Cub Cadet®

Power Equipment

Owner's Manual

45" SNOW THROWER ATTACHMENT

Model Number
551

NOTE

The Manual Lift Bracket/Helper Spring Kit, part number 759-3855, is required to install the Model 551 snow thrower on a standard Garden Tractor with the manual lift system.

Important:
Read Safety Rules and Instructions Carefully

Thank you for purchasing an American built product

CUB CADET CORPORATION • P.O. BOX 368023 • CLEVELAND, OHIO 44136-9723

PRINTED IN U.S.A.

FORM NO. 772-4247

LIMITED WARRANTY

TWO-YEAR RESIDENTIAL
ONE-YEAR COMMERCIAL

Proper maintenance of your Cub Cadet equipment is the owner's responsibility. Follow the instructions in your owner's manual for correct lubricants and maintenance schedule. Your Cub Cadet dealer carries a complete line of quality lubricants and filters for your equipment's engine, transmission, chassis and attachments.

RIDING MOWERS, LAWN TRACTORS, GARDEN TRACTORS, CUB CADET ATTACHMENTS AND HOME MAINTENANCE PRODUCTS

This limited warranty for residential users, covers any defect in materials or workmanship in your Cub Cadet equipment for two years from the date of purchase for the first user purchaser.

We will replace or repair any part or parts without charge through your authorized Cub Cadet dealer.

Batteries have a one-year prorated limited warranty with 100% replacement during the first three months.

V-belts for either the traction drive or any attachments are covered for one year only.

Cub Cadet equipment used commercially is warranted for one year only.

(Commercial use is defined as either having hired operators or used for income producing purposes.)

ITEMS NOT COVERED

The warranty does not cover routine maintenance items such as lubricants, filters (oil, fuel, air and hydraulic), cleaning, tune-ups, brake and/or clutch inspection, adjustments made as part of normal maintenance, blade sharpening, set-up, abuse, accidents and normal wear. It does not cover incidental costs such as transporting your equipment to and from the dealer, telephone charges or renting a product temporarily to replace a warranted product.

There is no other express warranty.

HOW TO OBTAIN SERVICE

Contact your authorized Cub Cadet servicing dealer who sold you your Cub Cadet equipment. If this dealer is not available, see the Consumer Yellow Pages under "lawn mowers" for the name of a dealer near you.

If you need further assistance in finding an authorized Cub Cadet servicing dealer, contact:

Cub Cadet Corporation
Post Office Box 368023
Cleveland, Ohio 44136

HOW DOES STATE LAW APPLY?

This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

CONTENTS

IMPORTANT

SAFE OPERATION PRACTICES

THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR UNIT. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY. WHEN YOU SEE THIS SYMBOL— **HEED ITS WARNING.**

WARNING

To reduce the potential for any injury, comply with the following safety instructions. Failure to comply with the instructions may result in personal injury.

SAFE OPERATION PRACTICES FOR SNOW THROWERS

TRAINING

1. Read this owner's manual carefully. Be thoroughly familiar with the controls and proper use of the equipment. Know how to stop the unit and disengage the controls quickly.
2. Never allow children to operate equipment. Never allow adults to operate equipment without proper instructions.
3. No one should operate the unit while intoxicated or while taking medication that impairs the senses or reactions.
4. Keep the area of operation clear of all persons, especially small children and pets.
5. Exercise caution to avoid slipping or falling, especially when operating in reverse.

PREPARATION

1. Thoroughly inspect the area where the equipment is to be used and remove all door mats, sleds, boards, wires and other foreign objects.
2. Disengage all clutches and shift into neutral before starting the engine.
3. Do not operate equipment without wearing adequate winter outer garments. Do not wear jewelry, long scarfs or other loose clothing which could become entangled in the moving parts of the machine. Wear footwear which will improve footing on slippery surfaces.
4. Check the fuel before starting the engine. Gasoline is an extremely flammable fuel. Always use an approved fuel container to store gasoline. Do not fill

the fuel tank indoors while the engine is running or while the engine is still hot. Replace the gasoline cap securely and wipe off any spilled gasoline before starting the engine. An ignition spark or heat may ignite spilled fuel, causing a fire or explosion.

5. Adjust the collector housing height to clear gravel or crushed rock surfaces.

6. Never attempt to make any adjustments while the engine is running (except where specifically recommended by the manufacturer).

7. Let the engine and machine adjust to the outdoor temperature before starting to clear snow.

8. Always wear safety glasses or eye shields during operation, or while performing an adjustment or repair, to protect eyes from foreign objects that may be thrown from the machine in any direction.

OPERATION

1. Do not put hands or feet near rotating parts. Keep clear of the discharge opening at all times.

2. Exercise extreme caution when operating on, or crossing, gravel drives, walks or roads. Stay alert for hidden hazards or traffic. Do not carry passengers.

3. After striking a foreign object, stop the engine, remove the wire from the spark plug, and thoroughly inspect the snow thrower for any damage. Repair the damage before restarting and operating the snow thrower.

4. If the snow thrower should start to vibrate abnormally, disengage the PTO, stop the engine and check immediately for the causes. Vibration is generally a warning sign of trouble.

5. Disengage the PTO and stop the engine whenever you leave the operating position, before unclogging the collector/impeller housing or discharge chute, and before making any repairs, adjustments or inspections.

6. Never place your hand in the discharge or collector openings. Use a stick or wooden broom handle to unclog the discharge opening.

7. Take all possible precautions when leaving the unit unattended. Disengage the collector/impeller, shift into neutral and engage the parking brake, stop the engine and remove the key.

8. When cleaning, repairing or inspecting, make certain the collector/impeller and all moving parts have stopped completely. Disconnect the spark plug wire and keep it away from plug to prevent accidental starting.

9. **Do not run the engine indoors** except when starting the engine and transporting the snow thrower in or out of the building. Open doors prior to starting engine. Exhaust gases contain carbon monoxide and are extremely dangerous.

10. Do not clear snow across the face of slopes. Exercise extreme caution when changing direction on slopes. Do not attempt to clear steep slopes.

11. Never operate snow thrower without all guards, plates or other safety protection devices in place.

12. Never operate the snow thrower near glass enclosures, automobiles, window wells, a drop off, etc., without proper adjustments of the snow thrower discharge angle. Keep children and pets away.

13. Do not overload the machine capacity by attempting to clear snow at too fast a rate.

14. Never operate the machine at high transport speeds on slippery surfaces. Look behind and use care when backing up.

15. Never direct discharge at bystanders or allow anyone in front of the unit.

16. Disengage power to the collector/impeller when transporting or not in use.

17. Use only attachments and accessories approved by the manufacturer of snow thrower (such as wheel weights, counterweights, cabs, etc.).

18. Never operate the snow thrower without good visibily or artificial light.

MAINTENANCE AND STORAGE

1. Check for proper tightness of shear bolts, mounting bolts, etc., at frequent intervals to be sure equipment is in safe working condition.

2. Never store the machine, with fuel in the fuel tank, inside a building where ignition sources are present, such as hot water and space heaters, clothes dryers and the like. Allow the engine to cool before storing in any enclosure.

3. Always refer to the Owner's Manual instructions for important details if the snow thrower is to be stored for an extended period.

4. Run the machine for a few minutes after throwing snow to prevent freeze up of the collector/impeller.

PRODUCT SAFETY GRAPHICS

1. Keep safety product graphics (decals) clean.
2. Replace any safety graphic that is damaged, destroyed, missing, painted over or can no longer be read.
3. Replacement safety graphics are available through your Cub Cadet dealer.

BACK OF BLOWER HOUSING FACING OPERATOR

ON BACK OF BLOWER HOUSING FACING OPERATOR

BLOWER HOUSING FACING FORWARD (TOP LIP)

ON DISCHARGE CHUTE (TOP)

TO THE OWNER

The Cub Cadet 45-inch Snow Thrower, Model Number 551, is designed for use on Cub Cadet Garden Tractors and Super Garden Tractors. Contained in this manual are instructions for the installation and use of the snow thrower assembly with these tractors.

PLEASE KEEP THIS MANUAL. The instructions in this manual explain the minor assembly required; how to install the snow thrower assembly; adjustment, operating and maintenance procedures for the equipment; and the seasonal removal of the snow thrower assembly. Read this manual carefully to familiarize yourself with the equipment before you install and operate the snow thrower. The illustrations, which are referenced in the text, are included to help you better understand how to install, adjust and operate the equipment for optimal performance.

When installing the Model 551 snow thrower on a standard Garden Tractor with a manual lift system, the Manual Lift Bracket/Helper Spring Kit, part number 759-3855 is required.

Read and observe all WARNING and CAUTION statements. They are included to provide for the protection of the equipment installer and user, and to ensure prolonged service life of the equipment.

