



**117 Tractor
Operators Manual**

casecollectingersoll.com

Win. Form No. 9-2551

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



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 Numbers and Engine Specification Number of your Tractor in all correspondence or contacts.

PRICE \$.75



Figure 1. Right Hand View of Case 117 Compact Tractor



Figure 2. Left Hand View of Case 117 Compact Tractor

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 3. The Engine, Model and Serial Numbers are stamped on a plate fastened to the rear of the engine facing the battery, Figure 4.



Figure 3

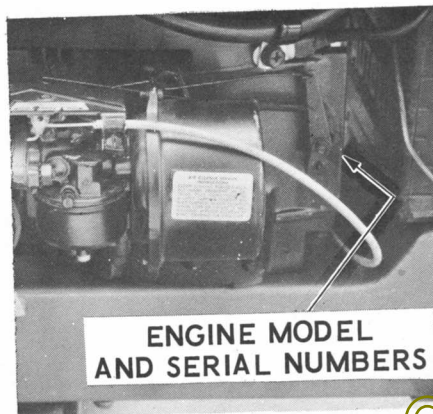


Figure 4

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 Number of your tractor in the spaces provided below.

Tractor Model Number _____

Tractor Serial Number _____

Engine Model Number _____

Engine Serial Number _____

SPECIFICATIONS

General

Type ----- Tecumseh - Vertical Crankshaft
Model ----- V 70
Cycle ----- 4
Cylinders ----- 1
Cylinder Bore ----- 2-3/4 in.
Stroke ----- 2-17/32 in.
Piston Displacement ----- 15.0 cu. in.
Horsepower ----- 7 HP
Compression Ratio ----- 6 to 1
Full Load Speed ----- 3500 RPM
No Load Speed ----- 3600 RPM
Idle Speed ----- 1000 RPM
Valve Clearance Cold (Intake) ----- .010 in.
Valve Clearance Cold (Exhaust) ----- .010 in.
Compression Release ----- Internal, Mechanical Type

Piston and Connecting Rod

Piston ----- Chrome Plated
Compression Rings ----- 2
Oil Rings ----- 1
Connecting Rod ----- Aluminum Alloy

Fuel System

Carburetor ----- Float Type
Filter Screen ----- In Tank Fitting
Fuel Tank Capacity ----- 4 U.S. Quarts

Ignition System

Breaker Point Gap ----- .020 in.
Spark Plug
Thread ----- 14 MM
Gap ----- .030 in.

Cooling System

Flywheel Blower ----- Forces air inside baffles
directing air around finned
cylinder and head area.

general specifications

Electrical System

Type of System ----- Flywheel Magneto
and Alternator
Battery ----- Autolite LU7
Starter ----- 12 Volt, Bendix Drive
Headlights (Optional) ----- 12 Volt

Hydraulic System ----- Variable Displacement
Ball Piston Pump and
Fixed Displacement
Ball Piston Motor

Reservoir ----- Self-Contained in Hydraulic
Transmission Plus 4 Ounce
External Expansion Tank

Brake ----- Mechanical Contracting Band,
Foot Pedal Operated, With
Drum Shaft Connected to Final
Drive Assembly

Final Drive ----- Mechanical Gear Reduction
and Differential Assembly

Speed Range ----- Forward 0 to 4.16 MPH
Reverse 0 to 2.6 MPH

WHEELS AND TIRES

WHEELS AND TIRES			PSI	
<u>Tire Size</u>	<u>Ply</u>	<u>Type</u>	<u>Recommended</u>	<u>Max</u>
FRONT				
5.00-6	2	High Flotation	12	* 20
REAR				
8.50-8	2	High Flotation	6	8

* WHEN USING SNOWCASTER OR FRONT BLADE

Overall Measurements

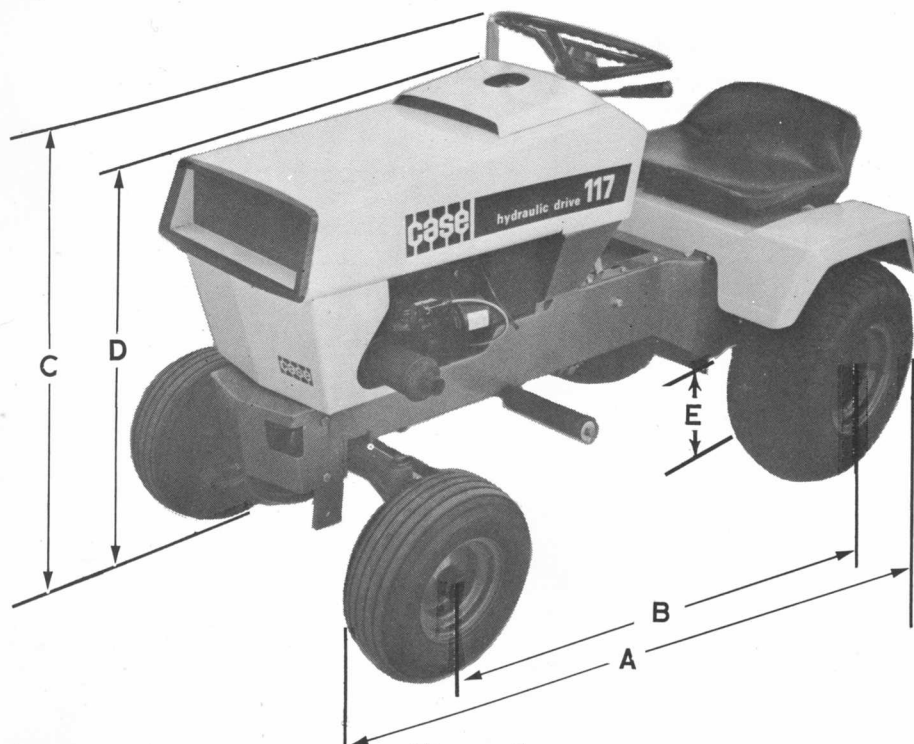


Figure 5

A	Overall Length	57-3/16"
B	Wheel Base	42"
C	Overall Height	37-7/8"
D	Hood Height - Rear	32-1/4"
E	Minimum Ground Clearance at Gear Case	6-5/8"
	Rear Wheel Tread	23-1/4"
	Front Wheel Tread	23-3/8"
	Overall Width	32-1/4"
	Shipping Weight	305 lbs.

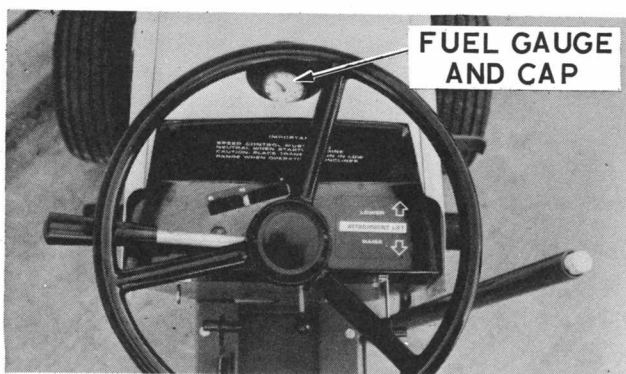


Figure 6



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

CARBURETION ON SMALL GASOLINE ENGINES IS ALWAYS CRITICAL OF DIRT. IT IS RECOMMENDED THAT A FILTERING FUEL FUNNEL ALWAYS BE USED ALONG WITH CLEAN GASOLINE.

GASOLINE

Tecumseh 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 "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 7

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. Disengage all clutches and shift into neutral before starting engine (motor).
2. Disengage power to attachment (s) and stop engine (motor) before leaving operator position or making any repairs or adjustments.
3. Know the controls and how to stop quickly -- READ THE OPERATOR'S MANUAL.
4. Do not allow children to operate machine or adults to operate it without proper instruction.
5. Clear work area of objects which might be picked up and thrown.
6. Disengage power to attachment (s) when transporting or not in use.
7. Do not carry passengers. Keep children and pets a safe distance away.
8. Take precautions, such as disengaging power take-off, shifting into neutral, setting parking brake, stopping engine and removing key when leaving machine unattended.
9. Reduce speed on slopes and in sharp turns to prevent tipping or loss of control.

10. Stay alert for holes in terrain and other hidden hazards.
11. Don't stop or start suddenly when going uphill or downhill.
12. 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. Don't turn too sharply, and use care when backing.
 - D. Use counterweight (s) or weight box when suggested in operator's manual.
13. Watch out for traffic when crossing or near roadways.
14. When using any attachments, never direct discharge of material toward bystanders nor allow anyone near machine while in operation.
15. Handle gasoline with care -- it is highly flammable.
 - A. Use approved gasoline container.
 - B. Never remove cap or add gasoline to a running or hot engine or fill fuel tank indoors. Wipe up spilled gasoline.
 - C. Replace gasoline cap securely.
 - D. Open doors if engine is run in garage -- exhaust gases are dangerous.
16. Keep machine in good operating condition and keep safety devices in place. Use guards as instructed in operator's manual.

