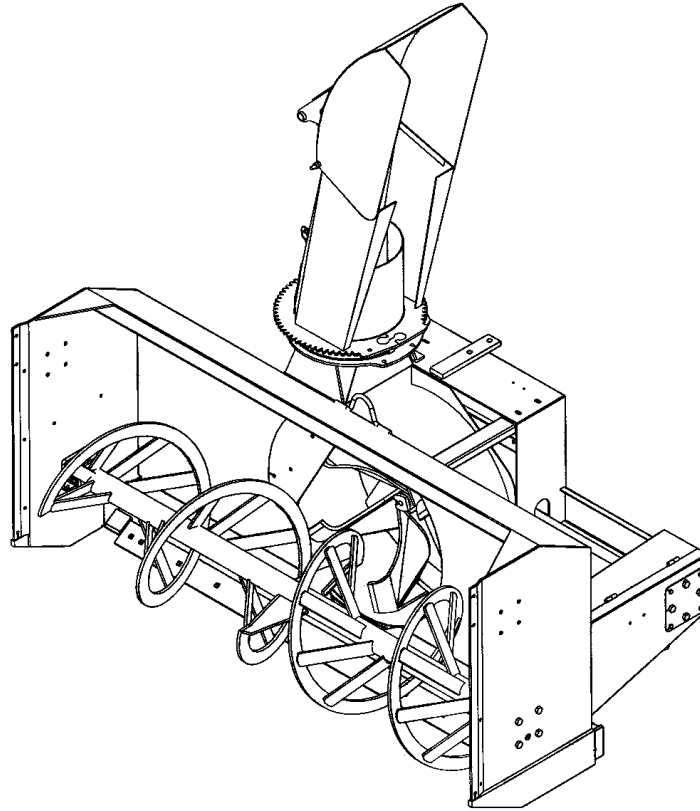


OPERATOR'S AND PARTS MANUAL



SNOWBLOWER SA92, SA92TRC, SA98, SA98TRC and SA104TRC MODELS

SERIAL NO. 2028735 AND UP

**OM 0275-A
04/03**



BER-VAC

by RAD Technologies Inc.

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INTRODUCTION

TO THE PURCHASER

All BER-VAC and BLIZZARD products are designed to give safe, dependable service if they are operated and maintained according to instructions. **Read and understand this manual before operation.**

This manual has been prepared to assist the owner and operators in the safe operation and suitable maintenance of the implements. The information was applicable to products at the time of manufacture and does not include modifications made afterwards.

Read and understand this operator's manual before attempting to put an implement into service. Familiarize yourself with the operating instructions and all the safety recommendations contained in this manual and those labelled on the implements and on the tractor. Follow the safety recommendations and make sure that those with whom you work follow them.

To assist your dealer in handling your needs, please record hereafter the model number and serial number of your implement and tractor. It is also advisable to supply them to your insurance company. It will be helpful in the event that an implement or tractor is lost or stolen.

Illustrations

The illustrations may not necessarily reproduce the full detail and the exact shape of the parts or depict the actual models, but are intended for reference only

Direction Reference

Right Hand and Left Hand are determined by those seen by the conductor looking at the machine while operating.

MODEL :

SERIAL NUMBER :

DATE OF PURCHASE :

SAFETY PRECAUTIONS



SAFETY FIRST

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on labels on the machine itself to warn of the possibility of personal injury. Read these instructions carefully. It is essential that you read the instructions and safety regulations before you attempt to assemble or use this unit.

⚠ DANGER : Indicates an immediately 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.

All products are designed to give safe, dependable service if they are operated and maintained according to instructions. **Read and understand this manual before operation.** It is the owner's responsibility to be certain anyone operating this product reads this manual., and all other applicable manuals, to become familiar with this equipment and all safety precautions. Failure to do so could result in serious personal injury or equipment damage. If you have any questions, consult your dealer.

BEFORE OPERATION

Children

Tragic accidents can occur if the operator is not alert to the presence of children. Children are generally attracted to machines and the work being done. Never assume children will remain where you last saw them.

1. Keep children out of the operating area and under the watchful eye of another responsible adult.
2. Be alert and turn machine off if children enter the work area.
3. Before and when backing, look behind and look for small children.
4. Never carry children while operating the machine. They may fall off and be seriously injured or interfere with safe operation of the machine.
5. Never allow children to play on the machine or attachment even when turned off.
6. Never allow children to operate the machine even under adult supervision.
7. Use extra care when approaching blind corners, shrubs, trees, or other obstructions that might hide children from sight.

SAFETY PRECAUTIONS- continued

NOTICE

A safe operator is the best insurance against accidents. All operators, no matter how experienced they may be, should read this Operator's Manual and all other related manuals before attempting to operate an implement. Please read the following section and pay particular attention to all safety recommendations contained in this manual and those labelled on the implements and on the tractor.

THE SNOWBLOWER

Before Operation

1. Read and understand this operator's manual and tractor operator's manual. Know how to operate all controls and how to stop the unit and disengage the controls quickly.
2. Never wear loose, torn, or bulky clothing around the tractor and implement. It may catch on moving parts or controls, leading to the risk of accident.
3. Before the snow season, thoroughly inspect the area where the equipment is to be used and remove all doormats, sleds, boards and other foreign objects.
4. Disengage clutch and shift into neutral before starting the engine.
5. Do not operate equipment in wintertime without wearing adequate winter garments.
6. Never attempt to make any adjustments while engine is running. Read this manual carefully to acquaint yourself with the equipment as well as the tractor operator's manual. Working with unfamiliar equipment can lead to accidents. Be thoroughly familiar with the controls and proper use of the equipment. Know how to stop the unit and disengage the controls quickly.
7. Keep all shields in place and properly tighten all mounting hardware.
8. Periodically, inspect all moving parts for wear and replace with authorized service parts if an excessive amount of wear is present.
9. Replace all missing, illegible, or damaged safety and warning decals. See list of decals in the operator's manual.
10. Do not modify or alter this equipment or any of its components, or any equipment function without first consulting your dealer.
11. Keep safety decals clean of dirt and grime.

SAFETY PRECAUTIONS- continued

Snowblower Operation

1. Before leaving the tractor unattended, take all possible precautions. Disengage the PTO, stop the engine and remove the ignition key. Lower the implement to the ground.
2. Before starting the snowblower, remove any ice that has accumulated in the auger/impeller.
3. Watch carefully for foreign objects that could enter the blower while operating.
4. Be sure the clutch switch/lever is in OFF position before starting engine.
5. Do not put hands or feet near rotation parts. Keep clear of discharge opening at all times.
6. Exercise extreme caution when operating on or crossing a gravel drive, walks, or roads. Stay alert for hidden hazards or traffic. Do not carry passengers.
7. Adjust collector housing height to clear gravel or crushed rock surface.
8. Stop the engine, remove the key, and allow the rotating parts to stop before unclogging the collector/impeller housing or chute, and making any repairs, adjustments or inspections. Use only a 36" long piece of wood to unclog blower.
9. If the snowblower starts to vibrate abnormally, stop the engine immediately and check for cause. Excessive vibration is generally a sign of trouble.
10. Do not run the engine indoors except when starting engine and transporting attachment in or out of building. Carbon monoxide gas is colorless, odorless and deadly.
11. Exercise extreme caution when changing direction on slopes. Do not attempt to operate on steep slopes.
12. Never operate snowblower without guards, and other safety protective devices in place.
13. Never operate snowblower near glass enclosures, automobiles, window wells, embankments, etc., without proper adjustment of snow discharge angle.
14. Never operate machine at high transport speeds on a slippery surface.
15. Use extra caution when backing up.
16. Do not direct discharge at bystanders or animals. Ejected objects may cause injury.
17. Disengage power to auger/impeller when transporting or when not in use.
18. Never operate the snowblower without good visibility and lighting.
19. 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

SAFETY PRECAUTIONS- continued

THE TRACTOR

General Information

1. Read the operator's manual carefully before using tractor. Lack of operating knowledge can lead to accidents.
2. Do not permit anyone but the operator to ride on the tractor. There is no safe place for extra riders.

Operating the Tractor

1. Never run the tractor engine in a closed building without adequate ventilation, as the exhaust fumes are very dangerous.
2. Never allow an open flame near the fuel tank or battery.
3. Make sure the shield is installed when using a PTO-driven equipment and always replace the shield if damaged.
4. Always bring the tractor to a complete stop, shut off the engine, lower the implement to the ground and remove the ignition key before leaving the tractor.
5. Never park the tractor on a steep slope.
6. Do not attempt to operate on steep slopes.
7. Use of tire chains for better traction and stability is recommended.
8. Always drive the tractor at speeds compatible with safety, especially when operating over rough ground, crossing ditches, or when turning.
9. Handle fuel with care, as it is highly flammable.
10. Use approved fuel container.
11. Never add fuel to a running engine or a hot engine.
12. Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors. Replace fuel cap securely and wipe up spilled fuel.

13. Never allow anyone to operate the snowblower until they are thoroughly familiar with basic tractor and snowblower operation.
14. Make sure the tractor is counterweighted as recommended by your dealer. Weights provide the necessary balance to prevent tip-over or loss of traction or steering.
15. Always make sure all snowblower components are properly installed and securely fastened BEFORE operation.

During Operation

1. Do not allow anyone to ride on the tractor/snowblower at any time. There is no safe place for passengers on this equipment. The operator MUST sit in the tractor seat.
2. Eye and hearing protection is recommended when operating the snowblower.
3. Operate only during daylight hours, or when the area is well lit with bright artificial light.
4. Disengage the PTO (turn to "OFF"), place the transmission in neutral, set the parking brake, shut off the engine and remove the key, and make sure rotating components have stopped BEFORE leaving the operator's seat.
5. Inspect the snowblower after striking any foreign object to assure that all snowblower parts are safe and secure and not damaged.

SAFETY PRECAUTIONS- continued

MAINTENANCE

Park the tractor/snowblower on level ground, set the parking brake, disengage the PTO, shut off the engine, remove the key, and lower the implement to the ground BEFORE making any snowblower adjustments.

1. To avoid injury, do not adjust, unclog or service the snowblower with the tractor engine running. Making sure rotating components have completely stopped before leaving the operator's seat
2. Keep the tractor/snowblower clean. Snow and ice build-up can lead to malfunction or personal injury from thawing and refreezing in garage.
3. Always wear eye protection when cleaning or servicing the snowblower.
4. Do not work under any part of the tractor or snowblower, unless it is securely supported by safety stands.
5. Make sure all shields and guards are securely in place following all service, cleaning, or repair work.
6. Do not modify or alter this equipment or any of its components or operating functions. If you have questions concerning modifications, consult with your dealer.

TRANSPORTING

1. If the tractor/snowblower is to be driven on public roads, it must be equipped with an SMV (Slow Moving Vehicle) sign. Check local traffic codes that may apply to unit usage on public roads and highways in your area.
2. Be alert for all other traffic when driving the tractor/snowblower on public roads or highways.

STORAGE

Before storing the snowblower, certain precautions should be taken to protect it from deterioration.

1. Clean the snowblower thoroughly.
2. Make all the necessary repairs.
3. Replace all Safety Signs that are damaged, lost, or otherwise become illegible. If a part to be replaced has a sign on it, obtain a new safety sign from your dealer and install it in the same place as on the removed part.
4. Repaint all parts from which paint has worn or peeled.
5. Lubricate the snowblower as instructed under "**Lubrication**" section.
6. When the snowblower is dry, oil all moving parts. Apply oil liberally to all surfaces to protect against rust.
7. Store in a dry place.

DECALS

Replace Immediately If Damaged.

⚠ 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.

656779

⚠ 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 D'UTILISATION DÉGAGÉ DE TOUTES PERSONNES ET ANIMAUX.
- GARDER TOUS LES ÉCRANS PROTÉCTEURS EN PLACE.
- JAMAIS DIRIGER L'ÉVACUATION VERS DES PIÉTONS, BÂTIMENTS, AUTOMOBILES, ETC.
- TOUJOURS UTILISER UN MASQUE À POUSSIÈRE DANS UN ENVIRONNEMENT POUSSIERREUX.
- GARDER TOUTES LES MATIÈRES PLASTIQUES ÉLOIGNÉES DE LA CHALEUR INTENSE ET DES FLAMMES.
- NE JAMAIS PERMETTRE DE PASSAGERS SUR CETTE MACHINE.

660989

⚠ 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 UNLOCK THE MACHINE.
- KEEP THE AREA OF OPERATION CLEAR OF ALL PERSONS AND ANIMALS.
- KEEP ALL GUARDS AND SHIELDS IN PLACE.
- NEVER DIRECT DISCHARGE TOWARD BYSTANDERS, 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.

660988

SA92: 664416
SA92TRC: 664426
SA98: 664441
SA98TRC: 664444
SA104TRC: 662391

⚠ DANGER



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

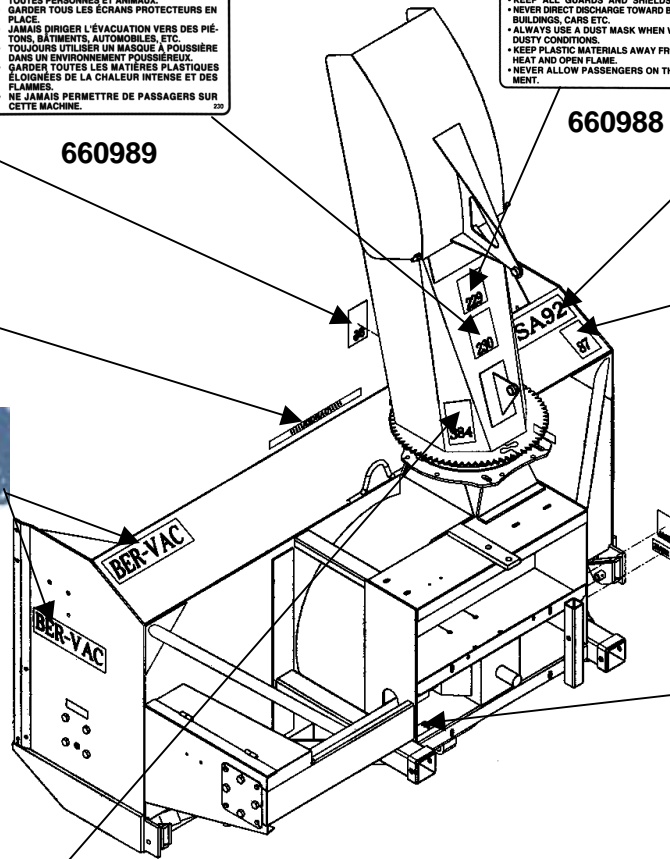
POUR ÉVITER DES BLESSURES GRAVES: GARDER LES MAINS, LES PIEDS ET LES VÊTEMENTS ÉLOIGNÉS DES VIS SANS FIN

656780

Danger: 664383



2500316



IMPORTANT

Before using:
-Oil level must be checked
-Fill with SAE 80W90, "ACMA 5 EP" extreme pressure oil or equivalent
-Read instructions manual

IMPORTANT

Avant usage:
-Vérifier le niveau d'huile
-Remplir avec de l'huile SAE 80W90, "ACMA 5EP" pression extrême ou équivalent
-Lire manuel d'instructions

655834

Located on driveline

Included with Option 8164 & 8164A

⚠ DANGER




AVOID INJURY FROM ROTATING GEARS:
• KEEP HANDS AND CLOTHING AWAY
• STOP ENGINE AND REMOVE IGNITION KEY BEFORE COMING NEAR ROTATING GEARS
• DO NOT ATTEMPT TO INSTALL OR REMOVE ROTATING GEARS WITHOUT READING OPERATOR'S MANUAL

ÉVITEZ LES BLESSURES PAR LES ENGRENAGES:
• GARDEZ MAINS ET VÊTEMENTS ÉLOIGNÉS
• ARRÊTEZ LE MOTEUR ET ENLEVEZ LA CLÉ DE CONTACT AVANT DE VOUS APPROCHER DES ENGRENAGES
• NE TENTEZ PAS D'INSTALLER OU D'ENLEVER LES ENGRENAGES SANS LIRE LE MANUEL D'OPÉRATEUR

2500330

⚠ 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 LES VÊTEMENTS ET PERSONNES À L'ÉCART

NE PAS OPÉRER SANS

- QUE TOUTS LES PROTÉCTEURS 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 PROTÉCTEURS TOURNENT LIBREMENT SUR L'ARBRE À CARDAN

656781

Included with Option 8172

⚠ DANGER



CONTACT DURING USE WILL RESULT IN SERIOUS INJURIES. TOUT CONTACT PENDANT L'UTILISATION CAUSERA DES BLESSURES GRAVES.

