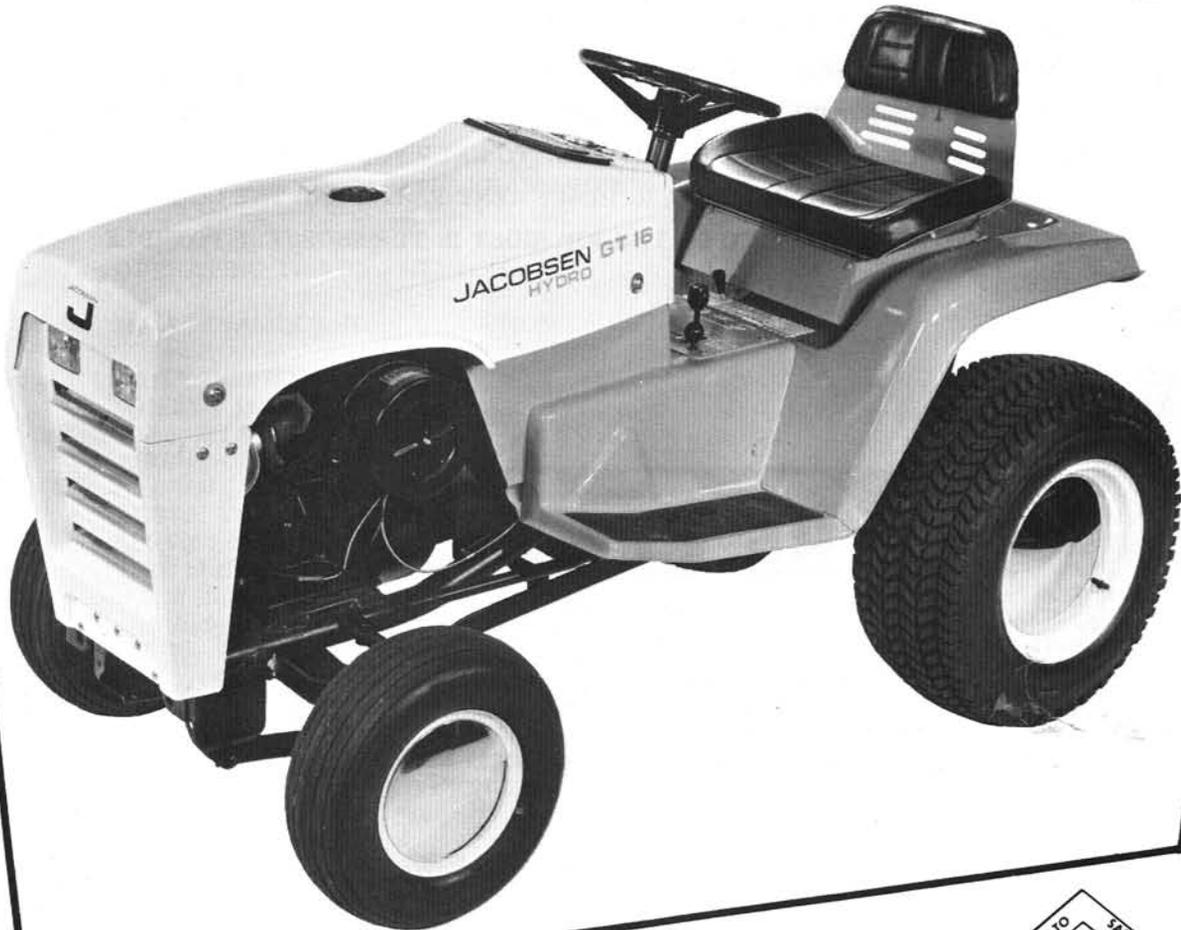


OWNER'S MANUAL

with SET UP INSTRUCTIONS

for **JACOBSEN**[®] GT SERIES TRACTORS

NO. 53330 HYDRO GT 16
SERIAL NO. 1601 AND UP



JACOBSEN MANUFACTURING COMPANY
A Member Company of Allegheny Ludlum Industries
RACINE, WISCONSIN 53403

Part No. 353391

FOREWORD

THIS MANUAL PROVIDES SUGGESTED OPERATING TECHNIQUES TO HELP YOU OBTAIN EFFICIENT AND DEPENDABLE USE FROM YOUR NEW TRACTOR. THIS MANUAL ALSO CONTAINS GENERAL INFORMATION, SPECIFICATIONS, SAFETY SUGGESTIONS, MAINTENANCE, AND SET-UP INFORMATION.

A WIDE VARIETY OF ACCESSORIES ARE AVAILABLE FOR USE WITH YOUR NEW TRACTOR. THESE ACCESSORIES WILL ADD PLEASURE TO YOUR OPERATING TIME. YOUR TRACTOR EQUIPMENT DEALER WILL HELP YOU DETERMINE WHICH ACCESSORIES WILL BE MOST USEFUL IN YOUR PARTICULAR SITUATION.

READ THIS MANUAL CAREFULLY BEFORE OPERATING YOUR TRACTOR. KEEP IT HANDY FOR FUTURE REFERENCE. IF, AT ANY TIME, YOU HAVE ANY QUESTIONS ABOUT YOUR TRACTOR, REMEMBER YOUR TRACTOR-EQUIPMENT DEALER IS BEST QUALIFIED TO HELP YOU. HE HAS FACTORY-TRAINED SERVICE TECHNICIANS, REPLACEMENT PARTS, AND THE CORRECT TOOLS AND EQUIPMENT TO DO THE JOB RIGHT IN THE SHORTEST POSSIBLE TIME.



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DEFINITIONS OF DIRECTIONS

Reference to "right" and "left" side of mower is from operator's position when seated in normal

operating position. Reference to "forward" and "rearward" is likewise from operator's position.

GENERAL INFORMATION

POWER PLANT

Your tractor is powered by a single cylinder, 4-cycle engine that uses "regular" gasoline. **DO NOT MIX OIL WITH GASOLINE FOR THIS ENGINE!** Engine speed is controlled by means of a throttle lever conveniently mounted on the dash.

GASOLINE

The engine manufacturer recommends use of non-leaded gasoline of 90 octane rating or higher.

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

DRIVE TRAIN

Hydrostatic Transmission

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.

BRAKE PEDAL (See Fig. 1)

The brake is operated by a foot pedal, conveniently located above the right foot rest. When the pedal is pushed down firmly, the brake is applied to stop tractor motion.

NOTE

The speed range lever will have to be placed in "NEUTRAL" to engage the safety start switch on tractor, in order to start the engine by turning the key switch clockwise. PTO switch must be "OFF".

STARTING SWITCH AND KEYS (See Fig. 5)

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.

REMOVING THE HOOD

First remove the four fastening screws completely from the hood. Move to front of tractor and face the hood. Grasp it with each hand at about the middle of the curved portion. Lift up and work the hood up and clear of the steering wheel area and toward you. Be careful not to harm the ammeter.