WARNING

Use rear wheel weights, or the rear weight bracket with a minimum of three suitcase weights, whenever the snow thrower attachment is installed on the tractor. The Rear Wheel Weight Kit is available through your Cub Cadet dealer by ordering kit number 190-370. The Rear Weight Bracket Kit is available as kit number 190-447, which includes **only** the bracket and mounting hardware. The individual suitcase weights can be ordered under part number 759-3389.

NOTE

References to LEFT and RIGHT indicate the left and right sides of the tractor when facing forward in the driver's seat, unless specifically instructed to reference from a different position on the tractor. Reference to the FRONT indicates the grille end of the tractor; to the REAR indicates the draw bar end.

SECTION I. INTRODUCTION

This section will help you to become familiar with the components of the 45˝Snow Thrower Attachment, Model 551, and the Manual Lift Bracket/Helper Spring Kit, Part Number 759-3855.

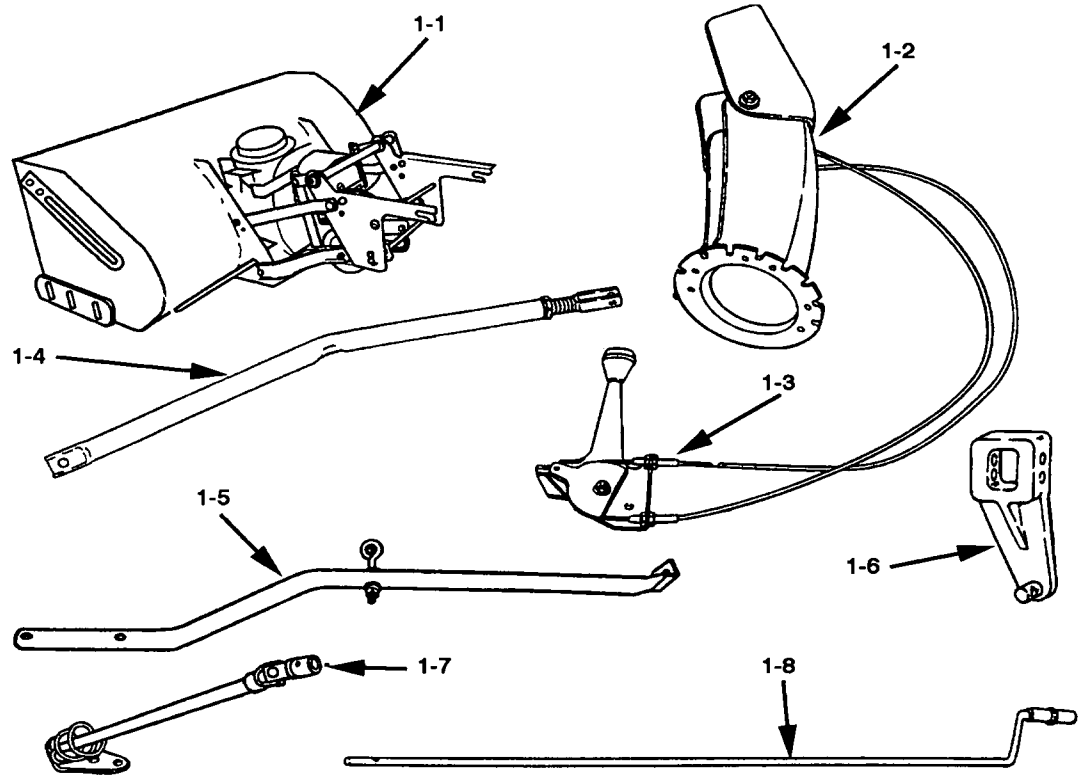
Remove the top and two end panels from the shipping crate, then cut the cable ties securing the snow thrower assembly to the pallet and the sub-assembly package to the end panel. Remove the snow thrower assembly and unpack the components of the sub-assembly package and the hardware carton. Refer to Figures 1and 2 to confirm that all parts are present and to acquaint yourself with the parts nomenclature.
If applicable, remove the components from the Lift Bracket/Helper Spring Kit (759-3855) and refer to Figure 3 to confirm that all parts are present

WARNING

Select a ***firm*** and ***level*** surface that is large enough to accommodate both the snow thrower assembly and the tractor. Engage the tractor's parking brake.

NOTE

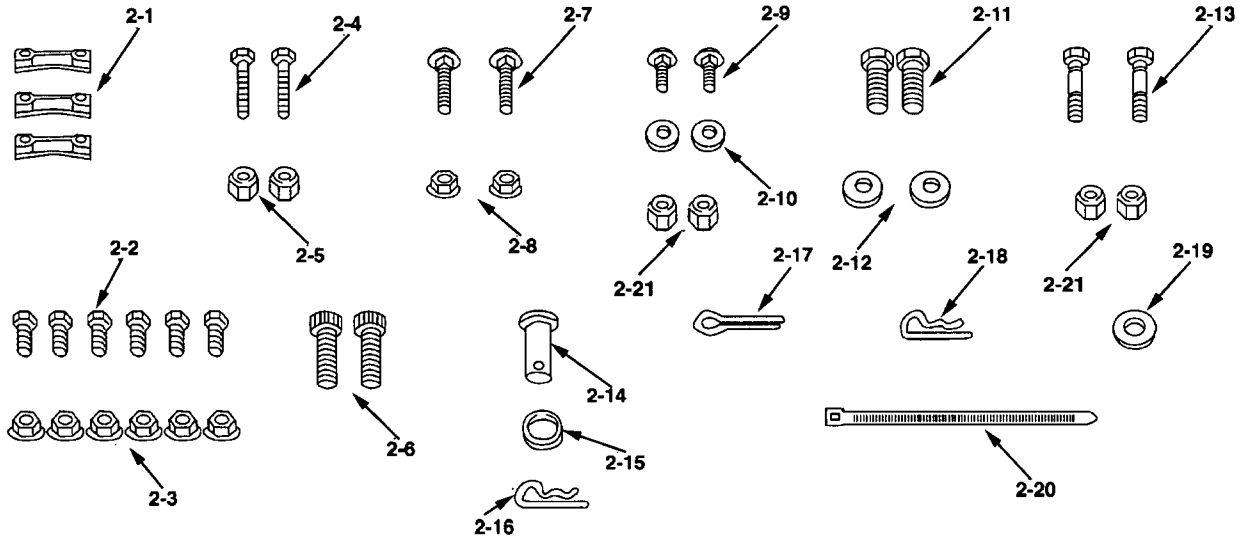
Throughout the manual, the parts shown in Figures 1, 2, and 3 (if applicable) will be identified by name, followed by their figure number and callout number in parenthesis. Some component parts may have been further preassembled at the factory. If so, skip the steps showing assembly of these parts and proceed to next step.



REF. NO.	DESCRIPTION	QTY.	REF. NO.	DESCRIPTION	QTY.
1-1	Snow Thrower Assembly	1	1-5	Chute Crank Support Tube Assembly	1
1-2	Discharge Chute Assembly	1	1-6	Hydraulic Lift Bracket Assembly	1
1-3	Chute Tilt Handle Assembly	1	1-7	Chute Crank/Mtg. Bracket Assembly	1
1-4	Lift Tube/Adjustment Clevis Assembly	1	1-8	Chute Crank Rod Assembly	1

