 15. Slide the terminal cap over the positive battery terminal.

SET-UP INSTRUCTIONS

SAFETY GUIDELINES FOR BATTERIES

1. Use extra caution with an external battery charger. If over-charging occurs the battery will release excessive hydrogen gas. Avoid charging next to an open flame or devices that may cause sparks.
2. Check the battery's liquid level regularly - hydrogen gas can build up in the void space.
3. Be sure there is nothing in your engine installation that will cause a spark to jump. Plug wires that are dirty or wet or covered with oil will cause a spark, as will poor connections and corroded terminals.
4. Accidents can also happen while inspecting or installing the battery. While installing, be sure all switches for ignition, lights, and accessories are in the off position. Always attach

the ground cable last to further prevent spark with the installation tools. Do not use a match or a lighter to inspect the installation or water level.

IMPORTANT

Arcing caused by: (1) Contact between support rails and tools used to loosen terminals; (2) Removing wrong cable from battery terminal first; (3) Striking battery terminals against metal rails while installing or removing; or (4) Contact with jumper cables may ignite fumes from battery, vapor from fuel tank, or both, causing explosion and/or fire.

JUMPER CABLES

To use jumper cables, Remove side panel. Attach positive cable to solenoid (Terminal with cable to battery). Attach negative cable to tractor frame. Do not use jumper cables on battery.

GENERAL INFORMATION

ENGINE

Your tractor is powered by single cylinder, 4-cycle Kohler Engine (See "Specifications"). Engine speed is controlled by the throttle lever located on the left side of the instrument panel.

A separate Engine Manual, prepared by the engine manufacturer is supplied. Study this manual carefully until you are familiar with the maintenance, operation, adjustment and repair of your engine. Proper attention to the engine manufacturer's directions will assure maximum service life of the engine and highest operating efficiency.

GASOLINE

The engine manufacturer recommends the use of regular leaded or non-leaded gasoline of 85 octane minimum. **DO NOT MIX OIL WITH GASOLINE!**

TIRES

The tires are over-inflated at the factory for shipping purposes. Before operation, check all tires for proper air pressure (See Maintenance).

DRIVE TRAIN

Power from the engine is transmitted to the rear wheels through a drive shaft, hydrostatic transmission and differential. The hydrostatic transmission has no gears, and it provides an infinite selection of speeds with constant power to the rear wheels.

The transmission is coupled to an automatic-type limited slip differential that allows the tractor to be maneuvered without unnecessary wear to the rear tires and provides maximum traction.

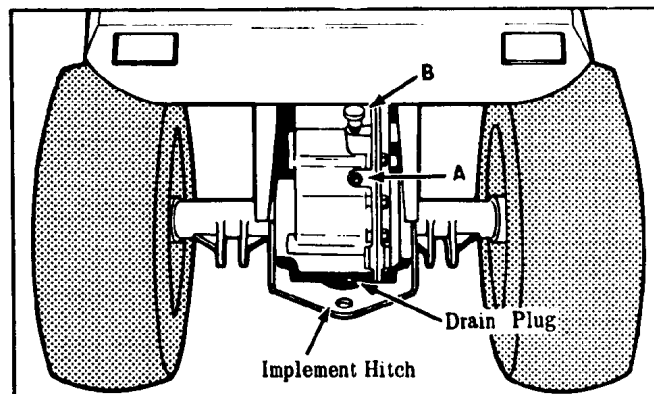


Figure 5

SINGLE POINT IMPLEMENT HITCH (See Fig. 5)

A fixed hitch is supplied as standard equipment for the towing of implements.

SEAT SAFETY SWITCH

A safety switch located in the seat stops the engine if the operator leaves the seat while the P.T.O. switch is "On".

OPERATING CONTROLS



WARNING - DANGER

The controls will do only what they are intended to do. Study the instructions below and learn to use them correctly. Keep hands and feet away from controls unless you intend to use them.

HOOD RELEASE (See Fig. 6)

Push in to release the hood, permitting access to the engine, battery, and gas tank.

AMMETER (See Fig. 6)

The ammeter indicates the rate of battery charge or discharge. When possible, maintain sufficient engine speed so the ammeter indicates a charging rate to prevent unnecessary drain on the battery.

HOOR METER (On 16 H.P. Tractor Only) (See Fig. 6)

The hour meter indicates the number of hours the tractor has been operated. It can be used to keep track of maintenance intervals and amount of time required to perform various tasks, etc. (See "Hour Meter" and Figure 19).

LIGHT SWITCH (See Fig. 6) 14 & 16 H.P. Only

A toggle switch is used to turn the headlights and taillights on and off.

BRAKE PEDAL (See Fig. 7)

When the pedal is pushed down firmly, the brake is applied to stop tractor motion.

PARKING BRAKE LOCK (See Fig. 6)

A parking brake lock is provided to prevent movement of the tractor whether the engine is running or stopped. To set the brake lock, fully depress the brake pedal and pull up on parking brake knob. The brake lock is automatically released by depressing the brake pedal.

CHOKE CONTROL (See Fig. 6)

When starting a cold engine, pull the choke control completely out to close the choke plate and allow a richer fuel mixture to enter the engine. After the engine starts, push the choke control about half way in to keep the choke plate partially closed. Push the choke control all the way in to open the choke plate for normal operation after the engine is properly warmed. A warm engine usually requires less choke to start.

THROTTLE LEVER (See Fig. 6)

The area of lever travel between the "SLOW", "MEDIUM", and "FAST" positions controls the flow rate of air and fuel mixture to the engine and this regulates engine speed. When the lever is moved upward toward the "FAST" position, the engine speed increases, and when it is pulled downward toward the "SLOW" position, the engine speed decreases.

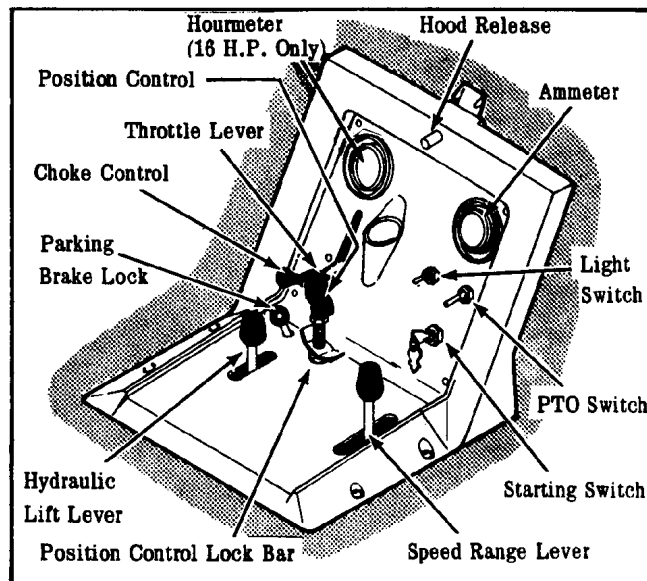


Figure 6

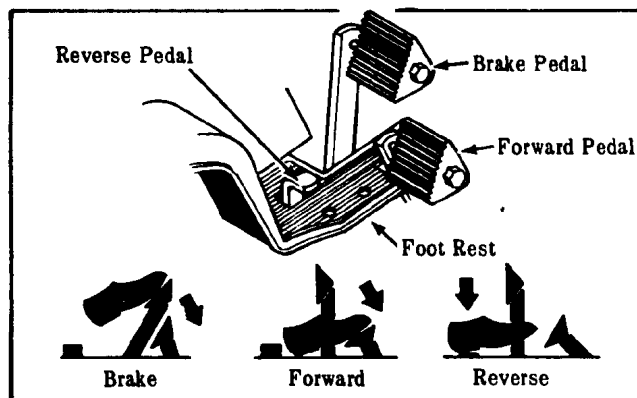


Figure 7

STARTING SWITCH AND KEYS (See Fig. 6)

Two keys are supplied with each tractor, taped to the starting switch. To start engine, insert key in switch, turn clockwise to "ON" position and release when engine starts. Do not hold key in "ON" position for more than 30 seconds at a time. Key should be removed when tractor is not in use to prevent unauthorized operation. See "Operating Instructions" for complete starting information.

