case

220, 222, 442 and 444 Tractor Operators Manual

Win. Form No. 9-2861

TO THE PURCHASER OF A CASE TRACTOR

The care you give your new Case Tractor will greatly determine the satisfaction and service life you will obtain from it. Use this manual as your guide. By observing the instructions and suggestions in this manual, your Case Tractor will serve you well for many years.

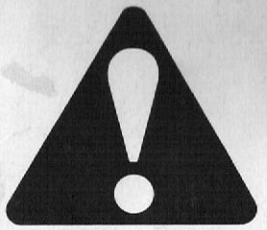
As an Authorized Case Dealer, we stock Genuine Case Parts, which are manufactured with the same precision and skill as the original equipment. Our factory trained staff is kept well informed on the best methods of servicing Case equipment and is ready and able to help you.

Should you require additional aid or information, contact us.

Your Authorized Case Dealer

NOTE

THIS MANUAL APPLIES TO TRACTORS SERIAL NUMBER 9646801 AND AFTER.



LOOK FOR THIS SYMBOL

TO POINT OUT IMPORTANT

SAFETY PRECAUTIONS

To insure efficient and prompt service, please furnish us with the Model, Serial, Engine Model Number and Engine Specification Number of your Tractor in all correspondence or contacts.

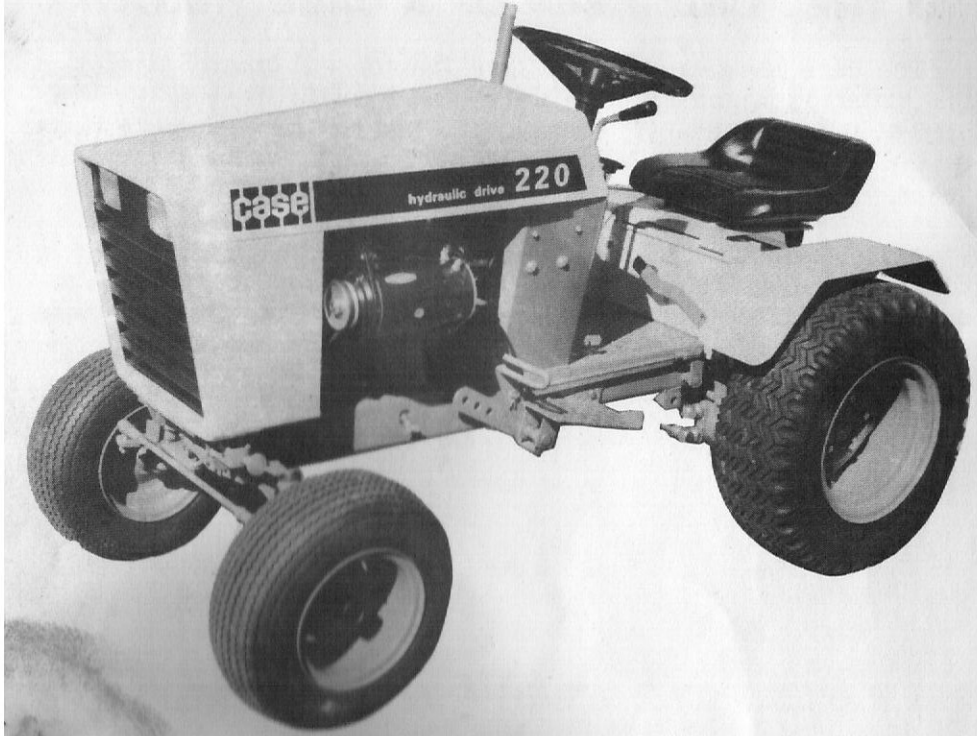


Figure 1. Left Hand View of Case 220 Compact Tractor

Figure 2. Right Hand View of Case 222 Compact Tractor
(Illustrated with Optional Hydraulic Lift)

Figure 3. Right Hand View of Case 222 Compact Tractor
(Illustrated with Optional Hydraulic Lift)

Figure 4. Left Hand View of Case 442 Compact Tractor

Figure 5. Right Hand View of Case 444 Compact Tractor
(Illustrated with Optional Wheel Weights)

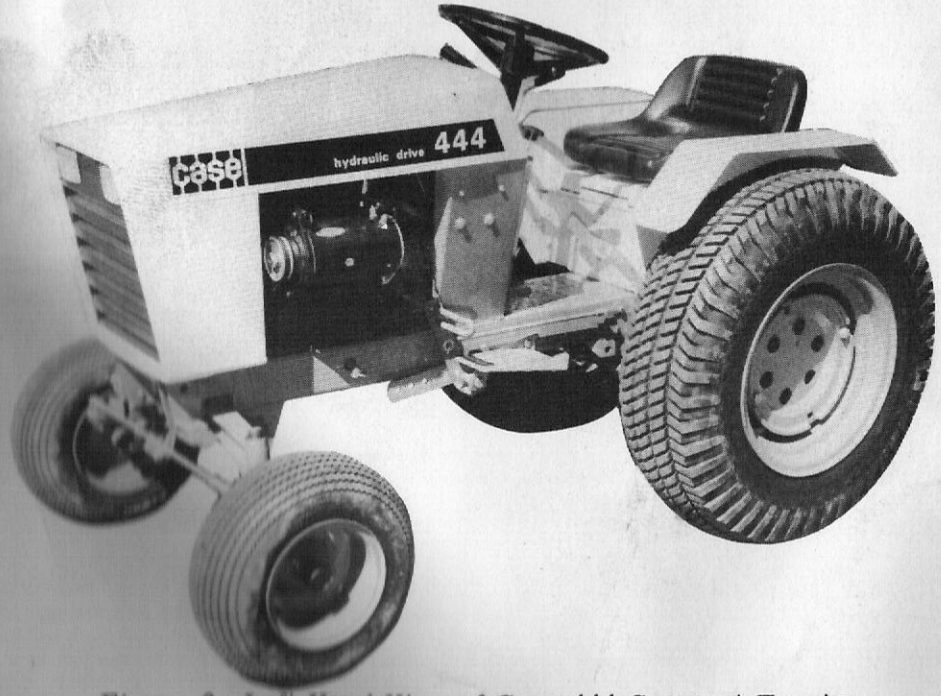


Figure 6. Left Hand View of Case 444 Compact Tractor
(Illustrated with Optional Wheel Weights)

SERIAL NUMBER

When ordering parts from your Authorized Case Dealer and in all contacts or correspondence with your dealer relative to the tractor always specify the Serial, Model and Engine Numbers of your tractor.

The Tractor Model and Serial Numbers are stamped on the number plate located on the instrument panel, Figure 7. The Engine, Model, Serial and Engine Specification Numbers are stamped on a plate fastened to the right or upper front side of the engine, Figure 8.

TRACTOR MODEL
AND SERIAL NUMBER

Figure 7.

ENGINE MODEL, SERIAL AND
SPECIFICATION NUMBER

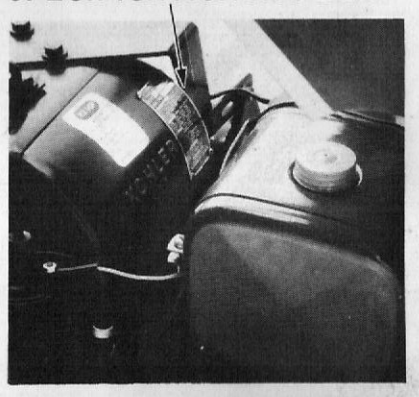


Figure 8.

NOTE

The terms "Right Hand" and "Left Hand" whenever used in this manual apply to the tractor when facing in the direction the tractor will move in forward operation.

For reference, fill in the Serial Number, Model Number and Engine Numbers of your tractor in the spaces provided below.

Tractor Model Number 444-79

Tractor Serial Number 9766014

Engine Model Number K321AS

Engine Serial Number 9569884

Engine Specification Number 4752284

Beniots
877-2813

SPECIFICATIONS

General

	220	222 AND 442	444
Type	Kohler	Kohler	Kohler
Model	K241A	K301A	K321A
Cycle	4	4	4
Cylinders	1	1	1
Cylinder Bore	3-1/4 in.	3-3/8 in.	3-1/2 in.
Stroke	2-7/8 in.	3-1/4 in.	3-1/4 in.
Piston Displacement	23.9 cu. in.	29.07 cu. in.	31.27 cu. in.
Horsepower	10 HP	12 HP	14 HP
Compression Ratio	6 to 1	6 to 1	6 to 1
Full Load Speed	3500 RPM	3500 RPM	3500 RPM
No Load Speed	3600 RPM	3600 RPM	3600 RPM
Idle Speed	1000 RPM	1000 RPM	1000 RPM
Valve Clearance Cold (Intake)	.010 in.	.010 in.	.010 in.
Valve Clearance Cold (Exhaust)	.020 in.	.020 in.	.020 in.

