



Owner's Manual

◆ SET-UP ◆ OPERATION ◆ MAINTENANCE



IMPORTANT: Read Safety Rules and Instructions Carefully


CALLING CUSTOMER SUPPORT

- **LOCATE YOUR MODEL NUMBER AND SERIAL NUMBER** which appears on your unit and record the information in the space provided below.

IMPORTANT: You must have these numbers, along with the date and proof of purchase to receive warranty or service.

- If you are having difficulty assembling this product or if you have any questions regarding the controls, operation or maintenance of this unit, please call an authorized dealer.
- Please have your model number and serial number ready when you call.

NOTE: Although both numbers are important, you will be asked to enter only your serial number before your call can be processed.

Model Number Numéro de modèle	Serial Number Numéro de série
XXXXXXXXXX	XXXXXXXXXX
 COLUMBIA CANADA KITCHENER, ON N2G 4J1	


— This is where your model number will be, record it here:

— This is where your serial number will be, record Serial Number here:

This unit has been inspected against the manufacturers quality check list. In case of a discrepancy, please call us. We will make every effort to ship the part(s) by courier within one working day of your call.

IMPORTANT SAFE OPERATION PRACTICES



WARNING: 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.



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.

PREPARATION

1. Thoroughly inspect the area where the equipment is to be used. Remove all door mats, 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.
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.

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. To avoid 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 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.
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 customer support department.

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. Snowthrower shave plates and slide 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.

**OWNER'S
MANUAL**



SAFETY LABEL



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.

CONTENTS OF THE HARDWARE PACK

Lay out the hardware according to the illustration for identification purposes. Part numbers are shown in parentheses.

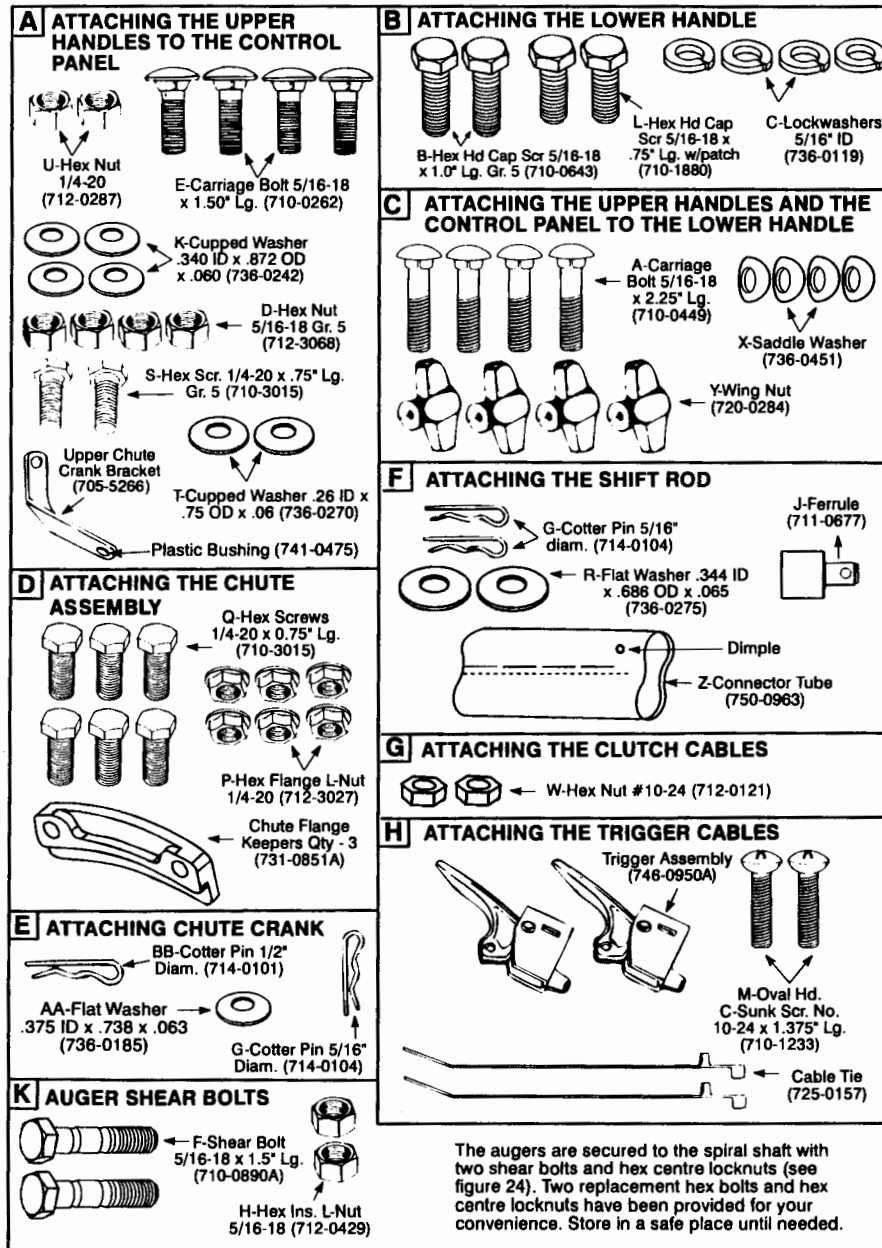


FIGURE 1

NOTE: The snowthrower is shipped with oil and **WITHOUT GASOLINE**. After assembly, refer to separate engine manual for proper fuel and engine oil recommendations.

ASSEMBLY INSTRUCTIONS

Reference to right hand or left hand side of machine are observed from the operating position.