664548

ASSEMBLY

SNOWBLOWER ASSEMBLY

The snowblower is assembled at the factory, however, snowblower kits must be assembled. Use the present manual and lay out all parts for assembly. Separate bolts and nuts into various sizes. After assembly, torque all the bolts according to the Torque Specification Table enclosed at the end of the manual.

Three Point Hitch Installation (Figure 1)

1. Install the lower left hitch and lower right hitch (items 1-2) on snowblower using two 3/4" x 5 1/2" bolts, 3/4" lockwashers and 3/4" hex nuts (items 14-16-17).
2. Install the attaching plates (item 3) to the lower hitches (items 1-2) using the top holes. Secure with two 3/4" NC x 2 1/2" bolts and 3/4" stover nuts (items 11-18).
3. Fasten each attaching plate (item 3) to the upper hitch (item 4) using a 3/4" NC x 4 1/2" bolt and a 3/4" stover nut (items 9-18).

4. Attach upper hitch (item 4) to the snowblower attaching plate (not illustrated) using two 3/4" NC x 2" bolts, 3/4" lockwashers and 3/4" hex nuts (items 10-12-13).
5. Install the brace (item 6) on the lower hitches (items 1-2) using two 3/4" NC x 4 1/2" bolts lockwashers and nuts (items 15-16-17) inserting them in the holes closest to the attaching plates.

NOTE: We recommend using the driveline chain when storing the snowblower.

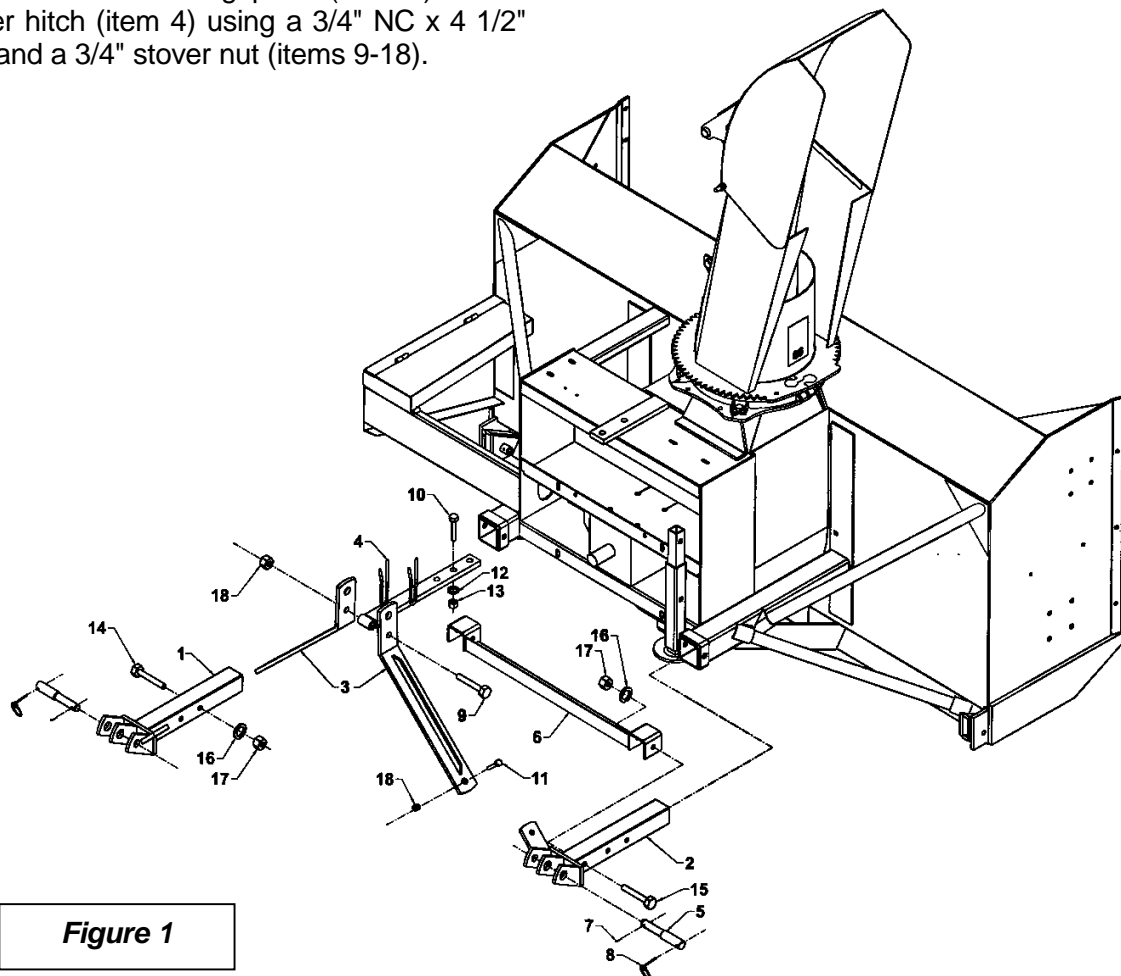


Figure 1

ASSEMBLY

Snowblower Installation (Figure 2)

1. Attach tractor lower hitch arms to snowblower lower hitches (item 1) using the pins, the linchpins and spring pins (items 6-2-7).
2. Install the tractor adjustable arm (item 3) on the upper or lower hole of the snowblower attaching plates (item 5) using the tractor pins (item 4).
3. To level snowblower front to back, adjust using the tractor adjustable arm (item 3).
4. To level side to side, use leveling crank on right lower lift arm.
5. Set the tractor anti-sway turnbuckles so the snowblower does not sway. Be sure the turnbuckles clear the tractor tires.



WARNING: Before connecting snowblower driveline to tractor drive shaft, make sure driveline is not too long in raised, lowered or middle position. If the driveline is too long it must be shortened, to avoid damaged to tractor.

6. Connect driveline to tractor drive P.T.O., making sure the driveline is well secured to the tractor.
7. Secure driveline safety chain to tractor master shield to prevent driveline shield from rotating.
8. Before operating the snowblower, raise the parking stand from the ground.

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

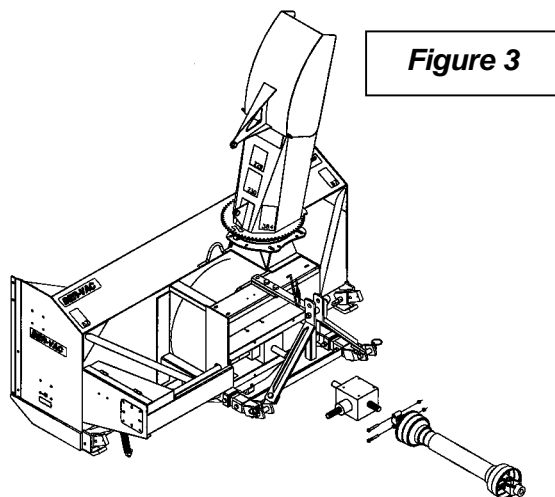


Figure 3

Driveline Installation (Figure 3)

1. Remove paint from snowblower gearbox drive shaft and grease driveline sliding surfaces and yoke.
2. Remove the two bolts of the yoke and slide driveline yoke over drive shaft using sliding action of the driveline. Make sure the driveline is well secured to the drive shaft by replacing the two bolts and tightening them according to the torque specification table.

Removing Snowblower from Tractor:

Select a level surface to detach. Lower the parking stand. Remove driveline from the tractor's PTO. Detach top link using adjustment as required. Detach right lower link using adjustable link to assist if necessary. Detach left lower link.

IMPORTANT: To avoid damage to the snowblower, retorque all bolts after the first 10 hours of operation.

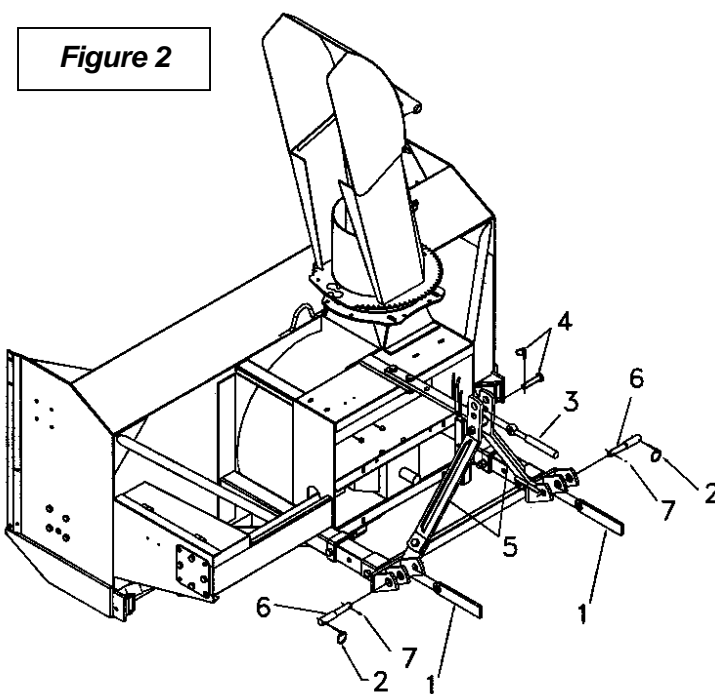


Figure 2

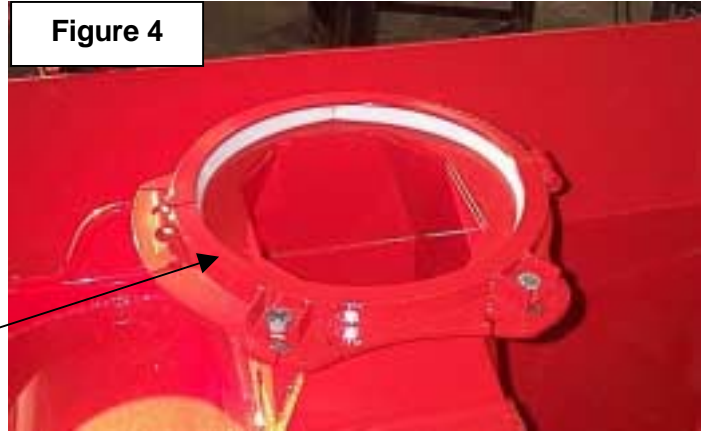
ASSEMBLY

Chute Installation

1. (FIGURE 4) The snowblower, as delivered.

Removable chute bracket

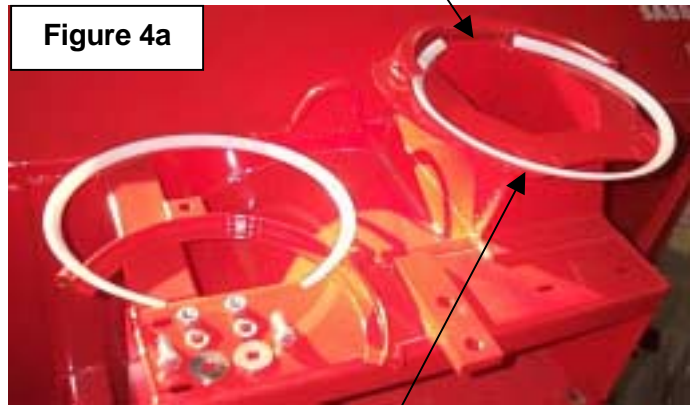
Figure 4



2. (FIGURE 4a) Unscrew the removable chute bracket by taking off the two 5/8" x 1 1/2" bolts, 11/16" flatwashers, 5/8" lockwashers and 5/8" nuts, leaving one rotation bushing on the snowblower. Place the opening of the rotation bushing towards the back of the fixed bracket on the snowblower.

Fixed bracket

Figure 4a



Rotation bushing

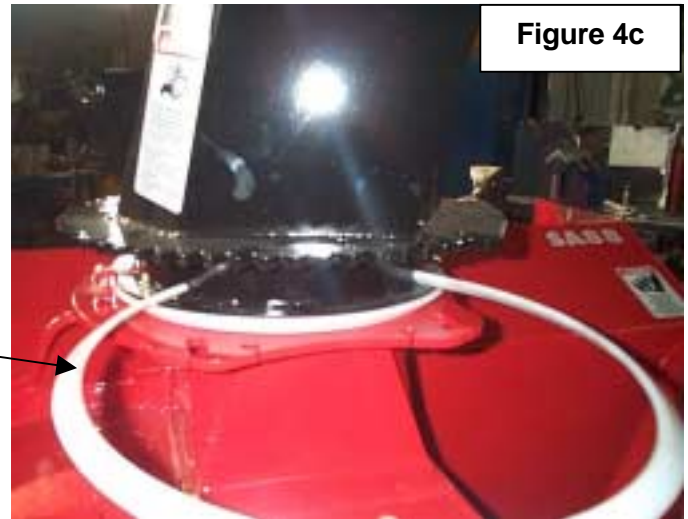
3. (FIGURE 4b) Place the chute over the rotation bushing.

Figure 4b



ASSEMBLY

4. **(FIGURE 4c)** Insert the second rotation bushing over the chute base.



5. **(FIGURE 4d)** Insert the bushing inside the chute's fixed bracket by pushing each side, one after the other.



6. **(FIGURE 4e)** Install the removable chute bracket on the snowblower, as shown.



ASSEMBLY

7. **(FIGURE 4f)** Reinstall the two 5/8" x 1 1/2" bolts used to secure the removable chute bracket on the snowblower. Partly tighten the two bolts using the 11/16" flatwashers, 5/8" lockwashers and 5/8" nuts in order to bring the removable chute bracket closer to the snowblower housing until they touch, but without putting any pressure.



Figure 4f

5/8" x 1 1/2" bolts

8. **(FIGURE 4g)** Insert the two 1/2" x 3 1/4" bolts used to join the two chute brackets together, as shown.



Figure 4g

1/2" 3 1/4" bolts

9. **(FIGURE 4h)** Use a hammer to bring the two chute brackets closer, by hitting a few times on the two bolt heads, one after the other. If the removable bracket moves back after each hit, the two 5/8" x 1 1/2" bolts holding the bracket are not tight enough.



Figure 4h

ASSEMBLY

10. **(FIGURE 4i)** When the bolt end exceeds enough to install the nut, stop hitting the bolts. Install the 1/2" nylon insert locknuts, on each bolt, until the two chute brackets are at approximately 1/4" from one another.
11. **(FIGURE 4i)** Check to see if the chute rotates. If it rotates with difficulty by hand, loosen the 1/2" nylon insert locknuts until a light tension is felt when turning the chute.
12. **(FIGURE 4i)** Finally, securely tighten the two 5/8" x 1 1/2" bolts holding the removable chute bracket to the snowblower.



