

INSTRUCTIONS
FOR
INSTALLING - OPERATING - ADJUSTING
THE MODEL F 80 AND F 84
SNOWCASTERS USED ON
CASE 220, 222, 442 AND 444
COMPACT TRACTORS

INTRODUCTION

The Model F80, 38" Snowcaster is designed for use on Case Models 220 and 222 Compact Tractors. The Model F84, 48" Snowcaster is engineered to operate on Case Models 442 and 444 Compact Tractors. Both of these snowcasters are furnished as a complete package with all necessary attaching components. There is no requirement for additional mounting kits.

This manual covers recommended operating procedures, safety suggestions, maintenance information and installation instructions. Read this manual carefully before operating your snowcaster. Your J. I. Case Compact Tractor

Dealer is well qualified to answer any further questions you might have concerning your snowcaster. Also, if the need should arise, his Service Department with factory trained technicians, genuine Case replacement parts and the proper facilities is in a position to provide proper repairs in the shortest time possible.

The definitions "Right, Left, Front and Rear" as used throughout this manual relate to the tractor and snowcaster as the operator is seated facing forward in the normal operating position on the tractor.

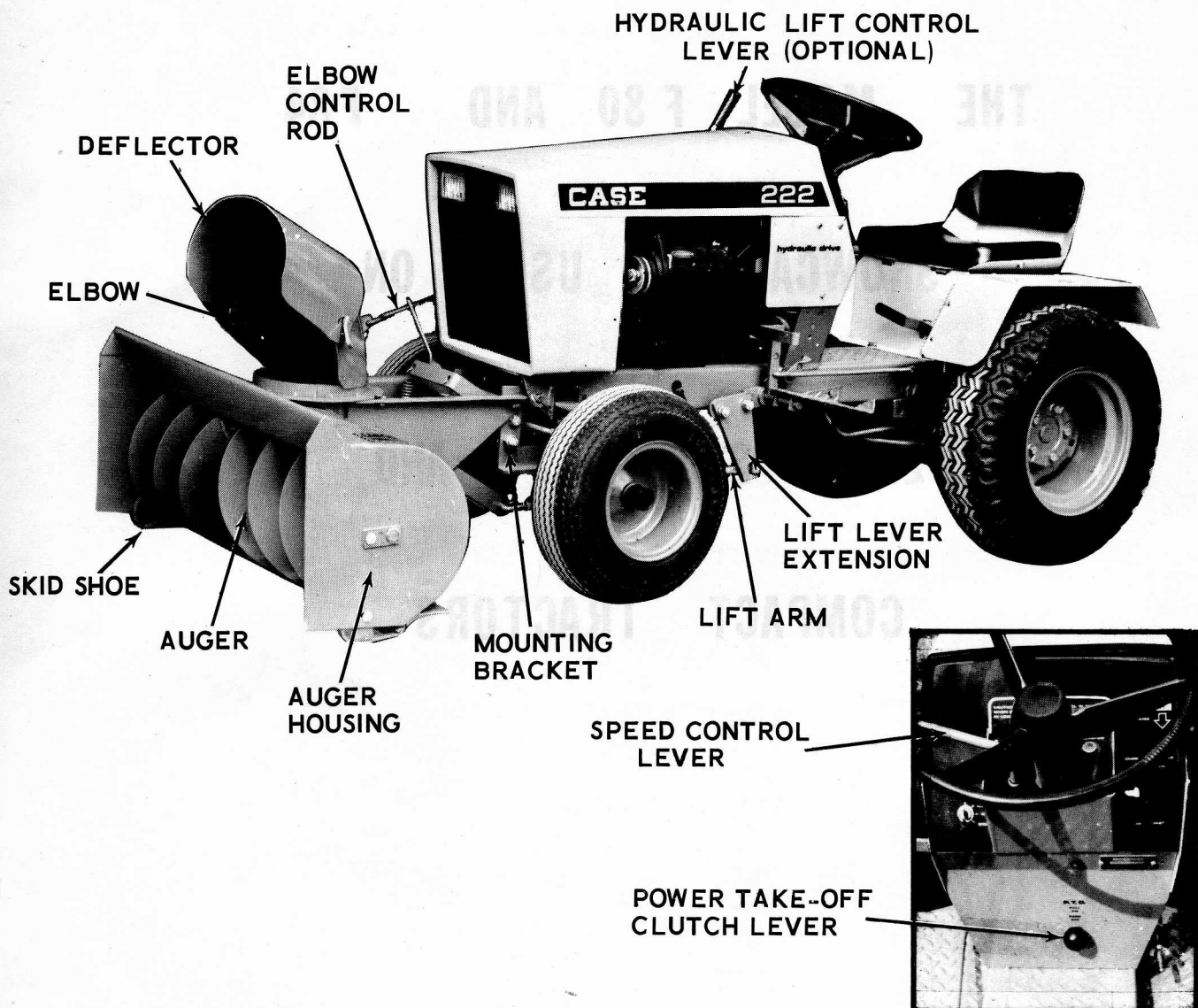


Figure 1. Identification of Principal Components and Controls

OPERATION



HI FOLKS! I'M SAM-
MY SAFETY. LOOK
FOR ME TO POINT
OUT IMPORTANT
SAFETY PRECAUTIONS.

