



Operator's Manual

COMMERCIAL SNOWBLOWER

4000 Series



Models

4097 / 4108 / 4120
4097RH / 4108RH / 4120RH

MK Martin Enterprise®

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Keep this manual with the machine at all times.

Do not attempt to operate equipment without thoroughly reviewing this manual for safe and proper operation.

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Effective for products retailed on or after October 1st, 2022.

**Seven Year Limited Consumer Warranty.
90 Day Limited Commercial Warranty including Gearboxes.
Commercial includes rental and industrial applications.**

Warranty coverage is null and void unless the Warranty Registration form has been completed in full and is on file at MK Martin Enterprise Inc.

Keep your registration copy in a safe place, it is required as proof of warranty activation.

This new and unused product is warranted by MK Martin Enterprise Inc., to be free from defects in material and workmanship under normal use and regular service as described in the owner's manual; for a consumer period of 7 years from the date of delivery, and commercial period of 90 days, including gearboxes, from the date of delivery. Warranty is limited to the replacement of parts and/or repair of the product.

If issues develop within the warranty period with the product, contact the local dealer from which you purchased the unit. Only MK Martin authorized dealers may make repairs to the product or affect the replacement of defective parts, unless otherwise approved by MK Martin. Repairs/replacement will be done at no charge within a reasonable time after the receipt of the product. This warranty does not cover the following items:

1. Normal replacement of service items.
2. Normal maintenance or adjustments.
3. Machines or parts lost or damaged during shipment.
4. Accessory items/parts not supplied by MK Martin.
5. Damages resulting from:
 - a. misuse, negligence, accident, theft or fire.
 - b. use of improper or insufficient fuel, fluids or lubricants.
 - c. use of aftermarket parts or accessories, unless approved by MK Martin.
 - d. modifications, alteration, tampering or improper repair.
 - e. any device or accessories installed other than an authorized dealer.
6. Tires are covered by the manufacturer of the tire and the warranty period specified by the manufacturer. Please contact the tire manufacturer for warranty on these items.

MK Martin Enterprise Inc. shall not, in any event, be liable for any losses, damages or costs; to include profits, travel, transportation, pick up, delivery, towing cost, tow vehicle, or loss of use, whether special, incidental, consequential or otherwise, in any way. Unit or parts are returned at the customer's expense. Include a copy of your completed Warranty registration form with any claim as proof of warranty activation.

There are no warranties, expressed or implied, other than those specified herein. No agent, employee or other person has any authority to vary any of the foregoing provisions. Warranty coverage is null and void unless the Warranty Registration form has been completed in full and is on file at MK Martin Enterprise Inc. Warranty begins at the time of customer delivery and is activated upon Warranty Registration receipt at MK Martin Enterprise Inc.

A Warranty Registration form is available at the back of this manual.

Introduction

Thank you for purchasing your new **MK Martin 4000 Series Commercial Snowblower**. Your implement has been designed and manufactured to give you many years of dependable service. There are three model sizes available for the **4000 Series blowers**: 4097, 4108, and 4120. As a customer, you can choose to purchase your **snowblower** with or without the rotating housing feature.

The **4000 Series Commercial Snowblower** was built with a 2-stage hydraulic deflector, a hydraulic chute rotator, dual augers with ribbon flighting, a 6-blade fan, a heat-treated bolt-on cutting edge, adjustable carbide skid shoes, and two gearboxes to help you complete your snow clearing tasks safely and efficiently. The **commercial blower** also has several add-on options, such as: a truck loading chute, work light kit, fixed bank cutters, and curb runners. For more information on these features, see section **Product Features** on p.22.



WARNING

- You, or any other person who will be assembling, operating, maintaining or working with this product, must read and completely understand the information and instructions contained in this manual.
- Keep this operator's manual available for reference by the operator and to pass on to new owners and operators.



NOTE

- There are several options available for the **4000 Series Snowblower**. Follow the instructions that apply to the options you have purchased. For more information, see section **Product Features** on p.22, or contact **MK Martin**.
- Assembly may be required depending on how you purchased your machine. Follow the assembly procedures as outlined in section **Assembly & Inspection** on p.26.

Intended Use:

MK's 4000 Series Commercial Snowblower was designed to clear snow from surfaces such as driveways, sidewalks, and parking lots. The **snowblower** uses PTO power when attached to the 3PH tractor. It's two augers break up the snow, and the 6-blade impeller throws it through the chute in the direction in which it is pointed.