5/8" x 1 1/2" bolt

1/2" nylon insert locknut

ASSEMBLY

Hydraulic Rotation by Cylinder- 8172 (Figure 5)

1. Install bell crank bracket (item 4) under the base of the chute support at the center of the machine by using two 1/2" NC x 1 3/4" hex. bolts (item 9). Tighten with two lockwashers (item 17) and nuts (item 14).
2. Install the cylinder bracket (item 3) on the housing, attaching everything with two 1/2" NC x 1 3/4" bolts (item 9). Tighten with two 9/16" flatwashers (item 18), lockwashers (item 17) and nuts (item 14).
3. Insert a bushing (item 7) in the $\text{\O}1\ 1/4$ " hole of the bell crank (item 1) and slide the bell crank between the flat bars of the cylinder bracket. Slide a pivot bushing (item 6) under the cylinder bracket (item 3). Fasten everything by inserting a 3/4" NC x 4 1/2" bolt (item 8) through the $\text{\O}3/4$ " hole of the bell crank bracket (item 4) and tighten with a lockwasher and nut (items 16-13).
4. Fasten the push arm (item 2) in the $\text{\O}1/2$ " hole, under the chute gear, using a 1/2" x 1 1/4" shoulder screw (item 11) with the head of the screw upward. Place a spacer (item 5) between the push arm (item 2) and the gear and tighten with a 3/8" NC stover nut (item 15), leaving some movement to the articulation. Attach the other end of the push arm (item 2) over the bell crank by inserting a 1/2" x 3/4" shoulder screw (item 10, with the head upward) and tighten with a 7/16" flatwasher (item 12) and a 3/8" NC stover nut (item 15), leaving some movement to the articulation.

IMPORTANT: To prevent premature wear, grease generously the mobile parts.

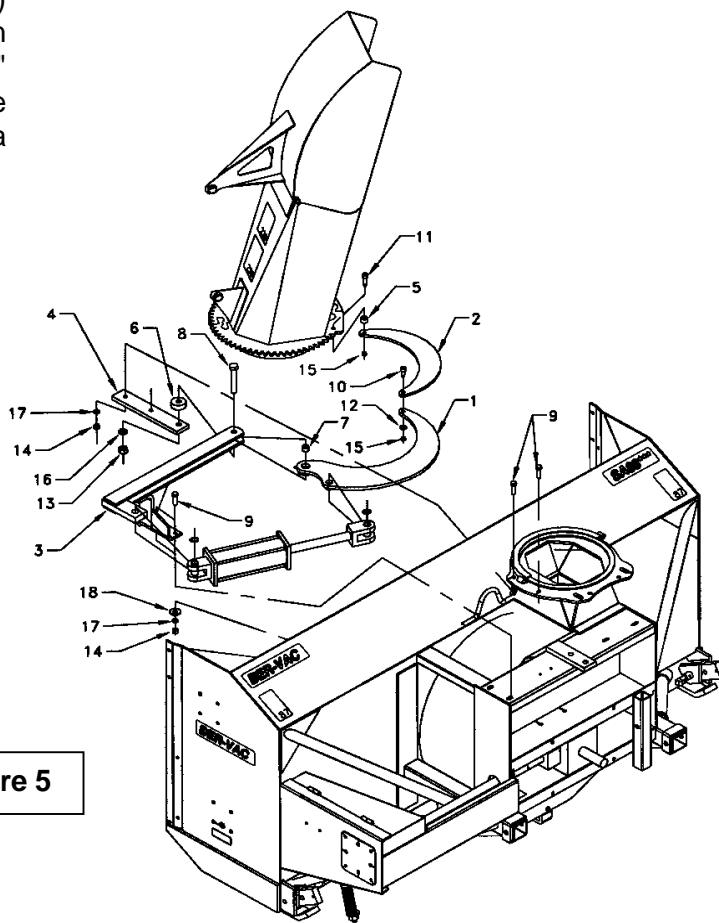


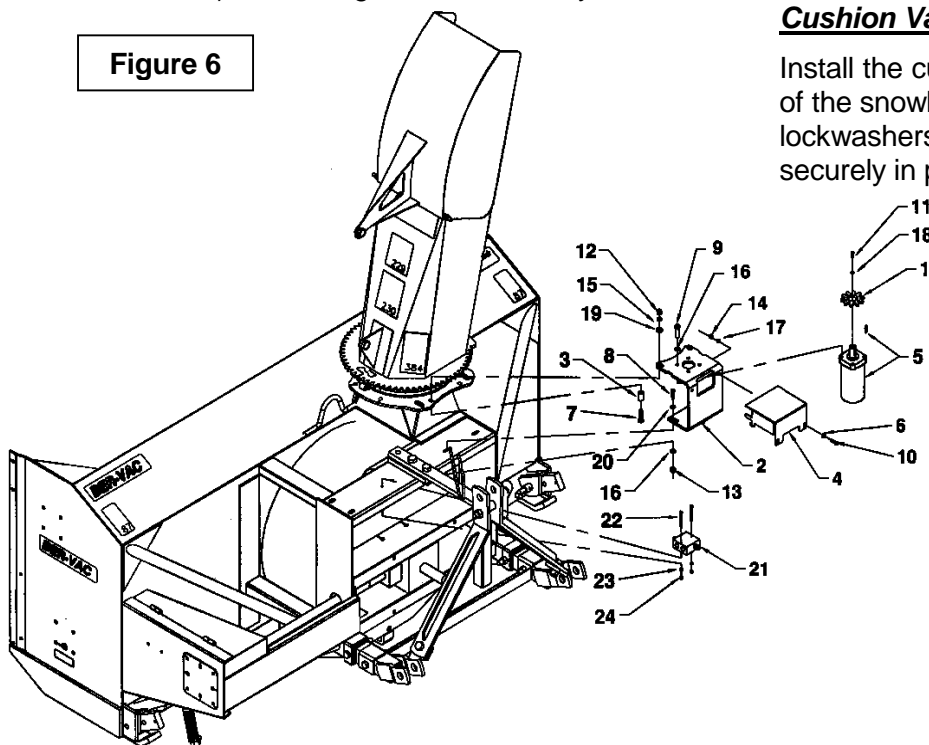
Figure 5

ASSEMBLY

Hydraulic Rotation by Motor – 8164 **(Figure 6)**

1. Fasten the motor (item 5), oil outputs towards the rear of the snowblower, using four 3/8" x 3/4" bolts, lockwashers (item 9-16). (Tighten according to the Torque Specification Table located at the end of the manual).
2. Place the motor gear (item 1) on top of the motor, with hub facing down. Fasten the gear in place with a 1/4" NC x 5/8" bolt and a 1/4" lockwasher (item 11-18). Tighten firmly.
3. Install the motor support (item 2) on the backside of the chute base, secure with two 3/8" x 1 1/4" bolts, 7/16" flatwashers, lockwashers and nuts (items 8-20-16-13). Do not tighten immediately.
4. Attach the upper part of the support with two 1/2" x 3" bolts, two 9/16" flatwashers, spacers, lockwashers and nuts (items 7-19-3-15-12). Do not tighten immediately.

Figure 6



5. Correct mounting of the system will level the gears.
6. Adjust the gears with a distance of 1/32" to 1/16". Tighten the four nuts (items 7-8). Tighten firmly.
7. Connect the hydraulic hoses to the motor, and make a trial test at a very low speed.
8. Evaluate the adjustment according to the sound of the teeth. If they produce a loud noise when making contact, it means that the pinion and gear need to be closer. Readjust and repeat the operation until you hear a regular and even sound.
9. Install the cover (item 4) with two 5/16" x 1" bolts, two 5/16" flatwashers, lockwashers and nuts (items 10-6-17-14). Tighten all bolts securely, according to the Torque Specification Table.
10. Grease regularly the gears to prevent premature wear and rust on contact points.

Cushion Valve Installation - 8090

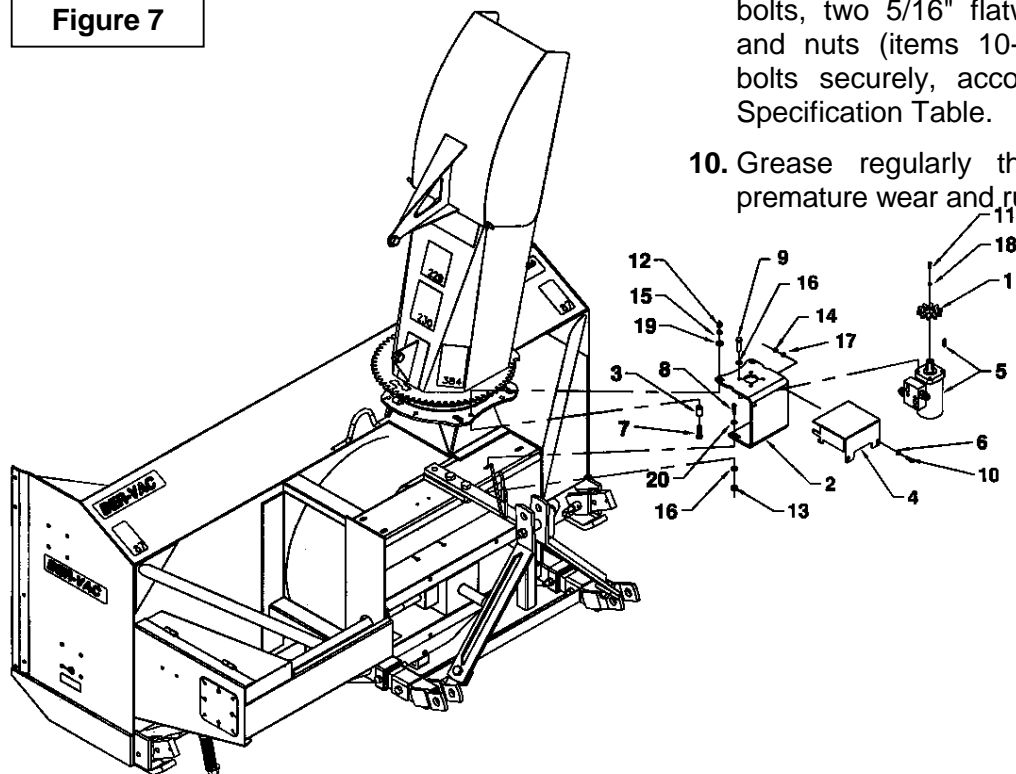
Install the cushion valve (item 21) to the rear top of the snowblower using two 1/54" NC x 2" bolts, lockwashers and nuts (items 22-23-24). Tighten securely in place.

ASSEMBLY

Hydraulic Rotation by Motor – 8164A **(Figure 7)**

1. Fasten the motor (item 5) placing the hydraulic ports towards the center of the snowblower, as shown on the figure. Secure using four 3/8" x 3/4" bolts, lockwashers (item 9-16). (Tighten according to the Torque Specification Table located at the end of the manual).
2. Place the motor gear (item 1) on top of the motor, with hub facing down. Fasten the gear in place with a 1/4" NC x 5/8" bolt and a 1/4" lockwasher (item 11-18). Tighten firmly.
3. Install the motor support (item 2) on the backside of the chute base, secure with two 3/8" x 1 1/4" bolts, 7/16" flatwashers, lockwashers and nuts (items 8-20-16-13). Do not tighten immediately.

Figure 7



4. Attach the upper part of the support with two 1/2" x 3" bolts, two 9/16" flatwashers, spacers, lockwashers and nuts (items 7-19-3-15-12). Do not tighten immediately.
5. Correct mounting of the system will level the gears.
6. Adjust the gears with a distance of 1/32" to 1/16". Tighten the four nuts (items 7-8). Tighten firmly.
7. Connect the hydraulic hoses to the motor, and make a trial test at a very low speed.
8. Evaluate the adjustment according to the sound of the teeth. If they produce a loud noise when making contact, it means that the pinion and gear need to be closer. Readjust and repeat the operation until you hear a regular and even sound.
9. Install the cover (item 4) with two 5/16" x 1" bolts, two 5/16" flatwashers, lockwashers and nuts (items 10-6-17-14). Tighten all bolts securely, according to the Torque Specification Table.
10. Grease regularly the gears to prevent premature wear and rust on contact points.

ASSEMBLY

Second Auger Conversion Kit (Option) (Figure 8)

1. Remove the front guard and loosen the idler sprocket. Remove the lower auger chain and the bolts on each side of the lower auger (item 4) bearings (item 2). Remove the lower auger from the snowblower.
2. Install the new sprockets (item 3) on both augers using four 3/8" NC x 1 1/4" bolts for the upper auger (item 5) and four 3/8" NC x 1 1/2" bolts for the lower auger (item 4), with lockwashers and nuts (items 6-7-8). Tighten according to the Torque Specification Table located in your snowblower's manual.
3. Reinstall lower (item 4) and upper augers (item 5) with the supplied bearings (item 9) and 1/2" x 1 1/2" bolts, lockwashers and nuts (items 10-11-12). Do not tighten setscrews on the bearings now.
4. Install idler sprocket (item 13) on chain idler support (item 14) as shown, using a 5/8" NC x 2 1/2" carriage bolt, 11/16" flatwashers and 5/8"NC nylon insert locknut (items 15-16-17). Assemble support inside snowblower in the pre-bored holes, using two 3/8" NC x 1 1/4" bolts, lockwashers and nuts (items 18-19-20).
5. Install the chain as shown and assemble the connecting link by placing the opening opposite the direction of the chain rotation (see Figure 8a). Align the auger's sprockets with the idler sprocket and tighten securely the setscrews on the auger bearings to stabilize the augers.
6. Install the new chain guard (item 21) supplied with the optional upper auger, using three 3/8"NC x 1" bolts and nylon insert locknuts (items 22-23). Reinstall the lower auger chain and the front guard.

Figure 8a

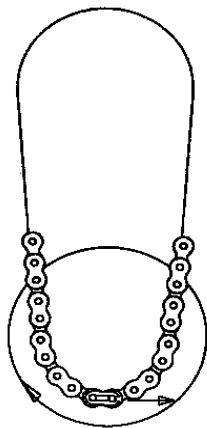
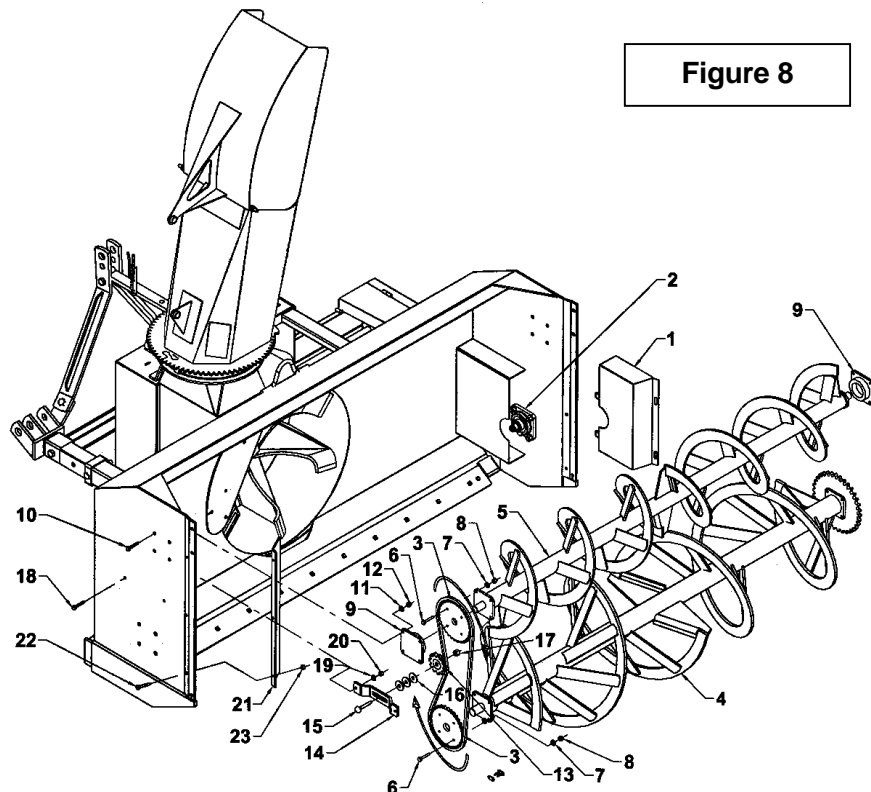


Figure 8



ASSEMBLY

Installation of Reduction Box 8097 (Option) (Figure 9)

1. Remove the driveline from the snowblower. Remove the driveline guard (item 1) and attach the reduction box (item 3) to the support (item 2) with four 1/2" NC x 1 1/4" hex. Bolts, flatwashers and lockwashers (items 4-5-6). Tighten firmly.
2. Slip the reduction box (item 3) on the gearbox splined shaft of the snowblower and align the holes of the support (item 2) with those of the snowblower. Fasten everything with four 1/2" NC x 1 1/4" hex. bolts, flatwashers, lockwashers and nuts (items 7-8-9-10), as shown on figure. Tighten firmly.