FORWARD PEDAL (See Fig. 7)

Press the forward pedal down with the toe of your right foot for forward movement of the tractor.

REVERSE PEDAL (See Fig. 7)


Press the reverse pedal down with your right heel for reverse movement of the tractor.

IMPLEMENT LIFT HANDLE (On 12 H.P. Tractor Only) (See Fig 8)

The lift handle is used to manually raise and lower the same implements as the Hydraulic Lift such as the snow thrower, trip dozer blade and rotary mower.

OPERATING CONTROLS

The lift handle can be locked in various positions. To place an implement in working position, push the pin on the handle downward and push forward until the locking rod catches the desired notch of the quadrant. To place in transport position, push the pin downward and pull the handle back until the locking rod catches in the rear notch. When mounting implements, place the handle in the forward position.

**WARNING - DANGER**

To avoid possible serious bodily injury, make certain the implement is in the lowered position before engaging the P.T.O. clutch. Always disengage the P.T.O. clutch (turn switch to "OFF") when the implement mounted on the tractor is not being used.

HYDRAULIC LIFT (On 14 & 16 H.P. Tractors Only) (See Fig. 6)

The Hydraulic Lift is used to raise and to lower implements used with the tractor. It can only be used with the engine running. Operate by pulling backward to raise, and pushing forward to lower. When the lever is released it will automatically return to the "LOCK" position.

SPEED RANGE LEVER (See Fig. 6)

The speed range lever is used in conjunction with the throttle control and the foot pedals to determine tractor operating speed. It has three positions "Low", "Neutral" and "High". "Low" range positions the transmission in a low gear ratio for slower tractor speed and greater pulling force. "Neutral" disengages the gears. The speed range lever must be in "Neutral" to start the engine. "High" range positions the transmission in a high gear ratio for faster tractor speed and less pulling force.

POSITION CONTROL (On 14 & 16 H.P. Tractors Only) (See Fig. 6)

The position control is used to adjust the operating height of front attachments. Proper adjustment of the position control allows the implement to return to the same pre-set operating height each

time it is lowered. The position control is intended primarily for the mower but can be used to obtain a similar adjustment for the dozer blade and snow thrower. Proceed as follows:

1. Raise attachment.
2. Loosen lock bar.
3. Turn knob clockwise to lowest position.
4. Lower attachment and adjust to desired height.
5. Turn position control knob counterclockwise until lift is contacted (resistance is felt).
6. Tighten the lock bar finger tight. Do not use a wrench.

POWER TAKE-OFF SWITCH (See Fig. 6)

The P.T.O. switch engages the engine drive pulleys to operate implements. It must be in the "OFF" position to start the engine.

If the operator leaves the seat while the P.T.O. switch is "On", the engine will stop (kill).

Operating instructions, belt adjustments, etc., concerning the use of the power take-off with any implement are covered in the Operator's Manual furnished with the implement.

NOTE

Check periodically to make sure the screw holding PTO clutch to engine shaft is tight.

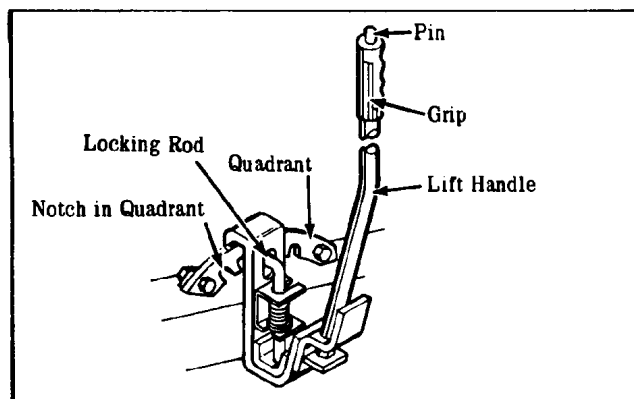



Figure 8

OPERATING INSTRUCTIONS

PREPARING TRACTOR FOR OPERATION

**WARNING - DANGER**

To avoid possible serious bodily injury, study, and learn to follow the "Safe Practices For Riding Vehicles" listed in this manual.

The operating speed and throttle setting will be determined by the implement being used as well as individual conditions encountered in the work being performed. The Operator's Manual supplied with each implement should be consulted for detailed operating instructions.

It is important to become thoroughly familiar with the handling characteristics of your tractor and with the instructions contained in this manual BEFORE attempting to use your tractor for the various operations which it can perform. Drive the tractor without operating an implement until you become familiar with its controls.

Refer to the Maintenance and Lubrication sections in this Manual and perform the indicated operations prior to operating the tractor.

WEIGHT FOR ADDED TRACTION

Wheel weights are available as accessories for both front and rear wheels. These weights will increase the drawbar pull. The weight added by these accessories is as follows:

- | | |
|----------------------|-------------------------|
| Front Wheel Weights: | 20 lbs. (9.07 kg.) each |
| Rear Wheel Weights: | 53 lbs. (24.4 kg.) each |

OPERATING INSTRUCTIONS

Whether used on the front or rear of the tractor, wheel weights should be used in pairs, that is, one on each side. Operation with weight on one side only will cause uneven tire wear and will cant or tip the tractor, which can result in improper operation of certain implements.

Liquid fill can be used in the tires as an alternate or in addition to the wheel weights. The tires and tubes are equipped with a special inflation valve so they can be filled three-quarters full of liquid to provide additional weight. If the anticipated temperatures are below freezing, a calcium chloride solution should be used. After the tires have been three-quarters filled with liquid, compressed air is used to inflate them to the pressures recommended under "Tire Maintenance".

When checking inflation pressure of liquid-filled tires, turn the wheel so that valve stem is at the top to avoid getting fluid into the tire gauge.

IMPORTANT

If calcium chloride solution is used in the tires over an extended period of time, it is recommended that inner tubes be used. Such tubes can be obtained from most well stocked tires stores.

FRONT END LOADER

Standard front spindles are not suitable when the tractor is used with a front end loader.

When using a front end loader, Hardened Front Spindle Service Kit No. JAC-500884 MUST BE USED.

OPERATING PROCEDURE

STARTING THE ENGINE

IMPORTANT

The engine will not start unless, the P.T.O. switch is in "Off" position and the speed range lever is in "Neutral". The seat switch is located in the seat between the foam pad and the metal backing. It does not cover the entire seat. Therefore, it is possible to partially sit in the seat and not activate the switch, or to shift positions in the seat and interrupt the engine operation if the P.T.O. switch is "On".

