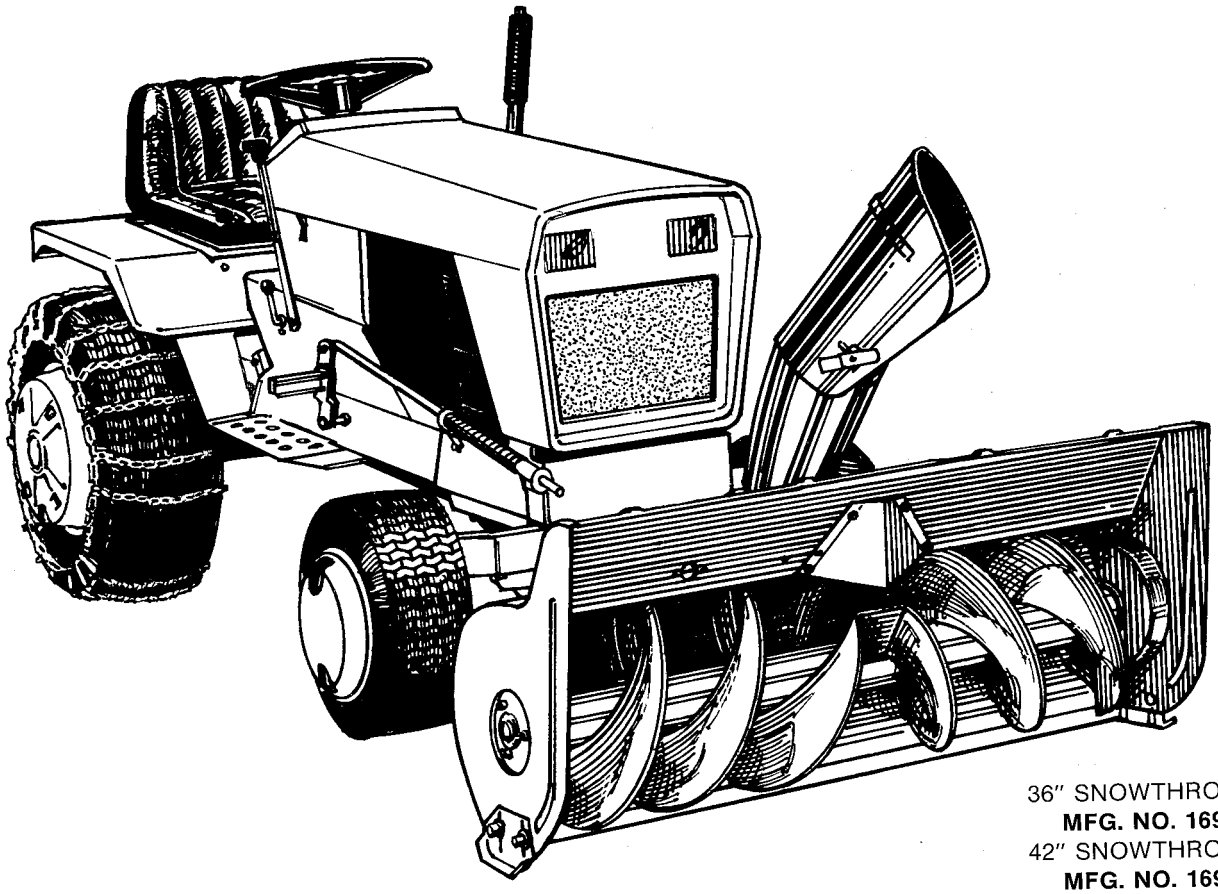
OPERATOR'S MANUAL

36" & 42" SNOWTHROWER



36" SNOWTHROWER
MFG. NO. 1690033
42" SNOWTHROWER
MFG. NO. 1690032

36" SNOWTHROWER
WITH BACK FIT KIT #1685174
MFG. NO. 1690547

42" SNOWTHROWER
WITH BACK FIT KIT #1685174
MFG. NO. 1690548

CAUTION: Read Manual Thoroughly Before Operating

FORM - 1668680
PRINTED IN U.S.A.
838

Dear Customer:

Congratulations on your selection and purchase of this snow thrower attachment. It has been carefully designed and constructed to give you years of dependable service. To ensure yourself of the utmost value and performance from this snow thrower, read this manual carefully. Be certain that your snow thrower is assembled, installed, and adjusted properly.

For your protection, be sure that you (and anyone who will operate this machine) know how to use the machine safely. Read this manual and your tractor manual thoroughly and become familiar with all controls before actual operation.

Also, carefully read and follow the safety rules in this manual and those in your tractor manual. Review this safety information often; it is there for your benefit and it is important.

This manual provides you with step-by-step installation, operation, assembly, and service procedures for your snow thrower. If help is needed with any of these procedures however, your dealer will be happy to assist you.

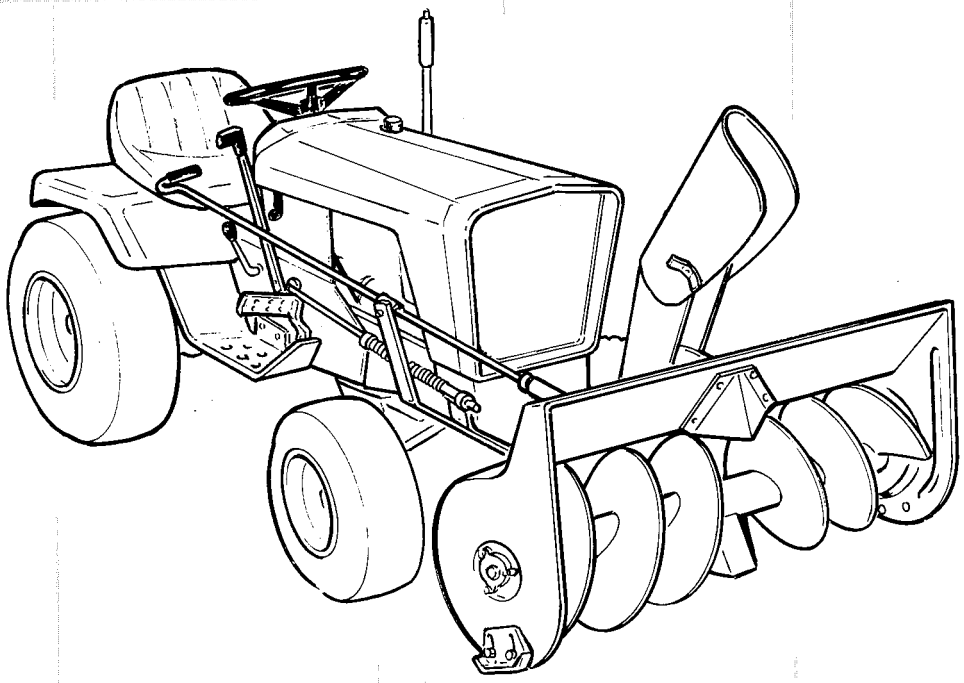
Measurements are given in this manual with metric equivalents in parentheses. For example, behind the measurement 1/8 will appear: (3 mm). So, the metric equivalent of 1/8 inch is 3 millimetres.

These metric measurements are provided for your convenience as an aid in converting to the metric system. A list of metric terms and abbreviations is given below.

LIST OF ABBREVIATIONS OF METRIC TERMS

1. **mm** = **millimetre**
2. **kPa** = **kiloPascal**
3. **N·m** = **newton-metre**
4. **kg** = **kilograms**
5. **km/h** = **kilometres per hour**

36" & 42" Snow Throwers



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WARNING

Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of vehicle, severe personal injury to yourself or bystanders, or damage to property or equipment affecting safety.

Safety Rules

This notation preceding Cautions and Warnings in the text signifies important precautionary steps which, if not properly followed, could result in personal injury or damage to your equipment affecting safety.

General

- Read the Operating and Service Instructions carefully. Be thoroughly familiar with the controls and the proper use of the equipment.
- Never allow children to operate the machine. Do not allow adults to operate it without proper instruction.
- Do not carry passengers.
- Use only attachments or accessories designed for your machine. See your dealer for a complete list of recommended attachments or accessories.
- Keep the area of operation clear of all persons, particularly small children, and pets.
- When using any attachments, never direct discharge of material toward bystanders or allow anyone near the vehicle while in operation.
- Make sure:
  a. tractor and attachments are in good operating condition,
  b. all safety devices and shields are in good working condition, and
  c. all adjustments have been made.

Preparation

- Never attempt to make any adjustments while engine is running.
- Thoroughly inspect the area where the snow thrower is to be used and remove all door mats, sleds, boards, wires and other foreign objects.
- Disengage all clutches and shift into neutral before starting engine.
- Do not operate snow thrower without wearing adequate winter outer garments. Wear footwear which will improve footing on slippery surfaces.
- Handle gasoline with care – it is highly flammable.
  a. Use approved gasoline container.
  b. Never remove the cap of the fuel tank or add gasoline to a running or hot engine, or fill the fuel tank indoors. Wipe up spilled gasoline.
- Adjust skid shoe height to clear gravel or crushed rock surface.
- Do not run the engine indoors. Exhaust fumes are deadly.

Operation

- Disengage power to attachment(s) and stop the engine before leaving the operator's position.
- Always clear snow up and down the face of slopes, and never across the face. Exercise extreme caution when changing direction on slopes. Do not attempt to clear steep slopes.
- After striking a foreign object, disengage PTO, stop the engine, and remove ignition key. Thoroughly inspect the snow thrower for any damage before restarting and operating the snow thrower.
- Exercise extreme caution when operating on or crossing gravel drives, walks, or roads. Stay alert for hidden hazards or traffic.