Tools Required for Assembly:

1/2" Wrench or adjustable

3/8" Wrench or adjustable

Two 7/16" Wrenches or adjustable

Pliers

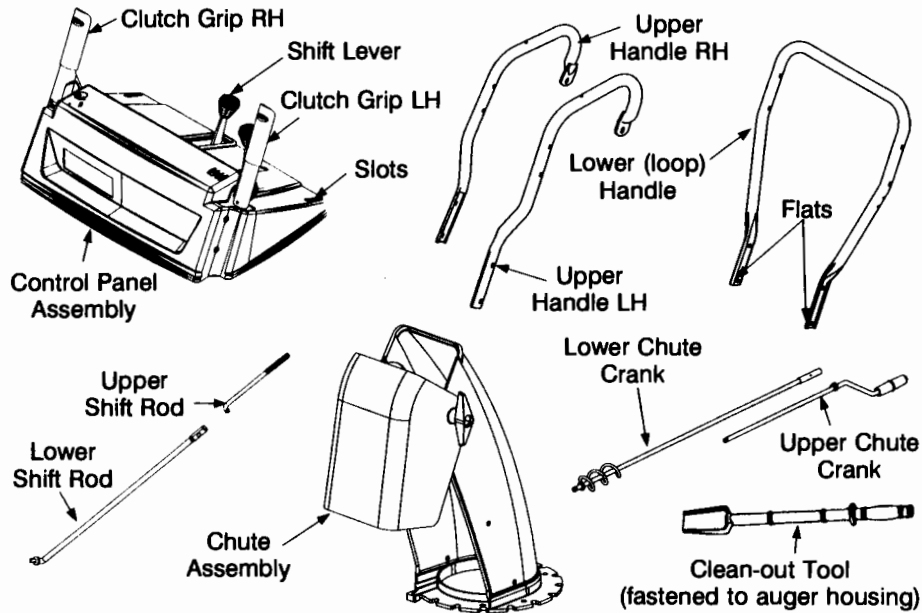


FIGURE 2 - LOOSE PARTS IN CARTON

ATTACHING THE HANDLES AND UPPER CHUTE CONTROL BRACKET TO THE CONTROL PANEL ASSEMBLY (Hardware A)

- Lift the chute and control panel assemblies out and set right side up. Caution: Be careful not to bend or kink (optional) cables. Cut the rear section of the carton away.
- Place the control panel assembly in position between the handles so the ends of the handle go through the slots in the control panel assembly. See Figure 3. **Note:** Flat sides on the ends of the handles should be towards the inside to attach to the handle panel support.

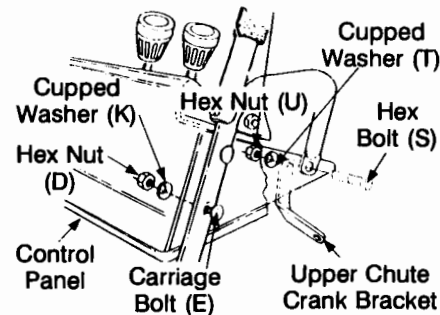


FIGURE 3

- Attach the front of the control panel assembly loosely using carriage bolt (E), cupped washer (K) and hex nuts (D). See Figure 3.

- On the **left side** (shown in Figure 3) position the upper chute crank bracket to the inside of the handle panel support. Insert hex bolt (S) through the handle, handle panel support, upper chute crank bracket and secure using cupped washer (T) (cupped side against the bracket) and hex nuts (U). See Figure 3.
- On the **right side** only (not shown in Figure 3) attach handle to the rear of the handle panel support using hex bolts (S), cupped washers (T) (cupped side against the support) and hex nuts (U). See Figure 3.

ATTACHING THE LOWER (LOOP) HANDLE TO THE SNOWTHROWER (Hardware B)

- Resting the lower handle on the floor behind the machine, line up the lower holes in the handle with the lower holes in the frame sides and secure with lockwashers (C) and hex screws (L). See Figure 4. **NOTE: Hex screws have a chemical patch which sets after bolt is assembled.**
- Raise the lower handle up aligning upper holes in the handle with remaining hole in the frame. Secure to the frame with lockwashers (C) and hex screws (B). See Figure 4.

Caution: Be careful not to pinch cables between the frame and handle.

ATTACHING THE UPPER HANDLES AND CONTROL ASSEMBLY TO THE LOWER HANDLE (Hardware C)

- Resting the upper handle control panel assembly on the floor, line up the upper holes in both the upper and lower handle and secure with curved carriage bolts (A), saddle washers (X) and wing nuts (Y). See Figure 5.
- Raise the upper handle assembly until it locks over the lower handle. Secure the lower holes in the handles with the remaining carriage bolts, saddle washers and wing nuts. See Figure 6.
- Tighten all hardware assembled to this point.

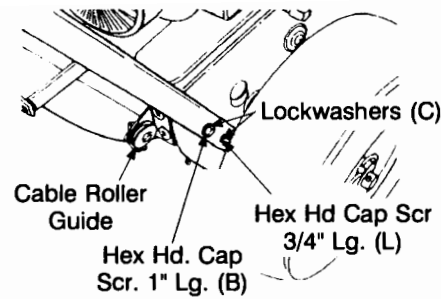


FIGURE 4

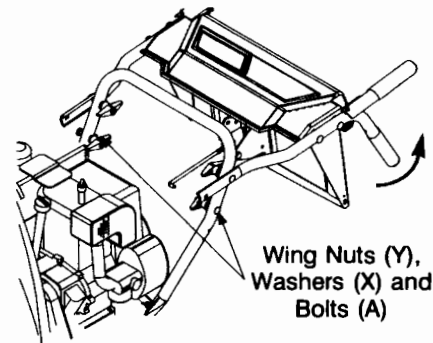


FIGURE 5

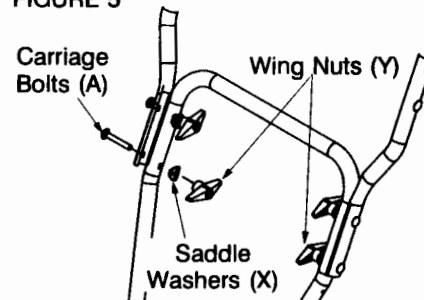


FIGURE 6

- Pull the snowthrower out of carton. Check all carton inserts to be certain that all loose parts and literature have been removed before the carton is discarded.