If the engine fails to start, check to be sure that other switches and controls (shift lever) are in "Off" or "Neutral" position.

1. Open the fuel tank shut off valve.
2. Sit in the operator's seat.
3. Put P.T.O. switch in "OFF" position.
4. Engage the parking brake.
5. Put speed range lever in "Neutral".
6. Pull choke control back to fully close choke, and move throttle lever to "Fast" position.
7. Insert starting key and turn it clockwise as far as possible until engine starts. DO NOT OPERATE STARTER FOR MORE THAN 30 SECONDS AT A TIME. If the engine does not start

within this time, turn the key to "Off" position and wait for a minute or two before trying again.

8. After engine starts, push choke control in halfway; then, when engine is properly warmed, push choke control in all the way to open choke.

STOPPING THE ENGINE

1. Put P.T.O. switch in "OFF" position.
2. Apply the brake to stop tractor motion.
3. Place speed range lever in "Neutral".
4. Depress brake pedal and engage parking brake.
5. Turn starting switch to "OFF" position.
6. Remove the key if tractor is to be left unattended.
7. Close the fuel tank shut-off valve if the tractor will not be operated for an extended period.

OPERATING HYDROSTATIC TRANSMISSION

Proper engine power is necessary for optimum tractor and implement operation. With a conventional transmission, the correct gear ratio and throttle setting is selected for the load and operating conditions encountered. Maximum pulling force is obtained in the low range ratio with the engine operating at full throttle.

In the case of the hydrostatic transmission, maximum pulling force will occur at the slowest ground speeds, in low range and full throttle.

Thus, for any one throttle setting, depressing the foot control pedal reduces the tractor pulling force and increases tractor speed; a condition comparable to operating a conventional transmission tractor in a high gear ratio.

With the speed range lever in the "Neutral" position and the P.T.O. clutch switch in the "OFF" position, start and operate the tractor as follows:



WARNING - DANGER

To avoid possible serious bodily injury, before leaving the operator's seat, engage parking brake, place speed range lever in "Neutral" and turn PTO and starting switches "OFF".

1. Start the tractor engine and advance the throttle slightly.
2. Disengage the parking brake.
3. Select the speed range desired and move the lever accordingly.
4. Advance the throttle setting to the desired rpm for the operation to be performed, and slowly depress the pedal.

IMPORTANT

5. The correct tractor speed is a composite setting involving the throttle control, speed range lever and the hydro control pedals. However, for any one throttle and speed range setting, depress the foot pedal until the correct operating speed is obtained.

OPERATING INSTRUCTIONS

- a. If the tractor operates too slowly and the engine appears to be racing, apply more pressure to the foot pedal.
- b. If the tractor engine appears to be slowing down or "lugging", i.e., laboring under the tractor load, decrease the pressure on the foot pedal. This will increase the power to the rear wheels.

IMPORTANT

Try to increase or decrease pressure on the foot pedal smoothly. Fast, jerky movements will cause unnecessary strain and wear on parts.

Release pressure on the foot pedal and the tractor will slow to a stop.

In case of an emergency, the forward motion of the tractor can be stopped by depressing the clutch-brake pedal.



WARNING - DANGER

To avoid possible serious bodily injury, bring the tractor to a complete stop before changing direction. Do not move your foot rapidly from the forward to the reverse pedal, or from the reverse to the forward pedal and do not use the reverse pedal as a brake, this may cause an upset.

HILLSIDE OPERATING AND HILL CLIMBING



WARNING - DANGER

In order to minimize the possibility of tipping: the least dangerous method of mowing on hills and terraces is to cut up and down the slope (vertically) instead of along the side (horizontally). It is also advisable to avoid any unnecessary turns while operating on hills.

1. Operators must use good judgement when operating on hill-sides. They must consider the percent of slope and the condition of the turf (wet, firm, density, etc.). If tractor tends to slide when operating on an extreme hillside change the angle of the tractor by turning slightly downhill until traction is regained.
2. Keep tires properly inflated. See "Maintenance".
3. When driving up hills, maintain full engine speed, but let up on treadle control. This will maintain the performance necessary.

ADJUSTMENTS



WARNING - DANGER

To avoid possible serious bodily injury before performing any adjustments, maintenance or lubrication, place speed range lever in neutral, engage parking brake, turn P.T.O. switch off, turn starting switch off and remove keys, disconnect spark plug wire and place it away from plug, and disconnect the battery cables.

BRAKE PEDAL ADJUSTMENT (See Fig. 9)

1. Adjust the brake actuator rod so that the brake is applied (brake band is tight on brake drum) when the pedal has traveled approximately 3 to 4" (76.2 to 101.6 mm) from its normal (released) position.
2. To adjust the working length of the brake actuator rod, back-off lock nut "A" to free adjusting nut "B". Turn "B" counter-clockwise, toward rear of tractor, to lengthen rod for more pedal travel or turn clockwise, toward front of tractor, to shorten rod for less pedal travel. Tighten lock nut "A" after brake has been adjusted.



WARNING

Be careful not to overtighten, or brake life will be shortened. Parking brake must lock in fully depressed position, to prevent movement when parked.

IDLER ARM TENSION SPRING ADJUSTMENT

See your Rotary Mower Operator's Manual for adjustment of the idler arm tension spring.

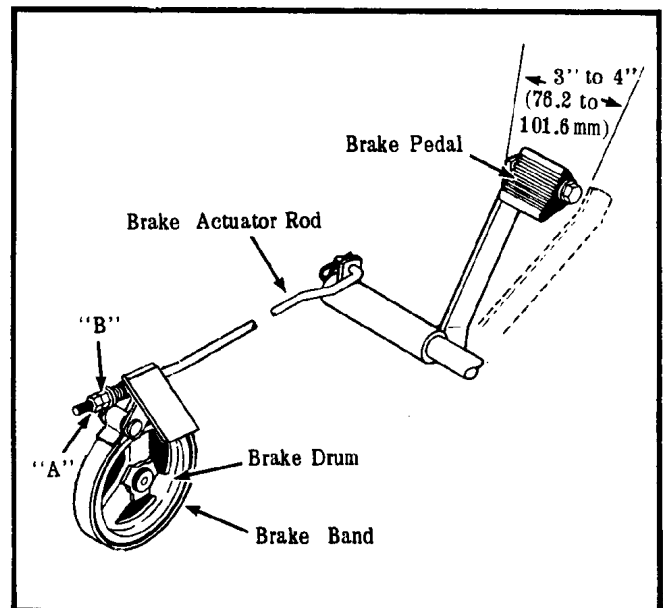


Figure 9

ADJUSTMENTS

STEERING WHEEL

Steering Adjustment

If excessive "free-play" should develop in the steering from normal wear, see your local dealer.

HYDROSTATIC TRANSMISSION CONTROL LEVER LINKAGE ADJUSTMENT

When the control lever is in the "Neutral" position and the tractor moves in either direction while the engine is running, the control lever linkage on the transmission may require adjusting.

IMPORTANT

The tractor may tend to move slightly if the oil in the transmission is cold. Operate the unit for 15 minutes before determining if the linkage requires adjustment. Place a small amount of lubricating oil on the lever points for ease of movement.