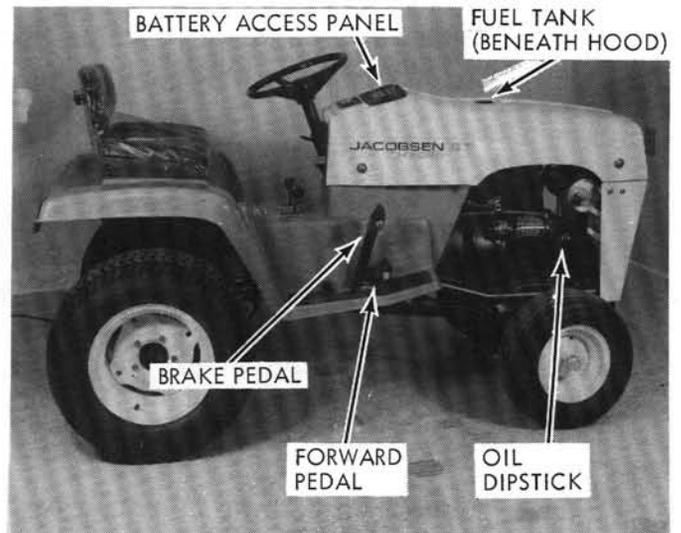


Figure 2.

SEAT AND TOOL COMPARTMENT

The seat hinges forward as shown in Figure 2 to provide access to the tool compartment.

SINGLE POINT IMPLEMENT HITCH (See Fig. 3)

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

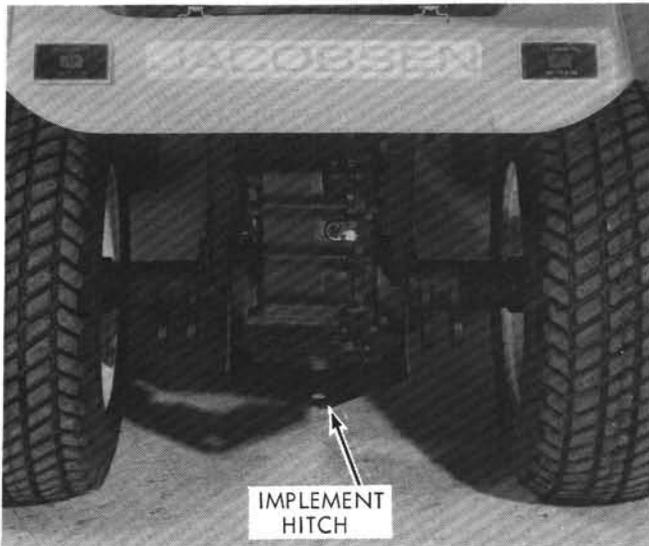


Figure 3.

HYDRAULIC LIFT (See Fig. 4)

THE Hydraulic Lift is used to raise and to lower attachments 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.

CAUTION

The Hydraulic Lift will do only what you control it to do. Keep hands and feet away from lift at all times when engine is running.

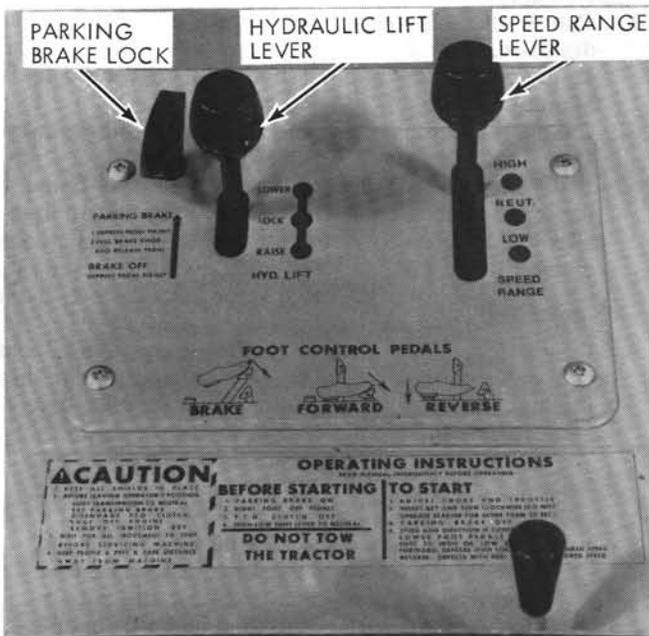


Figure 4.

PARKING BRAKE

A parking brake is provided to prevent movement of the tractor whether the engine is running or stopped. To set the brake, fully depress the brake pedal and pull up on parking brake knob to engage the brake lock (See Fig. 4). The brake is automatically released by depressing the brake pedal.

CHOKE CONTROL (See Fig. 5)

Located on lower left side of instrument panel. When starting a cold engine, turn choke switch to "ON" position. After the engine starts turn choke to "OFF" position.

THROTTLE LEVER (See Fig. 5)

Located on upper left side of instrument panel. 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.

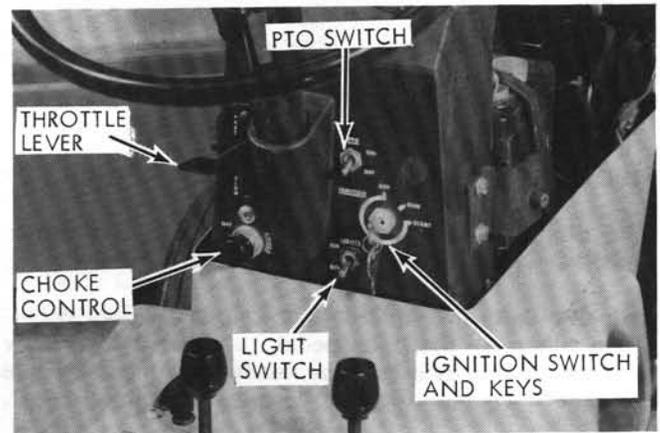


Figure 5.

AMMETER

The ammeter is located immediately to the left of the steering wheel. It 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.

HOURLY METER

Located at top of dash panel. Indicates number of hours tractor has been operated. It can be used to keep track of maintenance intervals and amount of time required to perform various tasks, etc.

LIGHT SWITCH (See Fig. 5)

A toggle switch is located on the lower right side of the instrument panel on those tractors equipped with head and tail lights.

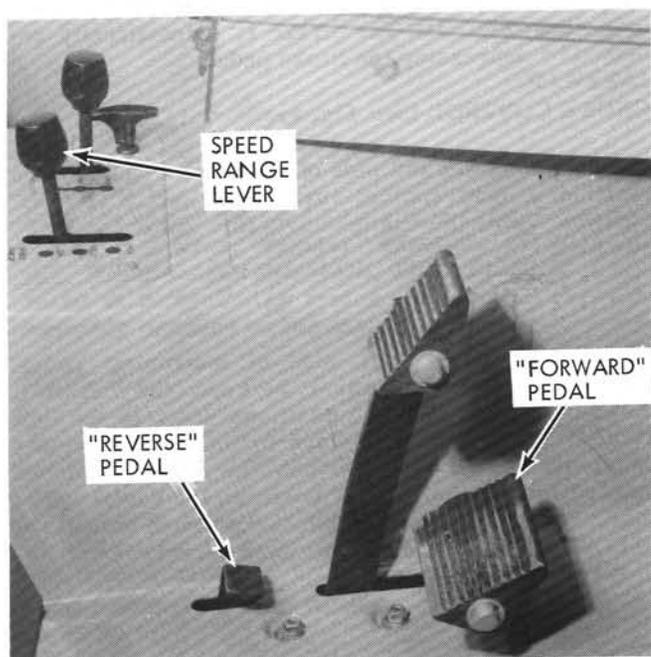


Figure 6.

