

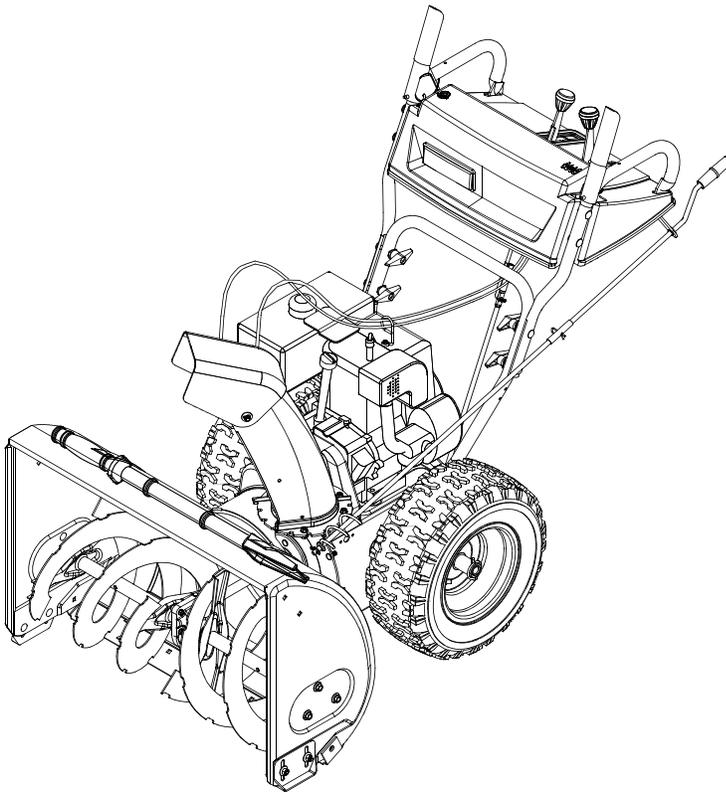
YARD-MAN

by MTD

Operator's Manual

Snow Thrower

Models E643E
E663H



IMPORTANT: READ SAFETY RULES AND INSTRUCTIONS CAREFULLY

Warning: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department, P.O. Box 361131 Cleveland, Ohio 44136-0019.

MTD LLC P.O. BOX 361131 CLEVELAND, OHIO 44136-0019

PRINTED IN U.S.A.

FORM NO. 770-10020E
(6/2003)

TABLE OF CONTENTS

Content	Page
Important Safe Operation Practices	3
Loose Parts	5
Assembling Your Snow Thrower	5
Know Your Snow Thrower	7
Operating Your Snow Thrower	8
Making Adjustments	11
Maintaining Your Snow Thrower	13
Service	13
Troubleshooting	17
Parts List	18

FINDING MODEL NUMBER

This Operator's Manual is an important part of your new Snow Thrower. It will help you assemble, prepare and maintain the unit for best performance. Please read and understand what it says.



Before you start assembling your new equipment, please locate the model plate on the equipment and copy the information from it in the space provided below. The information on the model plate is very important if you need help from our Customer Support Department or an authorized dealer.

- You can locate the model number by looking at the lower frame cover in the rear of your snow thrower. A sample model plate is explained below. For future reference, please copy the model number and the serial number of the equipment in the space below.

_____	_____
(Model Number)	(Serial Number)
	MTD LLC P. O. BOX 361131 CLEVELAND, OH 44136 330-220-4683 800-800-7310
www.yardman.com	

Copy the model number here: _____

Copy the serial number here: _____

ENGINE INFORMATION

The engine manufacturer is responsible for all engine-related issues with regard to performance, power-rating, specifications, warranty and service. Please refer to the engine manufacturer's Owner's/Operator's Manual packed separately with your unit for more information.

CALLING CUSTOMER SUPPORT

Please do NOT return the unit to the retailer from which it was purchased, without first contacting Customer Support.

Should you have difficulty assembling this product or have any questions regarding the controls, operation or maintenance of this unit, please call the Customer Support Department.



Call 1- (330) 220-4MTD (4683) or 1- (800)-800-7310 to reach a Customer Support representative. Please have your unit's model number and serial number ready when you call. See previous section to locate this information. You will be asked to enter the serial number in order to process your call.

For more details about your unit, visit our web site at www.yardman.com

SECTION 1: 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 this machine. Failure to comply with these instructions may result in personal injury. When you see this symbol—**heed its warning**.



WARNING: Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.



DANGER: This machine was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. This machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

TRAINING

1. Read, understand, and follow all instructions on the machine and in the manual(s) before attempting to assemble and operate. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. Be familiar with all controls and their proper operation. Know how to stop the machine and disengage them quickly.
3. Never allow children under 14 years old to operate this machine. Children 14 years old and over should read and understand the operation instructions and safety rules in this manual and should be trained and supervised by a parent.
4. Never allow adults to operate this machine without proper instruction.
5. Thrown objects can cause serious personal injury. Plan your snow-throwing pattern to avoid discharge of material toward roads, bystanders and the like.
6. Keep bystanders, helpers, pets and children at least 75 feet from the machine while it is in operation. Stop machine if anyone enters the area.
7. Exercise caution to avoid slipping or falling, especially when operating in reverse.
6. Disengage all clutch levers before starting the engine.
7. Never attempt to make any adjustments while engine is running, except where specifically recommended in the operator's manual.
8. Let engine and machine adjust to outdoor temperature before starting to clear snow.
9. To avoid personal injury or property damage use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Serious personal injury can occur when gasoline is spilled on yourself or your clothes, which can ignite. Wash your skin and change clothes immediately.
 - a. Use only an approved gasoline container.
 - b. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
 - c. Never fuel machine indoors.
 - d. Never remove gas cap or add fuel while the engine is hot or running.
 - e. Allow engine to cool at least two minutes before refueling.
 - f. Never over fill fuel tank. Fill tank to no more than ½ inch below bottom of filler neck to provide space for fuel expansion.
 - g. Replace gasoline cap and tighten securely.
 - h. If gasoline is spilled, wipe it off the engine and equipment. Move machine to another area. Wait 5 minutes before starting the engine.
 - i. Never store the machine or fuel container inside where there is an open flame, spark or pilot light (e.g. furnace, water heater, space heater, clothes dryer etc.).
 - j. Allow machine to cool at least 5 minutes before storing.

PREPARATION

1. Thoroughly inspect the area where the equipment is to be used. Remove all doormats, newspapers, sleds, boards, wires and other foreign objects, which could be tripped over or thrown by the auger/impeller.
2. Always wear safety glasses or eye shields during operation and while performing an adjustment or repair to protect your eyes. Thrown objects which ricochet can cause serious injury to the eyes.
3. Do not operate without wearing adequate winter outer garments. Do not wear jewelry, long scarves or other loose clothing, which could become entangled in moving parts. Wear footwear which will improve footing on slippery surfaces.
4. Use a grounded three-wire extension cord and receptacle for all units with electric start engines.
5. Adjust collector housing height to clear gravel or crushed rock surfaces.

OPERATION

1. Do not put hands or feet near rotating parts, in the auger/impeller housing or discharge chute. Contact with the rotating parts can amputate hands and feet.
2. The auger/impeller clutch lever is a safety device. Never bypass its operation. Doing so makes the machine unsafe and may cause personal injury.
3. The clutch levers must operate easily in both directions and automatically return to the disengaged position when released.

4. Never operate with a missing or damaged discharge chute. Keep all safety devices in place and working.
5. Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
6. Do not operate machine while under the influence of alcohol or drugs.
7. Muffler and engine become hot and can cause a burn. Do not touch.
8. Exercise extreme caution when operating on or crossing gravel surfaces. Stay alert for hidden hazards or traffic.
9. Exercise caution when changing direction and while operating on slopes.
10. Plan your snow-throwing pattern to avoid discharge towards windows, walls, cars etc. Thus, avoiding possible property damage or personal injury caused by a ricochet.
11. Never direct discharge at children, bystanders and pets or allow anyone in front of the machine.
12. Do not overload machine capacity by attempting to clear snow at too fast of a rate.
13. Never operate this machine without good visibility or light. Always be sure of your footing and keep a firm hold on the handles. Walk, never run.
14. Disengage power to the auger/impeller when transporting or not in use.
15. Never operate machine at high transport speeds on slippery surfaces. Look down and behind and use care when in reverse.
16. If the machine should start to vibrate abnormally, stop the engine, disconnect the spark plug wire and ground it against the engine. Inspect thoroughly for damage. Repair any damage before starting and operating.
17. Disengage all clutch levers and stop engine before you leave the operating position (behind the handles). Wait until the auger/impeller comes to a complete stop before unclogging the discharge chute, making any adjustments, or inspections.
18. Never put your hand in the discharge or collector openings. Always use the clean-out tool provided to unclog the discharge opening. Do not unclog discharge chute while engine is running. Shut off engine and remain behind handles until all moving parts have stopped before unclogging.
19. Use only attachments and accessories approved by the manufacturer (e.g. wheel weights, tire chains, cabs etc.).
20. If situations occur which are not covered in this manual, use care and good judgment.

Contact your dealer or telephone 1-800-800-7310 for

assistance and the name of your nearest servicing dealer.

MAINTENANCE AND STORAGE

1. Never tamper with safety devices. Check their proper operation regularly. Refer to the maintenance and adjustment sections of this manual.
2. Before cleaning, repairing or inspecting machine disengage all clutch levers and stop engine. Wait until the auger/impeller come to a complete stop. Disconnect the spark plug wire and ground against the engine to prevent unintended starting.
3. Check bolts and screws for proper tightness at frequent intervals to keep the machine in safe working condition. Also, visually inspect machine for any damage.
4. Do not change the engine governor setting or over-speed the engine. The governor controls the maximum safe operating speed of the engine.
5. Snow thrower shave plates and skid shoes are subject to wear and damage. For your safety protection, frequently check all components and replace with original equipment manufacturer's (OEM) parts only. "Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety!"
6. Check clutch controls periodically to verify they engage and disengage properly and adjust, if necessary. Refer to the adjustment section in this operator's manual for instructions.
7. Maintain or replace safety and instruction labels, as necessary.
8. Observe proper disposal laws and regulations for gas, oil, etc. to protect the environment.
9. Prior to storing, run machine a few minutes to clear snow from machine and prevent freeze up of auger/impeller.
10. Never store the machine or fuel container inside where there is an open flame, spark or pilot light such as a water heater, furnace, clothes dryer etc.
11. Always refer to the operator's manual for proper instructions on off-season storage.

WARNING — YOUR RESPONSIBILITY:

Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine. The safety labels are shown below for your reference..



SECTION 2: LOOSE PARTS

The snow thrower is shipped with following loose parts in the carton. Please remove all loose parts from the carton before discarding it. See Figure 1 to identify the parts noting that these parts may be referred to again in the following sections of this manual. Part numbers are shown in parentheses.

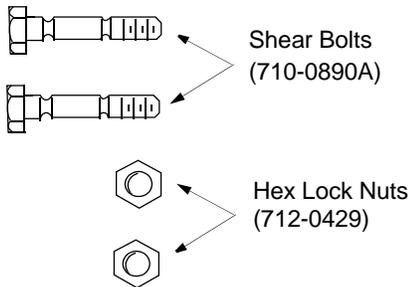


Figure 1

AUGER SHEAR BOLTS

The augers are secured to the auger shaft with two shear bolts and hex lock nuts. If you hit a foreign object or ice jam, the snow thrower is designed so that the bolts may shear. Two replacement shear bolts and nuts are provided for your convenience. Store in a safe place until needed.

IMPORTANT: NEVER replace the auger shear bolts with standard hex bolts. Any damage to the auger gearbox or other components as a result of doing so will NOT be covered by your snow thrower's warranty.

SECTION 3: ASSEMBLING YOUR SNOW THROWER

NOTE: Any reference in this manual to the left or right side of the snow thrower is observed from the operator's position.

IMPORTANT: Make any final adjustments as instructed later on in this section BEFORE operating your snow thrower.