Figure 1

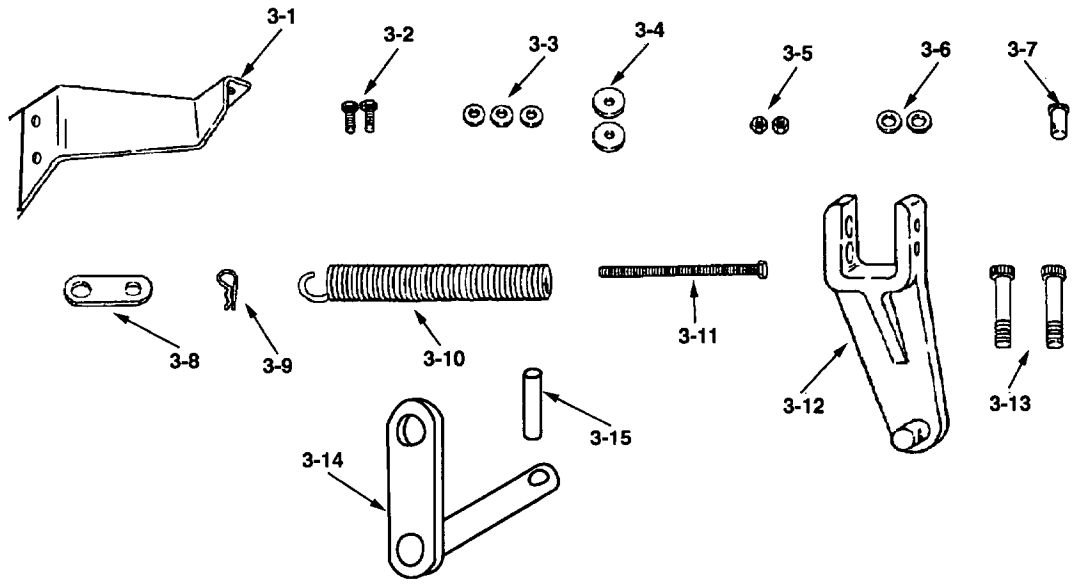
CONTENTS OF HARDWARE PACK



REF. NO.	DESCRIPTION	QTY.	REF. NO.	DESCRIPTION	QTY.
2-1	Chute Flange Keeper	3	2-12	Bell Washer, .505 X 1.0 X .05	2
2-2	Hex Cap Screw, 1/4-20 X 3/4 Lg	6	2-13	Shear Bolt, 5/16-18 X 1-3/4 Lg (Extra)	2
2-3	Hex Flanged Lock Nut, 1/4-20	6	2-14	Clevis Pin, 5/8 X 1-3/4 Lg	1
2-4	Hex Cap Screw, 3/8-16 X 1.5 Lg GR5	2	2-15	Flat Washer, 5/8 X 1.0	1
2-5	Hex Insert Lock Nut, 3/8-16	2	2-16	Hairpin Clip, .125 X 1.75	1
2-6	Socket Hd. Cap Screw, 5/16-18 X 1.5 Lg	2	2-17	Cotter Pin, 3/32 X 3/4 Lg	1
2-7	Carriage Bolt, 5/16-18 X 1.5 Lg	2	2-18	Hairpin Clip, .092 X 1.62	1
2-8	Hex Flange Lock Nut, 5/16-18	2	2-19	Flat Washer, .510 X 1.0 X .06	1
2-9	Carriage Bolt, 5/16-18 X 3/4 Lg	2	2-20	Cable Tie	1
2-10	Bell Washer, .345 X .880 X .06	2	2-21	Hex Insert Lock Nut, 5/16-18	4
2-11	Hex Cap Screw, 1/2-13 X 1.25 Lg GR5	2			

Figure 2

CONTENTS OF MANUAL LIFT BRACKET/ HELPER SPRING KIT, PART NO. 759-3855



REF. NO.	DESCRIPTION	QTY.	REF. NO.	DESCRIPTION	QTY.
3-1	Helper Spring Bracket	1	3-9	Hairpin Clip	1
3-2	Hex Cap Screw, 3/8-16 X 1.0 Lg	2	3-10	Extension Spring w/Insert	1
3-3	Bell Washer, 3/8˝ID	3	3-11	Special Hex Screw	1
3-4	Flat Washer, .406 ID X 1.25	2	3-12	Manual Lift Bracket Assembly	1
3-5	Hex Nut, 3/8-16	2	3-13	Socket Head Screw, 5/16-18 X 1.75 Lg	2
3-6	Flat Washer, 5/8˝ID	2	3-14	Helper Spring Lift Arm	1
3-7	Clevis Pin	1	3-15	Spiral Spring Pin	1
3-8	Link	1			

Figure 3

SECTION II. ASSEMBLY

Section II describes assembly procedures which should be performed before the 45″ Snow Thrower is installed on the tractor. Refer to the Owner's Manual provided with your tractor and mowing deck (or other attachments) if you have any questions regarding removal or tractor preparation.

A. SNOW THROWER ASSEMBLY PREPARATION

WARNING

Before beginning preparation, select a firm and level surface that is large enough to accommodate the snow thrower attachment and tractor. Engage the tractor parking brake.

1. Lubricate the flange of the chute adapter on the rear of the snow thrower assembly (1-1) housing, using a multi-purpose automotive grease or equivalent.
2. Place the discharge chute assembly (1-2) over the opening of the chute adapter, with the opening of the discharge chute facing forward.
3. With their flat surface facing downward, place the chute flange keepers (2-1) beneath the flanges of both the discharge chute (1-2) and the chute adapter. Insert the hex cap screws (2-2) up through the flange keepers and discharge chute flange as shown in Figure 4, and secure with the hex flanged lock nuts (2-3). After assembling all three chute flange keepers, tighten all lock nuts until snug, then back off (loosen) approximately 1/4 turn.

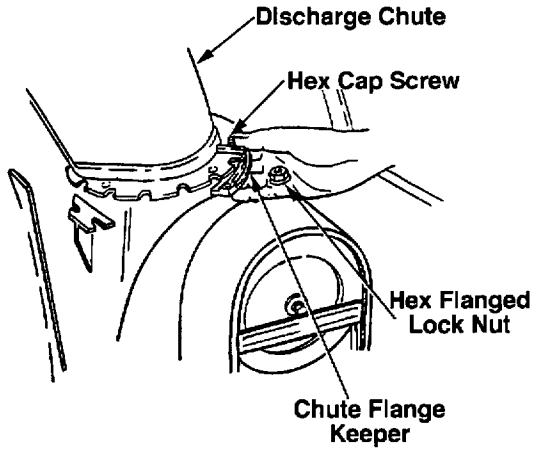


Figure 4

4. Fasten the chute crank support tube assembly (1-5) to the support tube mtg. bracket and to the back of the snow thrower housing using the hex cap screws (2-4) and hex insert lock nuts (2-5). Refer to Figure 5.

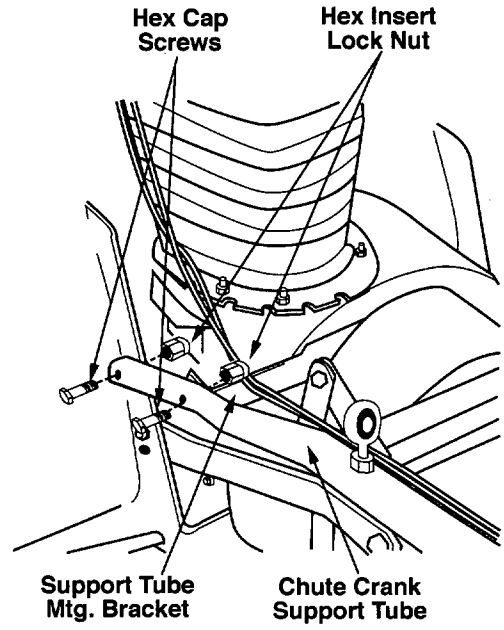


Figure 5

5. Routing the tilt handle cables (1-3) along the inside of the chute crank support tube (1-5), install the chute tilt handle assembly (1-3) on the support tube using the carriage bolts (2-7) and hex flange lock nuts (2-8). Refer to Figure 6.

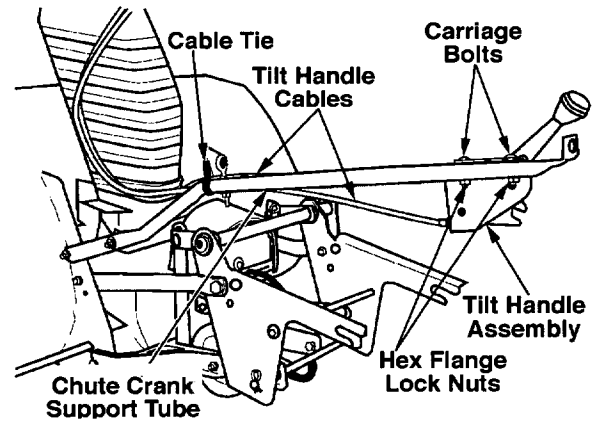


Figure 6

6. Secure the tilt handle cables (1-3) to the support tube (1-5) with the cable tie (2-20). See Figure 6. Cut excess length from the cable tie.

7. Position the chute crank/mtg. bracket assembly (1-7) on the mounting flange (on the left side of the chute adapter) so that the spiral of the chute crank engages the teeth of the discharge chute (1-2). Fasten the chute crank mtg. bracket (1-7) with the two carriage bolts (2-9), bell washers (2-10), and hex insert lock nuts (2-21). Do not completely tighten the hardware now. Refer to Figure 7.

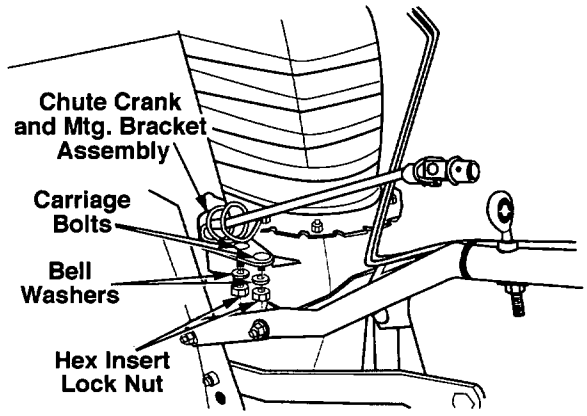


Figure 7

8. After first making sure the bushings are installed in both the rearward end and the eye bolt of the chute crank support tube assembly (1-5), slide the chute crank rod assembly (1-8) into the support tube assembly. Refer to Figure 8.