HYDROSTATIC TRANSMISSION CONTROL LEVER

The direction and speed of the tractor is determined by the position of the foot control pedals (See Fig. 6).

Select either the "HIGH" or the "LOW" speed range. Then depress the foot pedal to start the tractor moving. For reversing the direction of travel, use the heel of your foot to depress the small pedal.

TIRES

Your tractor is shipped from the factory with all tires mounted.

NOTE

Rear tires are overinflated at the factory for shipping purposes. Before operation, check rear tires for proper air pressure. See "Tire Maintenance" for tire pressure.

Tires mounted on your tractor are as follows:

Front Tires - Wide Base (set of two)
Size 16 x 6.50 - 8 Pneumatic

Rear Tires - Wide Base (set of two)
Size 23 x 10.50 - 12 Pneumatic

Wide base tires have a larger area of the tread in effective contact with the ground at all times, thus providing added traction, and have considerably less tendency to mark turf or sink into such surfaces as

loose soil, soft sand, etc. They also provide a soft and smooth ride on rough terrain.

OPERATING INSTRUCTIONS

OPERATING SAFETY INSTRUCTIONS

Before getting off tractor, or permitting anyone to work on machine or implement, perform the following:

1. Make sure PTO switch is in "OFF" position.
2. Depress brake pedal and put speed range lever in "NEUTRAL".
3. Turn key to "OFF" and remove key.
4. Set parking brake and release brake pedal.
5. Allow adequate time for all moving parts to stop.

PREPARING TRACTOR FOR OPERATION

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.

1. Check the engine crankcase oil level, using the dipstick. (See Fig. 1). If oil is required, add oil of proper grade as instructed in Engine Owner's Manual.
2. Check the fuel supply and fill tank if necessary. Open the fuel shut-off valve. (See Fig. 7).
3. Make a general inspection of the items beneath the hood and around the tractor. Check for loose hardware, frayed wires, oil or fuel leaks, loose connections, etc. In case such conditions are detected, take appropriate steps to correct them before starting engine.
4. Check tires for proper inflation pressure and general condition. Refer to the section in this manual on Tire Maintenance, for correct pressure for tires.

NOTE

It is necessary that tires be inflated to the same pressure on both sides of the tractor. Otherwise attachments such as the rotary lawn mower will be pitched and will operate unevenly.

5. If an implement is to be used, check it for proper installation, securely tightened fasteners and good operating condition. Refer to the Implement Manual for operating and maintenance instructions.

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 pounds each

Rear Wheel Weights: 53 pounds each

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 above freezing, clean water can be used. For temperatures 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 wide base (tubeless) rear tires over an extended period of time, it is recommended that inner tubes be used. Such tubes can be obtained from most well stocked tire stores.

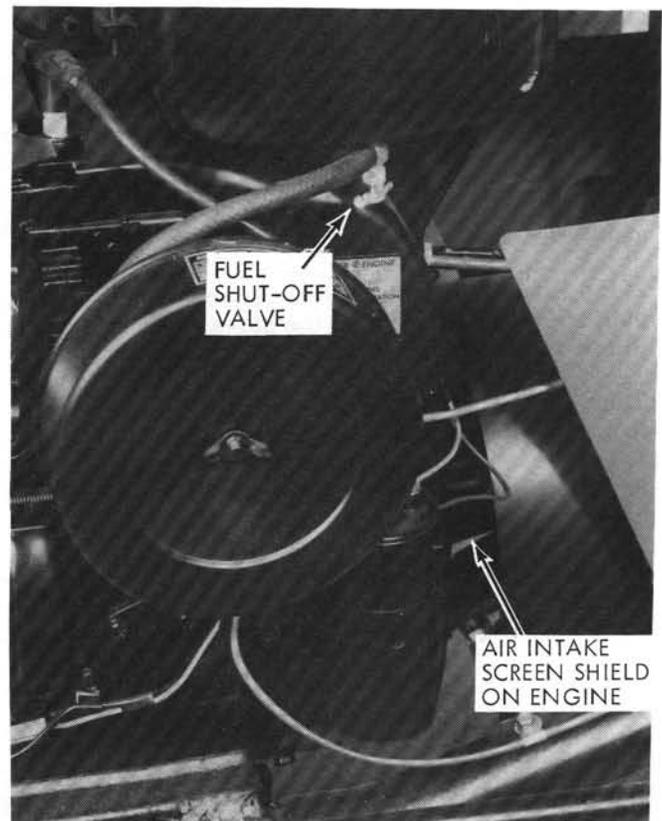


Figure 7.

STARTING AND STOPPING ENGINE

To Start Engine

1. Check oil, see "Maintenance and Lubrication", Daily Inspection.
2. Check fuel supply and shutoff valve, as previously directed.
3. Put speed range lever in "NEUTRAL".

NOTE

Always place speed range lever in "NEUTRAL" position for starting to close "START" circuit.

4. Put PTO switch in "OFF" position.
5. Depress Clutch-brake pedal.
6. Put choke control in "ON" position.
7. Insert ignition 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 the engine starts, move choke control to "OFF".

To Stop Engine

Turn the ignition key to "OFF" position. Set the parking brake, Turn PTO switch to "OFF". Leave the gear shift lever in neutral position. Remove the ignition key if the tractor is to be left unattended. Turn off the fuel shutoff 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 PTO clutch switch in the "OFF" position, start and operate the tractor as follows:

NOTE

When the tractor is new or the oil in the transmission is cold, the tractor may tend to "creep" slightly when the speed range lever is in "NEUTRAL". Therefore, we recommend that when the tractor is brought to a stop, before the operator dismounts from it, he should apply the parking brake or shut off the engine.

1. Start the tractor engine and advance the throttle slightly.
2. Select the speed range desired and move the lever accordingly.
3. Advance the throttle setting to the desired rpm for the operation to be performed, and slowly depress the pedal.
4. IMPORTANT - The correct tractor forward speed is a composite setting, involving both the throttle lever and the foot control pedal. However, for any one throttle setting, depress the foot pedal until the correct tractor speed is obtained.
 - 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.

NOTE

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

Stopping and Shuttling the Tractor

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

WARNING

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.

NOTE

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

Parking the Tractor

Bring the tractor to a stop by releasing pressure on the foot pedal. Move speed range control to "NEUTRAL". Turn PTO switch to "OFF". Depress the brake pedal and lock the parking brake securely. Stop the engine and remove the ignition key.