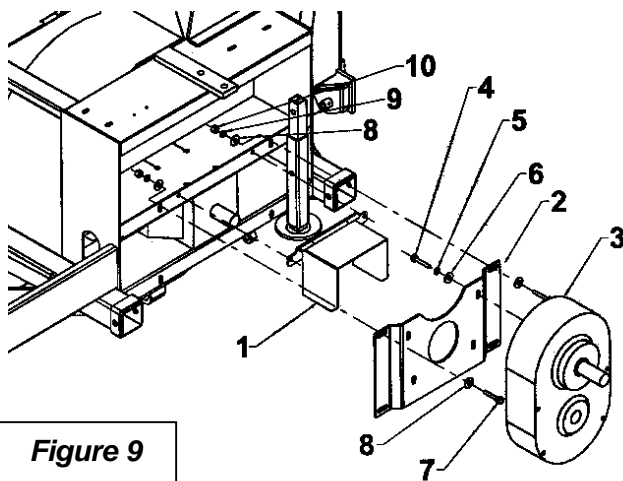


Figure 9

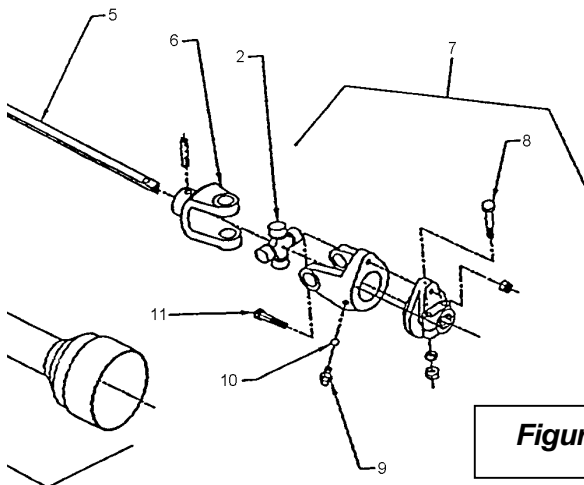
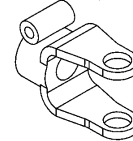


Figure 10

Adjustment and Maintenance of the Reduction Box (Figures 9-10)

IMPORTANT: If your tractor is equipped with a 1 3/4" – 20 splines PTO, you must replace the quick disconnect yoke of your driveline:

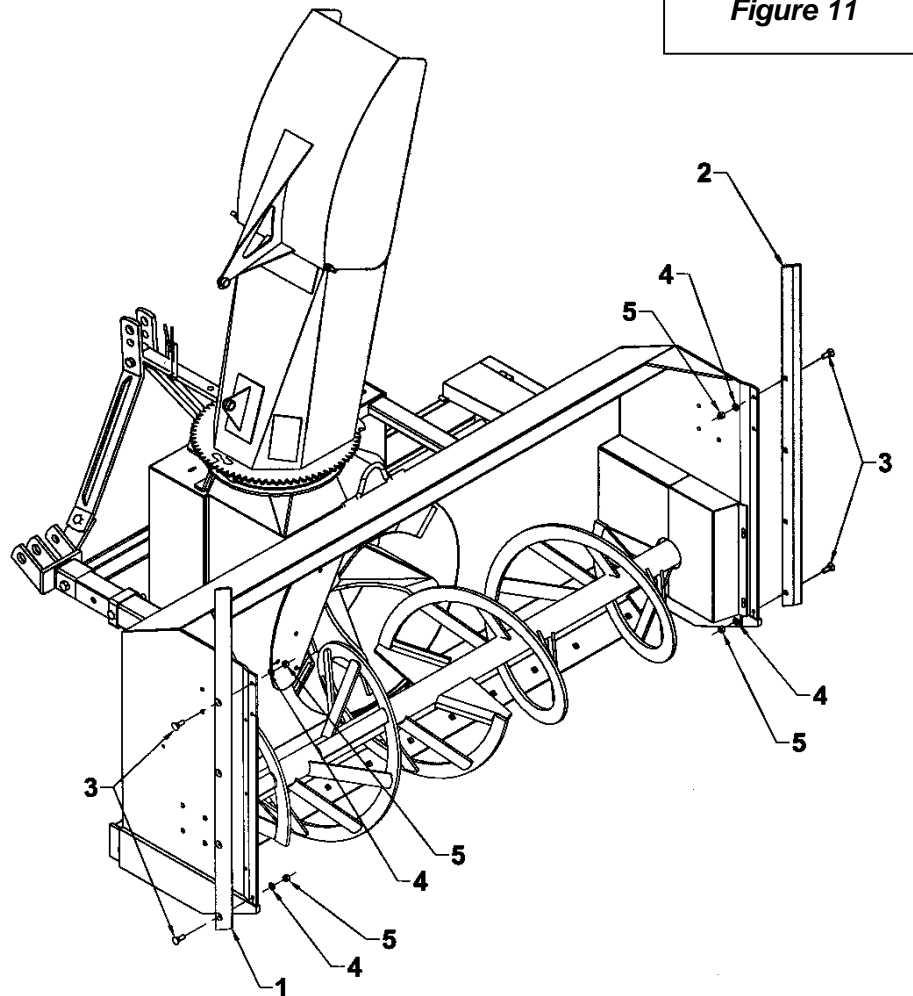


- For 8-series driveline (662288), order yoke #8203.
 - For 9-series driveline (8032), order yoke #8205.
1. Adjust the chain's tension after ten (10) hours of operation. To do so, check the play between the reduction box input shaft (Fig.9, item 3) and the output shaft by turning the input shaft both ways without the output shaft turning. A play of 10° or 15° requires an adjustment:
 - a. Remove the driveline from the reduction box.
 - b. Remove the 12 5/16" bolts from the covers around the input shaft on each side (6 bolts on each side). **NOTE:** These 2 covers have an eccentric center in relation to the exterior – by turning them, we change the center to center of the shafts and tighten the chain.
 - c. Using a hammer or a screwdriver, slowly turn the two covers in the same direction until the next cover hole is aligned with the threaded hole of the reduction box.
 - d. Check the play between the 2 shafts, as described at point (2.). If the play is still too high repeat step (c.). If the play is correct, reinstall the bolts and the driveline.
 - e. Check the play every 100 hours of operation.
 3. After 25 hours of operation and before every season, change the oil from the reduction box with 2.6 liters of SAE 80W90 oil, AGMA 5EP oil or equivalent.

ASSEMBLY

Drift Cutters Installation 8099 (Option) (Figure 11)

1. Enlarge the top and bottom holes on each side of the snowblower to $\text{\O}1/2"$. Install the knives (items 1-2) on the exterior of each snowblower side by aligning the top and bottom holes and fasten with the plow bolts, lockwashers and nuts (items 3-4-5).
2. Using the knives as templates, drill the four missing holes and fasten as indicated in step 1.



OPERATION

GENERAL PREPARATION

1. Read the operator's manual carefully before using the tractor and snowblower. Be thoroughly familiar with the controls and proper use of the equipment. Know how to stop the unit and disengage the controls quickly.
2. Make sure the snowblower is clear of snow before engaging the driveline.
3. Make sure the auger and fan operate freely.
4. Check the oil level in the worm gear box and if necessary, add SAE 80W90 gear oil, AGMA 5EP oil or equivalent.
5. Check the three shear bolts, one on each auger section and one between the fan and gearbox for proper tightness.
6. Adjust so that the snowblower skid shoes run level.
7. Wear adequate winter outer garments while operating equipment.

OPERATING CONTROLS

Deflector Adjustment

Set the angle of deflection according to the distance the snow must be thrown. To set the deflector angle, remove the hairpin from the adjustment tube, adjust the deflector to the appropriate angle and replace the hairpin.

Raising and Lowering the Snowblower

Move the three point lever down or forward to lower, and up or rearward to raise.

Work and Travel Speed

Working ground speed will depend on the depth and density of the snow to be cleared. Normally, ground speed will range from 4 to 7 MPH for light, dry snowfalls 3 to 6 inches, and 1 to 3 MPH for heavy, wet or drifted snow. To transport, disengage the drive shaft and raise the snowblower to full transport height.



WARNING: To avoid personal injury, be sure the tractor engine is off, the drive shaft disengaged, and all movement has stopped before making any adjustments.

Drive Shaft Operation

The mid drive shaft is activated by pulling up the drive shaft lever on left side of seat. Push down to disengage.

Skid Shoes Adjustment

Adjust the snowblower so that the skid shoes run level. Adjust the skid shoes according to the 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.

To adjust skid shoes, loosen the bolts or remove the pin, and make the following adjustments:

Clearance between cutting edge and surface:

- *Level paved surface :* Adjust to 1/16" to 1/8"
- *Uneven or gravel surface:* Adjust to 1/2" and more according to size of gravel.

OPERATION

SNOW REMOVAL METHODS

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 clog. For best results, raise the snowblower and remove a top layer of snow. A second pass with the snowblower will remove the remaining snow.

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

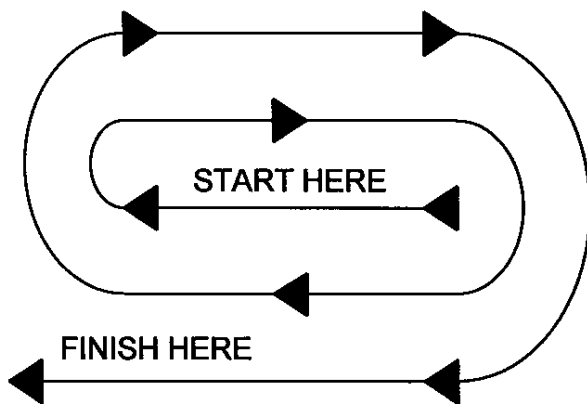


WARNING: Do not use hands or feet to unclog chute. Do not attempt to clear clogged chute of snow while tractor engine is running. If the chute clogs, disengage the drive shaft, shut off the tractor engine, remove the ignition key, wait for all movement to stop, and then clear the snow from the chute.

A definite pattern of operation is required to thoroughly clean the snow area. These patterns will avoid throwing snow in unwanted places as well as eliminating a second removal of snow.

PATTERN 1

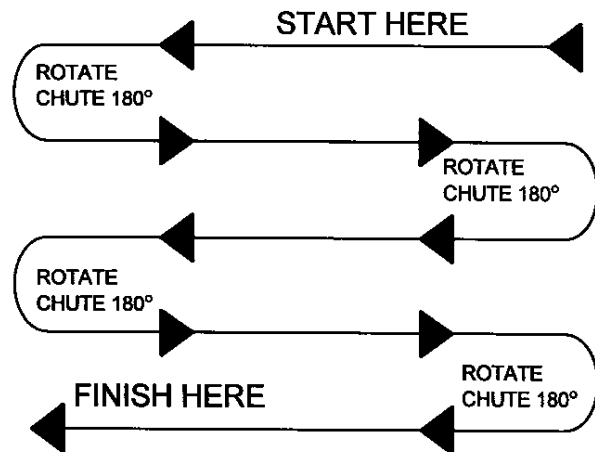
DISCHARGE SNOW BOTH SIDES



DISCHARGE SNOW BOTH SIDES

Where it is possible to throw the snow to the left and right (above), as on a long driveway, it is advantageous to start in the middle. Plow from one end to the other, throwing snow to both sides without changing the direction of the discharge guide

PATTERN 2



DISCHARGE SNOW THIS SIDE ONLY

If the snow can only be thrown to one side of the driveway or sidewalk (above), start on the opposite side. At the end of the first pass, rotate the discharge guide 180 degrees for the return pass. At the end of each succeeding pass, rotate the discharge guide 180 degrees to maintain direction of throw in the same area.

MAINTENANCE

MAINTENANCE

Storage

1. Check the shear bolts at frequent intervals for proper tightness to be sure the blower is in safe working condition.
2. Never store the tractor with fuel in the fuel tank inside a building where open flame or sparks 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.



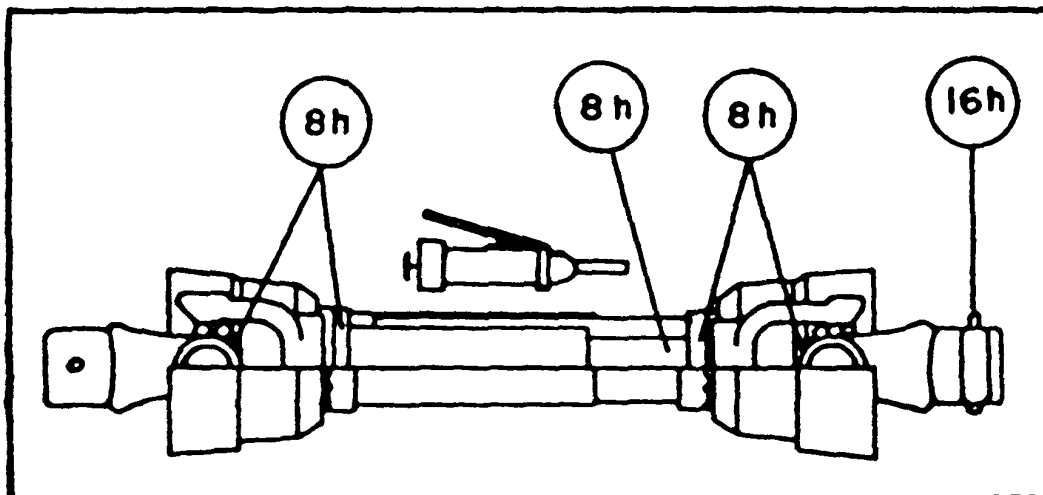
WARNING: Provide adequate blocking before working under the snowblower when in the raised position.

Driveline

IMPORTANT: When the snowblower is not used for more than two weeks, perform driveline maintenance and always store it in a dry place, away from bad weather conditions.

LUBRICATION

1. **GEAR** : Check the oil level in the worm gear drive every month. If necessary add SAE 80W90 gear oil, AGMA 5EP extreme pressure oil or equivalent.
2. **REDUCTION BY CHAIN** : Lubricate with chain saw lubricant every 4 hours of operation and after each use.
3. **ROTATION SYSTEM** : Grease the chute base, the pivots and the gears every 8 hours of operation and when storing.
4. **DRIVELINE (S)** : Grease each u-joint fitting every 8 hours of operation. Slide drive shaft apart and coat sliding surfaces with grease every 8 hours of operation.
5. **DOUBLE CHAIN IDLER SECTIONS:** Grease the areas of the mechanism that have a grease fitting every 24 hours.
6. **ROTARY DRUM:** Grease all rotation point every 24 hours of operation. At the end of the season, clean thoroughly the contour of the drum that comes in contact with the snowblower housing and grease generously before storing.



PARTS

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.