To Adjust Control Lever Linkage (See Fig. 10)

1. Hold nut "A" with a wrench. With another wrench, loosen nut "B". If the "creep" is in the forward direction, turn crank stud "C" toward rear of tractor. If the "creep" is in the rearward direction, reverse the turn on the crank stud toward the front.



WARNING

DO NOT ADJUST MORE THAN 1/8th OF A TURN IN EITHER DIRECTION.

2. Start the engine and move the throttle to the "SLOW" position. If the tractor does not move, the adjustment is satisfactory. If it does move in either direction, another adjustment will have to be made.
3. Secure both nuts.

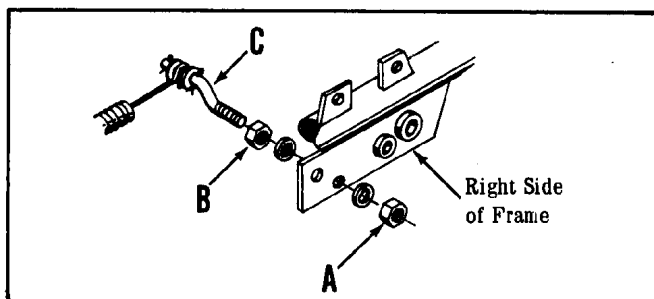


Figure 10

SEAT ADJUSTMENT (See Fig. 11)

14-16 H.P. Tractor

The seat and tool box assembly is mounted to a seat slide. A handle is provided for adjustment.

12 H.P. Tractor

The seat can be adjusted by removing the four screws, lockwashers and nuts holding the seat to the rear fender and body assembly, and reassembling them in different holes in the seat or rear fender.

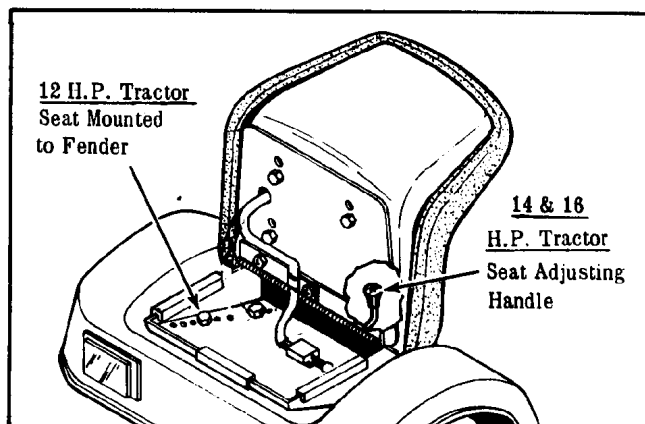


Figure 11

SAFETY SWITCHES

There are three safety switches on this tractor. The seat switch, PTO switch and the speed range switch. The switches are operated electrically. If maintenance is required check that the terminal connections are clean and properly connected.

The speed range switch should be adjusted so the arm on the speed range lever depresses the ball on the safety switch when the lever is in "Neutral". To adjust proceed as follows (See Fig. 12):

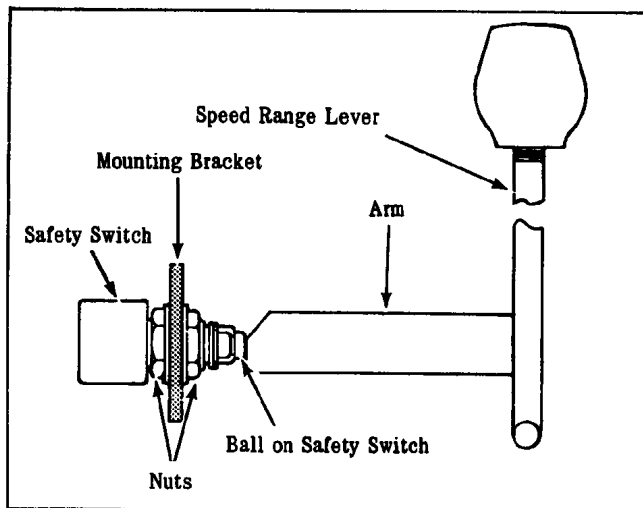


Figure 12

1. Loosen the nuts holding the safety switch to the mounting bracket.
2. Adjust the safety switch as required in the slotted hole.
3. Place speed range lever in "Neutral" and check that it depresses the ball in safety switch and then retighten the nuts to lock the adjustment.

The PTO switch and the seat switch are non-adjustable, if problems arise see your dealer.

BALL JOINTS (See Fig. 13)

Whenever adjusting ball joints, be sure the cut-out in ball joint is parallel to the mounting bracket (after assembling) before securing in place. Maintain 1/2" (12.7 mm) minimum thread engagement whenever adjusting ball joints.

ADJUSTMENTS

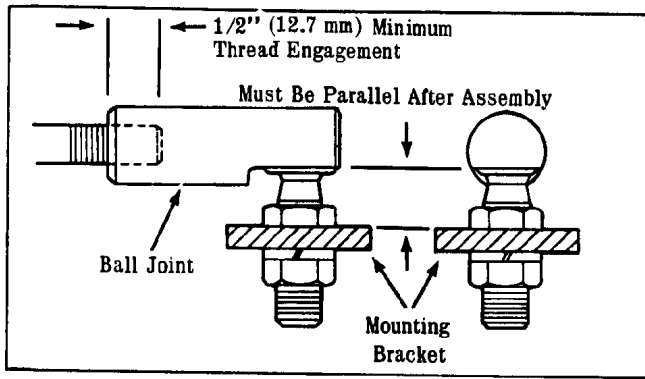


Figure 13

STEERING LINKAGE (See Fig. 14)

The steering linkage should be adjusted to give proper toe in and to allow the steering wheel and tires to turn equally in both directions. Proceed as follows:

1. Position steering wheel in center of travel (1-1/2 turns from either right or left stop).
2. Remove the nut and lockwasher holding the drag link assembly to the steering arm.
3. Position wheels straight ahead and adjust the tie rod to give .12-.18" (3.05 to 4.57 mm.) toe in. To adjust tie rod:
 - a. Remove nut and lockwasher holding either ball joint to arm on spindle body.

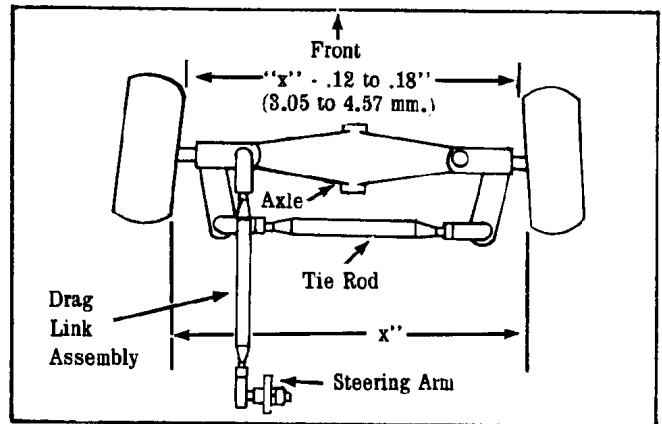


Figure 14

- b. Back off nut from ball joint.
 - c. Turn the ball joint in to decrease or out to increase toe in.
 - d. Retighten nut up against ball joint and reassemble tie rod to arm on spindle body.
4. Adjust the length of drag link assembly as necessary to reassemble it to steering arm without changing the position of the steering wheel or the front wheels. To adjust drag link assembly, back off nut from ball joint, turn ball joint as necessary and retighten nut.
5. After the length has been adjusted, reassemble to steering arm with lockwasher and nut.