ATTACHING THE CHUTE ASSEMBLY (Hardware D)

- Place chute assembly over chute opening, with the opening in the chute assembly facing the front of the unit. Place chute flange keepers beneath lip of chute assembly, with the flat side of chute flange keeper facing downward.

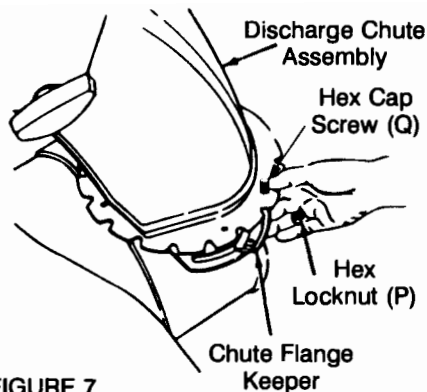


FIGURE 7

- Insert hex cap screws (Q) up through chute flange keeper and chute assembly as shown in Figure 7. Secure with hex locknuts (P). Tighten with two 7/16" wrenches. **Do not over tighten.**

ATTACHING THE CHUTE CRANK (Hardware E)

- Loosen hex nuts on the lower chute crank bracket. See Figure 8.
- Insert the end of the crank into the hole in the plastic bushing in the chute bracket. See Figure 8. Secure with flat washer (AA) and cotter pin (G) (5/16" diameter).
- Insert upper chute crank through hole in upper chute crank bracket then into spacer. Secure with cotter pin (BB) (1/2" diameter) as shown in Figure 9.
- With the hex nuts loosened on the chute crank support bracket adjust the chute bracket (see Figure 8) so that the spiral on the chute crank fully engages the teeth on the chute assembly. Tighten the nuts on the lower chute crank bracket securely.
- Check to make sure all nuts and bolts on the control panel and all four bolts which secure the handles to the frame are tight.

ATTACHING THE CLUTCH CONTROL CABLES (Hardware G)

- The clutch control cables are attached to the snowthrower. Your cables may be attached to the top of the engine with cable ties, cut the ties.
- Ensure there is a hex jam nut threaded all the way towards the "Z" end of the

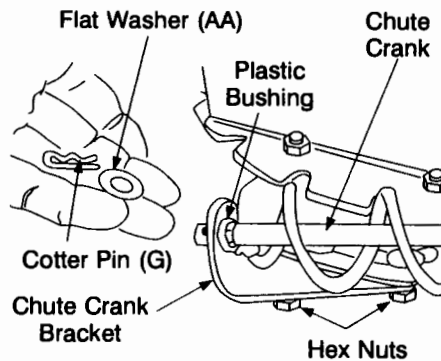


FIGURE 8

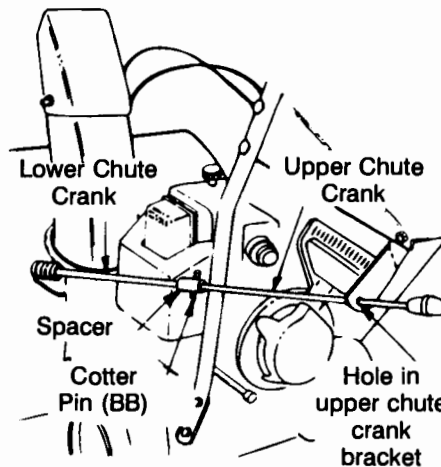


FIGURE 9

fitting. Extra nuts are supplied in the screw pack. See Figure 10.

- Make certain all cables are in the grooves of the cable roller guides. The roller guides are located on the engine frame at the rear of the unit, see Figure 4.

- Lift the clutch grip in the raised up position, see Figure 11.
- Thread the ferrule **without turning the cable** onto the "Z"

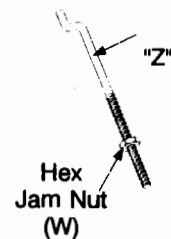


FIGURE 10

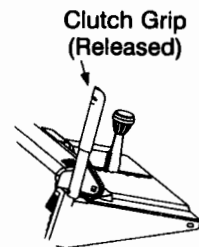


FIGURE 11

fitting until there is no slack in the cable. See Figure 12. **Do not overtighten** the cable. Hold the flats on the ferrule with pliers and **tighten** the jam nut against the ferrule.

- The right drive cable should be assembled in the same manner.

• **CAUTION: Cables will loosen if not tight.**

! WARNING: There must not be any tension on either clutch cable with the drive or auger clutch grip in the disengaged (up) position. These clutches are a safety feature, and their function can be overridden if there is tension on either cable with the clutches disengaged.

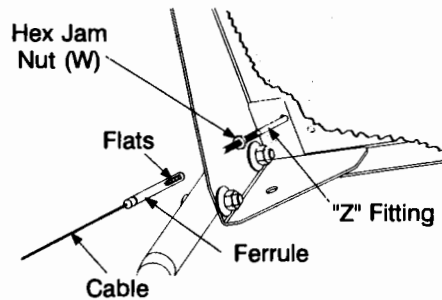


FIGURE 12 - Viewed from the underside of the control panel.

**WHEEL DRIVE CABLE TENSION
(right hand cable)**

Too loose = maximum drive will not be achieved.

Too tight = cable will break.

**AUGER DRIVE CABLE TENSION
(left hand cable)**

Too loose = augers will not turn.

Too tight = augers will not stop rotating.

**ATTACHING THE SHIFT ROD
(Hardware F)**

- Insert the end of the lower shift rod with the small hole into the shift arm assembly, located outside the snowthrower frame. Secure with flat washer (R) and cotter pin (G) (washer and cotter pin should be on the engine side of the bracket). See Figure 13.

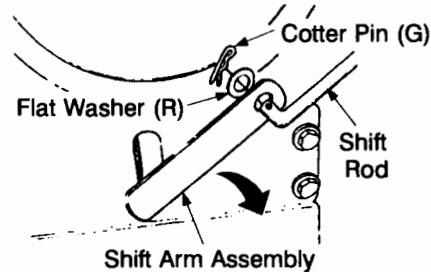


FIGURE 13

- Slide the shift rod connector (Z) over the threaded end of the upper shift rod with the dimple on the connector at the top.
- Thread the ferrule (J) on the threaded end of the upper shift rod.
- Slide the shift rod connector down over the end of the lower shift rod. See Figure 14. Tap the connector until it locks on the lower shift rod.