OPERATING THE ELECTRIC POWER TAKE-OFF CLUTCH

Various implements are available for use with your tractor. Certain of these implements are designed to be powered by the engine through V-belts, and are controlled by the PTO switch.

The power take-off clutch is disengaged when the PTO switch is "OFF" (See Fig. 5). The clutch is engaged when the switch is turned to "ON". The engine will not start with the PTO switch in the "ON" position.

CAUTION

Always disengage the power take-off clutch (turn switch to "OFF") when implement mounted on the tractor is not being used.

Operating instructions, belt adjustments, etc. concerning the power take-off use with any implement will be covered in the Owner's Manual furnished with the implement.

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

NOTE

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.

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. 1). The tractor must be level and the engine must be stopped or the reading will be inaccurate.
2. Add oil to the engine crankcase only if required. Keep the oil level between the marks on the dipstick.

Refer to your Engine Manual and follow the specific instructions as to grade of oil required.

3. The air intake screen on the engine flywheel is protected by a shield (See Fig. 7). Check to be certain that the air intake screen is clean and properly fitted to the flywheel. If the screen becomes bent, cracked, broken or otherwise damaged, it must be replaced.
4. Make a general inspection of the tractor, checking for leaks, loose nuts, bolts or fittings. Correct such conditions as they are detected.

WEEKLY INSPECTION (Inspect every 25 Hours)

1. **BATTERY** - Lift up battery access panel (See Fig. 1). 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. 8), fill with distilled water.

Inspect the battery terminals to make certain that cables are securely fastened and that terminals are free from corrosion. Refer to section headed "Servicing the Battery".

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

Check the tire pressure, using a "low-pressure" gauge with one P.S.I. graduations. Refer to "Tire Maintenance", for recommended inflation pressure. Adjust inflation as required.

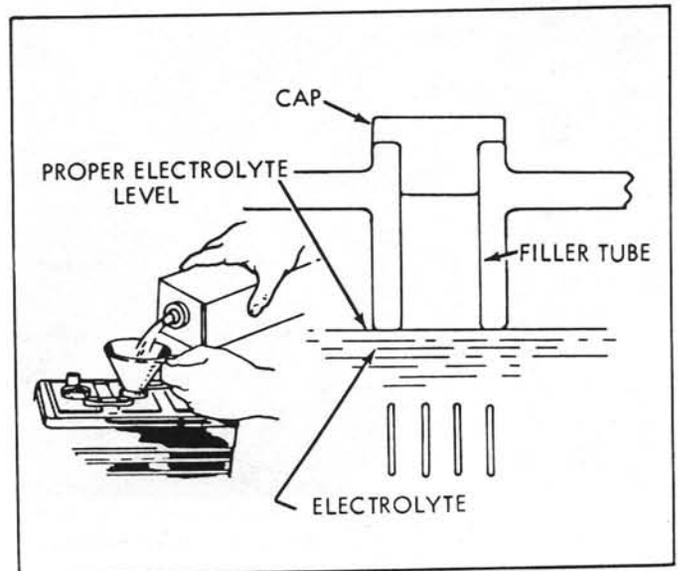


Figure 8.

3. **BELTS** - Visually inspect the PTO drive belt for cracks, cuts, excessive wear, etc.

HYDROSTATIC TRANSMISSION (Inspect Every 40 Hours)

Check the reservoir oil by removing plug at "A" (See Fig. 9). 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 Transhydral #2209 or Ford Motor Co. #M-2C41-A, or equivalent.

NOTE

It is very important that the fan, located on the front of the hydrostatic transmission, and the fins on the hydrostatic transmission (See Fig. 10) 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.**

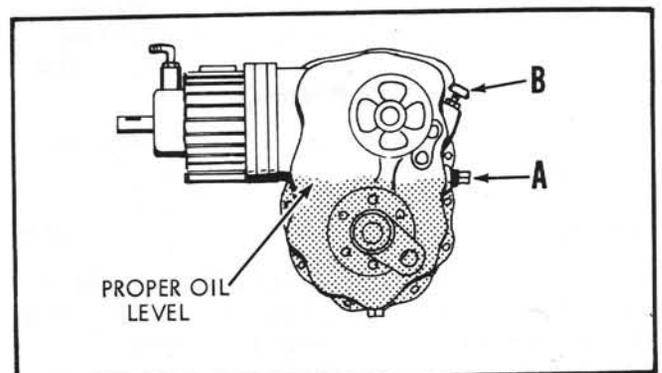


Figure 9.

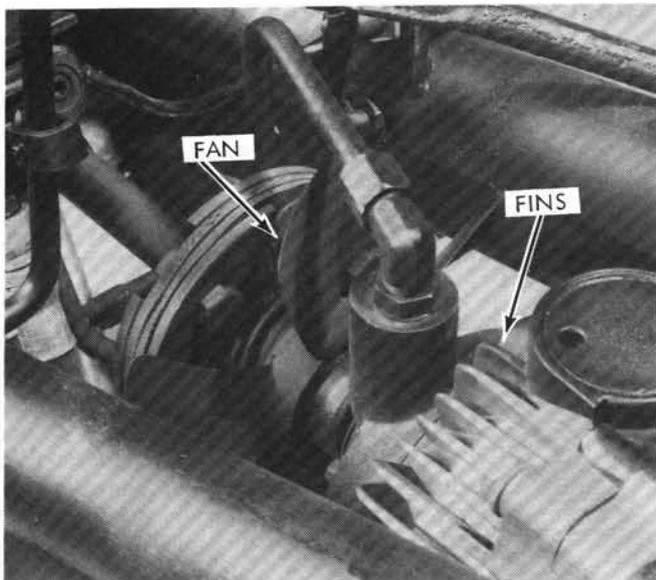


Figure 10.

ENGINE CRANKCASE OIL

Refer to your Engine Owner's Manual for oil changes, intervals, grade of oil, etc.

1. 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.

Crankcase Capacity 4-1/2 U.S. Pints

2. Place a pan under the drain to catch the used oil.
3. The oil drain of the tractor is located on lower left side of the engine. It extends down a few inches from the oil pin, is a square head pipe plug, and can be easily removed with an adjustable wrench.
4. Remove the drain plug and allow ample time for the used oil to drain out.
5. Reinstall the drain plug or cap securely. Wipe away any spilled oil. Replace crankcase oil as directed in Engine Owner's Manual.

NOTE

The crankcase oil should be changed more frequently when the tractor is operated under unusually severe or dusty conditions.

WARNING

Never oil or grease the tractor while the engine is running.

OIL FILTER (Part of Hydrostatic Transmission)

It is recommended that the filter be changed after the initial 10 hours of operations, and no further changes are necessary unless the system becomes contaminated through oil level checks, refill, or tear-down.

LUBRICATING THE TRACTOR

Every 100 hours or more frequently if operating under dusty or heavy load conditions, make the regular weekly - 25 hours - inspection and perform the following steps.