WARNING: Disconnect the spark plug wire and ground it against the engine to prevent unintended starting.

- Remove the **lower** two plastic wing knobs, cupped washers and carriage bolts from the lower handle. See Figure 2.

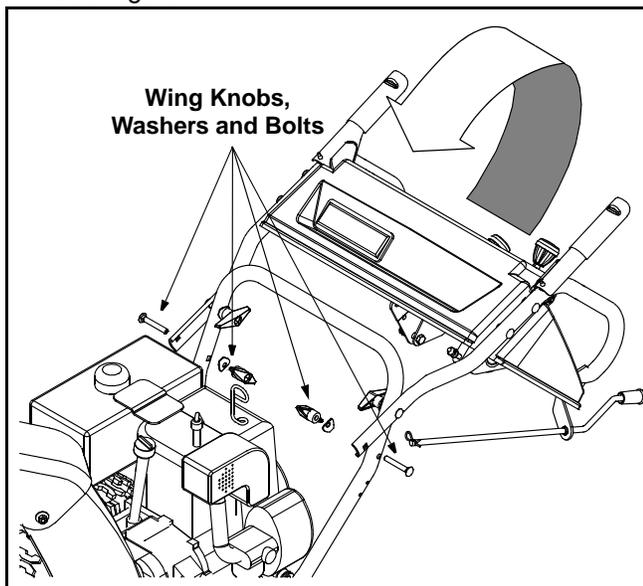


Figure 2

- Raise the upper handle assembly until it locks over the lower handle. See Figure 2 and Figure 3.
- Look at the lower rear of snow thrower frame to be sure both cables are aligned with roller guides.
- Secure the upper handle and lower handle with the two plastic wing knobs, cupped washers and carriage bolts previously removed. See Figure 3.

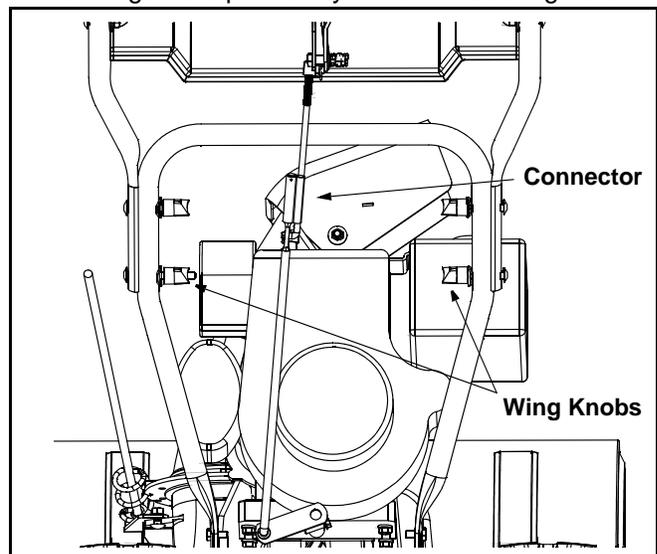


Figure 3

- Slide the shift rod connector down over the end of the lower shift rod. See Figure 3. Tap the connector until it **locks** on the lower shift rod.

NOTE: If the connector is not properly assembled, the shift rod will pivot and you will not be able to change speeds or change directions.

Attaching Chute Directional Control

For packaging purposes, the two-piece chute directional control was attached to the snow thrower on the two ends, but was kept loose at the middle. Assemble as follows:

- Remove the hairpin clip from the chute directional control. Align holes on the upper and lower pieces of the chute directional control before reinserting the hairpin clip. See Figure 4.

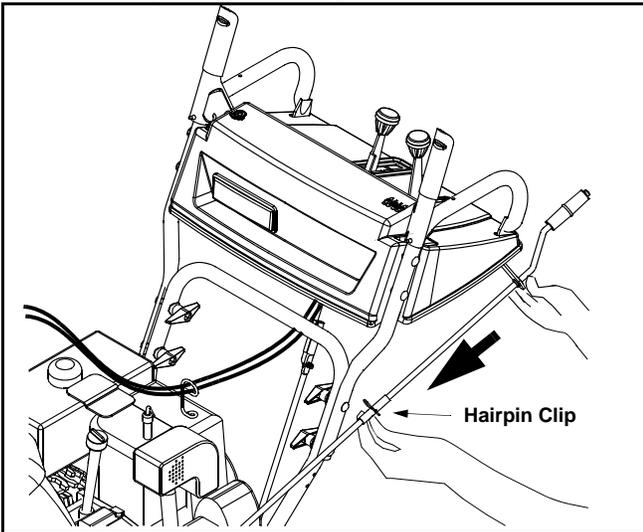


Figure 4

- If not already attached, slip the cables that run from the handle panel to the chute into the cable guide located on top of the engine. See Figure 5.

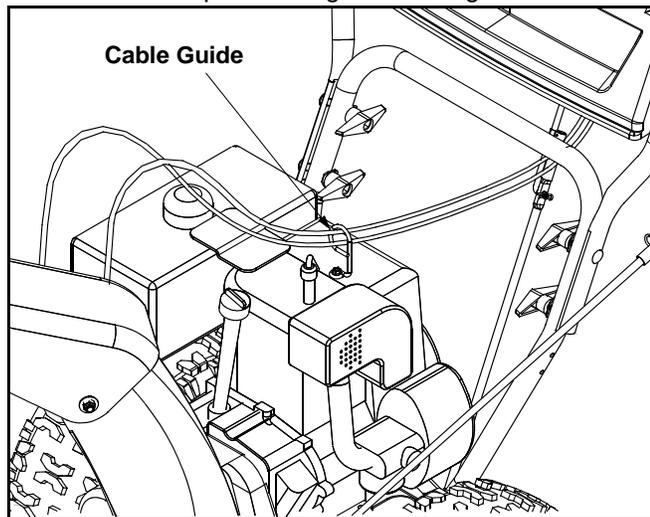


Figure 5

- Unwrap the headlight wire which is attached to the headlight, beneath the handle panel. Wind the headlight wire around the right handle until excess slack is removed.
- Plug the headlight wire into the wire lead found on the right side of the engine, beneath the fuel tank.

Chute Clean-Out Tool

- This tool is fastened with a cable tie to the rear of the auger housing for shipping purposes. Cut the cable tie and remove tool before operating the snow thrower.

Final Adjustments

Traction Control and Shift Lever Adjustment

To check the adjustment of the traction control and shift lever, proceed as follows:

- Move the shift lever into sixth (6) position.
 - With the traction control (refer to Figure 6) released, gently push the snow thrower forward, then pull it back. Disregarding the overall weight of the snow thrower, the machine should otherwise move freely.
 - Engage the traction control, and attempt to move the machine both forward and rearward. You should experience resistance as the wheels should not be turning.
- Move the shift lever into the fast reverse (R2) position and repeat the previous steps (a & b).

If you experienced resistance either when repositioning the shift lever from 6 to R2 or when attempting to move the machine forward or rearward with the traction control released, your snow thrower's traction control is in need of adjustment and you should NOT operate the machine before completing the adjustment as follows:

- Loosen the jam nut on the traction control cable and UNTHREAD the cable one full turn.
- Recheck the adjustment.
- Retighten the jam nut to secure the cable when correct adjustment is reached.

If the machine can be moved freely both forward and rearward when the traction control fully depressed, proceed as follows:

- Loosen the jam nut on the traction drive cable and THREAD the cable in one full turn.
- Recheck the adjustment and repeat as necessary.
- Retighten the jam nut to secure the cable when correct adjustment is reached.

If you are unsure that you have reached the correct adjustment, refer to Traction Control Adjustment on page 11 of this manual.

Tire Pressure Adjustment

The tires are over-inflated for shipping purposes. Check tire pressure and reduce to between 15 psi and 20 psi.

NOTE: *If the tire pressure is not equal in both tires, the unit may pull to one side or the other.*

SECTION 4: KNOW YOUR SNOW THROWER



WARNING: Be familiar with all the controls on the snow thrower and their proper operation. Know how to stop the machine and disengage them quickly.

Auger Control

The auger drive clutch is located on the left handle. Squeeze the clutch grip to engage the augers. Release to stop the snow throwing action. (Traction control must also be released.) See Figure 6.

Chute Directional Control

The chute directional control is located on left side of the snow thrower.

To change the direction in which snow is thrown, turn chute directional control as follows:

- Crank clockwise to discharge to the left.
- Crank counterclockwise to discharge to the right.

Traction Control / Auger Control Lock

The traction control is located on the right handle. Squeeze the traction control to engage the wheel drive. Release to stop.

This lever also locks the auger control so you can turn the chute directional control without interrupting the snow throwing process. If the auger control is engaged along with the traction control, the operator can release the auger control (the left handle) and the augers will remain engaged. Release the traction control to stop both the augers and wheel drive.

IMPORTANT: Always release tractional control before changing speeds.

Shift Lever

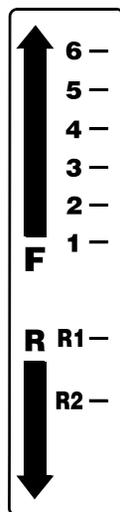
The shift lever is located in the center of the handle panel and is used to establish both ground speed and direction of travel. It can be moved into any of eight positions. See Figure 6.

Forward

Your snow thrower has six forward (F) speeds. Position number one (1) is the slowest. Position number six (6) is the fastest.

Reverse

Your snow thrower has two reverse (R) speeds. R1 is the slower, while R2 is the faster of the two.



IMPORTANT: Always release tractional control before changing speeds.

Chute Tilt Control

The distance snow is thrown can be varied by adjusting the pitch of the chute assembly. Move the chute tilt control forward to decrease the distance, or toward the rear to increase the distance. See Figure 6.

Fuel Shut-off Valve (if so equipped)

The fuel shut-off valve, located under fuel tank, controls fuel flow from the tank. Always make certain it is in the Open (vertical) position before attempting to start the engine. See Figure 6.

Headlight

The headlight is on whenever the engine is running.

Throttle Control

The throttle control is located on the engine. It regulates the speed of the engine.

Ignition Key

The ignition key must be fully inserted in the switch before the unit will start. Remove the ignition key when snow thrower is not in use.

IMPORTANT: Do NOT attempt to turn the key.

Chute Clean-out Tool



WARNING: Never use your hand to clear a clogged discharge chute. Shut off engine and remain behind handles until all moving parts have stopped before unclogging.

IMPORTANT: The chute clean-out tool (see Figure 6) is designed to clear a clogged discharge chute. Refer to **Operating Your Snow Thrower** on page 10 for detailed instructions on how to properly use the chute clean-out tool.