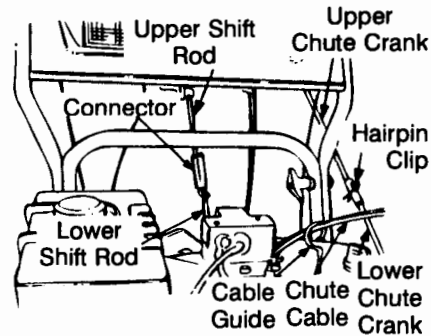


FIGURE 14

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

- Place the shift lever in the fastest forward position. Push the shift rod down sharply, as far as it will go, to put the drive into the fastest forward position. Thread the ferrule in or out on the shift rod as necessary until the ferrule lines up with the upper hole in the shift lever. Insert ferrule into upper hole in shift lever, see Figure 15. Secure with flat washer (R) and internal cotter pin (G).

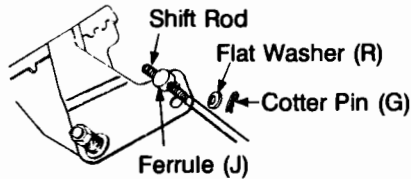


FIGURE 15 - Shift rod assembly for models with steerable option.

ATTACHING THE TRIGGER CABLE (Hardware H) (optional)

- Feed the trigger cable up through outer cut-out in the handle panel as shown in Figure 16.

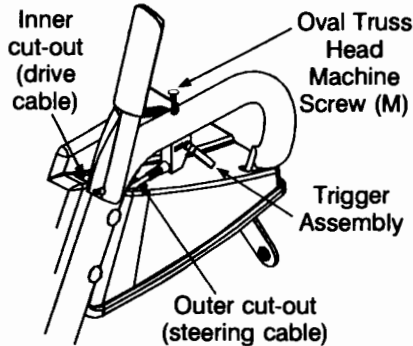


FIGURE 16

- Make sure the trigger cable is routed in front of the previously assembled drive cable.
- Place the barrel fitting into the hole in the trigger. Pull on the cable and rotate it around the bottom of the trigger, with the inner cable in the slot, until the cable end can be pushed into the trigger housing and snapped tight. See Figure 17.

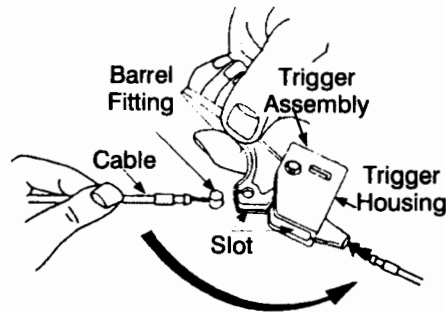


FIGURE 17

- Both right and left trigger assemblies and cables should be assembled in the same manner.
- Position trigger assemblies on the underside of the handles and secure with oval truss head machine screws (M). See Figure 16.
- When securing the trigger cables, route the cables to the **outside of the handles**. Secure with cables ties. Trim excess ends of cable ties. See Figure 18.

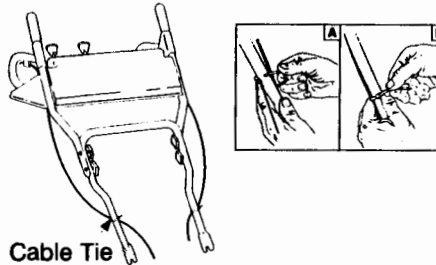


FIGURE 18

LAMP WIRING

NOTE: A lamp is an optional feature of some model snow throwers and is **NOT** standard equipment. On models so equipped, a lamp will either be installed on the dash panel at the factory OR packaged separately as a kit within the carton, depending on the model.

- If so equipped, wrap the wire from the lamp down the right handle until the wire can be plugged into the alternator lead wire located under the fuel tank. See Figure 19. Lamp wire must not interfere with any controls or cables.

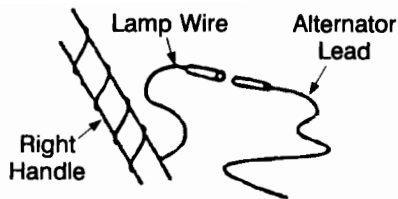


FIGURE 19

If your unit is not equipped with a lamp, contact Customer Support or your local dealer for information regarding price and availability.

FINAL ASSEMBLY AND ADJUSTMENTS

- Insert the (optional) remote chute cables into the cable control wire, located on top of the engine. See Figure 14.
- The space between the shave plate and the ground can be adjusted. For close snow removal, place slide shoes in the low position. Use middle or high position when area to be cleared is uneven. See Figure 20.

NOTE: Some models are equipped with reversible slide shoes and may be turned over to increase their lifespan.

Adjust slide shoes by loosening the hex nuts and carriage bolts and moving slide shoes to desired position. Make certain the entire bottom surface of slide shoe is against the ground to avoid uneven wear on the slide shoes. Tighten bolts securely.

CHUTE CLEAN-OUT TOOL

The chute clean-out tool is conveniently fastened to the rear of the auger housing with a mounting clip. Use the clean-out tool to clear snow and ice which may lodge in the discharge chute during operation. Refer to the Operation section for more detailed information regarding the chute clean-out tool.

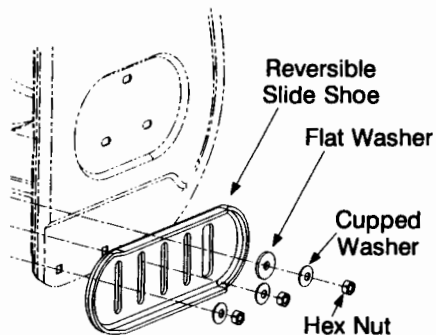


FIGURE 20 - REVERSIBLE SLIDE SHOE

CONTROLS

Control positions and information markings, on your machine are in international symbols, as explained.