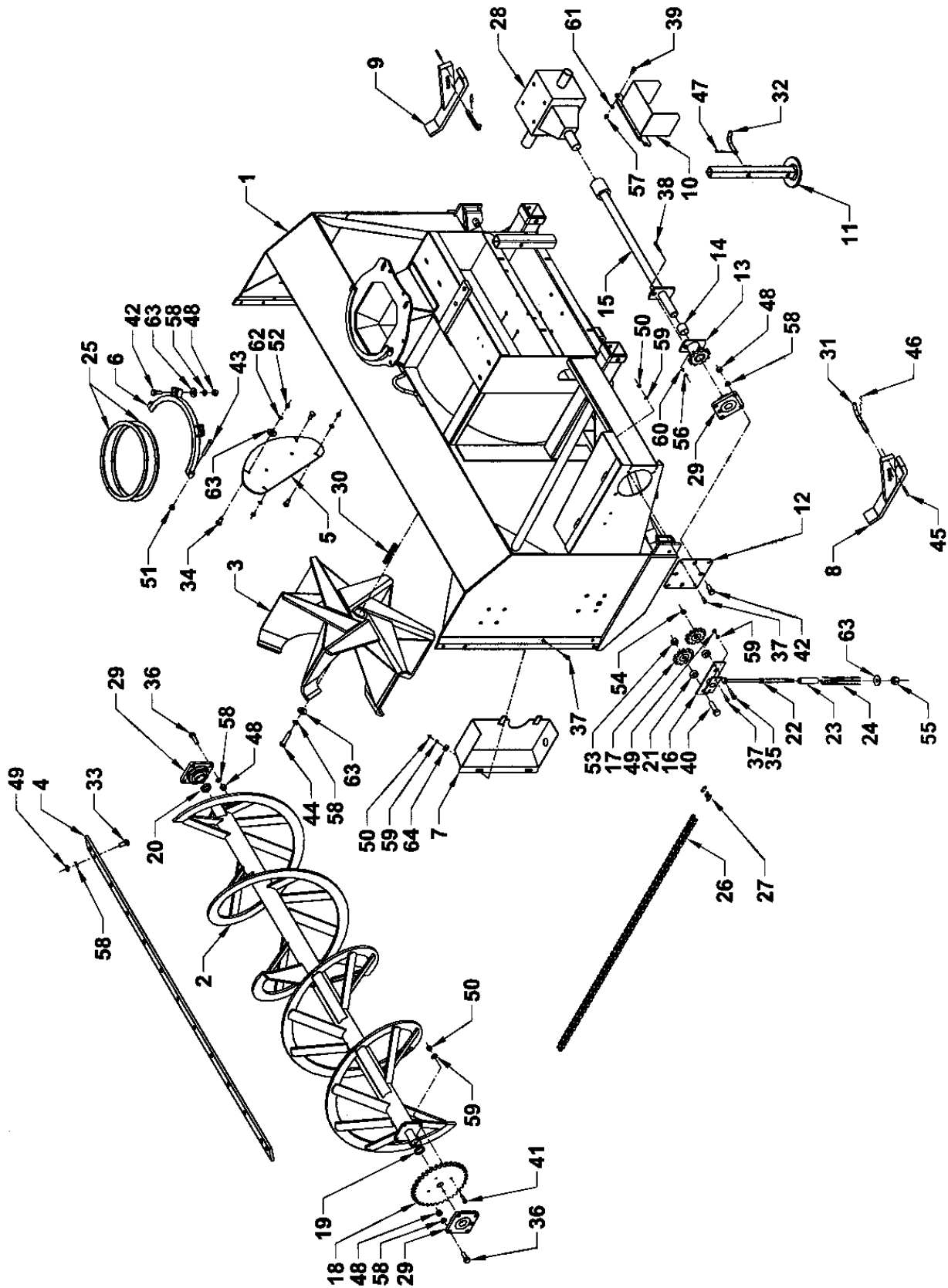
All reference to right and left, forward or rearward, are from the operator's seat, looking at the machine while operating.

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

The manufacturer reserves the rights to change, modify, or eliminate from time to time, for technical or other reasons, certain or all data, specifications, or the product or products themselves, without any liability or obligation.

PARTS

SA92 – SA98 SNOWBLOWER



PARTS

SA92 – SA98 SNOWBLOWER

REF.	DESCRIPTION	QTY.	PART #	
			SA92	SA98
1	Housing	1	---	---
2	Auger	1	664409	664431
3	Fan 6 blades	1	662324	662324
4	Cutting edge	1	666324	666329
5	Restriction plate	1	666325	666325
6	Retaining plate	1	665988	665988
7	Front guard	1	664895	664895
8	Left adjustable skid shoe	1	662250	662250
9	Right adjustable skid shoe	1	662251	662251
10	Driveline guard	1	663675	663675
11	Parking stand	1	662252	662252
12	Drive support	1	666326	666326
13	Shear plate	1	664915	664915
14	Bushing	2	665127	665127
15	Drive shaft	1	664914	664926
16	Double chain idler	1	664825	664825
17	Idler sprocket #80A11	2	654756	654756
18	Sprocket #80A34, 1 1/2" hole	1	662353	662353
19	Spacer	1	663672	663672
20	Spacer	1	662368	662368
21	Idler spacer 11/16" lg	2	664913	664913
22	Idler lever	1	664840	664840
23	Spring guide	1	664841	664841
24	Compression spring \varnothing 1.300 x 8"	1	664876	664876
25	Rotation bushing 1/4" x 3/4"	2	665989	665989
26	Chain #80 x 89 links & connecting link	1	664961	664961
27	Connecting link	1	3300007	3300007
28	Gearbox	1	662281	662281
29	Bearing \varnothing 1 1/2", 4 holes	3	4300018	4300018
30	Key 1/2" x 1/2" x 4 3/4" lg	1	662380	662380
31	Skid shoe pin	2	662400	662400
32	Parking stand pin	1	30767	30767
33	Carriage bolt 5/8"NC x 1 1/2"lg, gr.5 PTD	13	O/L	O/L
34	Carriage bolt 1/2"NC x 1 1/4"lg, gr.5 PTD	6	O/L	O/L
35	Shoulder screw 1/2" x 3/4", 3/8"NC	1	664577	664577
36	Bolt hex. 5/8"NC x 1 3/4" lg., gr.5 PTD	8	O/L	O/L
37	Bolt hex. 3/8"NC x 1" lg., gr.5 PTD	8	O/L	O/L
38	Bolt hex. 5/16"NC x 2" lg., gr.5 PTD	1	O/L	O/L
39	Bolt hex. 7/16"NC x 1" lg., gr.5 PTD	2	O/L	O/L
40	Bolt hex. 3/4"NC x 2 1/2" lg., gr.5 PTD	2	O/L	O/L
41	Bolt hex. 3/8"NC x 1 1/2" lg., gr.5 PTD	4	O/L	O/L
42	Bolt hex. 5/8"NC x 1 1/2" lg., gr.5 PTD	6	O/L	O/L
43	Bolt hex. 1/2"NC x 3 1/4" lg., gr.5 PTD	2	O/L	O/L

PARTS

SA92 - SA98 - SNOWBLOWER

REF.	DESCRIPTION	QTY.	PART #	PART #
			SA92	SA98
44	Bolt hex. 5/8"NC x 2" lg., gr.5 PTD	1	O/L	O/L
45	Spring pin 3/8" x 2" lg., PTD	2	O/L	O/L
46	Hairpin 3/16" x 3 3/4", PTD	2	O/L	O/L
47	Hairpin 4mm x 80mm, PTD	1	O/L	O/L
48	Nut hex. 5/8"NC, PTD	14	O/L	O/L
49	Nut hex. thin 5/8"NC, PTD	13	O/L	O/L
50	Nut hex. 3/8"NC, PTD	12	O/L	O/L
51	Nylon insert locknut 1/2"NC, PTD	2	O/L	O/L
52	Nut hex. 1/2"NC, PTD	6	O/L	O/L
53	Stover nut 3/4"NC, PTD	2	O/L	O/L
54	Stover nut 3/8"NC, PTD	1	O/L	O/L
55	Stover nut 5/8"NC, PTD	1	O/L	O/L
56	Nut hex. 5/16"NC, PTD	1	O/L	O/L
57	Nut hex. 7/16"NC, PTD	2	O/L	O/L
58	Lockwasher 5/8" PTD	28	O/L	O/L
59	Lockwasher 3/8" PTD	12	O/L	O/L
60	Lockwasher 5/16" PTD	1	O/L	O/L
61	Lockwasher 7/16" PTD	2	O/L	O/L
62	Lockwasher 1/2" PTD	6	O/L	O/L
63	Flatwasher 11/16" hole, PTD	5	O/L	O/L
64	Flatwasher 7/16" hole, PTD	2	O/L	O/L

PARTS

SA92TRC – SA98TRC – SA104TRC SNOWBLOWER

RÉF.	DESCRIPTION	QTÉ.	# PIÈCE	# PIÈCE	# PIÈCE
			SA92TRC	SA98TRC	SA104TRC
1	Housing	1			---
2	Auger	1	664409	664431	662382
3	Fan 6 blades	1	662324	662324	662324
4	Cutting edge	1	666324	666329	666387
5	Anti-friction strip 3/8" x 1/2"	1	662378	662378	662378
6	Rotary drum	1	666355	666355	666355
7	Anti-friction strip 3/8" x 1"	1	661988	661988	661988
8	Rotation arm	1	662246	662246	662246
9	Rotation lever	1	662417	662417	662417
10	Rotation rod	1	662418	662418	662418
11	Rotation flatbar	1	662347	662347	662347
12	Rotary drum guide	2	659078	659078	659078
13	Rear drawer	1	662340	662340	662340
14	Parking stand	1	662252	662252	662252
15	Retaining plate	1	665988	665988	665988
16	Restriction plate	1	666356	666356	666356
17	Front guard	1	664895	664895	664895
18	Double chain idler	1	664825	664825	664825
19	Idler spacer 11/16" lg	2	664913	664913	664913
20	Idler sprocket #80A11	2	654756	654756	654756
21	Idler lever	1	664840	664840	664840
22	Spring guide	1	664841	664841	664841
23	Compression spring \varnothing 1.300 x 8"	1	664876	664876	664876
24	Left adjustable skid shoe	1	662250	662250	662250
25	Right adjustable skid shoe	1	662251	662251	662251
26	Shear plate	1	664915	664915	664915
27	Bushing	2	665127	665127	665127
28	Drive shaft	1	664914	664926	664933
29	Rotation bushing 1/4" x 3/4" "UHMW"	2	665989	665989	665989
30	Driveline guard	1	663675	663675	663675
31	Gearbox	1	662281	662281	662281
32	Chain #80 x 91 links & connecting link	1	664921	664921	664921
33	Connecting link	1	3300007	3300007	3300007
34	Spacer	1	662368	662368	662368
35	Bearing \varnothing 1 1/2", 4 holes	3	4300018	4300018	4300018
36	Skid shoe pin	2	662400	662400	662400
37	Parking stand pin	1	30767	30767	30767
38	Hairpin 4mm x 80mm, PTD	1	O/L	O/L	O/L
39	Hairpin 3/16" x 3 3/4", PTD	2	O/L	O/L	O/L
40	Spring pin 3/8" x 2" lg., PTD	2	O/L	O/L	O/L
41	Spacer	1	663672	663672	663672
42	Sprocket #80A34, 1 1/2" hole	1	662353	662353	662353
43	Drive support	1	666326	666326	666326

PARTS

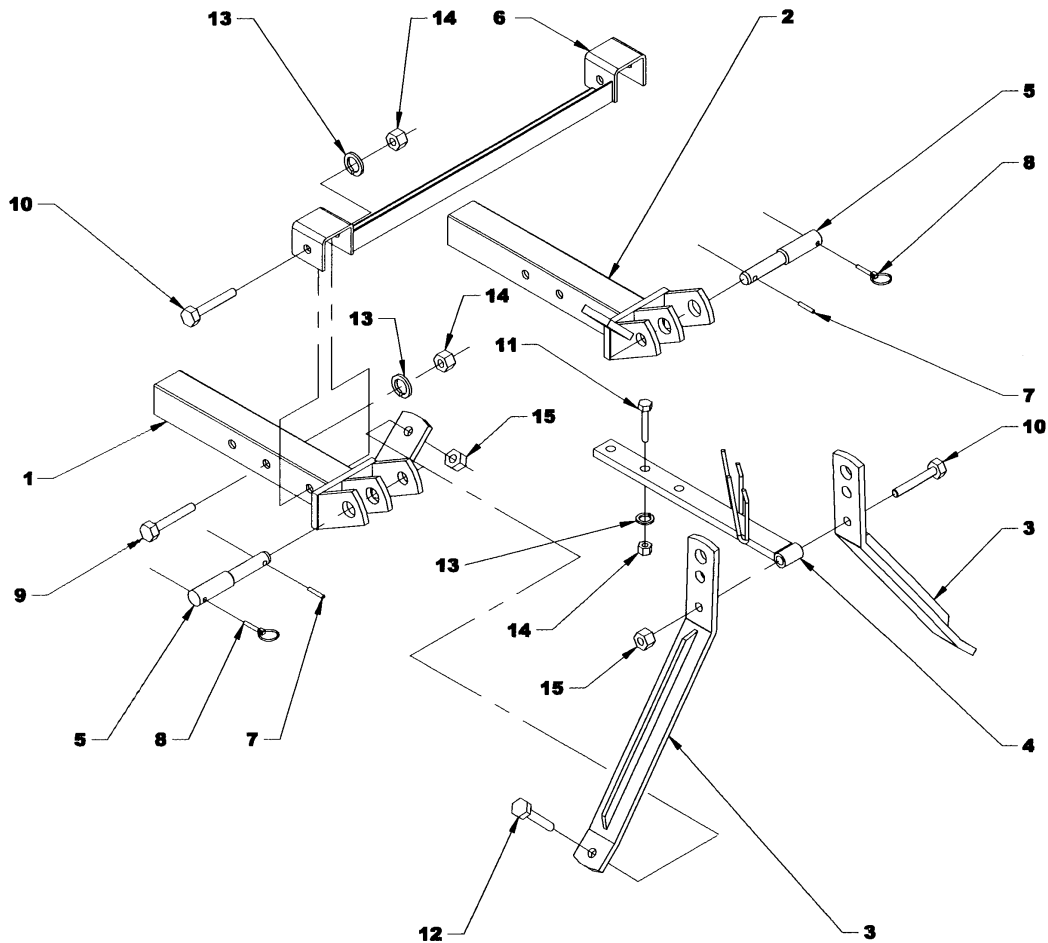
SA92TRC – SA98TRC – SA104TRC SNOWBLOWER

REF.	DESCRIPTION	QTY.	PART #			# PIÈCE
			SA92TRC	SA98TRC	SA104TRC	
44	Cylinder ø3" x 8"	1	654129	654129	654129	
	Seal kit	1	664176	664176	664176	
45	Fan washer	1	662351	662351	662351	
46	Rotation pin	1	662248	662248	662248	
47	Cotter pin ø3/16 x 1 1/2" lg., PTD	2	O/L	O/L	O/L	
48	Carriage bolt 5/8"NC x 1 1/2"lg, gr.5 PTD	13	O/L	O/L	O/L	
49	Bolt hex. 5/8"NC x 1 1/2" lg., gr.5 PTD	6	O/L	O/L	O/L	
50	Bolt hex. 5/8"NC x 1 3/4" lg., gr.5 PTD	8	O/L	O/L	O/L	
51	Bolt hex. 3/8"NC x 1 1/2" lg., gr.5 PTD	4	O/L	O/L	O/L	
52	Bolt hex. 5/8"NC x 3 1/4" lg., gr.5 PTD	1	O/L	O/L	O/L	
53	Bolt hex. 1/2"NC x 3 1/4" lg., gr.5 PTD	2	O/L	O/L	O/L	
54	Carriage bolt 1/2"NC x 1"lg, gr.5 PTD	4	O/L	O/L	O/L	
55	Bolt hex. 3/4"NC x 2 1/2" lg., gr.5 PTD	2	O/L	O/L	O/L	
56	Shoulder screw 1/2" x 3/4", 3/8"NC	1	664577	664577	664577	
57	Bolt hex. 3/8"NC x 1" lg., gr.5 PTD	8	O/L	O/L	O/L	
58	Bolt hex. 1/2"NC x 1 1/4" lg., gr.5 PTD	4	O/L	O/L	O/L	
59	Bolt hex. 5/16"NC x 2" lg., gr.5 PTD	1	O/L	O/L	O/L	
60	Bolt hex. 7/16"NC x 1" lg., gr.5 PTD	2	O/L	O/L	O/L	
61	Bolt hex. 1/2"NC x 1 3/4" lg., gr.5 PTD	4	O/L	O/L	O/L	
62	Cutting screw 3/8"NC x 1"lg. gr.5 PTD	2	659079	659079	659079	
63	Bolt hex. 3/8"NC x 2" lg., gr.5 PTD	1	O/L	O/L	O/L	
64	Bolt hex. 5/16"NC x 2 1/4" lg., gr.5 PTD	1	O/L	O/L	O/L	
65	Nylon insert locknut 1/2"NC, PTD	2	O/L	O/L	O/L	
66	Nut hex. 5/8"NC, PTD	14	O/L	O/L	O/L	
67	Nut hex. thin 5/8"NC, PTD	13	O/L	O/L	O/L	
68	Nut hex. 3/8"NC, PTD	13	O/L	O/L	O/L	
69	Stover nut 3/4"NC, PTD	2	O/L	O/L	O/L	
70	Stover nut 3/8"NC, PTD	1	O/L	O/L	O/L	
71	Stover nut 5/8"NC, PTD	1	O/L	O/L	O/L	
72	Nut hex. 5/16"NC, PTD	1	O/L	O/L	O/L	
73	Nut hex. 7/16"NC, PTD	2	O/L	O/L	O/L	
74	Nut hex. 1/2"NC, PTD	8	O/L	O/L	O/L	
75	Stover nut 5/16"NC, PTD	1	O/L	O/L	O/L	
76	Lockwasher 5/8" PTD	28	O/L	O/L	O/L	
77	Lockwasher 3/8" PTD	13	O/L	O/L	O/L	
78	Lockwasher 5/16" PTD	1	O/L	O/L	O/L	
79	Lockwasher 7/16" PTD	2	O/L	O/L	O/L	
80	Lockwasher 1/2" PQÉ	8	O/L	O/L	O/L	
81	Flatwasher 11/16" hole PTD	4	O/L	O/L	O/L	
82	Flatwasher 7/16" hole, PTD	2	O/L	O/L	O/L	
83	Key 1/2" x 1/2" x 4 3/4" lg	1	662380	662380	662380	
84	Serrated flange nut 1/2" NC PTD	4	O/L	O/L	O/L	