- If the unit should start to vibrate abnormally, disengage PTO, stop the engine, and remove ignition key, and check immediately for the cause. Vibration is generally a warning of trouble.

- Disengage PTO, stop engine, and remove ignition key whenever you leave the operating position, before unclogging the snow thrower housing or chute, and before making any repairs, adjustments, or inspections.

- Take all possible precautions when leaving the vehicle unattended. Disengage the power take-off, lower the attachment, shift into neutral, set the parking brake, stop the engine, and remove the key.

- When cleaning, repairing, or inspecting make certain snow thrower and all moving parts have stopped. Remove ignition key to prevent accidental starting.

- Be especially careful not to touch tractor or attachment parts which might be hot from operation. Allow such parts to cool before attempting to maintain, adjust, or service.

- Never operate snow thrower near glass enclosures, automobiles, window wells, drop-offs, etc., without proper adjustment of snow discharge angle.

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

- Never operate machine at high transport speeds on slippery surfaces. Use care when backing.

- Disengage power to snow thrower when transporting or not in use.

- Never operate the snow thrower without good visibility or light. Always be sure your feet are properly placed on the foot rests and keep a firm hold on the steering wheel.

Maintenance and Storage

- Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.

- Never store the equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.

- Do not change the engine governor settings or overspeed the engine.

- To reduce the fire hazard, keep the engine free of grass, leaves, or excessive grease.

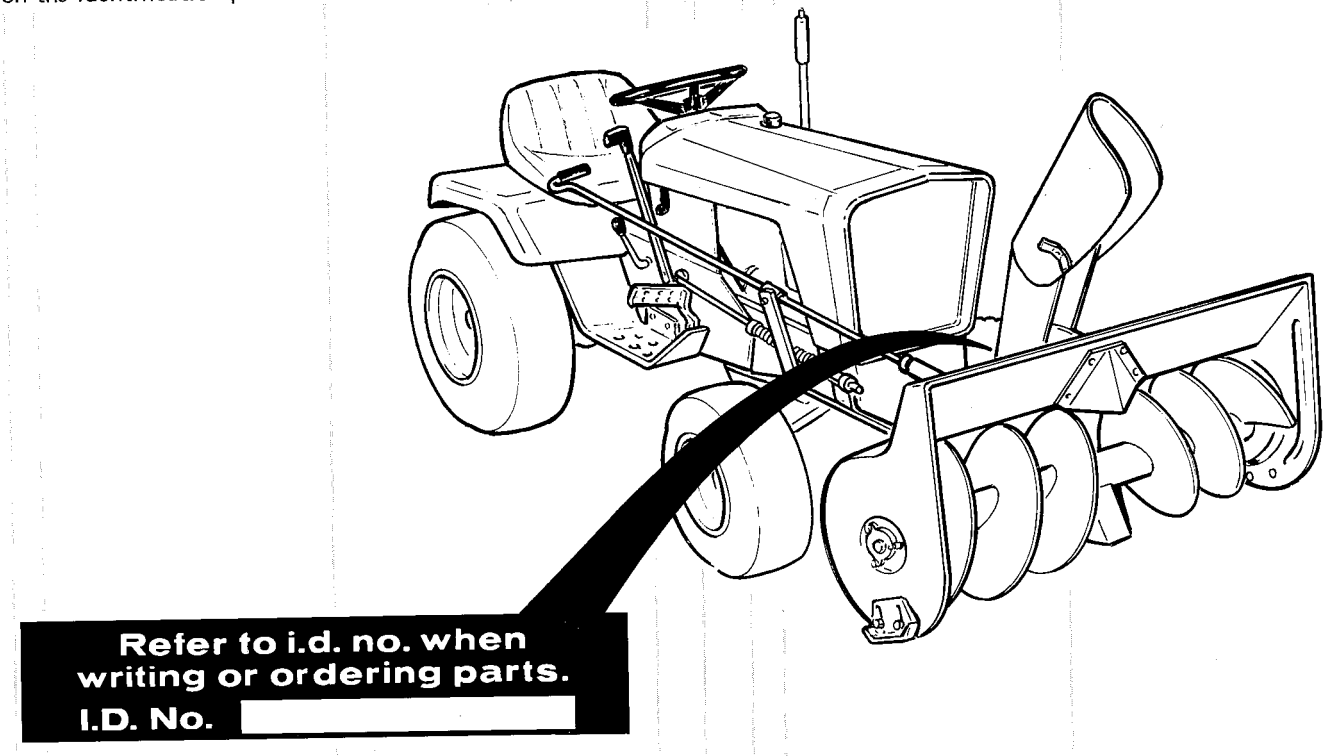
ALL WARNING, CAUTION, and instructional messages on this attachment and on your tractor should be carefully read and obeyed. Personal bodily injury can result when these instructions are not followed. The information is for your safety and it is important. The following is on your snow thrower attachment.

STAY AWAY FROM ROTOR AND DRIVE WHEN ENGINE IS RUNNING

LOCATION: ON SNOW THROWER AUGER HOUSING

Identification

When ordering replacement parts for your snow thrower, be prepared to give your dealer the identification number found on the identification plate shown below. We suggest you locate the number and record it here for easy reference.



SNOW THROWER IDENTIFICATION PLATE

Accessories

See your dealer to purchase any of the following accessories for your tractor or snow thrower.

REAR WHEEL WEIGHTS — recommended to improve traction and increase stability.

CHAINS — recommended for best performance on slippery surfaces.

POWER LIFT KIT — enables the raising and lowering of snow thrower with the flip of a switch.

WINTERIZING KIT — prevents engine carburetor from from freezing up.

SNOW CAB — shelters operator from cold wind and blowing snow.

ELECTRIC SPOUT ROTATOR — enables operator to control spout direction with the flip of a switch.

Models illustrated in this manual may vary slightly from the model you have.

Installation

CONTENT OF SECTION

This section guides you in installing the snow thrower on your tractor. It also provides instructions for removing the snow thrower from your tractor.

INSTALLATION

Before the snow thrower can be installed, it must first be completely assembled and the front PTO unit must be installed on your tractor. Procedures for assembly of these items are provided in the Assembly Section at the end of this manual. To install the assembled snow thrower, proceed as follows:

WARNING

For your personal safety, stop tractor engine, remove key, and set parking brake before attempting to install the snow thrower.

1. Position snow thrower hitch (see figure 1) in line with tractor front axle.
2. Attach snow thrower to tractor. The snow thrower hitch must be hooked over the front axle of the tractor. Insert pins from outside through holes of tractor and snow thrower hitches (see figure 1). Install spring clips through holes in ends of pins.

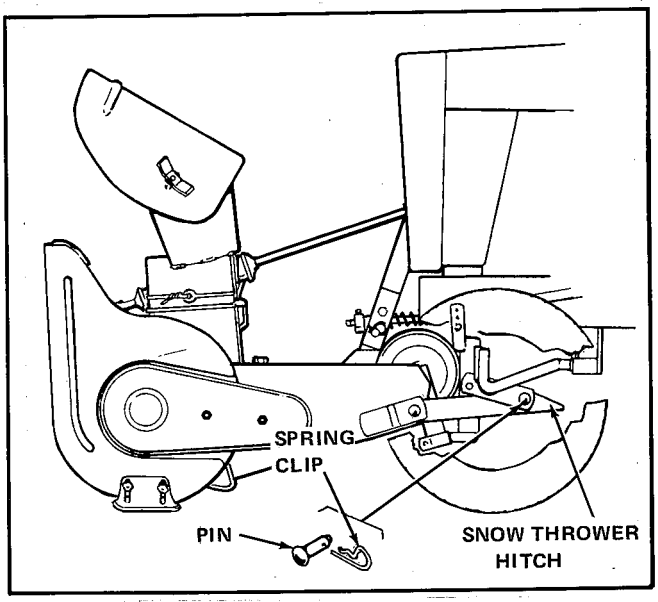


Figure 1. Attach Snow Thrower

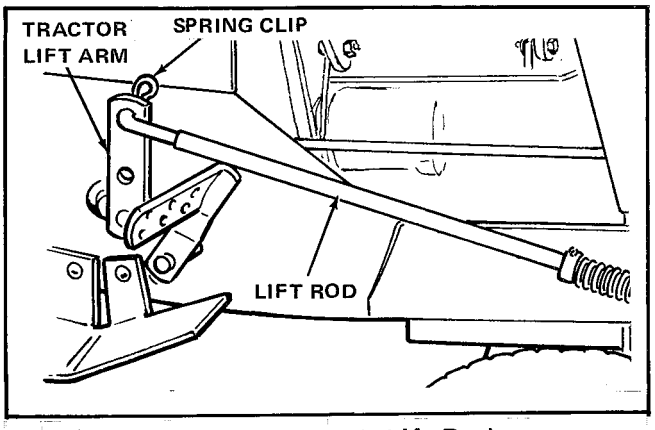


Figure 2. Attach Lift Rod

3. Insert end of lift rod through tractor lift arm. Then install a spring clip through hole in end of lift rod (see figure 2).
4. Raise tractor hood.

WARNING

For your personal safety, allow engine and muffler to cool (if hot). To install the V-belt on the PTO pulley you will be working in the muffler area.