Calls your attention to instructions concerning personal safety.



AUGER CLUTCH GRIP

Located on left hand handle. Squeeze to engage. Release to stop.



DRIVE CLUTCH GRIP

Located on right hand handle. Squeeze to engage. Release to stop.



Shut off engine before unclogging discharge chute.



Avoid injury from rotating auger – keep hands, feet and clothing away.



Never put hand in chute. Contact with rotating parts can amputate fingers and hands. Use clean-out tool to unclog discharge chute.

BEFORE STARTING

NOTE: The crankcase has been filled with oil and factory tested. Paint on the muffler may have burnt due to testing.

Your unit may be equipped with a white plastic fuel plug at the opening of the fuel tank. Please remove and discard the plug before filling your unit with gas or before putting the unit into operation.

Failure to follow this procedure may result in serious engine damage which will not be covered by warranty.

ATTENTION: YOU MUST CHECK OIL LEVEL BEFORE OPERATION. LEVEL MUST BE AT FULL MARK ON DIPSTICK BEFORE ENGINE IS STARTED.

GAS AND OIL FILL-UP

Service the engine with gasoline and oil as instructed in the separate engine manual packed with your snowthrower. Read instructions carefully.

WARNING: Never fill fuel tank indoors. Never fill fuel tank with engine running or while engine is hot. Do not smoke when filling fuel tank.

If your unit is equipped with a fuel valve open it as instructed in the separate engine manual packed with your unit.

OPERATION

TO START ENGINE


- Attach spark plug wire to spark plug. Make certain the metal loop on the end of the spark plug wire (inside the boot) is fastened securely over the metal tip on the spark plug. See Figure 21.
- Make certain the auger and drive clutch levers are in the disengaged (released) position. See Figure 11.
- Move throttle control up to FAST  position. Insert ignition key into slot. See Figure 22. Be certain it snaps into place. Do not turn key.



FIGURE 21

ENGINE WILL NOT START UNLESS IGNITION KEY IS INSERTED INTO IGNITION SLOT IN CARBURETOR COVER. DO NOT TURN IGNITION KEY.

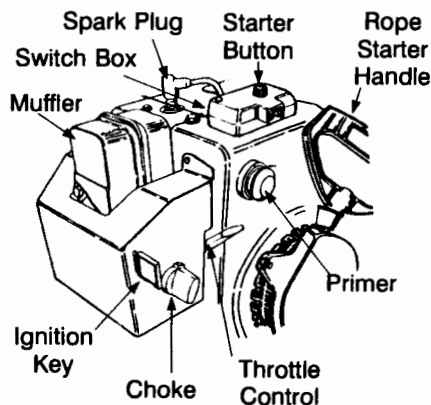


FIGURE 22



Electric Starter (Optional)

WARNING: The optional electric starter is equipped with a three-wire power cord and plug, and is designed to operate on 120 volt AC Household current. It must be properly grounded at all times to avoid the possibility of electric shock which may be injurious to the operator.

Follow all instructions carefully. 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 elec-

tric starter under any conditions. If your system is grounded and a three hole receptacle is not available at the point your starter will normally be used, one should be installed by a licensed electrician.

When connecting the power cord, always connect cord to starter on engine first, then plug the other end into a three-hole grounded receptacle.

When disconnecting the power cord, always unplug the end from the three-hole grounded receptacle first.

- Rotate choke knob to FULL choke position.
- Push primer button two or three times as instructed in the separate engine manual. See Figure 22.
- Connect power cord to switch box on engine. Plug the other end of power cord into a three-hole, grounded 120 volt AC receptacle.
- Push starter button to crank engine. See Figure 22.
- When engine starts, release starter button, and move choke gradually to OFF. If engine falters, move choke immediately to FULL and then gradually to OFF.

Recoll 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 as instructed in the separate engine manual. See Figure 22.
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 (-9°C).*

- Grasp starter handle (see Figure 22) 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. Repeat until engine starts.

- 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.
- To help prevent possible freeze-up of starter, proceed as follows.

Optional 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 switch box.

Recoll 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.

- To stop engine, 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:** Do not lose ignition key. Keep it in a safe place. Engine will not start without the ignition key.*

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


TO ENGAGE DRIVE

- With the engine running near top speed, move shift lever into one of the possible FORWARD or REVERSE positions. Select a speed appropriate for the snow conditions that exist. Use the slower speeds until you are familiar with the operation of the snowthrower.

- Squeeze the left hand auger clutch grip and engage it. *A squealing noise when you engage the auger is normal.*
- While the left hand auger clutch grip is engaged, engage the right hand drive clutch grip.
- Release the left hand auger clutch grip only. The interlock mechanism should keep the left hand clutch engaged until the right hand clutch is released.


NOTE: *Never move shift lever without first releasing the drive clutch.*

CHUTE CLEAN-OUT TOOL

 **WARNING: Stop the engine by removing the ignition key and wait for ALL moving parts to stop, before using the 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 auger and drive clutch grips.
- 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.

TRIGGER LEVERS (optional)

The trigger levers are located on the underside of the handles and used to steer your snowthrower. See Figure 16. To turn right, squeeze the right trigger lever and guide the snowthrower to the right. Squeeze and guide the left lever to turn left. These controls should be used while operating your snowthrower in open areas until you become familiar with their operation.

Squeeze both triggers to free wheel or to transport unit.

CHUTE TILT CONTROL (optional)

The distance snow is thrown can be changed by adjusting the angle of the chute assembly. Move the chute tilt control forward to decrease the distance, toward the rear to increase.

FUEL SHUT-OFF VALVE (optional)


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

TIRE PRESSURE

Pneumatic tires only. Tires are over-inflated for shipping purposes. Correct tire pressure is 10-15 psi.