Stop and inspect the mower for damage immediately after striking a foreign object and repair damages before restarting and operating the machine.

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 - - - - - Air Temperatures 32° F and Above

SAE 10W - - - - - Air Temperatures Below 32° F



Figure 8

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.

REFILL CRANKCASE TO TOP OF THE FILLER NECK.

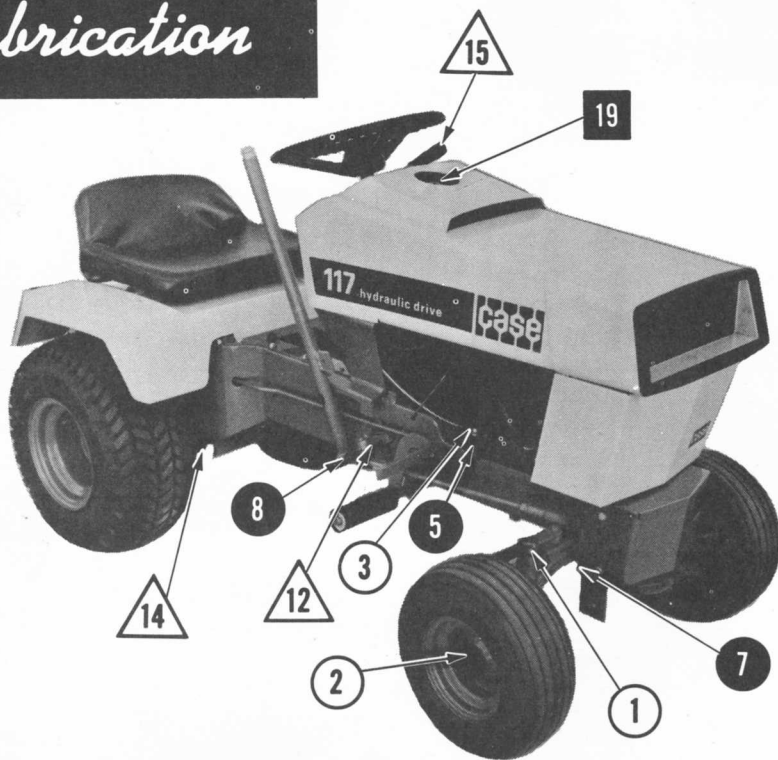


Figure 9

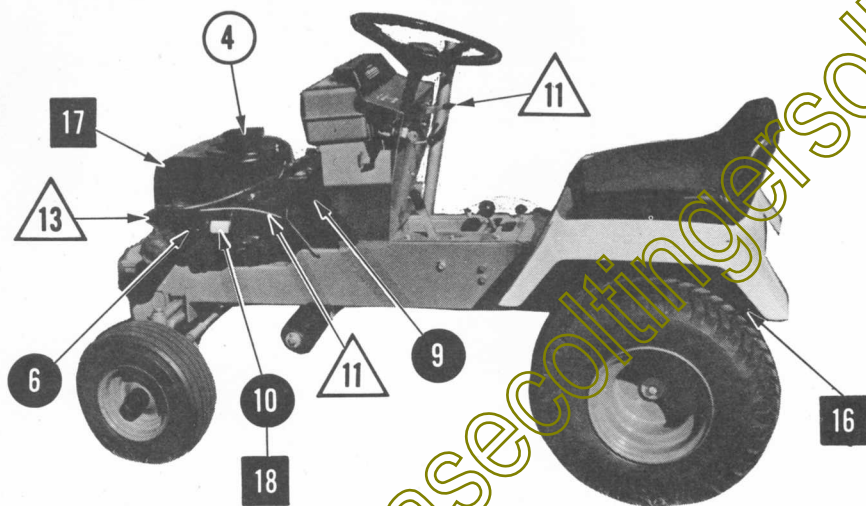


Figure 10

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	Throttle and Choke Control	2							50 HOURS OR MONTHLY
12	Steering Gear	3							
13	Spark Plug °	1							
14	Final Gear Drive Oil +	1							
15	Speed Control Lever and Cable	3							
16	Final Gear Drive Oil +	2							200 HOURS OR YEARLY
17	Engine Cooling Fins ***	1							
18	Air Cleaner Element	1							
19	Fuel Filter Screen (in tank)	1							

*Keep oil level to top of filler neck. See page 11 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. Remove front shroud to clean. °Clean and regap.

+Maintain level at check plug on rear side. When changing, refill with 2-3/4 pints of SAE EP90 gear lubricant.

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

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 speed control lever through its full forward and reverse ranges 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 lubrication fittings and pivot points are serviced as directed in the Lubrication Chart.
3. Check engine oil level and add as necessary.
4. Be sure that the air cleaner and blower air intake screen on the 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.
6. This tractor is equipped with a "safety start" feature. The Speed Control Lever must be in NEUTRAL to start the engine.

OPERATING CONTROLS AND INSTRUMENTS

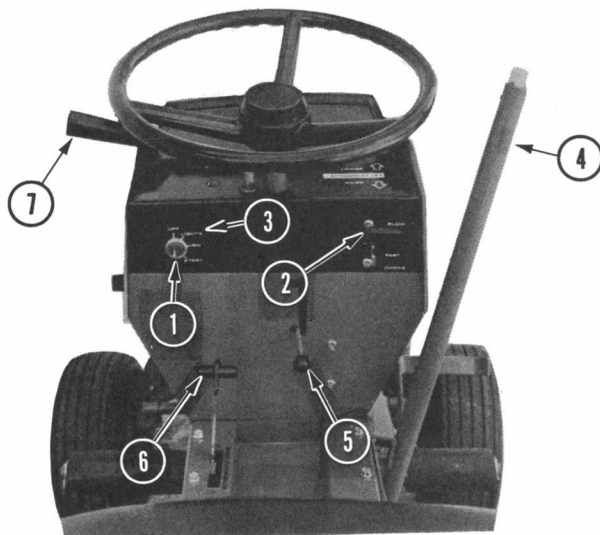


Figure 11

1. **IGNITION KEY AND STARTER SWITCH** - Turn key all the way to the right until starter engages to start the engine. When stopping the engine, turn the key to the left "Off" position. Be sure the attachment drive lever, Reference 6, is in the "Off" position and speed control is in "Neutral" before starting or stopping the engine.

CAUTION In the event of a "false start", that is, if the engine gets up sufficient speed to disengage the starter but fails to continue running, the engine starter must be allowed to come to a complete halt before a restart attempt is made. If the flywheel is still rotating when the switch is engaged, the flywheel and starter will clash and almost certainly be damaged.

Also, as with all starting motors, the cranking time must be limited to prevent overheating of the starter. On these compact starters, the maximum time allowed for cranking is 60 seconds followed by a 30 second cooling period. The cranking limit is not unreasonable for, if an engine fails to start after this length of time, ignition or carburetion troubles are indicated and these should be corrected before the engine is placed in operation.

2. **CHOKE AND THROTTLE** - When starting a cold engine, lower the lever all the way to the "Choke" position. Raise the lever immediately after the engine begins to run. Choking may not be necessary when restarting a warm engine. Start with the lever in the "Slow" position. Experience will soon tell you how much choking is necessary for different starting conditions.
3. **OPTIONAL HEADLIGHTS** - The headlights are turned on when the ignition key is placed in the "Light" position after the engine is started. Do not operate the headlights unless the engine is running at normal operating speeds.
4. **ATTACHMENT LIFT LEVER** - The attachment lift lever is used to raise a mounted implement into transport or to lower it into the operating position. Depress the button at the top of the lever to release and lower the attachment into operating position. A slight pulling pressure on the lever will permit the release button to be more easily depressed.
5. **HOOD LATCH** - To release the hood for servicing the battery, engine air cooling intake screen and spark plug, raise the latch lever of the hood free of the dash panel and lift it off toward the front of the tractor. Replace the hood by first repositioning it on the front of the tractor and then on the dash panel. Secure the hood by returning the latch to the lower notch.

NOTE If the tractor is furnished with optional headlights, separate the wiring connector before lifting the hood off the tractor.

6. **ATTACHMENT DRIVE LEVER** - To engage the mower or snow-caster, slowly pull this lever back to the "On" notch. Return this lever to the forward notch to stop the mower or snow-caster.

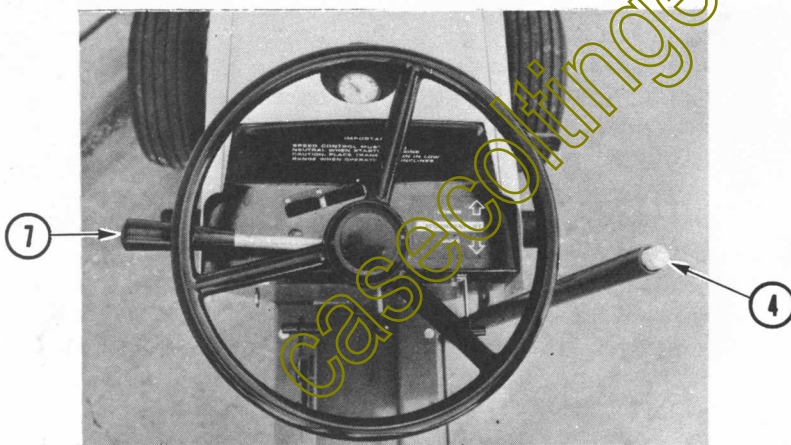


Figure 12

7. **SPEED CONTROL LEVER** - Slowly move this lever ahead to place the tractor in forward motion. Place the tractor in reverse by slowly moving the lever to the rear. Always allow the tractor to come to a stop before changing the directional travel.