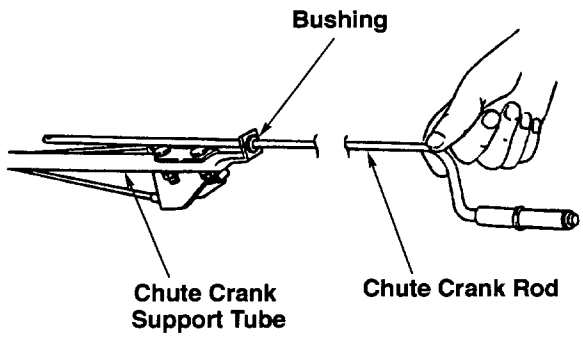


Figure 8

9. Insert the chute crank rod (1-8) into the sleeve of the joint block on the chute crank assembly (1-7). Align the holes and secure the rod with the cotter pin (2-17). See Figure 9.

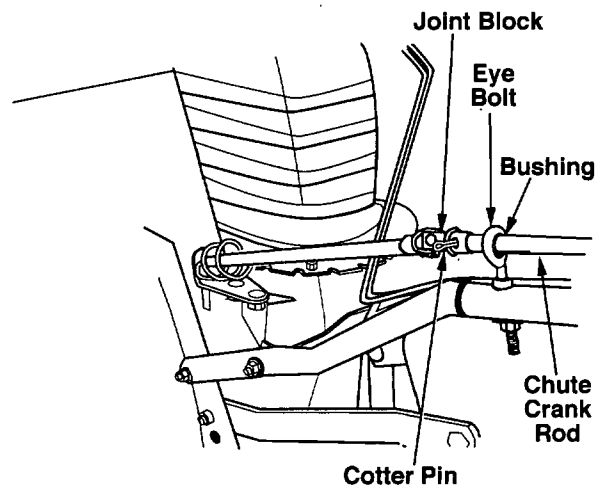


Figure 9

10. Adjust the chute crank mtg. bracket (1-7) so the spiral of the chute crank fully engages the teeth of the discharge chute, but still allows the chute crank rod (1-8) to be easily turned, then tighten the hex insert lock nuts (2-21).

B. TRACTOR PREPARATION

WARNING

If the tractor has been recently operated, the engine, exhaust system and PTO clutch will be HOT. To avoid personal injury, allow the tractor to cool before proceeding with tractor preparation.

NOTE

Remove the mower deck and lift frame, or any other attachment, from the tractor (refer to the attachment Owner's Manual for proper removal).

NOTE

For standard Garden Tractors with a manual lift system, skip step 1 and proceed to step 2.

1. FOR TRACTORS WITH HYDRAULIC LIFT install the hydraulic lift bracket assembly (1-6) as follows:

NOTE

On Standard Garden Tractors only, pull the height indicator from the end of the lift shaft. See Figure 10.

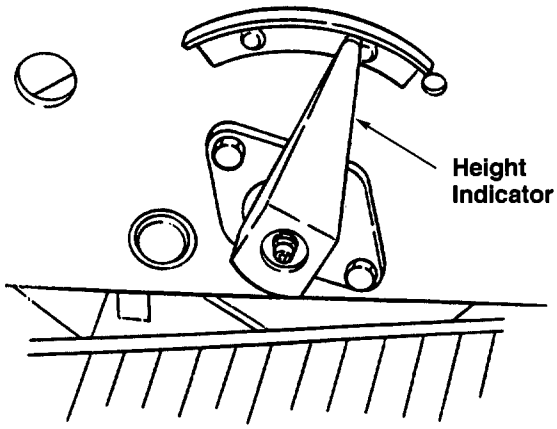


Figure 10

a. Slide the hydraulic lift bracket assembly (1-6) onto the end of the lift shaft, in the position shown in Figure 11.

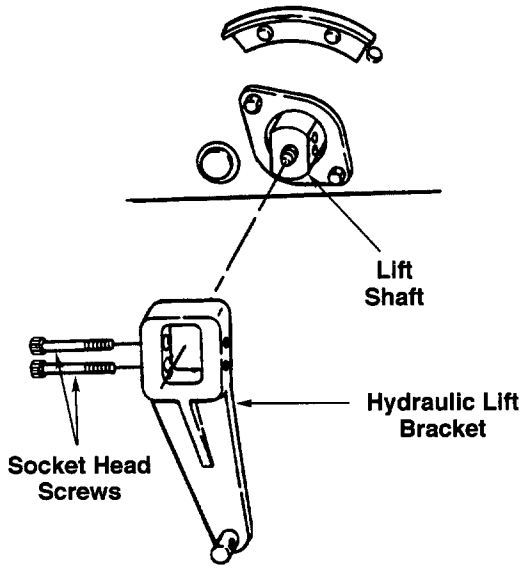


Figure 11

b. Secure the lift bracket with the two socket head cap screws (2-6) as shown in Figure 11.

2. FOR TRACTORS WITH MANUAL LIFT, install the manual lift bracket assembly (3-12) as follows:

NOTE

The manual lift bracket and mounting hardware are provided with the helper spring kit, Part No. 759-3855.

a. Remove the hex cap screws (lower two), hex nuts, and lock washers that attach the lift handle to the lift shaft. Store hardware for re-use when the lift bracket is removed.

b. Holding the lift handle in place, slide the manual lift bracket assembly (3-12) up onto the lift handle in the position shown in Figure 12.

c. Secure the lift bracket and lift handle with the two socket head cap screws (3-13) as shown in Figure 12.

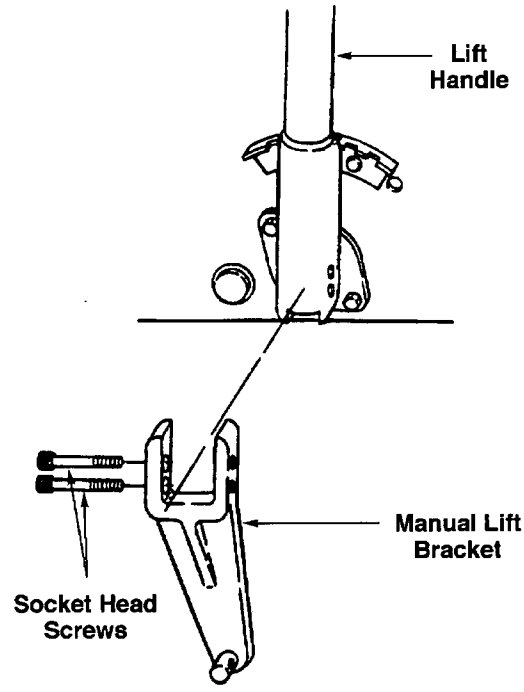


Figure 12

SECTION III. INSTALLATION

Section III explains how to install the snow thrower assembly onto the tractor. Most of the instructions apply to all tractors. Installation procedures which apply only to certain tractors are clearly noted at the beginning of the instruction.

WARNING

The tractor and snow thrower assembly must be placed on a firm and level surface during installation.

1. Position the front of the tractor directly behind the snow thrower assembly as shown in Figure 13. Using the hydraulic lift or manual lift handle, place the tractor lift arms in their lowest position.

WARNING

Before beginning installation of the snow thrower assembly, engage the tractor parking brake, ensure the tractor's PTO switch and ignition switch are in the "OFF" position, and remove the ignition key.

WARNING

The tractor engine, exhaust system and PTO clutch may be HOT. To avoid personal injury, allow the tractor to cool before proceeding with installation.

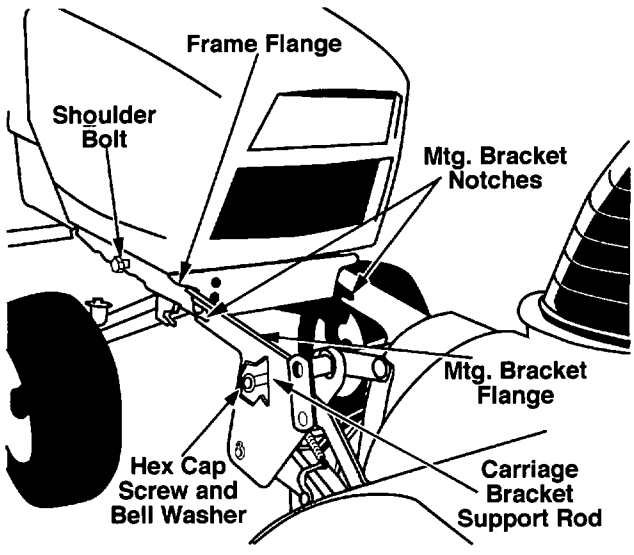


Figure 13

2. Loosen, but do not remove, the hex cap screw and bell washer that secures each end of the carriage bracket support rod to the mounting brackets of the snow thrower assembly. See Figure 13.