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: Temperature of muffler and surrounding areas may exceed 150°F (65°C). Avoid these areas.**

- For most efficient snow removal, remove snow immediately after it falls.
- Discharge snow downwind whenever possible. The distance snow is thrown can be adjusted by adjusting the angle of the chute assembly. The sharper the angle, the shorter the distance snow is thrown. Slightly overlap each previous swath.
- Set the slide shoes 1/4" below the scraper bar for normal usage. The slide shoes

may be adjusted upward for hard-packed snow. Adjust downward when using on gravel or crushed rock.

- Be certain to follow the precautions listed under previous section, "To Stop Engine" to prevent possible freeze up.
- Clean the snowthrower thoroughly after each use.

ADJUSTMENTS



WARNING: NEVER attempt to clean chute or make any adjustments while engine is running.

CHECK ADJUSTMENT OF CLUTCH CONTROL CABLES

Refer to "ATTACHING THE CLUTCH CONTROL CABLES", in the Assembly Instructions.

REMOTE CHUTE CONTROL

The remote chute control cables have been pre-adjusted at the factory. Move the remote chute lever on the control panel back and forward to adjust angle of the chute assembly.

SHIFT ROD ADJUSTMENT

To adjust the shift rod, remove the cotter pin which secures the femule to the shift lever. Adjust as specified in "ATTACHING THE SHIFT ROD", in the Assembly Instructions.

SLIDE SHOE ADJUSTMENT

The space between the shave plate and the ground can be adjusted. Refer to "FINAL ASSEMBLY AND ADJUSTMENTS" in the Assembly Instructions.

CARBURETOR ADJUSTMENT



WARNING: If any adjustments are made to the engine while the engine is running (e.g. carburetor), keep clear of all moving parts. Be careful of heated surfaces and mufflers.

Minor carburetor adjustment may be required to compensate for differences in fuel, temperature, altitude and load.

Refer to the separate engine manual packed with your unit for carburetor adjustment information.

LUBRICATION

NOTE: Failure to comply with suggested maintenance and lubrication specifications will void warranty.

WHEELS

Oil or spray lubricant into bearings at wheels at least once a season. Remove wheels, clean and coat axles with a multi-purpose automotive grease.

CHUTE CRANK WORM

The worm gear on the chute direction crank should be greased with multi-purpose automotive grease.

GEAR BOX

The worm gear box has been filled with grease at the factory. If disassembled for any reason, lubricate with 1.5 ounces of Shell Alvania grease EP00, part number 737-0168. Before reassembling remove old sealant and apply "Loctite 5699" or equivalent.

CAUTION: Do not overfill the gear box, damage to the seals could result. Be sure the vent plug is free of grease in order to relieve pressure.

DRIVE AND SHIFTING MECHANISM

Remove rear cover. Oil any chains, sprockets, gears, bearings, shafts, and shifting mechanism at least once a season. Use engine oil or a spray lubricant. **Avoid getting oil on rubber friction wheel and aluminum drive plate.**

AUGER SHAFT

Remove auger bolts on auger shaft. Oil or spray lubricant inside shaft. See Figure 24.

ENGINE

Refer to engine manual for engine lubrication instructions.

MAINTENANCE and LUBRICATION CHECK LIST

	After First 2 Hours	After 5 Hours Frequently	Beginning Each Season Before Storage
Check engine oil level		•	•
Change engine oil	•		•
Tighten all screws and nuts			•
Check spark plug			•
Lubricate chute opening			•
Lubricate wheel axle			•
Lubricate wheel bearings			•
Lubricate chains, bearings, shafts and shifting mechanism			• •
Check wear on friction wheel rubber			•
Check auger pulley(s) and auger drive belts		•	

WARNING: When following instructions in separate engine manual for draining oil, be sure to protect frame to avoid oil dripping onto transmission parts.

GEAR SHAFT

Lubricate the gear (hex) shaft with a light weight cold weather lubricant at least once a season or after every 25 hours of operation.

IMPORTANT: Keep all grease and oil off of the rubber friction wheel and aluminum drive plate.

If for any reason your transmission was disassembled and the drive cable disconnected, make sure when reassembling to pass the cable between the drive shaft and the gear shaft before reconnecting to support bracket. See Figure 23.

Models with 13" and 15" wheels: Pass the drive cable between the drive shaft and the gear shaft.

Models with 16" wheels: Pass the drive cable under the drive shaft and the gear shaft.

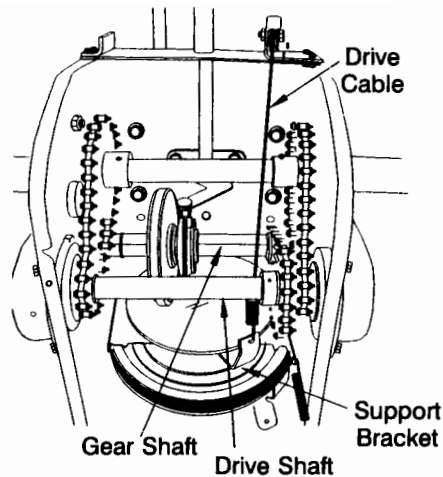


FIGURE 23

MAINTENANCE

WARNING: Disconnect the spark plug wire and ground against the engine before performing any repairs or maintenance.

AUGERS

The augers are secured to the auger shaft with two shear bolts and hex locknuts. See Figure 24. A direct impact of an object will usually cause the shear bolts to shear however, if you ingest an object between the augers/impellers and housing you may cause damage without shearing bolts. Keep clear of foreign objects.

NOTE: Locknuts cannot be threaded onto a bolt by hand. This type of nut is used where vibration occurs.

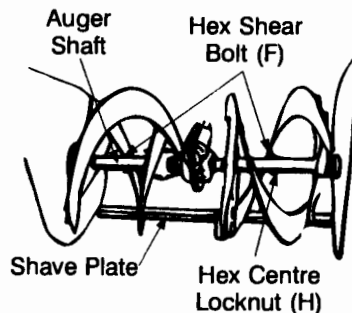


FIGURE 24

If the augers will not turn, check to see if the hex bolts have sheared. Two replacement hex bolts and hex lock nuts have been provided with the snowthrower. When replacing bolts, spray an oil lubricant into shaft before inserting new bolts.