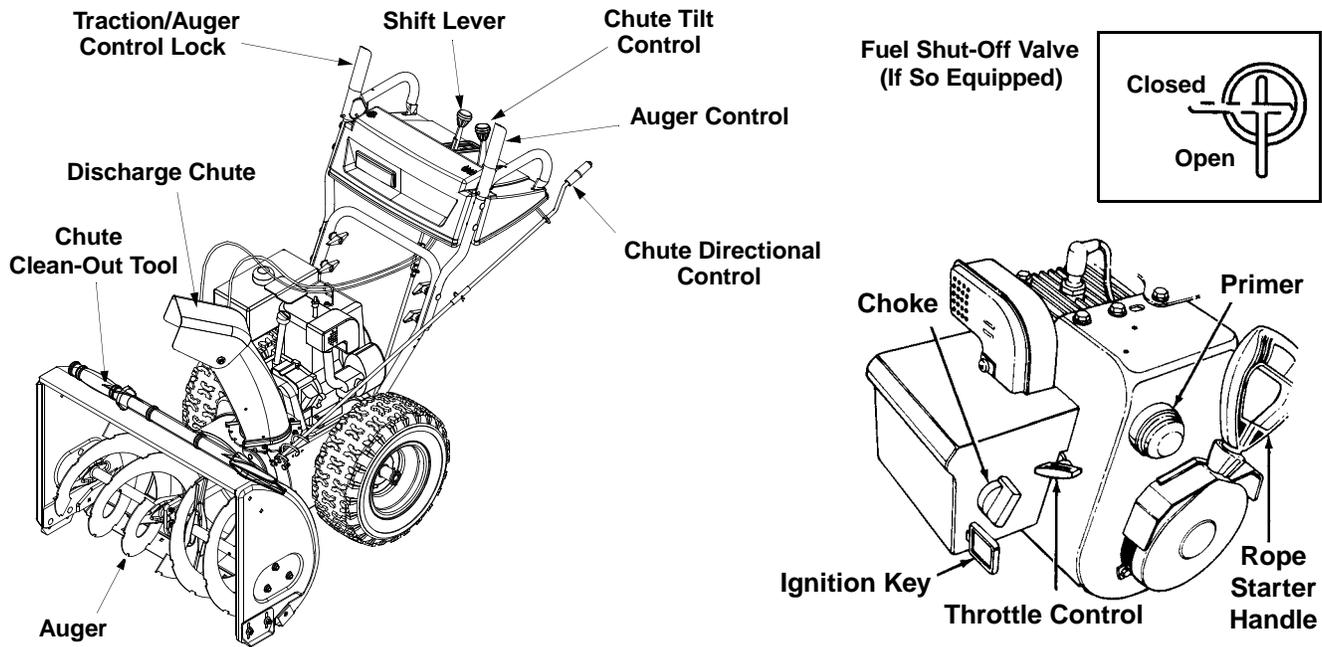


Figure 6

SECTION 5: OPERATING YOUR SNOW THROWER

Before Starting



WARNING: Read, understand, and follow all instructions and warnings on the machine and in this manual before operating.

Gas And Oil Fill-up

- Check oil level and add oil if necessary. Service the engine with gasoline as instructed in the separate engine manual packed with your snow thrower.



WARNING: Use extreme care when handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Never fuel the machine indoors or while the engine is hot or running. Extinguish cigarettes, cigars, pipes and other sources of ignition.

Starting Engine



IMPORTANT: Prior to operating your snow thrower, read, understand and follow ALL instructions to perform adjustments found under the heading **Auger Control Test** on page 9 of this manual.

- Attach spark plug wire to spark plug. Make certain the metal loop on end of the spark plug wire (inside

the boot) is fastened securely over the metal tip on the spark plug.

- Make certain the fuel cut-off valve, if your snow thrower is so equipped, is in OPEN position.
- Make certain the auger and drive clutch levers are in the disengaged (released) position.
- Move throttle control to FAST (Rabbit) position. Insert ignition key into slot. Be certain it snaps into place. **Do not turn key.**

NOTE: Engine will not start unless ignition key is inserted into ignition slot in carburetor cover.

Electric Starter

- Determine that your house wiring is a three-wire grounded system. Ask a licensed electrician if you are not certain.
- If your house wiring system is not a three-wire grounded system, do not use this electric starter under any conditions.



WARNING: The electric starter is equipped with a grounded three-wire power cord and plug and is designed to operate on 120 volt AC household current. It must be used with a properly grounded three-prong receptacle at all times to avoid the possibility of electric shock. Follow all instructions carefully prior to operating the electric starter.

- If your home electrical system is grounded, but a three-hole receptacle is not available, one should be installed by a licensed electrician before using the electric starter.
- If you have a grounded three-prong receptacle, proceed as follows:
- Connect power cord to switch box on engine. Plug the other end of power cord into a three-hole, grounded 120 volt AC receptacle.
- Rotate choke knob to FULL position.
- Move throttle control to FAST (Rabbit) position.
- Fully depress the primer three times, making sure to cover the vent hole when pushing.

NOTE: Do NOT use the primer when restarting a warm engine. Doing so will cause the engine to “flood.”

- Push starter button on top of the engine.
- When engine starts, release starter button, and move choke gradually to OFF. If engine falters, move choke momentarily to FULL and then gradually to OFF.
- When disconnecting the power cord, always unplug from the three-prong receptacle first and then from the snow thrower.

Recoil Starter

- Rotate choke knob to FULL choke position (cold engine start). If engine is warm, place choke in OFF position instead of FULL.
- Push primer button two or three times. If engine is warm, push primer button once only.

NOTE: Always cover vent hole in primer button when pushing. Additional priming may be necessary for first start if temperature is below 15°F.

- Grasp starter handle and pull rope out slowly, until it pulls slightly harder. Let rope rewind slowly.
- Pull starter handle rapidly. Do not allow handle to snap back. Allow it to rewind slowly while keeping a firm hold on the starter handle.
- As engine warms up and begins to operate evenly, rotate choke knob slowly to OFF position. If engine falters, return to FULL choke, then slowly move to OFF position.

To Stop Engine

- Run engine for a few minutes before stopping to help dry off any moisture on the engine.
- Move the throttle control to the STOP or OFF position.

To help prevent starter freeze-up:

Electric Starter

- Connect power cord to switch box on engine, then to 120 volt AC receptacle. With the engine running, push starter button and spin the starter for several seconds. The unusual sound made by spinning the

starter will not harm engine or starter. Disconnect the power cord from receptacle first, and then from snow thrower’s switch box.

Recoil Starter

- With engine running, pull starter rope with a rapid, continuous full arm stroke three or four times. Pulling the starter rope will produce a loud clattering sound, which is not harmful to the engine or starter.
- Remove the ignition key. Do not turn key. Disconnect the spark plug wire from the spark plug to prevent accidental starting while equipment is unattended.

NOTE: Keep the ignition key in a safe place. The engine will not start without the ignition key.

- Wipe all the snow and moisture from the carburetor cover in the area of the control levers. Also, move the control levers back and forth several times.

To Engage Drive

NOTE: Use the slower speeds until you are familiar with the operation of the snow thrower.

- With the engine running near top speed, move shift lever into one of the six FORWARD positions or two REVERSE positions. Select a speed appropriate for the snow conditions that exist.
- Squeeze the traction control against the right handle and the snow thrower will move. Release it and the drive motion will stop.

IMPORTANT: NEVER move shift lever without first releasing the traction control. Doing so will cause premature wear to drive system’s friction wheel rubber.

To Engage Augers

- To engage the augers and start the snow throwing action, squeeze the auger control against the left handle.

To disengage power to the augers, release both the auger control and the traction control, if engaged,

Auger Control Test

IMPORTANT: Perform the following test before operating the snow thrower for the first time and at the start of each winter season.

Check the adjustment of the auger control as follows:

- When the auger control is released and in the disengaged “up” position, the cable should have very little slack, but should NOT be tight.



WARNING: Do not over-tighten the cable. Over-tightening may prevent the auger from disengaging and compromise the safety of the snow thrower.

- In a well-ventilated area, start the snow thrower engine as instructed earlier in this section under the heading **Starting Engine**. Make sure the throttle is set in the FAST position.
- While standing in the operator's position (behind the snow thrower) engage the auger.
- Allow the auger to remain engaged for approximately ten (10) seconds before releasing the auger control. Repeat this several times.
- With the engine running in the FAST position and the auger control lever in the disengaged "up" position, walk to the front of the machine.
- Confirm that the auger has completely stopped rotating and shows NO signs of motion.

IMPORTANT: If the auger shows ANY signs of rotating, immediately return to the operator's position and shut off the engine. Wait for all moving parts to stop before readjusting the auger control cable.

- To readjust the control cable, loosen the hex jam nut on the auger control cable "Z" fitting.
- Rotate the coupling end of the cable counterclockwise to provide more slack.
- Retighten the hex jam nut. See Figure 7.

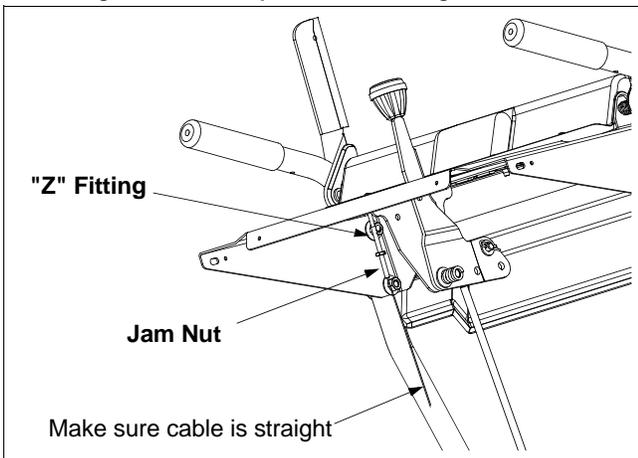


Figure 7

- Repeat Auger Control Test to verify proper adjustment has been achieved.

Chute Clean-Out Tool

The chute clean-out tool is conveniently fastened to the rear of the auger housing with a mounting clip. Should snow and ice lodge itself in the discharge chute during operation, proceed as follows to safely clean the chute and chute opening:

- Release both the Auger Control Lever and the Traction/Auger Control Lock Lever.
- Stop the engine by removing the ignition key.

- Remove the clean-out tool from the clip which secures it to the rear of the auger housing.
- Use the shovel-shaped end of the clean-out tool to dislodge and scoop any snow and ice which has formed in and near the discharge chute.



WARNING: Never use your hands to clean snow and ice from the discharge chute or auger housing

- Refasten the clean-out tool to the mounting clip on the rear of the auger housing, reinsert the ignition key and start the snow thrower's engine.
- While standing in the operator's position (behind the snow thrower), engage the auger clutch lever for a few seconds to clear any remaining snow and ice from the discharge chute.

Drift Cutters (if so equipped)

Drift cutters should be used when operating the snow thrower in heavy drift conditions.

On models so equipped, drift cutters are assembled to the auger housing inverted, for shipping reasons. Remove the carriage bolts by unthreading the hex nuts which secure them, and reinstall the drift cutters in their proper position before operating the snow thrower. See Figure 8.

If your unit is not equipped with drift cutters, contact Customer Support as instructed on page 2 for information regarding price and availability.

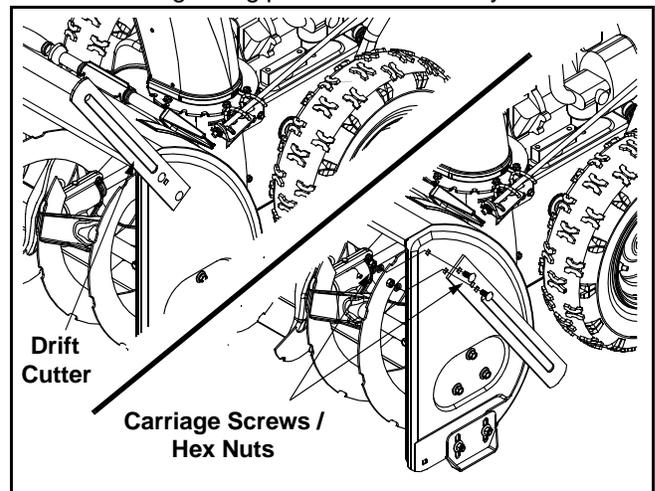


Figure 8

Tire Chains (if so equipped)

Tire chains should be used whenever extra traction is needed. If your unit is not equipped with tire chains, contact Customer Support as instructed on page 2 for information regarding price and availability.

Operating Tips

NOTE: Allow the engine to warm up for a few minutes as the engine will not develop full power until it reaches operating temperature.



WARNING: Muffler, engine and surrounding areas become hot and can cause a burn. Do not touch.

- Set the skid shoes 1/4" below the shave plate for normal usage. The skid shoes may be adjusted upward (to lower the shave plate) for hard-packed snow. Adjust downward (to raise the shave plate) when using on gravel or crushed rock.
- Remove snow immediately after it falls.
- Discharge snow downwind whenever possible.
- Slightly overlap each previous cleared path.
- Follow the precautions found under the heading To Stop Engine to prevent possible freeze-up.
- Clean the snow thrower thoroughly after each use.

SECTION 6: MAKING ADJUSTMENTS



WARNING: Never attempt to make any adjustments while the engine is running, except where specified in operator's manual.

Chute Assembly Adjustment

The distance snow is thrown can be varied by adjusting the pitch of the chute assembly. Refer to **Chute Tilt Control** on page 7 of this manual.