NOTE This tractor is equipped with "Safety-Start" and cannot be started unless the Speed Control Lever is in the neutral position.

CAUTION The Speed Control Lever automatically returns to neutral when the brake is applied. Do not attempt to manually hold this lever in forward or reverse when applying the brake since damage to the mechanism could result. The lever can, however, be moved toward forward or reverse before the brake is released.

NOTE To resume travel after braking to a stop on a hill, slowly move the Speed Control Lever toward forward or reverse while holding your foot on the brake pedal until there is sufficient power at the wheels to prevent the tractor from coasting.

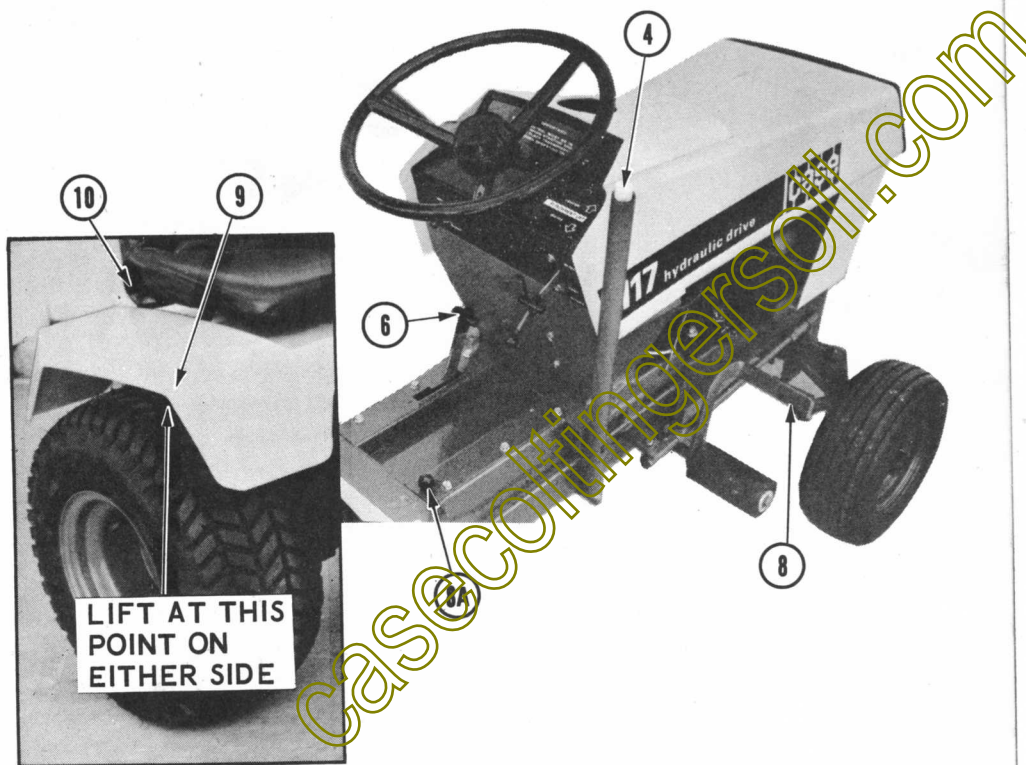


Figure 13

8. BRAKING AND PARKING - The speed control lever, Reference 5, can normally be used to stop the tractor by returning it to the neutral position. On relatively level terrain, the tractor will come to a normal stop by returning the speed control lever to neutral. If on a hill or if a fast stop is necessary, depress the brake pedal. Depress the brake pedal and engage the Brake Lock, Reference 8A, to prevent tractor movement. Apply foot pressure to the brake pedal when releasing the lock.

NOTE The speed control lever should be used in lieu of the brake pedal to control the tractor ground speed on hill-side operation. Remember, however, that if the brake is applied, the speed control lever will be automatically returned to neutral.

9. MANUALLY MOVING TRACTOR - When the tractor engine is off, the rear wheels are semi-locked by the hydraulic system. If it should be necessary to move the tractor without the engine running, relieve the weight on one of the rear wheels by lifting under the front corner of either wheel well as shown with one hand while using the other hand to direct the tractor steering wheel.
10. SEAT ADJUSTMENTS - Four sets of mounting holes are provided in the support. Select the seat position which gives the maximum comfort with your hands holding the steering wheel and your feet on the foot rests. To change position, pivot the rear of the seat support up and remove the four locknuts. Move the seat to the new position and replace the four locknuts.
11. TRANSMISSION DRIVE BELT - The primary drive belt between the engine and hydraulic transmission has a spring loaded idler pulley which automatically compensates for stretch and wear.

NOTE The belt between the engine and upper attachment drive pulley at the front of the tractor is adjusted when the mower or snowcaster is installed. Refer to the "Attachment" section in this manual for adjustments.

BATTERY STARTING

1. Place the Speed Control Lever in the NEUTRAL position. The "Safety-Start" feature prevents the engine from starting unless the speed control lever is in neutral.
2. Place the Attachment Drive Lever in the forward "Off" notch.

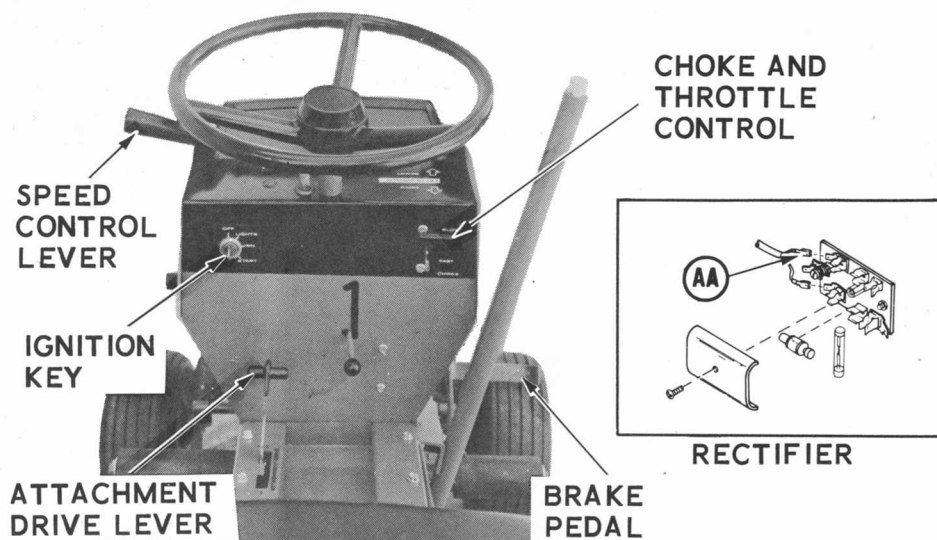


Figure 14

3. Engage and lock the Brake Pedal.
4. Position the Choke and Throttle Lever all the way down to the "Choke" position if the engine is cold. If engine is warm, leave the lever set at the "Slow" position. Experience will quickly tell you which lever setting to use under various temperature and weather conditions.
5. Turn the ignition key all the way to the right to start the engine.

CAUTION In the event of a "false start", that is, if the engine gets up sufficient speed to disengage the starter but fails to continue running, the engine and starter must be allowed to come to a complete halt before a restart attempt is made. If the flywheel is still rotating when the switch is engaged, the flywheel and starter will clash and almost certainly be damaged.

Also, as with all starting motors, the cranking time must be limited to prevent overheating of the starter. On these compact starters, the maximum time allowed for cranking is 60 seconds followed by a 30 second cooling period. The cranking limit is not unreasonable for if an engine fails to start after this length of time, ignition or carburetion troubles are indicated and these should be corrected before the engine is placed in operation.

6. After the engine starts and runs, move the lever up and out of the choke position. Always allow the engine to warm up before applying a load. Release the brake pedal slowly after the engine starts.

STARTING WITH "JUMPER CABLES" -

Jumper cables can be used to start the tractor without removing the hood if the battery should become discharged. The "Negative" battery terminal is marked (-) and the "Positive" terminal is marked (+). After cables are connected, follow same procedure as outlined in "Battery Starting" above.

"ROPE" STARTING -

If the battery becomes discharged and "jumper" cables are not available, the tractor can be manually "rope" started.

CAUTION To prevent damaging the electrical system, disconnect the upper wire, Reference "AA", Figure 14 inset, if the battery is removed from tractor or has a dead cell. The rectifier is located at the lower right forward side of the engine. This precaution is not required if the battery is simply discharged.