SHAVE PLATE AND SLIDE SHOES

The shave plate and slide shoes on the bottom of the snowthrower are subject to wear. They should be checked periodically and replaced when necessary.

NOTE: Some models are equipped with reversible slide shoes and may be turned over to increase their lifespan.

To remove slide shoes, remove the carriage bolts, cupped washers and hex nuts which attach them to the snowthrower. Reassemble new slide shoes with the carriage bolts, cupped washers (cupped side goes against slide shoes) and hex nuts.

To remove shave plate, remove slide shoes as previously instructed, remove the carriage bolts, cupped washers and hex nuts which attach it to the snowthrower housing. Reassemble new shave plate, making sure heads of the carriage bolts are to the inside of the housing. Tighten securely.

FRICTION WHEEL

Check wear on friction wheel at least once a season. Replace rubber ring (friction wheel) before clamping plates damage aluminum drive plate. See Figure 31.

BELT REMOVAL AND REPLACEMENT

WARNING: Remove the spark plug wire from the spark plug and ground. Drain gasoline from the fuel tank, or place a piece of plastic film underneath the gas cap to prevent gasoline from leaking.

- Disconnect chute crank assembly at the discharge chute by removing the cotter pin and flat washer.

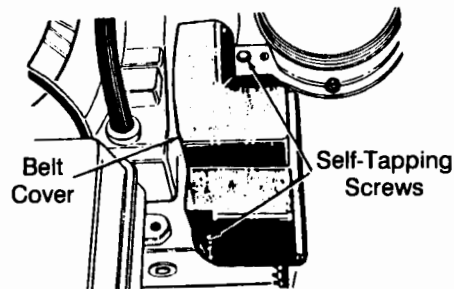


FIGURE 25 - Chute removed for clarity.

- Remove the plastic belt cover on the front of the engine by removing two self-tapping screws. See Figure 25.

AUGER DRIVE BELT:

- Unthread the bottom of the auger cable from the "Z" fitting, leaving the hex nut in place. See Figure 12.
- Remove the six lockwashers and hex nuts which attach the auger housing assembly to the frame. See Figure 26.

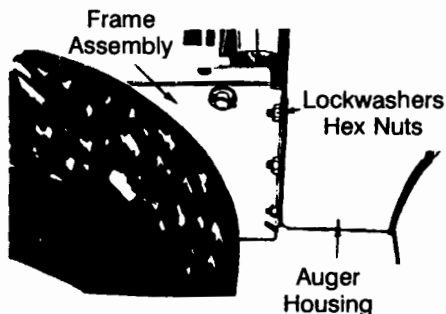


FIGURE 26

- Separate the housing from the frame assembly by standing in the operating position and lifting up on the handles. The frame and housing will separate, and the rear auger drive belt will come off the pulleys. See Figure 27.

NOTE: Your unit may be equipped with one or two auger belts.

- To remove the front auger drive belt, push the flat idler pulley to the left, and lift front auger drive belt from the front auger pulley. See Figure 28. Replace

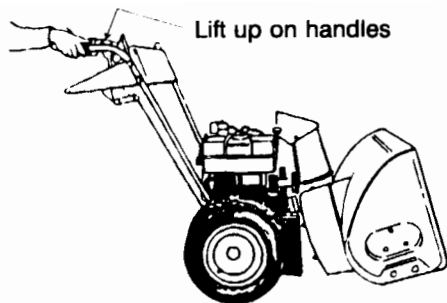


FIGURE 27

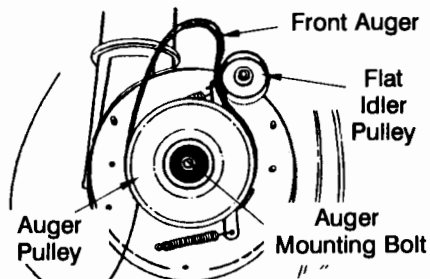


FIGURE 28

both auger drive belts by following instructions in reverse order.

NOTE: When reassembling the two halves of the unit, the auger drive cable must be routed through the cable roller guides as shown in Figure 29.

NOTE: The auger pulley mounting bolt has chemical patch which sets after bolt is assembled. If the bolt is removed for any reason it must be replaced.

DRIVE BELT:

NOTE: Separating the housing from the frame is not required when removing and replacing the drive belt.

- Tip the snowthrower up and forward, so that it rests on the housing.
- Remove six self-tapping screws from the frame cover underneath the snowthrower.
- Pull the idler pulley towards you and remove the drive belt from the pulley. You will find the idler pulley in front of the

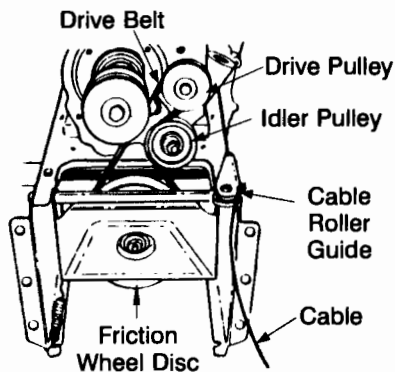


FIGURE 29

engine and under the belt cover that you removed earlier. See Figure 29.

- Slip belt between friction wheel and friction wheel disc. See Figure 29. You may have to twist the belt flat in order to slide it through the clearance between the friction wheel and the friction wheel disc. Remove the belt completely.
- Replace new belt. Reassemble in reverse order.