Disengage the Tractor
PTO (Power Take-Off)
clutch before starting
engine and when trans-
porting the snowcaster.

OPERATING CONTROLS

The principle components and controls of the snowcaster are identified in Figure 1 with the same description used throughout this manual.

All controls are conveniently located near the operator's position on the tractor. The auger

is placed in motion by pulling outward on the tractor PTO (Power Take-Off) clutch lever. The elbow control rod adjusts the direction of snow discharge and the deflector controls the distance the snow is cast.



OPERATING SAFETY SUGGESTIONS

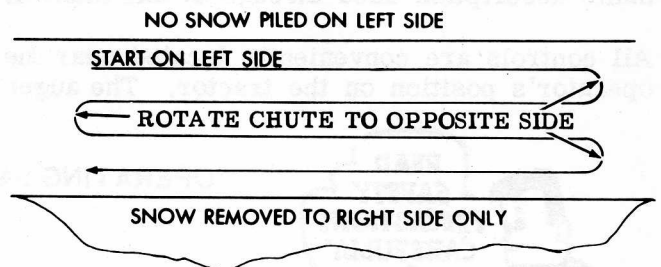
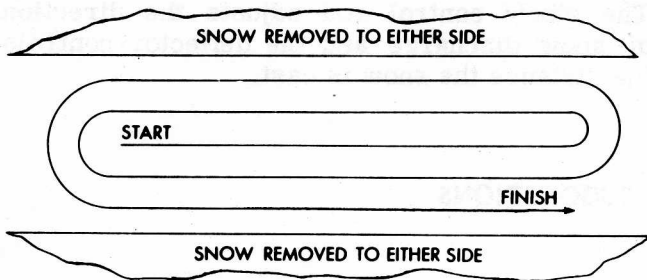
Read Safety Precautions
Carefully-

1. Regard your snowcaster as a piece of power equipment and be sure this is understood by all who operate it.
2. Never allow children or young teen-agers to operate the tractor and snowcaster.
3. Be sure you know how to stop the tractor and auger at a moment's notice.
4. Instruct children to keep away from the area of operation at all times.
5. Check the tractor and caster to make certain both are in good operating condition.
6. Fill gas tank out of doors and avoid spilling gasoline. Do not fill tank with gasoline while smoking or while engine is running.
7. Give complete and undivided attention to the job at hand.
8. Keep the area clear of all persons, particularly small children.
9. Stop engine and disengage PTO clutch when tractor is unattended.
10. Disengage PTO clutch when someone approaches.
11. Do not allow anyone other than the operator to ride on the tractor or to be towed behind.
12. Extreme caution should be exercised under slippery conditions. Reduce forward speed. Install tire chains and wheel weights to traction wheels for added safety.
13. DO NOT ATTEMPT TO CLEAR AUGER OR DISCHARGE CHUTE WHILE ENGINE IS RUNNING.
14. When changing position of the deflector, disengage the PTO clutch and stop engine.
15. Never direct snow discharge at people or buildings.
16. Disengage PTO clutch when transporting.

OPERATING TIPS

1. Whenever possible, discharge snow down wind.
2. Do not attempt to remove ice or hard packed frozen snow.
3. Always overlap each pass slightly to assure complete snow removal.
4. Use extreme care when freeing a frozen or stuck auger or chute.

METHODS OF SNOW REMOVAL



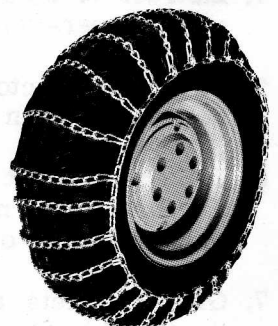
A definite pattern of operation is required to thoroughly clean the snow area. This pattern will avoid a second removal of snow and avoid throwing snow in unwanted places. Where it is possible to throw snow to right and left, as on a long driveway, it is advantageous to start in the middle. Work from one end to the opposite end throwing snow to both sides with-

out changing direction of discharge chute. If snow can only be thrown to one side of the driveway or sidewalk, start on the opposite side. At the end of each pass, rotate chute to opposite side for the return pass. At the end of each succeeding pass, rotate chute to opposite side to maintain direction of throw into the same area.

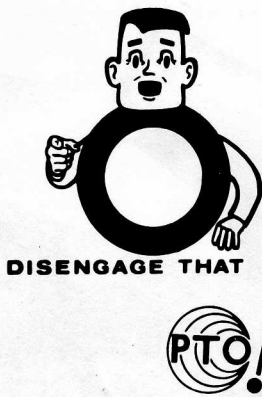
TIRE CHAINS AND WHEEL WEIGHTS

The use of tire chains and wheel weights is optional with the operator. The extra traction resulting gives the tractor operator maneuverability in handling heavy snow removal jobs. These accessories are sold by your dealer and are not included with the snowcaster.

For added traction on soft ground, snow or ice.



PREPARING FOR SNOW REMOVAL



Disengage PTO clutch when starting engine and when transporting snow-caster. Before the first snowfall, the area in which snow removal is to take place should be cleared of all stones, sticks, etc., which might be picked up by the snowcaster. OBSTACLES SUCH AS DRIVEWAY MARKERS, WATER OR GAS SHUT OFFS, ETC. SHOULD BE MARKED SO THEIR LOCATIONS UNDER THE SNOW ARE VERY OBVIOUS.