5. Step down on idler pulley lever to raise one idler pulley on hitch (see figure 3).

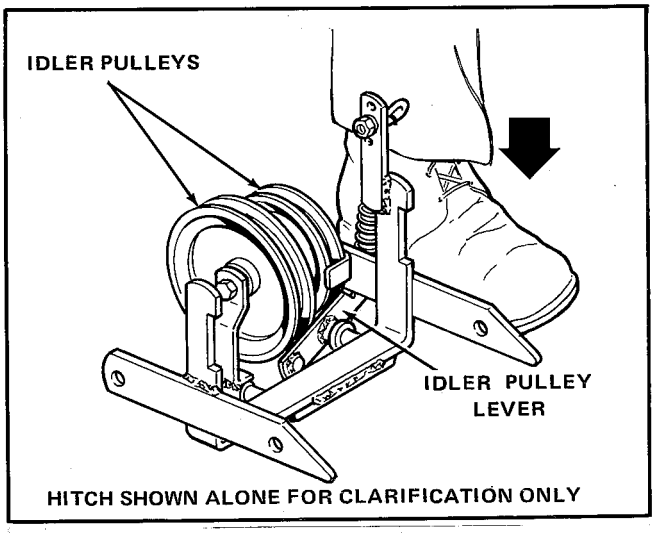


Figure 3. Raise Idler Pulley

CAUTION

For your personal safety, use care when installing belt on engine PTO pulley. If your foot slips off the idler pulley lever, the spring will tighten the belt and your fingers can be pinched at the PTO pulley.

6. Continue to hold idler pulley up while threading snow thrower V-belt over engine pulley. Be sure that V-belt is twisted as shown in figure 4. If belt seems short, idler pulley is not completely raised. In this case, release idler pulley lever and step on it again while pushing pulleys inward to clear frame. When V-belt is installed, release pulley lever.

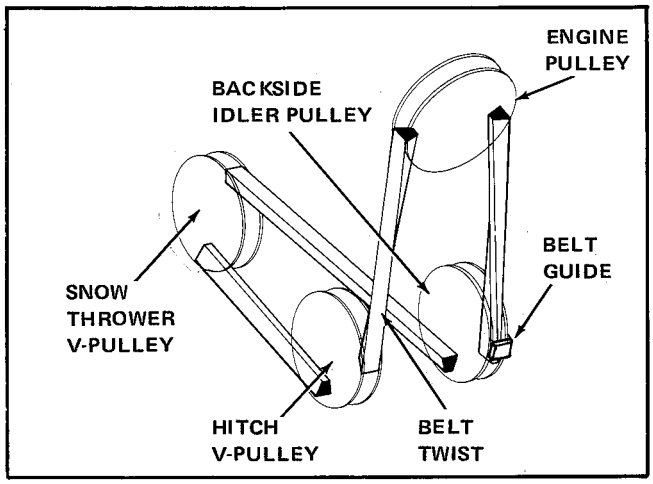


Figure 4. Install V-Belt

7. Adjust snow thrower skid shoes according to the Adjustment Section of this manual.

8. Check or adjust the scraper bar down-pressure according to the Adjustment Section of this manual.

SNOW THROWER REMOVAL

1. Stop tractor engine, remove key, and set the parking brake.
2. Use tractor lift lever or optional power lift switch on tractor to lower snow thrower completely.
3. Remove the spring clip and detach snow thrower lift rod from tractor lift arm (see figure 2). Store spring clip in lift rod hole.

WARNING

For your personal safety, allow engine and muffler to cool if hot from recent operation before attempting to remove the V-belt. Also, use care when removing belt from engine PTO pulley. If your foot slips off the idler pulley lever, the spring will tighten the belt and your fingers can be pinched at the PTO pulley.

4. Raise tractor hood. Step down on idler pulley lever (see figure 3) to slacken V-belt, and remove belt from engine PTO pulley.

5. Remove spring clip and pins to detach snow thrower from tractor (see figure 1). Reinstall pins and spring clips in hitch to prevent loss during storage.

Operation

CONTENT OF SECTION

A brief description of the snow thrower controls, followed by the basic operating procedures, is given in this section to help you get to know your snow thrower and how to operate it safely and efficiently.

SNOW THROWER CONTROLS

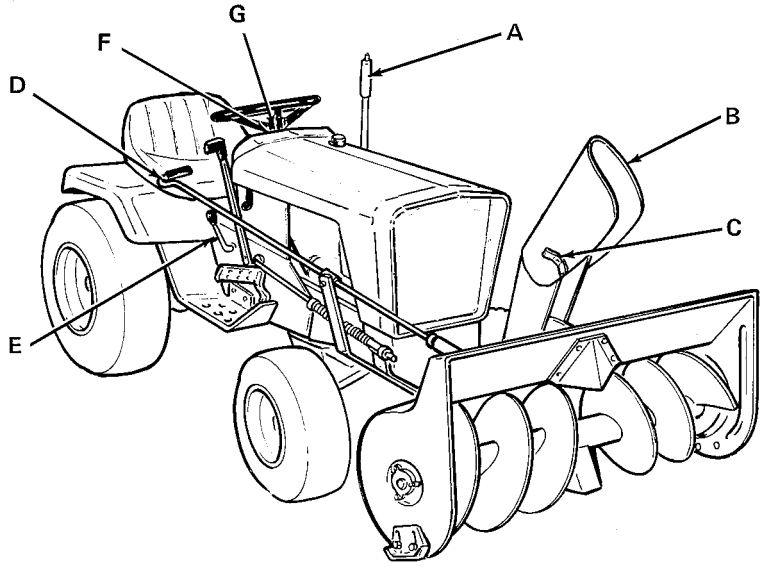
Figure 5 shows the locations, names and functions of the snow thrower controls. The control names given in figure 5 are used throughout the manual.

OPERATING PROCEDURES

The rest of this section instructs you in the operation of your snow thrower. The directions assume that the snow thrower and tractor are properly set up and adjusted. Refer to the troubleshooting and adjustments section of this manual and the tractor manual if your tractor or snow thrower is not working properly.

WARNING

For your personal safety, make sure the PTO lever is disengaged, the engine off, the key removed, and the snow thrower auger has stopped turning before attempting to inspect, adjust, or service the snow thrower.



Item	Name	Function
A	**Lift Lever**	Lifts and locks the snow thrower in its transport position and provides downpressure to scraper blade.
B	**Deflector**	Used to control the height and distance snow is thrown.
C	**Wing Nut**	Holds deflector in position (two places).
D	**Spout Control**	Controls the direction in which snow is thrown.
E	**PTO Lever**	Engages and disengages snow thrower drive.
F	**Electric Lift Switch (Optional)**	When installed, used in place of item A to lift and lower snow thrower.
G	**Electric Spout Rotator Switch (Optional)**	When installed, used in place of item D to rotate spout.

Figure 5. Locations and Functions of Controls

PREPARATION

1. Read this manual and the operator's manual for your tractor carefully. Be sure you are familiar with the safety precautions, controls, and operating instructions.
2. Check the snow thrower carefully to be sure it is functioning properly.
3. Check the tires for proper inflation pressure: 20 lbs. psi (138 kPa) recommended for front tires when snow thrower is installed.
4. Refer to Normal Care section of this manual to determine and perform needed care. Also refer to the tractor manual Normal Care section to be sure it is prepared for winter use.
5. Clear the area of operation of all articles which might be caught in or thrown by the snow thrower.
6. Adjust the chute deflector by loosening the wing nuts and moving the deflector up or down. Be sure to tighten both wing nuts after positioning the deflector. The chute deflector controls the throwing distance. Most snow moving can be done with the deflector all the way up and the engine at 3/4 to full speed. Hold the rear of the deflector against the spout extension while tightening the wing nuts to make sure there is no gap between the spout extension and the deflector.
7. Adjust the skid shoes as outlined in the Adjustment Section of this manual to suit the type of surface you will be operating on.

OPERATION ON SLOPES

For your personal safety, always operate your tractor and snow thrower up and down the face of slopes, and never across the face. Use slow tractor ground speeds on slopes, and use extreme caution when changing direction on any slope. Do not start or stop suddenly on slopes.

Two rear wheel weights are required to operate your tractor and snow thrower on slopes greater than 20 percent (11.3 degrees). Also, for better stability and traction, tire chains are recommended for slopes and whenever else desirable. Never operate your tractor and snow thrower on slopes greater than 35 percent (19.3 degrees), which is a rise of 3-1/2 feet in 10 feet forward, and always operate in an up and down direction.

OPERATION

The front PTO is not a standard tractor item. When tractor operating procedures tell you to disengage the PTO, remember to disengage both PTO's. Otherwise, you will be unable to start the engine.

Set the tractor engine control for 3/4 to full speed for normal snow throwing. Full engine speed is best when throwing wet and heavy snow. Use the slower engine speeds to adjust the throwing distance during operation and when throwing light fluffy snow.

The tractor ground speed will depend upon the type and amount of snow that must be cleared. For most conditions, 1 to 2 MPH (1.6 to 3.2 km/h) is a good starting speed. Refer to your tractor manual, and set the transmission gear shift or control lever accordingly. As the snow gets heavier or wetter, you will want to increase engine speed and decrease tractor speed.

NOTE

Always raise the snow thrower before turning or backing to prevent damage to it.

Check the condition of the snow thrower auger. Clear it of any ice particles which may cause damage when it is started.

Determine the best snow removal pattern. Consider the size, shape, terrain and obstructions of the area to be cleared. Usually it is best to drive back and forth the long direction of the area to minimize turning.