PARTS

THREE POINT HITCH

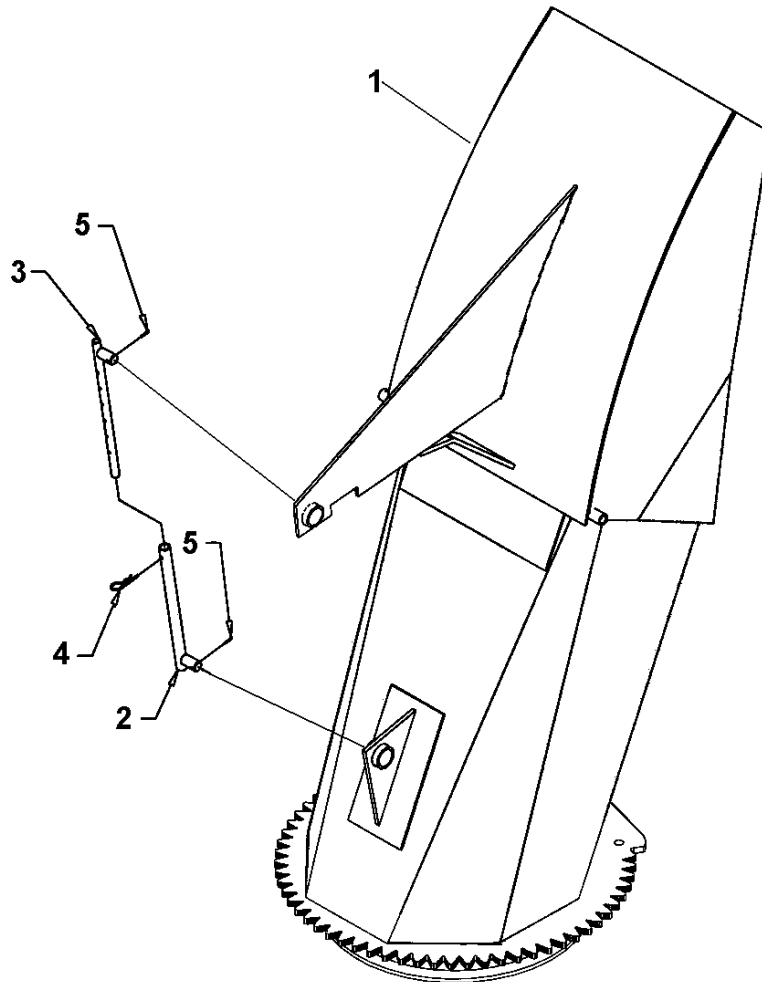
REF.	DESCRIPTION	QTY	PART #
1	Left lower hitch	1	662369
2	Right lower hitch	1	662370
3	Attaching plate	2	662372
4	Upper hitch	1	662371
5	Pin CAT. 2 & 3	2	30209
6	Brace	1	664125
7	Roll pin (1/4" dia. x 1 3/4" lg.)	2	O/L
8	Linchpin (7/16" dia.)	2	O/L
9	Hex. bolt (3/4" NC x 5 1/4")	2	O/L
10	Hex. bolt (3/4" NC x 4 1/2")	3	O/L
11	Hex. bolt (3/4" NC x 2 1/2")	2	O/L
12	Hex. bolt (3/4" NC x 2")	2	O/L
13	Lockwasher (3/4")	6	O/L
14	Hex. nut (3/4" NC)	6	O/L
15	Stover hex. nut (3/4" NC)	3	O/L



PARTS

STANDARD CHUTE

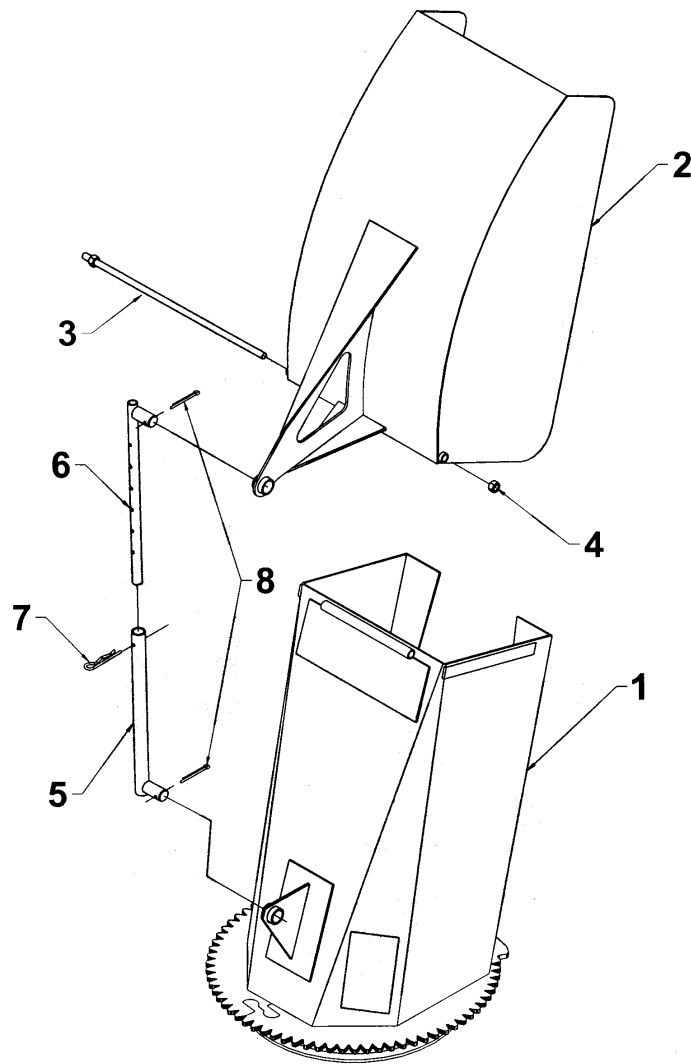
REF.	DESCRIPTION	QTY.	PART #
1	Chute ass'y	1	665993
OPTIONAL			
2	Adjustment tube	1	654076
3	Adjustment rod	1	654074
4	Hairpin 5mm dia. x 100 mm PTD	1	O/L
5	Cotter pin 1/4" dia. x 2" PTD	2	O/L



PARTS

STANDARD CHUTE – 666322

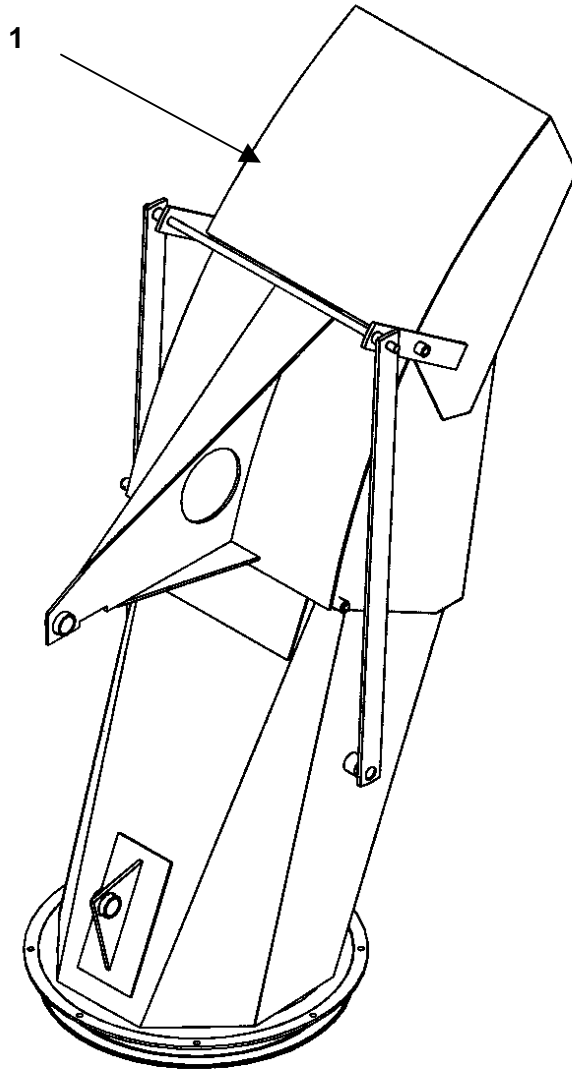
REF.	DESCRIPTION	QTY.	PART #
1	Chute base	1	666320
2	Adjustable deflector	1	666321
3	Hinge pin	1	666323
4	Stover hex. nut 7/16" NC PTD	1	O/L
OPTIONAL			
5	Adjustment tube	1	654076
6	Adjustment rod	1	654074
7	Hairpin 5mm dia. x 100 mm PTD	1	O/L
8	Cotter pin 1/4" dia. x 2" PTD	2	O/L



PARTS

SEMI-INDUSTRIAL CHUTE – 8169

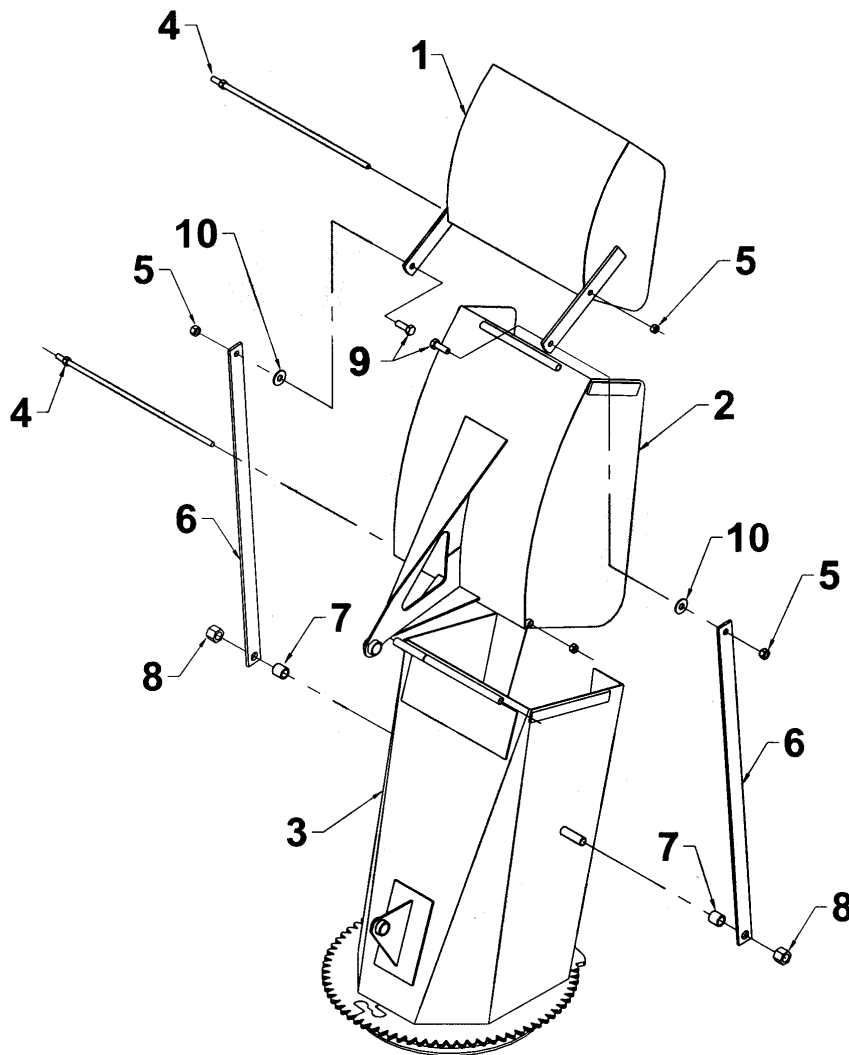
REF.	DESCRIPTION	QTY.	PART #
1	Chute ass'y	1	8169



PARTS

SEMI-INDUSTRIAL CHUTE – 8169A

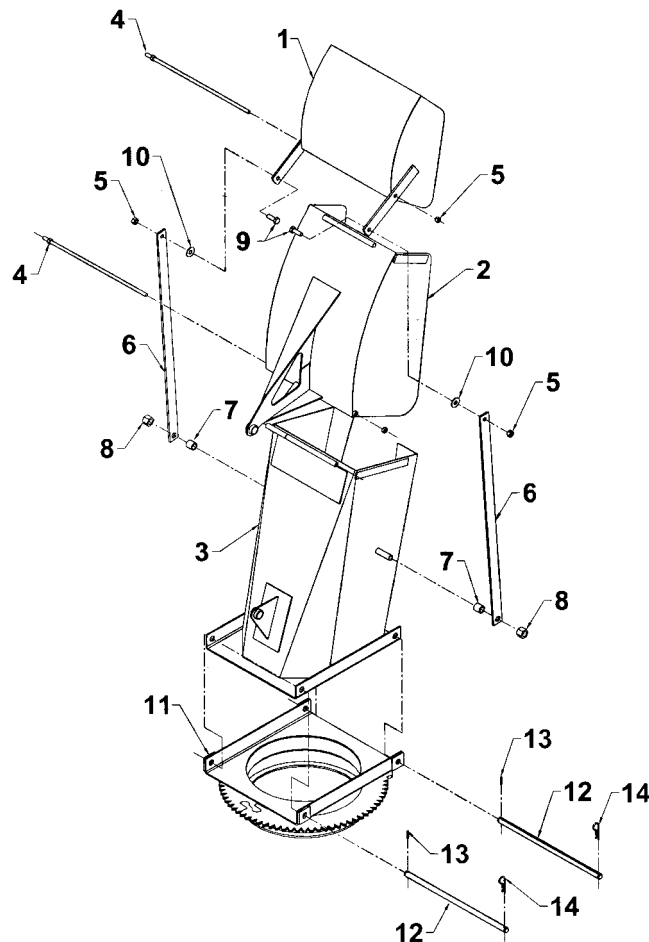
REF.	DESCRIPTION	QTY.	PART #
1	Deflector	1	666498
2	Central deflector	1	666497
3	Chute base	1	666495
4	Hinge rod	2	666323
5	Stover hex. nut 7/16" NC PTD	4	O/L
6	Chute flatbar	2	666499
7	Chute spacer	2	666464
8	Nylon insert locknut 3/4" NC PTD	2	O/L
9	Bolt hex. 7/16" NC x 1 1/4" gr.5 PTD	2	O/L
10	Flatwasher 7/16" hole dia. PTD	2	O/L