Piston and Connecting Rod

Piston	Aluminum
Compression Rings	2
Oil Rings	1
Connecting Rod	Aluminum

Fuel System

Carburetor	1" SAE Flange
Filter Screen	In tank outlet fitting
Fuel Tank Capacity	3 Gallons

Ignition System

Breaker Point Gap	.020 in.
Ignition Timing	SP Mark
Spark Plug	Prestolite 14 L7 or equivalent
Thread	14MM
Gap	.025"

Cooling System

Blower	Forced air with baffles directing air around finned cylinder and head area

Hydraulic System

Independent 5 quart reservoir, pump, control valve, hydraulic motor and heat exchanger. Pump delivers approximately 8 gallons per minute at 3600 RPM. Maximum operating pressure (relief valve) setting: 2000 psi.

Electrical System

Type of System	12 Volt, Negative Ground
Battery	Case, 24 Ampere Hour at 20 Hour Rate
Headlights	12 Volt
Starter-Generator	12 Volt

Brake

Type	Mechanical Contracting Band, with the drum shaft driven from transmission differential. Includes parking lock.

Transaxle

Type	Hydraulic Driven, Dual Gear Range
Differential	Automotive Type Bevel Gear
Oil Capacity	3 Quarts

SPEED RANGE		FORWARD	REVERSE
220 AND 222	Low	0 to 3.0 MPH	0 to 3.0 MPH
	High	0 to 7.3 MPH	0 to 7.3 MPH
442 AND 444	Low	0 to 3.2 MPH	0 to 3.2 MPH
	High	0 to 7.7 MPH	0 to 7.7 MPH

WHEELS AND TIRES

Tire Size	PLY	Type	PSI	
		FRONT	Recommended	Max.
6.50-8	2	High Flotation	8	14
		REAR		
8.50-12	2	High Flotation	8	10
8.00-16	2	High Flotation	8	14

verall Measurements

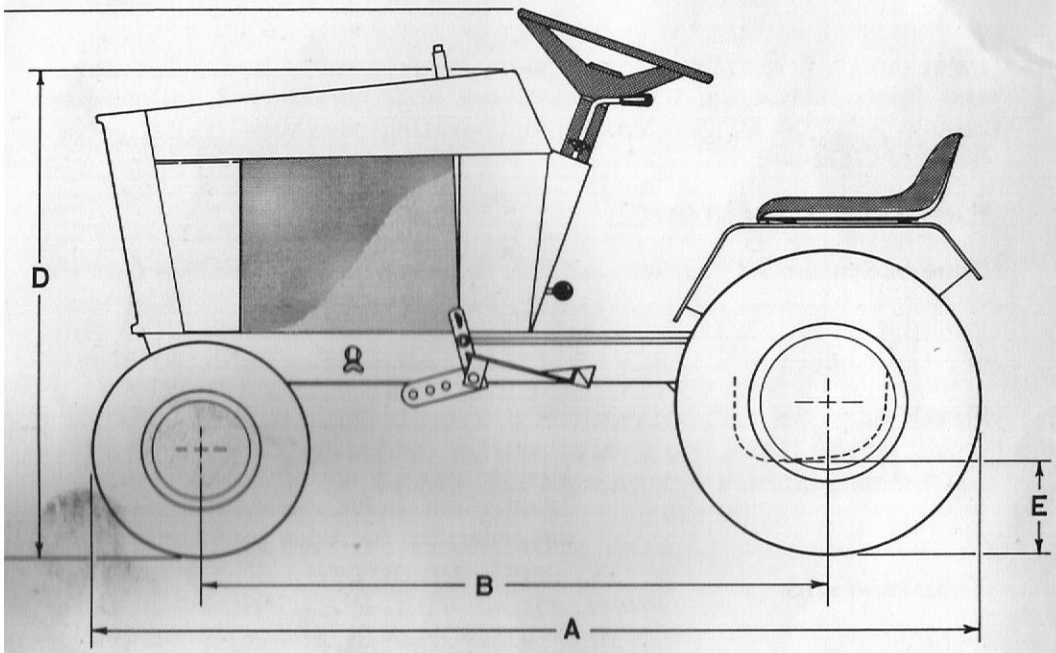


Figure 9.

		220 & 222	442 & 444
A	Overall Length	65"	70"
B	Wheel Base	46"	46"
C	Overall Height	40"	43-1/2"
D	Hood Height - Rear	35-1/2"	38-1/2"
E	Minimum Ground Clearance at Gear Case	7-1/8"	11"
	Rear Wheel Tread	27-3/4"	31-1/2"
	Front Wheel Tread	28-3/4"	33-1/2"
	Overall Width	37"	41"
	Shipping Weight	715 lbs.	770 lbs.

fuel specifications

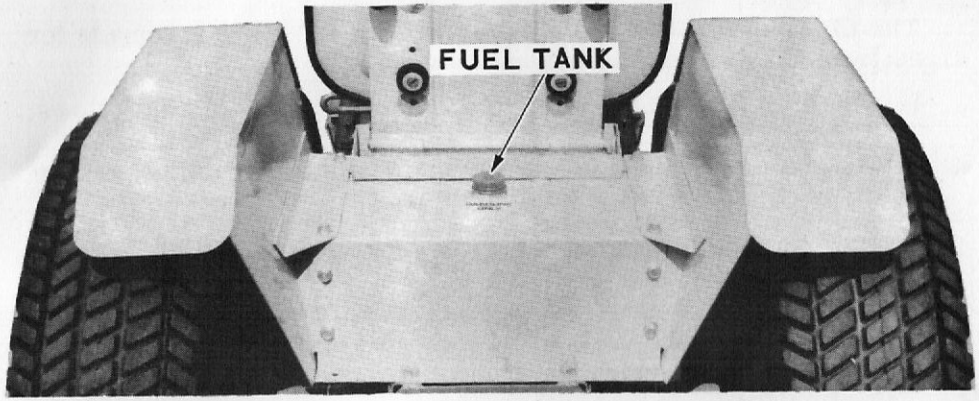


Figure 10.

NEVER FILL THE FUEL TANK WHEN THE ENGINE IS RUNNING OR WHEN NEAR AN OPEN FLAME. DO NOT SMOKE WHEN WORKING NEAR INFLAMMABLE FUELS.

FOR ADDED SAFETY THE FUEL TANK IS LOCATED UNDER THE HINGED SEAT AWAY FROM THE ELECTRICAL AND ENGINE COMPONENTS. SEE FIGURE 10.

GASOLINE

Kohler Gasoline Engines are designed to operate on REGULAR GRADE gasoline having a minimum research method rating of 90.7 Octane. This will give full power and economy together with long engine life and low maintenance cost.

The average Octane number ratings for regular grade gasoline (March 1967).

Motor Method ---------- 86.2 Octane Number
Research Method---------- 94.2 Octane Number

These two Octane ratings are used to define the anti-knock quality of gasoline. It has become common practice in the Petroleum Industry to refer only to the RESEARCH METHOD RATING.

When only one Octane rating is given for gasoline and the rating method is not specified, it can be assumed to be the Research Method Rating.

FUEL CONDITIONER

The following "Fuel Conditioner" recommendations are made for areas troubled with gum and varnish in the fuel:

1. Obtain a "Case Lubra-Gas Conditioner" and use it as follows:

   A. Add it to the fuel in the main storage container in proportions specified on the label.

   B. Add a small quantity to the tractor fuel tank daily.

   C. Use the "Conditioner" periodically, or when any symptoms develop in the engine that indicate gum and varnish deposits in the Fuel System.

NOTE

Refer to the instructions furnished with the "Conditioner" as to the amount that should be used.

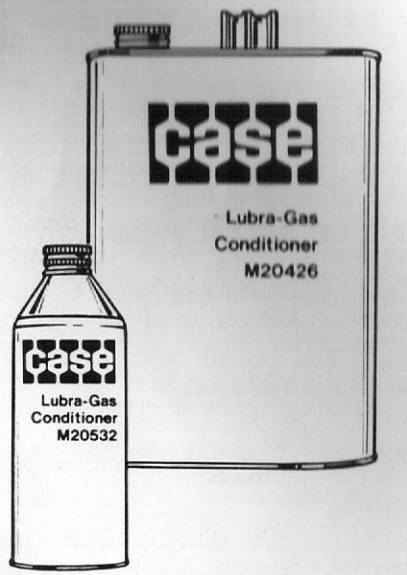


Figure 11.