1. Follow steps 1, 2, 3 and 4 under Battery Starting above.
2. Set the key in the "Ignition" position.
3. Unlatch and remove the hood as described in paragraph 5 under "Operating Controls and Instruments."
4. Place the rope knot in the notch of the starter pulley, wrap clockwise and pull.
5. Install hood before operating tractor.

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. Place all operating controls in neutral.
3. Turn ignition key to the "Off" or upright position.



Figure 15

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.

AIR CLEANER

Remove and clean element after each 25 hours or weekly. Install new element every 200 hours or yearly or when loss of power is noticeable.

To clean the element, remove two screws, air 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 and tighten the screws.

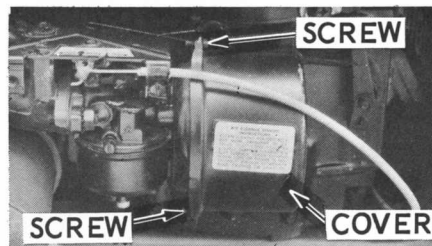


Figure 16

CARBURETOR ADJUSTMENT

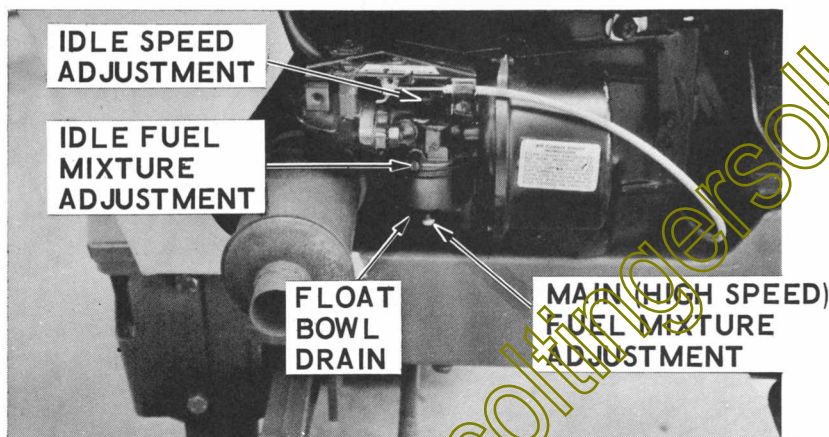


Figure 17

The carburetor is adjusted at the factory and under normal operating conditions should not require readjustment. Should the engine start hard, miss or backfire after a period of use, adjustment may be necessary.

The carburetor has three simple adjustments:

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

Adjust as follows:

- a. Turn both the "Main" and "Idle" mixture screws completely in finger tight only and then back them both out one complete turn.
- b. Back off the Idle Speed Adjustment Screw. With the throttle control all the way up in the "Slow" position, turn the screw in until it just touches the carburetor throttle lever and then continue one turn more.
- c. Start tractor and run at both idle and full throttle. Engine should run smoothly in either throttle setting. If necessary to fine adjust do not turn either screw more than 1/8 turn at a time.
- d. Place tractor under load. Loss of power, tendency to stall, or excessive backfiring all indicate a lean mixture. Open the "Main" adjustment screw in 1/8 turn graduations until engine runs smoothly. Operating the engine on too lean a mixture causes loss of power and high exhaust heat. If mixture is too rich, the engine will sound as though flooded and dark smoke will appear in the exhaust fumes.

NOTE Erratic engine operation can also be caused by dirt or other foreign material in the carburetor. Carburetion on small gasoline engines is always critical of dirt. It is recommended that a filtering fuel funnel always be used along with clean gasoline. Also check and clean the filter screen on the fuel tank outlet fitting periodically.

BRAKE AND RETURN TO NEUTRAL LINKAGE

FUNCTION -

At normal engine operating RPM, the speed control lever automatically returns to neutral when the brake pedal is depressed. When the engine is idling or operating at relatively low RPM, the brake will stop the tractor. However, it is necessary to manually neutralize the speed control lever to prevent tractor movement after releasing the brake pedal.

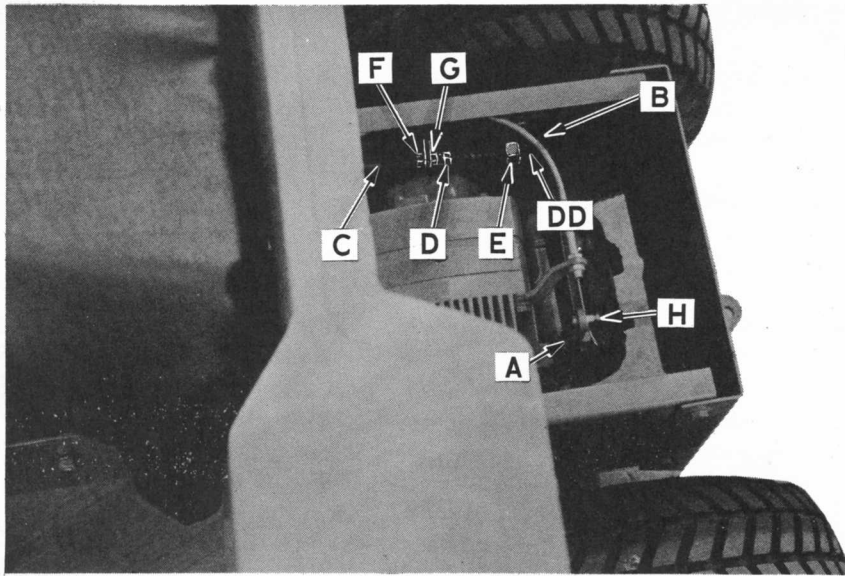


Figure 18

Briefly, this system functions as follows: The hydraulic control arm, Reference "A", has a built-in neutral seeking tendency while operating under normal engine RPM. A stop plate, Reference "B" bolted to the control arm, extends to the rear of the brake rod, Reference "C". When the brake is off the spring, pressure holds the rear end of the brake rod against the stop plate preventing the control arm from neutralizing. When the brake is applied, the brake rod moves away from the stop plate allowing the control arm to self-neutralize.

ADJUSTMENT -

1. Return-to-Neutral Linkage:

The spring loaded brake rod "C" should exert sufficient force against the stop plate "B" to prevent the control arm from self-neutralizing when your hand is removed from the tractor speed control lever while traveling in forward or reverse. Excessive brake rod force against the stop plate will cause difficult operation of the speed control lever when the brake is off.

To increase the brake rod pressure against the stop plate, loosen nut "D" and turn the rod extension "DD" to the rear. Decrease pressure by adjusting in opposite manner. Retighten nut "D" following adjustment. Adjust spring pressure by turning nut "E" ahead or back.

2. BRAKE PEDAL TRAVEL -

Decrease the brake pedal travel by turning nut "F" ahead and lock with nut "G". To increase pedal travel, first turn nut "G" to the rear; then tighten nut "F". Following brake adjustment, check the "return-to-neutral" function and readjust if necessary, as explained in preceding paragraph.

3. SPEED CONTROL CABLE -

The cable is secured to both the tractor speed control lever and to the hydraulic control arm "A" by locking screws, Reference "H". Check these screws periodically for tightness. Should either screw loosen, causing the cable to slip, adjust by loosening the screw enough to allow the cable to slide freely. Apply the brake at high engine RPM to place the hydraulic control arm "A" in neutral. Locate the tractor speed control lever in neutral and tighten screw "H" securely.

Spark Plug

The type spark plug provided in your engine is listed as medium in the spark plug heat range chart - Prestolite 14, 7 or equivalent.

Thread Size----- 14MM
Gap Setting----- .030 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 .030 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.

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 20 foot-pounds. This will assure proper seating and sealing of the spark plug.

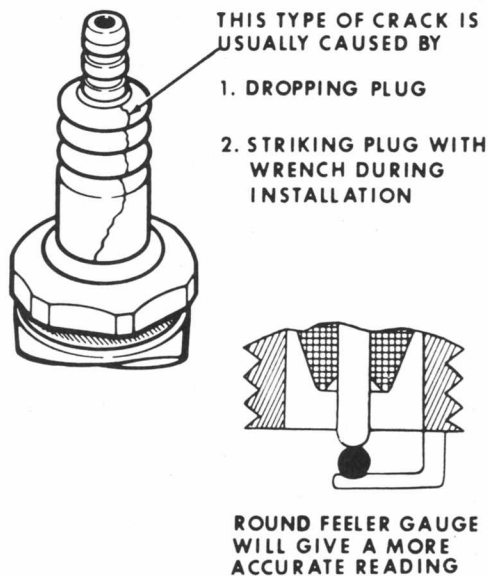


Figure 19

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. Starting at the front or leading edge of the front wheels, place a chalk mark on each tire center line in line with the spindle. Do the same at the rear or trailing edge of each front wheel.
4. Measure the distance between the tire center lines at the chalk marks.