3. Working from the left side of the tractor, tip the snow thrower slightly forward by lifting upward on the chute crank support tube, and lift upward on the snow thrower lift arm assembly until the flanges of the snow thrower mounting brackets align (are parallel) with the flanges of the tractor frame. See Figure 13.

NOTE

Blocks may be placed under the two frame attachment plates on the back of the blower housing to aid in holding the snow thrower in the forward tipped position while it is being installed.

4. Slide the snow thrower assembly rearward until the mounting bracket notches slip over the shoulder bolts on the tractor, and the carriage bracket support rod snaps into the tractor quick attach brackets. See Figure 13.

5. After making certain the support rod has locked into the tractor quick attach, tighten the hex cap screws and bell washers securing the rod. Secure the mounting brackets to each side of the tractor frame using the hex cap screws (2-11) and bell washers (2-12). Refer to Figure 14.

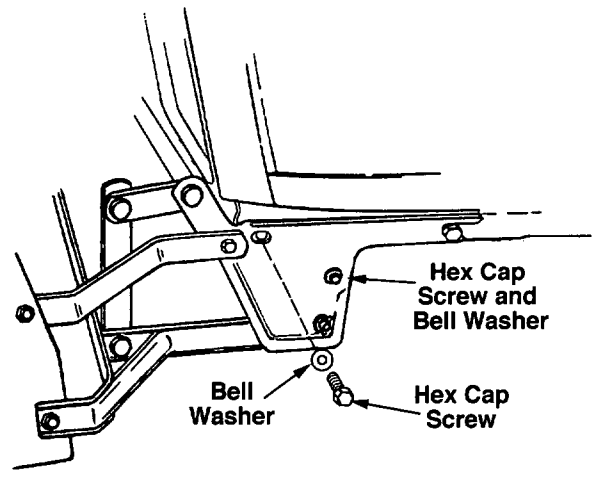


Figure 14

6. Install the drive belt onto the PTO clutch as follows:

   a. To remove the grille insert, push downward on top of the insert and pull forward as shown in Figure 15.

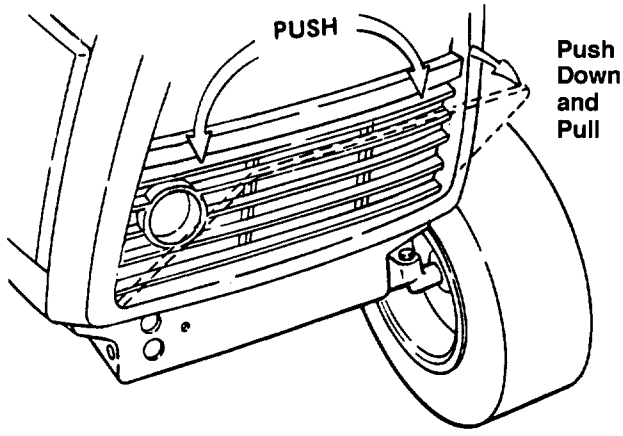


Figure 15

   b. Make certain the 'V' surface of the drive belt is positioned in the 'V' of both idler pulleys, and that the belt is not excessively twisted. No run of the belt (length between pulleys) should have more than a 1/4 twist.

   c. Roll the drive belt onto the PTO pulley on the front of the tractor engine. Refer to Figure 16.

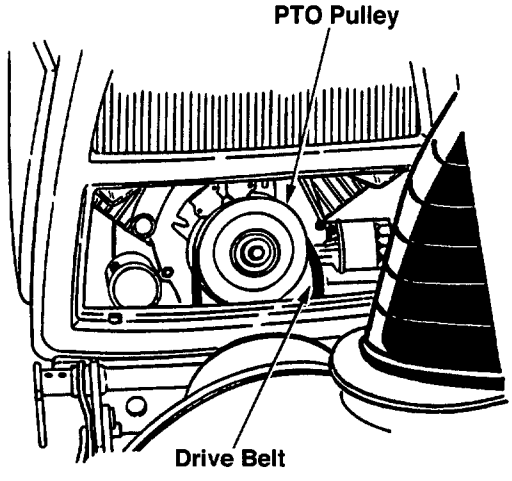


Figure 16

7. Make certain the idler tension spring is hooked to the stud of the idler arm assembly and to the shorter arm of the spring tensioner rod. See Figure 17.

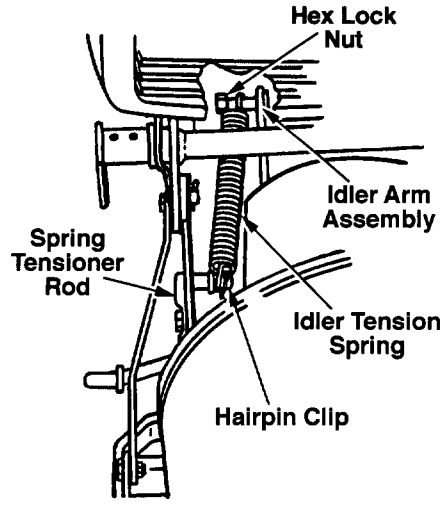


Figure 17

8. To tension the drive belt, extend the idler tension spring by pulling the long end of the spring tensioner rod outward, then rotating the rod downward and underneath the snow thrower frame assembly as shown in Figure 18. Lock the flange on the end of the tensioner rod behind the frame assembly.

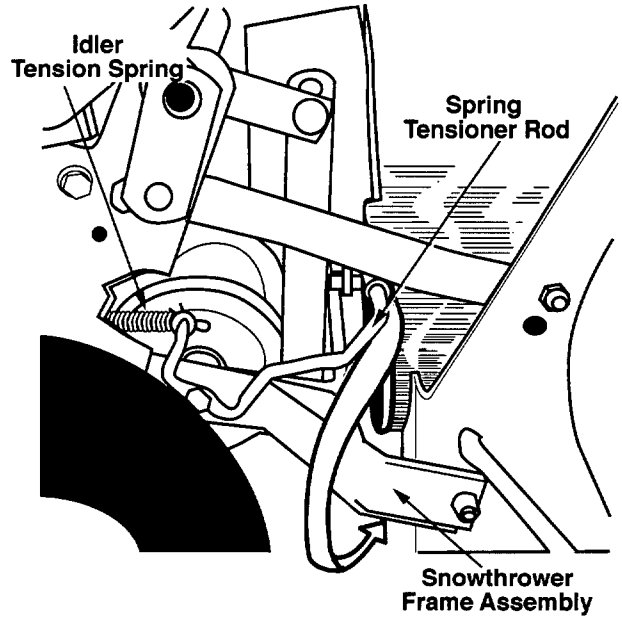


Figure 18

9. With the form (bend) of the lift tube facing upward (see Figure 21), install the lift tube/adjustment clevis assembly (1-4) on the lift bracket (1-6 or 3-12) using the flat washer (2-19) and hairpin clip (2-18). Refer to Figure 19.

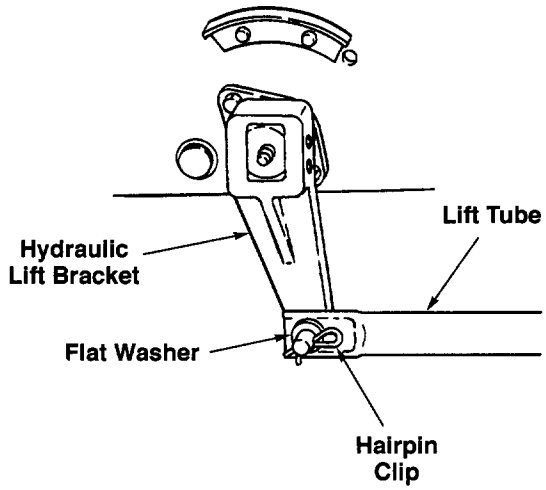


Figure 19. Hydraulic Lift Bracket Shown.

CAUTION

The tractor lift system must be placed in its ***lowest*** height position before beginning adjustment of the lift tube/adjustment clevis assembly (1-4).

NOTE

If not already loose, loosen the hex jam nut on the adjustment clevis by turning the nut completely up on the threads of the clevis. See Figure 21.

10. Working from the right side of the tractor, adjust the lift tube/adjustment clevis as follows:

    a. Rotate the lift arm assembly so that the top of the lift arms pins are approximately 1/2″ from the top of the slotted holes of the lift links as shown in Figure 20. HOLD the lift arm assembly in this position.