Chute Directional Control Support Bracket Adjustment

If the spiral at the base of the chute directional control isn't fully engaging with the notches in the lower chute assembly, the support bracket can be adjusted inward or outward as follows:

- Loosen, but do NOT remove the two hex nuts which secure the chute directional control support bracket to the snow thrower housing. See Figure 9.

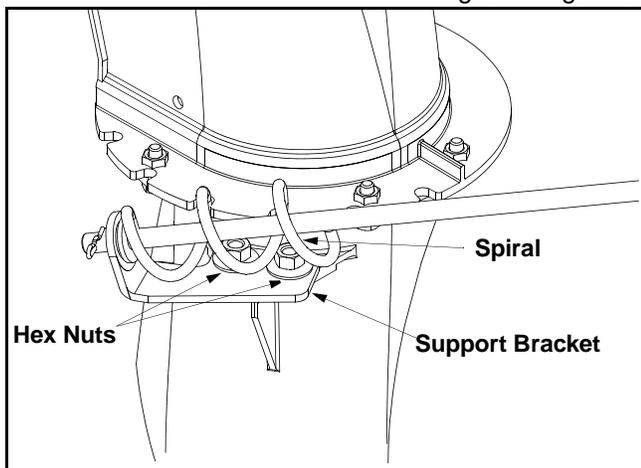


Figure 9

- Adjust the support bracket inward or outward so that the spiral is fully engaged in the notches on the chute before retightening the hex nuts.

Traction Control Adjustment

Refer to the information found under the heading Final Adjustments in Section 3 of this manual to adjust the traction control. If you are uncertain that you have reached the correct adjustment, proceed as follows:

- Tip the snow thrower forward, allowing it to rest on the auger housing.
 - Remove the frame cover underneath the snow thrower by removing six self-tapping screws.
- With the traction control released, there must be clearance between the friction wheel and the drive plate in all positions of the shift lever.

With the traction control engaged, the friction wheel must contact the drive plate. See Figure 10.

If adjustment is necessary:

- Loosen the jam nut on the traction drive cable and thread the cable in or out as necessary.
- Retighten the jam nut to secure the cable when correct adjustment is reached.
- Reassemble the frame cover.

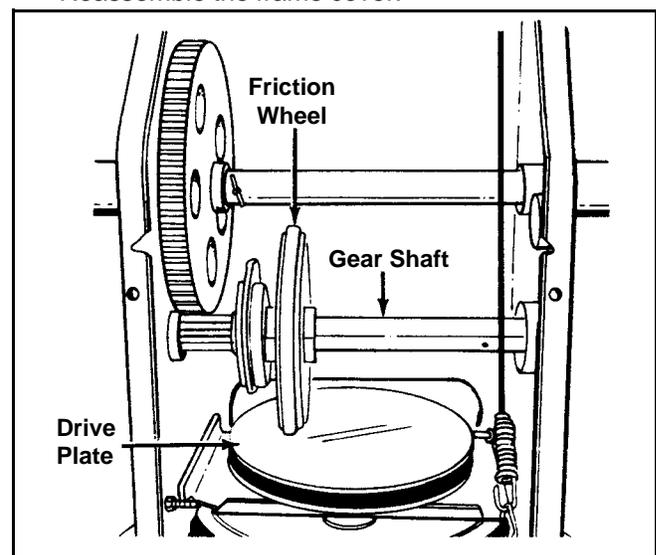


Figure 10

Shift Rod Adjustment

To adjust the shift rod, proceed as follows.

- Remove the hairpin clip and slide the connector up to separate the upper shift rod from the lower shift rod. See Figure 11.
- Place shift lever in the sixth (6) Forward position.
- Rotate the shift arm counterclockwise (from the operator's position) as far as it will go.
- Thread the upper shift rod downward until the elbow on its lower end aligns with the hole found in the lower shift rod.
- Reconnect the upper shift rod to the lower shift rod by reinserting the hairpin clip removed earlier and sliding the connector back down into place.

IMPORTANT: Make certain to check for correct adjustment of the shift rod as instructed under the heading Final Adjustments on page 8 of this manual, before operating the snow thrower.

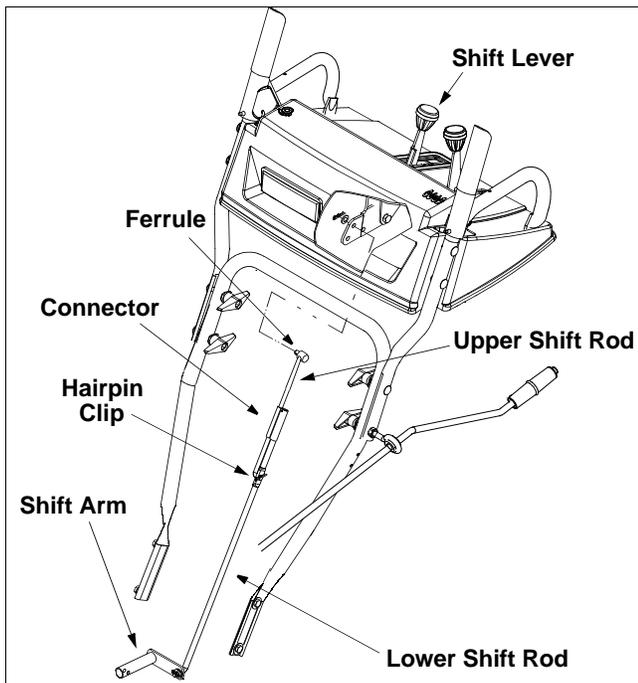


Figure 11

Auger Control Adjustment

Refer to **Auger Control Test** on page 9 of this manual to adjust the auger control.

Skid Shoes

The space between the shave plate and the ground can be adjusted. For close snow removal, place skid shoes in the low position. Use middle or high position when area to be cleared is uneven.

- Adjust skid shoes by loosening the four hex nuts and carriage bolts and moving skid shoes to desired position. Make certain the entire bottom surface of skid shoe is against the ground to avoid uneven wear on the skid shoes. Retighten nuts and bolts securely. See Figure 12.

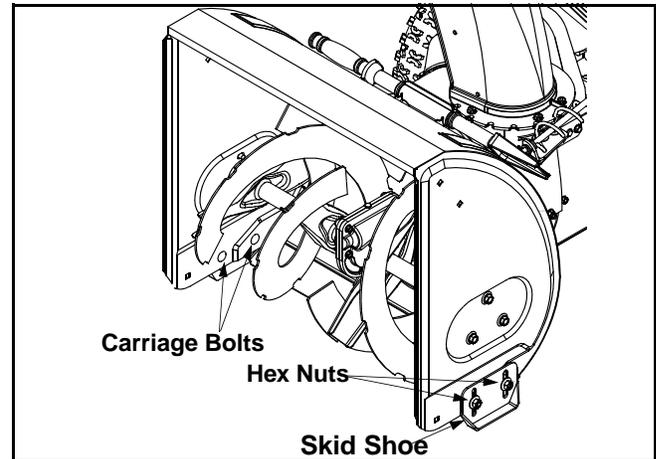


Figure 12



WARNING: Do not operate this snow thrower on gravel as loose gravel can be easily picked up and thrown by the auger causing injury to the operator and/or damage to the snow thrower.

Drive Wheels

The wheels may be adjusted for two different methods of operation. The adjustment is made by placing the click pins in one of two different holes on the right side of the unit.

One Wheel Driving—Insert the click pin **only through the outside hole of the axle (NOT the rim)** on the right side of the snow thrower. This position gives power drive to the left wheel only, making the unit easier to maneuver.

Both Wheels Driving—Insert the click pin through the hole in the hub of the rim and the **INSIDE** hole on the snow thrower's right axle. This position is good for heavy snow as there is power drive in both wheels.

IMPORTANT: NEVER operate the snow thrower with the click pin inserted through both the **RIM** and the **OUTSIDE HOLE** in the axle. Doing so can result in serious damage to the drive system.

SECTION 7: MAINTAINING YOUR SNOW THROWER

Lubrication



WARNING: Before lubricating, repairing, or inspecting, disengage all clutch levers and stop engine. Wait until all moving parts have come to a complete stop. Disconnect spark plug wire and ground it against the engine to prevent unintended starting.

Chute Directional Control

- The worm gear on the chute directional control should be greased with multipurpose automotive grease.

IMPORTANT: Keep all grease and oil off friction wheel and drive plate.

Gear Shaft

Lubricate the gear shaft with good all weather multi-purpose light grease at least once a season or after every 25 hours of operation.

Wheels

- Oil or spray lubricant into plastic wheel bearings inside the wheel hubs at least once a season. Remove wheels, clean and coat axles with a multi-purpose automotive grease. See Figure 13.

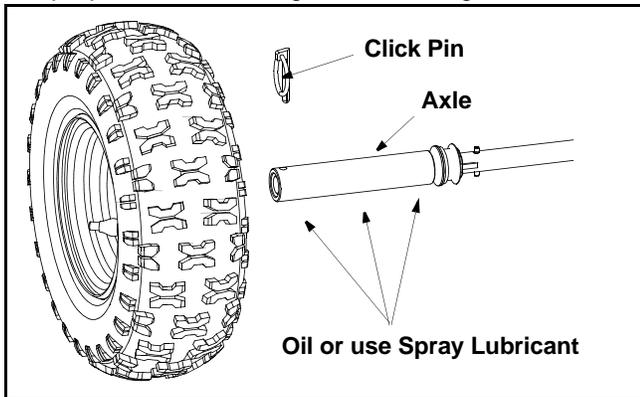


Figure 13

Drive and Shifting Mechanism

At least once a season or after every 25 hours of operation, remove rear cover. Lubricate any chains, sprockets, gears, bearings, shafts, and shifting mechanism at least once a season. Use engine oil or a spray lubricant.

IMPORTANT: Avoid getting oil on rubber friction wheel and aluminum drive plate. Refer to Figure 10.

Auger Shaft

- Once a season, remove the shear bolts and oil or spray lubricant inside the shear bolt holes while rotating the augers by hand to lubricate the shaft. See Figure 14. Also lubricate the bushings at the ends of the augers.

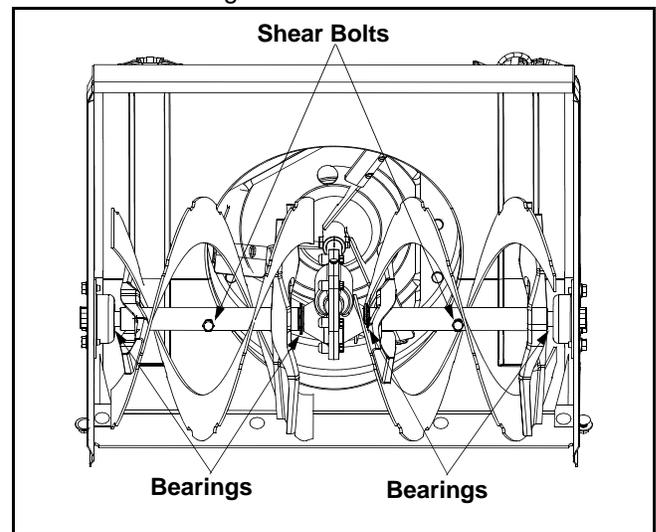


Figure 14

SECTION 8: SERVICE



WARNING: Before servicing, repairing, or inspecting, disengage all clutch levers and stop engine. Wait until all moving parts have come to a complete stop. Disconnect spark plug wire and ground it against the engine to prevent unintended starting.

Augers

The augers are secured to the spiral shaft with two shear bolts and hex lock nuts. If the snow thrower hits a foreign object or ice jam, hex bolts will shear.

- If the augers will not turn, check to see if the bolts have sheared.