MAINTENANCE



WARNING - DANGER

To avoid possible serious bodily injury before performing any adjustments, maintenance or lubrication, place speed range lever in neutral, engage parking brake, turn P.T.O. switch off, turn starting switch off and remove keys, disconnect spark plug wire and place it away from plug, and disconnect the battery cables.

Regular inspection and conscientious maintenance is the key to efficient economical operation. It will also help to assure that your tractor will perform satisfactorily with minimum need for service and repair.

DAILY INSPECTION (Prior to Operation)

The following steps should be observed daily prior to starting and operation.

1. Check the oil level in the engine crankcase by means of the dipstick (See Fig. 15). The tractor must be level and the engine must be stopped or the reading will be inaccurate.
Add oil to the engine crankcase only if required. Keep the oil level between the marks on the dipstick. See "Engine Crankcase Oil Change" for proper grade of oil.
2. Check the fuel supply and fill tank if necessary.

3. Check to be certain that the air intake screen on the engine flywheel is clean and properly fitted (See Fig. 15). If the screen becomes bent, cracked, broken, or otherwise damaged, it must be replaced.
4. Make a general inspection of the items beneath the hood and of the tractor as often as possible. Check for loose hardware, frayed wires, oil or fuel leaks, loose connections, poor condition of tires, etc. In case such conditions are detected, take appropriate steps to correct them before operating the tractor.

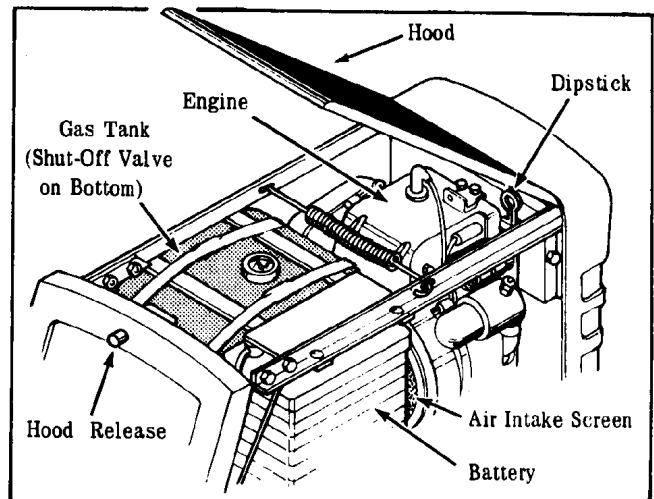


Figure 15

MAINTENANCE

5. Keep front cowling screen free of debris.

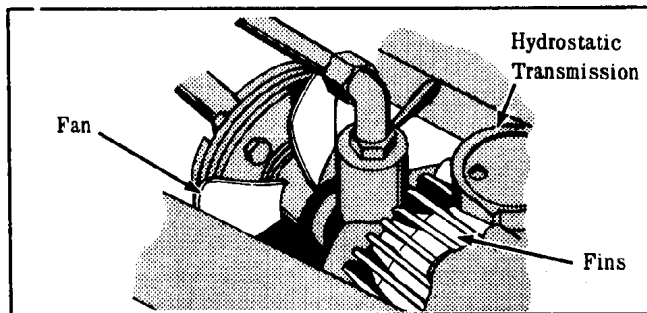


Figure 16

6. HYDROSTATIC TRANSMISSION

Check the reservoir oil by removing plug at "A" (See Fig. 5). The oil should just dribble out through the hole and must be kept at this level. If additional oil is required, remove breather at "B", and also plug at "A". Add oil at "B" until it dribbles out through "A"; then replace both plug and breather. Use Texaco Transhydryl #2209 or Ford Motor Co. #M-2C41-A, or equivalent.



WARNING

It is very important that the fan, located on the front of the hydrostatic transmission, and the fins on the hydrostatic transmission (See Fig. 16) be kept free and clean from grass clippings, dirt, dust, or other objects that could hinder proper cooling of the transmission. Debris can be removed with a soft brush, or blown clean with an air hose. Be careful not to bend or damage the fan blades or break any of the cooling fins on the hydrostatic transmission. **DO NOT ATTEMPT TO CLEAN FAN WHILE THE ENGINE IS RUNNING.**

WEEKLY INSPECTION (Inspect every 30 Hours)

- BATTERY**- Check the water level of the battery by removing each of the six caps. If the level is below the bottom of the filler tube (See Fig. 17), use a paper cup and fill with distilled water.

Inspect the battery terminals to make certain that cables are securely fastened and that terminals are free from corrosion.

Use soap and water to clean the battery as required. Care must be taken to prevent soap and water from getting inside the battery. Brighten the terminal contact surfaces with a wire brush or steel wool. Apply a light coat of petroleum jelly or chassis lubricant to terminals and cable ends to prevent corrosion. Tighten cables securely to battery terminals. Make certain vent holes in battery filler caps are kept open. Refer to "Tractor Storage" for detailed instructions for storage procedures.

- TIRES** - Inspect tires as to general condition. Check for cracks, cuts and damage; take necessary steps.

Keep all tires at the recommended pressure (8 p.s.i. or 55 kPa) at all times. Use an accurate, low-pressure tire gauge with one pound per square inch graduation. It is particularly important that inflation pressures be kept the same on each side to prevent tilting of the tractor, which would result in uneven performance of attachments. Under-inflation will damage tire cords and may cause tire slippage on the rims. Over-inflation will cause loss

of traction in soft soil or loose sand and it may also result in hard riding qualities on uneven ground.

NOTE

There may be some instances where pressure is lost due to tire beads coming loose from rim when operating with lower pressures. If this happens, it is recommended to maintain tire pressures at 10 to 12 psi (68 to 82 kPa)

16 x 6.50-8 Front tires

Inflation Pressure (per tire)	Maximum Load (per tire)
6 psi (41 kPa)	270 lbs* (122.47 kg.)
8 psi (55 kPa)	315 lbs* (142.88 kg.)
10 psi (68 kPa)	360 lbs* (163.29 kg.)
12 psi (82 kPa)	400 lbs* (181.44 kg.)

23 x 8.50-12 (12 H.P.) - 23 x 10.50-12 (14 & 16 H.P.) Rear tires.

6 psi (41 kPa)	450 lbs* (208.65 kg.)
8 psi (55 kPa)	550 lbs* (249.48 kg.)
10 psi (68 kPa)	625 lbs* (283.50 kg.)

* Maximum Load includes weight of tractor, operator, attachments, wheel weights, tire fluid, etc.

IMPORTANT

When using the "Optional" bar type rear tires on a tractor equipped with a rotary mower accessory, a clearance problem may exist between the mower and the tire when the mower is in the transport position. The 42" (1066 mm) and 50" (1270 mm) rotary mowers can be used on tractors equipped with 23 x 8.50-12 bar type tires, but only the 42" (1066 mm) mower can be used on tractors equipped with 23 x 10.50-12 bar type tires.

If replacement tires are needed for your tractor, see your nearest tire or Farm Equipment Dealer.