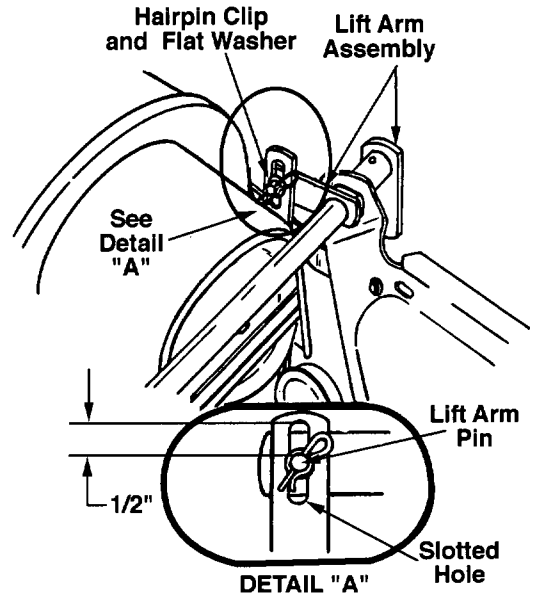


Figure 20

    b. Turn the adjustment clevis into or out of the lift tube as necessary to align the holes of the clevis with the hole of the outer lift arm. Refer to Figure 21.

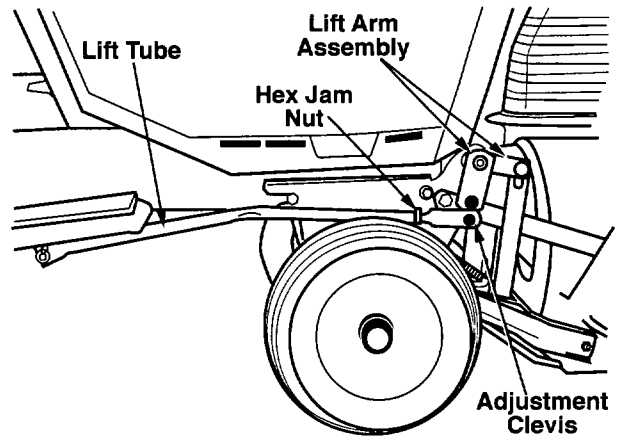


Figure 21

11. Insert the clevis pin (2-14) through the adjustment clevis and outer lift arm, and secure with the flat washer (2-15) and hairpin clip (2-16) as shown in Figure 22.

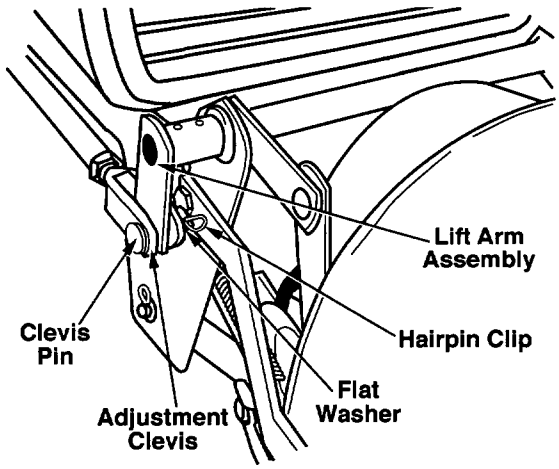


Figure 22

12. Tighten the hex jam nut against the lift tube.

NOTE

Step 13 applies only to standard Garden Tractors with a manual lift system.

13. Install the helper spring kit as follows:

    a. With the arm facing upward, slide the helper spring lift arm (3-14) into the left end of the lift arm assembly. Align the holes and drive the spiral spring pin (3-15) into the assembly. See Figure 23.

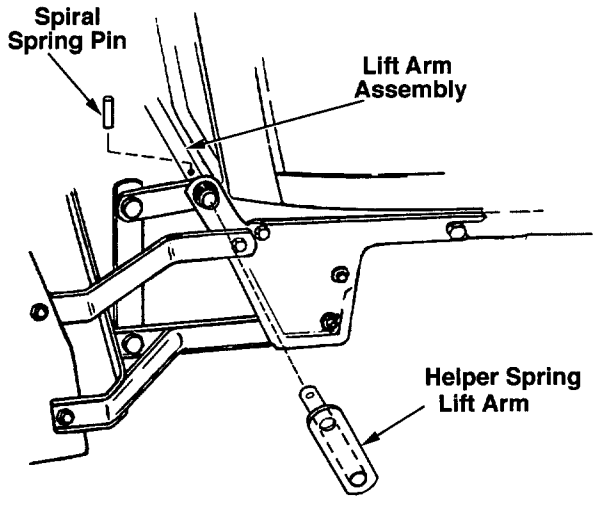


Figure 23

    b. Attach the helper spring bracket (3-1) to the left side of the tractor frame using the two hex cap screws (3-2), bell washers (3-3), flat washers (3-4), and hex nuts (3-5). The flat washers go between the spring bracket and frame. The crown (rounded surface) of the bell washers must be against the head of the cap screws. Refer to Figure 24.

    c. Place one flat washer (3-6) on the clevis pin (3-7). Insert the clevis pin through the link (3-8) and the hole of the helper spring lift arm (3-14). Secure with the second flat washer (3-6) and hairpin clip (3-9). See Figure 24.

    d. Slide a bell washer (3-3) onto the special hex screw (3-11) with the crown of the washer against the head of the screw.

    e. Hook the end of the extension spring w/insert (3-10) into the link, and align the spring insert with the hole of the spring bracket (3-1) as shown in Figure 24.

    f. Insert the special hex screw (3-11) through the hole in the helper spring bracket and thread into the spring insert. Tighten the screw until the bell washer compresses against the spring bracket.

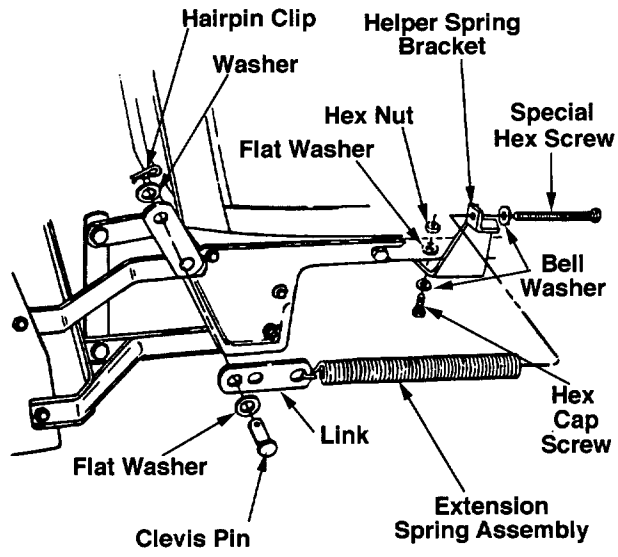


Figure 24

SECTION IV. ADJUSTMENTS AND OPERATION

A. ADJUSTMENTS

WARNING

If the snow thrower is to be used on gravel surfaces, use **extreme** caution to avoid picking up gravel with the shave plate or auger. Loose gravel can damage the auger or housing, and could be thrown at high speed by the impeller—causing possible injury to bystanders or damage to surrounding objects.

1. Skid Shoe Adjustment

The skid shoes are mounted on each side of the auger housing. They determine the distance the shave plate is raised above the plowing surface. The shave plate should be high for a gravel driveway or other uneven surfaces and low for paved surfaces. Adjust the skid shoes as follows:

a. Raise the snow thrower assembly off the ground and place a block under each end of the shave plate.

b. Loosen the hex insert lock nuts and bell washers securing the skid shoes to the housing.

c. Move the skid shoes up or down to the desired position and securely tighten the lock nuts. Adjust both skid shoes to the same height. Refer to Figure 25.

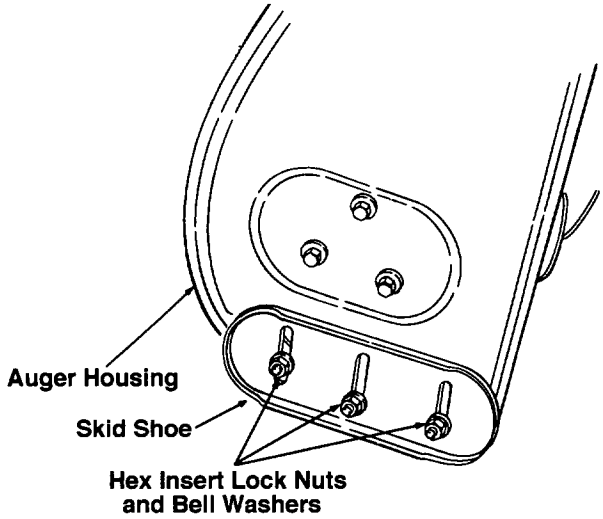


Figure 25

2. Drift Cutters

Drift cutters on both sides of the auger housing can be adjusted to the up position for a higher cut. Refer to Figure 26 and proceed as follows:

a. Remove each drift cutter by removing the two carriage bolts and hex insert lock nuts.

b. Turn the drift cutters to the up position and secure with the carriage bolts and lock nuts as shown in Figure 26.