IMPORTANT: NEVER replace the auger shear bolts with standard hex bolts. Any damage to the auger gearbox or other components as a result of doing so will NOT be covered by your snow throwers warranty

Shave Plate and Skid Shoes

The shave plate and skid shoes on the bottom of the snow thrower are subject to wear. They should be checked periodically and replaced when necessary. To remove the skid shoes, proceed as follows:

- Remove the four carriage bolts, bell washers and hex nuts which attach them to the snow thrower. Reassemble new skid shoes with the four carriage bolts, bell washers (cupped side goes against skid shoes) and hex nuts. Make certain the skid shoes are adjusted to be level.
- To remove shave plate, remove the carriage bolts, belleville washers and hex nuts which attach it to the snow thrower housing.
- Reassemble new shave plate, making sure heads of the carriage bolts are to the inside of the housing. Tighten securely.

Belt Removal And Replacement



WARNING: Disconnect spark plug wire and ground it against the engine to prevent unintended starting. Drain fuel into an approved container or place a piece of plastic film underneath the gas cap to prevent gasoline from leaking.

Auger Belt

- Remove the plastic belt cover by removing the two self-tapping screws. See Figure 15.

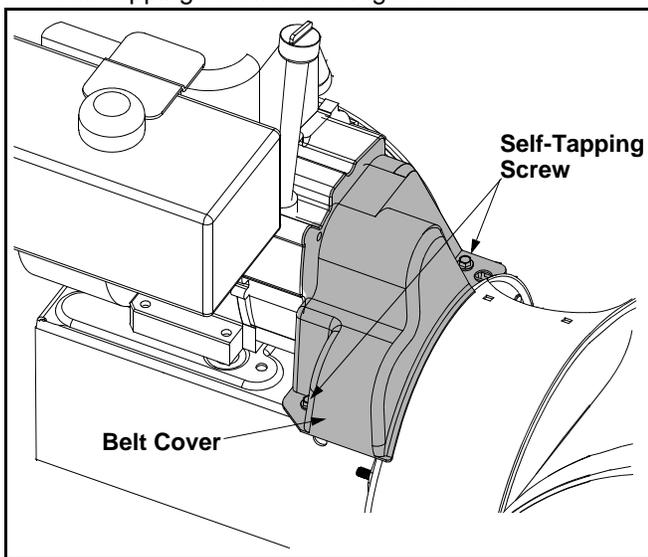


Figure 15

- Drain the gasoline from the snow thrower.
- Tip the snow thrower forward so that it rests on its auger housing and remove six self-tapping screws from the frame cover underneath the snow thrower.
- Roll the belt off the engine pulley. See Figure 16.
- Unhook the idler spring from the hex bolt on the auger housing. See Figure 17.

- Back out the stop bolt until the support bracket rests on the auger pulley. See Figure 18.

NOTE: Loosening the six nuts that connect the frame to the auger housing may aid in belt removal.

- Lift the auger belt from the auger pulley, and slip belt between the support bracket and the auger pulley. See Figure 18. Repeat this step for the front auger belt.

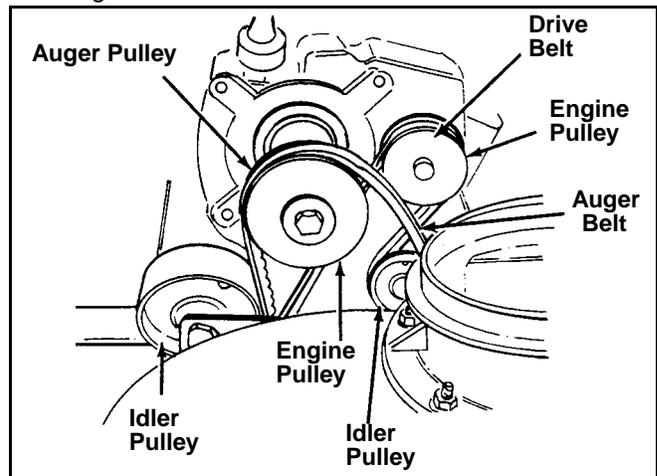


Figure 16

- Replace the auger drive belt by following instructions in reverse order.

Drive Belt

- Follow the first four steps of the instructions for servicing the auger belt.
- Pull idler pulley up, and lift the belt off the engine pulley and friction wheel disc. See Figure 16.
- Back out the stop bolt until the support bracket rests on the auger pulley. See Figure 18.

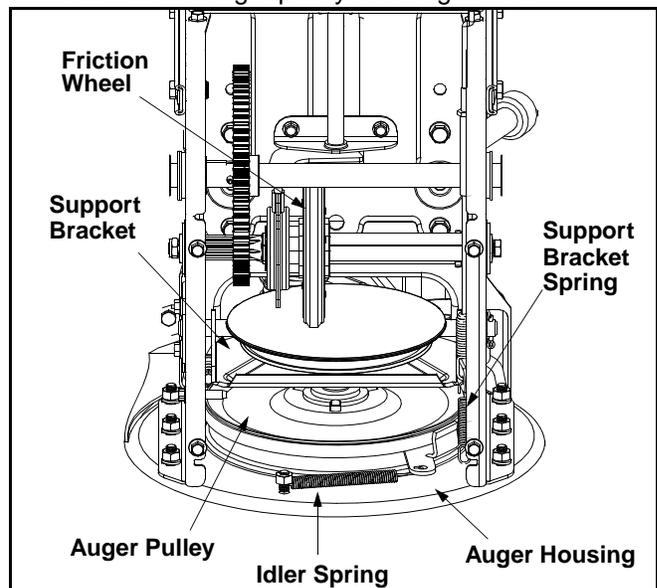


Figure 17

- Slip belt between friction wheel and friction wheel disc. See Figure 18. Remove and replace belt.

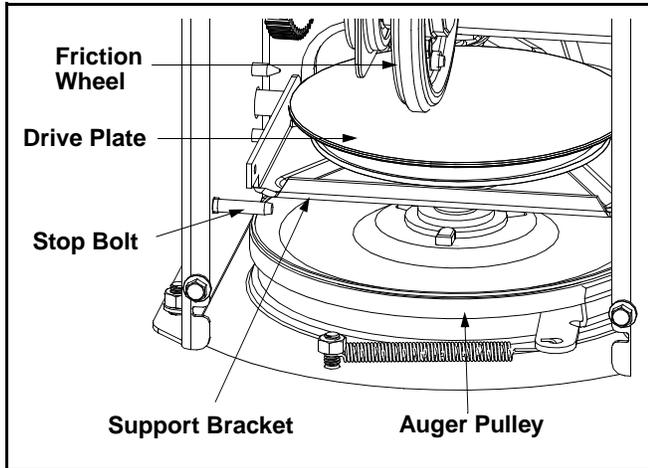


Figure 18

- Reassemble following the instructions in reverse order.

NOTE: The support bracket must rest on the stop bolt after the new belt has been assembled. See Figure 18.

Servicing Friction Wheel Rubber



WARNING: Disconnect the spark plug wire and ground it against the engine to prevent unintended starting. Drain fuel into an approved container or place a piece of plastic film underneath the gas cap to prevent gasoline from leaking.

The rubber on the friction wheel is subject to wear and should be checked after 25 hours of operation, and periodically thereafter. Replace the friction wheel rubber if any signs of wear or cracking are found.

- Drain the gasoline from the snow thrower.
- Tip the snow thrower up and forward, so that it rests on the housing. See Figure 19.

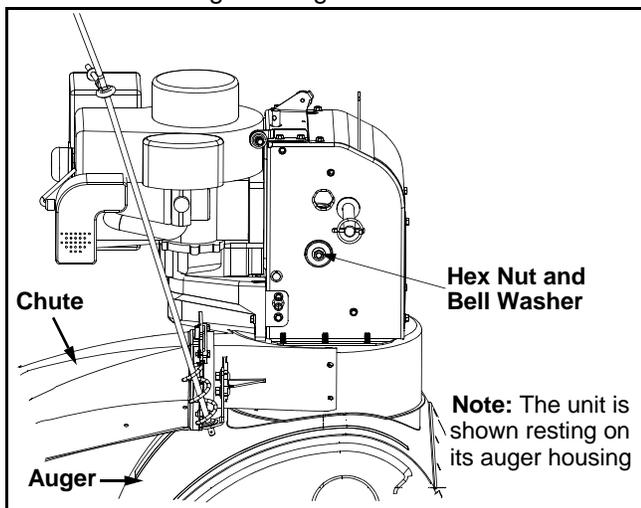


Figure 19

- Remove six self-tapping screws from the frame cover underneath the snow thrower.
- Remove the click pins which secure the wheels, and remove the wheels from the axle.
- Using a 7/8" wrench to hold the shaft, loosen, but do not completely remove, the hex nut and bell washer on the left end of gear shaft. See Figure 18.
- Lightly tap the hex nut to dislodge the ball bearing from the right side of frame before removing the hex nut and bell washer from left end of shaft.
- Move the gear shaft to the right and slide the friction wheel assembly from the shaft.
- Remove the four screws from the friction wheel assembly. Remove the friction wheel rubber from between the friction wheel plates. See Figure 20.

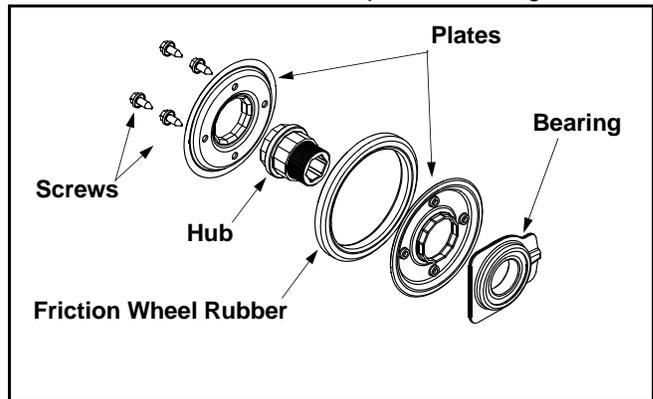


Figure 20

- Reassemble new friction wheel rubber to the friction wheel plates and hub, tightening the four screws in rotation and with equal force.
- Position the friction wheel assembly up onto the pin of the shift rod assembly, and slide the shaft through the assembly. Reassemble in reverse order.

Off-season Storage



WARNING: Never store the machine or fuel container indoors where there is an open flame, spark or pilot light such as on a water heater, furnace, clothes dryer or other gas appliances.

If unit is to be stored over 30 days, prepare for storage as follows:

- Remove gasoline from carburetor and fuel tank to prevent gum deposits from forming on these parts and causing possible malfunction of engine.
- Run engine until fuel tank is empty and engine stops due to lack of fuel.