To become familiar with the controls, operate the tractor and snowcaster in a clear area before removing snow. The more familiar you become with the snowcaster, the better results you will have in its use.

A light coat of wax or silicone applied to the inside surfaces of auger housing prevents snow and ice from sticking to it. The inside of chute and deflector should be waxed several times during the snow removal season. Use any good commercial grade of paste wax, snow plow wax or spray-on silicone available from your dealer or from your local hardware store.

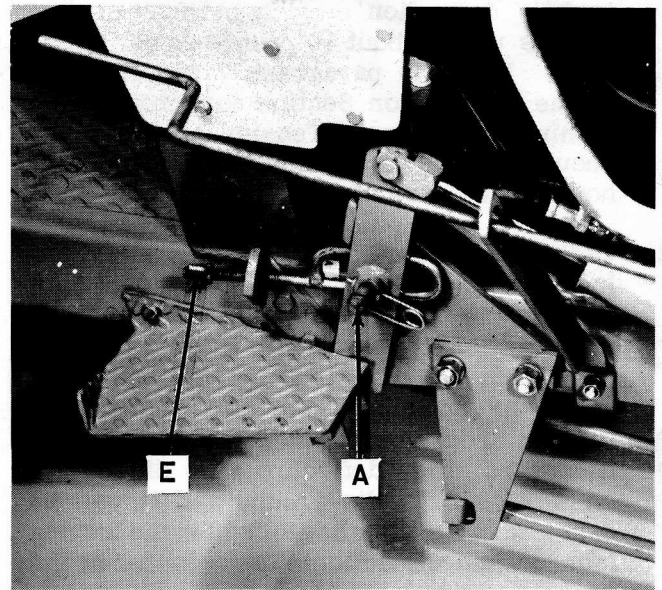


Figure 2. Adjustments for Tractors with Power Lift

If the tractor is equipped with hydraulic Power-Lift, be certain the "down-pressure" pin, Reference "A", Figure 2 is in the outer (float) position to allow the auger housing to follow the ground contour without digging in causing possible damage to the snowcaster.

Allow ample engine warm up time before starting snow removal.

Best results are obtained when snow is removed as soon as possible after it falls.

SNOW CONDITIONS

Snow removal conditions vary so greatly from the first light fluffy snowfall to the wet heavy snow that operating instructions must be flexible to fit snow removal encountered. The operator must adapt the tractor and snowcaster to depth of snow, wind direction, temperature, and surface conditions.

The auger speed is directly related to engine speed. For maximum snow removal and discharge, maintain high engine RPM (three-quarters to full governed throttle). Always operate the tractor in low range for safe and

efficient snow removal. The speed control lever should be operated to provide a ground speed most compatible with the snow removal conditions.

In extremely deep snow, raise snowcaster from the ground, drive tractor ahead in the deep snow to remove top layers first. Reverse tractor and lower snowcaster to the ground. Drive tractor ahead and repeat process to remove balance of snow. Working with repeated passes into and out of drifts will eventually move even the deepest of snow piles.

ADJUSTMENTS

1. Drive Belt - Recommended belt tension is 1/4" deflection midway between the two pulleys under about 10 pounds finger pressure. Refer to paragraph 7 and Figure 8 in the Installation Section for proper tensioning procedure. Tension on a new belt should be checked following the first 1/2 hour and 2 hours of operation.
2. Deflector - The deflector has a slotted hole on each side for adjustment. To change the angle of the deflector, loosen the two locking levers. Reference "B", Figure 3. By angling the deflector upward the snow will be cast higher and further from the tractor. When angled downward the deflector will direct the snow closer to the ground and it will be cast a shorter distance. Tighten the locking levers when the deflector is adjusted at the desired angle.
3. Skid Shoes - See Reference "C", Figure 3. Several mounting hole options are available to obtain the desired clearance between the base of the auger housing and the surface of the area to be cleared. When operating on a smooth surface such as cement or asphalt the skid shoes can be attached at the lower holes. If operating on a rough surface such as gravel or earth the skid shoes should be set at the upper holes to prevent foreign material from entering and possibly damaging the snowcaster.
4. Auger Drive Chain - The chain slack at the lower section should be held to between 3/8" and 1/2" under normal finger pressure midway between the sprockets. Adjust the guide Reference "D", Figure 3,