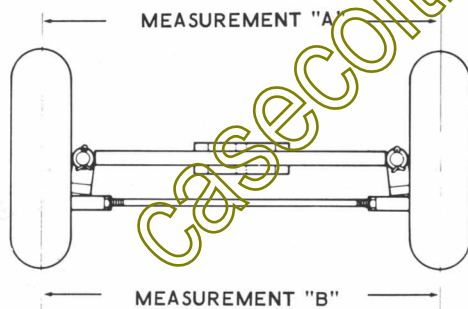


Figure 20

THE DISTANCE BETWEEN MEASUREMENT A MUST BE 1/8 TO 1/4-INCH LESS THAN MEASUREMENT B. BOTH MEASUREMENTS - FRONT AND REAR MUST BE TAKEN AT THE SAME HEIGHT ABOVE THE FLOOR.

1. Loosen both tie rod joints.
2. Turn both joints on or off the tie rod an equal amount. Retighten 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.

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 from the battery 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.
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.

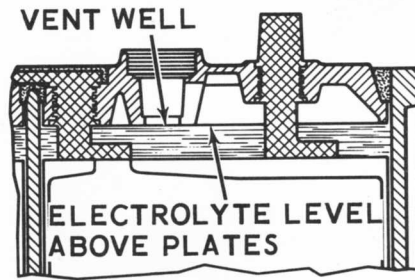


Figure 21

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 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.

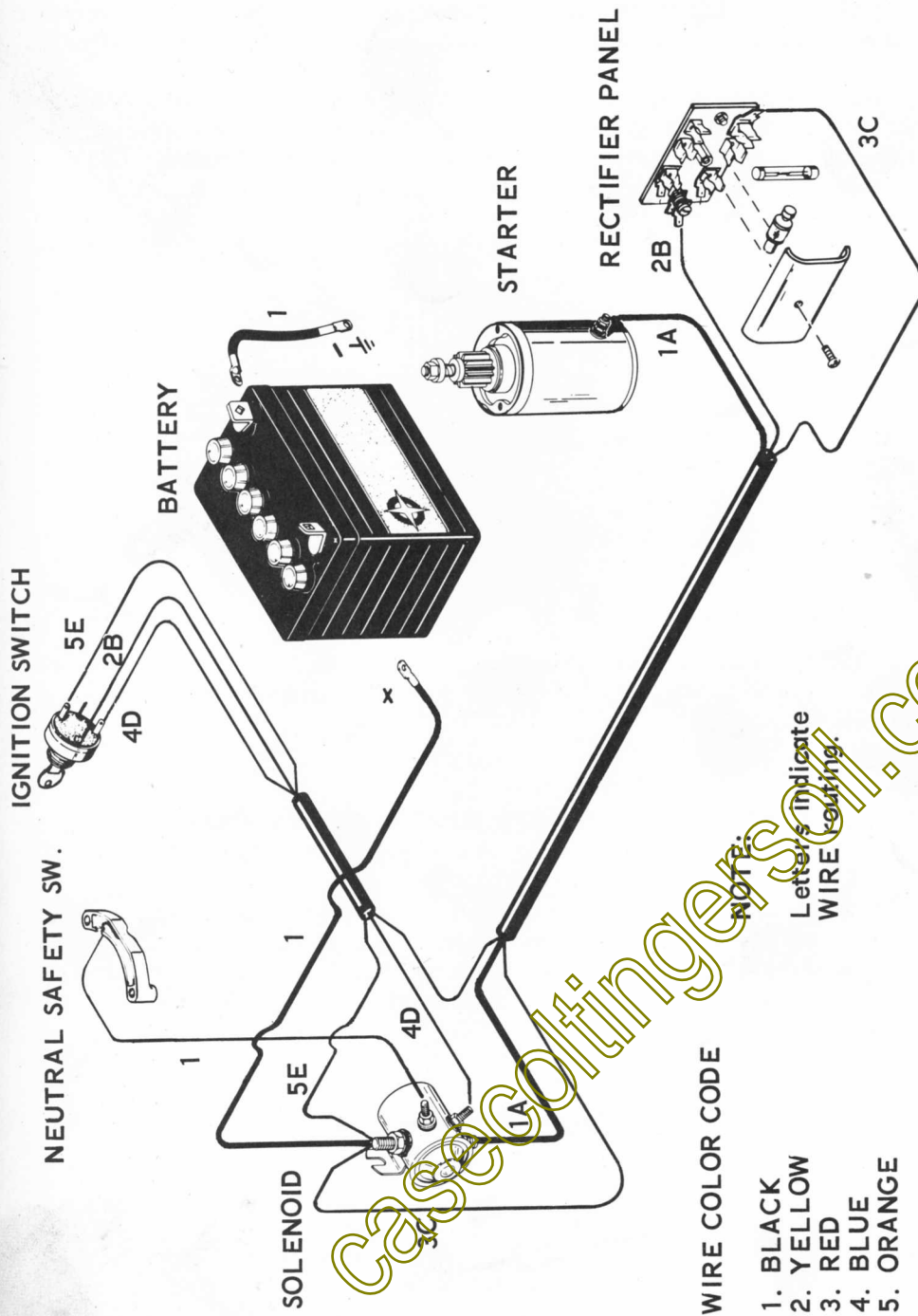


Figure 22. Wiring Diagram, Model 117 Compact Tractor

ATTACHMENTS

34" Twin Blade Rotary Mower

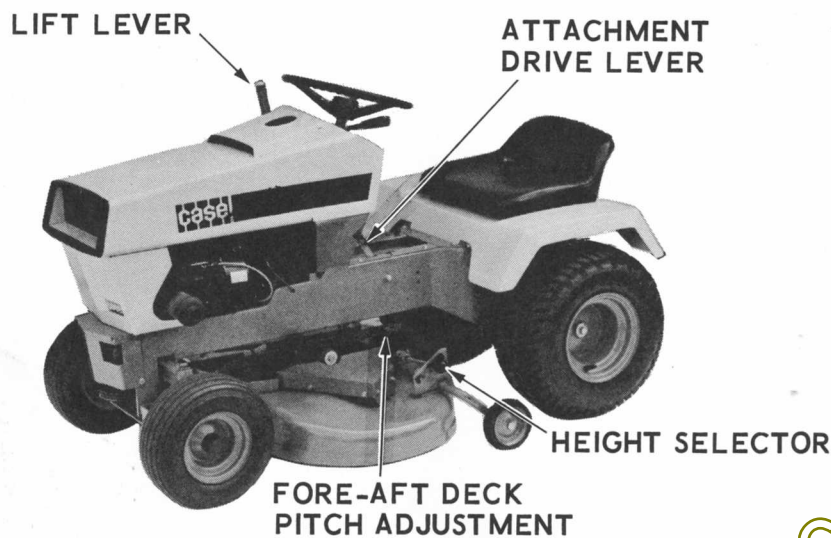


Figure 23

Operating Controls -

Lift Lever - The lift lever is used to raise the mower into transport and to lower it into cutting position.

Height Selector - The Height Selector Lever is used to adjust the cutting height of the mower between 1-1/2" in the lowest notch to 3-1/2" in the highest notch. Each notch adjusts the mowing height approximately 1/2".

Attachment Drive Lever - Move the attachment drive lever to the rear notch to engage the mower. To stop the mower, return this lever to the forward notch.

Fore and Aft Deck Pitch - The mower deck should be set from level to angled slightly higher at the front. To raise the front of the deck, shorten the adjustment on the "L" link at the rear of the mower as shown in Figure 23. To raise the rear of the deck, lengthen the "L" link with the two adjusting nuts.

Operating Tips -

- a. Run the engine in "Fast" throttle position.
- b. Keep mower blade sharp and balanced.
- c. Keep inside of mower deck housing free of excess clippings.
- d. When cutting heavy grass, travel in a counterclockwise direction to discharge the clippings into the area already cut. If grass is light, traveling in a clockwise direction will place the clippings in a single row when completed for easy pick-up.
- e. Lubrication - The mower spindles turn in sealed bearings which do not require lubrication. The gauge wheels have "oilite" bushings and do not require servicing. A few drops of oil should, however, be applied to the three "spring pins" periodically so they will continue to operate freely.



Figure 24

Installing the Mower -

1. Cramp the tractor front wheels to the left.
2. Place the lift lever in transport position for maximum clearance.
3. Pivot the front attaching bracket (3) toward the mower deck.
4. Roll the mower under the right side of the tractor in a counterclockwise motion to point of contact with the rear tire.