To see the **4000 blower** in action, scan the QR code:



General Information

The purpose of this manual is to assist you in safely operating and maintaining your **4000 Series Snowblower**. Read this manual carefully to obtain valuable information and instructions that will ensure you a safe, efficient and trouble-free operation.



NOTE

- The illustrations and data used in this manual were current at the time of printing, but due to possible engineering and/or production changes, this product may vary slightly in detail. **MK Martin Enterprise Inc©** reserves the right to update and/or change components as necessary without notification.

If you require further assistance, have questions related to this manual, or would like to order a new manual: contact **MK Martin** using the information provided on the cover page or the dealer from which this product was purchased.

Terminology:

In this manual, the **4000 Series Commercial Snowblower** may be referred to as: snowblower, blower, equipment, machine, attachment or implement. The tractor may be referred to as: power unit. All hardware is Grade #5 unless otherwise specified. When a direction is mentioned, such as: front, rear, left or right, assume you are in the position of the operator; sitting and facing forwards.

California Proposition 65:

You may see a warning like the following:

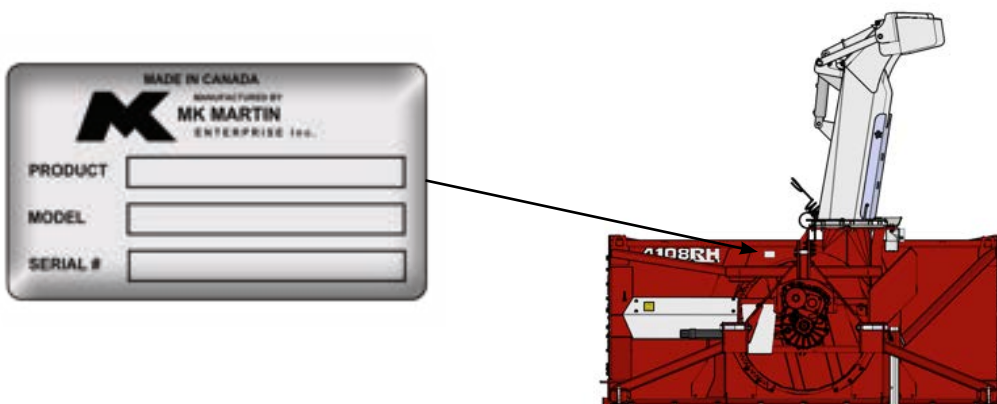


This warning is required by California Proposition 65 (Prop 65), which is meant to notify California residents of exposures to Prop 65-listed chemicals. For more information, go to www.P65Warnings.ca.gov.

Serial Number Location

The serial number and model number for your **4000 Series Commercial Snowblower** is located on the back, above the fan housing.

Please record your serial number here as a handy reference. In the case there is an issue with your implement, your dealer will need your serial number to verify your warranty.



Model Number: _____

Serial Number: _____

Safety



The Safety Alert symbol means:
Attention!
Become Alert!
Your safety is involved!

The Safety Alert symbol identifies important safety messages on the implement and in the manual. When you see this symbol, read and understand the message, be alert to the potential hazard and follow the instructions in the safety message.

Safety Messages:

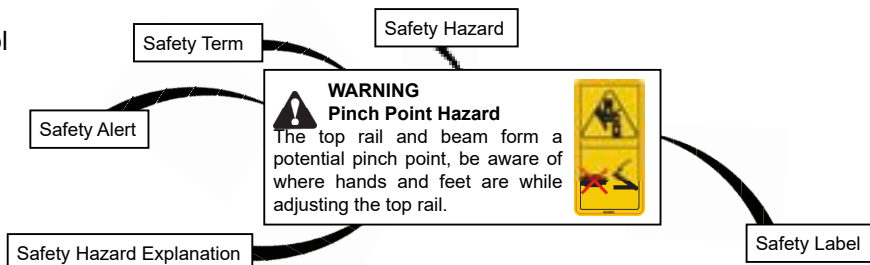
Throughout this manual, the terms in the table below are used to indicate the degree of hazard if safety procedures are not followed. The appropriate term for each message has been selected using the following guide-lines:

Symbol	Alert	Description
	DANGER	Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury, and includes most extreme situations typically for implement components which, for functional purposes, cannot be guarded.
	WARNING	Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.
	CAUTION	Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.
	IMPORTANT	Indicates a situation that could result in damage to the implement or other property.
	NOTE	Indicates additional information that may assist you in operating your machine safely.
	TIP	Indicates a helpful hint to improve the efficiency or ease of using your machine.