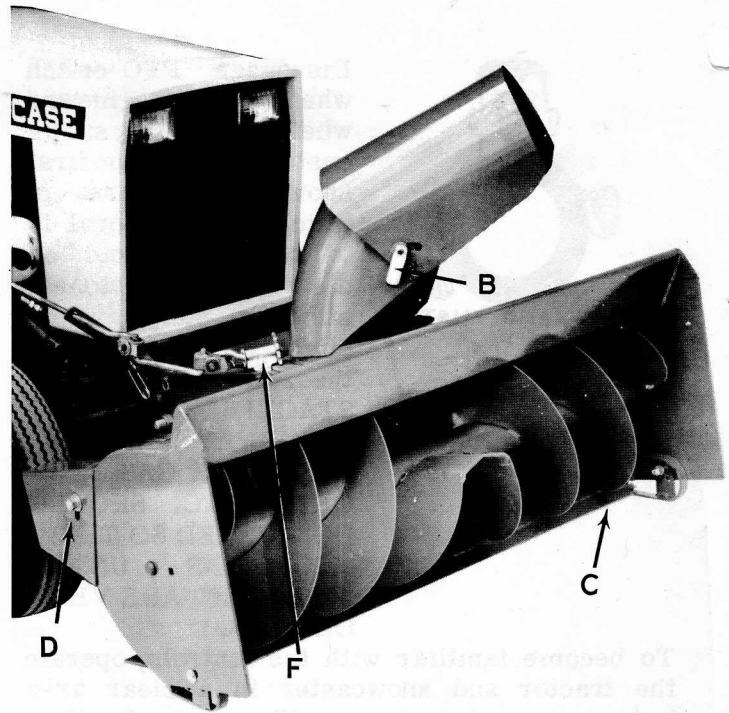


Figure 3. Snowcaster Adjustments

on the upper chain section, up or down, as necessary to maintain proper slack. Should the available adjustment for the chainguide be used up, the overall chain length can be decreased by removing one link and adding the offset link furnished with snowcaster.

5. Lift Lever - The wing nut, Reference "E", Figure 2, on the tractor mechanical or hydraulic lift lever should normally be backed off sufficiently to allow the auger housing to lower 3 to 4 inches below grade level to keep the gauge runners in ground contact when operating on uneven terrain.

MAINTENANCE

Every fifty (50) hours of operation, check the lubricant level in the gear box. See paragraph 9 and Figure 9 in the Installation section. At any evidence of seal leakage, stop operation and have it corrected by your J. I. Case Compact Tractor Dealer.

CAUTION Never attempt to service or make adjustments while the snowcaster or tractor is running.



There are lubrication fittings on each of the drive shaft universal joints. Lubricate these two fittings daily when the snowcaster is in use with a good grade (Lithium base) chassis grease. At the same time, apply a thin coat of grease to the hex shaft with the auger in transport position.

Oil the discharge elbow control sprocket and the sprocket support sleeve, Reference "F", Figure 3 daily to keep the crank turning freely.

At the beginning of each season, remove the discharge elbow and apply a coating of grease to the outside of the chute ring and to the notched underside of the elbow base ring.

Once a month during season or every 25 operating hours, lubricate the auger drive chain with Case Heavy Duty Chain and Cable Lubricant available through your Case Compact Tractor Dealer.

CHAIN AND CABLE LUBRICANT

Penetrating lubricant and rust preventive for all chains and cables.



STORING SNOWCASTER

At the end of the snow season, the following steps are recommended:

1. Remove snowcaster assembly from tractor following the reverse sequence in the installation section.
2. Wash off any salt deposit which may have dried on the auger and housing. Paint or cover exposed metal with a light coat of oil. Case Touch-up Enamel is available through your Case Compact Tractor Dealer.
3. Service the caster following lubrication instructions above. Auger drive chain must be oiled thoroughly using Case Chain and Cable Lubricant to prevent rust from forming.

4. Store snowcaster in a dry place.



Keep the original finish and color on all CASE equipment.

INSTALLATION

- A. Locate the tractor on a smooth and level surface. Check tires for equal and recommended pressures.
- B. Before setting up the snowcaster lay out the individual parts as illustrated in Figure 4. To simplify the original installation, all components are preassembled as far as possible and the attaching hardware is installed in its proper location.
- C. The following installation sequence is the same whether the tractor is equipped with hydraulic or mechanical lift.
- D. THE NUMERICAL REFERENCES ON THE ILLUSTRATIONS CORRESPOND TO THE INSTALLATION INSTRUCTION PARAGRAPH NUMBERS.