IMPORTANT

1. Buy Fuel in quantities that will be used up in 90 days or less.

2. Keep the main storage container sheltered so the fuel can be kept as cool as possible.

SAFETY PRECAUTIONS

1. BECOME THOROUGHLY FAMILIAR WITH ALL TRACTOR AND ATTACHMENT CONTROLS BEFORE OPERATING.
2. Before starting the engine, be sure all operating controls are in NEUTRAL. The "Safety Start" device prevents tractor from starting unless Speed Control Lever is in NEUTRAL.
3. Never operate any of the controls from any position but seated in the operator's seat.
4. Be extra careful when going down steep grades.
5. Drive at a speed slow enough to insure safety and complete control, especially over rough terrain or steep grades.
6. Reduce ground speed when making a turn, going down hill or applying the brake.
7. Always operate the tractor in low range whenever on hills or steep inclines.
8. Never leave the tractor parked unattended on hills or steep inclines.
9. Change speed and direction of tractor with a smooth and gradual movement of the speed control arm. Avoid abrupt changes in speed or direction and avoid spinning wheels.
10. Never leave the engine running while it is unattended.
11. Never dismount from a tractor when it is in motion.
12. Never permit persons other than the operator to ride on the tractor.
13. Never stand between a tractor and machine when hitching unless the Speed Control Lever is in NEUTRAL and the brake is engaged and locked.
14. DO NOT OIL, GREASE OR ADJUST A TRACTOR WHEN THE ENGINE IS RUNNING.
15. Never refuel a tractor when the engine is running.
16. Do not smoke when refueling.
17. Never operate a tractor in a closed shed or garage.
18. Do not wear loose fitting clothing which may catch in the moving parts.
19. To prevent highway accidents, use red warning flags in the daytime and red warning lamps at night.
20. Always have PTO lever disengaged and the brake pedal depressed and locked when parking or starting the tractor.
21. REMEMBER, A CAREFUL OPERATOR IS ALWAYS THE BEST INSURANCE AGAINST AN ACCIDENT.

lubrication

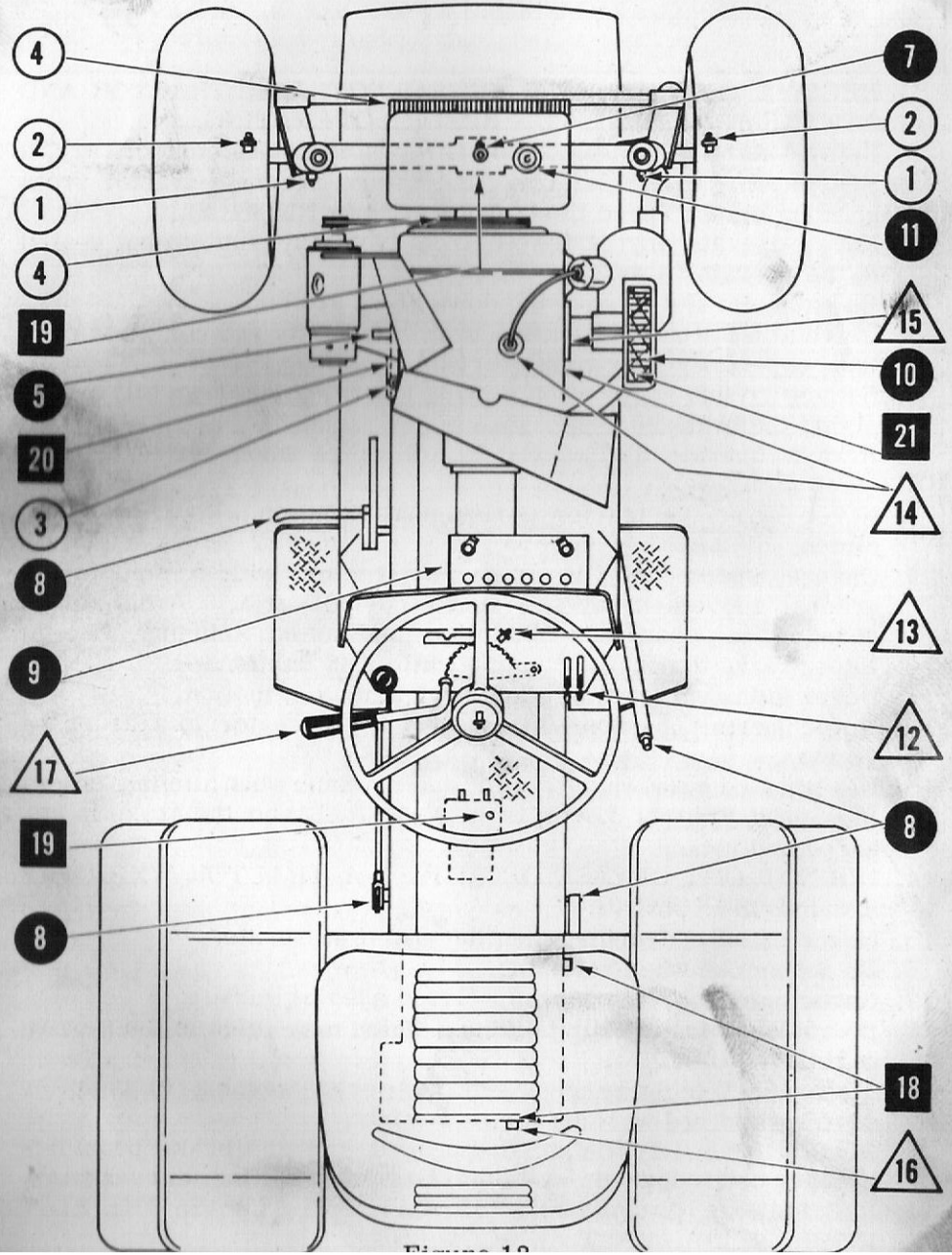


Figure 12

REF. NO.	SERVICE POINTS	NO. OF POINTS	GREASE	DRAIN	CHECK	CLEAN	CHANGE	OIL (Few Drops)	FREQUENCY
1	Front Spindles (king pins)	2	▒						5 HOURS OR DAILY
2	Front Wheel Bearings	2	▒						
3	Engine Oil *	1			▒				
4	Blower Air Intake Screen	1			▒	▒			
5	Engine Oil +	2		▒			▒		25 HOURS OR WEEKLY
6	Air Leaks **	**							
7	Front Axle Pivot Pin	1	▒						
8	Implement Lever and Brake Linkage	6						▒	
9	Battery	1			▒				
10	Air Cleaner ***	1			▒	▒			
11	Hydraulic Oil +	2			▒				
12	Throttle and Choke Controls	2						▒	50 HOURS OR MONTHLY
13	Steering Gear	3	▒						
14	Spark Plug °	1			▒				
15	Crankcase Breather ***	1				▒		▒	
16	Transmission Oil +	1			▒				
17	Travel and Lift Lever and Linkage	3						▒	
18	Transmission Oil +	2		▒			▒		500 HOURS OR YEARLY
19	Hydraulic Oil +	1		▒			▒		
20	Engine Cooling Fins ***	1				▒			
21	Air Cleaner Element ***	1					▒		

*Keep oil level between marks on dipstick (capacity 3 pts.). See page 12 for engine lubrication recommendations.

**Be sure there are no leaks between gaskets, joints at carburetor, air cleaner and cylinder block.

***More often in dusty conditions.

°Clean and regap.

+Hydraulic System: Use SAE 5W-20 Motor Oil in winter (below 32° F.) and SAE 20W-40 Motor Oil in summer. Use only oil which is rated at API engine service classification SC or CC. Prior service classifications for these oils were "MS" or "DM". Use SAE 20W-40 Motor Oil or SAE No. 80 EP Gear Lube in transmission the year around.

The hydraulic system reservoir is located under the hood ahead of the engine. Maintain oil level between two and three inches from the top of the filler opening. The drain plug is located on the bottom side of the travel valve.

Use number 1 gun grease (Lithium Base) for all pressure fittings (as many strokes as required).

ENGINE LUBRICATION

Selection of Lubricating Oil

It is extremely important that you select and use in your Case Tractor Engine a detergent type, high quality, SAE-MS or DM Service Classification Oil that has passed Automotive Manufacturers Association (AMA) Test Sequences I, II, and III.

Engine Oil SAE Viscosity Rating

SAE 30 or 20W-40---------- Air Temperatures 30° F and Above

SAE 10W-30---------- Air Temperatures 0° F to 30° F

SAE 5W-20 ---------- Air Temperatures 0° F or Below

REGULAR OIL CHANGE

Drain and refill the crankcase at least every 25 hours of operation.

If possible, run engine just prior to changing oil--the oil will flow more freely and carry away a greater amount of contaminant when hot.

If the engine service is severe-(frequent stopping and starting, high or low operating temperature)-the crankcase should be drained more often to prevent the formation of sludge or harmful deposits in the engine.