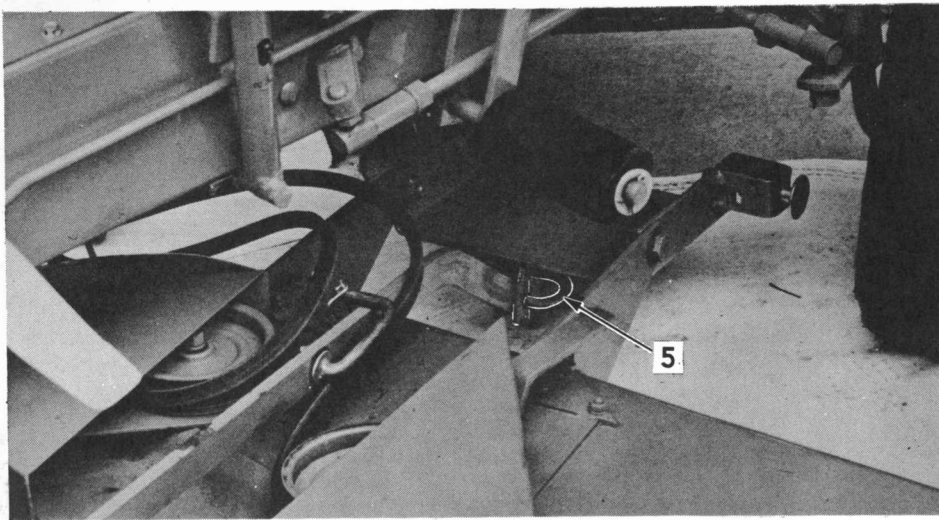


Figure 25

5. When the front attaching bracket (3) is inside the front wheel, as shown in Figure 24, pivot it away from the mower deck and connect the spring pin (5) to the carrying bar.

NOTE The drive belt must be above both the carrying bar and the front attaching bracket.

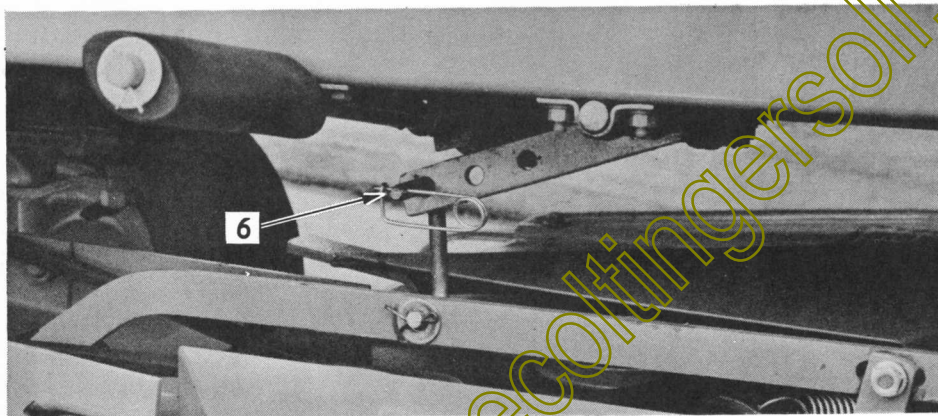


Figure 26

6. Center the mower under the tractor and lower the lift lever. Connect the lift link (6) to the tractor lever, install the safety pin and raise the mower into "transport".

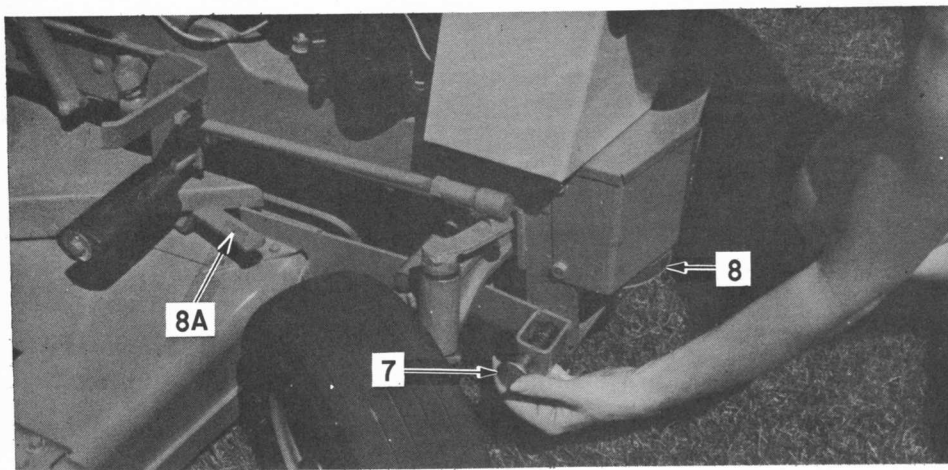


Figure 27

7. Retract and rotate the front spring pins to the open position. Raise the front attaching bracket into alignment with the mounting holes on the tractor and close the spring pins as shown.
8. Place the drive belt over the front tractor pulley making sure it is not rolled or twisted.

NOTE The drive belt tension can be relieved while installing by pushing rearward on the spring loaded idler pulley extension arm (8A) until the belt has been properly positioned on the front pulley.

This spring pressure automatically compensates for drive belt stretch or wear during operation.

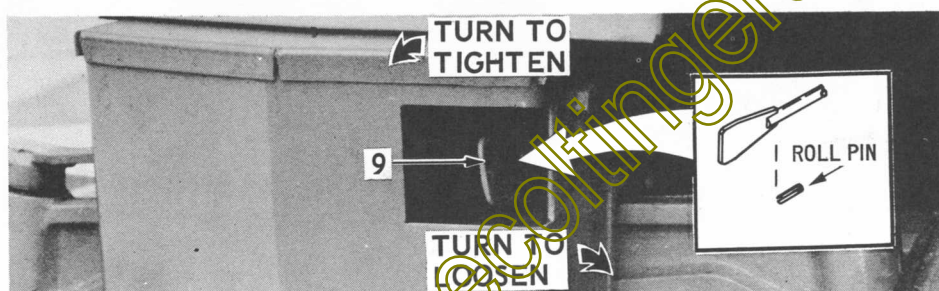


Figure 28

9. Place the attachment drive lever in the "ON" position. Turn the primary attachment drive belt adjustment (9) counterclockwise until the inside edge is in line with the outside end of the roll pin. See inset drawing on Figure 28.

NOTE This adjustment affects the tension on the primary drive belt between the engine pulley and the upper pulley of the attachment drive only. The mower belt is automatically tensioned by the spring loaded idler, Reference 8A, Figure 27.

To Remove the Mower -

- a. Relieve spring pressure on the mower belt with lever (8A) and remove belt from the tractor pulley (8).
- b. Disconnect the two spring pins, Reference 7, and lock in the retracted position by rotating slightly.
- c. Disconnect spring pin, Reference 5, and lock in the retracted position by rotating.
- d. Move mower to the right and rearward until the front attaching bracket clears the front axle as shown in Figure 24, then fold back for removal.
- e. Pivot the deck out from under the tractor in a clockwise turn.

32" Snowcaster

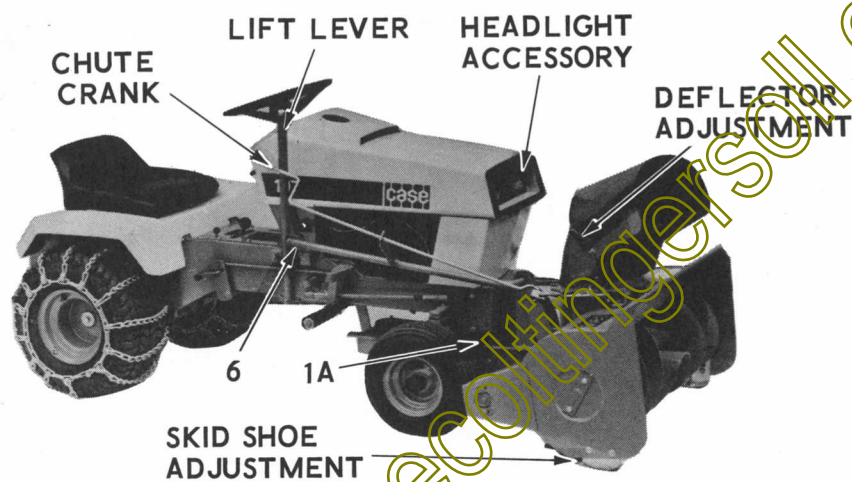


Figure 29

Operating Controls -

Lift Lever - The lift lever is used to raise the snowcaster into transport and to lower it into the operating position.

Skid Shoes - Skid shoes can be raised or lowered as desired to adjust the operating height of the auger.

Chute Crank - Turn the chute crank in the direction you wish to cast the snow.

Deflector Adjustment - The distance the snow is cast can be varied by adjusting the angle of the deflector. Loosen the two wing nuts before adjusting: Angling the deflector upward will increase the distance the snow is cast. To decrease this distance, angle the deflector downward. Tighten the wing nuts following adjustment.



The snowcaster must be "off" and stopped when making this adjustment.

Attachment Drive Lever - Move the attachment drive lever to the rear notch to engage the snowcaster. Return this lever to the front notch to stop the snowcaster.