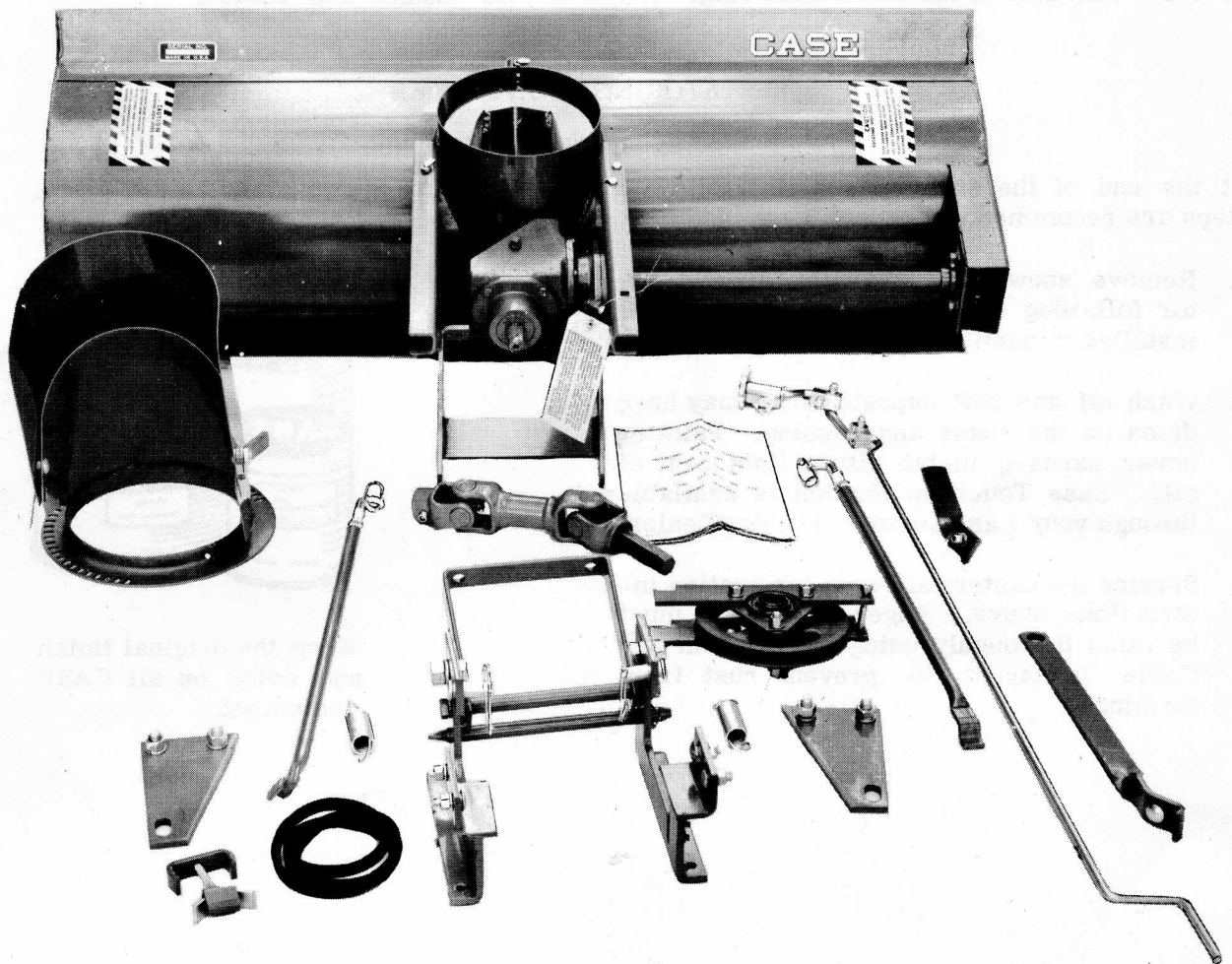


Figure 4. Snowcaster Removed from Shipping Carton

NOTE Figure 5 illustrates the manner in which the F80 mounting bracket is preassembled for the Model 220 and 222 tractors. Figure 6 illustrates the preassembled F84 bracket for the Model 442 and 444 tractors. To convert F84 brackets for use on Model 220 or 222 tractors remove the long pin, Reference 10 and remove the two large bolts that anchor the lift assist spring bracket. Then remove the lift assist spring bracket, flip it over so the anchor tabs point "down" and re-assemble it in the same bracket holes. Install the two large bolts into the lower holes so the hex flats rest against the anchor tabs. Then use the upper set of holes for assembling the auger housing to the tractor with the long mounting pin.

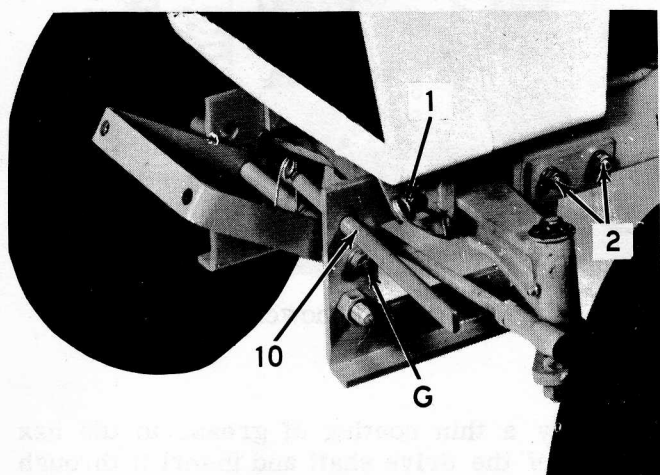


Figure 5. Mounting Bracket for Model 220 and 222 Tractors

1. Position the mounting bracket onto the tractor frame as illustrated and insert the two clevis pins through the front mounting lugs in the tractor frame from the inside so the safety pins are fully exposed as shown in Figures 5 and 6.

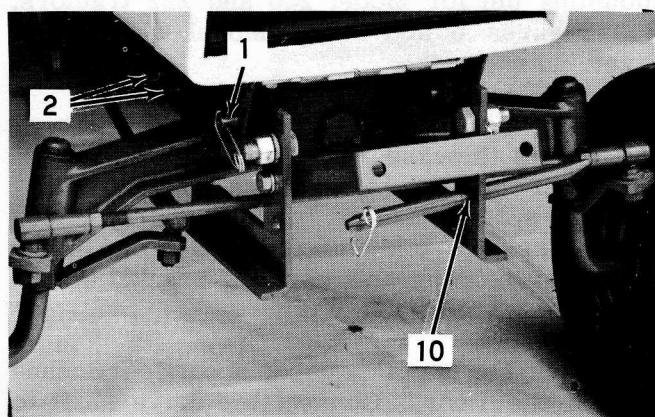


Figure 6. Mounting Bracket for Model 442 and 444 Tractors

If the bracket does not fit easily between the front mounting lugs on the tractor, loosen one of the spacer mounting bolts, Reference "G", Figure 5. After the clevis pins are installed, check and tighten both spacer bolts.