CRANKCASE OIL CHANGE

IMPORTANT

1. When the crankcase is drained, refill with 3 measured pints of oil.

2. Operate the engine for a few minutes; then check the oil level with the dipstick.

   Be sure to allow sufficient time for the oil to run down off the engine parts.

3. By following the above procedure, you will prevent overfilling or underfilling the crankcase, either of which can be detrimental to the engine service life and will give you false oil consumption records.

RUN-IN PROCEDURE

Your new tractor should be subjected to a run-in period before it is operated at full load. Drive the tractor for approximately an hour to get the feel of operation. Actuate the travel control through its full range during the run-in period.

PRE-STARTING CHECK LIST

Before starting your new Case Tractor for the first time and before each operating period thereafter, check the following.

1. MAKE SURE EVERYONE RESPONSIBLE FOR THE TRACTOR'S OPERATION AND MAINTENANCE UNDERSTANDS THE IMPORTANCE OF CLEAN FUEL, OILS, CONTAINERS AND FUNNELS.

2. Check that all lubricating fittings are serviced as directed in the Lubrication Chart.

3. Check engine and hydraulic reservoir oil levels and add as necessary.

4. Be sure that air cleaner, heat exchanger fins, and blower air intake screen on engine are free of obstructions and excessive dirt.

5. Check that tractor fuel tank is filled with clean fuel that meets requirements listed under Fuel Specifications. Always wipe fuel tank cap clean before removing it. Be sure vent hole in fuel tank cap is open.

6. This tractor is equipped with a "safety start" feature. The Travel Lever must be in NEUTRAL to start the engine.

OPERATING CONTROLS AND INSTRUMENTS

CAUTION: PLACE SPEED CONTROL IN NEUTRAL WHEN STARTING ENGINE - PLACE TRANSMISSION IN LOW RANGE WHEN OPERATING ON INCLINES

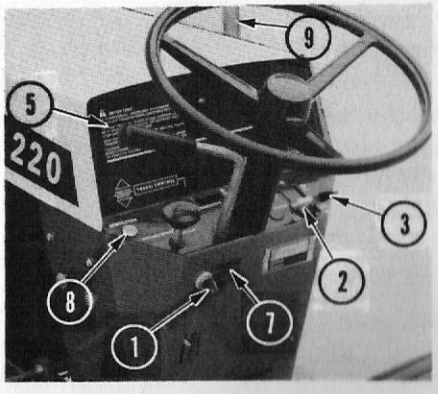


Figure 13.

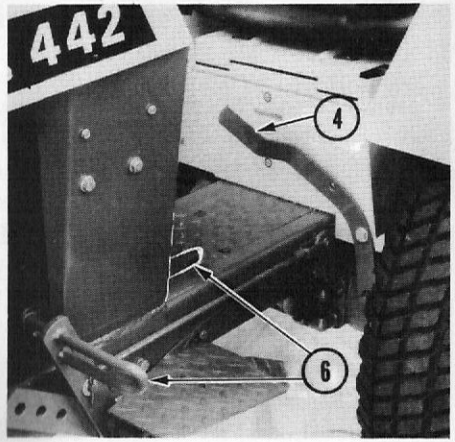


Figure 14.

1. IGNITION KEY AND STARTER SWITCH - Turn the key to the right (Start) position to start the engine. When shutting the engine off, turn the key to the full "Off" (upright position).

   DO NOT START THE ENGINE WITH THE PTO ENGAGED.

2. CHOKE - To start a cold engine, push choke lever forward. Pull lever rearward when engine is started.

3. THROTTLE - When the throttle lever is all the way rearward, the engine should be idling. To increase the engine RPM, push the lever forward until the desired throttle setting is obtained. As a general rule, set the throttle as low as possible to obtain maximum fuel economy but high enough to prevent engine lug-down or labor which will cause overheating.

4. HIGH - LOW RANGE SHIFT LEVER - When shifting into Low or High Range, make certain the lever is located past the neutral locking pin. Likewise, when shifting to neutral, the lever must be locked to the pin. Gear damage can result if the tractor is operated while the shift lever is not fully engaged beyond the locking pin.

5. TRAVEL "CUSHION" CONTROL LEVER - This single lever provides effortless and smooth "finger-tip Cushion Control" of speed and travel direction. Move the lever forward as desired to obtain either full speed ahead or to "creep" through heavy grass or deep snow. For reverse, simply move the lever rearward. Full engine power is always available to the attachment regardless of the tractor travel speed.

NOTE The tractor is equipped with "Safety-Start" and cannot be started unless the Travel Control Lever is in the NEUTRAL position.

CAUTION The Speed Control Lever automatically returns to neutral when the brake is applied.

An exclusive brake "over-ride" feature permits the speed control lever to be moved into forward or reverse after braking and while your foot is still on the brake. Slowly release the brake pedal when power is obtained at the rear wheels.

6. BRAKING AND PARKING - The travel control level (Ref. 5) can also be used as a brake by returning it to the neutral position. On a level surface the tractor will come to a normal stop by returning the Travel Control Lever to neutral. If on a hill or if a fast stop is necessary, depress the brake pedal. When getting off the tractor, always depress and lock the brake to prevent tractor movement.

Operate the tractor in low range on hills or inclines. Do not leave tractor parked unattended on hills unless the wheels are adequately blocked. Always lock the brake and turn off the engine when parking and leaving the tractor.

NOTE The travel control lever can be used in lieu of the brake pedal to control the tractor ground speed on hillside operation. Remember, however, that if the brake is applied the speed control lever will be automatically returned to neutral. Again, keep in mind that the travel lever can be moved into forward or reverse while your foot is still on the brake.

7. HEADLIGHTS - The headlights are turned on when the ignition key is turned to the "Light" position after the engine is started. Do not operate the headlights unless the engine is running and the Generator Warning Light is off.

8. GENERATOR WARNING LIGHT - The Warning Light goes on when the key switch is turned on and should go off when the engine starts. If the warning light does not go off when the engine is running, it is an indication that the battery is discharging and the generator is not supplying current. STOP THE ENGINE AND CHECK FOR THE CAUSE.

NOTE If the Warning Light flickers when the engine is at low idle, the battery generator or regulator may not necessarily require servicing. However, if the Warning Light remains on when engine speed is increased, stop the engine im-

9. ATTACHMENT LIFT LEVER

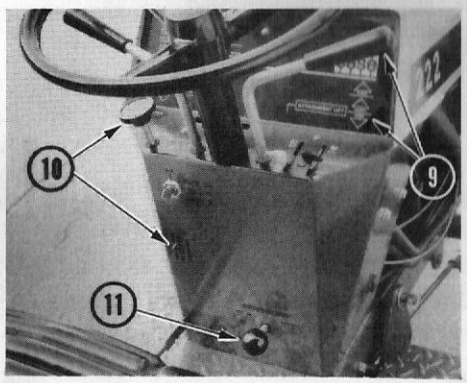
MECHANICAL - Pull this lever to the rear until the catch engages to raise the attachment into transport position. Depress the button at the top of the lever to release and lower the attachment to operating position. A slight pulling pressure on the lever will permit the release button to be more easily depressed. The desired operating position of the attachment is set with the "Depth Control" knob covered in paragraph 10 below.

HYDRAULIC LIFT (Optional, except on Model 444) - The hydraulic lift lever has three operating positions. Pull the lever to the rear to raise the attachment into transport position. Push the lever ahead to operating position or to apply "down pressure" moving the lever further ahead will keep the lever in a "hold" position allowing the attachment to "float". The "float" position is recommended for snow removal and tilling operations. "Down-pressure" can be used to advantage for dozing and ground leveling operations.

NOTE Refer to instructions furnished with each attachment for specific information covering lift lever operation and depth control settings.

10. ATTACHMENT "DOWN STOP" (DEPTH) CONTROL and INDICATOR - A decal lettered "A" through "F" is located next to the depth indicator. When the indicator is turned up to the letter "F", the attachment is set at its lowest or deepest operating position and when at the letter "A" it is at the highest or most shallow setting. The use of the height and depth control adjustments are covered in detail in the individual attachment instructions.

11. ATTACHMENT DRIVE LEVER - Pull out on the attachment drive lever to engage the attachment drive. To disengage the drive, simply push it back in. Be sure this lever is in the off position when parking or starting the tractor.