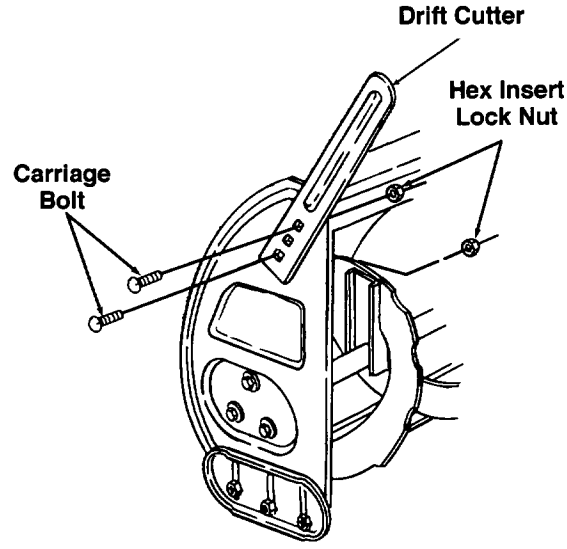


Figure 26

B. CONTROLS

The thrower controls are conveniently located to be operated from the operator's position on the tractor.

1. Lift Lever

The lift system of the tractor is used to raise or lower the snow thrower. Pull the lift lever upward (or pull the lift handle rearward on manual lift tractors), to raise the snow thrower. Push the lift lever downward (or push lift handle forward—manual lift), to lower the snow thrower to the ground.

2. Front Power Take-Off (PTO)

The tractor front PTO switch controls engagement of the snow thrower. To engage the auger, pull the PTO toggle switch outward and move up to the "START" position, then release. Move the PTO switch to the "OFF" position to stop the snow thrower auger.

3. **Discharge Chute Control Crank**

   The discharge chute control crank is located on the left hand side of the snow thrower. The chute crank controls the direction in which the snow is thrown. The discharge radius is 190 degrees. Turn the crank clockwise to rotate the discharge chute opening toward the left, and counterclockwise to rotate toward the right. Refer to Figure 27.

4. **Chute Tilt Handle**

   The chute tilt handle assembly is also located on the left hand side of the snow thrower assembly. The upper chute of the discharge chute assembly pivots downward when the tilt handle is pushed forward, decreasing the distance snow is thrown. Pulling the handle backwards pivots the upper chute upward, increasing the distance snow is thrown. Refer to Figure 27.

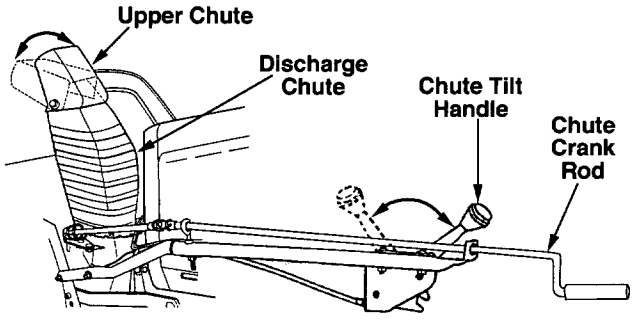


Figure 27

C. OPERATION

The following steps describe methods for safe and proper operation of this snow thrower. Refer to "SAFE OPERATION PRACTICES" on page 3 of this manual for additional safe operating practices.

1. The snow thrower is capable of handling heavy snow conditions. Become fully familiar with all aspects of both the tractor and snow thrower prior to its usage. **DO NOT** remove any guards or covers while operating the tractor and snow thrower.

⚠ WARNING

Whenever the snow thrower is installed on the front of the tractor, use rear weights on the tractor to counterbalance the weight of the snow thrower and provide stability to the tractor. See "TO THE OWNER" on page 6.

2. Before placing the snow thrower into operation:

   a. Check **all** nuts and bolts for correct tightness. Be sure that all parts are properly assembled.

   b. Test **all** controls for smooth and proper operation.

   - Tractor lift lever
   - PTO switch
   - Discharge chute control crank assembly
   - Discharge chute tilt control

   c. Inspect the tractor and snow thrower to make certain both are in good operating condition.

   d. Fill the tractor's fuel tank outdoors. Avoid spilling fuel onto the engine or any other source of heat or combustion. **Do not** fill the tank while the engine is running. Wipe up any spilled fuel before starting the engine.

3. The auger speed is directly related to the engine speed. For optimal snow removal and discharge, maintain high engine R.P.M. (full throttle). Control the tractor's ground speed by shifting the speed control lever to the desired position. It is recommended that the tractor be operated at a slow ground speed for safer handling and efficient snow removal.

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

5. In deep, drifted or banked snow, it will be necessary to use full throttle and a slow ground speed. Drive the auger into the snow, stop and allow the auger to clear the snow. Repeat this method until a path is cleared. On the second pass (and each succeeding pass), overlap the preceding pass enough to allow the auger to handle the volume of snow without having to stop the tractor.

6. In extremely deep snow, the snow thrower may be raised to the transport position, then slowly driven into the deep snow to remove the top layers first. However, do not drive the tractor into a snow bank where the snow has not been cleared to the ground level. Stop the tractor's forward movement and allow the auger to clear the snow. Reverse the tractor and lower the snow thrower to the ground to clear the remaining snow. Working with repeated passes into and out of drifts, even the deepest snow piles can be cleared.

D. SPECIAL PRECAUTIONS

WARNING

If the snow thrower becomes plugged with snow or jammed due to hitting a foreign object, disengage the snow thrower immediately and stop the tractor engine. Clear snow from the chute if plugged, before resuming operation.

WARNING

Never place your hand into the discharge chute to remove plugged snow. Use a wooden dowel rod, or similar object, to unclog the chute. Never use your hand to remove any object jamming the auger or impeller. The auger or impeller could move when the obstruction is dislodged. Use an appropriate tool (dowel rod, bar, etc.) to remove the obstruction.

WARNING

If the auger is jammed or bent from hitting a foreign object, stop the tractor engine. Remove the spark plug wire(s) from the spark plug(s) and then remove the foreign object from the auger. If damage is noted, repair or replace prior to continuing operation. Reconnect the spark plug wire(s) and resume operation.

1. Operating Tips

   - Whenever possible, discharge snow down wind.
   - **DO NOT** attempt to clear ice or hard packed-frozen snow.
   - Always overlap each pass slightly to assure complete snow removal.
   - A frozen or stuck auger or chute must be broken loose or thawed with care. When attempting to loosen a frozen or jammed auger, shut off the tractor engine and disconnect the spark plug wire(s). **Never** attempt to clear the snow thrower at any time with the tractor engine running.

NOTE

When the snow thrower and tractor are not in use, lower the snow thrower to the ground to prevent excess weight on the front tires.

2. Tire chains should always be used when extra traction is needed. Chains improve maneuverability and control of the tractor when handling snow removal jobs.

WARNING

When making any adjustments, disengage the PTO and turn the tractor engine off.

SECTION V. REMOVAL (SEASONAL)

Section V describes the procedures for removing the snow thrower from the tractor when the snow removal season has ended. It is recommended that all components of the snow thrower assembly be stored together to avoid misplacing any of the smaller components.

SNOW THROWER REMOVAL

WARNING

Place the tractor and snow thrower on a firm and level surface nearest to the location being used to store the snow thrower assembly. Use the tractor lift system to lower the snow thrower to the ground.

WARNING

Before beginning removal of the snow thrower assembly, engage the tractor parking brake, ensure the tractor's PTO switch and ignition switch are in the "OFF" position, and remove the ignition key.

WARNING

The tractor engine, exhaust system and PTO clutch may be HOT. To avoid personal injury, allow the tractor to cool before proceeding with removal.

NOTE

Step 1 applies only to standard Garden Tractors with the helper spring kit for the manual lift system.

1. Referring to Figure 24, remove the helper spring kit as follows:
   a. Loosen the special hex screw to relieve tension from the extension spring.
   b. Disconnect the link from the helper spring lift arm by removing the hairpin clip, two flat washers, and clevis pin.
   c. Remove the link, extension spring, and helper spring bracket from the tractor by removing the two hex cap screws, bell washers, flat washers, and hex nuts.
   d. Store all parts with the snow thrower for seasonal installation.
2. Referring to Figure 22, disconnect the adjustment clevis/lift tube assembly from the snow thrower lift arm by removing the hairpin clip, flat washer and clevis pin.
3. Disconnect the lift tube from the lift bracket by removing the hairpin clip and flat washer. See Figure 19.
4. FOR MANUAL LIFT TRACTORS, remove the socket head screws and lift bracket from the lift handle. Reinstall the hex cap screws, lock washers and hex nuts which were removed during snow thrower installation.
5. FOR HYDRAULIC LIFT TRACTORS, remove the socket head screws and slide the lift bracket off the tractor lift shaft. On standard Garden Tractors, snap the height indicator onto the end of the lift shaft. Refer to Figure 10.

WARNING

The spring tensioner rod is under tension. To avoid injury, use care when releasing.