Whenever possible, begin snow removal on the upwind side of the sidewalk or driveway so it is not necessary to blow snow over an area already cleared.

The spout should be rotated to discharge the snow downwind, not into it. Always adjust the spout so that you are well out of the path of the snow stream.

CAUTION

Constant inhalation of cold, wet vapor can be harmful to your health. On windy days, have your nose and mouth covered.

The snow should be deposited beyond the surface you want to clear if at all possible. Start with the deflector all the way up so that the thrown snow is deposited just beyond the far side of the area to be cleared.

Light to medium depth snow can be cleared using the full width of the auger on each pass, overlapping the passes a few inches to prevent side spillage.

In deep or very heavy snow, it may be necessary to make the first pass with the snow thrower partially raised, backing up every few feet so the tractor tires do not slip in the snow left on the surface.

On subsequent passes in heavy snow, slice off less than the full width of the auger to prevent it from becoming overloaded. Judge how wide a slice to take by watching the stream of snow coming from the spout. The snow should flow freely. If it does not, take a narrower slice of snow. Anytime snow stops flowing freely from the spout, use reverse to back away until the snow thrower clears itself and then inch slowly forward into the snow. You will soon get the feel of how fast to go and how wide a slice to take.

If the auger stalls or the chute plugs, DISENGAGE THE PTO IMMEDIATELY. STOP THE ENGINE AND REMOVE THE KEY. Set the parking brake, and remove the foreign object or clear the spout.

WARNING

For your personal safety, always stop the engine before working near or on the auger or spout. Never insert your hand into the auger or spout.

Transport the snow thrower in the raised position with the PTO clutch in the disengaged position. Ground speed should be adjusted according to the type and condition of the road surface.

Maintenance Record

Date	Hours Used	Lubrication	Maintenance/Repair

Figure 6. Maintenance Record

Normal Care

CONTENT OF SECTION

Your snow thrower was built to provide years of service with only minor care. These minor tasks, however, must be done to keep it in good operating condition and to avoid costly repairs. This section provides the necessary instructions for the care of your snow thrower.

SCHEDULED CARE

A schedule for normal, routine care is given in figure 7. This schedule is based on operating hours. To be sure that you meet the schedule, you will have to keep track of operating hours. This can be done on the maintenance record (figure 6).

WARNING

For your personal safety, disengage PTO, stop engine, remove key, set parking brake, and be sure snow thrower auger has stopped turning before attempting to maintain, service, or adjust the snow thrower.

NORMAL STORAGE

Between snow removal jobs, the tractor and snow thrower are best stored in a cool, dry area. If the unit is stored in a warm (above freezing temperature) area, it should be moved outdoors and allowed to cool before beginning work. Otherwise, the snow may melt on the warm surfaces of the snow thrower and then freeze where it can cause jams.

Before returning the unit to storage, stop the tractor and remove key from ignition. Then brush off all snow from both the snow thrower and the tractor. If possible, restart the tractor engine and allow it to idle for about 5 minutes. This will help melt and dry up snow in hidden areas of the engine. These efforts will help avoid freezeups that might otherwise hinder easy starting and operation the next time the unit is needed.

OFF-SEASON STORAGE

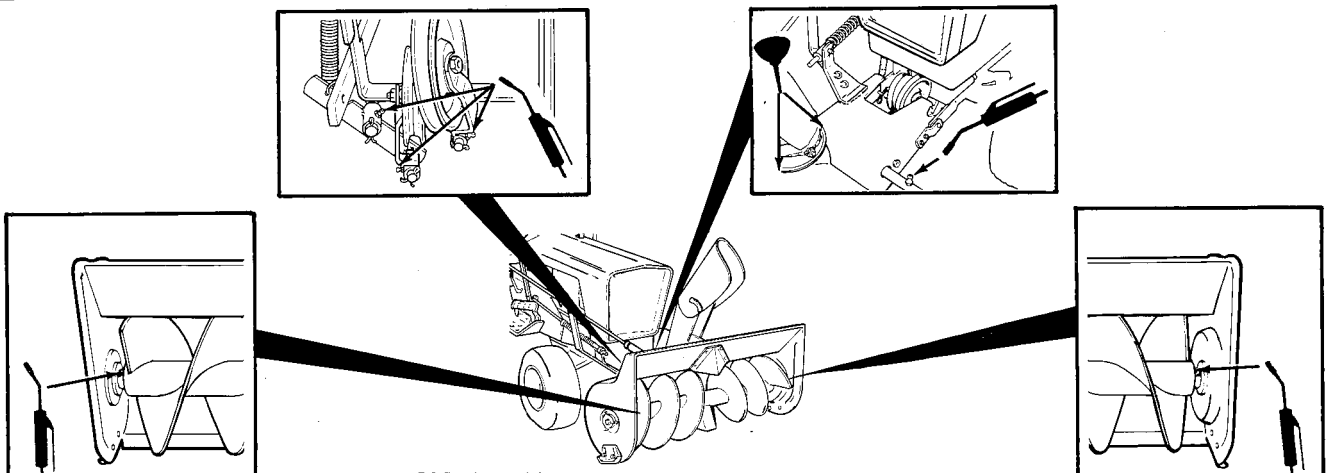
To protect your snow thrower, store it in an enclosed dry area. Prepare the snow thrower for off-season storage as follows:

1. Remove snow thrower from tractor.
2. Hose or brush the main housing to remove all dirt and chipped paint.
3. Paint or lightly coat with oil any area where paint has worn or chipped away.
4. Lubricate snow thrower (figure 9).
5. Store the snow thrower in a dry place.
6. To save space, the hitch can be removed for storage by removing the two pins and spring clips attaching it to the snow thrower, and by removing the belt from the snow thrower auger pulley.

Care Required	See Figure	Schedule			
		Before Each Use	After Each Use	Every 10 Hours*	Yearly**
Check to be sure all exterior screws, nuts, bolts and pins are present and secure		•			
Clean Snow Thrower			•		
Lubricate Snow Thrower	8			•	
Inspect, adjust, and lubricate drive chain	9				•

*At least once a year
**More often under heavy use

Figure 7. Summary of Scheduled Care



NOTE: Keep oil and grease off pulleys and belt.

Symbol	Use	Apply With	Procedure
	Lithium base automotive grease	Grease Gun	1. Wipe fitting clean with rag. 2. Apply 2 or 3 shots of grease. 3. Wipe up any excess grease.
	Oil	Oil Can	1. Wipe mating parts clean. 2. Apply a few drops of oil on mounting pin or spout pivot surface.

Figure 8. Lubricate Snow Thrower (10 - Hour Care)

1. Remove two nuts and lockwashers that secure chain guard.
2. Remove chain guard.
3. Check chain for excessive wear. Look for broken or bent links as well as damaged link pins. If wear is excessive, replace chain.
4. Loosen tension adjusting nut and capscrew.
5. Pull shaft rearward, keeping shaft parallel to auger body, to tighten chain.
6. While keeping chain tight and shaft parallel to auger body, retighten tension adjusting nut and capscrew. The nut should be torqued to 40 foot-pounds (54 N·m).
7. Oil entire chain.
8. Install chain guard and secure with two nuts and lockwashers.

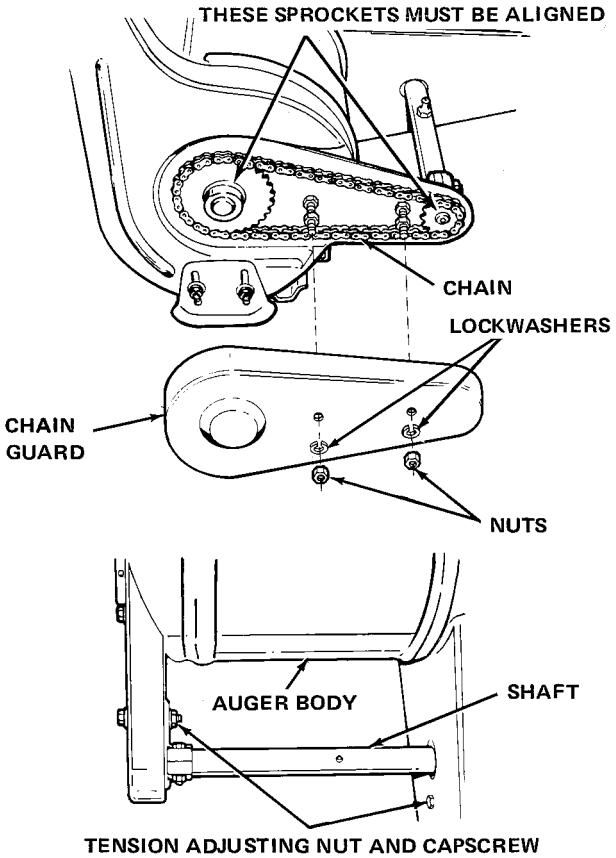


Figure 9. Inspect, Lubricate, and Adjust Drive Chain (Yearly Care)

Troubleshooting

CONTENT OF SECTION

This section of the manual provides troubleshooting instructions for the more common and easily corrected snow thrower problems. For other problems, it is recommended that you contact your dealer.

WARNING

To avoid serious injury, perform maintenance on the tractor or snow thrower only when the engine is stopped. Always remove the ignition key before beginning maintenance to prevent accidental starting of the engine.