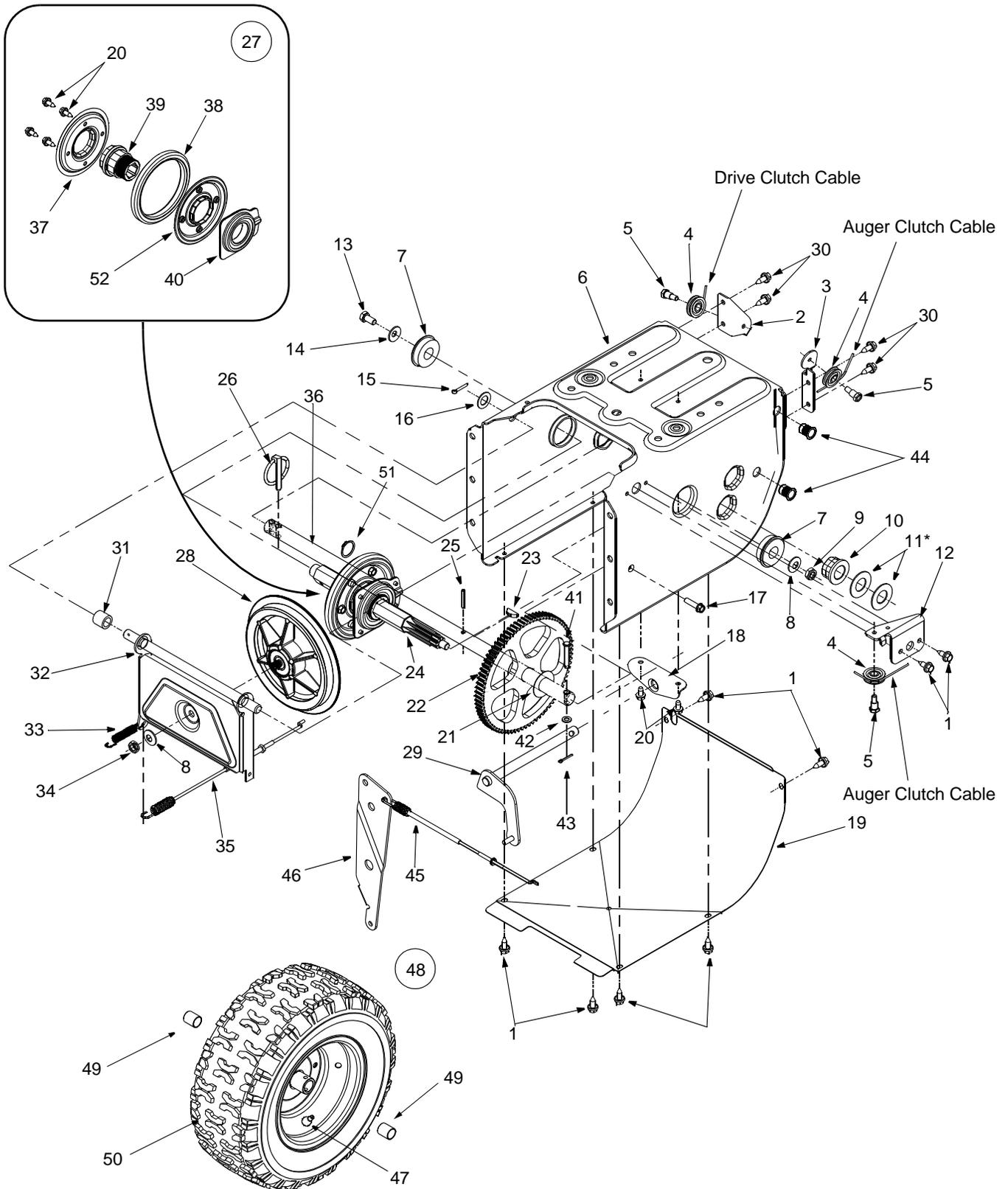
- Drain carburetor by pressing upward on bowl drain, located below the carburetor cover.
- Remove all dirt from exterior of engine and equipment.
- Remove spark plug and pour one ounce of engine oil through spark plug hole into cylinder. Cover spark plug hole with rag. Crank engine several times to distribute oil. Replace spark plug.
- Follow lubrication recommendations on page 13.

NOTE: *When storing any type of power equipment in an unventilated or metal storage shed, care should be taken to rust proof the equipment. Using a light oil or silicone, coat the equipment, especially any chains, springs, bearings and cables.*

SECTION 9: TROUBLESHOOTING

Problem	Cause	Remedy
Engine fails to start	<ol style="list-style-type: none"> 1. Fuel tank empty, or stale fuel present in gas tank. 2. Blocked fuel line. 3. Choke not in ON position 4. Faulty spark plug. 5. Safety key not in ignition switch on engine. 6. Spark plug wire disconnected. 7. Primer button not being used properly. 8. Fuel shut-off valve (if so equipped) closed. 	<ol style="list-style-type: none"> 1. Fill tank with clean, fresh gasoline. Fuel becomes stale after thirty days unless a fuel stabilizer is used. 2. Clean the fuel line. 3. Move switch to ON position 4. Clean, adjust gap or replace. 5. Insert the key fully into the switch. 6. Connect spark plug wire. 7. Refer to the engine manual for proper priming instructions. 8. Open fuel shut-off valve.
Engine runs erratic	<ol style="list-style-type: none"> 1. Unit running on CHOKE. 2. Blocked fuel line or stale fuel. 3. Water or dirt in fuel system. 4. Carburetor out of adjustment. 	<ol style="list-style-type: none"> 1. Move choke lever to OFF position. 2. Clean fuel line. Refill with fresh fuel. 3. Drain fuel tank and carburetor. Refill with fresh fuel. 4. Refer to the engine manual packed with your unit or have carburetor adjusted by an authorized MTD service dealer.
Loss of power	<ol style="list-style-type: none"> 1. Spark plug wire loose. 2. Gas cap vent hole plugged. 3. Exhaust port plugged. 	<ol style="list-style-type: none"> 1. Connect and tighten spark plug wire. 2. Remove ice and snow from gas cap. Be certain vent hole is clear. 3. Refer to the engine manual packed separately with your unit.
Engine overheats	<ol style="list-style-type: none"> 1. Carburetor not adjusted properly. 	<ol style="list-style-type: none"> 1. Refer to the engine manual or have the carburetor adjusted by an authorized MTD service dealer.
Excessive vibration	<ol style="list-style-type: none"> 1. Loose parts or damaged auger. 	<ol style="list-style-type: none"> 1. Stop engine immediately and disconnect spark plug wire. Tighten all bolts and nuts. If vibration continues, have unit serviced by an authorized MTD service dealer.
Unit fails to propel itself	<ol style="list-style-type: none"> 1. Traction control cable in need of adjustment. 2. Drive belt loose or damaged. 	<ol style="list-style-type: none"> 1. Adjust traction control cable. Refer to Section 6 of this manual. 2. Replace drive belt. Refer to Section 8 of this manual.
Unit fails to discharge snow	<ol style="list-style-type: none"> 1. Discharge chute clogged. 2. Foreign object lodged in auger. 3. Auger control cable in need of adjustment. 4. Auger belt loose or damaged. 5. Auger shear bolts have sheared. 	<ol style="list-style-type: none"> 1. Stop engine immediately and disconnect spark plug wire. Clean chute area and auger housing. 2. Stop engine immediately and disconnect spark plug wire. Remove object from auger. 3. Adjust auger control cable. Refer to Section 6 of this manual. 4. Refer to the Service section of this manual. 5. Replace auger shear bolts. Refer to Figure 1 on page 5 of this manual.

SECTION 10: MODEL E663H & E643E PARTS LIST

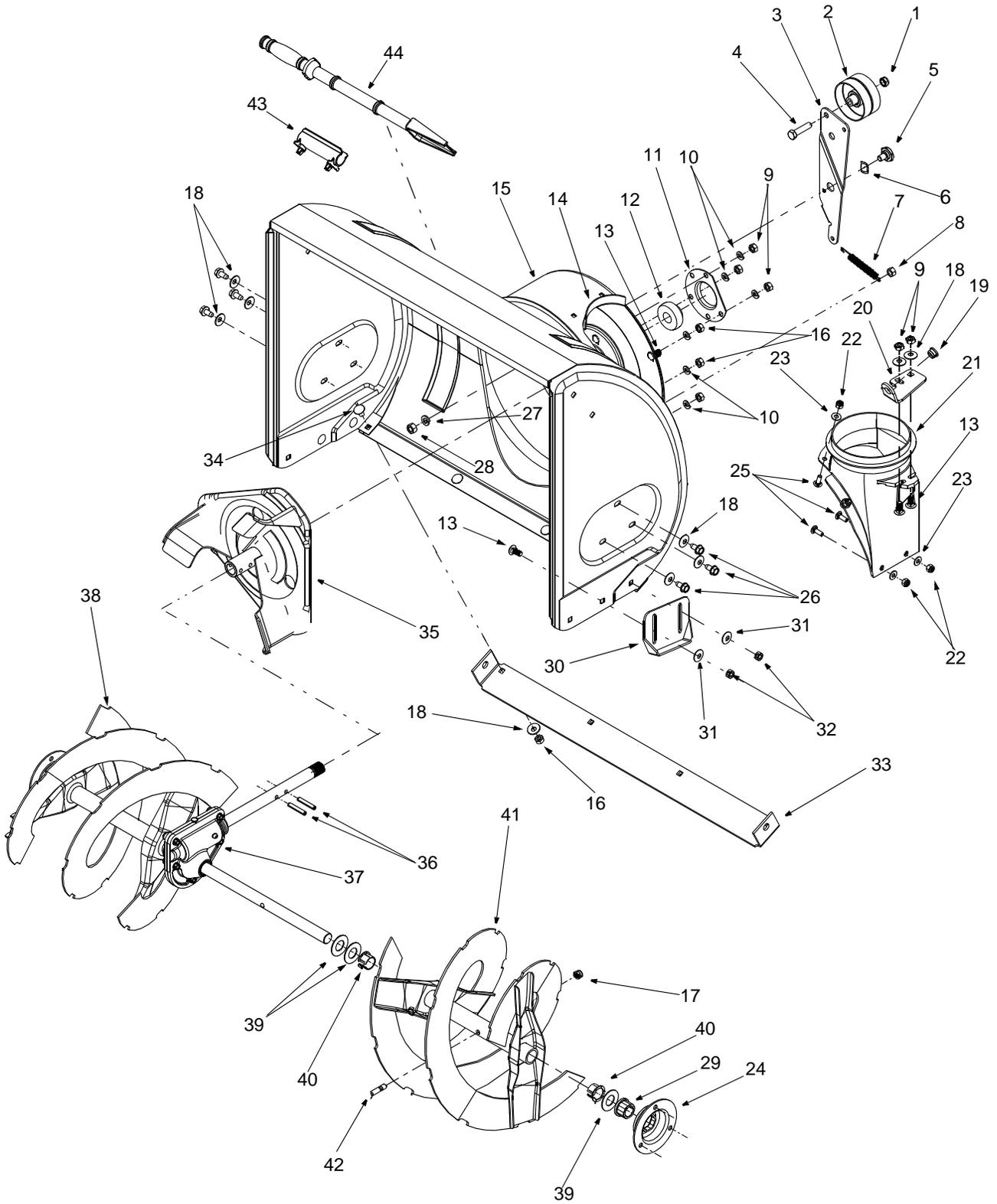


* Add a second washer here, if needed, to reduce axle play.

Models E663H & E643E

Ref. No.	Part No.	Part Description	Ref. No.	Part No.	Part Description
1	710-1652	Self-tapping Screw, 1/4-20 x .625	29	684-0013B	Wheel Shift Rod Assembly
2	784-5688	Drive Cable Guide Bracket	30	710-0599	Self-tapping Screw, 1/4-20 x .5
3	784-5687A	Auger Clutch Cable Bracket	31	748-0190	Spacer
4	756-0625	Cable Roller	32	684-0021	Friction Wheel Bracket Assembly
5	738-0924	Hex Screw 1/4-28	33	732-0264	Extension Spring
6	784-5630B	Frame Assembly	34	712-0711	Jam Nut 3/8-24
7	741-0563	Ball Bearing	35	746-0898B	Drive Cable
8	736-0105	Bell Washer	36	738-0830	Axle (E663H)
9	712-0116	Lock Jam Nut		738-0869	Axle (E643E)
10	741-04026	Hex Flange Bearing	37	790-00010	Friction Plate
11	736-0188	Flat Washer†	38	735-0243B	Friction Wheel Rubber
12	784-5689A	Front Support Guide Bracket	39	718-0301A	Friction Wheel Hub
13	710-0538	Lock Hex Screw	40	618-0063A	Friction Wheel Bearing
14	736-0242	Bell Washer .340 ID x .872 OD	41	711-1364	Clevis Pin, 1/4 x 1.3725
15	714-0474	Cotter Pin	42	736-0142	Flat Washer, .281 x .5 x .063
16	736-0160	Flat Washer .536 ID x .930 OD	43	714-0507	Cotter Pin, .75
17	710-0809	Self-tapping Screw, 1/4-20 x 1.25	44	712-0703A	Insert Nut, 5/16-18
18	784-5590	Frame Shift Bracket	45	746-0897	Drive Cable
19	784-5638A	Frame Cover	46	784-5232A	Auger Idler Arm
20	710-1652	Hex Washer Screw 1/4-20	47	734-0255	Air Valve
21	736-0351	Flat Washer .760 ID x .50 OD	48	734-1712A	Wheel Assembly (E663H)
22	717-1445	Gear		634-0140A	Wheel Assembly (E643E)
23	714-0126	Key	49	741-0401	Sleeve Bearing, .75 x .87 x 1
24	717-04094	7-Tooth Shaft	50	734-1525	Tire Only, 16 x 6.5 x 8 (E663H)
25	715-0249	Roll Pin		734-1859	Tire Only, 15 x 5 x 6 (E643E)
26	714-0143	Klik Pin	51	716-0102	Snap Ring
27	684-0042C	Friction Wheel Assembly	52	790-00011	Friction Plate
28	656-0012A	Friction Disc Wheel			