Refer to the accompanying Lubrication Chart (Figs. 11, 11-A, 11-B, and 12) and the figures stated in the following:

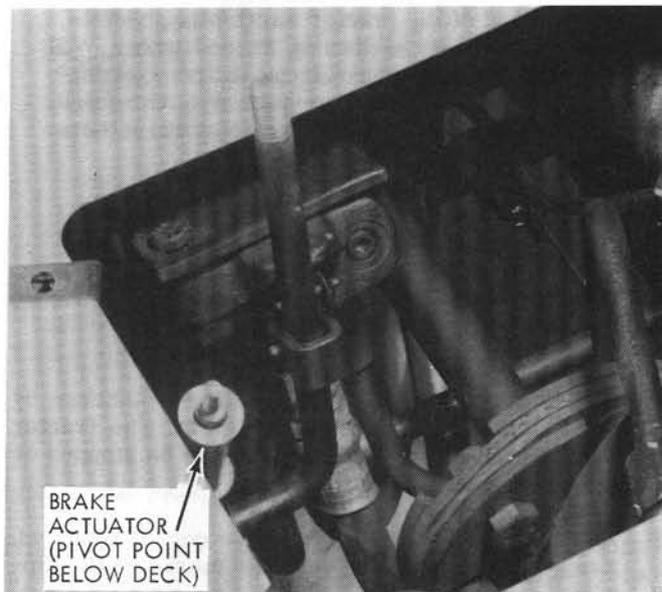


Figure 11.

APPLY GREASE TO THE FOLLOWING:

1. BRAKE ACTUATOR AND PIVOT. Grease these pivot points (Figure 11).
2. STEERING GEAR. Grease fitting - fill slowly with grease gun until lubricant begins to seep out.
3. LIFT LINKS. Sliding surfaces and slotted holes (Figure 11-A). Ref. No. 1

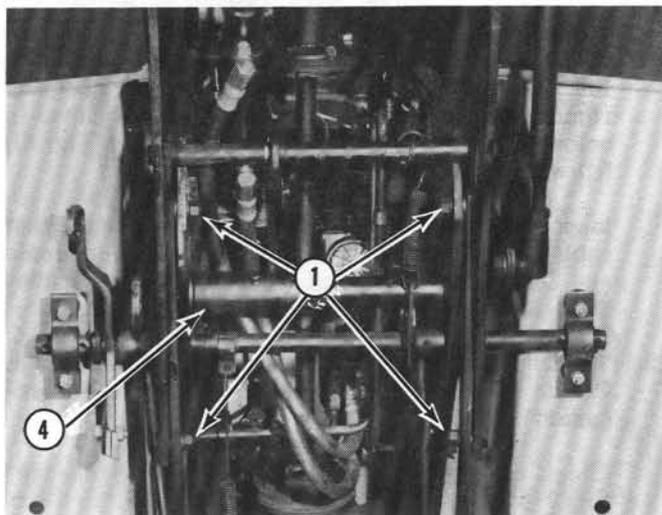


Figure 11A.

4. IDLER ARM. All connection points.
5. FRONT WHEELS. One grease fitting each wheel.
6. FRONT AXLE. One grease fitting each end of axle.
7. BRAKE ADJUSTING SPRING AND PIVOT POINTS. (Figure 12).
8. FRONT POWER TAKE-OFF (Figure 11-B). Apply grease around tension springs (Ref. No. 2). Grease idler pivot rod (Ref. No. 3).

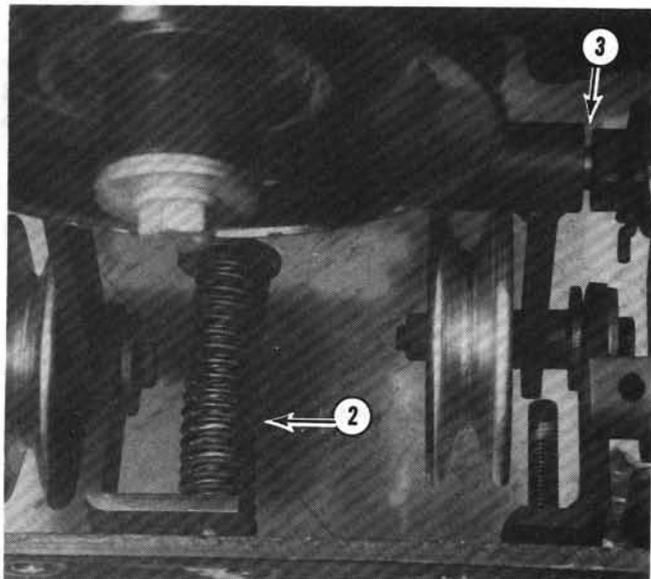


Figure 11B.

APPLY A FEW DROPS OF SAE 30 OIL TO THE FOLLOWING:

9. BRAKE SLIDE BRACKET (Figure 12).
CAUTION: Do not get oil between brake drum and brake band.
10. LIFT HANDLE SHAFT PIVOT (Figure 11-A).
Ref. No. 4.
11. BRAKE ROD PIVOT (Figure 12).

Rear axle bearings are prepacked and sealed at the factory. No lubrication is required.

Apply a few drops of oil to other moving parts not listed above.

SERVICING THE BATTERY

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 term-

inals. Make certain vent holes in battery filler caps are kept open. The recommended water level is indicated on the filler caps. Use distilled water when filling battery. Refer to "Tractor Storage" for detailed instructions for storage procedures.

TIRE MAINTENANCE

Attention to the following instructions and recommendations will help assure maximum use and service from your tires.

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

Keep all tires at the recommended pressure (8 p.s.i.) at all times. Check pressure once a month when tractor is being operated. 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.

Wide Base Front Tires Inflation Pressures

Inflation Pressure (per tire)	Maximum Load (per tire)
6 psi	270 lbs.*
8 psi	315 lbs.*
10 psi	360 lbs.*
12 psi	400 lbs.*

Wide Base Rear Tire Inflation Pressures

Inflation Pressure (per tire)	Maximum Load (per tire)
6 psi	460 lbs.*
8 psi	550 lbs.*
10 psi	625 lbs.*

*Maximum Load includes weight of operator seated behind the wheel, plus any attachments, wheel weights, tire fluid, etc.

NOTE

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

ADJUSTMENTS

CAUTION

Before performing any adjustments, follow these steps:

1. Turn ignition to "OFF" and remove key from ignition switch.
2. Disconnect spark plug wire.
3. Disconnect battery cables.

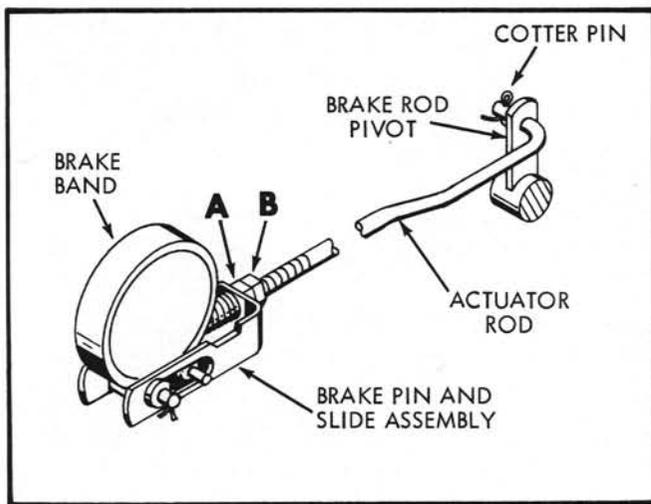


Figure 12.