TROUBLESHOOTING PROCEDURES

Troubleshooting procedures are provided in figure 10. To use these procedures, first locate the problem description that best describes the trouble that you have encountered. Check the possible causes one at a time in the order that they are listed. Correct any problems that are found and try to operate the snow thrower again to see if you have eliminated the trouble.

Problem	Cause/Remedy
1. Snow thrower auger does not rotate.	A. PTO lever not engaged. Engage PTO lever. B. Foreign material blocking auger. STOP engine. Remove key. Unplug auger with stick or rod. C. Snow thrower drive belt slipping. Adjust drive belt tension. D. Drive belt or chain broken. Repair or replace.
2. Auger rotates, but snow not thrown far enough.	A. Engine speed too slow. Set throttle for 3/4 to full speed. B. Tractor ground speed too fast. Set transmission shift lever or control for slower speed. C. Snow thrower discharge spout clogged. STOP engine. Remove key. Unplug discharge spout.
3. Scraper bar does not clean down to hard surface.	A. Skid shoes not properly adjusted. Adjust skid shoes.
4. Snow thrower picks up and throws stones on gravel drive.	A. Skid shoes not properly adjusted for gravel surface. Adjust skid shoes. B. Drive too uneven for skid shoes to reach ground. Use the tractor lift lever to raise the snow thrower slightly.
5. Tractor does not have sufficient traction.	A. Rear wheels lack traction. Use rear wheel weights and chains.
6. Tractor not stable on sloping surfaces.	A. Ground speed too fast. Reduce ground speed. B. Tractor not properly weighted. Use rear wheel weights and chains C. Tire pressure incorrect. Inflate rear tires according to tractor operator's manual. Inflate front tires to 20 Lbs. psi (138 kPa).

Figure 10. Troubleshooting Procedures

Adjustments

CONTENT OF SECTION

This section contains adjustment procedures for the snow thrower and the front PTO that is used to power the snow thrower.

ADJUSTMENT PROCEDURES

WARNING

To avoid serious injury, perform adjustment procedures on the tractor only when the engine is stopped. Always remove the ignition key before beginning the adjustment procedures to prevent accidental starting of the engine.

SKID SHOE ADJUSTMENT

The skid shoes can be adjusted up or down to keep the snow thrower working efficiently on various types of surfaces.

On smooth, hard surfaces, such as concrete or asphalt, the skid shoes should be adjusted so that the scraper bar is resting on the surface.

To adjust the skid shoes up or down, loosen the two nuts holding each skid shoe and move the skid shoes to the desired position (see figure 11). Tighten the nuts securely, making sure the skid shoes are parallel to the ground surface and both adjusted to the same level.

On rough surfaces, such as gravel, the skid shoes should be adjusted down. This helps to keep the scraper bar above the ground so that it doesn't pick up stones. Use scraps of wood to raise the scraper bar about 1 inch (25 mm) above a level ground surface. Then drop the skid shoes down to the ground, keeping the bottom edge of the skid shoes level. The snow thrower will now be supported by the skid shoes.

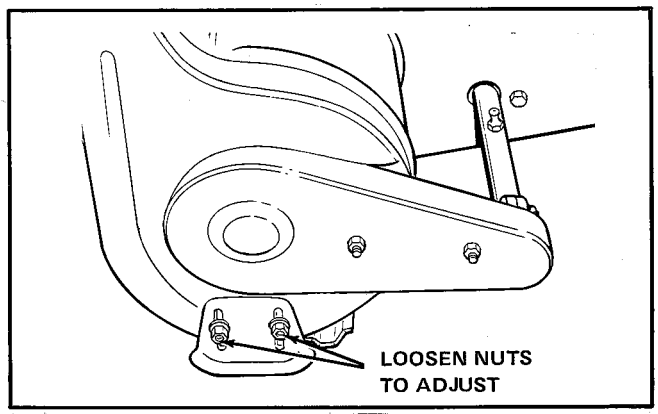


Figure 11. Skid Shoe Adjustment

DRIVE BELT TENSION

A spring attached to an eyebolt (item A, figure 12) applies tension to the drive belt. The tension can be adjusted to compensate for stretching of the belt. To do this, remove the spring from the eyebolt using a pair of pliers (use care, the spring is under tension and can snap back). Then move the eyebolt to a higher hole in the bracket. Be sure to tighten the nut that holds the eyebolt before reinstalling the spring.

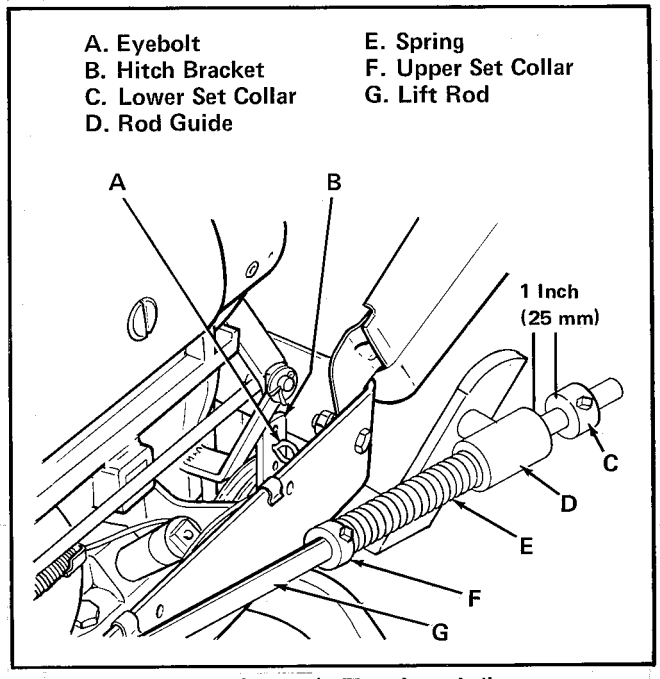


Figure 12. Drive Belt Tension Adjustment

SCRAPER BAR DOWN-PRESSURE

The scraper bar will float over minor bumps in the surface or dig into them depending upon the down-pressure adjustment. To make this adjustment, park the tractor on level ground and fully lower the snow thrower. At this point, the gap between the rod guide (item D, figure 12) and the lower set collar (item C) should be about 1 inch (25 mm). If not, loosen setscrew, move set collar, and retighten screw.

If you want the scraper blade to float, loosen setscrew and move upper set collar (item F) so the gap between it and the spring (item E) is about 2 inches (50 mm).

If you want positive down-pressure on the scraper bar, loosen setscrew and move upper set collar (item F) downward so it compresses the spring (item E) 2 to 3 inches (50 to 75 mm). Be sure to retighten setscrew securely. The more the spring is compressed, the greater the down-pressure.

PTO CLUTCH

The front PTO clutch must be adjusted for proper operation. To check the adjustment, measure the distance between the thrust washer (item F, figure 13) and the bearing (item G) while the PTO lever is in the disengaged position. Then repeat the same measurement with the PTO lever in the engaged position. The difference between the two measurements should be 1/8 inch (3 mm). If not, adjust the PTO clutch as follows:

1. Be sure that front PTO clutch lever is in engaged position.
2. Remove cotter pin (item E) and flat washer (item D). Pivot (item C) may be on inside or outside of fork (item B) depending on your model (see figure 24).
3. Pull pivot (item C) free of fork (item B).
4. Rotate pivot (item C) to change its position on clutch rod (item A). To increase difference in measurements, thread pivot further onto rod.
5. Insert pivot back into hole in fork and repeat check. When it is adjusted properly, reinstall flat washer and cotter pin (items D and E).
6. When making initial adjustment after assembly, start engine and engage and disengage front PTO clutch 10 times at 15-second intervals. Then repeat check and, if needed, adjustment.

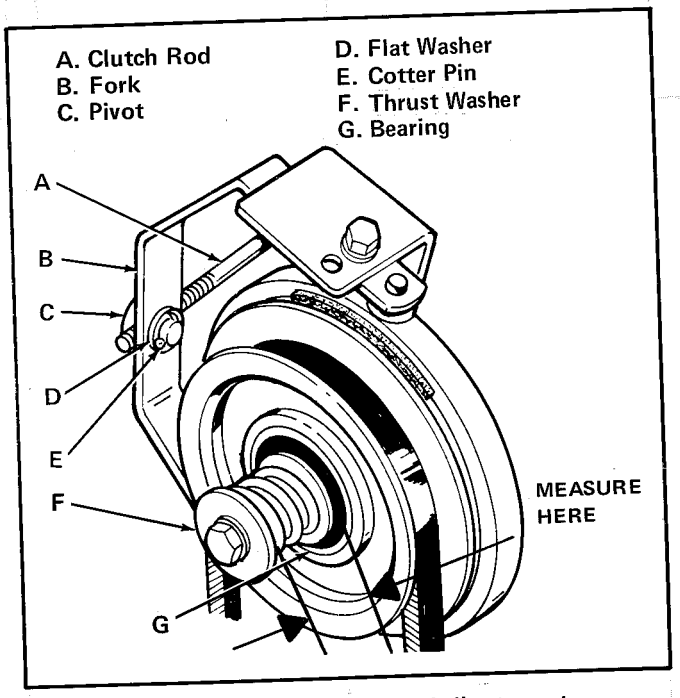


Figure 13. PTO Clutch Adjustment

PTO SAFETY SWITCH

The PTO safety switch (item B, figure 14) is held in a bracket (item D). When the PTO lever (item A) is moved from the engaged to the disengaged position, the plunger of the switch should move downward about 1/8 inch (3 mm). If not, adjust switch as follows:

1. Loosen two jam nuts, one (item C) below and one above bracket (item D).
2. Move switch upward in bracket for more plunger movement or downward in bracket for less plunger movement.
3. Retighten two jam nuts to secure switch in place.
4. Repeat check of switch plunger movement. If switch movement is not proper, the engine will not start.