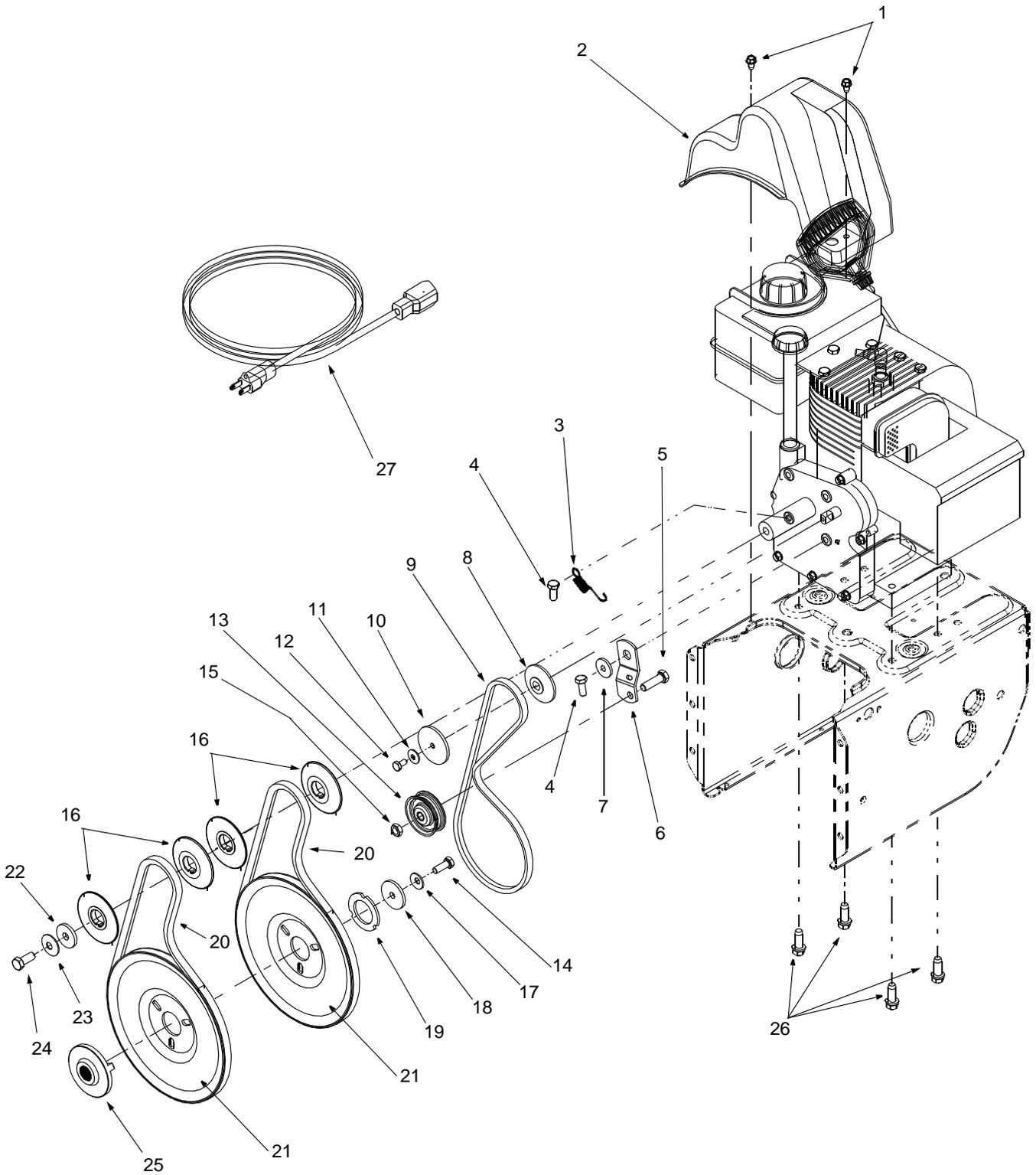
Models E663H & E643E



Models E663H & E643E

Ref. No.	Part No.	Part Description	Ref. No.	Part No.	Part Description
1.	712-0116	Lock Jam Nut 3/8-24	25.	710-0703	Carriage Screw 1/4-20 x .75
2.	756-0178	Flat Idler, 2.75 w/o Flanges	26.	710-0726	Hex Screw 5/16-18 x .75
3.	784-5632B	Auger Idler Arm	27.	736-0169	Lock Washer 3/8
4.	710-0459A	Hex Cap Screw 3/8-24 x 1.50	28.	712-0798	Hex Nut 3/8-16
5.	738-0281	Shoulder Screw	29.	741-0245	Hex Flange Bearing
6.	736-0167	Flat Washer	30.	784-5580	Skid Shoe
7.	732-0611	Extension Spring	31.	736-0242	Bell Washer
8.	712-3068	Hex Nut 5/16-18	32.	712-3010	Hex Nut 5/16-18
9.	712-3010	Hex Nut 5/16-18	33.	784-5575	Shave Plate, 29.66" (E663H)
10.	736-0119	Lock Washer 5/16		784-5581A	Shave Plate, 23.66" (E643E)
11.	05931A	Bearing Housing, 1.85	34.	710-0260	Carriage Bolt 5/16-18 x .62
12.	741-0309	Ball Bearing, .75 x 1.85	35.	684-0065	Impeller Assembly, 12
13.	710-0451	Carriage Bolt 5/16-18 x .75	36.	715-0114	Spiral Pin, .25 x 1.5
14.	705-5226	Chute Reinforcement	37.	618-0160A	Gearbox Assembly (E663H)
15.	684-0055C	30" Housing Assembly (E663H)		618-0120A	Gearbox Assembly (E643E)
	684-0039D	24" Housing Assembly (E643E)	38.	605-5248B	RH Spiral Ass'y (E663H)
16.	712-3010	Hex Nut 5/16-18		605-5188A	RH Spiral Ass'y (E643E)
17.	712-0429	Lock Nut 5/16-18	39.	736-0188	Flat Washer
18.	736-0242	Bell Washer	40.	741-0493A	Flange Bushing
19.	741-0475	Plastic Bushing, .380	41.	605-5249B	LH Spiral Ass'y (E663H)
20.	784-5647	Chute Crank Bracket		605-5189A	LH Spiral Ass'y (E643E)
21.	731-1379C	Chute Adapter, 5.0	42.	710-0890A	Shear Bolt 5/16-18 x 1.5
22.	712-3027	Hex Lock Nut 1/4-20	43.	731-2635	Mount: Chute Clean-out Tool
23.	736-0463	Flat Washer	44.	731-2643	Chute Clean-out Tool
24.	784-5618	Bearing Housing			

Models E663H & E643E



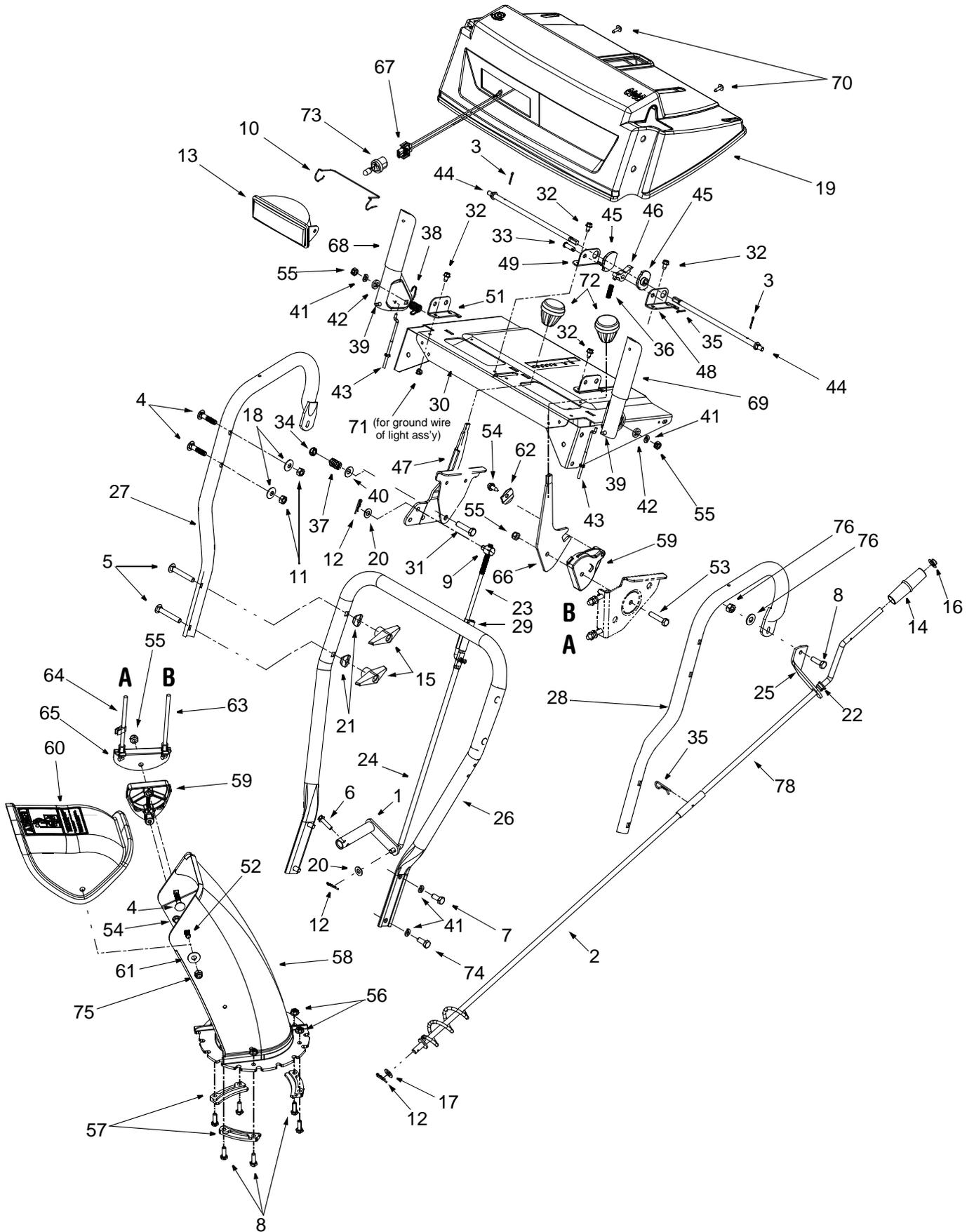
Models E663H & E643E

Ref. No.	Part No.	Part Description
1.	710-1652	Hex Washer Screw 1/4-20 x.625
2.	731-1324	Belt Cover
3.	732-0710	Extension Spring
4.	710-0627	Hex Screw 5/16-24 x .75
5.	710-3005	Hex Cap Screw 3/8-16 x 1.25
6.	05896A	Drive Clutch Bracket
7.	748-0234	Shoulder Spacer
8.	756-0987	Pulley Half
9.	754-0346	V-Belt
10.	756-0986	Pulley Half
11.	736-0270	Bell Washer
12.	710-0230	Hex Cap Screw 1/4-28 x .50
13.	756-0313	Flat Idler
14.	710-1245B	Lock Cap Screw 5/16-24 x .875
15.	712-0181	Lock Jam Nut 3/8-16
16.	756-0569	Pulley Half
17.	736-0242	Bell Washer
18.	736-0505	Flat Washer
20.	754-0430B	Belt
21.	756-0967	Auger Pulley
22.	736-0247	Flat Washer
23.	736-0331	Bell Washer
24.	710-0696	Hex Cap Screw 3/8-24
25.	748-0360	Pulley
26.	710-0654A	Hex Washer Screw 3/8-16 x 1.0
27.	629-0071	Extension Cord

IMPORTANT: For a proper working machine, use Factory Approved Parts.

