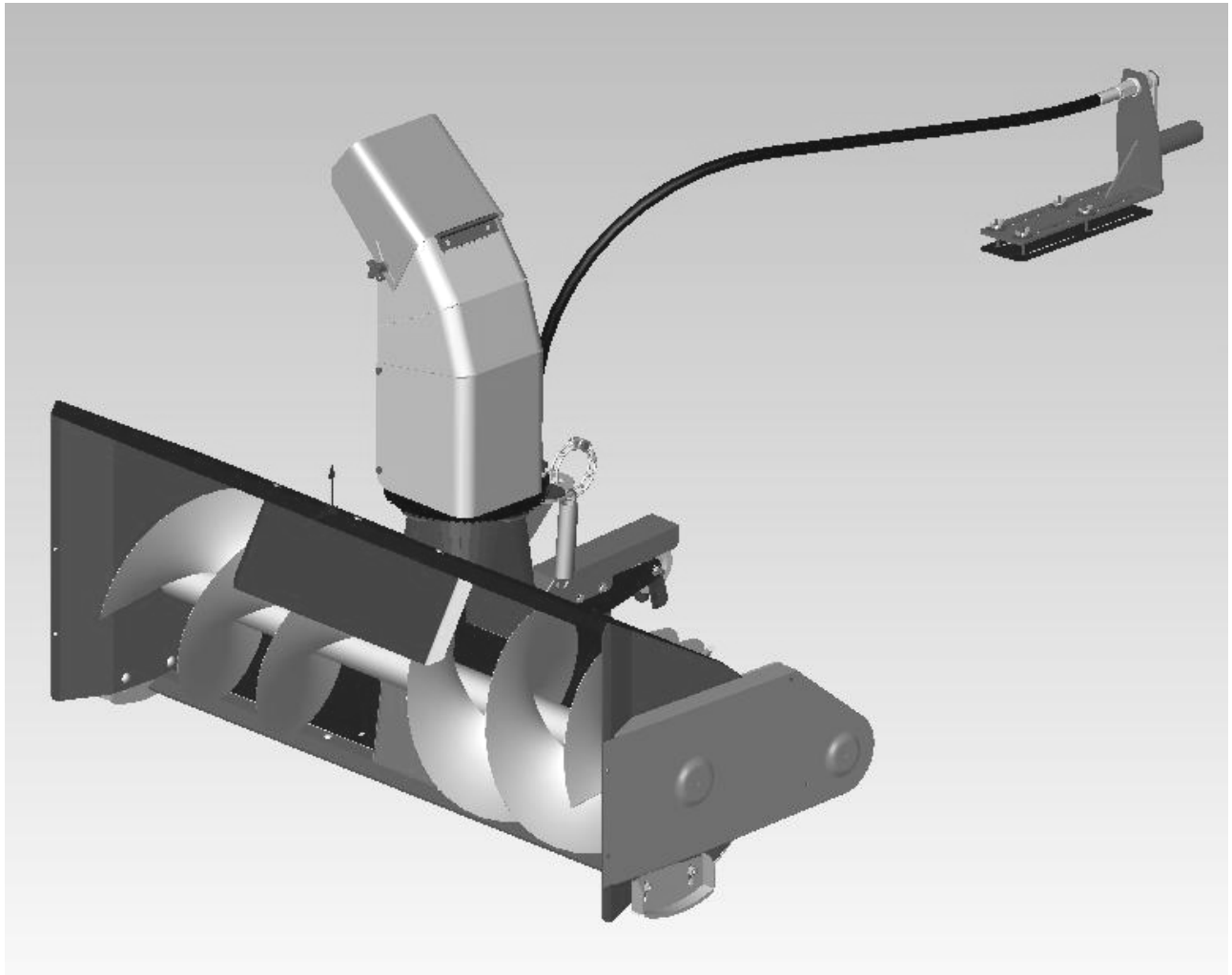


Assembly/Operators/Parts Manual

English Language Version 05

Printed: November 2008



READ & SAVE THIS MANUAL

QUADIVATOR INC.
1000 6th Ave. NE
Portage La Prairie, MB
Canada, R1N 3C5
www.quadivator.com

Part #: 89329D

QUADIVATOR WARRANTY POLICY

The warranty for the Quadivator Product is a limited warranty.

The manufacturer's warranty to the original customer is - the product is free from defects in materials and workmanship for a period of one (1) year from the date of purchase by the original purchaser.

We will repair or replace, at our discretion, parts found to be defective due to materials and workmanship.

The warranty is subject to the following limitations and exclusions:

1. Engine Warranty - all engines utilized on our products have a separate warranty extended to them by the engine manufacturer. Any engine service difficulty is the responsibility of the engine manufacturer and in no way is Quadivator Inc. or its agents responsible for the engine warranty. The Briggs & Stratton Engine Service Hot Line is 1-800-233-3723.

2. Commercial Use - the warranty period for any product used for commercial or rental use is limited to ninety (90) days from the date of original purchase.

3. Limitations - the warranty applies only to products which have been properly assembled, adjusted and operated in accordance with the instructions contained within this manual. The warranty does not apply to any product of Quadivator Inc. that has been subject to alteration, misuse, abuse, improper assembly or installation, shipping damage or normal wear of the product.

4. Exclusions - excluded from this warranty are normal wear, normal adjustments and normal maintenance.

In the event you have a claim under this warranty, you must return the product to an authorized service dealer. All transportation charges, damage or loss incurred during transportation of parts submitted for replacement or repair under this warranty shall be borne by the purchaser. Should you have any questions concerning this warranty, please contact us toll-free at 866 770-2169 or on our web-site at www.quadivator.com. The model, serial numbers, date of purchase and the name of the authorized Quadivator dealer from whom you purchased the Quadivator Product will be needed before any warranty claim can be processed.

This warranty does not apply to any incidental or consequential damages and any implied warranties are limited to the same time periods stated for all expressed warranties. Some provinces and states do not allow the limitation of consequential damages or limitations on how long an implied warranty may last, so the above limitations may not apply to you. This warranty gives you specific legal rights and you may have other rights, which vary from province to province or state to state.

This is a limited warranty as defined by the Magnuson-Moss Act of 1975.

FOREWORD

You are now the owner of a Quadivator ST50 Snow Thrower. To obtain the best use of your Snow Thrower, read this manual *carefully*. It will help you become familiar with the operation and maintenance of the Quadivator ST50. It is Quadivator Policy to use all research, design and manufacturing improvements to improve our products. At the time of printing, this may result in some of the minor parts in the manual becoming outdated.

Quadivator will have the most up to date parts and service information – call 1 866 770-2169 for service information and parts orders.

Contact Information:

Quadivator Inc.
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SAFETY FIRST

This symbol, the industry’s “Safety Alert Symbol”, is used throughout this manual and on labels on the unit to warn the possibility of personal injury.

Read these instructions carefully.

It is essential that you read the instructions and safety regulations - before you assemble, use, operate, or maintain this unit.



DANGER

Indicates an imminent hazardous situation, which if not avoided - will result in death or serious injury.



WARNING

Indicates a potentially hazardous situation which, if not avoided - could result in death or serious injury.



CAUTION

Indicates a potentially hazardous situation which, if not avoided - may result in minor or moderate injury.

IMPORTANT

Indicates that equipment or property damage could result if instructions are not followed.

NOTE

Gives helpful information or key information to make procedures easier or clearer.

Table of Contents

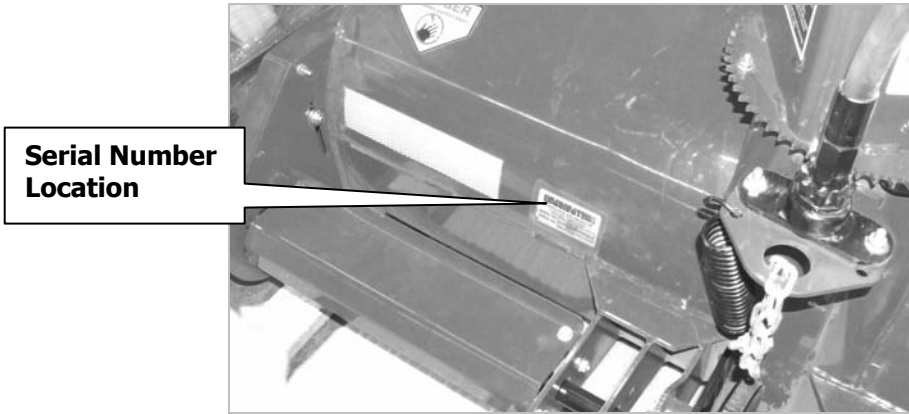
Quadivator Warranty Policy.....	Inside front cover
Foreword/Safety First.....	i
Serial Number Location.....	iii
Pre-Delivery Check List.....	iv
Delivery Check List.....	iv
1. Operating Safety.....	1
2. Service Information.....	3
3. Introduction.....	3
4. Set up the Snow Thrower.....	4
5. Initial Mounting of the ST50 to an ATV.....	5
6. Disconnect ST50 from the ATV.....	9
7. Operation.....	10
8. Maintenance Section.....	14
9. Troubleshooting.....	19
10. Replacement Parts.....	20
11. How to order Repair Parts.....	26
12. Contact Information.....	26
13. Quadivator Warranty Policy.....	26
14. Warranty Registration.....	27

Snow Thrower Model#

ST 50

Serial #

Serial Number Location:



Pre-Delivery Check List

Check off all items as they are found satisfactory or after adjustments are made:

- All safety shields and guard are securely in place.
- All decals are in place and readable.
- Tighten all hardware – see the Torque Chart in Service Section.
- Check the drive belt that it is adjusted properly – see Service Section.



CAUTION

To prevent personal injury from rotating auger or thrown objects, NEVER walk or stand in line with the auger or discharge during run-in or operation.

- Start and operate the Quadivator Snow Thrower and allow it to run for 5 – 10 minutes, check for excessive operation or unusual noise.
- The Quadivator Snow Thrower has been tested and to the best of my knowledge, is ready to be delivered to the customer.

Date Pre-delivered –

Signature –

Delivery Checklist

Name –

Address –

City/Town –

State/Prov. –

Mail Code -

Model & Serial # –

Date Sold –

DELIVERY Checklist

- Tell the customer not to remove any of the safety shields or guards.
- Review the Quadivator Warranty with customer.
- Safe Operation and Service.
- Daily and Periodic Lubrication and Maintenance.
- Daily and Periodic Inspections.
- Parts & Service Availability.

Prior to delivery to the customer, do the following:

- Record Serial Numbers for the Quadivator Products
- Sign and remove this section for the dealer's record.
- Give the customer the Operator's Manual and encourage the customer to read the manual.

Date Delivered –

Signature –

1. OPERATING SAFETY



DANGER

This machine is capable of amputating hands and feet. It can throw objects significant distances. Failure to observe the following safety instructions could result in serious injury and or death.

1.1 GENERAL OPERATION – Training and Safety

1. Read the operating and service instruction manual *carefully*. Leave all safety features intact.
2. Become thoroughly familiar with the controls and the proper use of the equipment. Know how to stop the unit and disengage the controls quickly.
3. Allow responsible adults or operators, who are familiar with the instructions and Snow Thrower, to operate this machine. Never allow children to operate the equipment.
4. Make sure the area is clear of bystanders, children, pets and objects before operating. Stop machine if anyone or anything enters the area.

IMPORTANT: NEVER CARRY PASSENGERS - while clearing snow with the ST50 - EVEN IF YOURS is a TWO-UP ATV.



DANGER

When operating the ATV Mounted Snow Thrower with the Power Unit – **ALWAYS** attach the clip end of the Tether Cord to your belt, until you dismount from the ATV. The switch with the attached cord will shut off the Power Unit engine – if pulled deliberately or by inadvertent dismount from the ATV seat.

1.2 GENERAL OPERATION - Preparation

1. Thoroughly inspect the area where the equipment is to be used. Remove all floor mats, sleds, boards, wires or other foreign matter. Note the locations of stumps, banks, curbs, large rocks, small shrubs, manhole covers and other obstructions. Mark these obstructions with stakes or flags.
2. Disengage clutch on ATV and shift ATV into neutral before starting the Power Unit engine for the ST50 Snow Thrower.
3. Do not operate the equipment without wearing adequate winter outer garments. Do not wear loose clothing. Wear footwear that provides good footing on slippery surfaces. It is advisable to wear protective goggles while removing snow.
4. Adjust the skid shoe height of the ST50 Snow Thrower to clear gravel or crushed rock surface that is being cleaned. Set up the snow thrower so it is one inch (25 mm) above the gravel.
5. Never attempt to make adjustments to the ST50 Snow Thrower while the engine (motor) is running. Shut off equipment (and remove spark plug from Power Unit engine) before making adjustments or repairs.
6. Allow engine and machine (warm up) so they adjust to outdoor temperatures before clearing snow.
7. Always wear safety glasses or eye shields during operation or when making an adjustment or repair. This protects eyes from foreign objects that may be thrown from the machine.

1.3 General Operation

1. Do not put hands or feet near or under rotating parts. Keep clear of the drives, auger and discharge chute opening at all times.
2. Exercise extreme caution when operating on or crossing gravel drives, walks or roads. Stay alert for hidden hazards or traffic – NEVER carry passengers.
3. After striking a foreign object, stop the engine, remove the wire from the spark plug, thoroughly inspect the snow thrower for any damage, and repair damage before restarting and operating the snow thrower.
4. If the unit should start to vibrate abnormally; stop the engine and check immediately for the cause. Vibration is generally a warning of trouble with the snow thrower.
5. Stop the engine and drives whenever leaving the operating position, before unplugging the auger housing or discharge chute, and when making any repairs, adjustments or inspections.
6. Take all possible precautions when leaving the machine unattended. Disengage the drive, lower the attachment, set the parking brake, stop the engine and remove the key.
7. When cleaning, repairing or inspecting, make certain the auger and all moving parts have stopped. Disconnect the spark plug wire from Power Unit; route spark plug wire away from the spark plug to prevent accidental starting.
8. Do not run the engine indoors, except when starting the engine and for transporting the snow thrower in or out of the building. Open the outside doors: exhaust fumes are dangerous.
9. Do not clear snow across the face of slopes, but up and down the face of the slope. Exercise extreme caution when changing direction on slopes. Do not attempt to clear steep slopes.
10. Never operate the snow thrower without proper guards, plates or other safety protective devices in place. Wear protective goggles while removing snow.
11. Never operate the snow thrower near glass enclosures, automobiles, window wells, drop offs and the like without proper adjustment of the snow discharge angle. Keep children and pets away.
12. Do not overload the machine capacity by attempting the clear snow at too fast a rate.
13. Never operate the machine at high transport speed. Use care when backing up.
14. Never discharge snow at by-standers or allow anyone in front or the discharge end of the chute of the Snow Thrower.
15. Disengage power to the snow thrower when it is being transported or not in use.

1.4 General Operation – Maintenance and Storage

1. Check shear bolts and all other fasteners at frequent intervals. Check hardware for tightness. Be sure the equipment is in safe operating condition.
2. Always refer to Operators Manual for important details if the snow thrower is to be stored for an extended period.
3. Maintain or replace safety and instruction labels and shields, as necessary.

4. Run the machine a few minutes after throwing snow to prevent freeze-up of the auger during the next operation.
5. Never tamper with safety devices and check their proper operation regularly.

2. SERVICE INFORMATION

1. When in need of parts or service, give the serial number of the Quadivator product to your dealer.
2. The serial number is on the left side of the snow thrower, just to the left of the discharge chute; refer page iii of the manual.
3. For reference, record the serial number of your Quadivator product on page iii as a reference and use when contacting your dealer and/or Quadivator.

3. INTRODUCTION

3.1 SPECIFICATIONS

Quadivator Model		ST50 50" Snow Thrower
Height Adjustment Method		Right & Left Side Height Adjustment with fixed wear skids on either side of the auger housing.
Mounting Method		2-point bolted assembly to the Inter-Frame.
ST50 Width	inch (mm)	50 (1270)
ST50 Height	inch (mm)	0.5 to 2.5 (13 to 63.5)
ST50 Weight Approx	lbs (kg)	440 (200)
Auger Diameter	inch (mm)	14.25 (362)
Auger Speed	RPM	925
Overall Height (Controls)	inch (mm)	41.0 (1040)
Overall Length – Snow Thrower	inch (mm)	137.8"(3500)
Length - Hitch point to front of the Snow Thrower	inch (mm)	102.8 (2611 +/- 38)
Length - Hitch point to the rear of the Snow Thrower	inch (mm)	35 +/- 1.5 (890 +/- 38)

3.2 Snow Thrower Terminology – see the Parts Section of the Operators Manual – for illustrated parts and terminology.

4. Setting up the ST50 Snow Thrower

1. Remove the ST50 Snow Thrower from the shipping box:
 - a. the ST50 Discharge Chute and Spout Assembly.
 - b. the ST50 Drive Belt – Part # 89523.
 - c. the ST50 Belt Tensioner, shield and hardware package.
 - d. the ST50 Hand Crank Assembly for the discharge chute.

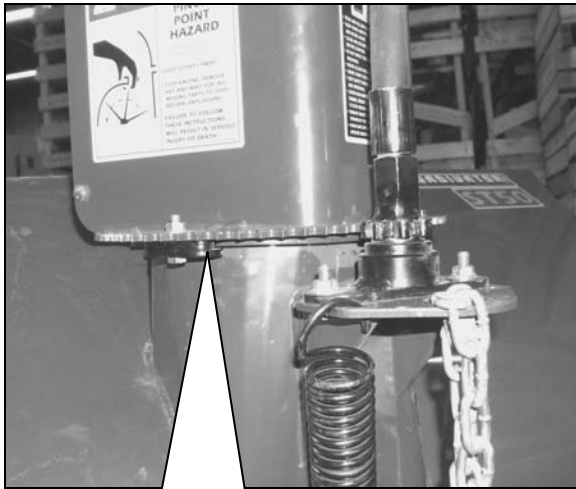
NOTE: The hardware to assemble components is attached to the assemblies. Left and right sides of the machine are determined by sitting on the ATV in the normal operating position.

2. Set the ST50 Auger Assembly on a smooth level surface for assembly.

NOTE: Apply low-temperature grease to the mating ends of the discharge chute and auger housing.

3. Attach the Discharge Chute & Spout Assembly to the auger housing with the 4 attaching sliders and hardware. Fit the curved side of the slider edges so they are under the flanges of the auger housing and secure. Rotate the Discharge Chute to make sure it rotates around the flange of the auger housing.

4. Attach the ST50 Hand Crank Mechanism for the discharge chute using the attached two bolts. The gear teeth of the Discharge Chute Hand Crank should mesh with the gear teeth of the discharge chute.



Attach the discharge chute to the auger housing with the sliders and hardware provided. The curved part of the sliders fit under the flange of the housing.



Adjust the discharge chute for smooth operation by centering chute to housing and then installing the chute crank mechanism.

Attach the chute adjuster of the hand crank to the auger housing with the attached hardware.

5. Initial Mounting of the Quadivator ST50 to an ATV

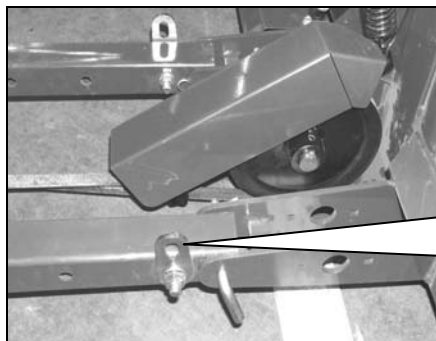
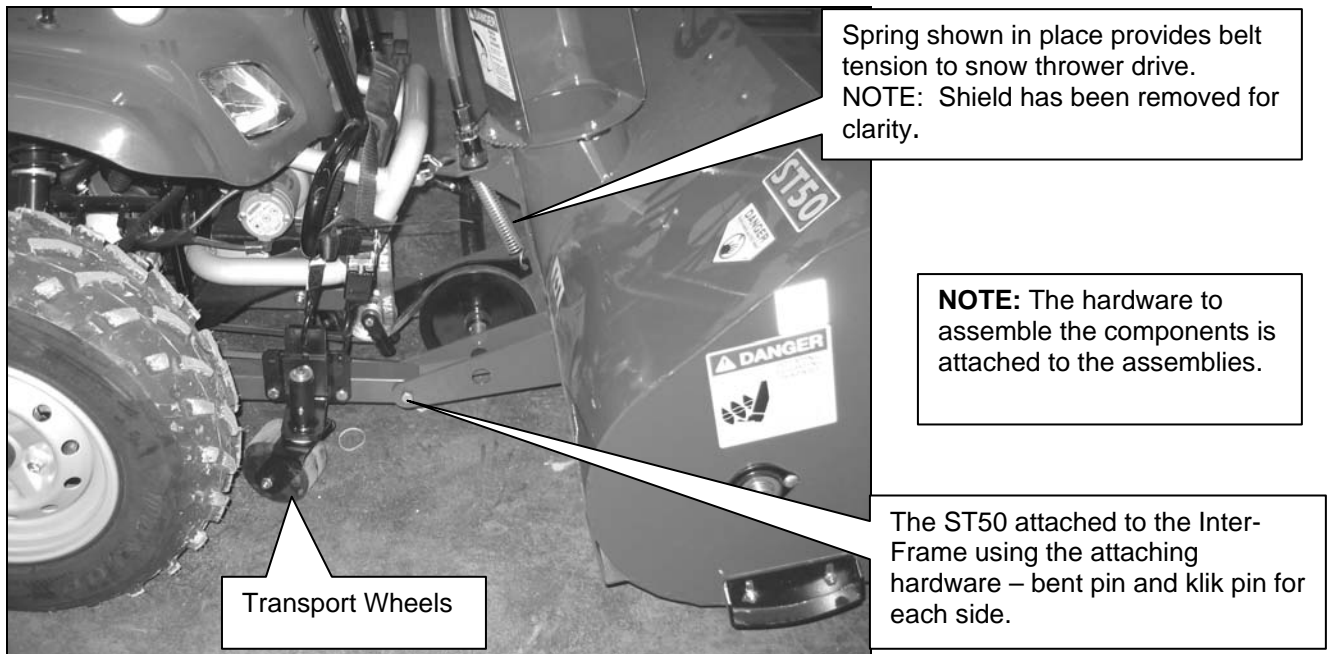
General Principles for mounting the Snow Thrower to ATV:

The ST50 requires an electric winch to lift the unit during transport and operation. Views of the ATV are typical. Configurations will vary with each unit. Left and right sides of the machine are determined by sitting on the ATV in the normal operating position.

1. Mounting Power Unit (PU). Refer to Power Unit Operators Manual for further information.
2. The ST50 is attached to the Inter-Frame with pins provided. Transport Castor Wheels are required when the Snow Thrower is used with the Power Unit, separate installation instructions are provided.
3. Belt is attached and tensioned.
4. Winch is attached to the hook location on snow thrower.
5. Snow Thrower is adjusted side to side using the ratchet straps.

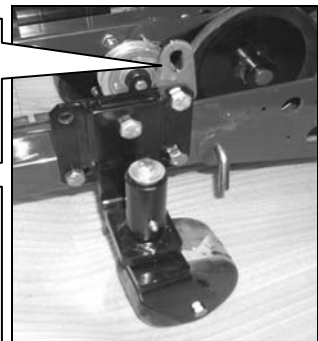
Initial fit up: Quadivator ST50 to ATV - place on a flat, hard surface that has enough room to mount the Snow Thrower to the ATV, and maneuver the assembled unit to the ATV.

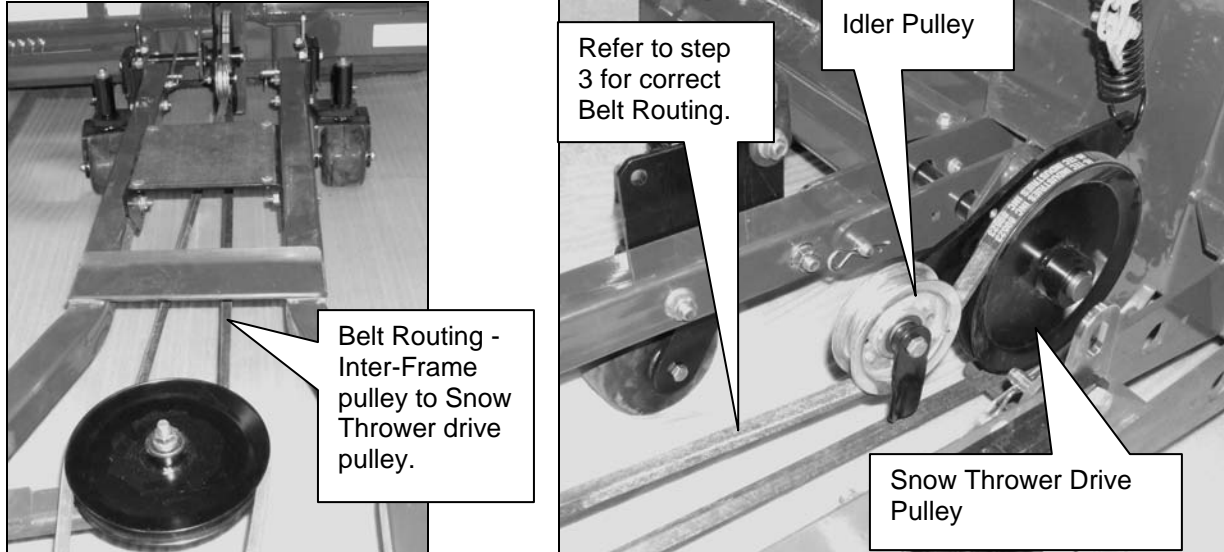
1. Refer to the Power Unit manual for instructions on mounting the PU/Inter-Frame to ATV.
2. Attach the ST50 to the Inter-Frame under the ATV using two bent pins and klik pins at the front ends of the Inter-Frame.



Transport Wheels only: Install ratchet strap lug to front (shown) or rear corner of the caster wheels – both sides.

Transport Wheels only: Remove ratchet strap lug from inter-frame before installing caster wheels – both sides.





NOTE: Removal of (89530) belt from engine to Inter-Frame may be required before installing the belt to the snow thrower.

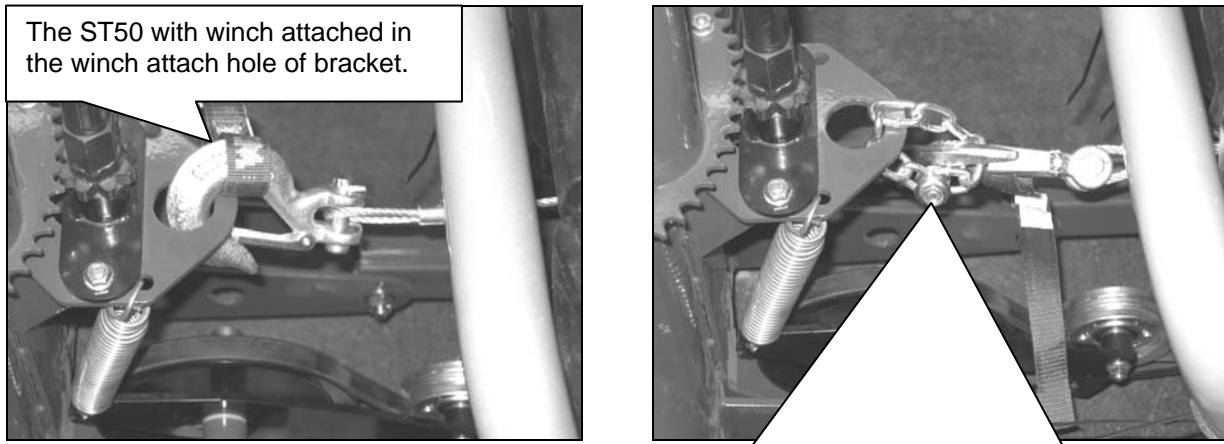
3. Attach the belt (89523) to the snow thrower drive pulley – Route belt (from the driver’s position) from the left side of the smaller inter-frame pulley (located under the large inter-frame pulley), to and under the snow thrower idler pulley, and over the snow thrower drive pulley and to the right side of the same small inter-frame pulley.

NOTE: Incorrect belt routing from small inter-frame pulley to snow thrower pulley will cause ST50 to run backwards. The auger must bring the snow to the center of the snow thrower.

4. Attach the belt tension spring from the adjust arm to the frame above it.

5. Attach the winch to the hole on the frame provided.

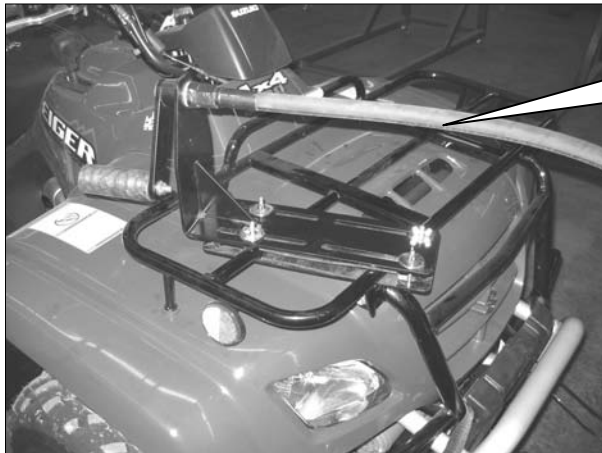
NOTE: The initial lifting of the ST50, by winch, should be done very cautiously. The winch should “bottom” on the winch hook – before the ST50 contacts the ATV front frame or the ATV itself. Use the supplied chain to loop through the mounting hole of bracket as shown below.



The ST50 with winch attached to the extended winch attach hole. Install winch hook to the looped chain. This allows winch hook to bottom on the winch. This prevents the ST50 contacting the ATV or the ATV’s front bumper/tubing.

NOTE: Use caution, with the first use, of the winch when raising the ST50. Note operation and adjust where needed, so winch raises and lowers the ST50 smoothly.

6. Attach the Hand Crank for the Discharge Chute to the ATV.

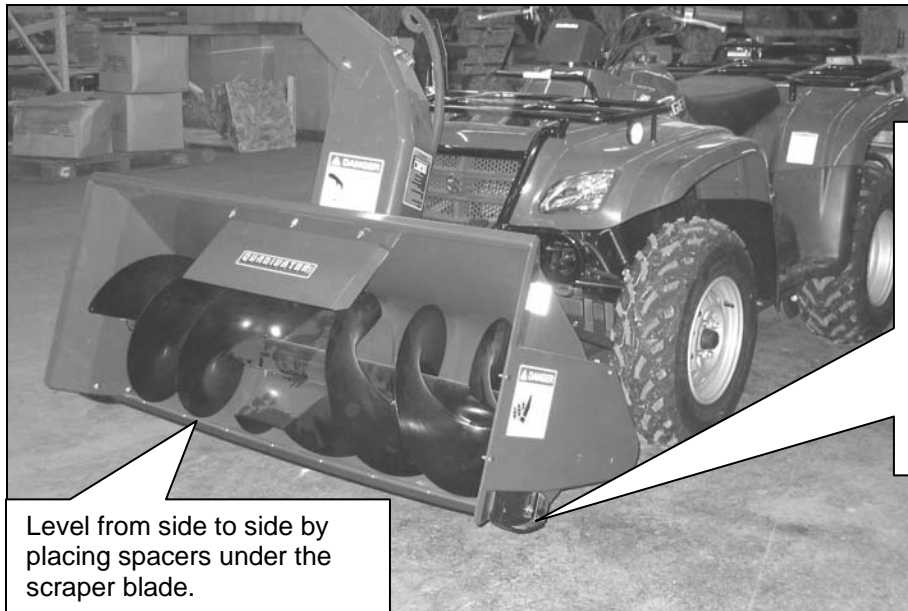


Attach the Hand Crank to the right side of top rack. Allow a smooth curve of crank assembly when routing it to the ST50.

Mount the hand crank assembly with the attached hardware as far rearward on the right side of the front rack. Check routing so it does not interfere with the steering of the ATV. Clamp to the right side of the front rack, as shown. Steer from full right to full left and back. Ensure there is no interference between the hand crank and the ATV steering. Turn the crank again, to ensure the discharge spout moves smoothly – adjust if required to ensure smooth movement.

7. Level the ST50 from side to side. Place equal size spacers under the scraper blade and adjust the skid shoes to the same height. Start with 3/8 inch (10 mm). Then adjust again to your operating needs. Adjust skid shoes on both sides of the ST50.

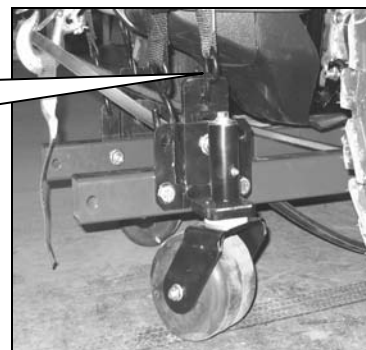
NOTE: Check transport wheels and adjust on the level surface to keep the bottom of the wheel (on the inter-frame) – 3/4 inch (19mm) above the ground surface when the front suspension is unloaded. Use the three holes in the transport casters to make the adjustment.



Level from side to side by placing spacers under the scraper blade.

Skid shoe - adjust up and down in the slotted holes and secure with the attaching bolts. The ST50 must be level on both sides.
Lift Height needs to be no more than 4.0 inches (100mm) to the ground.

Transport (Caster) Wheel Option: Adjust on a level surface to keep bottom of the wheel on the inter-frame 3/4 inch (19mm) above the ground surface when front suspension is unloaded. Adjustment holes (3) are provided.



8. Thoroughly check all drives, belt routing and chain tension.

NOTE: Position the discharge chute spout as low as possible and away from the operator and nearby people and/or objects during the initial start up.

9. Start the engine, engage the clutch just above idle, then run the engine to maximum RPM. Allow it to operate for several minutes to reach operating temperatures in all of the drives.

NOTE – First time starting of the assembled ST50 (with ATV). Refer to the next procedure.

Initial Start Up (for the first time) the Quadivator ST50:

1. Allow the Power Unit engine to warm up to operating temperature before engaging the ST50 for the first time.
2. Engage the Power Unit clutch for the ST50 at just above idle, then run the engine to maximum RPM, and allow the ST50 to operate for several minutes to reach operating temperatures in all of the drives.
3. Shut the ST50 and the Power Unit engine off and check all drives for operation. Check belt drives – incorrect routing of belt from interframe pulley to snow thrower will cause ST50 to run backwards. The auger must bring the snow to the center of the snow thrower and out of the discharge chute.
4. Restart the Power Unit engine of the ST50 and start operating Snow Thrower.

NOTE: Inter-Frame assembly is found in the Power Unit Operators Manual.

6. Disconnect the ST50 from the ATV

When disconnecting the ST50 from your ATV, take the following Steps:



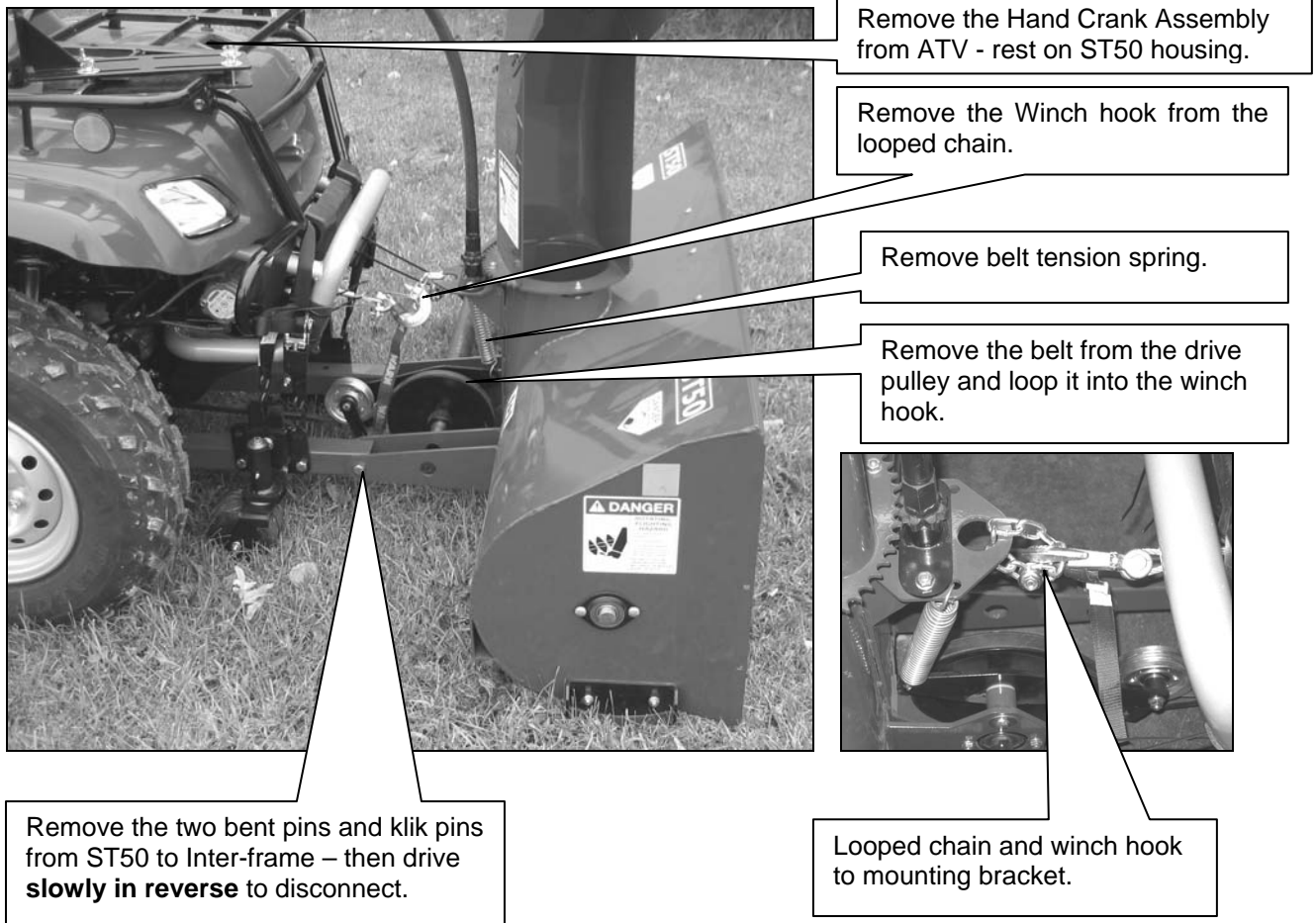
WARNING

NEVER attempt to disconnect the ST50 Snow Thrower from ATV with the engine running – ALWAYS shut the engine (includes Power Unit engine) off before disconnecting from the ATV.

1. **Stop the ATV** where you want to leave the ST50, **SHUT OFF** the ATV and place in PARK and apply the handbrake – ensure the Power Unit engine is off.

2. **Disconnect the ST50 from Inter-Frame:**

- a. Remove the Hand Crank Assembly for discharge chute from the front rack by removing the attaching bolts, flatwashers and nuts. Place Hand Crank Assembly on the ST50 housing.
- b. Remove the winch hook from ST50 by relaxing the tension to the looped chain from the winch to ST50 connection.
- c. Remove the belt tension spring that tensions the belt for the snow thrower.
- d. Remove the belt from the drive pulley; loop it into the winch hook.
- e. Unhook the ST50 from the Inter-Frame – two bent pins and klik pins on the bottom connection.



7. Operation

The Quadivator ST50 Snow Thrower (mounted to the ATV) is designed to clean snow from roads, paths and driveways. Left and right sides of the machine are determined by sitting on the ATV in the normal operating position.



WARNING

The ST50 Snow Thrower should be attached to an ATV in the manner described in this manual and should not be used for speeds exceeding 5 MPH (miles per hour) or 8 KPH (kilometers per hour).



WARNING

Always wear certified safety glasses or wide vision safety goggles over spectacles before starting and when operating the unit. The snow thrower auger rotates at a high speed and can pick up and throw foreign objects with considerable force, resulting in severe eye damage.



CAUTION

Be familiar with your machine. Learn all controls and how they work, read the complete ST50 Snow Thrower Operators Manual and Power Unit Operators Manual.

7.1 Snow Thrower Operating Guidelines

- Check the snow thrower every time - before you use it.
- Plan your route before you start. Check and clear away any debris or other objects that may be picked by the snow thrower. Use care around curbing, holes and hidden fixed objects.
- Remove snow as soon as possible after it falls.
- In snowy or cold conditions; some controls and moving parts may freeze up. Do not use excessive force when trying to free up or operate frozen controls.
- Operate the Power Unit engine to maintain snow thrower at full throttle. Work the snow slowly; there will be less chance for clogging or plugging if you don't rush the job.
- Slow down on slopes, when you make turns and when you throw snow close to people, buildings, vehicles or trees.
- Raise snow thrower when you drive between jobs.
- Throw snow down wind, if at all possible for optimal operator visibility.
- If you hit an object or unit plugs:
 - STOP snow thrower **immediately**.
 - Disengage the ST50, Power Unit engine and ATV engine. Shut OFF all engines.
 - Make repairs and fix damage before operating the Snow Thrower again.
- **Before** you clean or unplug the ST50 Snow Thrower:
 - Disengage the drive to the ST50 at the rear Power Unit switch.
 - SHUT Off the Power Unit engine of the ST50 and ATV engine.
 - Wait for all moving parts to stop before you start cleaning or unplugging of the ST50.
 - Never use your hands to unplug the snow thrower. Remove plugged snow using a long stick or similar. Never place your hands on the auger or drives.
- Clean the ST50 Snow Thrower after each use. Let the machine run for a few minutes with the auger spinning. This allows the snow thrower to dry and avoid damaging freeze ups.
- Never leave the unit unattended. Shut off the snow thrower and remove keys – even for a small amount of time.
- Allow individuals who understand the operation of the unit to operate the snow thrower.
- Concentration is the key to safe operation of a snow thrower. Avoid using medication, drugs or alcohol. Don't use the snow thrower when angry or depressed.

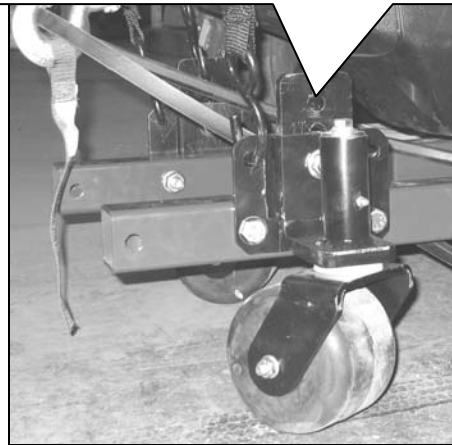
7.2 Skid Shoe Clearance (to Working Surface)

Do the following adjustments on a level surface, as shown:

1. Lower the ST50 to the ground.
2. Loosen the bolts holding the skid shoes on either end of the ST50 snow blower.
3. *Smooth Surfaces:* Adjust the distance from skid shoes to working surface - 1/8 inch (3 mm) for smooth surfaces.
4. *Rough or Gravel Surfaces:* Adjust the distance from skid shoes to working surface - 1/4 to 3/8 inch (5 – 6 mm).
5. Repeat skid shoe procedure to the other side of unit.



Caster Wheel Option: Adjust on a level surface to keep bottom of the wheel on the inter-frame 3/4 inch (19mm) above the ground surface when front suspension is unloaded. Adjustment holes (3) are provided.



7.3 Operating the Snow Thrower – Engaging the ST50 Drive

1. Lower the ST50 to the ground – the auger should be free of snow and/or ice.
2. Engage the ST50 at partial engine throttle.
3. Move the throttle to the FAST speed and bring the ST50 to maximum engine speed.

Engage the ST50 drive by pushing the toggle switch to the UP or Engage Position.

Ignition Switch

Kill Switch Tether Cord – to engine shut off (Kill) switch

Kill Switch or engine shut off switch

Push throttle away from operator to speed up (Power Unit) engine.

IMPORTANT: When operating the ATV Mounted Snow Thrower with the Power Unit – ALWAYS attach the clip end of the Tether Cord to your belt, until you dismount from the ATV. The switch with the attached cord will shut off the Power Unit engine if pulled deliberately or inadvertently dismounting from the ATV seat.

7.4 Inspect the ST50 Snow Thrower – Safety First!**CAUTION**

Avoid injury – ALWAYS shut off the ST50 and the Power Unit engine when you leave the ATV seat.



1. Check all fasteners, auger, and drives at frequent intervals for proper tightness.
2. Check and be sure unit is in safe working condition.
3. DANGER Decals on the discharge spout and ends of the auger housing warn of the possible danger of trying to unplug a rotating auger on the snow thrower.

NOTE: Left and right sides of the machine are determined by sitting on the ATV in the normal operating position.

7.5 Discharge Chute Adjustment

The hand crank (right hand side of the front rack) turns the discharge chute to select from left side, front, to right side – clockwise turns the chute left, counter clockwise turns the chute right.



Hand Crank – adjusts the Discharge Chute.

7.6 Discharge Spout Adjustment



CAUTION

Avoid Injury! Before adjusting the discharge spout, disengage drive – **STOP** the Power Unit and ATV engine. Wait for the auger to **STOP** before attempting to adjust the discharge spout.

To adjust – loosen the two tension knobs on each side of the discharge spout, move to the desired position, and re-tighten the knobs.

IMPORTANT: If the spout moves during operation and it must be re-adjusted. **STOP ENGINE;** disengage drive before adjusting the discharge spout. Wait for the auger to **STOP** and adjust the discharge spout.



Adjust knobs on both sides of the discharge spout.

7.7 Transport

Use a proper size and length trailer - with legal lights, safety chains and hold downs (in good condition):

- drive the ATV & ST50 to the trailer deck.
- lower the ST50 to the trailer deck and,
- stop the ATV Engine.
- strap securely the ATV and ST50 to the transporting trailer.

Check load on the trailer to make sure it is secure before transporting.

8. Maintenance

8.1 Service Intervals

Item #	Check Point	Use Hour Interval (change or check every interval)			
		Check Daily	50 Hours or Weekly	Annually	Manual Reference Page
1	Check Auger Assembly & fasteners to the Auger Housing.	X			
2	Check all Hardware and tighten.	X			
3	Ensure the ST50 Discharge Chute moves freely from right to left.	X			
4	Check Drive Belt Tension – Engine to the ST50 (2 belts). Check Auger Drive Chain Tension.		X		
5	Check all Drive Shields. Replace if damaged.			X	
6	Check Drive Belts (2) for Physical Wear.			X	
7	Check Drive Chain for Physical Wear.			X	



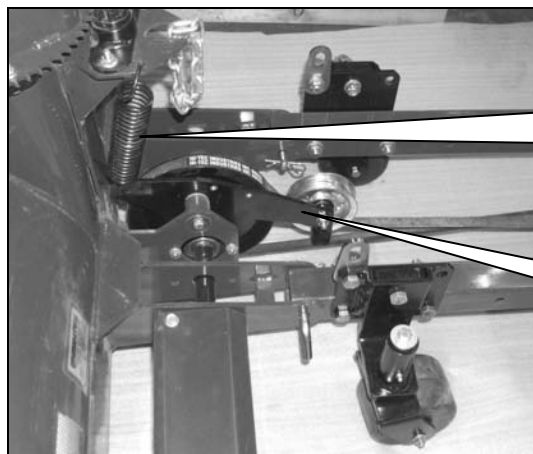
WARNING

Avoid personal injury by **ALWAYS** shutting the Power Unit engine **OFF**, and ATV engine **OFF** when working on the snow thrower. Wait for all drives to **STOP** before working on the unit.

Do not operate the Power Unit engine indoors or in an enclosed area. Exhaust fumes contain carbon monoxide – an odorless, deadly gas that can kill you.

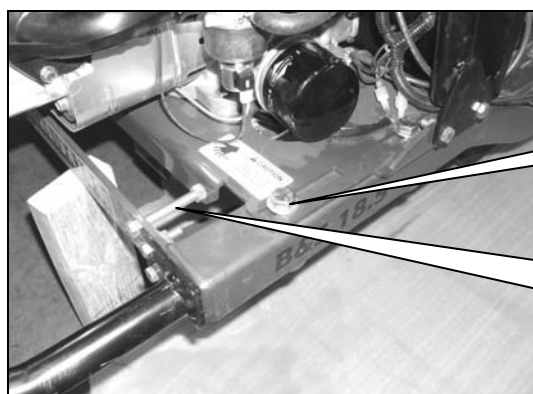
8.2 Drive Belt Tension Adjustment

The Snow Thrower Drive Belt Tension is adjusted with the belt tension spring at the rear of the Snow Blower. Since the two drive belts are connected via a free swinging idler arm, tightening the belt at the rear end of the Power Unit will also tighten the front Snow Thrower belt. First, measure the belt tension spring body with the belt loose. Then, draw the Power Unit motor base back until the belt tension spring stretches a further 1.25" (30mm) as shown below. Normally a stretched spring body length of 6.25 inches (159mm) will do.



Belt tension spring: Draw the Power Unit motor base back until the belt tension spring stretches a further 1.25" (30mm) as shown below. Normally a stretched spring body length of 6.25 inches (159mm) will do.

Belt Tension Idler Arm.
NOTE: Shield has been removed for clarity.



Loosen the 4 bolts (2 on each side) holding the engine plate to the frame of the Power Unit.

Tighten the adjuster bolts clockwise and ensure the belt tension idler spring at the snow thrower belt is stretched to a minimum of 6.25 inches (159 mm), re-tighten the 4 retaining bolts to the Power Unit frame.

8.3 Replacement of the Drive Belts

Before replacing belts, inspect and clean pulley sheaves. Check pulley alignment and correct. Rotate pulleys, with belt installed, to check alignment and bearings. Tension belt to approx. ½ inch (13mm).

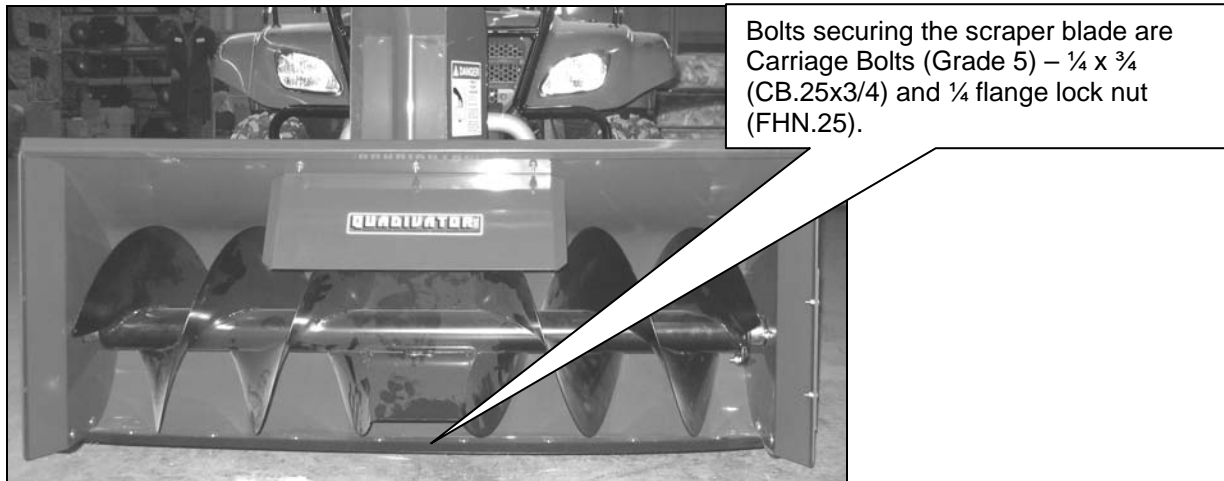
The Drive Belt – Quadivator Part# 89523 – runs from the Power Unit between two sets of idlers on the power unit, and to the top (large) idler on the Interframe. From the smaller lower pulley on the inter-frame to the Snow Thrower drive pulley, Part# 89530 is used. The left side of the belt goes under the spring-loaded idler pulley, over the snow thrower drive pulley, and back to right side of the smaller lower pulley on the inter-frame.

Belt Replacement – remove the tension from the front belt by disconnecting the tension spring. Then, remove the belt from the front driven pulley, idler pulley and small (lower) inter-frame pulley. Reinstall new belt in reverse order, refer to page 6 for correct routing procedure.

Refer to Power Unit Operators Manual for further information on installing belt from Power Unit to large inter-frame pulley.

8.4 Replacement of the Scraper Blade

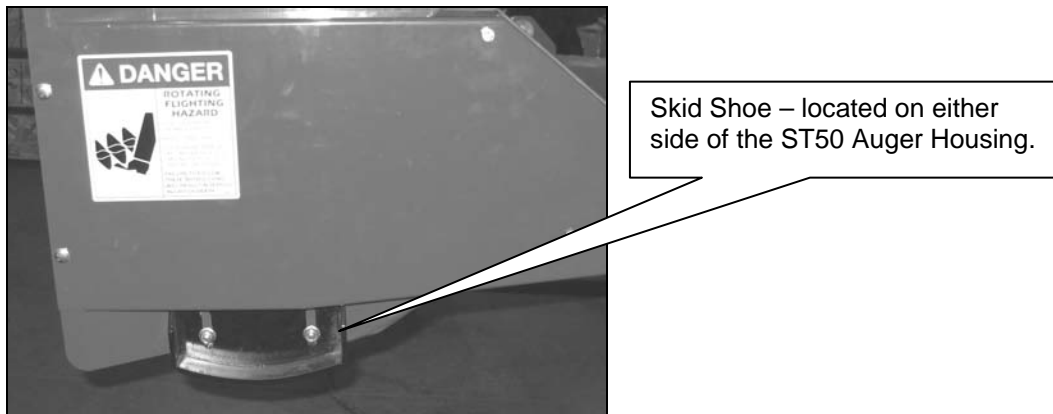
The scraper blade is located on the front of the ST50 Snow thrower housing. It protects the auger housing from wear and damage during snow thrower operation.



The scraper blade, Part # 89246 can be reversed. When both sides are worn, replace.

8.5 Replacement of the Skid Shoes

The skid shoes are located on either end of the ST50 Auger Housing.

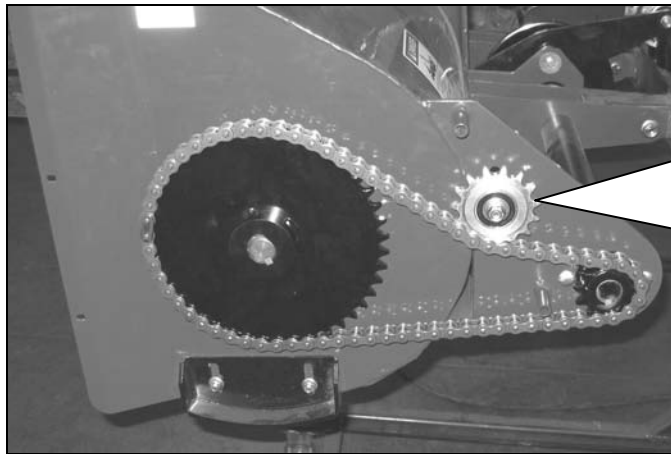


8.6 Auger Drive Chain Adjustment

The auger drive chain is located on the Left Hand Side of the ST50 auger housing.



Remove the LHS chain drive shield – 4 Bolts secure shield to auger housing.



Move the idler sprocket down to increase the chain tension – bottom deflection should be no more than 1/8 inch or 3mm.

ALWAYS replace the chain drive shield.

NEVER operate the ST50 without the chain drive cover securely in place.

8.7 Replacement of Auger Drive Chain

The auger drive chain can be changed by removing the auger drive shield on the Left Hand Side of the ST50 and locating the connector link on the chain. Remove the clip and the retaining link. Remove the old chain from the ST50 drive and replace with a new chain and connector link. Adjust chain tension and reinstall auger drive shield.





IMPORTANT: ALWAYS replace the chain drive shield on the left hand side of the ST50 Snow Thrower.

IMPORTANT: NEVER operate the ST50 Snow Thrower without the chain drive cover securely in place.

8.8 Torque Chart

The Torque Chart is to be used to ensure that the hardware used on the Quadivator Product is tightened adequately to the capacity of the hardware.

Use the Torque Chart to make sure that the hardware on your Quadivator Product is secure.

American Standard Cap Screws with UNC or UNF Threads				Metric Cap Screws			
SAE Grade No.		Grade 5 - 	Grade 8 - 	Property Class		Class 8.8 - 	Class 10.9 - 
5/16	(ft-lbs)	17 - 20.5	24 - 29	M8	(ft-lbs)	17.4 - 20.2	21.7 - 25.3
	(N-m)	23.1 - 27.8	32.5 - 39.3		(N-m)	23.6 - 27.4	29.4 - 34.3
	(kgf-m)	2.35 - 2.84	3.31 - 4.01		(kgf-m)	2.4 - 2.8	3.0 - 3.5
3/8	(ft-lbs)	35 - 42	45 - 54	M10	(ft-lbs)	35.5 - 41.2	44.9 - 52.1
	(N-m)	47.5 - 57.0	61.0 - 73.2		(N-m)	48.1 - 55.8	60.8 - 70.5
	(kgf-m)	4.84 - 5.82	6.22 - 7.47		(kgf-m)	4.9 - 5.7	6.2 - 7.2
1/2	(ft-lbs)	80 - 96	110 - 132	M12	(ft-lbs)	57.2 - 66.5	76.0 - 86.8
	(N-m)	108.5 - 130.2	149.2 - 179.0		(N-m)	77.5 - 90.1	103 - 117
	(kgf-m)	11.07 - 13.29	15.22 - 18.27		(kgf-m)	7.9 - 9.2	10.5 - 12.0
9/16	(ft-lbs)	110 - 132	160 - 192	M14	(ft-lbs)	91.2 - 108	123 - 144
	(N-m)	149.2 - 179.0	217.0 - 260.4		(N-m)	124 - 147	167 - 196
	(kgf-m)	15.22 - 18.27	22.14 - 26.57		(kgf-m)	12.6 - 15.0	17.0 - 20.0
5/8	(ft-lbs)	150 - 180	220 - 264	M16	(ft-lbs)	145 - 166	192 - 224
	(N-m)	203.4 - 244.1	298.3 - 358.0		(N-m)	196 - 225	260 - 303
	(kgf-m)	20.75 - 24.91	30.44 - 36.53		(kgf-m)	20.0 - 23.0	26.5 - 31.0

9. Troubleshooting

Refer to the Power Unit Operators Manual and Engine Operation & Maintenance Manual for further troubleshooting information.

Problem	Probable Cause	Correction
Engine Stops	1. Out of fuel.	1. Fill the fuel tank.
	2. Fuel shut off valve - Closed	2. Open the fuel shut off valve.
	3. Mechanical Jam in the auger.	3. Turn off the engine, remove key, wait for all moving parts to stop. Check for and remove obstruction and repair ST50 before re-start.
	4. Polluted fuel supply.	4. Replace with clean fuel.
	5. Faulty Spark Plug.	5. Clean or replace spark plug.
	6. Kill Switch in OFF Position.	6. Move Kill Switch to ON Position.
Auger will not Turn	1. Worn or Broken Drive Belt.	1. Replace the drive belt and tension.
	2. Worn or Broken Auger Drive Chain.	2. Re-Attach the Chain and/or Tension to 1/8". Replace worn chain and chain link.
	3. Inadequate Drive Belt Tension.	3. Tension Belt Correctly.
Snow Thrower Operation is Erratic	1. Belt Slips.	1. Check belt tension – approx. 1/2" deflection.
	2. Worn Drive Belt.	2. Replace the Drive Belt.
	3. Worn Auger Drive Chain.	3. Replace drive chain and tension to 1/8 inch.
Snow Thrower removes Snow Unevenly	1. Snow Thrower is not level to surface.	1. Adjust skid shoes so unit is level to surface.
Belt Wears too Fast or Breaks prematurely	1. Adjust Belt Guide Pulleys.	1. Adjust Belt Guide Pulleys.
	2. Adjust Belt Tension.	2. Adjust Belt Tension -1/2" deflection (approx).
	3. Check Pulley Alignment.	3. Align pulleys and/or replace worn parts.

10. Replacement Parts

The following pages contain parts illustrations and replacement part numbers for all components on the Quadivator Snow Thrower. At time of printing, some of the minor parts in the manual may become outdated. To obtain replacement parts, please contact Quadivator for service. To locate the nearest dealer, contact a Quadivator Representative, using the contact information at the front of the manual.

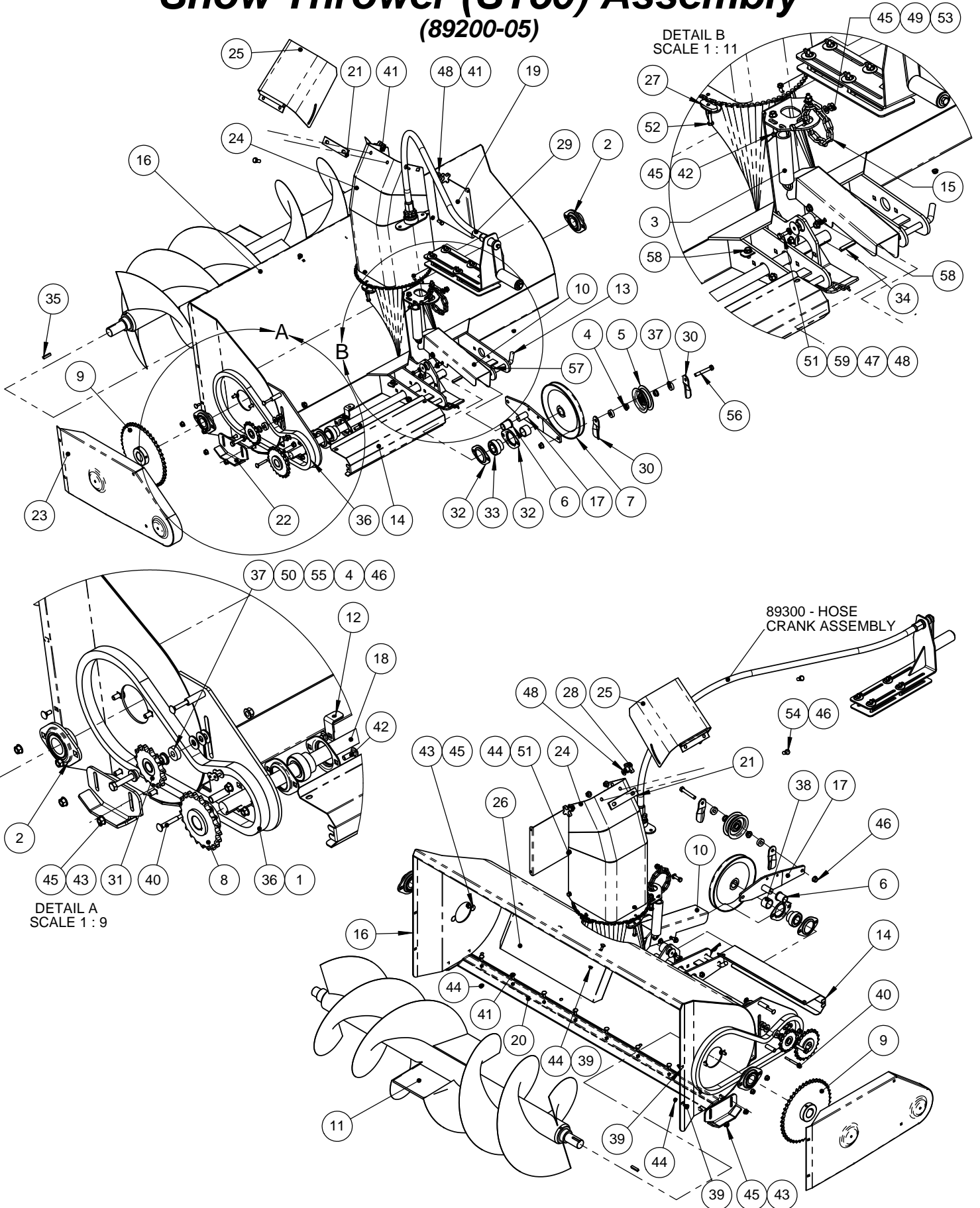
When ordering parts – have the following information on hand:

- *Part Number* you are looking for.
- *Model Number and Serial Number* of the machine.
- *Quantity* required.

To ensure warranty support for your Quadivator, please fill out the Warranty Registration Card located at the front of the Operators Manual.

Snow Thrower (ST50) Assembly

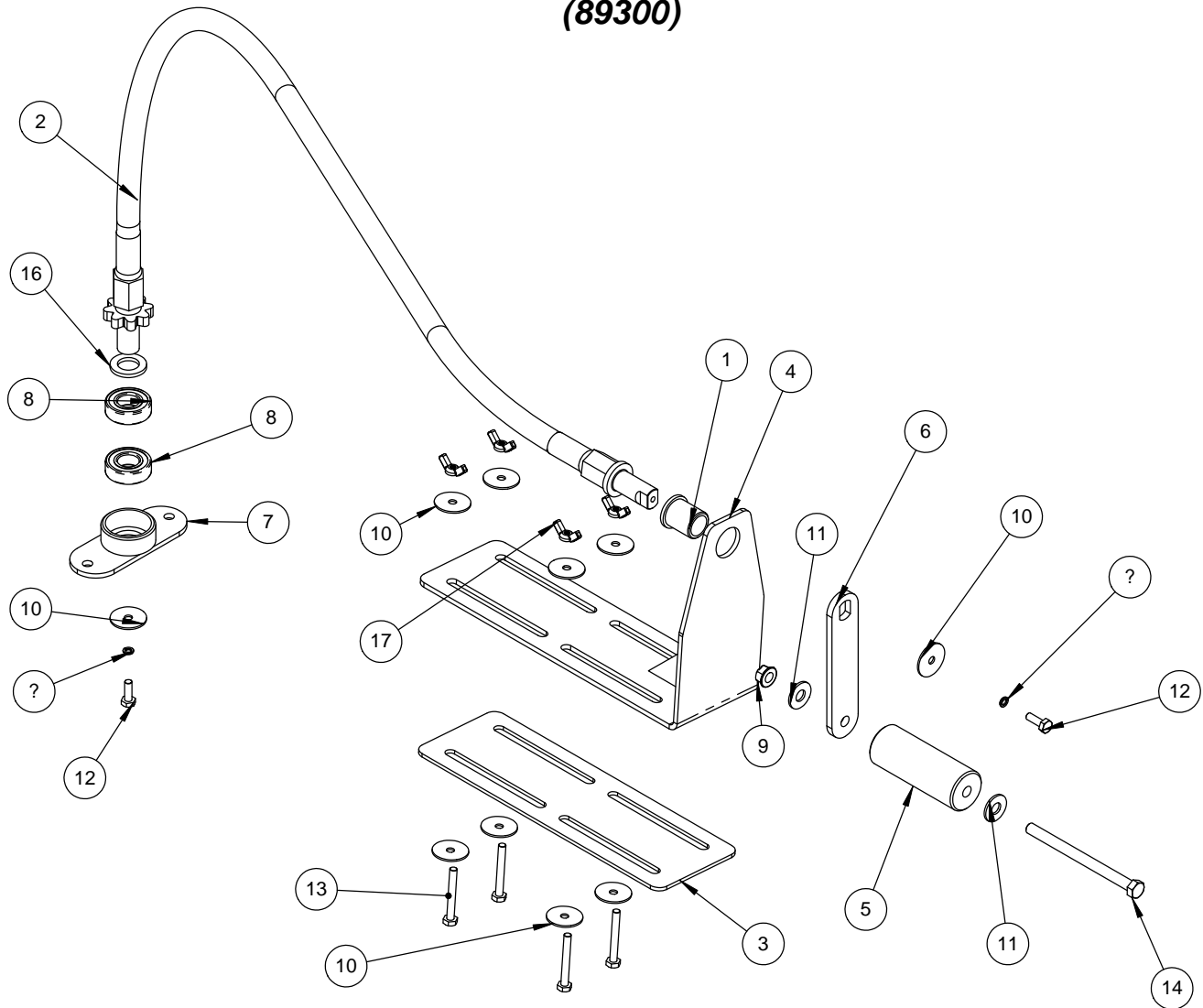
(89200-05)



Snow Thrower (ST50) Assembly (89200-05)

ITEM	PART	DESCRIPTION	QTY.	Effective Ser. #.
1	11111	Connector Link # 50	1	0
2	14721	Bearing Unit-Pressed Steel Housing SBPFL206-20	2	0039
3	17979	Extension Spring (.177 x 1-1/2 x 6 in Long)	1	0
4	88540	Spacer - Bushing	4	0
5	88574	Idler Pulley - 3"	1	0
6	88579	UNMW - Flange Bearing	1	0
7	89085	Weldment - 8" Pulley	1	0
8	89090B	Sprocket - #50 x 21t, 1" Bore	1	0039
9	89095C	Weldment - Sprocket, Large	1	0039
10	89204	Shield - Belt Drive	1	0
11	89205B	Weldment - Auger, Blower 08	1	0200
12	89208	Tab -Shaft Shield Mount-Front	2	0
13	89209	Pin, Bent 1/2"	2	0
14	89211	Shield - Cross Shaft	1	0
15	89214	Chain Assy-Lift	1	0
16	89220A	Weldment - Blower Shroud-05	1	0039
17	89235	Weldment - Idler Arm	1	0
18	89237	Shaft - Lateral Drive	1	0
19	89239	Deflector - Discharge	1	0
20	89246	Angle - Cutting Edge	1	0
21	89258	Spacer - Chute Hinge	1	0200
22	89260B	Skid Shoe, Snow Thrower. Formed	2	0200
23	89265B	Shield - Chain -Dimpled-21t	1	0039
24	89270	Weldment - Spout	1	0
25	89275	Weldment - Adjustable Chute	1	0
26	89276	Shield -Auger Deflector	1	0
27	89280	Weldment - Spout Guide	4	0
28	89297	Knob -1/4-20 NC	2	0
29	89300	Assembly - Hose Crank -05	1	0
30	89306	Guide - Belt	2	0
31	89515	Idler Sprocket w/bearing	1	0
32	89522	Flangette, 52 mm 2 Bolt	4	0
33	89524	Bearing, locking - NTN CS205-100LLU	2	0
34	89526	Key Stock, 1/4x1/4x 40 mm	1	0
35	89527	Key Stock 1/4x1/4x 30 mm	2	0
36	89528	Roller Chain- Tsubaki, # 50, 75 Pitches	1	0
37	89529	Spacer - Pulley	3	0
38	89532	Tube - Pulley Spacer	1	0
39	CB.25X.625	Carriage Bolt 1/4 x 5/8 gR 5	5	0
40	CB.25x2.5	Carriage Bolt, 1/4 x 2 1/2 Gr 5	2	0
41	CB.25x3/4	Carriage Bolt 1/4 x 3/4	10	0
42	CB.313x1	Carriage Bolt 5/16 x 1	4	0
43	CB.313x3/4	Carriage Bolt 5/16 x 3/4	10	0
44	FHN.25	Flange Lock Nut-1/4 NC Unitorque	23	0
45	FHN.313	Flange Lock Nut, Unitorque 5/16 NC	15	0
46	FHN.375	Flange Lock Nut-3/8 NC Unitorque	4	0
47	FNW.27X1.25	Fender Washer, .27 ID x 1.25 OD x .04	1	0
48	FW.25	Flat Washer - 1/4 Standard	3	0
49	FW.313N	Flat Washer 5/16 SAE	2	0
50	FW.375	Flatwasher, 3/8 Std	3	0
51	HB.25x.75	Hex Head Bolt 1/4-20 X 3/4	5	0
52	HB.25x1	Hex Head Bolt 1/4-20 X 1	4	0
53	HB.313x1.25	Hex Head Bolt 5/16-18 X 1 1/4	1	0
54	HB.375x.75	Hex Head Bolt 3/8-16 X 3/4	2	0
55	HB.375x2	Hex Head Bolt 3/8-16 X 2	1	0
56	HB.375x2.5	Hex Head Bolt 3/8-16 X 2 1/2	1	0
57	HPC.125X2.563	Hitch Pin Clip 1/8 x 2 - 9/16"	1	0
58	HWTCS.313X.625	HX WSHR HD THRD Cutting Screw 5/16-18 x 5/8	4	0
59	LW.3125	Lockwasher-5/16	1	0

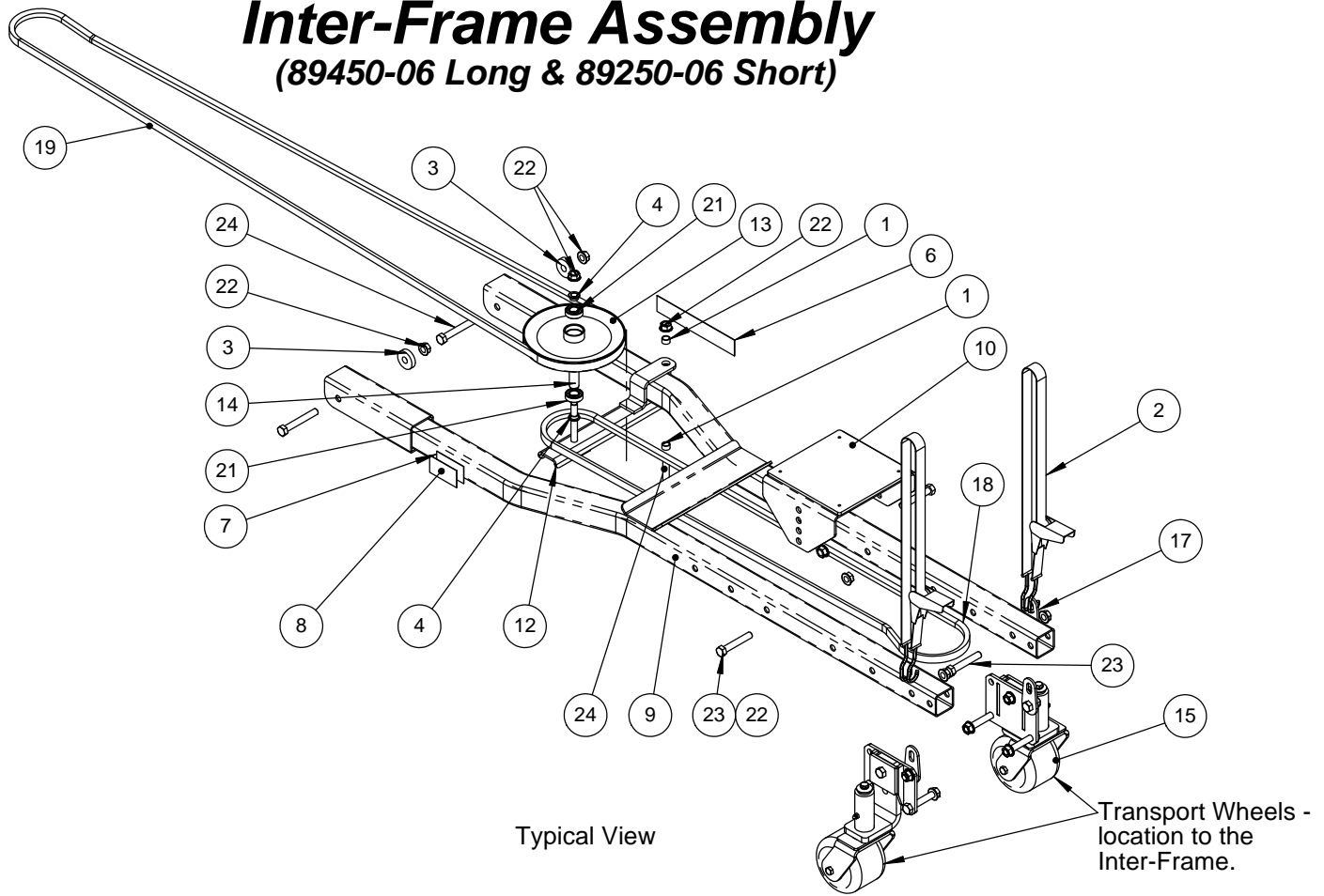
Hose Crank Assembly (89300)



ITEM	PART	DESCRIPTION	89300A /QTY.
1	88579	UNMW - Flange Bearing	1
2	89285	W.A. - Hose Crank	1
3	89307	Plate - Clamp	1
4	89310	W.A. - Bracket, Crank	1
5	89312	Handle - Crank	1
6	89316	Plate - Crank Lever	1
7	89355	W.A. - Hub	1
8	89552	Bearing - 6205-2RS ID-25, OD-52 & W-15	2
9	FHN.375	Flange Lock Nut-3/8 NC Unitorque	1
10	FNW.27x1.25	Fender Washer, 9/32" ID x 1 1/4" OD	10
11	FW.375	Flat Washer 3/8 Std	2
12	HB.25x.75	Hex Head Bolt 1/4-20 X 3/4	2
13	HB.25x2	Hex Head Bolt 1/4-20 X 2	4
14	HB.375x5	Hex Head Bolt 3/8-16 X 5	1
15	LW#12	Lockwasher-#12	2
16	MB.134x.75x1.25	Machinery Bushing 10 Gage x .75" x 1.25"	1
17	wng.25	Wing Nut, 1/4-20	4

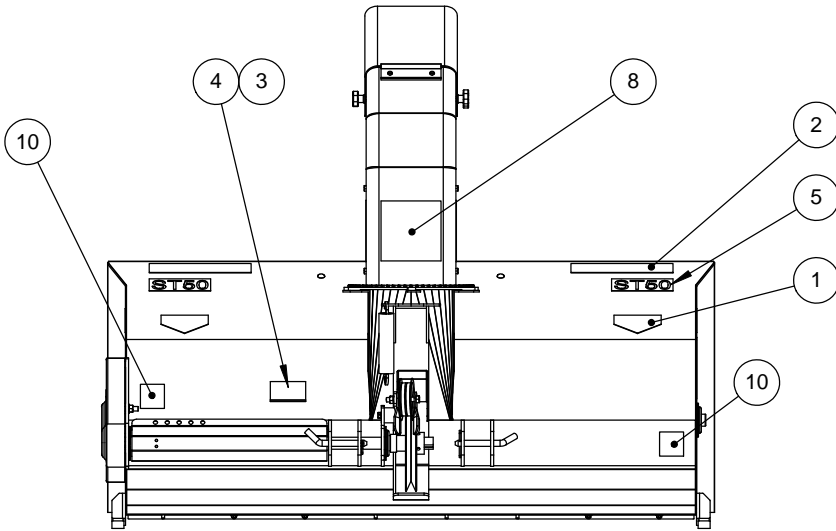
Inter-Frame Assembly

(89450-06 Long & 89250-06 Short)

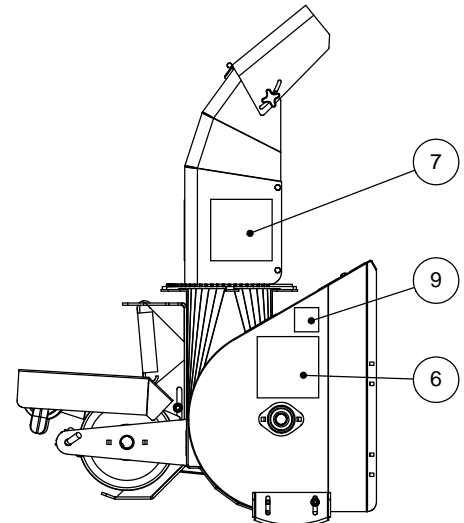


ITEM	PART	DESCRIPTION	89450-06/QTY.	89250-06/QTY.
1	19-5-91	Bushing -Oilite 12.7ID x 16OD x 9.4 Long	2	2
2	86803	Ratchet Strap -05500 1 x 6	2	2
3	88403	Washer - Retainer	2	2
4	88545	Spacer - Bushing	2	2
18	88645	Belt B225 - Blower Drive	1	-
6	88665	Decal-Quadivator Corp-1.75 x 8.5"	1	1
7	88666	Decal - Serial Plate Foil (1 5/8 x 3.00")	1	1
8	88667	Decal - Mylar Overlay, Frosted	1	1
9	89240A	Weldment - Inter-Frame, short	-	1
10	89245	Assembly - Bumper Pad	-	1
10	89245	Assembly - Bumper Pad	1	-
12	89290	Weld't - Pulley Mount Swing Arm	1	1
13	89315B	Pulley -Double Idler Weld't -4.5&8	1	1
14	89318	Bushing -Spacer -Dbl Pulley	1	1
15	89350	Kit- Single Caster Wheel Assy	1	1
8	89440	Weldment - Inter-Frame-Long	1	-
17	89442	Lug, Ratchet Strap Base	2	1
18	89523	V Belt -B116, Kevlar (USA) (4404)	-	1
19	89530	V Belt -B133, Kevlar(7-8727)	-	1
18	89545	V Belt- B136, Kevlar	1	-
21	89824	Bearing 6003-2RS-AAB	2	2
22	FHN.5	Flange Lock Nut-Unitorque -1/2-13NC	8	8
23	HB.5x3	Hex Head Bolt 1/2-13 X 3	4	3
24	HB.5x3.5	Hex Head Bolt 1/2-13 X 3 1/2	3	3
25	LCT.04x11	Tie Wrap .04 x .17 x 11 in 35 Lbs-Black (not shown)	3	3

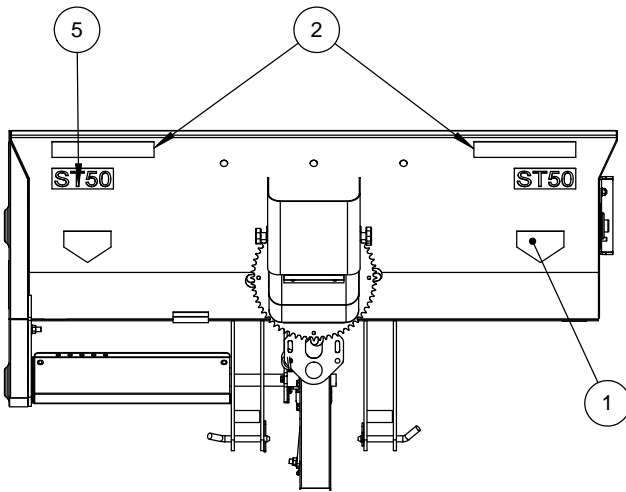
Decals



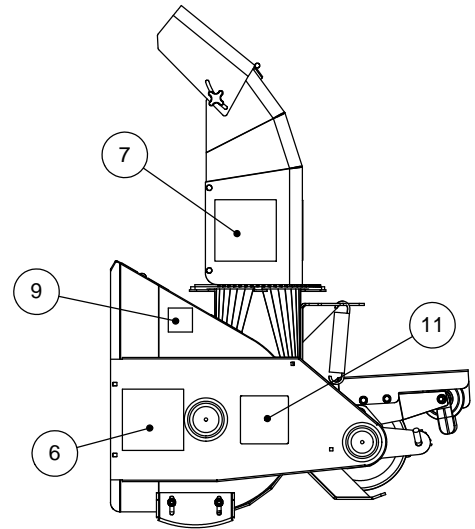
REAR



L.H. SIDE



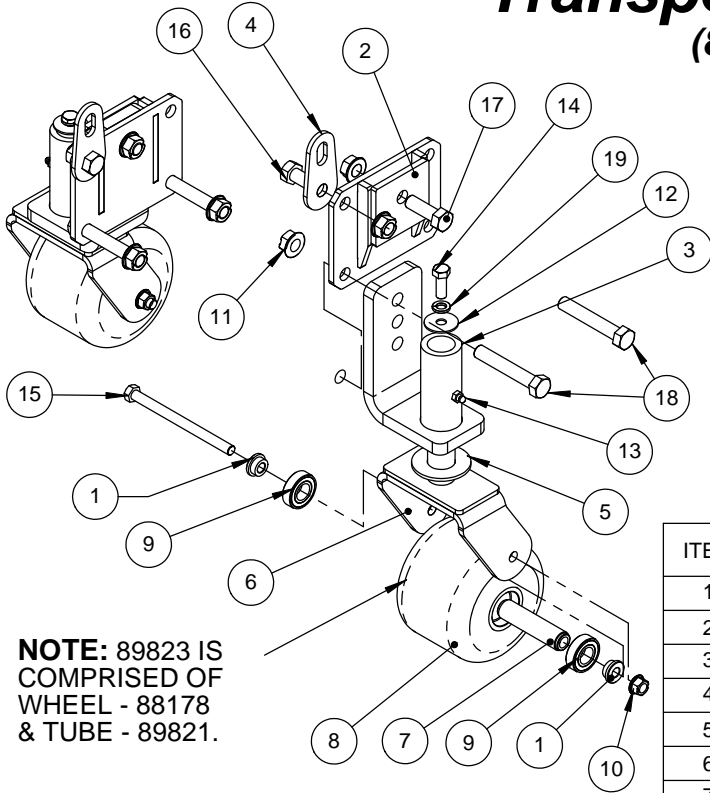
TOP



R.H. SIDE

ITEM	PART	DESCRIPTION	QTY.
1	88590	Decal - Warning (Keep Hands and Feet Away)	2
2	88665	Decal-Quadivator Corp-1.75 x 8.5"	2
3	88666	Decal - Serial Plate Foil (1 5/8 x 3.00")	1
4	88667	Decal - Mylar Overlay, Frosted	1
5	89540	Decal, Model - ST50	2
6	89541	Decal, Warning - ST50 Foot	2
7	89542	Decal, Warning - ST50 Hand	2
8	89543	Decal, Warning - ST50 General	1
9	89881	Decal - Amber reflective Tape 51 x 51	2
10	89882	Decal -Red reflective Tape 51 x 51	2
11	SW108	Decal-Danger-Moving Parts	1

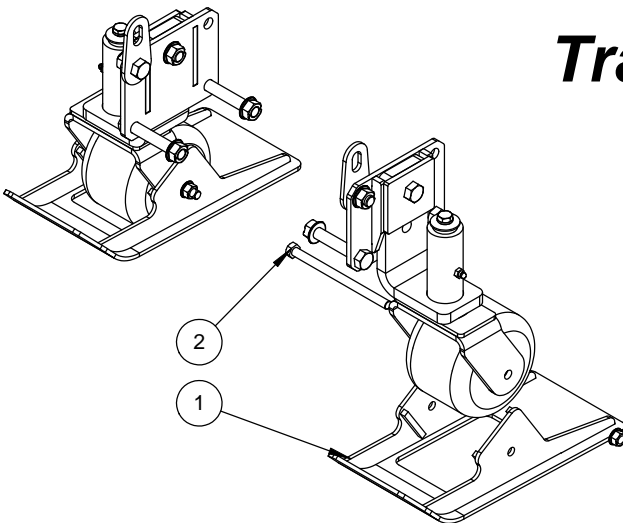
Transport Wheels (89350)



NOTE: 89823 IS COMPRISED OF WHEEL - 88178 & TUBE - 89821.

The Transport Wheels carry the weight of the Snow Thrower (or Power Broom) attachment. Depending on the stiffness of the ATV - this option may or may not be needed.

ITEM	PART	DESCRIPTION	Default/ QTY.
1	88540	Spacer - Bushing	4
2	89320	W.A. - Bracket, Caster	2
3	89325	W.A. - Leg, Interframe Caster	2
4	89442	Lug, Ratchet Strap Base	2
5	89753	Washer - Caster	2
6	89765	W.A. - Caster Wheel Mount	2
7	89822	Tube -Bearing Spacer -Castor	2
8	89823	Assy-Rubber Wheel	2
9	89824	Bearing 6003-2RS-AAB	4
10	FHN.375	Flange Lock Nut-3/8 NC Unitorque	2
11	FHN.5	Flange Lock Nut-Unitorque -1/2-13NC	8
12	FNW.375x1.25	Flt Fndr Wshr 3/8"IDx1.25"ODx.06Thick	2
13	GZ.25	Grease Zerk 1/4-28 Straight	2
14	HB.375x1	Hex Head Bolt 3/8-16 X 1	2
15	HB.375x5	Hex Head Bolt 3/8-16 X 5	2
16	HB.5x1	Hex Head Bolt 1/2-13 X 1	2
17	HB.5x1.5	Hex Head Bolt 1/2-13 X 1 1/2	2
18	HB.5x3	Hex Head Bolt 1/2-13 X 3	4
19	LW.375	Lockwasher-3/8	2



Transport Skis (89360)

ITEM	PART	DESCRIPTION	QTY.
1	89815	W.A. - Ski, Caster	2
2	HB.375x5.5	Hex Head Bolt 3/8-16 X 5 1/2	2

The Transport Ski Option is to prevent the Transport Wheels from skidding in heavy or wet snow conditions.

11. How to order Repair Parts

The Operators Manual contains the replacement part numbers of all components of the Quadivator ST50 Snow Thrower. At the time of printing, some of the minor parts in the manual may become outdated.

To obtain replacement parts, please contact your Quadivator Dealer for Service. To locate the nearest dealer, please contact a Quadivator Representative using the contact information below.

When ordering parts – please have the following information:

- *Part Number* you are looking for.
- *Model and Serial Number* of the machine.
- *Quantity* required.

To ensure warranty support for your Quadivator Product, please fill out the Warranty Registration card included in the Operators manual.

12. Contact Information

Quadivator Inc.

Box 218

1000 – 6th Ave NE

Portage la Prairie, Manitoba (MB)

Canada, R1N 3B5

E-mail: mailbox@quadivator.com

Website: www.quadivator.com

Tel. 1 (866) 770-2169

Fax. 1 (204) 239-4271

13. Quadivator Warranty Policy

Refer to the inside front cover for Quadivator Warranty Policy.

WARRANTY REGISTRATION – Quadivator ST50 Snow Thrower

Please fax this sheet to (204) 239-4271 or mail it to:

Quadivator Inc.
P.O. Box 218
1000 – 6th Ave NE
Portage la Prairie
Manitoba R1N 3B5
CANADA

Snow Thrower Model # -

Snow Thrower Serial # -

Purchased by (Name)

Address

City

State/Prov/Mail Code

Dealer

Date Purchased (D/M/Yr)

Thank you!