STARTING PROCEDURE

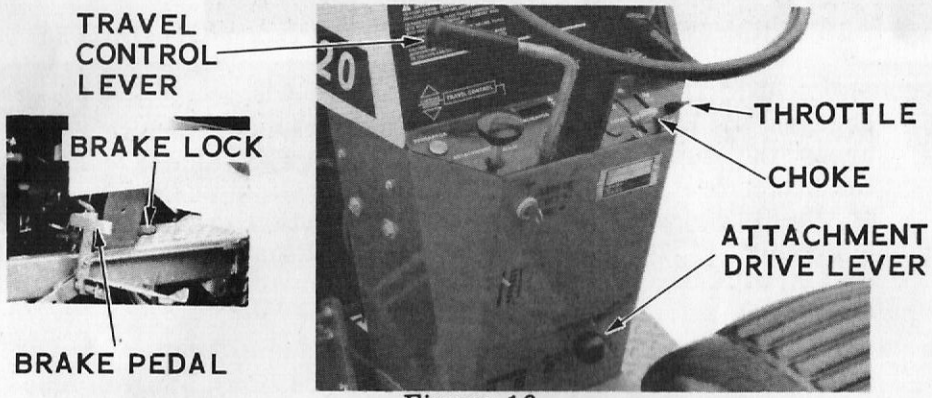


Figure 16.

1. Place the travel control lever in the NEUTRAL position. The "Safety-Start" feature prevents the engine from starting unless the travel control lever is in neutral.
2. Push the attachment drive lever to the IN position.
3. Engage and lock the brake pedal.
4. Close the choke by pushing the control lever forward. More or less choking may be necessary due to variations in temperature, grade of fuel, etc. Little or no choking will be needed when engine is warm. In cold weather, it is advisable to position the throttle lever about one-third open.
5. Turn the starter key all the way to the right to start engine.

CAUTION DO NOT USE THE STARTER LONGER THAN 30 SECONDS WITHOUT INTERRUPTION. WAIT AT LEAST 3 MINUTES SO THE STARTER CAN COOL DOWN BETWEEN PERIODS OF USEAGE.

6. After the engine starts and runs, pull the choke control lever all the way rearward. Always allow engine to warm up before applying a load. Release the brake pedal slowly after engine starts.

NOTE Under normal operating conditions it is recommended the throttle be set approximately 3/4 open. If operating under light load, the throttle can be set 1/2 open or less. For maximum economy, operate at a throttle setting which will perform the job without lugging or laboring and subsequent overheating of the engine.

STOPPING THE ENGINE

1. An engine that has been working under load should idle for a few minutes so the engine parts can cool evenly before it is shut off.
2. Turn starter key to "OFF" or upright position.

preventive maintenance

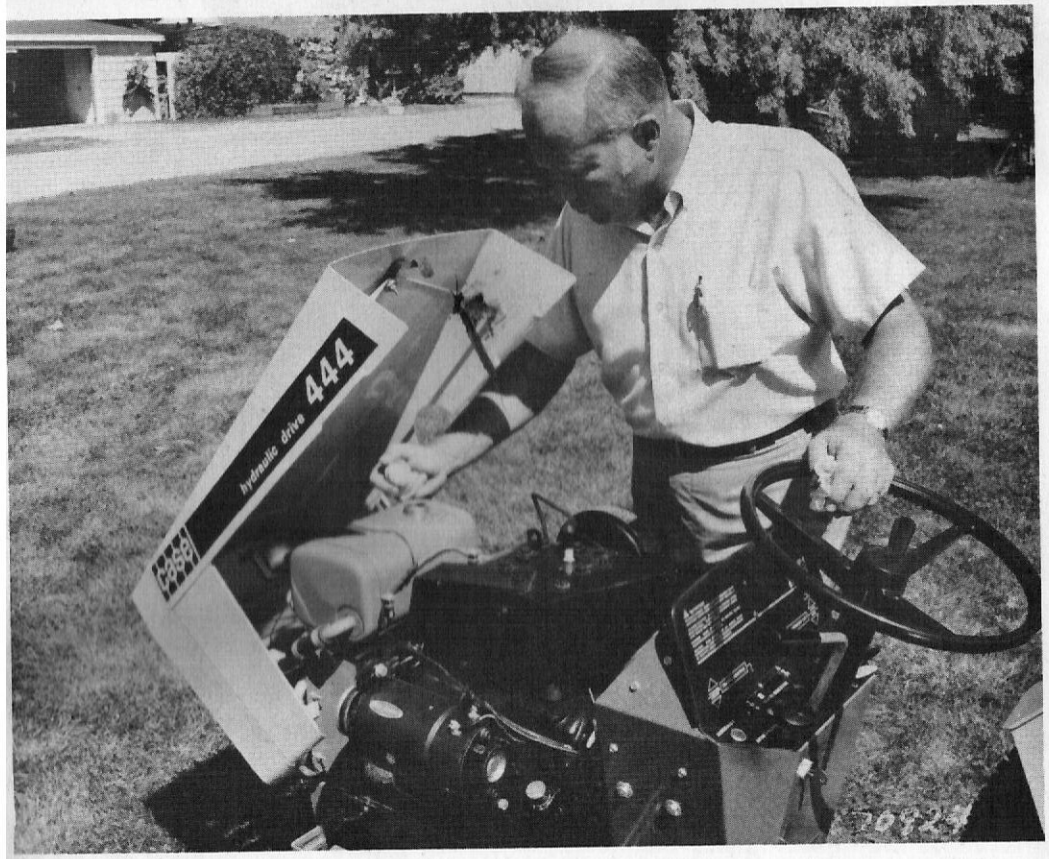


Figure 17.

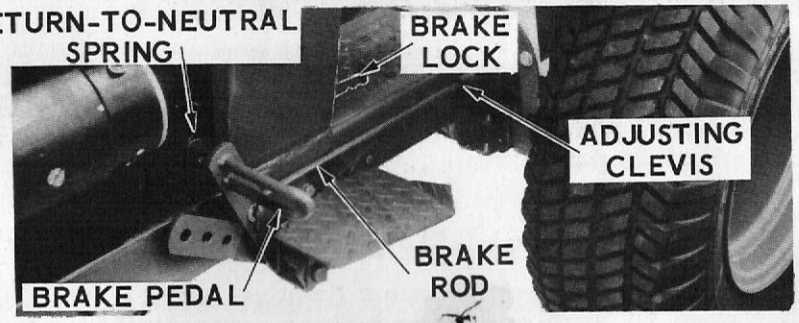
PREVENTIVE MAINTENANCE IS IMPORTANT TO YOU!

AS THE OWNER OF A CASE TRACTOR, YOU POSSESS A MACHINE THAT IS MADE TO THE HIGHEST STANDARDS POSSIBLE.

PREVENTIVE MAINTENANCE BY YOU OR YOUR OPERATOR IS THE EASIEST AND MOST ECONOMICAL MEANS OF ASSURING MANY SATISFACTORY PRODUCTIVE HOURS OF OPERATION.

The preceding sections of this operator's manual have dealt with instructions necessary for daily operation of your Tractor. The following subjects present detailed instructions concerning the care and adjustment of the Tractor.

BRAKE ADJUSTMENT



Figure

The brake is properly adjusted when depressing the pedal brings the tractor to a prompt stop and when there is sufficient pedal travel to allow the spring to return the speed control lever from both the forward and reverse travel positions.

Turn the "adjusting clevis" further on the brake rod to decrease pedal travel. To increase pedal travel, turn the "adjusting clevis" further off the brake rod. Be careful not to overadjust the clevis in either direction since if the pedal travel is too limited the speed control lever will not return to neutral. Excessive pedal travel will also cause the brakes to be less effective.

Adjust the clevis on the "brake rod" to obtain the proper amount of pedal travel. Replace the brake band before the lining becomes worn through at any area to prevent damaging the drum.

AIR CLEANER

Remove and clean element after each 25 hours or weekly. Install new element every 500 hours or yearly or when loss of power is noticeable.

To clean the element, remove the wing nut, washer, cleaner cover and remove the element. Tap element lightly on a flat surface to cause the loose dirt to fall off. Handle the paper element with care to avoid damage to element.

Do not wash, use compressed air or solvent to clean element.

Replace the element with a new one if dirt does not drop off easily or if it is bent, crushed or damaged. When replacing the element, be sure it fits snugly around the inside edge of the air cleaner base. Then replace the cover, washer and tighten the wing nut finger tight.

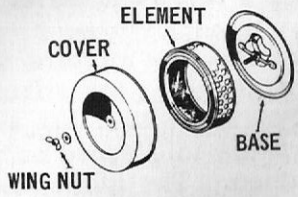


Figure 19.

CARBURETOR

The carburetor has three simple adjustments:

1. High Speed Mixture Adjustment
2. Idle Mixture Adjustment
3. Idle Speed Adjustment

High Speed Adjustment

With engine running and throttle fully open, adjust the high speed screw, Figure 20, by turning the adjusting screw clockwise (in) until the engine misfires or falls off; then turn the adjusting screw counterclockwise (out) until the engine runs smoothly, approximately two turns.