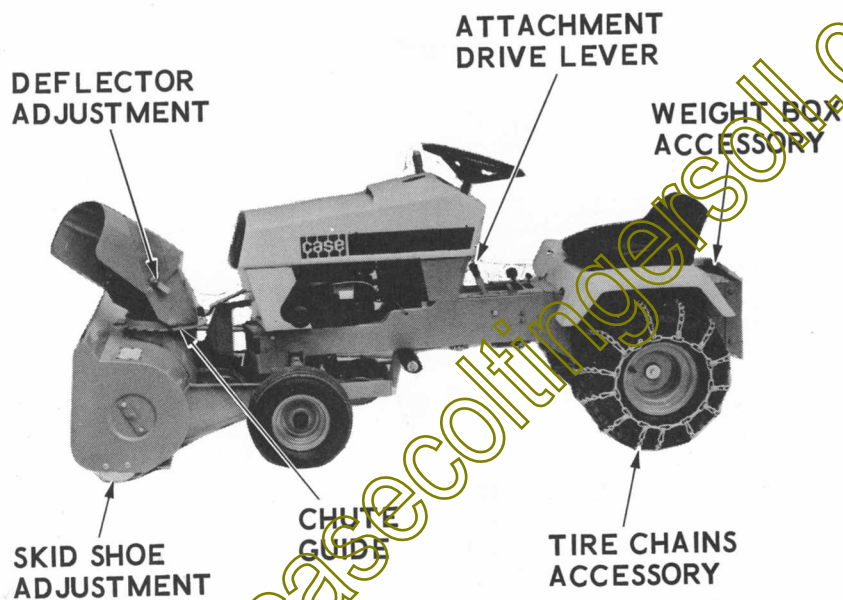


Figure 30

Operating Tips -

- a. Run the engine in the "Fast" throttle position.
- b. Always use tire chains and rear weight box filled with weight to obtain the necessary traction for maximum efficiency. These accessories along with headlights are all available from your J. I. Case Dealer.
- c. Keeping the discharge opening, chute and deflector coated with wax will aid in preventing wet snow and slush from sticking or freezing to the metal surfaces.
- d. Become familiar beforehand with the location of all obstacles in and around the area where snow removal is anticipated. Keep children and pets a maximum safe distance away from the front of the snowcaster or snow discharge path.
- e. When operating on a smooth surface such as cement and black-top, the skid shoes should be adjusted to lower the auger as far as possible. On gravel or other rough surfaces, adjust the skid shoes to prevent stones or other damaging obstacles from being picked up and thrown by the auger. (Large obstacles can damage snowcaster components.)
- f. When possible, operate the tractor in the direction the wind is blowing or at right angles to it. For best dispersal, the snow should also be cast in the direction the wind is blowing.
- g. Always be alert for people, vehicles and windows while operating and always stop machine when getting off the tractor.

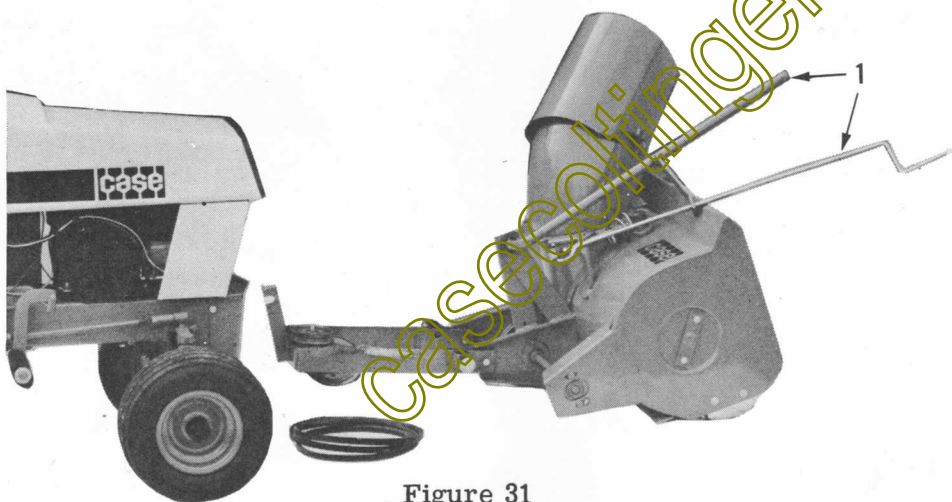


Figure 31

Installing the Snowcaster -

NOTE Before proceeding, make sure the front idler pulley, Reference 1A, Figures 29 and 33 (inset), is installed under the front right corner of the attachment drive shield. Once installed, this pulley can be left on the tractor the year around.

1. Position the snowcaster in front of the tractor with the lift arm and crank assembly folded forward. See Figure 31.

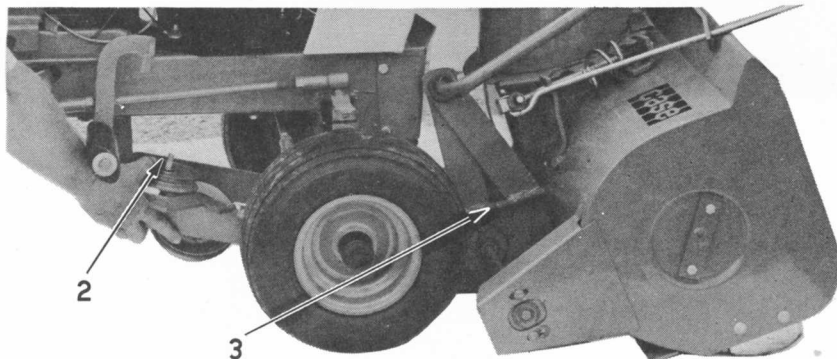


Figure 32

2. Move the tractor into position and hook the mounting bracket (2) over the foot pad cross shaft as shown.
3. Pivot (or raise) the back of the auger (3) and connect the two spring pins to the tractor. Both pins should be retracted and locked out by rotating before raising the frame, then rotate pins to release when located over holes.

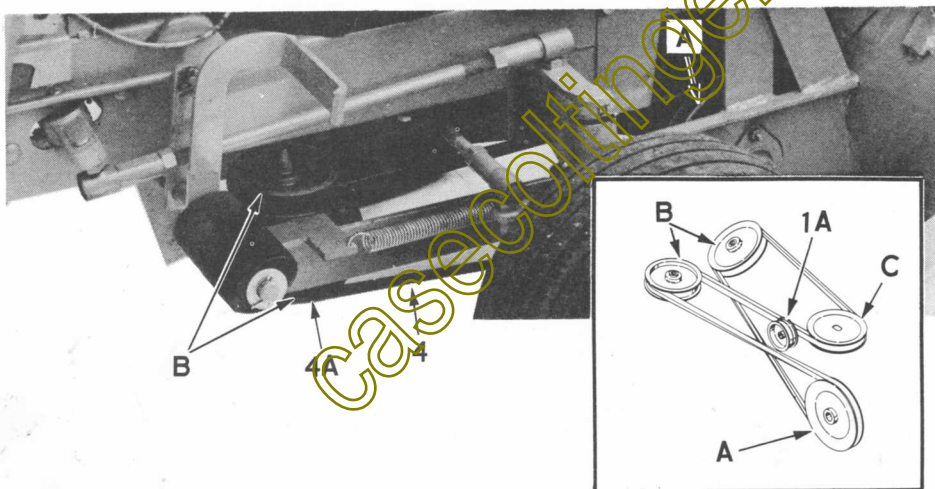


Figure 33

4. Install the drive belt first around the front of auger pulley (A), then around the back side of the two bracket mounted pulleys (B), and lastly around the tractor pulley (C), Figure 33. (See insert diagram.)

NOTE The drive belt tension can be relieved while installing by pushing rearward on the spring loaded idler pulley extension arm (4A, behind the foot pad) until the belt has been properly positioned on the front pulley.

This spring pressure automatically compensates for drive belt stretch or wear during operation.

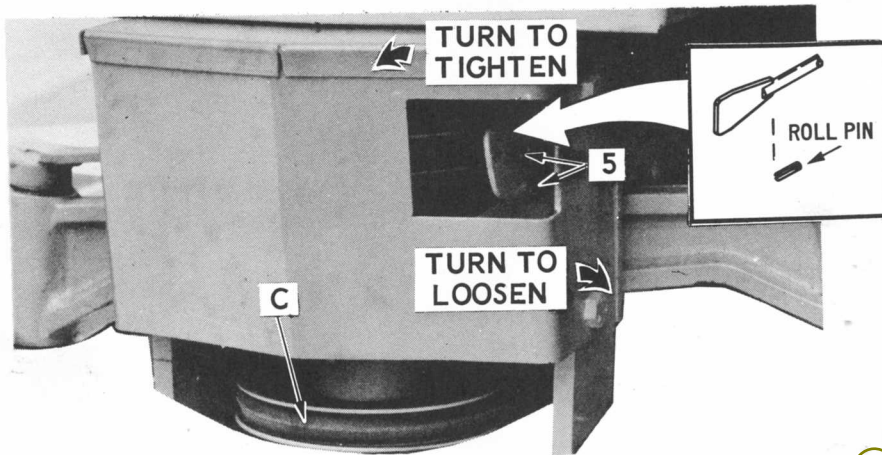


Figure 34

5. Place the attachment drive lever in the "ON" position. Turn the belt adjusting lever (5) counterclockwise until the inside edge is in line with the outside edge of the roll pin. See inset drawing on Figure 34.