In the owner's manual, when a hazard is present, you will see a safety message box. The box may contain:

- The safety alert symbol
- The safety term
- The safety hazard
- The safety hazard explanation

When applicable you may also see the appropriate safety label displayed with the message, as shown below.



The safety information given in this manual does not replace any safety codes, insurance needs, government and local laws.

Accident Prevention:

Accidents can be prevented with your help! You are responsible for the safe operation and maintenance of your implement. You must ensure that you and anyone else who is going to use, maintain or work around the implement, be familiar with the work and related safety information contained in this manual. This manual will take you step-by-step through your working day and provide you with the best safety practices.



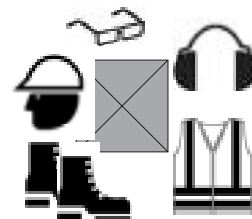
Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices an effective part of your day to day work habits. Be certain that EVERYONE using this implement is familiar with the recommended maintenance and work procedures and follow all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

The best accident prevention is a careful operator. MK Martin asks that YOU be that careful, responsible equipment operator.

Read the accident prevention guidelines below.



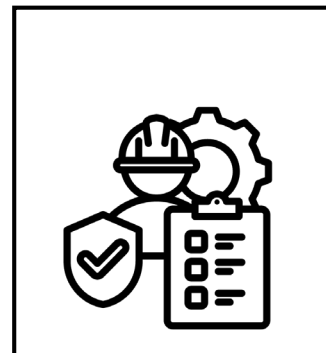
1. Familiarize yourself, and anyone else who will operate, maintain, or work around this product, with the safety and operation information contained in this manual.
2. Read and understand the safety labeling which appears on the implement.
3. Have a first-aid kit available for use should the need arise and know how to use it.
4. Pay attention to the job at hand. Do not let your mind lose concentration on what you are doing. No accident prevention program can be successful without the whole hearted cooperation of the person who is directly responsible for the operation of the implement.
5. Have a fire extinguisher ready for use should the need arise and know how to use it.
6. Reduce the risk of injury or death by following all safety precautions and by using good safety practices.
7. Never exceed the limits of the implement. Safety of the operator and safe operation are the main concerns in designing a safe product, however ignoring implement specifications by the operator can result in an accident which could have been prevented.
8. Do not allow riders on the implement, loaded or empty.
9. Do not operate this implement under the influence of drugs or alcohol.
10. Be responsible for the SAFE operation and MAINTENANCE of YOUR implement.
11. Wear appropriate personal protective equipment (PPE). This list includes but is not limited to:
 - a. Hard hat
 - b. Heavy gloves
 - c. Hearing Protection
 - d. Protective foot wear
 - e. Protective eye wear
 - f. Safety Vest



Safety Guidelines:

Safety of the operator and bystanders is one of the chief concerns when developing and designing equipment. However, every year many accidents occur which could have been avoided by only a few seconds of thought, and a more cautious approach to handling the equipment.

You, the operator, can avoid many accidents by observing the precautions in this section. To avoid personal injury or death, study the following precautions and insist those working with you, or for you, follow them as well.



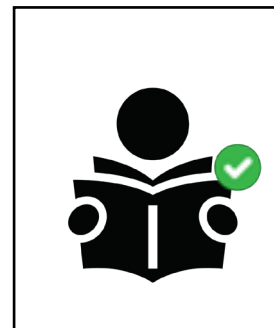
Your **MK 4000 Series Snowblower** was designed and configured with safety labels and safety devices. However, hazard control and accident prevention are dependent upon the awareness, concern, and proper training of personnel involved in the *assembly, operation, transport, maintenance, and storage* of the implement. Refer to safety messages and operation instructions in each of the appropriate sections of the tractor and implement manuals. Pay close attention to the safety labeling affixed to the implement.

Read through the safety guidelines below that must be followed at all times.

1. In order to provide a better view, certain illustrations in this manual may show an assembly with a safety device removed. However, equipment should never be used in this condition. Keep all safety devices in place, if removal becomes necessary for repairs, replace the device prior to use.
2. Replace any safety label or instruction sign that is unreadable or is missing. Location of safety signs is indicated in this manual.
3. Never use alcoholic beverages or drugs which can hinder alertness or coordination while using this implement. Consult your doctor about using this implement while taking prescription medications.
4. Under no circumstances should young children be allowed to work with this implement.
5. If the elderly are assisting with work, their physical limitations need to be recognized and accommodated. Assistants should be a responsible, properly trained and physically-able person familiar with machinery and trained in this implement's operations.