V-BELTS are specially designed to engage and disengage safely. A substitute (non OEM) V-Belt can be dangerous by not disengaging completely

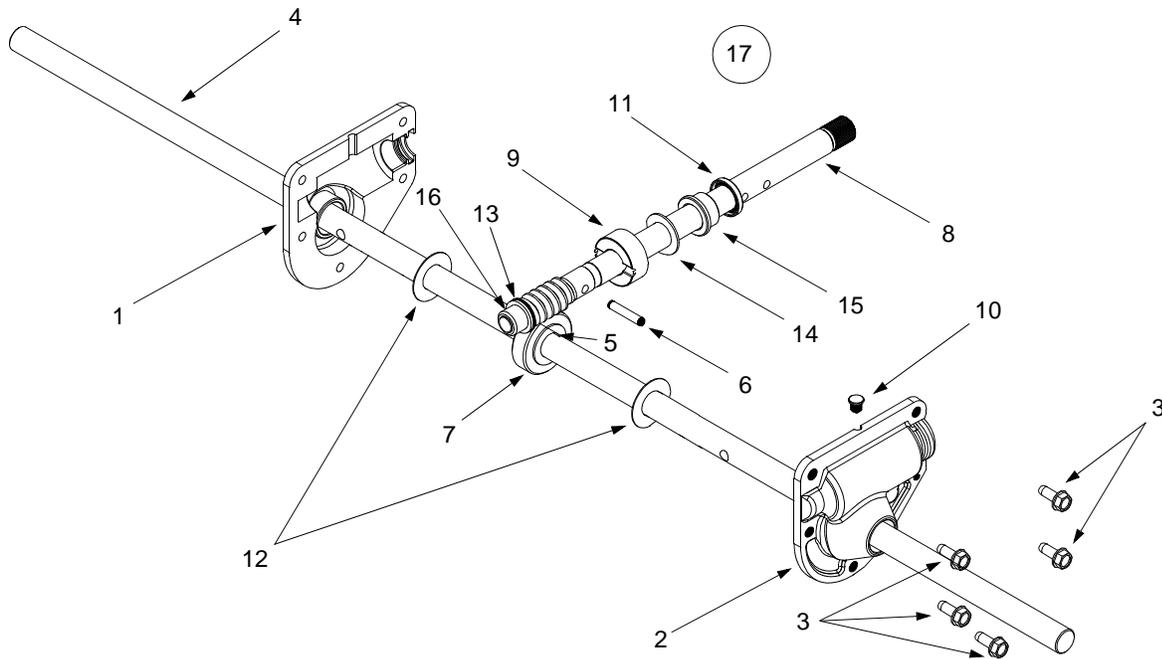
Models E663H & E643E



Models E663H & E643E

Ref. No.	Part No.	Part Description	Ref. No.	Part No.	Part Description
1.	684-0008A	Shift Arm Assembly	40.	736-0105	Bell Washer, .401 x .87 x .063
2.	684-0053B	Lower Chute Crank Assembly	41.	736-0119	Lock Washer, 5/16
3.	714-0507	Cotter Pin, 3/32 x .75	42.	736-0509	Special Washer, .35 x .72 x .13
4.	710-0458	Carriage Bolt, 5/16-18 x 1.75	43.	746-0778	Cable "Z" Fitting
5.	710-0449	Carriage Bolt, 5/16-18 x 2.25	44.	747-0877	Cam Rod
6.	710-0788	Self Tapping Screw, 1/4-20 x 1	45.	748-0362	Cam Handle Lock
7.	710-0643	Hex Cap Screw, 5/16-18 x 1.0	46.	748-0363	Handle Lock Pawl
8.	710-3015	Hex Cap Screw, 1/4-20 x .75	47.	784-5619A	Shift Handle
9.	711-0677	Ferrule, 5/16-18 x .312	48.	784-5679	LH Handle Support Bracket
10.	747-1136	Headlamp Retainer	49.	784-5680	RH Handle Support Bracket
11.	712-3010	Hex Nut, 5/16-18	50.	784-5681	LH Handle Support Bracket
12.	714-0104	Internal Cotter Pin	51.	784-5682	RH Handle Support Bracket
13.	725-1672	Lens Assembly / Lamp Housing	52.	710-0451	Carriage Bolt, 5/16-18 x .75
14.	720-0201A	Chute Crank Knob	53.	710-0805	Hex Cap Screw, 5/16-18 x 1.5
15.	720-0284	Wing Knob, 5/16-18	54.	710-0896	Screw, 1/4-14 x .625
16.	726-0100	Push Cap, 3/8	55.	712-0429	Hex Lock Nut, 5/16-18
17.	736-0185	Flat Washer, .375 x .738 x .063	56.	712-3027	Hex Flange Lock Nut, 1/4-20
18.	736-0242	Bell Washer, .34 x .872	57.	731-0851A	Lower Chute Flange Keeper
19.	731-1545B	Handle Panel, Yellow	58.	731-1300B	Lower Chute
20.	736-0275	Flat Washer, .344 x .688 x .065	59.	731-1313C	Chute Tilt Cable Guide
21.	736-0451	Saddle Washer, .32 x .93	60.	731-04426	Upper Chute
22.	741-0475	Plastic Bushing	61.	736-0159	Washer, 5/16
23.	747-0620A	Upper Shift Rod	62.	736-0506	Special Washer, .28 x 1.2 x .06
24.	747-0621	Lower Shift Rod	63.	746-0896	Chute Deflector Control Cable
25.	705-5266	Chute Crank Bracket	64.	746-0901	Chute Deflector Cable w/ Clip
26.	749-0951	Lower Handle	65.	784-5594	Cable Bracket
27.	749-0954	RH Handle (Upper), C-style	66.	784-5604	Chute Tilt Handle
28.	749-0955	LH Handle (Upper), C-style	67.	629-0059	Halogen Light Harness
29.	750-0963	Shift Rod Connector	68.	684-0036A	RH Engagement Handle Ass'y
30.	684-0102	Handle Panel Assembly	69.	684-0037B	LH Engagement Handle Ass'y
31.	710-0459A	Hex Cap Screw, 3/8-24 x 1.5	70.	710-1003	Special Screw, #10-16 x .625
32.	710-0599	Self Tapping Screw, 1/4-20 x .5	71.	712-0271	Hex Sems Nut, 1/4-20
33.	711-0653	Clevis Pin	72.	720-0232	Plastic Knob
34.	712-0116	Jam Nut, 3/8-24	73.	725-1658	Halogen Lamp, 12-volt, 27 Watt
35.	714-0104	Cotter Pin, .072 x 1.0	74.	710-1880	Hex Cap Screw, 5/16-18 x .75
36.	732-0145	Compression Spring, .36 x 1.0	75.	712-3068	Hex Nut 5/16-18
37.	732-0193	Comp. Spring, .39 x .6 x .88	76.	736-0270	Bell Washer, .265 x .75 x .062
38.	732-0746	Torsion Spring, .44 x .8	77.	712-0287	Hex Nut, 1/4-20
39.	735-0199A	Rubber Bumper	78.	747-0737	Upper Chute Crank

Models E663H & E643E



Ref. No.	Part No.	Part Description
1.	618-0123	RH Housing
2.	618-0124	LH Housing w/Fitting Hole
3.	710-0642	Self Tapping Screw, 1/4-20 x .75
4.	711-1024A	Spiral Axle, 30" (E663H)
	711-0908A	Spiral Axle, 24" (E643E)
5.	714-0161	Hi-Pro Key, 3/16 x 5/8
6.	715-0143	Spring Spirol Pin, .25 x 1.25
7.	717-0528A	Worm Gear, 20-tooth
8.	717-0526	Worm Shaft
9.	718-0186	Thrust Collar
10.	721-0325	Grease Plug
11.	721-0327	Grease Seal
12.	736-0351	Flat Washer, .76 x 1.5 x .030
13.	736-0369	Flat Washer, .508 x 1.0 x .020
14.	736-0445	Flat Washer, .76 x 1.5 x .060
15.	741-0662	Flange Bearing, .75 x 1.0 x .59
16.	741-0663	Flange Bearing, .503 ID x .75 OD
17.	618-0160A	Gear Assembly Complete, 30" (E663H)
	618-0120A	Gear Assembly Complete, 24" (E643E)
—	737-0168A	Grease (1-½ oz.)

NOTES

MANUFACTURER'S LIMITED WARRANTY FOR:



The limited warranty set forth below is given by MTD LLC with respect to new merchandise purchased and used in the United States, its possessions and territories.

MTD LLC warrants this product against defects for a period of two (2) years commencing on the date of original purchase and will, at its option, repair or replace, free of charge, any part found to be defective in materials or workmanship. This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator's Manual furnished with the product, and has not been subject to misuse, abuse, commercial use, neglect, accident, improper maintenance, alteration, vandalism, theft, fire, water, or damage because of other peril or natural disaster. Damage resulting from the installation or use of any accessory or attachment not approved by MTD LLC for use with the product(s) covered by this manual will void your warranty as to any resulting damage.

Normal wear parts or components thereof are subject to separate terms as follows: All normal wear parts or component failures will be covered on the product for a period of 90 days regardless of cause. After 90 days, but within the two year period, normal wear part failures will be covered ONLY IF caused by defects in materials or workmanship of OTHER component parts. Normal wear parts and components include, but are not limited to: batteries, belts, blades, blade adapters, grass bags, rider deck wheels, seats, snow thrower skid shoes, shave plates, auger spiral rubber, and tires.

HOW TO OBTAIN SERVICE: Warranty service is available, WITH PROOF OF PURCHASE, through your local authorized service dealer. To locate the dealer in your area, check your Yellow Pages, or contact MTD LLC at P.O. Box 361131, Cleveland, Ohio 44136-0019, or call 1-800-800-7310 or log on to our Web site at www.mtdproducts.com.

This limited warranty does not provide coverage in the following cases:

- a. The engine or component parts thereof. These items carry a separate manufacturer's warranty. Refer to applicable manufacturer's warranty for terms and conditions.
- b. Log splitter pumps, valves, and cylinders have a separate one year warranty.
- c. Routine maintenance items such as lubricants, filters, blade sharpening, tune-ups, brake adjustments, clutch adjustments, deck adjustments, and normal deterioration of the exterior finish due to use or exposure.
- d. MTD LLC does not extend any warranty for products sold or exported outside of the United States, its possessions and territories, except those sold through MTD LLC's authorized channels of export distribution.
- e. Parts that are not genuine MTD parts are not covered by this warranty.
- f. Service completed by someone other than an authorized service dealer is not covered by this warranty.
- g. Transportation charges and service calls are not covered.

No implied warranty, including any implied warranty of merchantability of fitness for a particular purpose, applies after the applicable period of express written warranty above as to the parts as identified. No other express warranty, whether written or oral, except as mentioned above, given by any person or entity, including a dealer or retailer, with respect to any product, shall bind MTD LLC. During the period of the warranty, the exclusive remedy is repair or replacement of the product as set forth above.

The provisions as set forth in this warranty provide the sole and exclusive remedy arising from the sale. MTD LLC shall not be liable for incidental or consequential loss or damage including, without limitation, expenses incurred for substitute or replacement lawn care services or for rental expenses to temporarily replace a warranted product.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.

In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold. **Alteration of safety features of the product shall void this warranty.** You assume the risk and liability for loss, damage, or injury to you and your property and/or to others and their property arising out of the misuse or inability to use the product.

This limited warranty shall not extend to anyone other than the original purchaser or to the person for whom it was purchased as a gift.

HOW STATE LAW RELATES TO THIS WARRANTY: This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

MTD LLC, P.O. BOX 361131 CLEVELAND, OHIO 44136-0019; Phone: 1-800-800-7310