Place the tractor under load and observe how the engine handles the load. Loss of power, tendency to stall, or excessive backfiring all indicate a lean mixture. Turn adjusting screw counterclockwise not more than 1/8 of a turn and again try the engine performance. When the high speed screw is correctly adjusted, it will not be necessary to reset the carburetor unless load conditions or fuel quality have been radically changed.

Operating an engine on too lean a mixture causes loss of power and high exhaust heat.

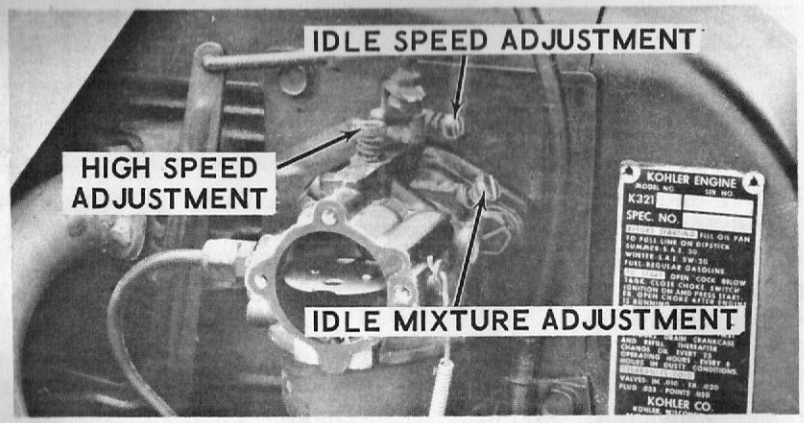


Figure 20.

Idling Speed and Idling Mixture Adjustment

Turn the idle mixture screw, Figure 20, counterclockwise approximately 1-1/4 turns from the closed position. Place the throttle in 1/2 open position and start engine. With the throttle all the way up, turn the idle speed adjusting screw, Figure 20, until 1000 RPM is obtained. The idle mixture screw can be adjusted in or out until the engine runs smoothly while maintaining 1000 RPM with the idle speed adjusting screw.

Spark Plug

The type spark plug provided in your engine is listed as medium in the spark plug heat range chart - Prestolite 14 L7 or equivalent.

Shank Length	7/16"
Thread Size	14 MM
Gap Setting	.025 Inch

NOTE

It is possible that under unusual conditions, "colder" type spark plug may be required. Consult your Authorized Case Dealer regarding the proper type spark plug to use for your particular condition.

The spark plug plays a very important part in the power, fuel economy and general performance of your engine. The outside of the plug should be cleaned frequently to prevent shorting of the plug.

The spark plug should be removed, checked, cleaned and gapped at the end of every 100 hours of operation.

Removing

It is important to select the exact size spark plug wrench. The wrong size or type wrench may cause distortion and insulator breakage. Always use a spark plug wrench or a thin wall deep socket wrench of the recommended size.

Thoroughly clean the spark plug, including the threads. Check the electrode gaps using a .025 inch gauge. A very slight drag should be felt when the gauge wire passes between the electrodes.

Reset the gaps by bending the side electrode only. Never bend the center electrode.

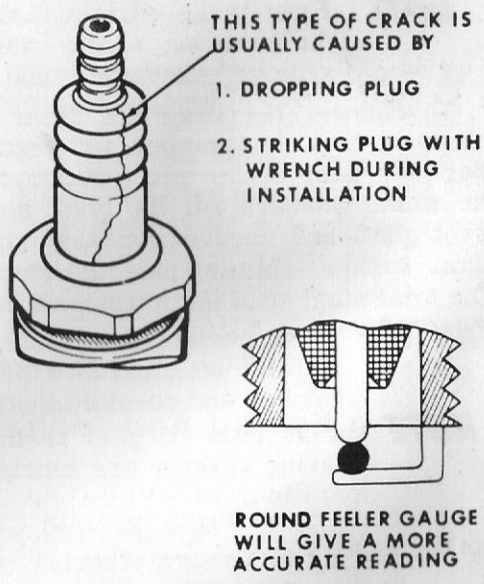


Figure 21.

Installing

Install the spark plug, with a new gasket, in the engine and seat the plug on the gasket, finger tight. Tighten the plug about 3/4 of a turn after the plug is seated firmly on its gasket. If a torque wrench is available, tighten the plug to 27 foot-pounds. This will assure proper seating and sealing of the spark plug.

Steering Adjustment

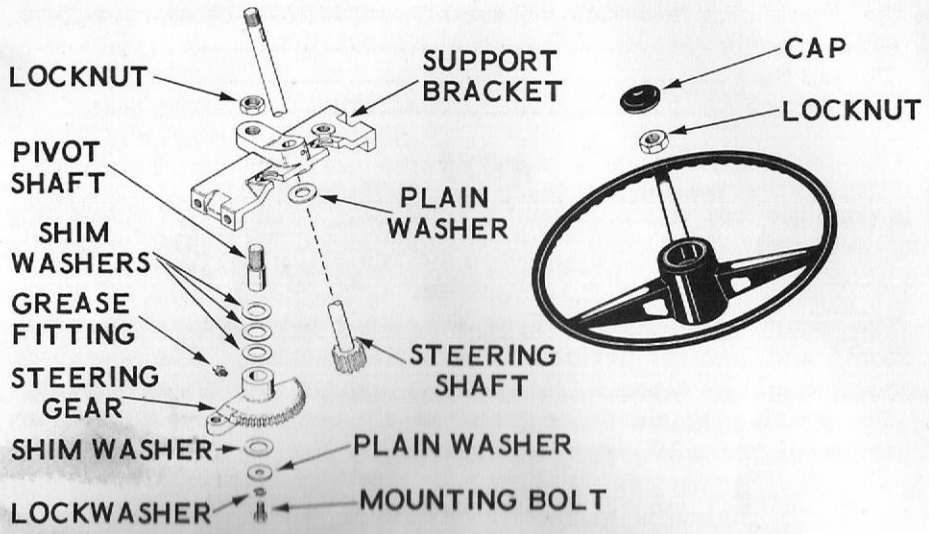


Figure 22.

The tractor is designed with two or more shim washers between the steering gear and support bracket as illustrated in Figure 22. As the gear teeth wear in, additional steering wheel free play may occur. If the free play becomes excessive, one (more if necessary) of the shims can be relocated to the bottom side of the steering gear.

NOTE First make certain there is not excessive end play on the steering shaft. Tighten steering wheel locknut to remove excessive end play without causing binding.

Disconnect the drag link from the steering gear. Remove the mounting bolt, lockwasher and plain washer (shims also if present) from the base of the pivot shaft. Slip the steering gear and one of the shim washers off the pivot shaft. Place the gear back on the pivot shaft and secure with the original mounting bolt, lockwasher, plain washer shim(s) plus the shim removed from the upper side. The total number of shim washers must remain the same.

CAUTION Make certain that some free play remains since a tight fit with no clearance between the two gears may cause binding and possible tooth failure.

NOTE Always coat all gear teeth with grease each time the two steering fittings are lubricated or at least each 50 hours operation.

IMPORTANT Excessive steering wheel free play may not require gear adjustment as covered above. First check to make certain all ball joints on the drag link and tie rods are tight.

Toe-in Adjustment

1. Locate the tractor on a hard level surface preferably concrete. Place front wheels in a straight ahead position.

2. Make sure the front tire pressures are equal.

3. The front tires should show a mold part-line which coincides with the centerline of the tire. If the centerline of the tire is not readily visible then the wheel can be raised off the ground, spun and marked at the approximate centerline location.

4. Measure the distance between the tire center lines or the chalk marks.

THE DISTANCE BETWEEN MEASUREMENT A MUST BE 1/8 TO 3/8-INCH LESS THAN MEASUREMENT B. BOTH MEASUREMENTS - FRONT AND REAR MUST BE TAKEN AT THE SAME HEIGHT ABOVE THE FLOOR.

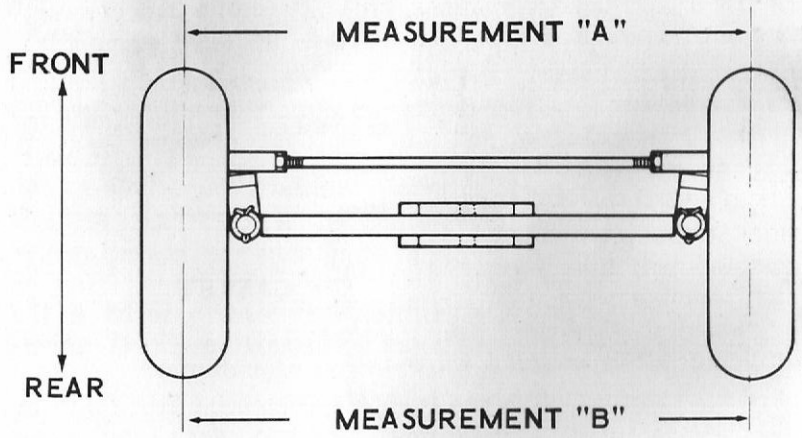


Figure 23.