PARTS

INDUSTRIAL CHUTE – 8170A

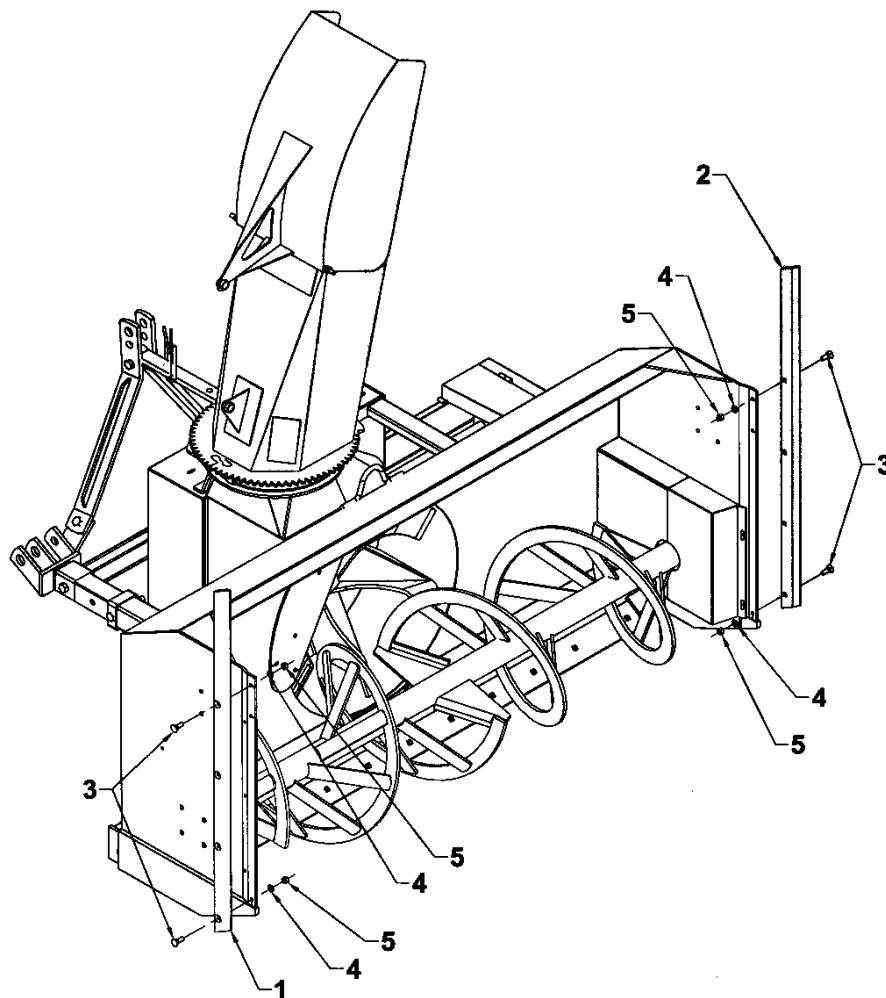
REF.	DESCRIPTION	QTY.	PART #
1	Deflector	1	666448
2	Central deflector	1	666447
3	Chute base	1	666532
4	Hinge rod	2	666297
5	Stover hex. nut 7/16" NC PTD	4	O/L
6	Chute flatbar	2	666463
7	Chute spacer	2	666464
8	Nylon insert locknut 3/4" NC PTD	2	O/L
9	Bolt hex. 7/16" NC x 1 1/4" gr.5 PTD	2	O/L
10	Flatwasher 7/16" hole dia. PTD	2	O/L
11	Chute ring	1	665679
12	Retaining pin	2	664980
13	Spring pin 1/4" dia. x 1 1/2" PTD	2	O/L
14	Hairpin 5mm dia.x 100mm PTD	2	O/L



PARTS

DRIFT CUTTERS – 8099 (OPTION)

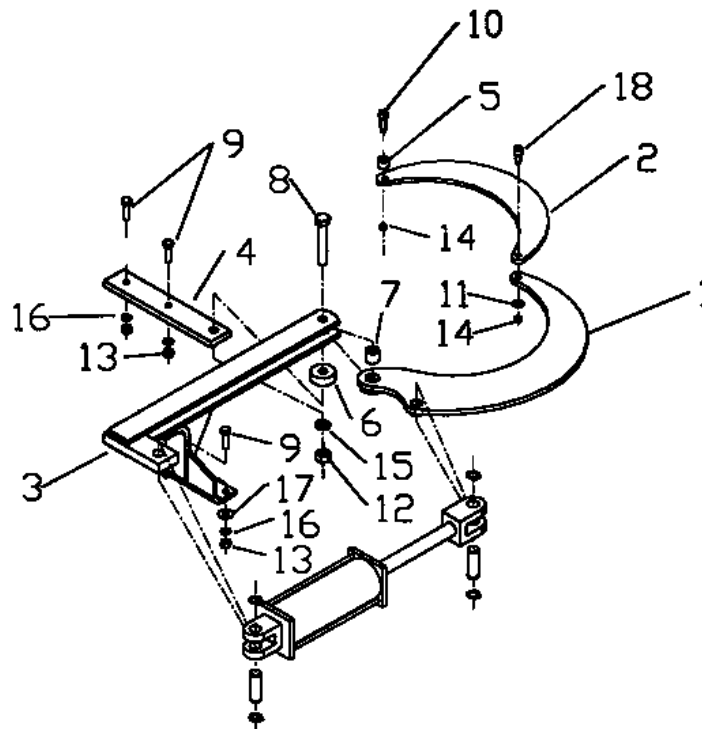
REF.	DESCRIPTION	QTY	PART #
1	Right vertical knife	1	664908
2	Left vertical knife	1	664907
3	Plow bolt 1/2" NC x 1 1/2" gr.5 PTD	8	O/L
4	Lockwasher 1/2" PTD	8	O/L
5	Nut hex. 1/2" NC PTD	8	O/L



PARTS

ROTATION BY CYLINDER – 8172 (OPTION)

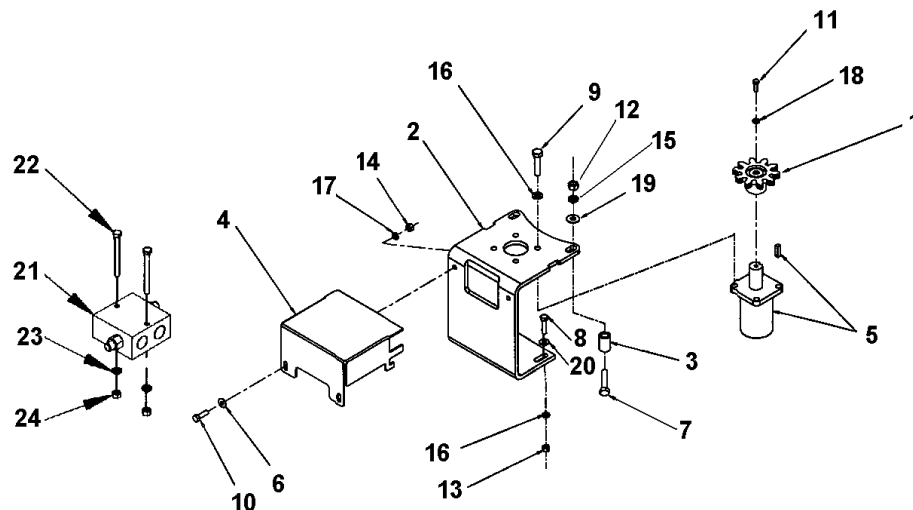
REF.	DESCRIPTION	QTY	PART #
1	Bell crank	1	664536
2	Push arm	1	664535
3	Cylinder bracket	1	664534
4	Bell crank bracket	1	665735
5	Spacer	1	665732
6	Pivot bushing	1	665731
7	Bushing	1	664476
8	Bolt hex. 3/4" NC x 4 1/2" gr.5 PTD	1	O/L
9	Bolt hex. 1/2" NC x 1 3/4" gr.5 PTD	4	O/L
10	Shoulder screw 1/2" x 1 1/4", 3/8" NC	1	3200016
11	Flatwasher $\varnothing 7/16$ " PTD	1	O/L
12	Nut hex. 3/4" NC PTD	1	O/L
13	Nut hex. 1/2" NC PTD	4	O/L
14	Stover nut 3/8" NC PTD	2	O/L
15	Lockwasher 3/4" PTD	1	O/L
16	Lockwasher 1/2" PTD	4	O/L
17	Flatwasher 9/16" PTD	2	O/L
18	Shoulder screw 1/2" x 3/4"	1	664577



PARTS

HYDRAULIC ROTATION BY MOTOR - 8164

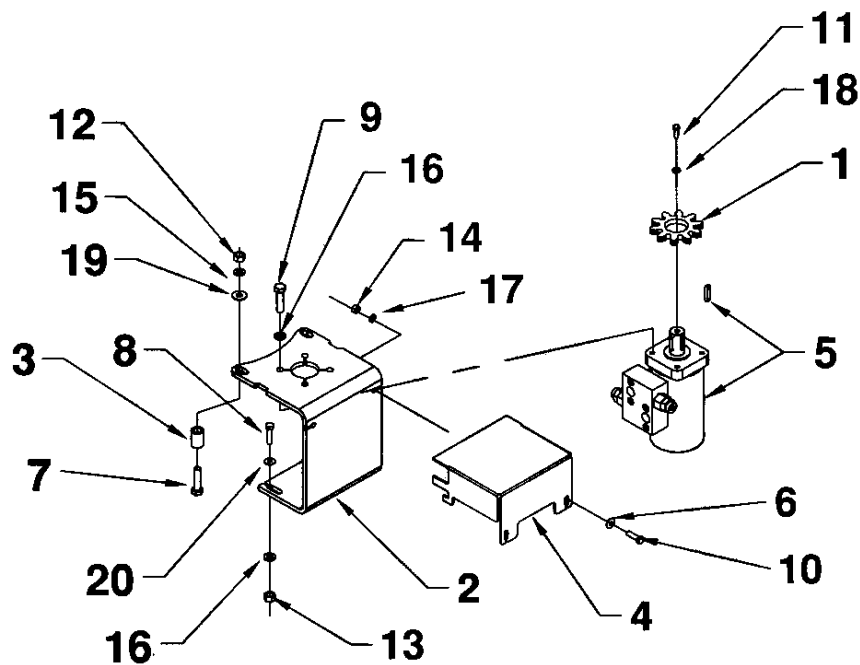
REF.	DESCRIPTION	QTY	PART #
1	Motor gear	1	665930
2	Motor support	1	665931
3	Spacer for motor support	2	665932
4	Shield	1	664839
5	Hydraulic motor	1	662448
	Seal kit	1	662449
6	Flatwasher Ø5/16"	2	O/L
7	Hex bolt 1/2" NC x 3"	2	O/L
8	Hex. bolt 3/8" NC x 1 1/4"	2	O/L
9	Hex. bolt 3/8"NC x 3/4"	4	O/L
10	Hex. bolt 5/16" NC x 1"	2	O/L
11	Hex. bolt 1/4" NC x 5/8"	1	O/L
12	Hex. nut 1/2" NC	2	O/L
13	Hex. nut 3/8" NC	2	O/L
14	Hex. nut 5/16" NC	2	O/L
15	Lockwasher 1/2"	2	O/L
16	Lockwasher 3/8"	6	O/L
17	Lockwasher 5/16"	2	O/L
18	Lockwasher 1/4"	1	O/L
19	Flatwasher 9/16" dia. hole	2	O/L
20	Flatwasher Ø7/16"	2	O/L
OPTIONAL			
21	Cushion valve	1	664999
22	Hex. bolt 1/4" NC x 2"	2	O/L
23	Lockwasher 1/4"	2	O/L
24	Hex. nut 1/4" NC	2	O/L



PARTS

HYDRAULIC ROTATION BY MOTOR – 8164A

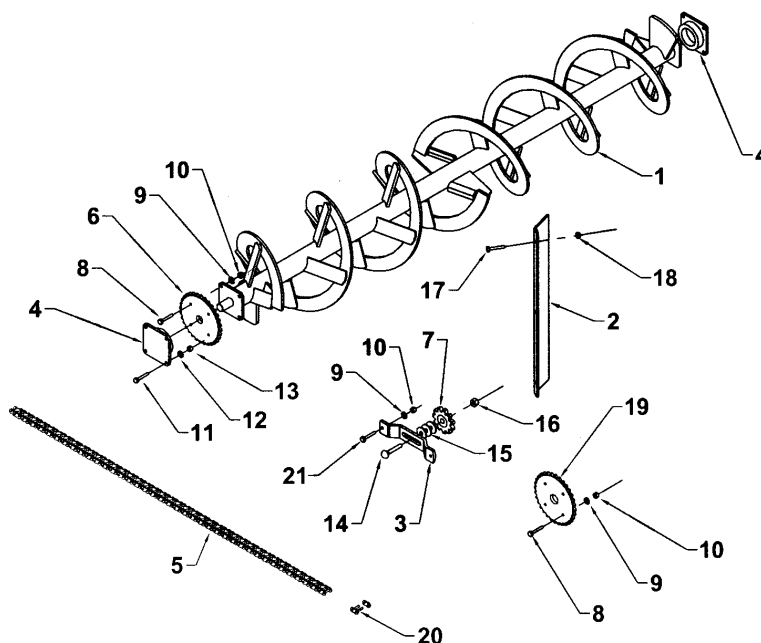
REF.	DESCRIPTION	QTY	PART #
1	Motor gear	1	665930
2	Motor support	1	666209
3	Spacer for motor support	2	665932
4	Shield	1	664839
5	Hydraulic motor	1	666253
	Seal kit	1	3900077
6	Flatwasher Ø5/16"	2	O/L
7	Hex bolt 1/2" NC x 3"	2	O/L
8	Hex. bolt 3/8" NC x 1 1/4"	2	O/L
9	Hex. bolt 3/8"NC x 3/4"	4	O/L
10	Hex. bolt 5/16" NC x 1"	2	O/L
11	Hex. bolt 1/4" NC x 5/8"	1	O/L
12	Hex. nut 1/2" NC	2	O/L
13	Hex. nut 3/8" NC	2	O/L
14	Hex. nut 5/16" NC	2	O/L
15	Lockwasher 1/2"	2	O/L
16	Lockwasher 3/8"	6	O/L
17	Lockwasher 5/16"	2	O/L
18	Lockwasher 1/4"	1	O/L
19	Flatwasher 9/16" dia. hole	2	O/L
20	Flatwasher Ø7/16"	2	O/L



PARTS

SECOND AUGER CONVERSION KIT (OPTION)