BRAKE ADJUSTMENT (See Fig. 12)

To adjust brake actuator rod, back-off (turn toward front of tractor) jam nut "A". This will free adjustment nut "B". Turn it toward the rear of the tractor to tighten, or toward the front of the tractor to loosen tension on brake. Secure both nuts after brake is correctly adjusted.



Be careful not to over-tighten, or brake life will be shortened.

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.

NOTE

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. 13)

1. Jack up rear end of tractor, thus allowing rear wheels to rotate freely. Place blocks in front and rear of front wheels to prevent tractor from rolling.
2. 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.



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

3. Start the engine and move the throttle to the "SLOW" position. If the raised wheels do not move, the adjustment is satisfactory. If the wheels turn in either direction, another adjustment will have to be made.
4. Secure both nuts.

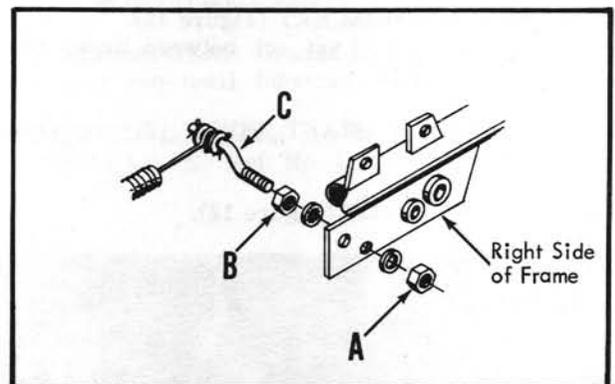


Figure 13.

TRACTOR 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 1, 5, and 6 should be repeated every six months.

1. Wash, clean and completely lubricate the tractor. Follow the steps given in the lubrication chart on Page 10. Paint the exposed metal or brush a light coat of rust-preventative oil over unpainted metal (except pulley grooves and clutch friction disc). Incidentally, common motor oil is not a rust preventative oil.
2. 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 regular intervals and reinflate as necessary to keep them at the pressure recommended under "Tire Maintenance". Store the tractor so that tires are protected from the sunlight.
3. After engine has cooled, remove the spark plug and pour about one tablespoon of good quality lubricating oil into the cylinder.

Crank the engine slowly by hand to distribute the oil over the cylinder walls. Replace the spark plug.

4. Drain the fuel from the fuel tank and carburetor.

NOTE

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.

5. Clean exterior of engine. Paint exposed metal or coat it with a light coating of rust-preventative oil.
6. Remove the battery and clean it as directed. See "Maintenance and Lubrication". 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. or above. Check the battery, referring to separate Battery Booklet supplied with it at the time of purchase. Follow storage recommendations contained therein.

NOTE

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

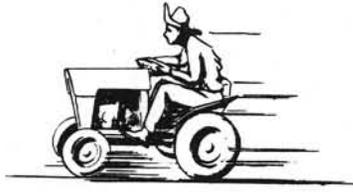
STARTING THE ENGINE AFTER STORAGE

1. Check the battery according to recommendations given in Battery Booklet and, if necessary, re-charge it. Reinstall the battery, following the instructions under "Installing The Battery".
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.
4. Check level of oil in crankcase and transaxle.
5. Fill the fuel tank with fresh gasoline.
6. 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.
7. Before driving the tractor, check to make certain that the tires are inflated to the proper pressure as given under "Tire Maintenance".

NOTE

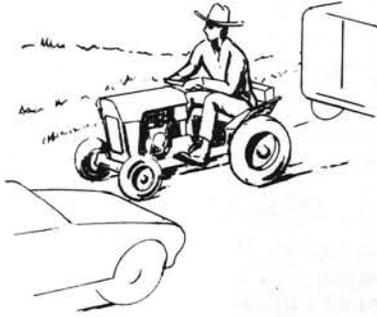
If fuel was NOT drained before storage, gum has probably formed in the tank, fuel line, and carburetor. This can be dissolved with acetone or a 50-50 mixture of alcohol and benzol. First, drain old fuel from tank and carburetor. Then install cleaning solution in tank and leave in for a 24-48 hour period.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

SPEED



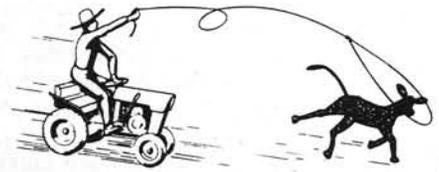
Driving too fast is a factor in most tractor accidents. Many occur while tractor is being driven to or from work. Slow down and get there.

TRAFFIC



High speed traffic and slow speed tractors don't mix safely. Avoid heavy traffic.

MISUSE



Many accidents result from misuse or "horseplay." Use your tractor for jobs it was designed to do.

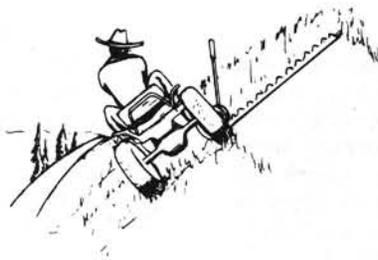
SOME SETUPS FOR UPSETS

DOWNHILL



Caution should be taken when going down steep down hill grades. Do not try to handle heavy loads. Always leave tractor in gear.

OPERATING ON SLOPES



A hole, a bump, or a quick turn can bring tragedy on a slope. Be extra-cautious - if the slope is steep, stay off of it.

UP SLOPES



Backward upsets can happen when going up hill. If you must climb a steep slope, turn the tractor around and go up in reverse. Never use chains, rear wheel weights, or calcium chloride in rear tires for uphill work without a snowblower mounted in the front.

HIDDEN OBSTACLES



A tractor tire has a lot of "bounce". A hidden log, stump, or stone can throw you. Be alert, slow down for tall weeds and grass.

MUD



Something will turn if power is applied. If the wheels stick, the chassis will revolve around axle. When you can't back out, get help.

DITCHES



A tractor, as shown, may tip backward when power is applied. Sideways upsets happen easily in ditches. Avoid steep banks. Cross ditches where banks have a gradual slope - or don't cross them.