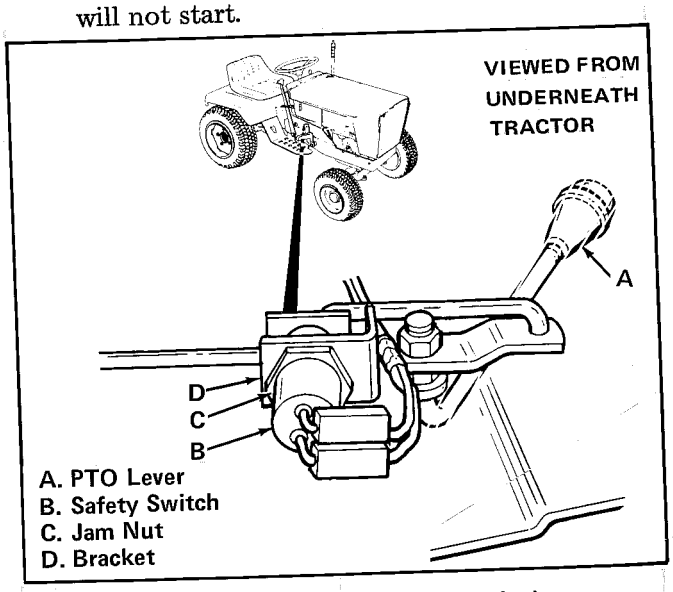


Figure 14. PTO Safety Switch

Assembly

CONTENT OF SECTION

The snow thrower is shipped only partially assembled for packaging reasons. This section provides the necessary instructions for assembling the snow thrower and for installing the front PTO on the tractor. The instructions are the same for both the 36" and 42" snow throwers.

SNOW THROWER ASSEMBLY

Remove all loose parts, the skin pack, and the snow thrower from the shipping carton. Open the skin pack and hardware bags and arrange all parts according to size and type. Then proceed as follows:

1. Install support bracket (item C, figure 15) as shown with two 3/8 x 1 inch (9.5 x 25.4 mm) capscrews and flange locknuts (items A and B).

NOTE

Do not let pivot bearing alone support the full weight of control rod, as the bearing can be damaged.

2. Insert end of spout control rod (item E, figure 15) through plastic pivot bearing (item D) on auger housing. Install a 3/32 x 5/8 inch (2.4 x 16 mm) cotter pin in the lower rod hole on the inside of the housing, and spread cotter pin legs fully around rod. Pull the rod back so cotter pin is up against pivot bearing and install another cotter pin through the rod just above the bearing. Spread cotter pin legs fully around the rod.
3. Place the thin plastic liner (item G, figure 15) inside the rod guide (item H).
4. Install rod guide and liner over spout control rod as shown. Attach rod guide to support bracket with a 5/16 x 1-1/8 inch (10 x 28.5 mm) capscrew and a locknut (items F and I, figure 15). Tighten locknut (usually flush with end of capscrew) so control rod is held firmly but is still free enough to turn inside of rod guide.
5. Install the spout extension (item J, figure 15) on the housing opening so the clip (item K) on the housing is positioned in the notch on the spout extension. Then rotate spout extension slightly to start its rim under the clip. Oil mating surfaces so spout extension rotates freely.
6. With the spout extension facing slightly left, wind the cable around the control rod spool as shown in figure 16. Wind three turns on the rear part of the spool so that the cable leaves the spool on the lower edge as shown. Wind two turns on the front part of the spool so that the cable leaves the spool on the upper edge as shown.

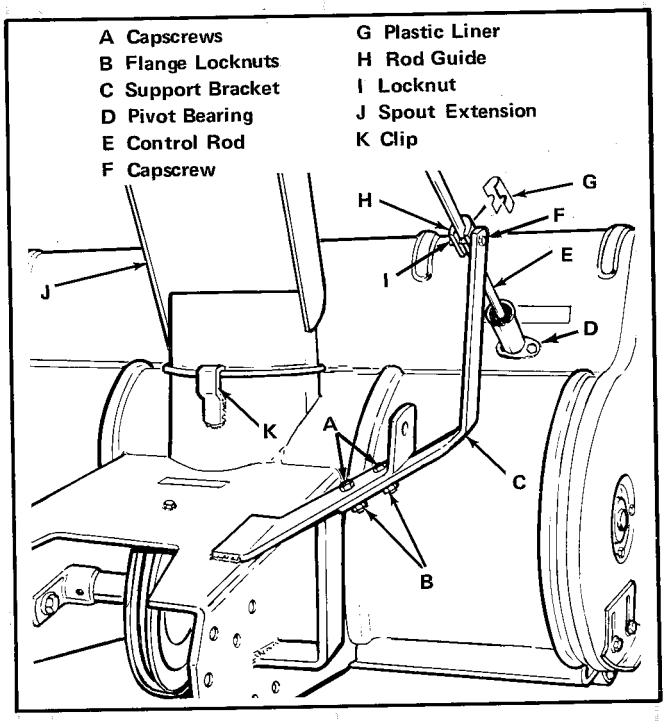


Figure 15. Installing Spout Control

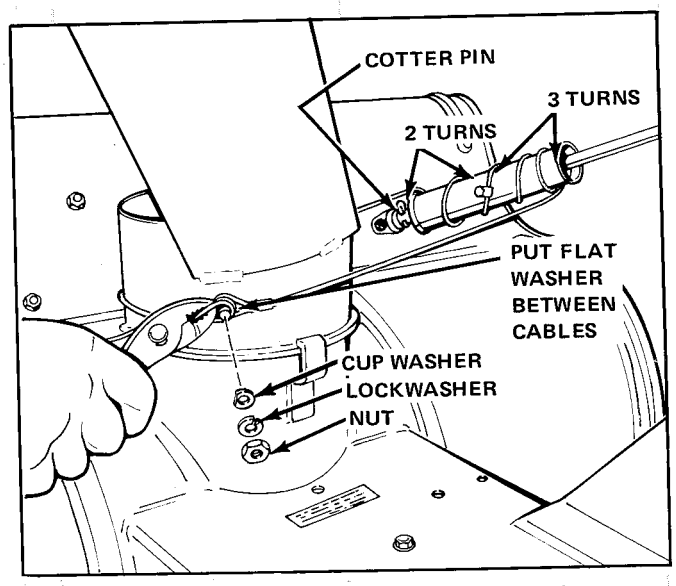


Figure 16. Installing Control Cable

7. Place the looped end of the cable over the stud on the spout extension (see figure 16). Place the small flat washer provided on the stud. Pull the other end of the cable around the stud as shown with a pliers. While holding the cable tight, install the cup washer (facing inward), lockwasher and nut to hold the cable. Tape any loose cable neatly to the taut cable.

NOTE

The outer points of the special hex lockwashers must face in toward the deflector to grip the flat surface.

8. Attach deflector (item A, figure 17) to spout extension (item F). Use the two carriage bolts, special hex lockwashers, flat washers, and wing nuts (items B through D) to hold deflector.
9. Install hitch (item G, figure 17) to frame clips as shown with two 3/8 x 2 inch (9.5 x 51 mm) pins (item I) and spring clips (item H).
10. Install the two 3/8 x 1-1/2 inch (9.5 x 38 mm) pins and spring clips (items J and H) provided in the hitch for safe storage. They will be used when installing the snow thrower on the tractor.

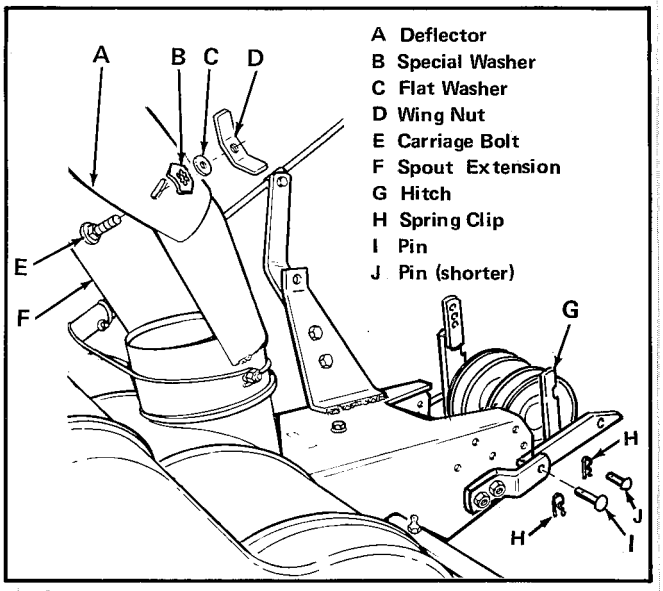


Figure 17. Installing Deflector and Hitch

11. Thread the V-belt provided onto the snow thrower and hitch pulleys as shown in figure 18. You will need to loosen the locknut holding the belt guide to position the belt in the backside idler pulley. Reposition belt guide and tighten locknut to hold V-belt. Be sure the backside of V-belt runs through the backside idler pulley as shown.