CHANGING THE FRICTION WHEEL RUBBER

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 snowthrower, or place a piece of plastic under the gas cap.
- Tip the snowthrower up and forward, so that it rests on the housing.
- Remove six self-tapping screws from the frame cover underneath the snowthrower.
- Remove the klick pin which secures the left wheel, and remove the left wheel from the axle.
- Remove four self-tapping screws from the left side frame cover and remove the cover off the drive shaft assembly. Refer to Figure 30.
- Holding the friction wheel assembly, slide the hex shaft out the left side of

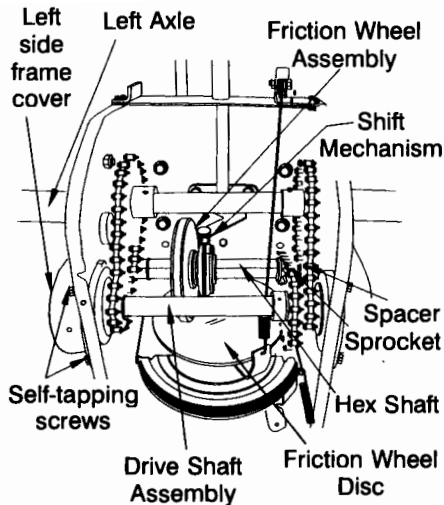


FIGURE 30

the unit. The spacer on the right side of the hex shaft will fall and the sprocket should remain hanging loose in the chain.

NOTE: If the sprocket fell from the snowthrower while removing the hex shaft, place the sprocket on the hex shaft. Position the hex hub of the sprocket toward the friction wheel when sliding the sprocket on to the hex shaft.

- Lift the friction wheel assembly out between axle shaft and drive shaft assembly.
- Remove the four screws from the friction wheel assembly. Remove the friction wheel rubber from between the clamping plates.
- Reassemble new friction wheel rubber to the friction wheel assembly, turn each screw approximately 2 turns in order shown in Figure 31 until screws are tight. **It is important for the rubber to be assembled symmetrically.**
- Slide the friction wheel assembly up onto the shift mechanism as shown in Figure 30 and slide the hex (gear) shaft back into the unit.

NOTE: When reassembling make sure the spacer is aligned between the sprocket and the right side bearing on the hex shaft.

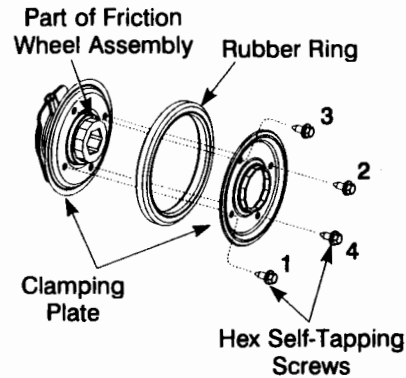


FIGURE 31

STORAGE INSTRUCTIONS

NEVER STORE ENGINE WITH FUEL IN TANK INDOORS OR IN ENCLOSED, POORLY VENTILATED ENCLOSURES, WHERE FUEL FUMES MAY REACH AN OPEN FLAME OR SPARK.

If unit is to be stored over 30 days, prepare for storage as instructed in the separate engine manual packed with your snowthrower.

NOTE: Failure to comply with suggested maintenance and lubrication specifications will void warranty.

THREE (3) YEAR LIMITED WARRANTY

For three (3) years from the date of original purchase of our products, we will either repair or replace, at its option, free of charge, F.O.B. Factory or authorized service firm, any part found to be DEFECTIVE IN MATERIAL and WORKMANSHIP for the original purchaser. all transportation charges on parts submitted for replacement under this warranty must be paid by the purchaser unless return is requested by the manufacturer.

This warranty DOES NOT apply to any part which has become inoperative through misuse, excessive use, accident, neglect, improper maintenance or alterations by unauthorized persons.

The limited warranty does not extend to the replacement of parts which are not defective, but where regular usage has exhausted the life of the part.

ENGINES, ELECTRIC START KITS, PEERLESS TRANSMISSIONS AND PEERLESS TRANSAXLES ARE WARRANTED BY THEIR RESPECTIVE MANUFACTURER. ALL CLAIMS AGAINST THESE COMPONENTS MUST BE HANDLED THROUGH THE RESPECTIVE MANUFACTURER'S SERVICE DEALERS.

Belts, light bulbs, clutch parts (friction wheels), grass bags, tires, seats, rider deck wheels and cutting blades are covered by a 60 day limited warranty.

Batteries are covered by a 90 day limited warranty.

Fuses, shear bolts and blade adapters are considered consumable items and as such are not warranted.

NOTE: Regular maintenance replacement parts and related inspections and adjustments are excluded from coverage when made as part of normal maintenance service.

TRACTOR ATTACHMENT WARRANTY

Mower decks included with your product, or sold separately, as an attachment for your garden tractors will be warranted according to the above terms of the manufacturer three (3) year limited consumer warranty.

ALL OTHER ATTACHMENTS will be sold under the same condition as above except the warranty will be ONE YEAR FROM DATE OF ORIGINAL PURCHASE.

PERSONAL USE

THE FOREGOING PARAGRAPHS CONSTITUTE THE MANUFACTURER'S ENTIRE WARRANTY WITH RESPECT TO ANY PRODUCT PURCHASED AND USED FOR PERSONAL FAMILY, HOUSEHOLD/RESIDENTIAL PURPOSES, AS DISTINGUISHED FROM COMMERCIAL USAGE.

COMMERCIAL USE

ALL APPLICATIONS OTHER THAN PERSONAL USE AS OUTLINED ABOVE, ARE CONSIDERED COMMERCIAL USAGE.

New products purchased for commercial usage are warranted in the same manner and to the same extent EXCEPT the term of warranty will be 60 DAYS from date of purchase, 90 days if your unit is equipped with an OHV engine. "

WARRANTY SERVICE CAN ONLY BE PERFORMED BY AN AUTHORIZED SERVICE DEALER. ANY NON-ORIGINAL EQUIPMENT REPLACEMENT PART USED ON OR IN A PRODUCT UNDER WARRANTY WILL BE EXCLUDED FROM THAT WARRANTY COVERAGE, AS WILL BE ANY RELATED DAMAGED COMPONENTS RESULTING FROM THE INSTALLATION OF A REPLACEMENT PART FROM ANOTHER SOURCE OTHER THAN THE MANUFACTURER.