NOTE This adjustment affects the tension on the primary drive belt between the engine pulley and the upper pulley of the attachment drive only. The snowcaster belt is automatically tensioned by the spring loaded idler, Reference 4A, Figure 33.

6. Connect the lift arm and crank assembly to the tractor lift lever, Reference 6, Figure 29, using the retainer provided.

To Remove the Snowcaster:

- a. Remove the drive belt, Reference 4.
- b. With the auger at ground level, disconnect the lift arm and crank assembly, Reference 6, from the tractor lift lever and fold them forward clear of the tractor.

- c. Disconnect the two spring pins and lift the mounting bracket off the foot pad cross shaft.

Lubrication -

Oil the auger chain periodically and saturate thoroughly for summer storage.

Grease the chute guides and crank spirols as required for continued smooth operation.

The pulley and auger bearings are sealed and do not require lubrication.

38" Snow Blade

Operating Controls -

Lift Lever - Pull back on the lift lever to place the blade in transport. Move the lever ahead to place the blade in the operating position. A slight pulling pressure on the lever will permit the release button at the top of the lever to be more easily depressed.

Angling Spring Pin - The blade can be operated straight ahead or angled to either side. To change the blade angle, raise the spring pin and pivot the blade in desired direction until the locking pin drops into place.

Skid Shoe - The skid shoes can be adjusted up or down as desired to meet your specific operating conditions. The blade cutting edge will last longer if it is not operated in contact with a concrete or black top surface.

Trip Spring - If the blade comes in contact with an obstacle while pushing snow, the resulting force will stretch the spring causing the blade to trip. When past the obstacle, the blade will return to its normal upright position. With a heavy snow load, it may be necessary to back up briefly to allow the blade to return to working position.

Accessories - Tire chains and a rear weight box are available through your J. I. Case Dealer. These accessories will greatly increase wheel traction for maximum operating efficiency.

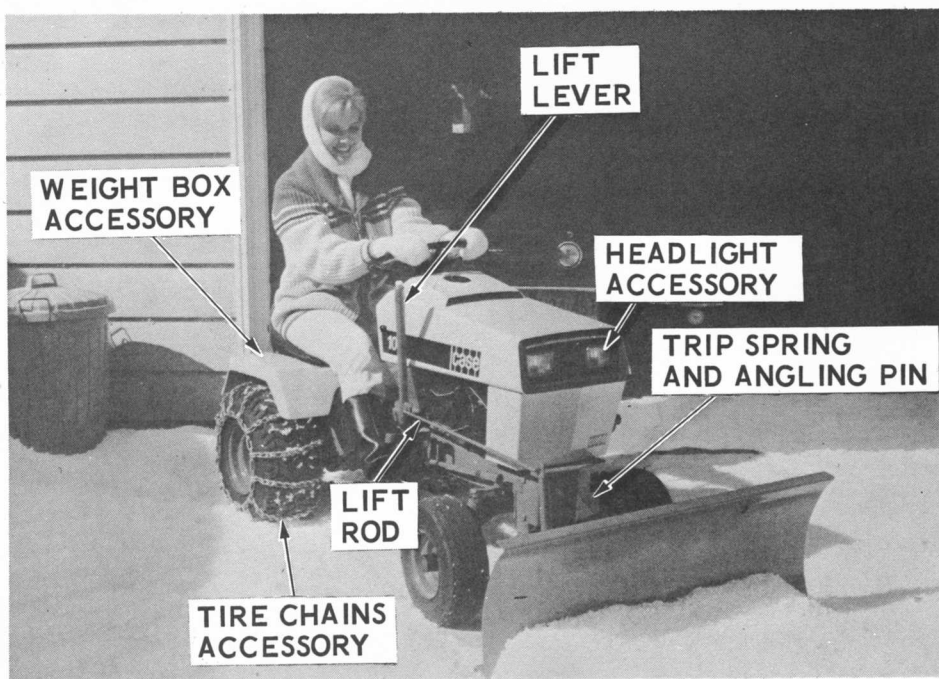


Figure 35

Installing the Blade -

1. Move the tractor into position and hook the blade mounting bracket over the foot pad cross shaft.
2. Retract and rotate the front spring pins to the open position. Raise the front attaching bracket into alignment with the mounting holes on the tractor and rotate the pins into the closed position.
3. Move the tractor lift lever ahead and connect the lift rod.

To Remove the Blade -

- a. Lower to ground level and disconnect the lift rod.
- b. Detach the two spring pins from the front attaching bracket on the tractor.
- c. Unhook the blade mounting bracket from the tractor foot pad cross shaft.

ACCESSORIES

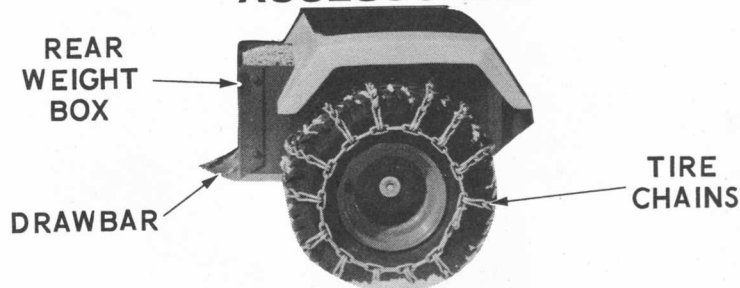


Figure 36

NOTE The following accessories in addition to many other useful optional attachments are available from your J. I. Case Dealer.

Rear Weight Box - When filled with sand, gravel, stone, bricks, metal pieces, or concrete blocks, the rear weight box will greatly increase the wheel traction when dozing or casting snow.

When not needed for wheel traction, empty the box of counterweight and use it as a handy pick up container around the yard.

The draw bar at the rear of weight box (or on back of tractor if the weight box is removed) provides a convenient attaching point for trailing attachments such as the sturdy Case Dump Cart, Figure 38.

Tire Chains - Avoid wheel slippage when operating in snow or on slippery terrain by using tire chains.

Do not use liquid in the tires for adding weight to the tractor.

Headlights - The 12 Volt Headlight Kit further increases the versatility of your Case Compact Tractor for such chores as evening snow removal. A Rear Light Attachment is also available.



Figure 37

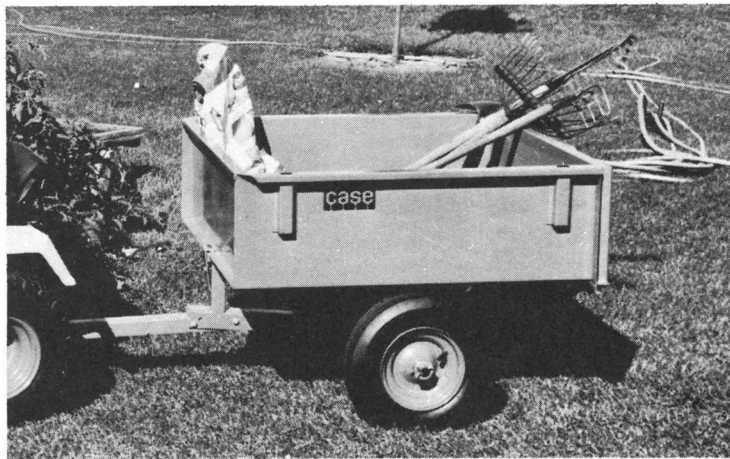


Figure 38

Dump Cart - A multitude of labor saving, hauling chores are quickly accomplished with the rugged, high capacity Case Dump Cart illustrated above.

NOTE

MANY OTHER USEFUL ATTACHMENTS AND ACCESSORIES ARE AVAILABLE THROUGH YOUR J. I. CASE DEALER.

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.

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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 inspector's copy of the Quality Assurance Audit Procedure 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.

AFTER DELIVERY CHECKUP

.....	
(Owner's Name)	(Date Checkup Performed)
.....	
(Owner's Address)	
.....	
(Dealership)	(Town)
Tractor has been operated hours	
(Tractor Model and Serial Number)	

TRACTOR

Return to neutral function.

Engine cooling system.

Check operation of brake.

Crankcase oil (change oil if necessary).

Check Speed Control Lever for proper "Neutral" and full forward and reverse travel.

Oil level in transmission.

Check tire pressures.

Lubricate all pressure fittings.

Tighten cylinder head.

Check air cleaner.

Check ignition timing.

Check tension of all belts.

Check spark plug.

Lubricate steering gears.
Check "free play". Adjust if necessary.

Check full governed no load engine speed and low idle speed.

Check front wheel toe-in.

Tighten all bolts (including rims).

Battery, starter 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

Original—Dealer

Duplicate—Leave in Operators Manual for Purchaser

Signed Customer

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