Refer to section in this manual headed "Tractor Storage" for recommendations on storing tires.

- BELTS** - Visually inspect the PTO drive belt for cracks, cuts, excessive wear etc.
- ENGINE CRANKCASE OIL CHANGE** - Under normal conditions, the oil should be changed after the first five hours of operation, and every 30 hours thereafter. In extremely dusty or dirty conditions, change oil more frequently.
 - The ideal time to drain and replace the crankcase oil is when the oil is hot; after the engine has run for 5 minutes or more, or after the tractor has been in operation. The oil will drain more quickly and completely; and dirt, foreign material, etc. if present, will be in suspension and thus be removed.

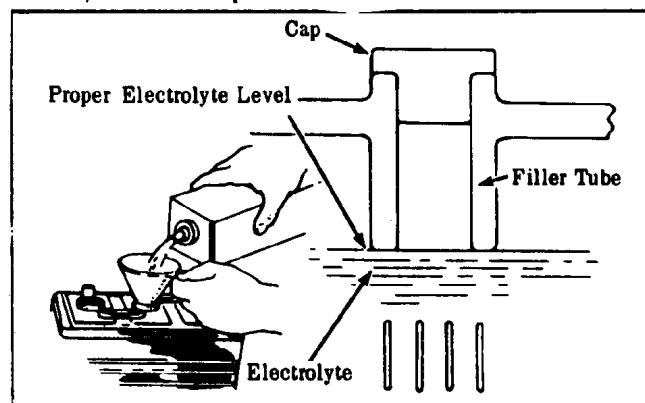


Figure 17

MAINTENANCE

Crankcase Capacity 1-1/2 qts. (1.42 liters)

NOTE

Fill engine to full mark on oil dipstick that is provided with each engine.

- B. Place a pan under the drain to catch the used oil.
- C. The oil drain on the tractor is located at the front of the engine. It is a square head pipe plug extending out from the oil pan and is easily removed with a box or open end wrench.
- D. Remove the drain plug and allow ample time for the used oil to drain out.

E. Reinstall the drain plug securely. Wipe away any spilled oil.

Remove the dipstick and replace the crankcase oil. Use a high-quality detergent type oil with API service SC classification. In temperatures above 40° F. (4.4° C.) use SAE 30. Between 0° F. (-17.8° C.) and 40° F. (4.4° C.) use SAE 10W-30. Below 0° F. use SAE 5W-20. See your engine manual for complete engine maintenance.

- 5. LUBRICATION - Refer to the Lubrication Chart and perform the indicated operations.

LUBRICATION

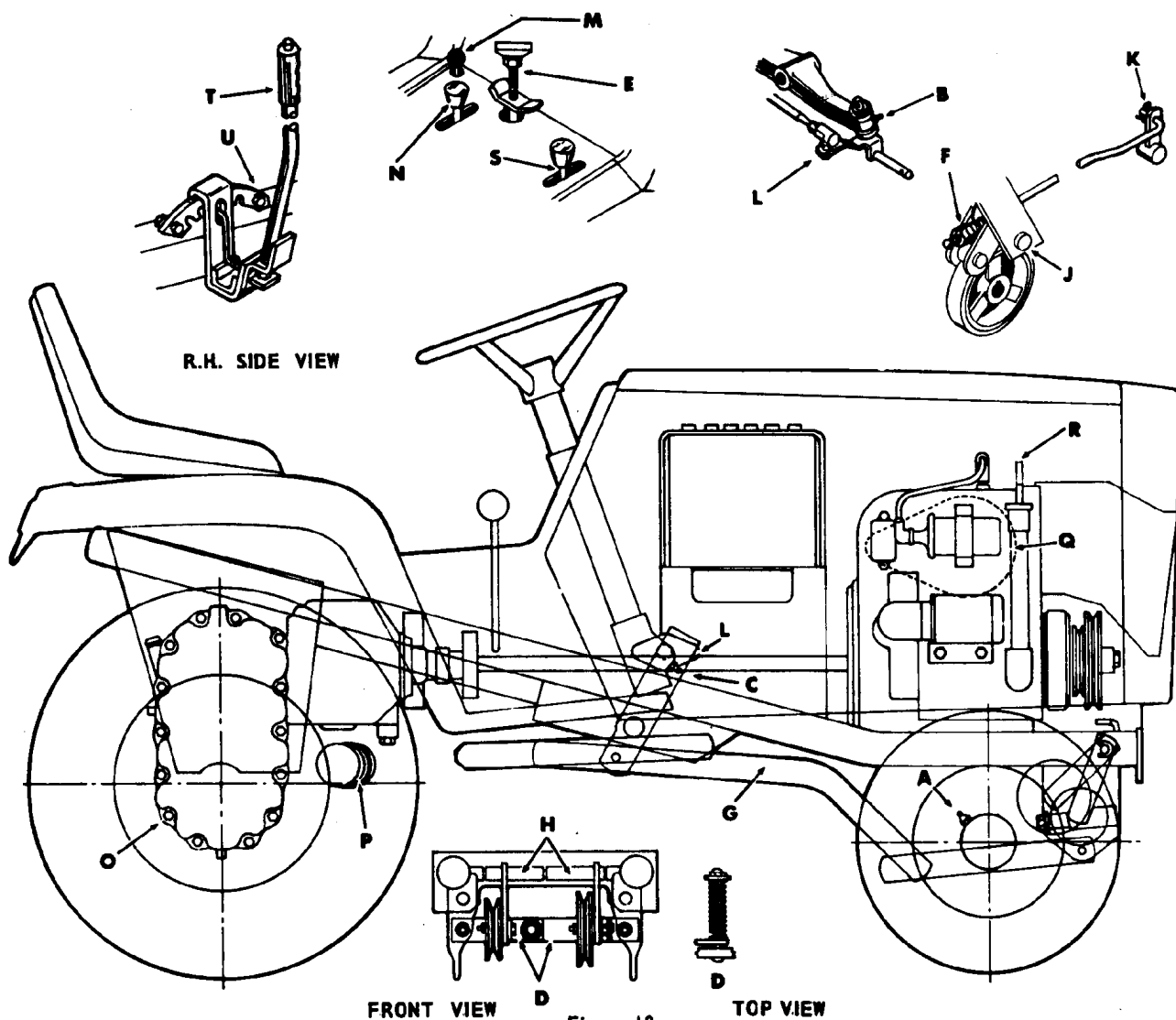


Figure 18

LUBRICATION

Lubricate your tractor on a definite schedule. The rear axle bearings are prepacked and sealed at the factory and need no further lubrication. Apply a few drops of SAE 30 Oil as required to other moving parts not listed below.