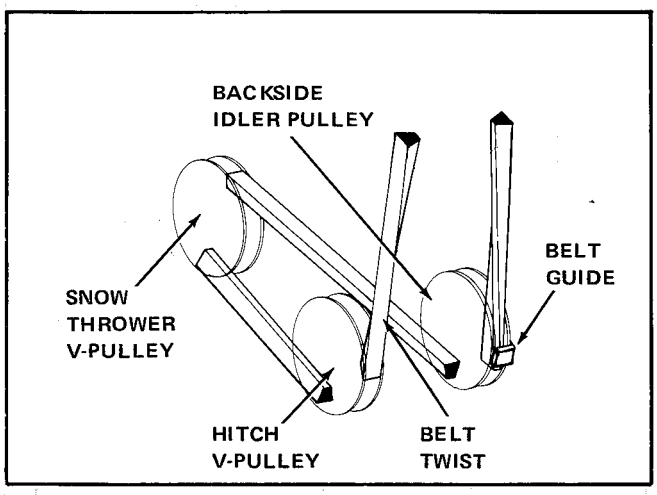


Figure 18. Installing V-Belt

12. Attach the front of the snow thrower lift rod (item C, figure 19) to the support bracket (item D) as shown. Insert the mounting tip at the side of the rod guide (item B) in the support bracket hole, and secure the rod with a spring clip (item A).

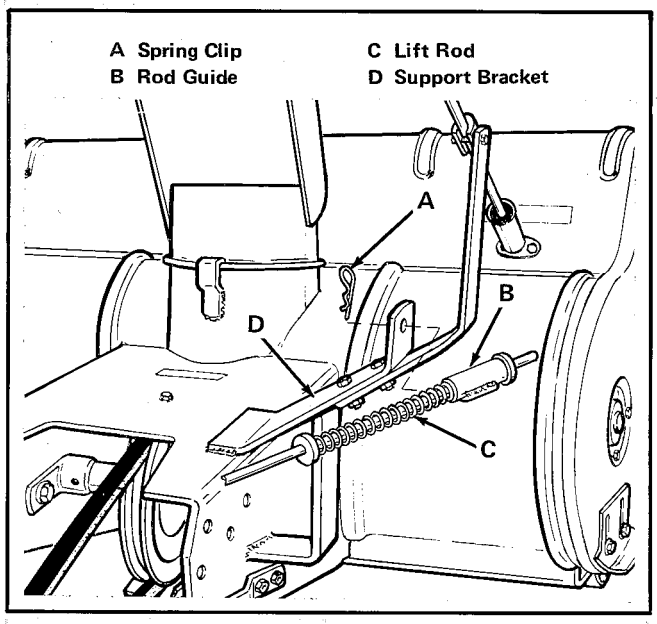


Figure 19. Installing Lift Rod

ASSEMBLY OF FRONT PTO

The snow thrower is driven by a front PTO assembly on your tractor. This assembly is not a standard tractor item. It is shipped with the snow thrower and must be assembled onto the tractor as follows:

WARNING

For your personal safety, stop engine, set parking brake, and shift into neutral. Then raise tractor hood and remove spark plug wire and fasten it away from engine.

1. The keyway in engine crankshaft (see figure 20) must be straight up at top of crankshaft. If not, crank engine to turn keyway straight up.

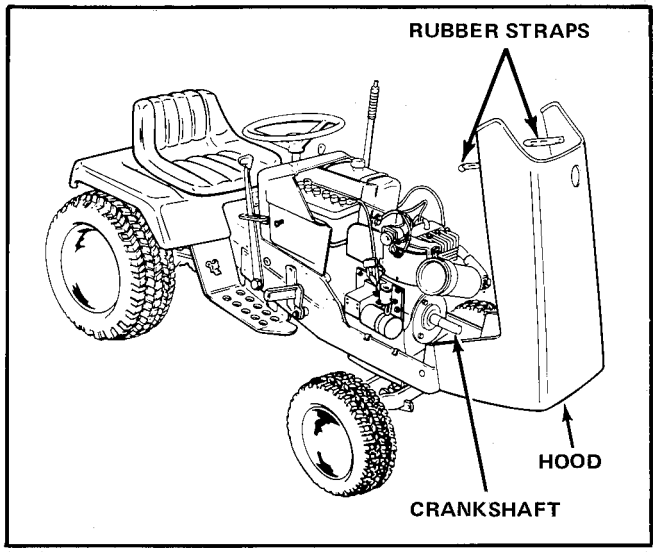


Figure 20. Raise Tractor Hood

WARNING

For your personal safety, remove ignition key. Allow engine and muffler to cool before installing front PTO.

2. Use cleaning solvent to remove any coating on engine crankshaft.
3. The main PTO parts (figure 21) are fastened together for shipping. Remove and discard the nut and capscrew that passes through the center of the parts.
4. Remove two capscrews (item N, figure 21) from Briggs & Stratton engines. These will not be used again and can be discarded. Kohler engines do not have capscrews installed in these holes.

NOTE

If your tractor has a Kohler engine, the fork must be mounted in bracket holes nearest engine. If it has a Briggs & Stratton engine, the fork is mounted in the forward bracket holes.

5. The clutch-brake assembly (item A) is assembled at the factory for Briggs & Stratton engines. For Kohler engines, remove the capscrew at the top and bottom of bracket. Reinstall capscrews to hold the fork in rear bracket holes. Be sure to keep spacer in place between bracket and fork at both top and bottom.
6. Install the clutch-brake assembly (item A) onto engine using engine mounting holes (see reference in step 4). Use two capscrews (item M) and lockwashers provided: use two 5/16 x 1 inch capscrews with matching lockwashers for Briggs & Stratton engines, and use two 3/8 x 3/4 inch capscrews with matching lockwashers for Kohler engines.

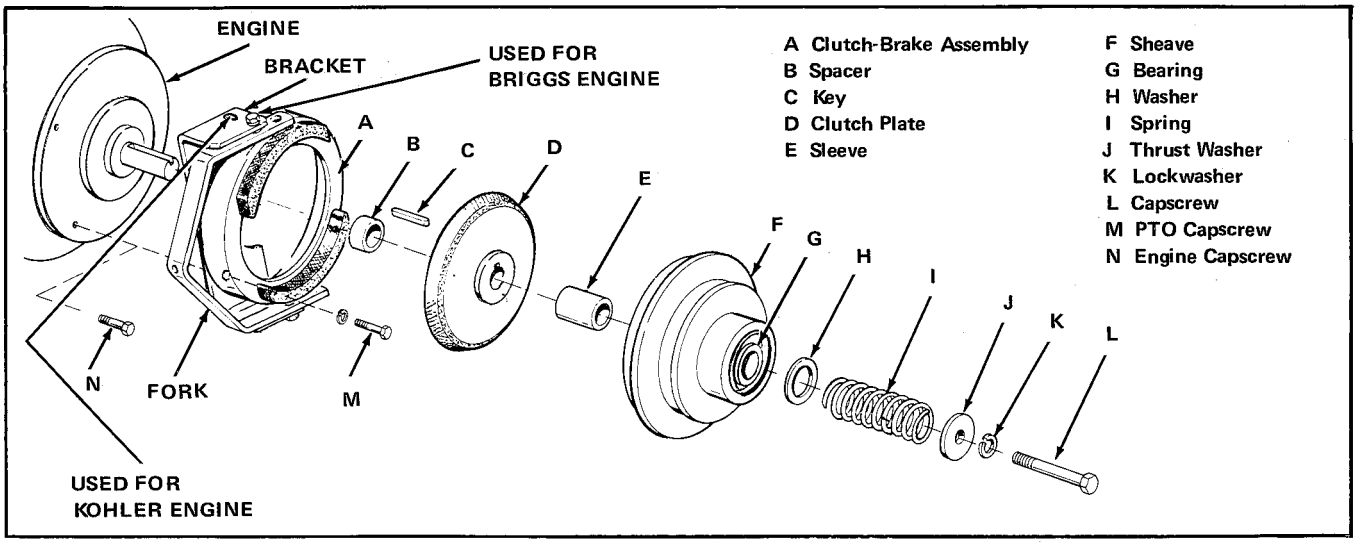


Figure 21. Install Clutch-Brake on Tractor Engine Shaft

7. Slide spacer (item B), recessed end first, onto crankshaft.
8. Install key (item C) in crankshaft so curved end of key is pointing inward towards engine.
9. Install clutch plate (item D) and sleeve (item E) on crankshaft.
10. Install bearing (item G) in recess of sheave (item F). Then install sheave and bearing on crankshaft as shown (bearing to outside).
11. Install large, thin washer (item H) and spring (item I) over sleeve.

NOTE

The capscrew used in step 12 varies according to the engine. Use the 3/8 x 1-3/4 inch capscrew provided for a Briggs & Stratton engine. Use the 7/16 x 2 inch capscrew provided for a Kohler engine.

12. Slip lockwasher (item K) and thrust washer (item J) onto capscrew (item L), and start capscrew in threaded hole in end of crankshaft. Tighten capscrew until lockwasher is flat. To prevent engine from turning, insert a rod through the drive shaft coupling (figure 22). Be sure to remove rod after capscrew is tight.
13. Locate safety switch bracket (item F, figure 23). The bracket can be seen from underneath tractor on inside of right-hand frame.
14. Remove one of the nuts from the safety switch (item E, figure 23) provided. Insert safety switch upward (button end first) through bracket as shown. Reinstall nut loosely to hold switch in place.
15. The wiring plug (item D) is part of the tractor wiring harness and should be located near the bracket. Remove jumper wire from plug and connect plug to prongs of safety switch.
16. From underneath tractor, work the front end (the threaded end) of the PTO clutch rod (item G) up towards front of tractor between engine and right-hand frame. Stop at point where rod can be pulled rearward over the clutch-brake shaft, and slide rear of rod backward over safety switch.
17. Install rear end of clutch rod first. Position rod so metal plate is over safety switch button as shown in figure 23. Then slip the arm (item B) onto bend in clutch rod as shown.
18. From outside tractor frame, install threaded end of PTO clutch lever (item A) through hole in tractor frame. The lever should be installed in the disengaged position which is to the rear and nearly horizontal as shown (use existing PTO clutch lever on left side of tractor as a guide).
19. Slip the arm (item B) onto the threaded end of clutch lever and install a locknut (item C).