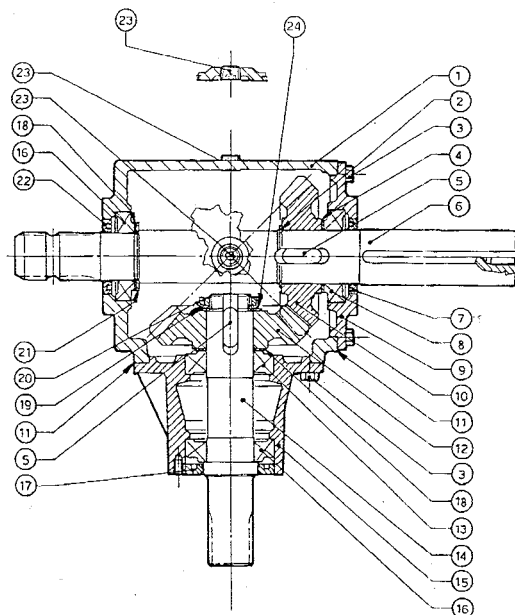
REF.	DESCRIPTION	QTY.	PART #	PART #	PART #
			SA92- SA92TRC (8049)	SA98- SA98TRC (8050)	SA104TRC (9464)
1	Upper auger	1	666450	666451	666452
2	Chain guard	1	662443	662443	662443
3	Chain idler support	1	655782	655782	655782
4	Bearing hole 1/4" dia., 4 holes	2	4300001	4300001	4300001
5	Chain #60 x 90 links & connecting link	1	662447	662447	662447
6	Sprocket #60A32 hole 1 1/4" dia.	2	654167	654167	654167
7	Idler sprocket CA60	1	654010	654010	654010
8	Bolt hex. 3/8" NC x 1 1/2" gr.5 PTD	8	O/L	O/L	O/L
9	Lockwasher 3/8" PTD	10	O/L	O/L	O/L
10	Nut hex. 3/8" NC PTD	10	O/L	O/L	O/L
11	Bolt hex. 1/2" NC x 1 1/2" gr.5 PTD	8	O/L	O/L	O/L
12	Lockwasher 1/2" PTD	8	O/L	O/L	O/L
13	Nut hex. 1/2" NC PTD	8	O/L	O/L	O/L
14	Carriage bolt 5/8" NC x 2 1/2" gr.5 PTD	1	O/L	O/L	O/L
15	Flatwasher hole 11/16" dia. PTD	2	O/L	O/L	O/L
16	Nylon insert locknut 5/8" NC PTD	1	O/L	O/L	O/L
17	Bolt hex. 3/8" NC x 1" gr.5 PTD	3	O/L	O/L	O/L
18	Nylon insert locknut 3/8" NC PTD	3	O/L	O/L	O/L
19	Sprocket #60A32 hole 1 1/2" dia.	1	662444	662444	662444
20	Connecting link #60	1	654839	654839	654839
21	Bolt hex. 3/8" NC x 1 1/4" gr.5 PTD	2	O/L	O/L	O/L



PARTS

GEARBOX - 662281

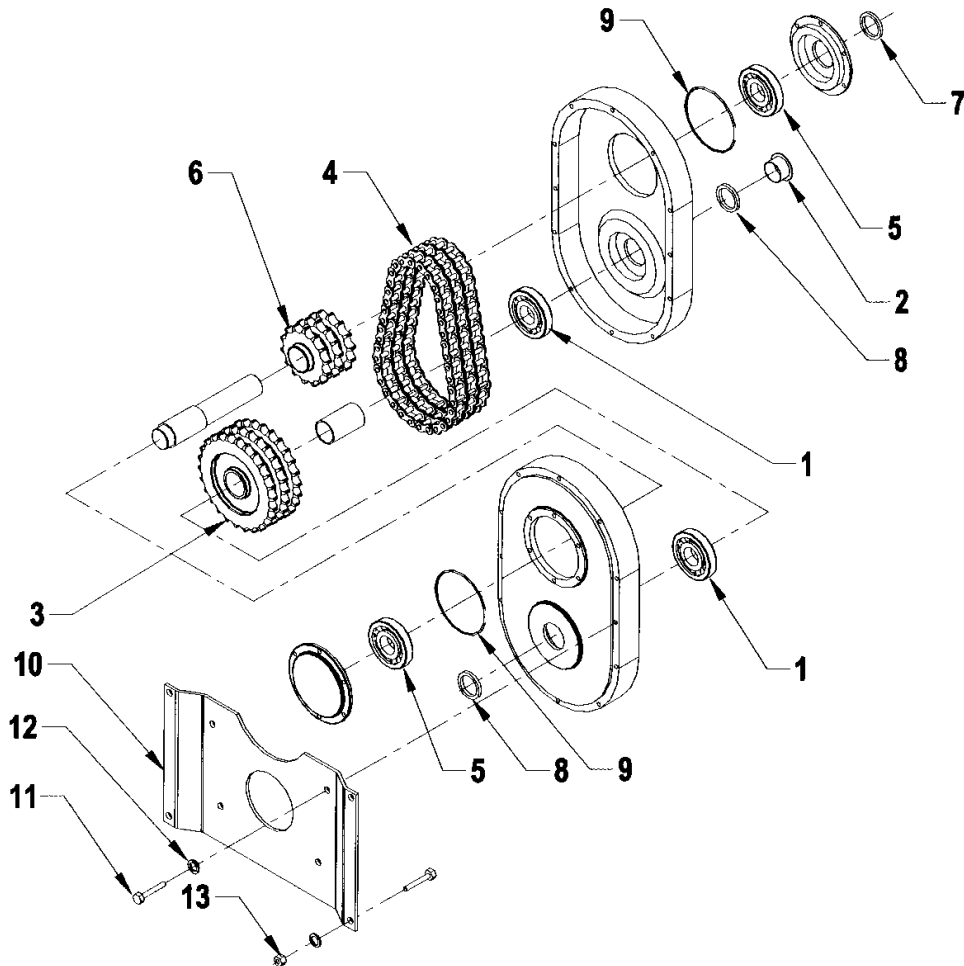
REF.	DESCRIPTION	QTY	PART #
1	Casing	1	658850
2	Snap ring	1	662311
3	Bolt M10 x 22 - 8,8	16	658852
4	Shim	1	658853
5	Key	2	658854
6	Shaft	1	662282
7	Oil seal 50 x 72 x 8	1	658856
8	Bearing	1	658857
9	Cover	1	658858
10	Gear	1	662435
11	Gasket	2	658860
12	Gear	1	658861
13	Bearing	1	658862
14	Shaft	1	658863
15	Extension	1	658864
16	Bearing	2	658865
17	Oil seal 52 x 85 x 10	1	658866
18	Shim	2	658867
19	Snap ring	1	658868
20	Locknut M40 x 1.5	1	658869
21	Spring washer	1	662283
22	Oil seal 45 x 72 x 8	1	658871
23	Plug 3/8" NPT	4	658872
24	Snap ring	1	658870



PARTS

REDUCTION GEARBOX - 8097

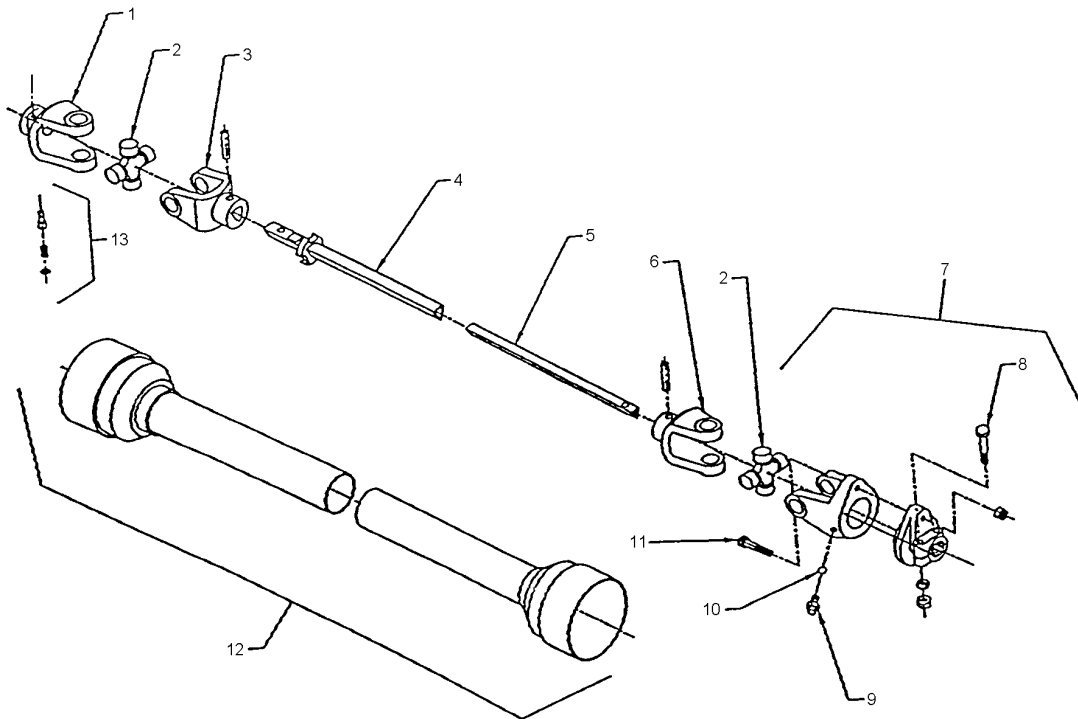
REF.	DESCRIPTION	QTY.	PART #
1	Bearing 6232	2	665115
2	Seal cover	1	665116
3	Sprocket 80-3 A26	1	665117
4	Chain 80-3 x 36"	1	665118
5	Bearing 6309	2	665119
6	Sprocket 80-3 A14	1	665120
7	Double lip seal	1	665121
8	O-ring	2	665122
9	Double lip seal	2	665123
10	Reduction box support	1	664837
11	Bolt hex. 1/2" NC x 1 1/4" gr.5 PTD	8	O/L
12	Lockwasher 1/2" PTD	8	O/L
13	Nut hex. 1/2" NC PTD	4	O/L



PARTS

DRIVELINE - 662288

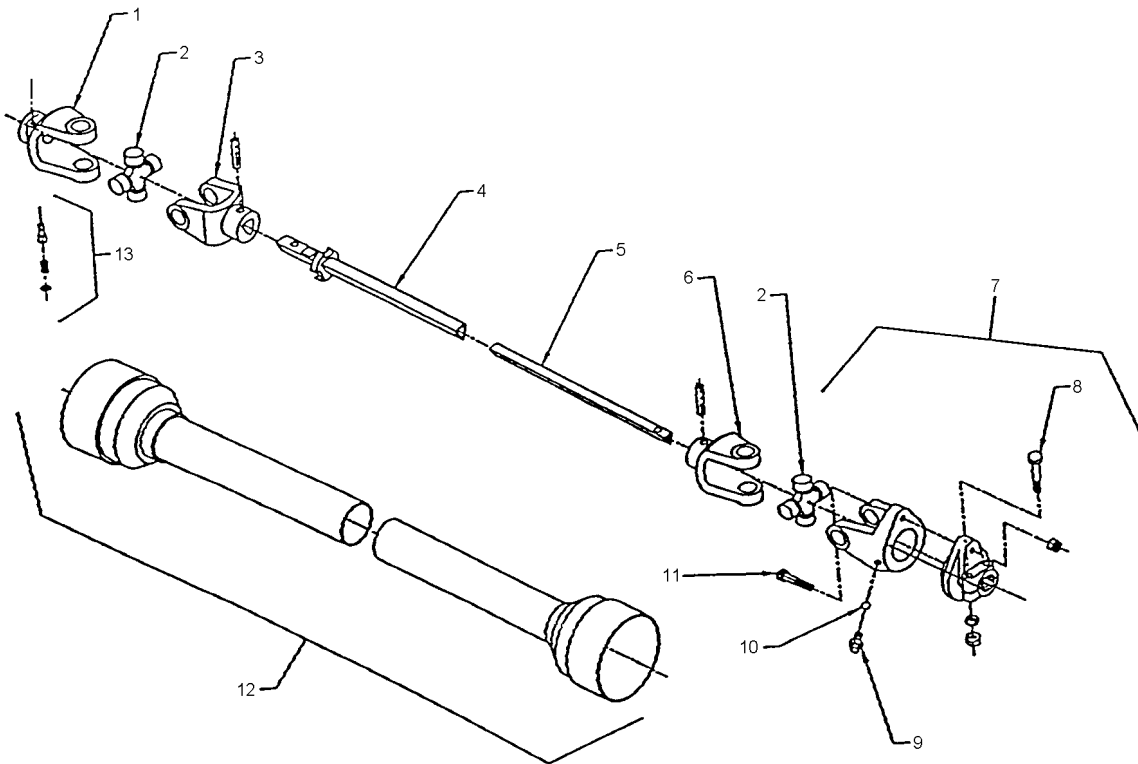
REF.	DESCRIPTION	QTY.	PART #
1	Push pin yoke assembly	1	662289
2	Universal joint kit	2	662023
3	Outer yoke	1	663152
4	Outer tube	1	663155
5	Inner tube	1	663156
6	Inner yoke	1	663158
7	Yoke and hub assembly	1	662294
8	Bolt and nut	2	662297
9	Grease fitting	1	663161
10	Ball	24	663162
11	Shear bolt and nut	1	662296
12	1	662298	
13	Safety pin	1	662291



PARTS

HEAVY DUTY DRIVELINE - 8032

REF.	DESCRIPTION	QTY.	PART #
1	Push pin yoke assembly	1	664619
2	Universal joint	2	664620
3	Outer yoke	1	664621
4	Outer tube	1	664622
5	Inner tube	1 </td <td>664623</td>	664623
6	Inner yoke	1	664624
7	Yoke and hub assembly	1	664625
8	Bolt and nut	2	664569
9	Grease fitting	1	663161
10	Ball	24	663162
11	Shear bolt and nut	1	664570
12	Shields with safety chain	1	664626
13	Safety pin	1	664568



WARRANTY



RAD TECHNOLOGIES INC.

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 replacement of any non-wear part or component, which RAD TECHNOLOGIES INC. finds to be defective within **one year** from the date of original purchase (unless otherwise-specified). The applicable warranty period for commercial or rental use shall be ninety (90) days from the date of purchase

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

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

RAD's obligation under this warranty shall be limited to repairing or replacing, free of charge to the original purchaser, any part that, in RAD's judgment, shall show evidence of such defect, provided the **distributor** returns the part prepaid within thirty (30) days from date of failure.

This warranty shall not be interpreted to render RAD TECHNOLOGIES INC. liable for injuries or damages of any kind or nature to person or property. This warranty does not extend to losses because of delays, or to any expenses or losses incurred for labor, substitute machinery, rental or for any other reason.

Except as set forth above, RAD TECHNOLOGIES INC. shall have no obligation or liability of any kind on account of any of its equipment and shall not be liable for special or consequential damages. RAD TECHNOLOGIES INC. makes no other warranty, expressed or implied, and specifically, RAD TECHNOLOGIES INC. disclaims any implied warranty or merchantability or fitness for a particular purpose. **Some states or provinces do not permit limitations or exclusions of implied warranties or incidental or consequential damages, so the limitations or exclusions in this warranty may not apply.**

This warranty is subject to any existing conditions of supply, which may directly affect our ability to obtain materials or manufacture replacement parts. RAD TECHNOLOGIES INC. reserves the right to make improvements in design or changes in specifications at any time, without incurring any obligation to owners of units previously sold.

No one is authorized to alter, modify or enlarge this warranty nor the exclusions, limitations and reservations.

2835 Chemin de l'Aéroport, Thetford Mines (Québec) G6G 5R7

Tél.: (418) 338-4499 Fax: (418) 388-6090

Internet: www.radinter.com [EMAIL: radtech@radinter.com](mailto:radtech@radinter.com)

TORQUE SPECIFICATION TABLE

GENERAL SPECIFICATION TABLE

Use the following torques when special torques are not given Note: These values apply to fasteners as received from supplier, when dry. These values do not apply if lubricants are used.

BOLT SIZES (SAE)	TORQUE	
INCHES	Pounds-Foot	Newtons-Meter
1/4	5	7
5/16	10	14
3/8	20	27
7/16	25	41
1/2	88	119
9/16	121	164
5/8	165	224
3/4	297	403
7/8	440	597
1	638	865
1 1/8	840	1139
1 1/4	1180	1600
1 3/8	1570	2129
1 1/2	2070	2807

BOLT SIZES (METRIC)	TORQUE	
MILLIMETERS	Pounds-Foot	Newtons-Meter
M6	10	13
M8	22	30
M10	40	54
M12	59	80
M14	93	126
M16	130	176
M18	168	228
M20	205	278

Manufactured by:



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