REF.	PART NAME	LUBRICANT	LUBRICATION INTERVAL		REMARKS
			30 HOURS	60 HOURS	
A	Grease Fittings (2) Front Wheels	Chassis Grease	●		Fill slowly with grease gun until grease begins to seep out
B	Grease Fittings (2) Each end of front axle	Chassis Grease	●		Fill slowly with grease gun until grease begins to seep out
C	Grease Fitting (1) Steering Gear	Chassis Grease	●		Fill slowly with grease gun until grease begins to seep out.
D	Front Power Take-Off	Chassis Grease	●		Apply around tension springs
E	Depth Control	Chassis Grease	●		Apply full length of threads
F	Brake Adjusting Spring and Pivot Points	Chassis Grease	●		
G	Implement Lift Linkage	SAE 30 Oil		●	All sliding surfaces, slotted holes and pivot points
H	Idler and Spring Tension Arms	SAE 30 Oil		●	All connection points
J	Brake Links and Pins	SAE 30 Oil		●	Caution - Do not get oil between brake drum and brake band
K	Brake Rod Pivot	SAE 30 Oil		●	Linkage pivot points
L	Steering Linkage	SAE 30 Oil		●	Outboard bearing and linkage pivot points
M	Parking Brake Lock	SAE 30 Oil		●	Linkage pivot points
N	Hydraulic Lift Lever	SAE 30 Oil		●	Linkage pivot points
O	Hydrostatic Transmission	See Maintenance			Daily
P	Oil Filter (Hydrostatic Transmission)				Change after first 10 hours of operation. No further changes necessary unless system becomes contaminated through oil level checks, refill, or teardown.
Q	Air Filter, Dry Type (Engine)			●	Remove element after 60 hours and tap lightly on flat surface to remove loose dirt. Replace after 120 hours (more frequently under extremely dirty or dusty conditions).
R	Engine Crankcase Oil Change	See Maintenance	●		Remove dipstick to replace oil.
S	Speed Range Lever	SAE 30 Oil	●		Linkage point pivots
T	Implement Lift Handle (12 H.P. Model Only)	SAE 30 Oil	●		Spring and rod inside handle
U	Quadrant (12 H.P. Model Only)	Chassis Grease	●		Apply generously

HOUR METER

The hour meter is standard equipment on the 16 H.P. Tractor and is available as an accessory for use on the 12 and 14 H.P. models. It indicates the actual hours of engine operation and enables the operator to determine exactly when lubrication, change of oil and periodic inspections are necessary. The hour meter operates whenever the engine is running or whenever the ignition key is in the "ON" position.

NOTE

The meter will operate up to 90 seconds after the ignition key is turned to "OFF".

The small white hand circles the dial once each minute to give evidence that the meter is working. The large red hand is the hour indicator. Note the red four-hour warning indicators at 30 and 60 hours to give the operator ample notice that tractor maintenance will soon be necessary. The small yellow hand shows the total

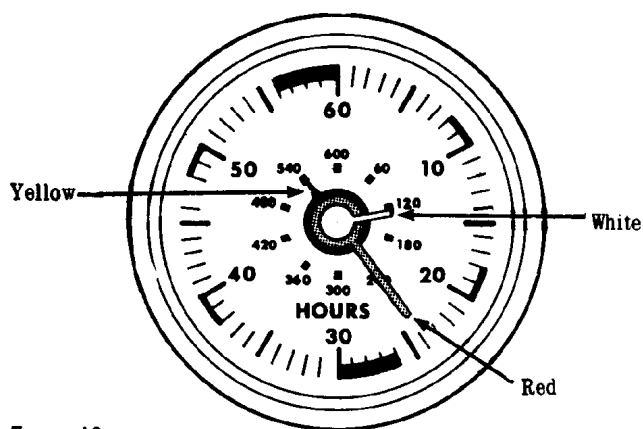


Figure 19

number of hours the tractor has operated in 60 hour intervals. To read elapsed hours, total the readings from the red and yellow hands.

STORAGE

When you do not plan to use your tractor for some time, it should be stored in a dry and protected place. Unnecessary exposure to the elements may deteriorate its appearance and shorten the usual service life.

Follow the procedures outlined in the following paragraphs for placing the tractor in storage. If the tractor is not to be used for an extended period, steps 5, 6, and 7 should be repeated every six months.

1. Drain the fuel from the fuel tank and carburetor.
2. Operate the engine until the gasoline in the carburetor is completely consumed.

IMPORTANT

Gum will eventually form in the tank, fuel line, and carburetor if the fuel is not drained. Gum in carburetor jets and passages affects engine starting.

3. While the engine is still warm, drain the oil from the crankcase and refill with fresh oil (See ENGINE CRANKCASE OIL).
4. After engine has cooled, remove the spark plug and pour about one tablespoon (30 cc.) of SAE 30 oil into the cylinder.
5. Clean exterior of engine. Paint exposed metal or coat it with a light coat of rust-preventative oil.
6. Remove the battery and clean it as directed. See "Maintenance". Place it on a rack or bench in a cool, dry place where it will not be exposed to freezing temperatures. Storage temperature must be 32° F. (0° C.) or above.

IMPORTANT

The battery should be checked every 60 to 90 days while in storage, and should be re-charged if necessary.

7. Wash, clean and completely lubricate the tractor. Follow the steps given in the lubrication chart. Paint the exposed metal or brush a light coat of rust-preventative oil over unpainted metal (except pulley grooves). Use oil that complies with SAE #30 MIL-L-21260 Standards. Two oils which meet these standards are DX Sunray "Preservative Oil" #543 Grade # (SAE 30) or Mobile Oil "Tecrex" 823.
8. Before storing the tractor, clean the tires thoroughly. Jack up the tractor so that the load is off the tires if it is to be out of service over a long period of time. If it is not jacked up, check the tires at least once a month and reinflate as necessary to keep them at the pressure recommended under "Tire Maintenance". Store the tractor so the tires are protected from the sunlight.

STARTING THE ENGINE AFTER STORAGE

1. Check the battery as directed in "Maintenance" and, if necessary, recharge it. Reinstall the battery, following the instructions under "Putting Battery in Service".
2. Remove the spark plug and wipe it dry. Crank the engine (with spark plug removed), using starter, until excess oil has been expelled through the spark plug hole. Replace the plug and connect the ignition lead wire.
3. Service the air cleaner (See Engine Manual).
4. Check oil level in crankcase, and hydrostatic transmission. Add oil if required.
5. Fill the fuel tank with fresh gasoline.
6. Before driving the tractor, check to make certain that the tires are inflated to the proper pressure as given under "Tire Maintenance".

STORAGE

IMPORTANT

7. Start the engine and let it idle slowly. Either move the tractor outside before starting engine or keep doors and/or windows wide open to provide sufficient ventilation to prevent danger from carbon monoxide gas in the exhaust. Do not accelerate the engine rapidly, and do not operate it at high speed immediately after starting. Allow time for it to become properly warmed and lubricated.

If fuel was NOT drained before storage, gum has probably formed in the tank, fuel line, and carburetor. This can be dissolved with acetone or a 50-50 mixture of alcohol and benzol. First, drain old fuel from tank and carburetor. Then install cleaning solution in tank and leave in for a 24-48 hour period. **DO NOT START ENGINE WITH CLEANING SOLUTION IN TANK!** Drain solution from fuel tank and carburetor, and re-fill tank with fresh gasoline.

SPECIFICATIONS

WHEELBASE 46" (1169 mm)

WIDTH - OVERALL - WIDE BASE TIRES 44" (1118 mm)

HEIGHT:

To Steering Wheel 42" (1067 mm)
To Hood. 37" (940 mm)
To Backrest - 12 H.P. 40" (1016 mm)
- 14 & 16 H.P. 42" (1066 mm)

GROUND CLEARANCE:

To Front Axle 9-1/4" (225 mm)
To Transmission 8" (203 mm)

TURNING RADIUS 36" (914 mm)

High Range 0 - 6.5 mph (10.46 km./hr.) Forward
Low Range 0 - 4.4 mph (7.08 km./hr.) Forward
High Range 0 - 3.2 mph (5.15 km./hr.) Reverse
Low Range 0 - 2.2 mph (3.54 km./hr.) Reverse

SPEED: At 3300 engine rpm, an infinite selection of ground speeds forward and reverse.