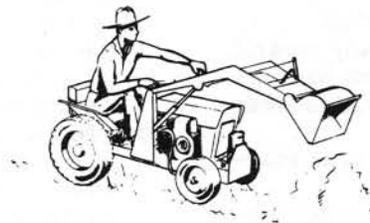
Recognize Hazards - Avoid Accidents

HIGH HITCH



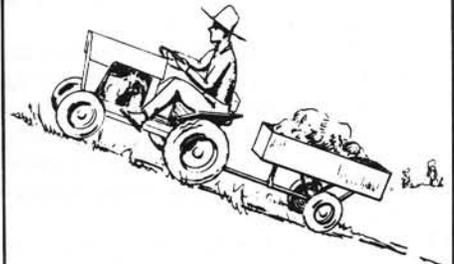
Always hitch to the tractor drawbar. Hitching to the axle or seat bracket can cause backward upset. Never attempt to pull a load with the drawbar removed.

LOADS ON FRONT



A front end loader is a labor saver. Use loader with care. Add rear wheel weights. Avoid sharp turns or abrupt maneuvers when loaded bucket is raised.

LOADS ON REAR



Loads on rear increase the chance of backward upset. Add front wheel weights for balance, reduce transport speed and turn corners slowly. Handle tractor with care.



THE OPEL LABEL IS THE BUYERS ASSURANCE THAT A MODEL OF THIS MOWER HAS BEEN TESTED BY AN INDEPENDENT TESTING LABORATORY, AND FOUND TO CONFORM WITH THE SAFETY SPECIFICATIONS FOR POWER LAWN MOWERS PUBLISHED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE.

SAFE OPERATION PRACTICES FOR RIDING VEHICLES



1. Know the controls and how to stop quickly. READ THE OWNER'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 owner's manual.
14. Watch out for traffic when crossing or near roadways.
15. When using any attachments, never direct discharge of material toward bystanders nor 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 fuel 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 settings 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) Shut the engine (motor) off when removing the grass catcher or unclogging chute.
 - (4) Check the blade mounting bolts for proper tightness at frequent intervals.
24. Check the grass catcher bags frequently for wear or deterioration. Replace with new bags for safety protection.
25. Know what is behind you before backing up.
26. Do not use machine on a public road unless it is equipped per ASAE S279.3, lighting and marking standard.
27. Follow the manufacturer's maintenance recommendations implicitly. See "Maintenance and Lubrication".
28. It is recommended that your machine be thoroughly inspected at least once a year by a competent serviceman.
29. 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.
30. 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.
31. 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.

SPECIAL PRECAUTIONS FOR RIDING VEHICLES WITH GRASS CATCHERS



Do not run engine until catcher bag or chute is secured in place.

SPECIFICATIONS

WHEEL BASE 46"

WIDTH-OVERALL-WIDE BASE TIRES 44"

HEIGHT:

To Steering Wheel 42"
To Hood 37"
To Backrest Adjustable 39" - 42"

GROUND CLEARANCE:

To Front Axle 9-1/4"
To Transmission 8"

TURNING RADIUS 36"

High Range 0 - 6.5 mph Forward
Low Range 0 - 4.4 mph Forward
High Range 0 - 3.2 mph Reverse
Low Range 0 - 2.2 mph 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:

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

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 and backrest.

Steel fenders are supplied as standard equipment.

STORAGE COMPARTMENT:

A storage compartment is located under seat.

ENGINE:

Engine Model No. Kohler K341-AS

Type: 4 cycle, single cylinder Air Cooled
Oil Capacity: 4-1/2 Pts.
Fuel Capacity: 3 Gal.
Fuel Pump: Auto-Diaphragm Type
Air Cleaner: Dry Type
Governor: Mechanical

SET UP INSTRUCTIONS

INSTALLING THE STEERING WHEEL (See Fig. 14)

1. Straighten front wheels.
2. Remove steering wheel from box of parts and position it on steering shaft so that:
 - a. the two spokes are horizontal;
 - b. the notch is on the top half;
 - c. the serration in the wheel hub engage properly on the steering shaft.
3. Thread the nut onto the steering shaft and tighten securely.
4. 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.

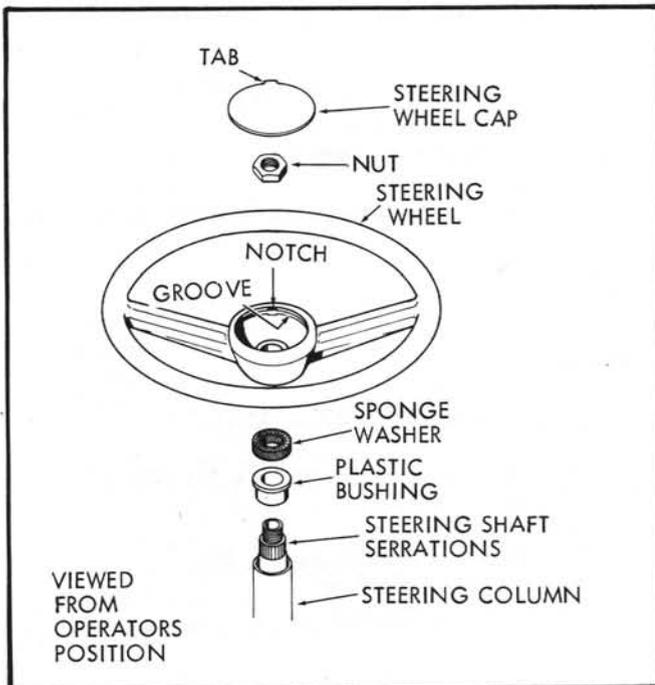


Figure 14.

INSTALLING THE BATTERY

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.

The required amount of electrolyte needed for your battery is furnished with your tractor.

NOTE

If you equip your tractor with headlights, do not use them more than one hour for every two hours of tractor operation. For more frequent use provide a supplementary charge to the battery.

Putting Battery In Service

1. Remove hood from tractor, See Page 4, "REMOVING THE HOOD".
2. Break steel banding and remove battery and electrolyte package from tractor shipping frame.
3. Place battery on wood bench or on a piece of wood or plastic. **DO NOT SET BATTERY ON CONCRETE FLOOR.**

WARNING

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.

4. Before installing the electrolyte furnished with your tractor, study the instructions on the carton.
5. Remove filler caps and fill battery with 1.265 specific gravity electrolyte or acid to proper level (See Fig. 8). **ALLOW BATTERY TO SET FOR 20 MINUTES.**

CAUTION

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

6. With the filler caps still removed, place battery on charge after the 20 minute setting period at 3 amperes until gravity reading is 1.265 - 1.275. If room, battery and electrolyte temperatures are below normal, a longer charging period will be mandatory to bring the specific gravity up to 1.265 - 1.275.
7. Insert filler caps into filler holes and place battery on shelf in front of the instrument panel. **BATTERY TERMINALS MUST BE TOWARD FRONT OF TRACTOR** (See Fig. 15).
8. Locate battery hold down clamp and rods. Insert curved ends of rods into holes in battery holder and place straight ends of rods into holes of battery clamp. Install lockwashers and nuts on the rods and tighten snugly in place.