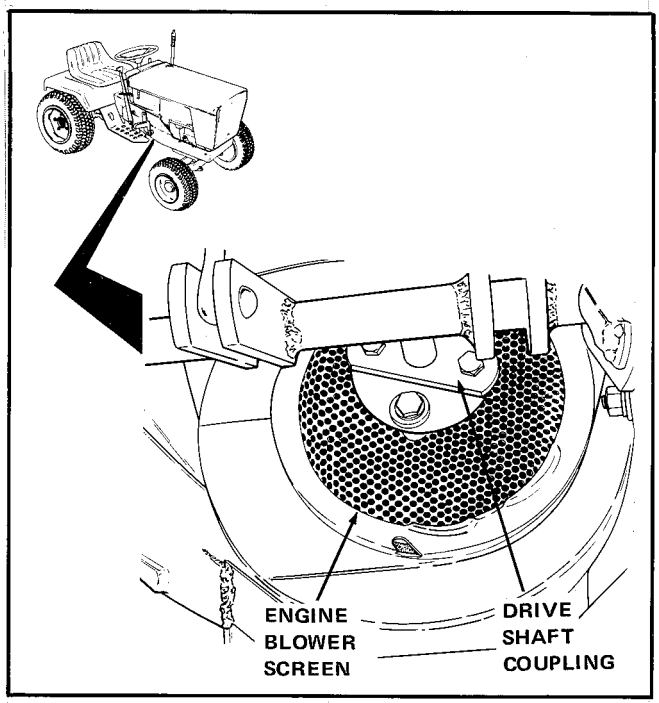


Figure 22. Drive Shaft Coupling Location

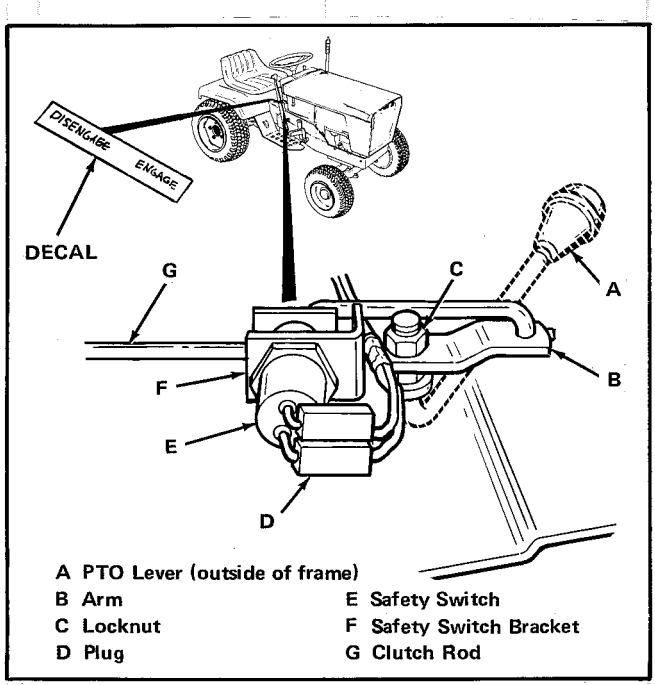


Figure 23. Install Safety Switch and PTO Handle

20. Thread the pivot (see figure 24) onto front of clutch rod until it is even with holes in clutch fork.
21. Depending on the tractor engine, connect the pivot to the clutch fork as follows:

    For Briggs & Stratton engines with a generator, install the pivot from the inside through the upper hole of the clutch fork (figure 24). Secure pivot with a washer and cotter pin, and spread cotter pin legs.

    For Briggs & Stratton engines with the dual circuit alternator, install the pivot from the outside through the lower hole of the clutch fork (figure 24). Secure pivot with a washer and cotter pin, and spread cotter pin legs.

    For Kohler engines with the alternator, install the pivot from the outside through the upper hole of the clutch fork (figure 24). Secure pivot with a washer and cotter pin, and spread cotter pin legs.
22. Connect one end of the spring (see figure 24) to hole in clutch rod and the other end to the hole in the tractor frame.
23. Install PTO clutch decal on the tractor frame at the clutch lever (see figure 23).
24. Operate clutch lever to be sure clutch rod moves freely.
25. Adjust the PTO safety switch according to the Adjustment Section of this manual.
26. Check and, if necessary, adjust PTO clutch according to the Adjustment Section of this manual.
27. Put a drop or two of oil on clutch fork pivot points, making sure not to spill oil on clutch pulley.
28. Check snow thrower lubrication according to the Normal Care Section of this manual.
29. Increase tractor front tire pressure to 20 lbs. psi (138 kPa) to compensate for the added weight to the front of the tractor. Be sure both tires have equal pressure.
30. Reinstall spark plug wire and close tractor hood.

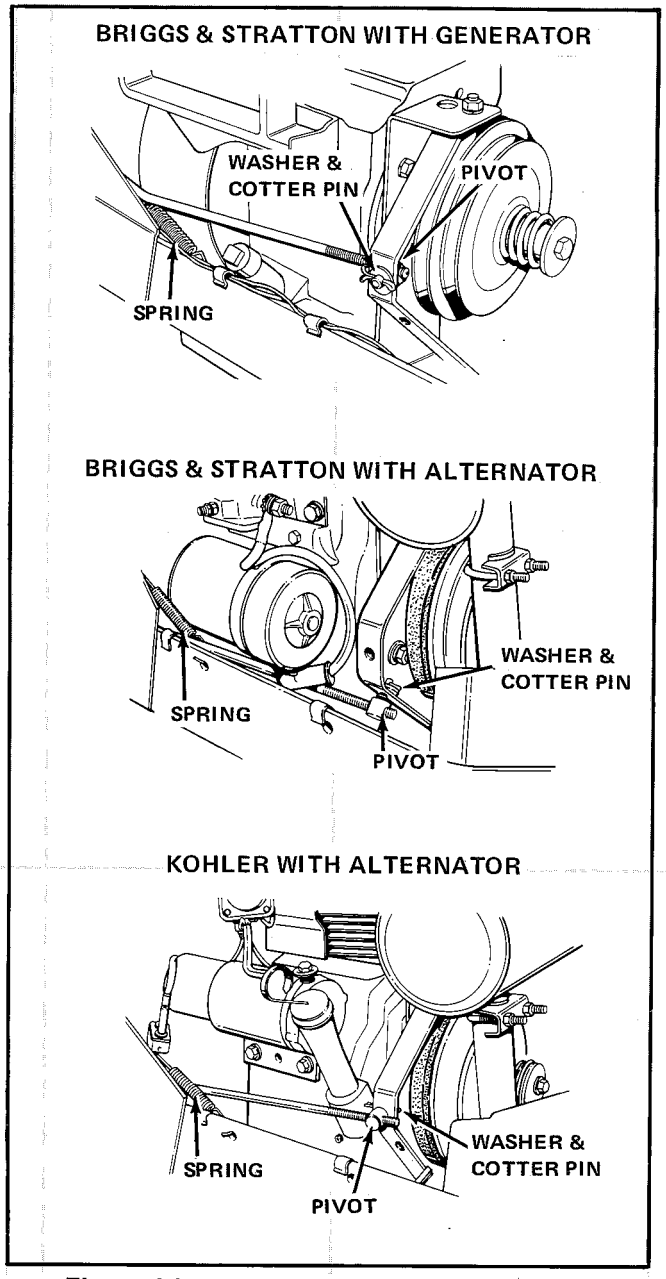


Figure 24. Connecting Clutch Rod Pivot

		36-Inch Snow Thrower	42-Inch Snow Thrower
DIMENSIONS	Effective Width	36 In. (914 mm)	42 In. (1067 mm)
	Overall Width	37-1/2 In. (953 mm)	43-1/2 In. (1105 mm)
	Overall Length	27 In. (686 mm)	27 In. (686 mm)
	Opening Height	19 In. (483 mm)	19 In. (483 mm)
	Auger Diameter	12 In. (305 mm)	12 In. (305 mm)
	Net Weight	135 Lbs. (61.2 kg)	145 Lbs. (65.8 kg)
CONTROLS	Auger Drive	PTO Lever on Right Side of Tractor	
	Raise and Lower	Tractor Lift Lever or Optional Electric Lift	
	Spout Rotation	Tee Handle to Right of Operator or Optional Electric Spout Rotator	
DRIVE TRAIN	Input Drive	Cushioning V-Belt	
	Final Drive	Prelubricated Enclosed Roller Chain	
	Clutch	Mechanical Cone Clutch with Brake	
CHASSIS	Bearings	Prelubricated and Sealed Rolling Contact with Lube Fitting	
	Auger Bearings	Self-aligning Roller Contact with Lube Fitting	
	Housing	Welded Steel Channel and Stamping	
	Scraper Bar	Full Width High Carbon Steel – Replaceable	

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE