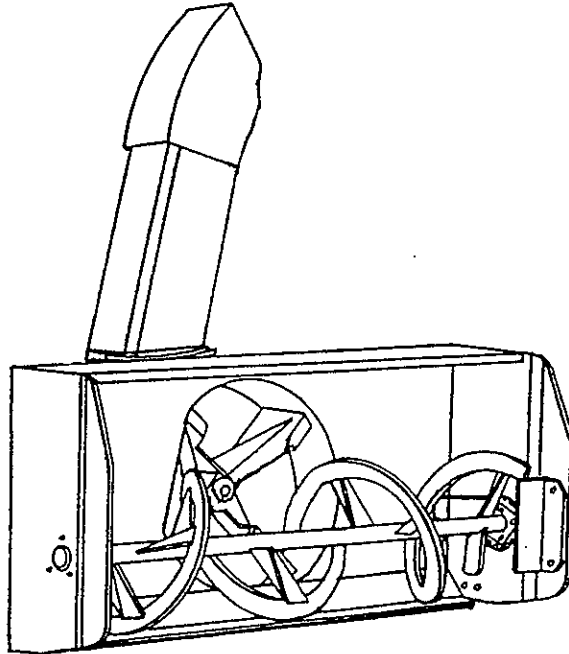


OPERATOR'S AND PARTS MANUAL



SE 73 3 POINT HITCH TWO STAGE SNOWBLOWER

MODELS STARTING AT SERIAL NO. 9700101

05/97
OM 0235

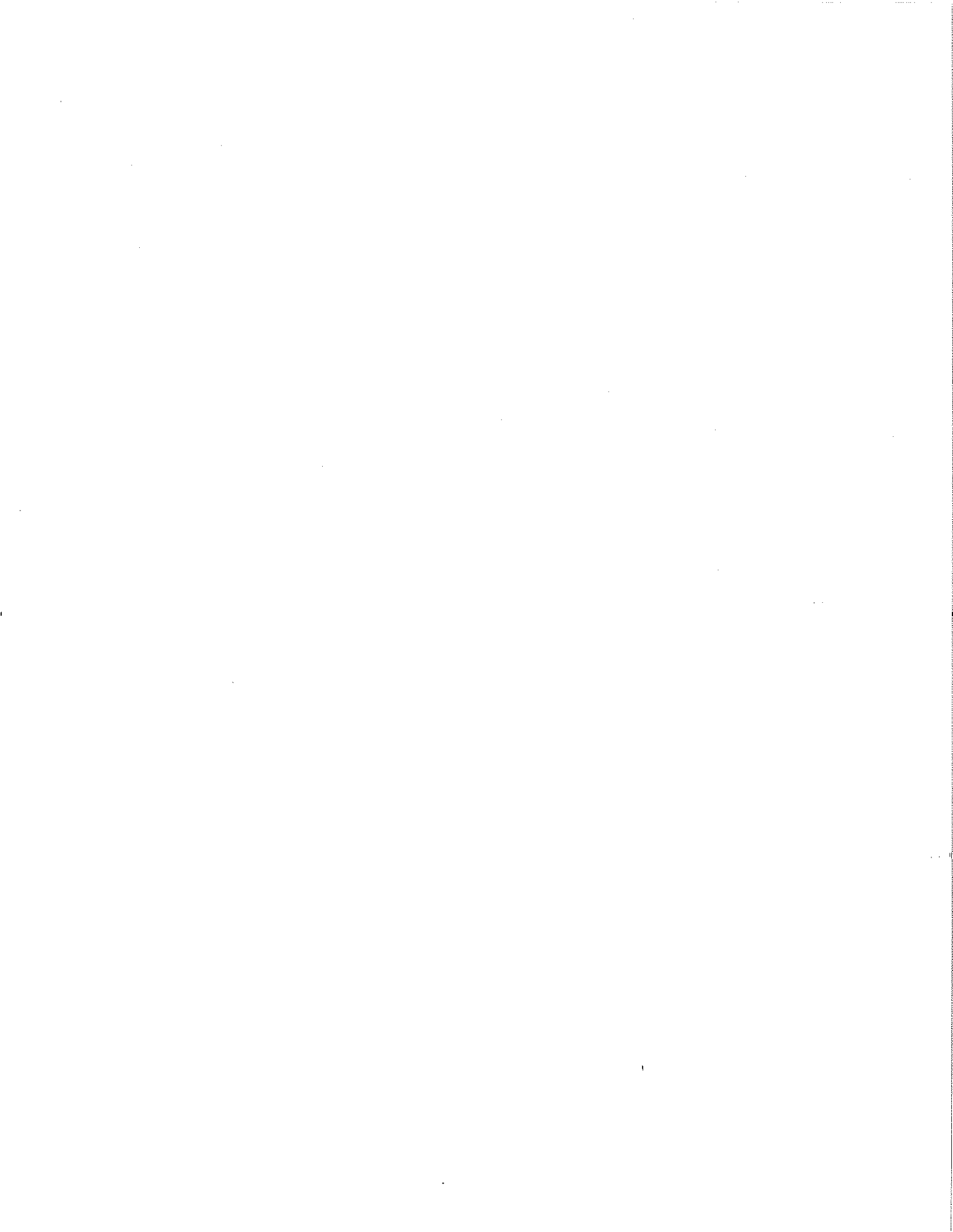


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INTRODUCTION

To the purchaser

This new snowblower was carefully designed to give you years of dependable service.

This manual has been provided to assist in the safe operation and service of your new snowblower.

NOTE: All photographs and illustrations in the manual are intended for reference only and are based on the latest product information available at the time of publication.

Familiarize yourself fully with the safety recommendations and operating procedures before operating the machine. Carefully read, understand and follow these recommendations and make sure other operators of the machine understand safe operation.



This symbol, the industry's "Safety Alert Symbol" is used throughout this manual and on the snowblower's safety labels to warn of the possibility of personal injury. Grass Hopper requests that you take special care in reading and understanding the safety precautions before operating the snowblower or the tractor.

Record your snowblower serial number and model. Your dealer requires this information to give you prompt efficient service when ordering parts or attachments. Service with genuine **RAD** parts when replacement parts are required.

Right hand and left hand are determined by sitting on the tractor seat facing forward.

MODEL _____

SERIAL NUMBER _____

DATE PURCHASED _____

SAFETY PRECAUTIONS



Careful operation is your best insurance against an accident. Read this section carefully before operating the tractor and snowblower. All operators, no matter how experienced they may be, should read this and other related manuals before operating the snowblower. It is the owner's legal obligation to instruct all operators in safe operation.

BEFORE OPERATION

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on the snowblower's safety labels to warn of the possibility of personal injury. Grass Hopper requests that you take special care in reading and understanding the safety precautions before operating the snowblower or the tractor.

1. Read and understand this Operator's Manual and the tractor Operator's Manual. Know how to operate all controls and how to stop the unit and disengage the controls quickly.
2. Never allow other persons to operate the equipment without proper instruction. Never allow children to operate the equipment.
3. Keep the area of operation clear of all bystanders, especially small children and pets.
4. Never wear loose, torn, or bulky clothing around the tractor and snowblower. It may catch on moving parts or controls, leading to the risk of accident. Use additional safety items -- hard hat, safety boots or shoes, eye and hearing protection, gloves, etc... as appropriate or required.
5. Before the snow season, thoroughly inspect the area where the equipment is to be used and remove all door mats, sleds, boards, wires and other foreign objects.
6. Disengage PTO (POWER TAKE OFF), and shift into neutral before starting the engine.
7. Do not operate equipment without wearing adequate winter outer garments.
8. Adjust collector housing height to clear gravel or crushed rock surface.
9. Never attempt to make any adjustments while engine is running.
10. Do not work under a raised snowblower.
11. Escaping hydraulic/diesel fluid under pressure can penetrate the skin. Use a piece of cardboard or paper rather than your hands to search for leaks.

SAFETY PRECAUTIONS

OPERATION

1. Make sure the drivelines are attached properly before operation.
2. Before dismounting, take all possible precautions. Disengage PTO, lower the attachment, shift into neutral, set the parking brake, stop the engine, and remove the key.
3. Before starting, remove any ice that has accumulated in the auger and fan.
4. Watch carefully for foreign objects that could enter the blower while operating.
5. Make sure that the PTO is in the **NEUTRAL** position before starting engine.
6. Do not put hands or feet near rotating parts. Keep clear of discharge opening at all times.
7. Exercise extreme caution when operating on or crossing a gravel drive, walks, or roads. Stay alert for hidden hazards of traffic. Do not carry passengers.
8. Use a piece of wood or stick (36" minimum length) to unplug spout, do not use hands or feet.
9. Use adequate safety warning lights. Check local regulations.
10. Stop the engine, remove the key, set the parking brake, and allow the rotating parts to stop before unclogging the collector/impeller housing or discharge guide, and before making any repairs, adjustments or inspections.
11. If the snowblower starts to vibrate abnormally, stop the engine immediately, and check for the cause. Excessive vibration is generally a sign of trouble.
12. Do not run the engine indoors except when starting engine and transporting snowblower in or out of building. Do not operate or idle engine in non-ventilated area. Carbon monoxide gas is colorless, odorless and deadly.
13. Do not clear slopes. Exercise extreme caution when changing direction on slopes. Do not attempt to clear steep slopes.
14. Never operate snowblower without guards, plates, and other safety protective devices in place.
15. Never operate snowblower near glass enclosures automobiles, window well, embankments etc., without proper
16. Never operate machine at high transport speeds on a slippery surface.

SAFETY PRECAUTIONS

17. Use extra caution when backing up.
18. Do not direct discharge at bystanders or animals. Ejected objects may cause injury.
19. Disengage power to auger/fan when transporting or when not in use.
20. Never operate the snowblower without good visibility and lighting.
21. Use only approved tire chains and rear counterweights for better traction and stability.
22. Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable noises.

WHENEVER YOU SEE THIS SYMBOL !



IT MEANS:

ATTENTION!

BECOME ALERT!

YOUR SAFETY IS INVOLVED!

SAFETY DECALS

REPLACE IMMEDIATELY IF DAMAGED
(see your dealer)

! WARNING

FAILURE TO FOLLOW SAFE OPERATING PROCEDURES MAY RESULT IN INJURY.

- FOR SAFE OPERATION FOLLOW ALL OPERATING INSTRUCTIONS AND SAFETY PRECAUTIONS IN OPERATOR'S MANUAL.
- EYE PROTECTION MUST BE WORN AT ALL TIMES.
- KEEP HANDS, FEET AND CLOTHING AWAY FROM POWER DRIVEN PARTS.
- STOP ENGINE BEFORE LEAVING OPERATOR POSITION.
- WAIT FOR ALL MOVEMENTS TO STOP BEFORE STARTING TO ADJUST, LUBRICATE, CLEAN OR UNCLOG THE MACHINE.
- KEEP THE AREA OF OPERATION CLEAR OF ALL PERSONS AND ANIMALS.
- KEEP ALL GUARDS AND SHIELDS IN PLACE.
- NEVER DIRECT DISCHARGE TOWARD BY-STANDERS, BUILDINGS, CARS ETC.
- ALWAYS USE A DUST MASK WHEN WORKING IN DUSTY CONDITIONS.
- KEEP PLASTIC MATERIALS AWAY FROM INTENSE HEAT AND OPEN FLAME.
- NEVER ALLOW PASSENGERS ON THE ATTACHMENT.

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! MISE EN GARDE

NÉGLIGER DE SUIVRE LES PROCÉDURES SÉCURITAIRES D'UTILISATION PEUT ENTRAÎNER DES BLESSURES.

- POUR UNE UTILISATION SÉCURITAIRE SUIVRE TOUTES LES INSTRUCTIONS D'UTILISATION ET PRÉCAUTIONS SÉCURITAIRES DANS LE MANUEL DE L'OPÉRATEUR.
- PORTER DES LUNETTES DE SÉCURITÉ EN TOUT TEMPS.
- GARDER MAINS, PIEDS ET VÊTEMENTS ÉLOIGNÉS DES PIÈCES MOTRICES.
- ARRÊTER LE MOTEUR AVANT DE QUITTER LA POSITION DE L'OPÉRATEUR.
- ATTENDRE QUE TOUTS LES MOUVEMENTS SOIENT ARRÊTÉS AVANT D'AJUSTER, LUBRIFIER, NETTOYER OU DÉBLOQUER LA MACHINE.
- GARDER L'ENDROIT DÉGAGÉ DE TOUTES PERSONNES ET ANIMAUX.
- GARDER TOUS LES ÉCRANS PROTECTEURS EN PLACE.
- JAMAIS DIRIGER L'ÉVACUATION VERS DES PIÉTONS, BÂTIMENTS, AUTOMOBILES, ETC.
- TOUJOURS UTILISER UN MASQUE À POUSSIÈRE DANS UN ENVIRONNEMENT POUSSIÉREUX.
- GARDER TOUTES LES MATIÈRES PLASTIQUES ÉLOIGNÉES DE LA CHALEUR INTENSE ET DES FLAMMES.
- NE JAMAIS PERMETTRE DE PASSAGERS SUR CETTE MACHINE.

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! DANGER




AVOID INJURY FROM ROTATING AUGER
KEEP HANDS, FEET AND CLOTHING AWAY

POUR ÉVITER DES BLESSURES GRAVES:
GARDER LES MAINS, LES PIEDS ET LES VÊTEMENTS ÉLOIGNÉS DES VIS
SANS FIN

67

656780

! DANGER




TO AVOID SERIOUS INJURY:
KEEP HANDS OUT OF THIS DISCHARGE CHUTE WHILE ENGINE IS RUNNING

POUR ÉVITER DES BLESSURES GRAVES:
GARDER LES MAINS ÉLOIGNÉES DE CETTE GOULOTTE LORSQUE LE MOTEUR EST EN MARCHÉ

86

656779

! DANGER



ROTATING DRIVELINE
CONTACT CAN CAUSE DEATH
KEEP PEOPLE AND CLOTHING WELL CLEAR

DO NOT OPERATE WITHOUT—

- ALL DRIVELINE, TRACTOR AND EQUIPMENT SHIELDS IN PLACE
- DRIVELINES SECURELY ATTACHED AT BOTH ENDS
- DRIVELINE SHIELDS THAT TURN FREELY ON DRIVELINE

TRANSMISSION ROTATIVE À CARDAN
TOUT CONTACT PEUT CAUSER LA MORT
TENIR VÊTEMENTS ET PERSONNES À L'ÉCART

NE PAS OPÉRER SANS—

- QUE TOUTS LES PROTECTEURS DU TRACTEUR, DE L'ÉQUIPEMENT ET DE L'ARBRE À CARDAN SOIENT EN PLACE
- L'ARBRE À CARDAN FIXÉ SOLIDEMENT À CHAQUE BOUT
- QUE LES PROTECTEURS TOURNENT LIBREMENT SUR L'ARBRE À CARDAN

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IMPORTANT

Before using:

- Oil level must be checked.
- Fill with "AGMA No 5 EP" extreme pressure oil
- Read instructions manual.

IMPORTANT

Avant usage:

- Vérifier niveau d'huile.
- Remplir avec de l'huile pour extrême pression "AGMA No 5 EP"
- Lire manuel d'instructions.

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OPERATION

PREPARING FOR SNOW REMOVAL



WARNING:

1. Read the Operator's Manual carefully. Be thoroughly familiar with the controls and proper use of the equipment. Know how to stop the unit and disengage the controls quickly.
2. Never allow children to operate equipment. Never allow adults to operate equipment without proper instruction.
3. Do not allow anyone other than the operator on the tractor.
4. Keep the area of operation clear of all persons.
5. Clothing worn by the operator should be fairly tight and belted. Loose clothing should not be permitted because of danger of getting into moving parts.
6. Start the tractor engine.
7. Before engaging the snowblower drive, always have the engine running at idle.
8. Operate the snowblower at maximum RPM.
9. Grease each U-joint fitting. Slide driveline shaft apart and coat sliding surfaces with grease.
10. Check the drive shaft to be sure it is not obstructed in any way, particularly by the tractor drawbar. Pay special attention when the snowblower is raised and lowered for the first time, that the driveline shaft is not too long or too short.
11. Check sprocket alignment.
12. Lubricate chute base and adjust rotation cable if necessary.
13. Tire chains and front bumper weights are recommended for better traction and stability.

OPERATING THE SNOWBLOWER

1. Make sure that the snowblower is clear of snow before engaging the snowblower.
2. Make sure that the auger and fan operate freely.
3. Check the oil level in the worm gear box and if necessary, add AGMA 5EP or SAE 90 extreme pressure oil.
4. Check the three shear bolts, one on each auger section, and one between the fan and gearbox for proper tightness.
5. Adjust so that the snowblower runs level.

REMOVING SNOW

When removing snow, do not use the snowblower as a dozer blade to push snow. Let the snowblower work its way through deep drifts. If the speed of your tractor is too fast, the snowblower may become overloaded and plug. For best results, raise the snowblower and remove a top layer of snow. A second pass with the snowblower will remove the remaining snow.

OPERATION

IMPORTANT: Use full RPM power when removing wet, sticky snow. Low RPM power will tend to plug the chute.

WARNING: Do not use your hands to unplug chute. Use a minimum 36" length stick. Do not attempt to clear plugged chute of snow while tractor engine is running. If the chute plugs, disengage the PTO, shut off the tractor engine, remove the ignition key and then clear the snow from the chute.

MAINTENANCE

MAINTENANCE SERVICE AND STORAGE

1. Check shear bolts at frequent intervals for proper tightness to be sure the blower is in safe working condition.
2. Never store the tractor with in the fuel tank inside a building where open flame or soaks are present. Allow the engine to cool before storing in any enclosure.
3. Run the snowblower a few minutes after blowing snow to prevent freeze up of the auger and the impeller.
4. Provide adequate blocking before working under the snowblower when in the raised position.

LUBRIFICATION

1. **GEAR BOX:** Check the oil level in the worm gear drive every month. If necessary, add AGMA 5EP, or SAE 90 gear oil. Make sure oil level is up to side plug (fig.1, item 1).
2. **PTO DRIVELINES :** Grease each u-joint fitting every 8 hours of operation. Slide drive shaft apart and coat sliding surfaces with grease every 24 hours of operation.
3. **CHAIN :** Under exceptionally clean conditions the drive chain can be lubricated with chain saw chain lubricant, but in sandy and/or muddy conditions, chain lubrication is not recommended, as sand and mud tends to adhere to oiled chain.

MAINTENANCE

END OF SEASON STORAGE

1. Clean the snowblower thoroughly.
2. Repaint all parts from which paint has worn.
3. When the snowblower is dry, oil all moving parts. Apply oil liberally to all surfaces to protect against rust.
4. Lubricate the snowblower as instructed above.
5. List the replacement parts that will be needed before the next season.
6. Store the snowblower in a dry place.

ASSEMBLY

The snowblower is assembled at the factory, however, tractor mounting kit must be assembled. Open carton and lay out all parts for assembly. Separate bolts and nuts into various sizes.

3 Points hitch Installation

NOTE: Leave all bolts loose during assembly and tighten after assembly.

1. Install lower attaching arms(fig.1, item 1), in square tubes on blower.
2. Attaching arms have two holes. Use holes depending on tractor lower link length to provide a minimum 6" overlap of driveline sliding sections when snowblower is attached to tractor. Secure in place with 3/4" x 4" bolts, lockwashers and nuts.
3. Install 3 points hitch assembly(fig.1, item 2), inside flat plates on attaching arms and install hitch pins (fig.1, item 3) from outside in.
4. Attach top brace to 3 point hitch using lower hole(fig.1, item 4). Secure with 5/8" x 4" bolt, lockwasher and nut.
5. Align rear brace hole (fig.1, item 5) and install 5/8" x 1 1/2" bolt, lockwasher and nut. Install bolt up through blower housing with nut on top. If lower hitch tubes are assembled in extended position, brace must also be bolted in extended position.
6. Tighten all bolts with reference to "TORQUE TABLE".

NOTE: Make sure 1/2 inch pin holes on lower link pins are vertical when nuts are tight.

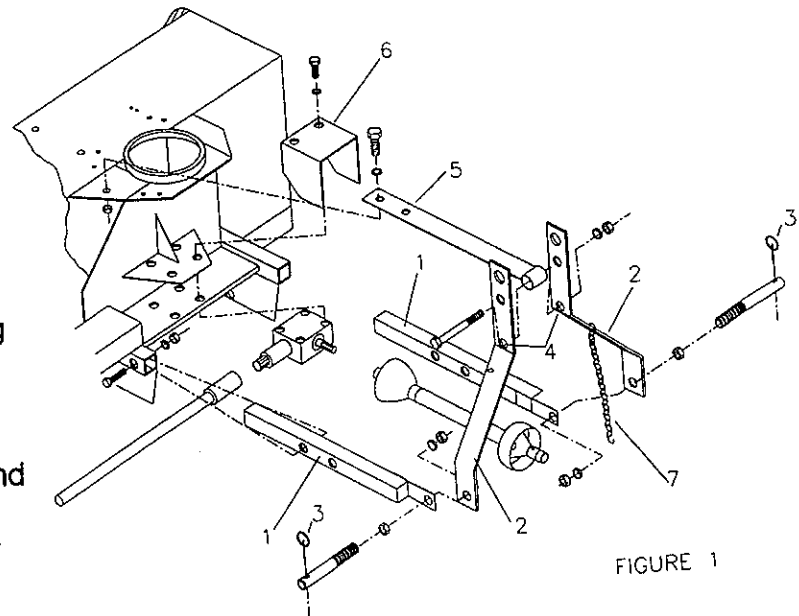


FIGURE 1

ASSEMBLY

Driveline shield and support chain

1. Remove two 1/2" x 1" bolts from rear of gearbox and install driveline shield(fig.1, item 6) at that location. Replace and torque bolts.
2. Install " S " hooks(fig.1, item 7) on each end of 12" driveline support chain and bend hooks to prevent removal from chain.
3. Attach " S " hook with chain to one side of 3 points hitch and bend " S " hook to prevent removal.
3. Chain can now be used to support driveline when snowblower is removed from tractor.

Tractor Attaching Rear Snowblower

1. Position tractor in front, keeping lower links level with snowblower lower link pins.
2. Attach left lower link to snowblower and secure with linch pin.
3. Attach right lower link, using levelling crank if necessary to assist attachment. Secure with linch pin.
4. Attach top link using adjustment to assist in attaching and secure pin with linch pin.
5. Level snowblower using levelling crank on right lower lift arm to level side-to-side.
6. Level snowblower front to rear using top link.

ASSEMBLY

7. Install stabilizers or sway blocks to hold the snowblower directly behind tractor during operation.
8. Release driveline to tractor storage chain and attach it to one side of 3 points hitch.
9. Attach driveline to tractor making certain spring-loaded pin snaps fully in groove of tractor PTO shaft.

NOTE: Depending on tractor used, it may be necessary to install front tractor weights to maintain front end stability.

Tractor Detaching Rear Snowblower

1. Select a level surface to detach.
2. Remove driveline and support it with chain.
3. Detach top link using adjustment as required.
4. Detach right lower link using adjustable link to assist if necessary.
5. Detach left lower link.

ASSEMBLY

Chute and rotation

Assembly chute to snowblower

1. Grease base of chute. Install chute over chute base on snowblower with "UHMW" ring.
2. Install three retainer plates and spacers, using six 1/2" x 1" bolts, lockwashers and nuts.

NOTE: Keep plates out away from chute when tightening bolts. If for any reason, one of the plates causes chute to bind, it should be shimmed with small washers.

Manual Chute Rotation Bracket

1. Install manual rotation bracket to left of chute. Secure with 5/8" x 2 1/2" bolt and nylon lock nut on left (fig.2, item 1) and 1/2" x 1 3/4" bolt, lock washer and nut on right side(fig. 2, item 2).
2. Install one end of rotation system tube over welded pin at on bracket (fig. 2,item 3).
3. Insert crank handle through other end of bracket(fig. 3, item 4) and inside tube until first holes in tube and handle are in alignment. Secure with 1/4" x 1 1/2" bolt and nylon lock nut.

ASSEMBLY

Cable Installation-Manual Chute Rotation

1. Place discharge chute with opening to blow directly in front of blower auger.
2. Turn chute opening towards the left (counter-clockwise) approximately 100°. Right and left are determined by facing in direction snowblower will travel when in use.
3. Tape ends of cable with electrical tape to keep ends from fraying.
4. Thread cable through two small holes in base of chute from inside to outside.
5. Tie a single knot in cable leaving 61" of cable on left side.
6. Pass this end of cable around chute clockwise, through pulley on rotation bracket and through upper hole in rotation tube with 5" of cable extending beyond tube. Attach temporarily with cable clamp.
7. Turn rotation handle clockwise holding other end of cable with your free hand so cable remains tight as handle is turned.
8. Continue turning handle until 5-6" of cable extends beyond lower part of rotation tube and lower hole is horizontal.
9. Pass cable through lower hole in rotation tube and attach the two ends of cable together securely using cable clamps.

NOTE: Chute should have equal rotation to each side of center.

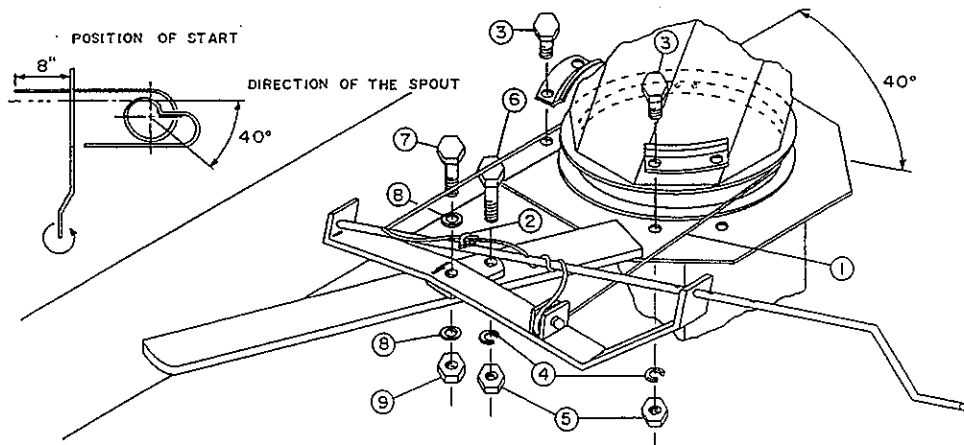


FIGURE 2

BE SURE TO PUT THE CABLE THROUGH THE TWO HOLES IN THE CHUTE AS SHOWN IN THE UPPER DIAGRAM.

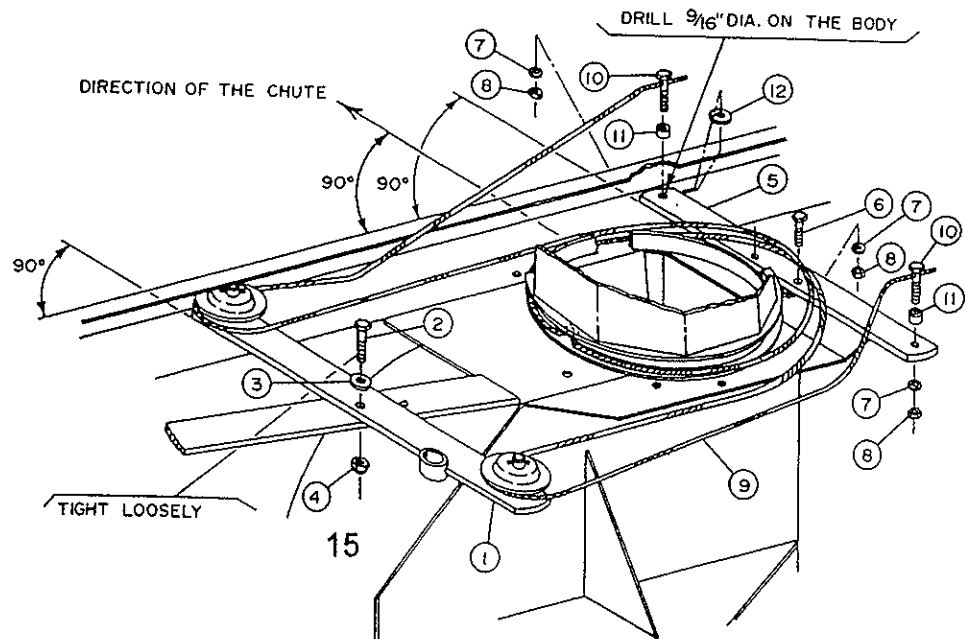
ASSEMBLY

Hydraulic Chute Rotation Bracket

1. Install hydraulic rotation arm with pulleys (item 1) to the left of chute with 11/16" washers (item 3) above the arm. Secure with 5/8" x 2" bolt (item 2) with nylon lock nut (item 4). Tighten nut to remove end play but still allow arm to move.
2. Install cable holding arm (item 5) on top of retainer plate using two 1/2" x 1 3/4" bolts (item 6) with two lockwashers (item 7) and two nuts (item 8). Tighten securely.
3. Drill a 9/16" dia. hole using the front cable holding arm hole as a guide. Insert a flatwasher (item 12) between the arm and blower body as shown in figure 7.
4. Insert one 1/2" x 2" bolt with drilled cable hole (item 10) at each end of the cable holding arm (item 5) with a 1/2" bushing (item 11) as shown in figure 7. Secure loosely with two lockwashers (item 7) and nuts (item 8).
5. Attach 3" x 8" hydraulic cylinder, not supplied. Attach hose to remote outlets on tractor. Position arm with pulleys in center of travel.

Cable installation-Hydraulic Chute

Position the chute to blow directly in front of blower auger. Pass the cable through small holes in base of chute from inside out. Wrap ends of cable with electrical tape to keep ends from fraying. Wind cable ends in opposite directions around the chute. Pass cable around pulleys from outside to inside. Insert the cable ends through special 1/2" x 2" bolts (item 10). With rotation arm in center of travel (parallel to snowblower ends) and chute positioned to blow directly in front of blower auger. Tighten the cable at each bolt(item 10) and tighten the nut (item 8) on both special bolts.



ASSEMBLY

Driveline installation

1. Clean paint from gearbox input shaft, removed the two bolts on yoke, inside yokes on PTO shaft and secure with secure with the same bolts.

Adjustment

Manual deflector

To adjust deflector angle, adjust upper rod in lower pipe and install hair pin in desired hole, according to the distance the snow must be thrown.



WARNING: Before adjustment deflector, stop blower, rotate chute to the right as far as possible and stop the engine.

Skid shoes adjustment

Adjust the snowblower so that the skid shoes run level. Adjust the skid shoes according to the surface being cleared. Adjust downwards for rough or uneven surface conditions so that stones are not thrown with the snow, and adjust upwards for smooth surfaces. Adjust both skid shoes to the same height to keep the cutting edge level.

Description	Time interval	Lubrication Required
Chute base	As required	Lubricate and rotate base until it rotates smoothly
Crank-Manual chute rotation	As required	Oil to obtain smooth operation
Auger drive chain	4 hours	A. Clean conditions. Use chain lubricant after machine use when chain is warm B. Sandy-Muddy conditions. Do not lubricate chain as sand and mud adheres to oiled chain.
Universal joints	8 hours	Lubricate one fitting each U-joint.
Gearbox	Monthly	Check oil level. Add AGMA 5 EP or 90 extreme pressure oil.
Cross shaft shear plate	Monthly	Lubricate plate.
PTO shear plate	Monthly	Lubricate one grease fitting.

PARTS

PARTS SECTION INTRODUCTION

All parts are illustrated in "Exploded Views" which show the individual parts in their normal relationship to each other. Reference numbers are used in the illustrations. These numbers correspond to those in the "Reference number" (REF) column, and are followed by the description and quantity required.

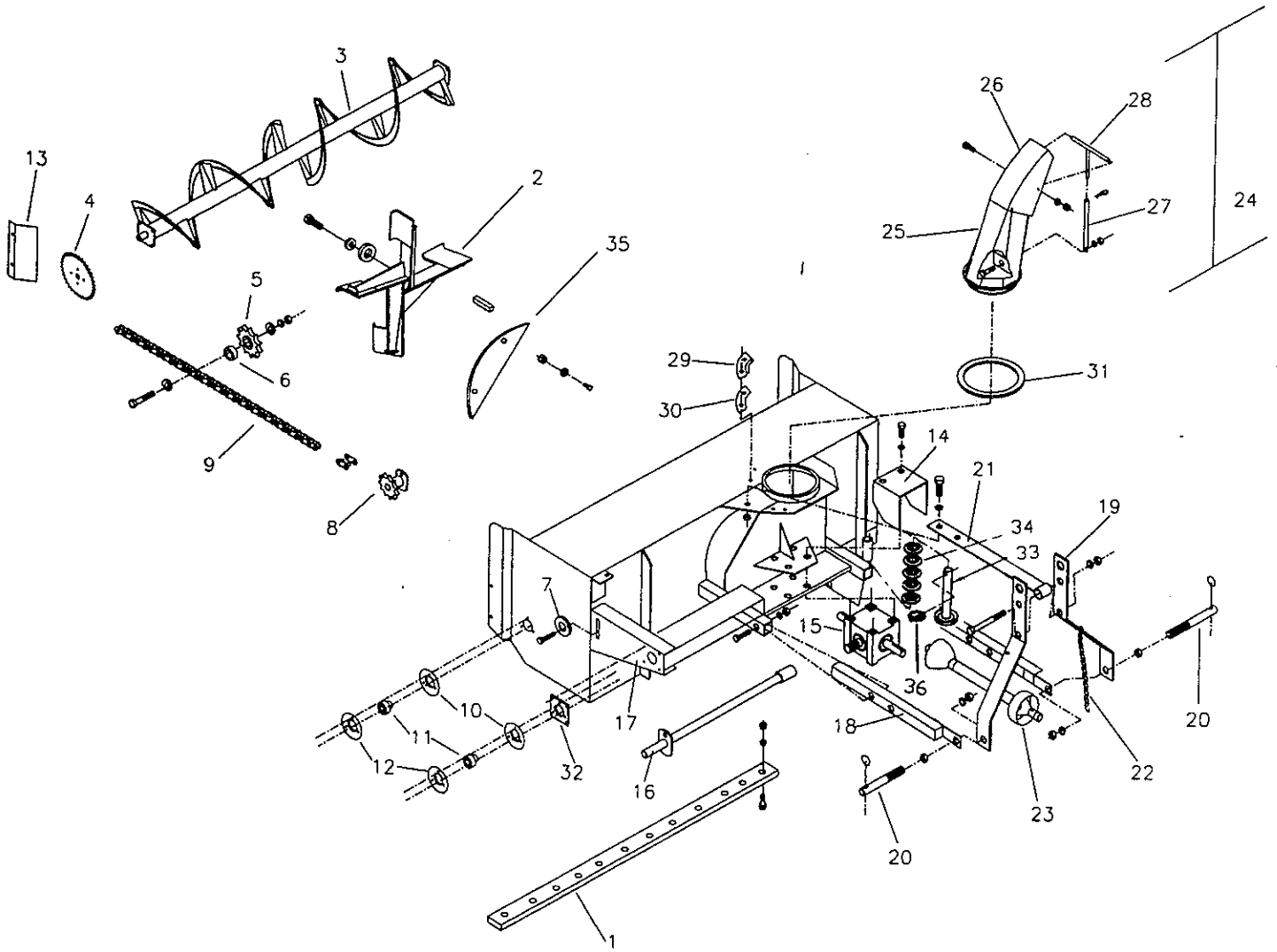
O/L- "Obtain Locally" in the part number column indicates common hardware that is available at your local hardware supply.

NSS-"Not Serviced Separately" in the part number column is an indication this part is not available for repair separately, but must be purchased as a complete unit.

"Right Hand" and "Left Hand" sides of this machine are determined by standing at the rear of the unit and facing in the direction of forward travel.

Orders must give the complete description, correct part number, the total amount required, the serial number, the method of shipment and the shipping address.

SNOWBLOWER SE73



SNOWBLOWER SE73

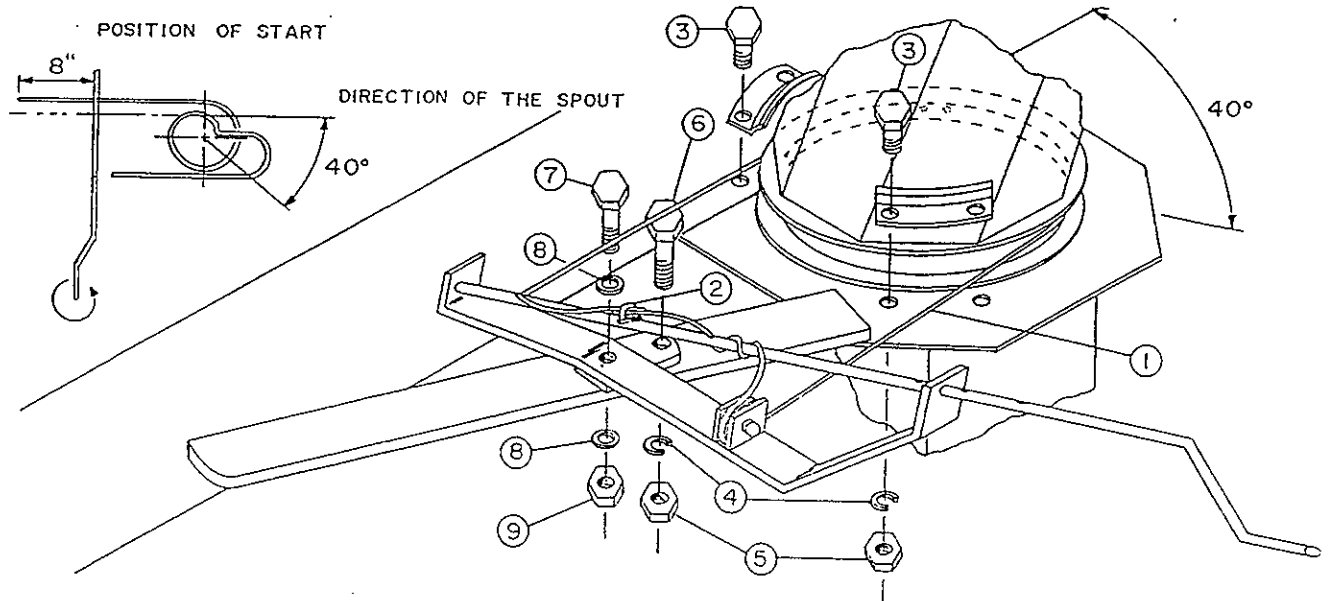
REF	DESCRIPTION	QTY	# PARTS
1	Cutting edge	1	662704
	Plow bolt 5/16" NC x 1 1/2" with nut	11	O/L
2	Rotor assembly	1	662663
	key 3/8" x 3/8" 2 3/4"lg.	1	654174
	Hex. bolt 5/8"NC x 1 1/2" with lockwasher	1	O/L
	Flat washer 11/16"dia.	1	O/L
3	Auger assembly	1	654165
4	Sprocket 60A32	1	654167
	Hex. bolt 3/8"NC x 1 1/4"lg. with lockwasher and hex. nut	4	O/L
5	Idler sprocket	1	654010
6	Washer "spacer"	1	656910
7	Washer	1	654649
	Hex. bolt 5/8"NC x 2 3/4" lg. with lockwasher and hex. nut	1	O/L
	Flat washer 11/16" dia.	1	O/L
8	Sprocket with shear plate	1	654173
	Hex. bolt 1/4"NC x 1 1/4" lg. gr.5 with lockwasher and hex. nut.	1	O/L
9	Auger drive chain no:60, 79links	1	654168
	Half link	1	654025
10	Flange	3	654171
11	Bearing with locking collar	3	654170
12	Capped flange	3	654169
	Hex. bolt 3/8"NC x 1"lg. with lockwasher and hex. nut.	9	O/L
13	Chain guard	1	654650
	Hex. bolt 3/8"NC x 1"lg. with lockwasher and hex. nut.	2	O/L
14	PTO protector	1	654654
15	Gearbox assembly	1	662195
	Hex. bolt 1/2"NC x 1"lg. wit lockwasher and hex. nut	8	O/L
16	Driving shaft	1	654175
17	Chain cover	1	655284
	Carriage bolt 3/8"NC x 5"lg. with lockwasher and wing nut	1	O/L
18	Lower hitch	2	654188
	Hex. bolt 3/4"NC x4"lg. with lockwasher and hex. nut.	2	O/L
19	3 point hitch	2	654194
	Hex. bolt 5/8"NC x4"lg. with lockwasher and hex. nut.	1	O/L
20	Pin cat. 1	2	654196
21	Upper hitch	1	654195
	Hex. bolt 5/8"NC x2"lg. with lockwasher and hex. nut.	1	O/L
22	Suspension chain	1	654200
	S-hook 1/4" x 2"lg.	2	O/L

SNOWBLOWER SE73

REF	DESCRIPTION	QTY	# PARTS
23	Driveline	1	662194
24	Standard chute assembly	1	655772
25	Chute base	1	655792
26	Chute deflector	1	655793
27	Adjustment pipe	1	655600
28	Adjustment pin	1	655771
29	Retaining plate	3	654197
	Hex. bolt 1/2" X 1" lg. with lockwasher and hex. nut	4	O/L
30	Spacer	3	661643
31	UHMW " ring	1	662834
32	Driving plate	1	662685
	Hex. bolt 5/16"NC x 3/4" lg. with lockwasher and nut	4	O/L
33	Adjustable skid shoe	2	663591
34	Spacer	2	659393
35	Restriction plate	1	662411
36	Pin (7/16" dia., linch)	2	O/L

MANUAL CHUTE ROTATION (9047)

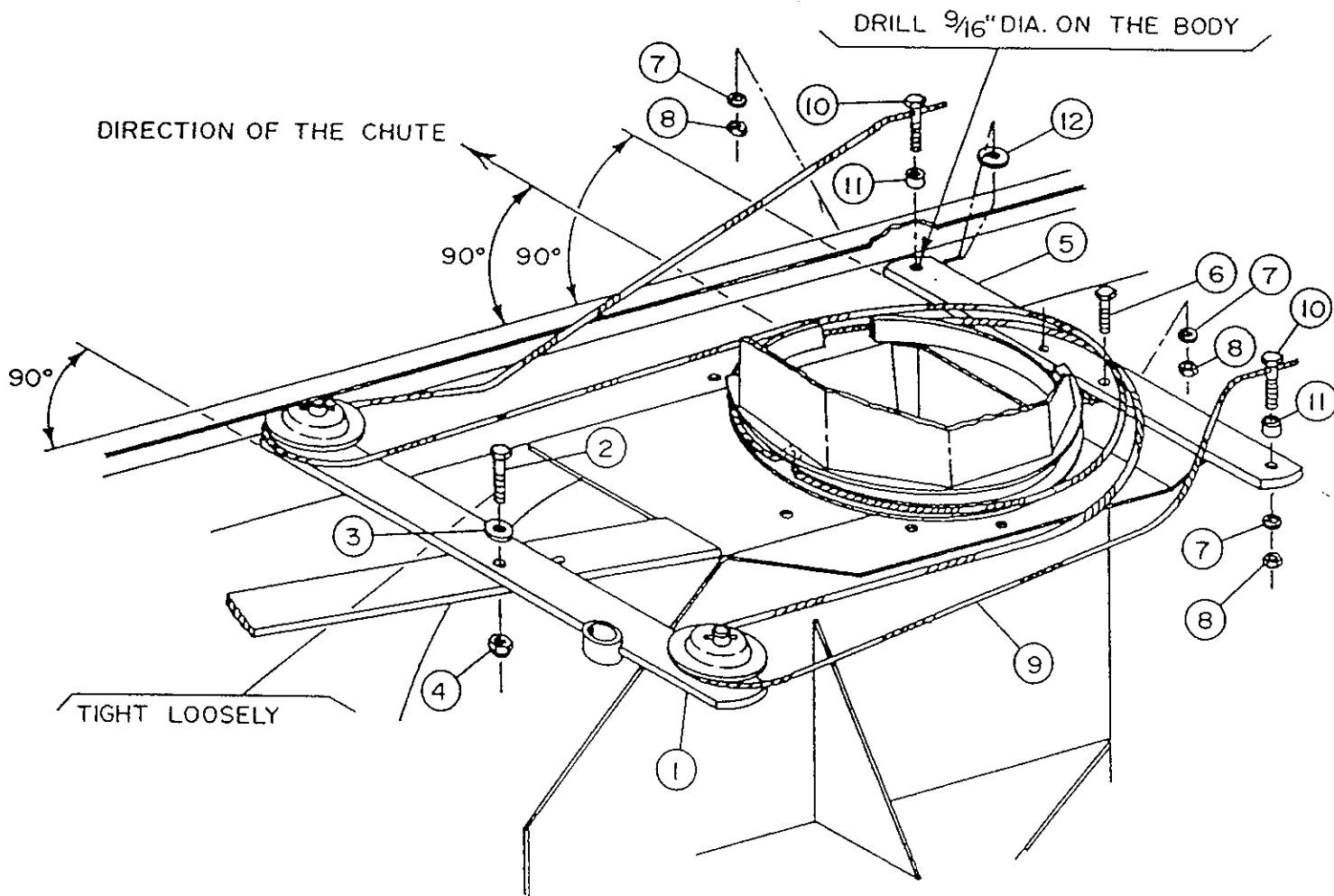
REF	DESCRIPTION	QTY	# PARTS
1	Cable 3/16" dia. x 152" lg.	1	654201
2	Rope clamp 3/16" dia.	1	654202
3	Hex. bolt 1/2"NC x 1" lg.	2	O/L
4	Lock washer 1/2" dia.	3	O/L
5	Hex. nut 1/2"NC	3	O/L
6	Hex. bolt 1/2"NC x 1 3/4" lg.	1	O/L
7	Hex. bolt 5/8"NC x 2 1/2" lg.	1	O/L
8	Flat washer 11/16" dia.	2	O/L
9	Nylon lock nut 5/8"NC	1	O/L



BE SURE TO PUT THE CABLE THROUGH THE TWO HOLES IN THE CHUTE AS SHOWN IN THE UPPER DIAGRAM.

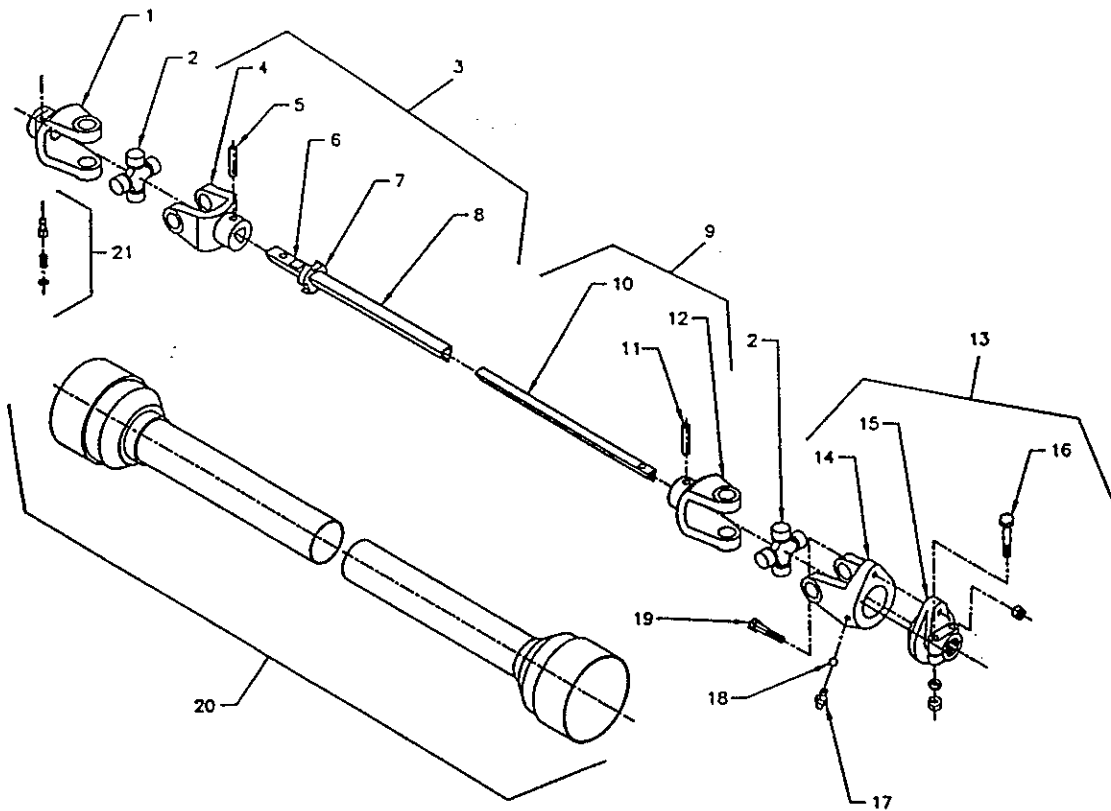
HYDRAULIC CHUTE ROTATION (8004)

REF	DESCRIPTION	QTY	# PARTS
1	Rotation arm ass'y	1	656805
2	Hex. bolt 5/8"NC x 2"lg.	1	O/L
3	Flat washer 11/16" dia.	1	O/L
4	Nylon lock nut 5/8"NC	1	O/L
5	Shim	1	657242
6	Hex. bolt 1/2"NC x 1 3/4"lg.	2	O/L
7	Lock washer 1/2" dia.	4	O/L
8	Hex. nut 1/2"NC	4	O/L
9	Cable 3/16" dia. x 182"lg.	1	657243
10	Hex. bolt special 1/2"NC x 2"lg. gr.2	2	654199
11	Spacer	2	663049
12	Flatwasher 9/16" dia.	1	O/L



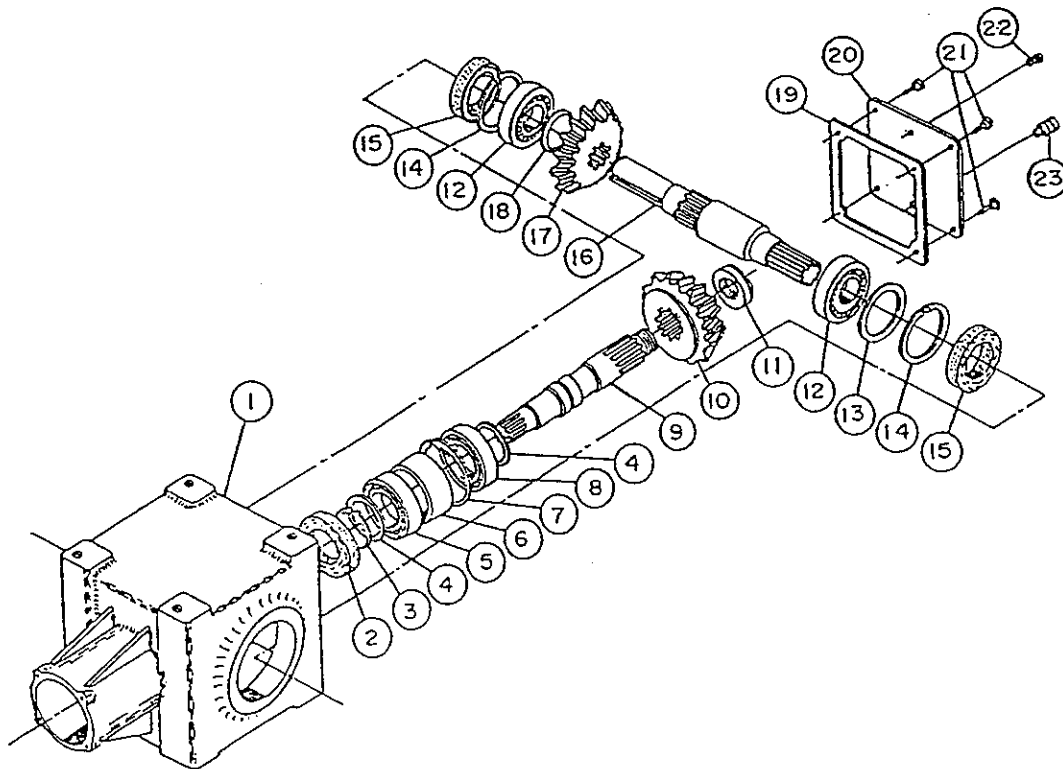
DRIVELINE (662194)

Ref.	Description	Qty.	
1	Push pin yoke assembly	1	657209
2	Universal joint kit	2	657200
3	Outer tube and yoke assembly	1	662196
4	Outer yoke	1	663119
5	Roll pin for outer tube	1	663120
6	"DANGER" label for outer tube	1	663121
7	Bush with grease fitting	1	663122
8	Outer tube	1	663123
9	Inner tube and yoke assembly	1	662197
10	Inner tube	1	663124
11	Roll pin for inner tube	1	663125
12	Inner yoke	1	663126
13	Yoke and hub assembly	1	662198
14	Yoke for hub	1	663127
15	Hub	1	663128
16	Bolt and nut	2	662199
17	Grease fitting	1	663129
18	Ball	24	663163
19	Shear bolt and nut	1	657199
20	1	657221	
21	Safely pin	1	657212



Gear box (662195)

REF	DESCRIPTION	QTY	# PARTS
1	Casing	1	656640
2	Oil seal (35 x 72 x 10)	1	656650
3	Snap ring	1	656652
4	Shim	2	656649
5	Bearing	1	656653
6	Sleeve	1	656648
7	Snap ring	1	656654
8	Bearing	1	656647
9	Shaft	1	656651
10	Gear	1	656645
11	Snap ring	1	656646
12	Bearing	2	656641
13	Shim	1	656644
14	Snap ring	2	656642
15	Oil seal (40 x 80 x 12)	2	656643
16	Shaft	1	662212
17	Gear	1	656657
18	Shim	1	656655
19	Gasket	1	656658
20	Cover	1	656660
21	Hex. bolt (M10 x 14)	4	656659
22	Plug 3/8" NPT	2	655259
23	Filter plug	1	656662





RAD TECHNOLOGIES INC.

WARRANTY

RAD TECHNOLOGIES INC. warrants to the original buyer that the equipment is free from defects in material and workmanship. RAD TECHNOLOGIES INC.'s obligation, under this warranty, will be limited to the repair or to the replacement (F.O.B. factory) of any part or component which RAD TECHNOLOGIES INC. shall disclose to be defective within one year from date of original purchase (unless other wise specified).

In no event shall RAD TECHNOLOGIES INC. be liable for consequential or special damages, direct or indirect, arisen by the buyer/user.

This warranty replaces all other written or implied warranties and RAD TECHNOLOGIES INC. COMPANY neither assumes nor authorizes any other obligation nor responsibility in connection with the sale of the said product or components.

This warranty will not apply to the product (or components) which will have been the object of an accident, alteration, abuse or misuse. Any claim for parts or replacement of equipment must be taken up with the authorized dealer or with the office of the Company.

All components not manufactured by RAD TECHNOLOGIES INC. (such as motors, tires, etc.) are covered by the original manufacturer's warranty.

All claims must be taken up within 30 days from date of mechanical breakage. The Company reserves the right to require the said parts and this F.O.B. our factory or distributor.

MINIMUM HARDWARE TIGHTENING TORQUES

IN FOOT POUNDS (NEWTON-METRES) FOR NORMAL ASSEMBLY APPLICATIONS

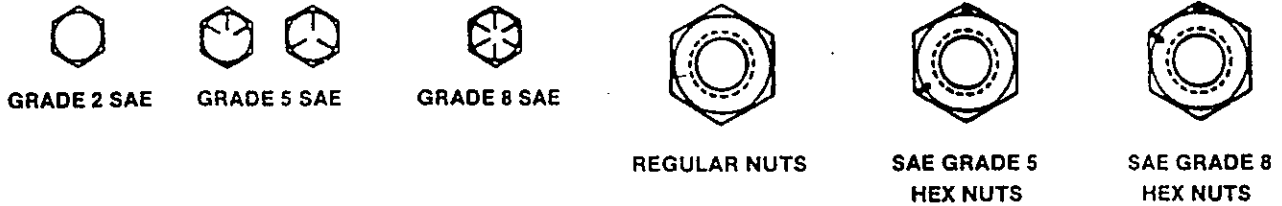
INCH HARDWARE AND LOCKNUTS

NOMINAL SIZE	SAE GRADE 2		SAE GRADE 5		SAE GRADE 8		LOCKNUTS		NOMINAL SIZE
	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	GR.B w/GR5 BOLT	GR.C w/GR8 BOLT	
1/4	55* (6.2)	72* (8.1)	86* (9.7)	112* (13)	121* (14)	157* (18)	61* (6.9)	86* (9.8)	1/4
5/16	115* (13)	149* (17)	178* (20)	229* (26)	250* (28)	324* (37)	125* (14)	176* (20)	5/16
3/8	17 (23)	22 (30)	26 (35)	34 (46)	37 (50)	48 (65)	19 (26)	26 (35)	3/8
7/16	27 (37)	35 (47)	42 (57)	54 (73)	59 (80)	77 (104)	30 (41)	42 (57)	7/16
1/2	42 (57)	54 (73)	64 (87)	83 (113)	91 (123)	117 (159)	45 (61)	64 (88)	1/2
9/16	60 (81)	77 (104)	92 (125)	120 (163)	130 (176)	169 (229)	65 (88)	92 (125)	9/16
5/8	83 (112)	107 (145)	128 (174)	165 (224)	180 (244)	233 (316)	90 (122)	127 (172)	5/8
3/4	146 (198)	189 (256)	226 (306)	293 (397)	319 (432)	413 (560)	160 (217)	226 (306)	3/4
7/8	142 (193)	183 (248)	365 (495)	473 (641)	515 (698)	667 (904)	258 (350)	364 (494)	7/8
1	213 (289)	275 (373)	547 (742)	708 (960)	773 (1048)	1000 (1356)	386 (523)	545 (739)	1

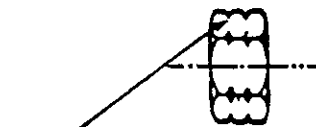
NOTE: Torque values shown with * are inch pounds.

IDENTIFICATION

CAP SCREWS AND CARRIAGE BOLTS



LOCKNUTS



- GRADE IDENTIFICATION
- GRADE A NO NOTCHES
 - GRADE B ONE CIRCUMFERENTIAL NOTCH
 - GRADE C TWO CIRCUMFERENTIAL NOTCHES



- GRADE IDENTIFICATION
- GRADE A NO MARKS
 - GRADE B THREE MARKS
 - GRADE C SIX MARKS

MARKS NEED NOT BE LOCATED AT CORNERS



- GRADE IDENTIFICATION
- GRADE A NO MARK
 - GRADE B LETTER B
 - GRADE C LETTER C

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