NOTE: Higher engine rpm will result in higher speeds.

STARTER:

Flywheel Magneto Ignition. Includes 12 Volt Electric Bendix Drive Starter and Flywheel Alternator, Battery, Starter Switch, and Wiring.

WHEELS:

12 H.P. TRACTOR:

Front: 16 x 6.50 - 8 Pneumatic Wide Base
Rear: 23 x 8.50 - 12 Pneumatic Wide Base

14 and 16 H.P. TRACTORS:

Front: 16 x 6.50 - 8 Pneumatic Wide Base
Rear: 23 x 10.50 - 12 Pneumatic Wide Base

BRAKE:

Rear wheels only. Brake band engages transaxle or differential pinion shaft.

STEERING:

Automotive-type worm gear with 14:1 Gear Reduction.

HITCH:

Equipped with fixed type standard for easy coupling of tools. A.S.A.E. Standard lift sleeve hitch, 3 Point lift hitch, or Category "O" lift hitch, all available as optional equipment.

HYDRAULIC LIFT (14 and 16 H.P. Models)

Offers many positions for height adjustment of attachments. Conveniently operated by lever from driver's seat.

SEAT AND FENDER:

Vinyl covered; cushioned on seat and backrest with foam rubber.

With adjustable seat slide on 14 and 16 H.P. models. Rigid seat with limited adjustment on 12 H.P. model. A seat safety switch will stop the engine if the operator leaves the seat while the P.T.O. switch is "On".

Steel fenders are supplied as standard equipment.

STORAGE COMPARTMENT:

A storage compartment is located under seat.

ENGINE:

16 H.P. TRACTOR:

Kohler No. K-341 AQS, 16 H.P. Spec. No. 71147-A
Type: 4 cycle, single cylinder, air cooled
Oil Capacity: 1-1/2 quarts (1.42 liters)
Fuel Capacity: 5 Gal. (18.93 liters)
Air Cleaner: Dry type
Governor: Mechanical

14 H.P. TRACTOR:

Kohler No. K-321 AQS, 14 H.P. Spec. No. 60244-D
Type: 4 cycle, single cylinder, air cooled
Oil Capacity: 1-1/2 Quarts (1.42 liters)
Fuel Capacity: 3 Gal. (11.36 liters)
Air Cleaner: Dry Type
Governor: Mechanical

12 H.P. TRACTOR:

Kohler No. K-301 AQS, 12 H.P. Spec. No. 47606-D
Type: 4 cycle, single cylinder, air cooled
Oil Capacity: 1-1/2 Quarts (1.42 liters)
Fuel Capacity: 3 Gal. (11.36 liters)
Air Cleaner: Dry type
Governor: Mechanical

SAFE PRACTICES FOR RIDING VEHICLES



1. Know the controls and how to stop quickly. READ THE OPERATOR'S MANUAL.
2. Do not allow children to operate the vehicle. Do not allow adults to operate it without proper instruction.
3. Do not carry passengers. Keep children and pets a safe distance away.
4. Clear the work area of objects which might be picked up and thrown.
5. Disengage all attachment clutches and shift into neutral before attempting to start the engine (motor).
6. Disengage power to attachment(s) and stop the engine (motor) before leaving the operator's position.
7. Disengage power to attachment(s) and stop the engine (motor) before making any repairs or adjustments.
8. Disengage power to attachment(s) when transporting or not in use.
9. Take all possible precautions when leaving the vehicle unattended, such as disengaging the power take-off, lowering the attachment(s), shifting into neutral, setting the parking brake, stopping the engine, and removing the key.
10. Do not stop or start suddenly when going uphill or downhill. Mow up and down the face of steep slopes; never across the face.
11. Reduce speed on slopes and in sharp turns to prevent tipping or loss of control. Exercise extreme caution when changing direction on slopes.
12. Stay alert for holes in the terrain and other hidden hazards.
13. Use care when pulling loads or using heavy equipment.
 - a. Use only approved drawbar hitch points.
 - b. Limit loads to those you can safely control.
 - c. Do not turn sharply. Use care when backing.
 - d. Use counterweight(s) or wheel weights when suggested in the operator's manual.
14. Watch out for traffic when crossing or near roadways.
15. When using any attachments, never allow anyone near the vehicle while in operation.
16. Handle gasoline with care - it is highly flammable.
 - a. Use approved gasoline container.
 - b. Never remove the cap of the fuel tank, or add gasoline to a running or hot engine, or fill the tank indoors. Wipe up spilled gasoline.
 - c. Open doors if the engine is run in the garage - exhaust fumes are dangerous. Do not run the engine (motor) indoors.
17. Keep the vehicle and attachments in good operating condition and keep safety devices in place.
18. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
19. Never store the equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.
20. To reduce fire hazard, keep the engine free of grass, leaves, or excessive grease.
21. The vehicle and attachments should be stopped and inspected for damage after striking a foreign object, and the damage should be repaired before restarting and operating the equipment.
22. Do not change the engine governor setting or over-speed the engine.
23. When using the vehicle with mower, proceed as follows:
 - (1) Mow only in daylight or in good artificial light.
 - (2) Never make a cutting height adjustment while the engine (motor) is running if the operator must dismount to do so.
 - (3) Check the blade mounting bolts for proper tightness at frequent intervals.
24. Know what is behind you before backing up.
25. It is recommended that this machine not be used on public roads. However, if riding on public roads is unavoidable, you must comply to equipment requirements per SAE J137b and/or ASAE S279.4 lighting and marking standard.
26. Follow the manufacturer's maintenance recommendations implicitly. See "Maintenance" and "Lubrication".
27. It is recommended that your machine be thoroughly inspected at least once a year by a competent serviceman.
28. If it is necessary to adjust the carburetor with the engine running, take extra care not to allow rings, wristwatches, clothing, etc., to become entangled with moving parts.
29. Keep the machine and supply of gasoline in locked storage to prevent children or others from playing or tampering with them. Always remove the ignition key when machine is stored. When machine is to be stored for an extended time, disconnect battery cables or remove the battery.
30. Use fresh, clean gasoline only. For fuel recommendation, see GASOLINE. If machine is to be stored for an extended period, drain the tank and empty the gasoline storage container, either discarding the gasoline in a safe place, or using it in other gasoline-powered equipment for which it may be suited.
31. Do not attempt to fill gas tank from fuel container unless the container spout or funnel fits INSIDE the fuel tank filler neck. The use of too large a spout or funnel, or no funnel, may result in spilled gasoline, creating highly flammable gas vapors. This could result in fire and/or explosion, causing severe bodily injury.

SPECIAL PRECAUTIONS

1. Use gasoline only as a fuel, never as a cleaner.
2. Do not smoke when handling gasoline.
3. Pick up all debris before mowing.

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FORD TRACTOR OPERATIONS

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Troy, Michigan 48084

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