2. Secure the mounting bracket to the tractor side frame channels with the four square neck bolts, nuts, and lockwashers.
3. The pulley and bearing plate assembly is in three parts. The front assembly is arranged so when the nuts are on the forward face the "U" shaped cut out is on the left and facing upwards. The third part is the pulley itself.

Pull PTO lever out and carefully install drive belt over the tractor clutch pulley. If one of the fan blades should be too close to the grille side wrapper, turn over the engine until clearance is available. Push PTO lever back in. Remove anchor bolt and disassemble the two bearing plates.

Place the front bearing plate into the slots on the mounting bracket with "U" shaped cut out to the left side.

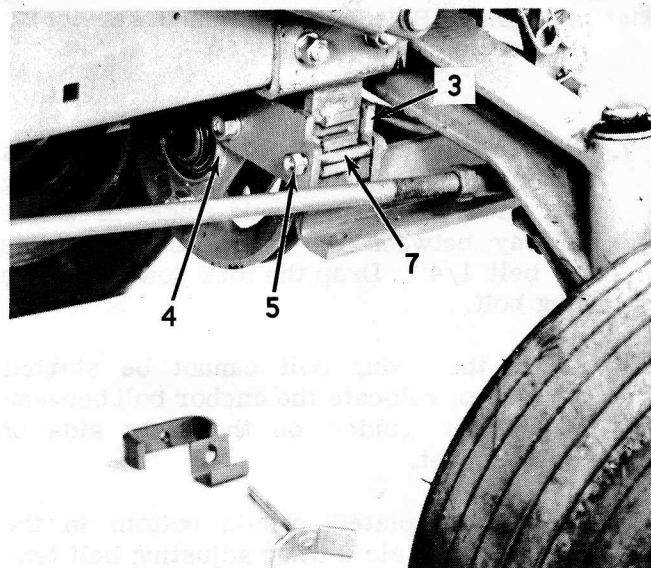


Figure 7. Installing the Pulley, Drive Belt and Bearing Plate Assemblies

4. Insert the pulley into the lower belt loop and then insert the pulley hub into the front bearing plate assembly.

Place the rear bearing plate assembly onto the pulley hub with the "U" shaped cut out up and to the left.

5. Insert the anchor bolt through the right side of the bearing plates and between the two lower guides on the mounting bracket. Install the locknut finger tight.
6. Place the clamp into the notches on left side of the bearing plates. Assemble the wing bolt through the bracket lock and clamp as shown in Figure 8. Do not tension the belt.

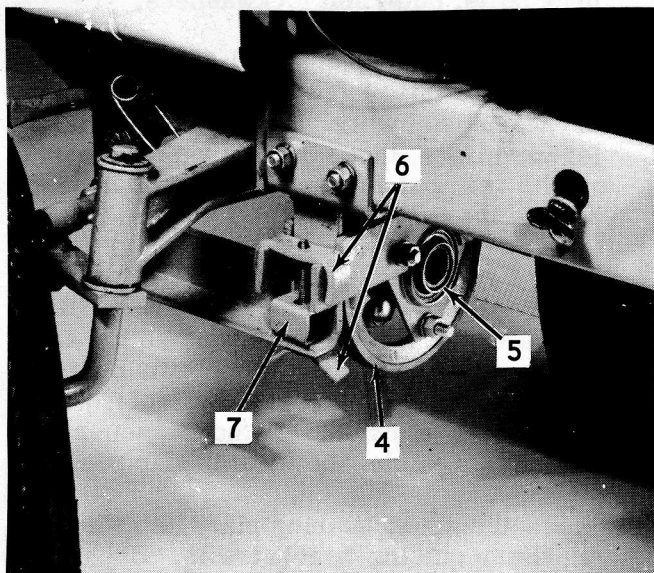


Figure 8. Drive Belt Installation and Tensioning

7. Tighten the anchor bolt on right side of the bearing plates and tighten the wing bolt until about 10 pounds finger pressure midway between the two pulleys deflects the belt $1/4"$. Drop the lock down over the wing bolt.

NOTE If the wing bolt cannot be started into the clamp, relocate the anchor bolt between the two upper guides on the right side of mounting bracket.

If the bearing plates should bottom in the mounting bracket slots when adjusting belt tension, move the anchor bolt under a lower guide.

8. Remove the square head pipe plug from the top opening in the gear box and install the hex bushing and breather plug, Figure 9, which for shipping purposes is tied to one of the auger housing adapter plates. With the gear box positioned level, check the lubricant level at the side socket plug. Add, if necessary, to bring to this level using a good grade of SAE 75 or 80 EP gear lubricant.

NOTE The lubricant level can also be easily checked by using a clean screwdriver as a dipstick through the breather plug hole. Tube level should be between $1-1/4"$ and $1-3/4"$ with the gear box in a level position.