1. Loosen both tie rod joints.

2. Turn both joints on or off the tie rod an equal amount. Re-tighten the joints when correct toe-in is obtained. Turning the joints on the tie rod increases the toe-in. Turning the joints off the tie rod decreases the toe-in.

ELECTRICAL SYSTEM

Headlights

To install a new Case 12 volt replacement headlight bulb, loosen the Retainer Screws and with the hood raised turn the Retainers off the Receptacle. Carefully lift the Receptacle off the Lens and place between the hood and hydraulic system reservoir on the side opposite from where it was removed.

Remove the old bulb by pushing inward and turning it counterclockwise. Install the new Case bulb and replace the receptacle making certain one gasket is located between the lens and grille and the other is properly seated between the lens and receptacle.

The new bulb will not light unless the receptacle is reinstalled or manually grounded to a metal part on the tractor.

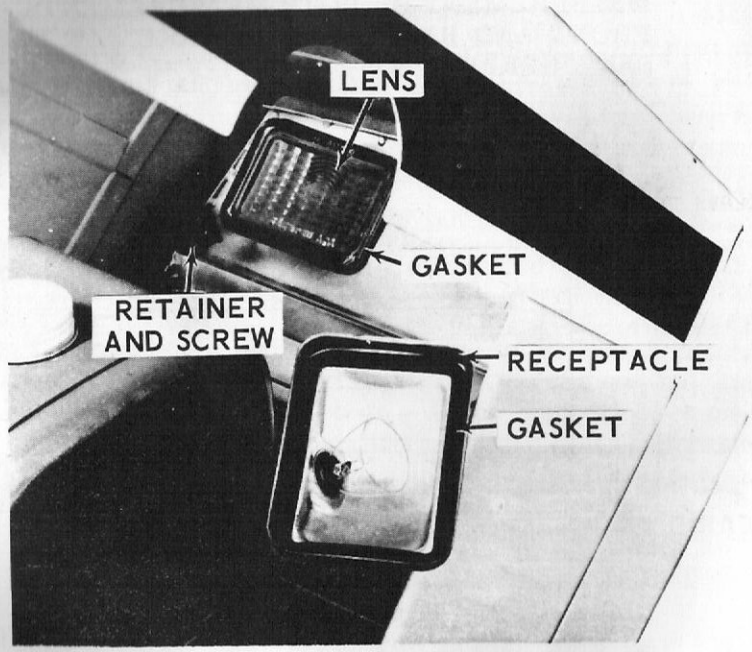
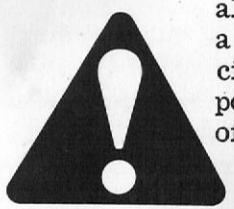


Figure 24.

After installing the new unit, make sure all the connections are tight.

STORAGE BATTERY



When working around a storage battery, remember all of its exposed metal parts are "live". Never lay a metal object across the terminals as spark or short circuit may result. Sparks, lighted matches and exposed flames must be kept away due to the presence of explosive gas in the battery.

The liquid in the battery is acid. Use care not to spill it on hands or clothing.

Rules for Battery Care

1. Add pure or distilled water, as needed, to keep the separators covered. Check every 25 hours or weekly depending on air temperature. Normal water consumption would be approximately 1 ounce every 25 hours of operation. If it is greater, either the case is leaking or the regulator is overcharging and must be adjusted.

2. Keep the battery in a healthy state of charge as shown by hydrometer readings.

3. Make sure the battery is securely fastened in position. Cable leading from the battery should not touch cell connectors or lay on the battery container.

4. Keep the battery clean and dry.

If a battery will not hold a charge, replace it with a new one meeting the specifications as listed in the specification section.

NOTE

The full charge gravity reading will usually be specified on the battery. A battery having a reading of 1.175 will freeze at approximately 0° Fahrenheit temperature.

Adding Water

Unless the tap water in your area is "approved" (water free of scale-forming minerals), always add distilled water to the battery.

When water is added during freezing weather, the battery must receive a charge immediately to mix the water and electrolyte. If it is not mixed, the water will remain at the top and freeze.

Check the liquid level in each cell weekly by removing the vent plugs. Add water before the tops of the separators become exposed. DO NOT OVERFILL.

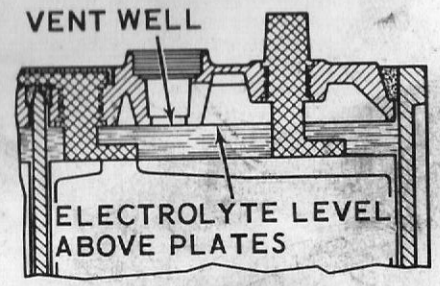


Figure 25.

Vent Plugs

Always keep the vent plugs in place and tight. Be sure the vent holes are free of dirt to prevent gas pressure in cells from breaking the sealing or the container.

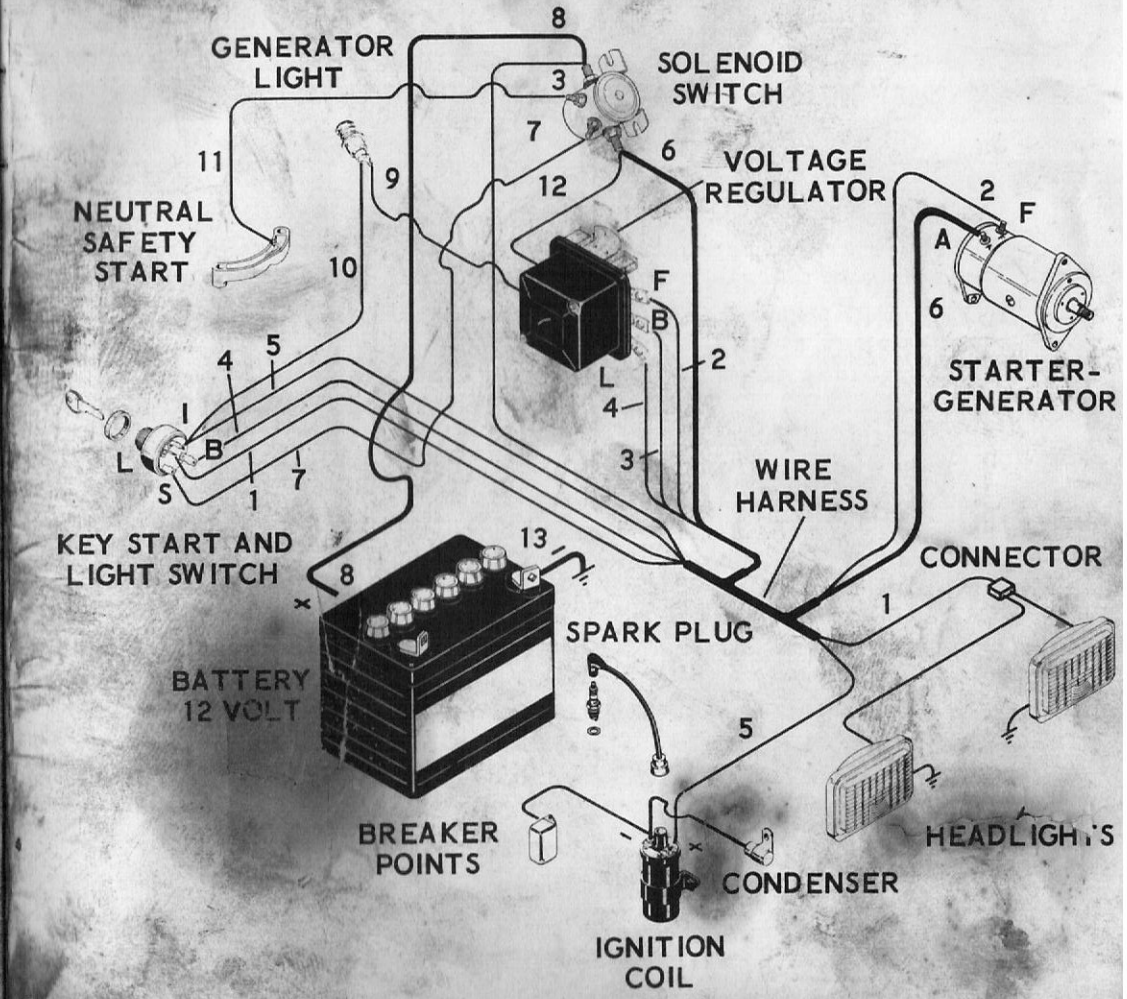
Cable Terminals and Battery Posts

The battery terminals must be kept clean and tight. A good method of cleaning terminals is to remove all excess corrosion with a wire brush, then wash with a weak baking soda solution or ammonia. After cleaning, a thin coating of vaseline or light cup grease will retard further corrosion.