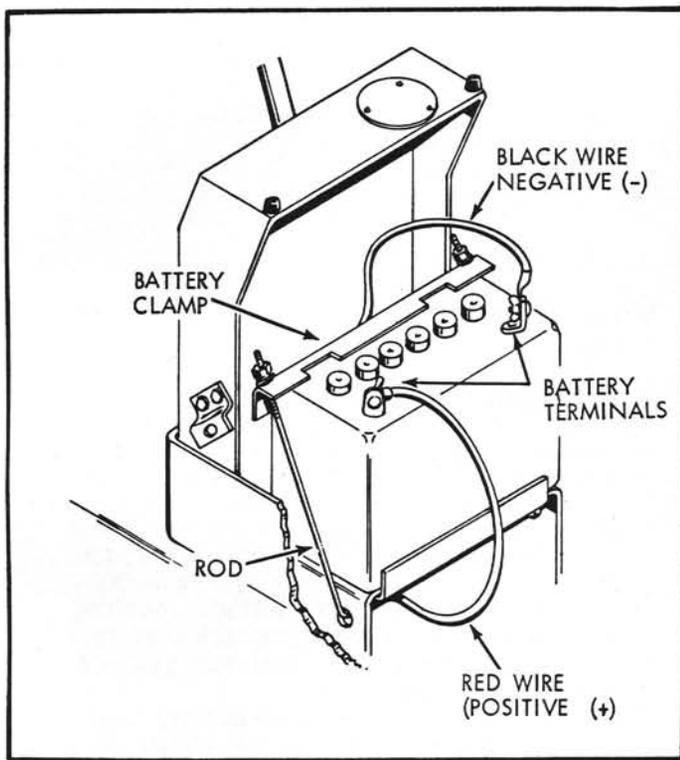


Figure 15.

NOTE

Do not over-tighten nuts on rods as damage to the battery may result.

9. Next, connect the two battery cables to the battery terminals (See Fig. 15). The cable that is 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 wing nut from the carriage bolt and place cable eye on threads of the bolt. Secure cable eye in place with the wing nut just removed.

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: Remove the wing nut from the carriage bolt provided and place cable eye onto threads of the bolt. Secure cable eye in place with the wing nut. Battery connections must be kept tight at all times. Loose cables will cause arcing and pitting of the connections and cause eventual failure. Now apply a light coat of petroleum jelly or chassis lubricant to both terminals and cable ends to prevent corrosion.

NOTE

If battery shows signs of overcharging (fuming or boiling), remove one rectifier from panel. This will cut charging current approximately 50%.

SAFETY GUIDELINES FOR BATTERIES

1. Under certain conditions, AABM (Association of American Battery Manufacturers) says, the hydrogen gas given off by all electric storage batteries can cause an explosion and result in personal injury or damage to the tractor. There are precautions that can be taken to avoid accidental explosions. The problem of hydrogen gas is often overlooked when it comes to provisions for ventilating closed spaces in machines and equipment. Most existing vent systems deal with gasoline fumes, which are heavier than air and travel downward. Hydrogen gas is lighter than air and seeks upper spaces, such as those under a cowl or enclosure.
2. If vehicles are not equipped with ventilation for the upper spaces, especially in areas surrounding the battery box, make some provisions for letting out any hydrogen gas that may accumulate.
3. Make sure the engine air intake does not draw air from around the battery. If hydrogen gas is drawn in with the fuel mixture, it possibly will explode other gas in the engine area.
4. Use extra caution with an external battery charger. If overcharging occurs the battery will release excessive hydrogen gas. Avoid charging next to an open flame or devices that may cause sparks.
5. Check the battery's liquid level regularly - hydrogen gas can build up in the void space.
6. 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.
7. 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.

HOW TO ORDER REPAIR PARTS

SEE YOUR JACOBSEN SERVICE DEALER

This manual is an operating and service guide for the owner. We do not recommend that you make major repairs beyond the necessary adjustments and simple parts replacements required to keep your unit in good operating condition.

For assistance in getting the most out of your unit, and for overhaul, winter or summer storage, tune-up, and repair service, we recommend your Authorized Jacobsen Dealer, who is prepared to help you.

Go directly to your local Authorized Jacobsen Dealer for service and repair parts for your particular unit. Be sure you have the correct product name and number, and serial number. To obtain these refer to the serial plate or name plate mounted on the unit.

IMPORTANT

If your Parts List is separate from this manual DO NOT LOSE IT, as it is the only means you have of ordering replacement parts accurately.

To eliminate error and speed delivery:

1. Write your NAME and ADDRESS on your order plainly.
2. Explain WHERE and HOW to make shipment.
3. Give PRODUCT NUMBER, NAME, and SERIAL NUMBER that is stamped on the NAME PLATE or SERIAL PLATE of your product.
4. Order from your PARTS LIST, as this is the ONLY means we have of identifying the parts you need. Order by QUANTITY DESIRED, the PART NUMBER, and the DESCRIPTION OF PART.
5. Send your order to or visit your nearest JACOBSEN DEALER, AUTHORIZED SERVICE STATION, or AUTHORIZED JACOBSEN SERVICE DISTRIBUTOR as indicated in your SERVICE STATION DISTRIBUTOR'S DIRECTORY.
6. INSPECT ALL SHIPMENTS ON RECEIPT. If any parts are damaged or missing, file a claim with the carrier before accepting.
7. Do not return material to your nearest JACOBSEN DEALER, AUTHORIZED SERVICE STATION, or AUTHORIZED JACOBSEN SERVICE DISTRIBUTOR without a letter of explanation. Make a list of all returned parts, show your name and address, and include it with the shipment. TRANSPORTATION CHARGES MUST BE PREPAID.

JACOBSEN MANUFACTURING COMPANY PERFORMANCE GUARANTY - CONSUMER PRODUCTS

Jacobsen Manufacturing Company (hereinafter Jacobsen) guarantees to the original retail purchaser of new and unused Jacobsen Consumer products that the same are free from defects in workmanship or materials that may cause performance failure subject to the conditions hereinafter stated.

This guaranty is limited to a period of one year. It is further limited to a period of 45 days if the product is used for commercial or rental purposes. Both periods are from the date of purchase. Replacement of any defective part including labor free of charge, f.o.b. any Authorized Jacobsen Service Station, shall constitute compliance by Jacobsen with this guaranty.

This guaranty does not apply to engines or other parts that are manufactured and guaranteed by the

manufacturer thereof; nor does it apply with respect to any product or part (1) that has been repaired other than by an Authorized Jacobsen Service Station, or (2) that has had original parts removed or otherwise altered without specific authorization beforehand by Jacobsen or (3) that has had placed upon or attached to it any part or product not sold or approved by Jacobsen or (4) that has been damaged or improperly used, or not used in conformity with the applicable Jacobsen Owner's Manual for that product or (5) that has not been properly adjusted, lubricated or maintained by the user.

This guaranty is in lieu of and excludes all other guaranties and conditions of merchantability and fitness for purpose. Acceptance of a Jacobsen product constitutes an agreement that Jacobsen shall have no liability for any special or consequential damages.



JACOBSEN MANUFACTURING COMPANY
A Member Company of Allegheny Ludlum Industries
RACINE, WISCONSIN 53403