6. Referring to Figure 18, push downward and pull the spring tensioner rod outward to release from the snow thrower frame, then rotate the rod upward to release tension from the idler spring and drive belt.
7. Referring to Figures 15 and 16, remove the grille insert from the front of the tractor and roll the drive belt off the PTO pulley. Pull the drive belt downward through the bottom of the tractor frame.
8. Referring to Figure 14, remove the hex cap screw and bell washer securing the snow thrower mounting brackets to each side of the tractor frame. Store the screws and washers with previously removed hardware.

NOTE

It is recommended that blocks be placed underneath the two frame attachment plates on the rear of the blower housing to support the snow thrower when removing it from the tractor. Use care to avoid pinching hands or fingers in the undercarriage when removing the snow thrower.

9. Pull and hold the quick latch rod of the tractor downward in the unlocked position.
10. While holding the quick latch rod, pull the snow thrower forward to disengage the carriage bracket support rod from the quick attach brackets of the tractor. Refer to Figure 13.
11. Store the snow thrower together with the parts and hardware removed to avoid misplacing any of the components.

SECTION VI. MAINTENANCE

Section VI describes maintenance procedures designed to keep your snow thrower in good operating condition.

SHAVE PLATE AND SKID SHOES

The shave plate and skid shoes on the bottom of the snow thrower housing are subject to wear. They should be periodically checked for wear and replaced when necessary. Failure to do so will result in damage to the housing.

1. Replace the shave plate as follows:

   a. Remove the seven carriage bolts and hex insert lock nuts that secure the shave plate to the bottom of the housing.

   b. Remove the rear most carriage bolt, bell washer and hex insert lock nut securing the back end of each skid shoe to the sides of the housing.

   c. Slide the shave plate out of the off-set slot of the housing, and from between the skid shoes and side panels of the housing.

   NOTE

   If necessary to ease sliding the shave plate out of, or into, position on the housing, *loosen* the four remaining hex insert lock nuts which secure the skid shoes to the housing.

   d. With the mounting holes toward the back, slide the new shave plate into position and secure with the fasteners removed previously.

2. The skid shoes are reversible for longer life. Remove the carriage bolts, bell washers and hex insert lock nuts fastening the skid shoes to the housing. Turn the shoes over and/or reverse sides to ensure even wear and extend their service life.

AUGERS

1. The augers are secured to the auger shaft with two shear bolts and hex insert lock nuts. Refer to Figure 28. If the auger is suddenly jammed by a foreign object or ice chunk, the bolts are designed to shear — minimizing potential damage to the gear boxes.

2. If the augers will not turn, check the bolts to see if they have sheared. Two replacement shear bolts (2-13) and hex insert lock nuts (2-21) have been provided with the snow thrower. For future use, order part number 710-0891 for replacement shear bolts and 712-0429 for the lock nuts.

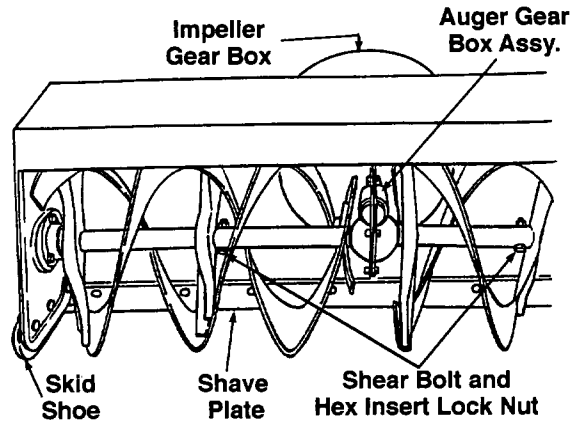


Figure 28

LUBRICATION

1. The auger gear box is lubricated with grease at the factory and is neither externally servicable, nor requires checking. If disassembled for any reason, lubricate with 2.5 ounces (by weight) of Benalene grease, part number 737-0300. Before reassembling, remove old sealant and apply Loctite Ultra Grey (5699) sealant or equivalent.

2. The impeller gear box is also neither externally servicable, nor requires checking. If disassembled for any reason, lubricate with 4.0 ounces of Benalene grease, part number 737-0300. Before reassembling, remove old sealant and apply Loctite Ultra Grey (5699) sealant or equivalent.

3. Apply penetrating oil to the cables of the chute tilt handle assembly at least once a season.

4. Apply a good grade of spray lubricant to the universal joint of the chute crank, and to the pivot of the chute tilt handle at least once a season.

5. Lubricate the chute crank spiral gear with a multipurpose automotive grease once a year.

6. Lubricate the bearings at each end of the auger shaft with oil or spray lubricant at least once a season.

7. Although not necessary, it is advisable to remove the auger shear bolts at least once a season and spray penetrating oil, or similar lubricant, between the auger tubes and auger shaft.

DRIVE BELT REPLACEMENT

Replace the snow thrower drive belt as follows:

1. Refer to Section V and perform the steps necessary to roll the belt off the PTO pulley and remove the snow thrower assembly from the tractor.

NOTE

To ease removal of the drive belt, stand the snow thrower up on the face of the auger housing.

2. Remove the belt guard and bracket assembly from the blower housing as follows:
   a. Remove the two hex nuts and bell washers fastening the belt guard bracket to the housing. Refer to Figure 29.
   b. Lift the belt guard assembly just off the studs in the housing and slide it toward the top of the snow thrower until the screws fastening the guard to the bracket clear the pulley, then lift the guard assembly off the snow thrower.

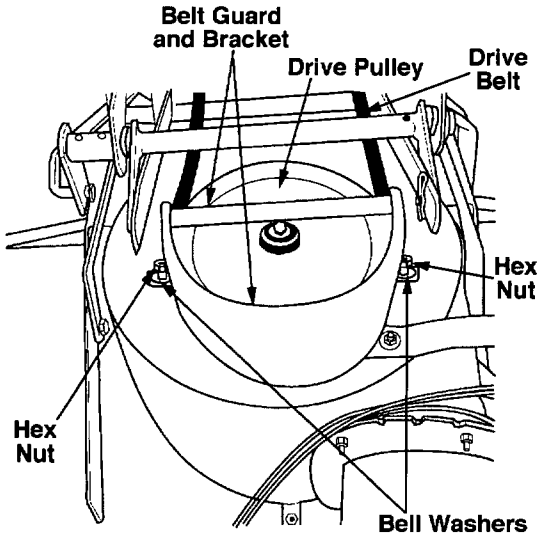


Figure 29

3. Remove the drive belt from the drive pulley and the fixed idler pulley.

4. Rotate the idler arm assembly so that the hex cap screw securing the idler pulley to the arm is accessible beneath the snow thrower frame assembly. Refer to Figure 30.

5. Remove the hex cap screw and hex insert lock nut securing the idler pulley to the idler arm. See Figure 30.

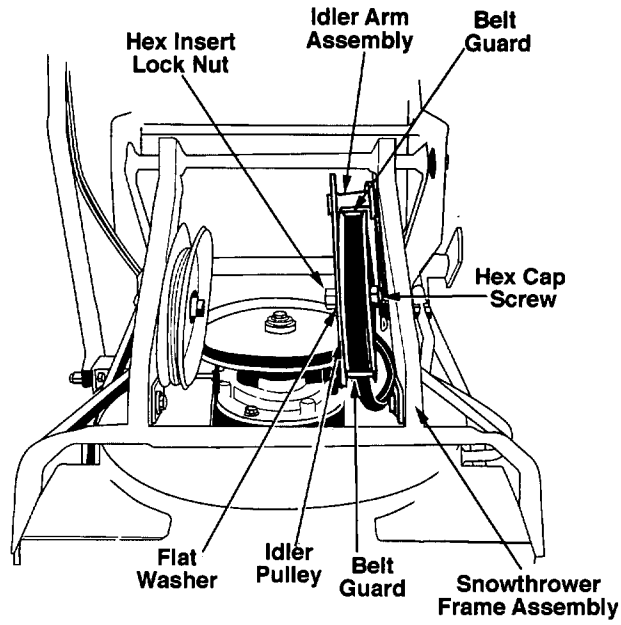


Figure 30

6. Referring to Figure 30, slide the idler pulley from between the belt guard pins of the idler arm and remove the drive belt. Use care to avoid losing the flat washer that is installed **between** the idler pulley and idler arm.

7. Install the new belt onto the idler pulley, then position the flat washer and pulley on the idler arm. Make sure the belt is inside the two belt guard pins. Secure the pulley and washer with the hex cap screw and hex insert lock nut.

8. Route the belt over the drive pulley and install the belt guard and bracket onto the blower housing. Make certain the belt has only a 1/4 twist and is not pinched between the pulley and belt guard bracket.

9. Reinstall the snow thrower onto the tractor.

OFF-SEASON STORAGE

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

1. Remove the snow thrower assembly from the tractor.

2. Wash off any salt deposits which may have dried on the snow thrower housing. Paint, or cover with a light coat of oil, any exposed metal surfaces.

3. Lubricate bearings and pivot points with a good grade of spray lubricant.

4. Store the snow thrower in a dry place.