Idle Battery

When the Tractor is not in active use, the battery will require a charge at sufficient intervals to keep the hydrometer reading at or above 1.250. An idle storage battery will slowly discharge.

WIRING DIAGRAM



WIRE COLOR CODE AND ROUTING

1 - PINK
2 - GREEN
3 - ORANGE
4 - RED
5 - BLACK/WHITE
6 - BLACK
7 - YELLOW
8 - RED
9 - WHITE
10 - PURPLE
11 - BLACK
12 - WHITE
13 - BLACK

AVAILABLE ATTACHMENTS

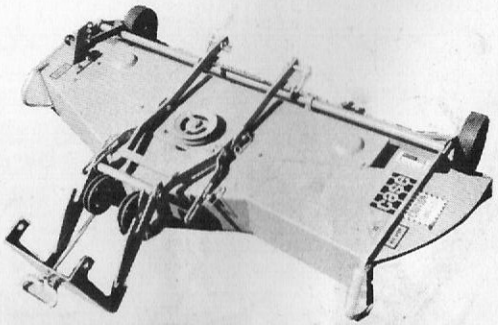
DOZER AND SNOW BLADE
WITH SPRING TRIP

SLEEVE HITCH
(3-POINT HITCH ALSO
AVAILABLE)

HYDRAULIC DRIVE TILLER

SNOWCASTER

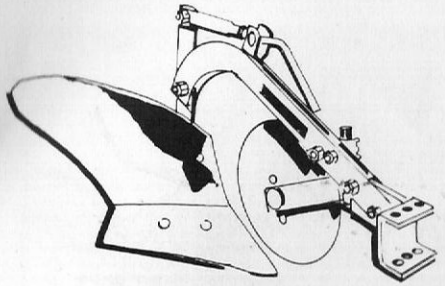
1000 POUND CAPACITY
DUMP CART



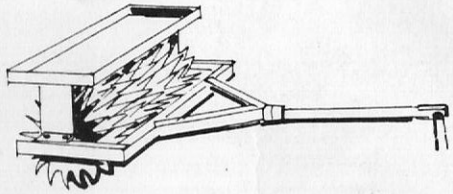
THREE SPINDLE ROTARY MOWER

MANY OTHER USEFUL ATTACHMENTS ARE

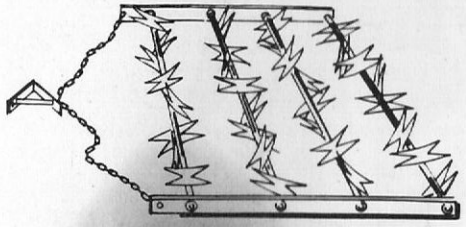
AVAILABLE ATTACHMENTS



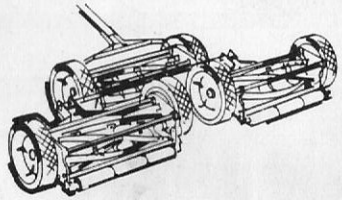
PLOW



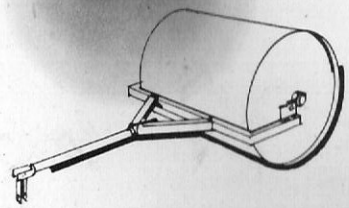
SPIKER AERATOR



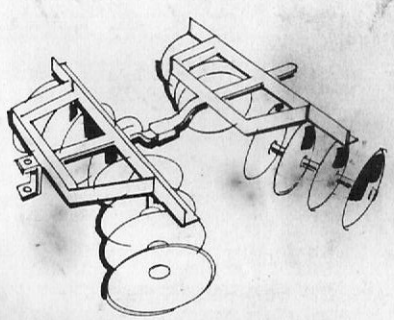
SPIKE HARROW



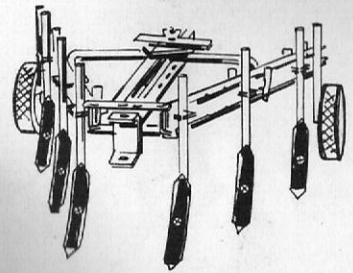
REEL MOWER



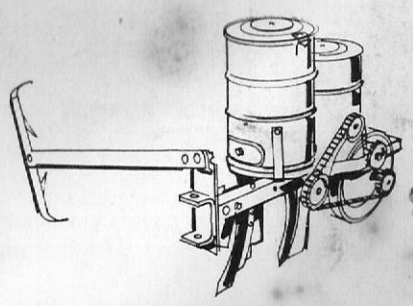
ROLLER



DISC HARROW



SPRING HARROW



PLANTER-FERTILIZER

MANY OTHER USEFUL ATTACHMENTS ARE

TABLE OF CONTENTS

NOTICE

At the time your Case Dealer delivers your new tractor, he will acquaint you with its operation and maintenance as outlined in the "Delivery Procedure and Warranty Registration". When your Dealer has completed these instructions, he will ask you to sign the report and will then hand you a copy for your records.

NOTE

The "Delivery Procedure and Warranty Registration" also contains a record of the Pre-Delivery Checkup which your Dealer made on your tractor.

A factory completed Quality Audit just prior to crating is further assurance that your new tractor has been manufactured and tested to the highest possible standards and is ready to provide you with long, trouble free service. The Quality Control Department copy of the Certificate of Quality is packed with the tractor.

AFTER DELIVERY CHECKUP

The Authorized Case Dealer from whom you purchased your new tractor will perform the "After Delivery Checkup" outlined on the following page, if you will arrange to bring your tractor to his Service Shop within - - -

60 days after date of delivery or 100 hours of operation (whichever occurs first).

NOTE

The only charge your dealer will make for this inspection will be for oil, filter, or other accessories.

LUBRICATION AND PREVENTIVE MAINTENANCE RECORDS

DESCRIPTION	HOURS

NOTE: The J I Case Company reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.

AFTER DELIVERY CHECKUP

(Owner's Name) ..... (Date Checkup Performed) .....

(Owner's Address) .....

(Dealership) ..... (Town) .....

Tractor has been operated ..... days ..... (Tractor Model and Serial Number)

TRACTOR

- ☐ Return to neutral function.
- ☐ Check operation of brake.
- ☐ Check Travel Control Lever for proper "Neutral" and full valve spool travel.
- ☐ Check tire pressure.
- ☐ Tighten cylinder head and adjust tappets.
- ☐ Check spark plug.
- ☐ Check full governed no load engine speed and low idle speed.
- ☐ Tighten all hydraulic line connections.
- ☐ Tighten all bolts (including rims).
- ☐ Cooling system engine and heat exchanger fins.
- ☐ Crankcase oil (change oil if necessary).
- ☐ Oil level in hydraulic system reservoir.
- ☐ Oil level in transmission.
- ☐ Lubricate all pressure fittings.
- ☐ Check air cleaner.
- ☐ Check tension of all belts.
- ☐ Lubricate steering gears. Check "free play." Adjust if necessary.
- ☐ Check front wheel toe-in.
- ☐ Battery, wiring and lights.
- ☐ Check operation of all instruments and levers.

DEALER: Question purchaser carefully concerning his experience with tractor and answer any questions concerning maintenance or operation that are not clear to him.

Checkup ..... Performed by

Signed ..... Dealer

DEALERS COPY CUT HERE

Original—Dealer

Duplicate—Leave in Operator's Manual

LUBRICATION AND PREVENTIVE MAINTENANCE RECORDS

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TO THE PURCHASER OF A CASE TRACTOR

The care you give your new Case Tractor will greatly determine the satisfaction and service life you will obtain from it. Use this manual as your guide. By observing the instructions and suggestions in this manual, your Case Tractor will serve you well for many years.

As an Authorized Case Dealer, we stock Genuine Case Parts, which are manufactured with the same precision and skill as the original equipment. Our factory trained staff is kept well informed on the best methods of servicing Case equipment and is ready and able to help you.

Should you require additional aid or information, contact us.

Your Authorized Case Dealer

NOTE

THIS MANUAL APPLIES TO TRACTORS SERIAL NUMBER 9646801 AND AFTER.

LOOK FOR THIS SYMBOL

TO POINT OUT IMPORTANT

SAFETY PRECAUTIONS

To insure efficient and prompt service, please furnish us with the Model, Serial, Engine Model Number and Engine Specification Number of your Tractor in all correspondence or contacts.

Printed In U.S.A.