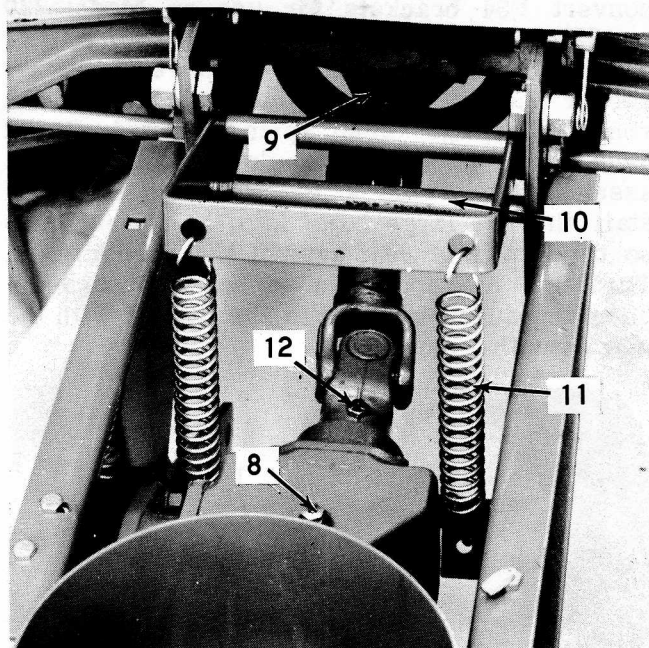


Figure 9. Connecting Snowcaster to Tractor

9. Apply a thin coating of grease to the hex end of the drive shaft and insert it through the center of the pulley.
10. Roll the tractor up to the snowcaster and align the auger housing adapter plates with the mounting bracket. Insert the long mounting pin through the adapter plates and mounting bracket and secure with safety pin.

NOTE Figure 5 illustrates the location of the mounting pin for Model 220 and 222 tractors. See Figures 6 and 9 for Model 442 and 444 tractors.

11. With the tractor brakes locked and rear wheels blocked, raise and block up the auger housing high enough so the lift assist springs can be installed easily. Hook the springs into the attaching holes on the auger housing and mounting bracket as illustrated in Figure 9.
12. Block the auger housing about four inches off the floor. Connect the drive shaft to the gear box input shaft and secure with bolt and locknut. Lower the auger housing to ground level.

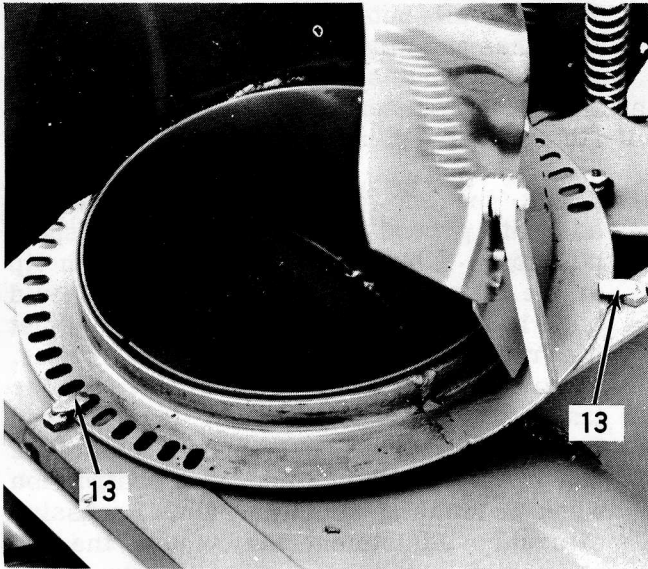


Figure 10. Installing the Elbow and Deflector

13. Apply grease to all areas of contact between the discharge elbow and chute, including the front corners of the auger adapter plates, under sides of the guides and so forth. Place the elbow and deflector assembly over the discharge chute. Turn the front and left guides over the elbow ring and secure by tightening the two lower hex nuts. See Figure 10.

14. Hook the lift arm assemblies into the lift lever extensions as illustrated in Figure 11.

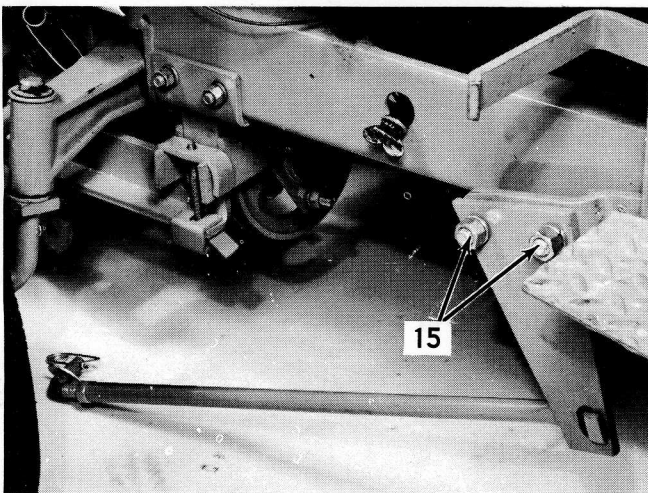


Figure 11. Installing the Lift Arms

15. Secure the lift lever extensions to the outside of the lift levers as illustrated using the four preassembled bolts, nuts, and lockwashers.

NOTE If the tractor has hydraulic PTO, install the left extension with the nuts to the inside of the lift lever to obtain the required clearance.

16. Connect the rod ends of the lift arm assemblies to the attaching bars on the auger housing. Secure with the plain washers and safety pins to the inside of the attaching bars. See Figure 12. Also, see Paragraph 21 for final adjustment.

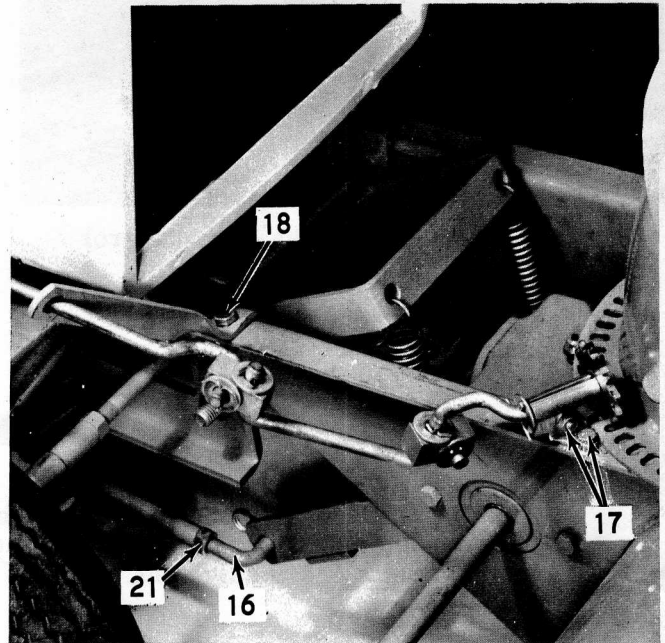


Figure 12. Installing the Elbow Control Assembly

17. Place the elbow control sprocket into the notches on the elbow base ring and secure the support bracket to the upper flange on the right auger housing adapter plate, Figure 12, with the two preassembled 1/4" bolts, nuts, and lockwashers.
18. Slip the smaller of the two elbow control rod support bars onto the control rod and secure it to the right auger housing adapter plate, Figure 12, with the preassembled 3/8" bolt, nut, and lockwasher.
19. Place the other support bar onto the control rod as illustrated in Figure 13 and secure to the rearward of the two square holes near the center of the right tractor frame rail using the preassembled 3/8" square neck bolt, nut, and lockwasher.

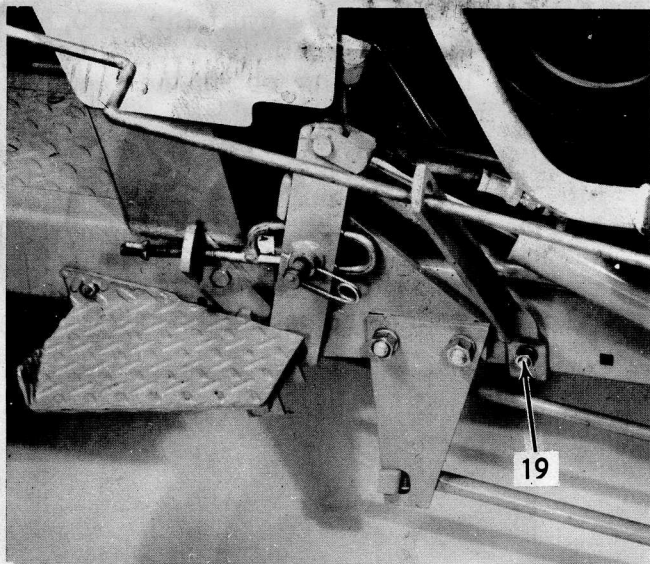
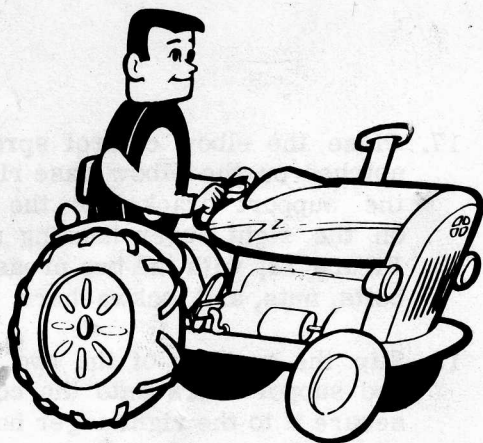


Figure 13. Installing the Rear Control Rod Support Bracket

20. Recheck all nuts, bolts, and brackets for tightness and alignment. Test run the snowcaster at low speeds initially, gradually increasing speeds and checking constantly for proper operation of all components.
21. Check the snowcaster for level and for adequate ground clearance in the transport position. Clearance from the bottom lip of the auger housing to the ground should be 5-1/2 to 6-inches at both ends. Adjust the rod ends of the lift arm assemblies, Figure 12, as necessary to achieve proper transport clearance and for level ground contact. Inadequate transport clearance can cause the auger to run into obstruction when negotiating rough terrain. Excessive clearance adjustment may cause the hex end of the drive shaft to "jam" in the pulley hub resulting in damage to the pulley or drive shaft assemblies.

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.



CAUTION

"Never operate the tractor or snowcaster unless seated in the driver's seat."