6. Never exceed the limits of the implement. If its ability to do a job, or to do so safely, is in question - DON'T TRY IT.
7. Do not modify the implement in any way. Unauthorized modification may result in serious injury or death and may impair the function and life of the implement.
8. This implement is dangerous to persons unfamiliar with its operation. Do not allow persons to use or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and how it works. Review the safety instructions with all users annually.



Safety Training:

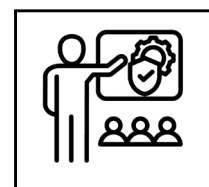
Read through the safety training guidelines below that must be followed at all times.

1. Train all new personnel with the instructions alongside the implement. Be certain only a properly trained and physically-able person will use the machinery.
2. Working with unfamiliar equipment can lead to careless injuries. If this implement is used by any person other than yourself, or is loaned or rented, it is the implement owner's responsibility to make certain that the operator, prior to using:
 - a. Reads and understands the operator's manuals.
 - b. Is instructed in safe and proper use of the implement.
3. If the elderly are assisting with the work, their physical limitations need to be recognized and accommodated.
4. Operators or maintenance personnel who are not fully able to read and understand this manual should not operate or work on the implement.
5. Make certain that all operators and maintenance personnel have a complete understanding of the full and exact contents of this manual and safety labeling.
6. ALL information contained in this manual and labeling on the implement must be conveyed CLEARLY and FULLY, in order to be able to operate safely and knowledgeably.
7. Review the implement and instructions regularly with existing workers.
8. All trainees must be fully equipped with PPE, even when simply observing.



DANGER

- *A person who has not been trained or has not read and understood all use and safety instructions is not qualified to use the implement. An untrained operator exposes himself and bystanders to possible serious injury or death.*



Work Area Safety:

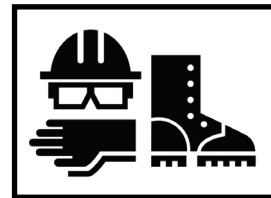
Not all work spaces are the same, but the principles presented here can be applied to any work space.

1. For worker safety, a pre-season site visit is recommended.
2. Make note of any nearby or overhead obstructions, knowing your work area will make the clearing job easier and safer.
3. Mark any potential hazards that cannot be removed such as tree stumps, rocks, holes, or posts. This is especially important when operating the **snowblower** since visibility can sometimes be limited by the weather conditions.
4. Ensure bystanders or anyone not directly involved with the work is only permitted outside of the work area to minimize hazards.
5. Workers helping the operator must wear the appropriate PPE and must always make eye contact with the operator before entering the work area. Unauthorized workers or bystanders are not allowed in the work area. Hazards are present.
6. Do not operate the **snowblower** outside of the designated work area.
7. **Danger:** If solid objects such as rocks, gravel, wire, chains, ice chunks or other debris come into contact with the auger, they can cause damage to the implement and create a danger hazard. At high speeds the thrown objects are extremely dangerous and can cause injury or death to any bystanders or animals. Avoid this by marking objects that cannot be removed.
8. Mark off any steep slopes, hills or icy areas before operating your **snowblower**. Unstable land can be extremely dangerous and cause you to lose control of your implement, resulting in property damage, personal injury or death.

 **DANGER**

- Objects thrown from **snowblower** at high speeds can cause property damage, injury and death! Keep distance from machine, and keep deflector pointing away from yourself and others. Be aware of bystanders.





 **WARNING**

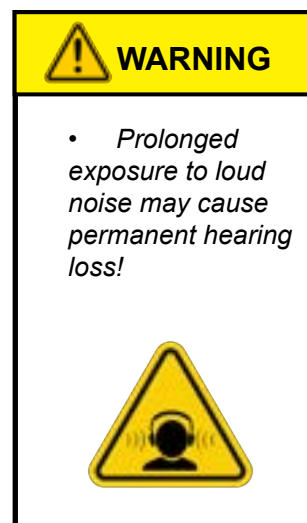
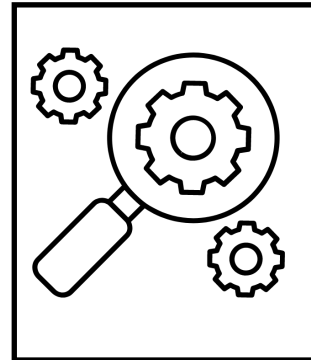
- Sudden impact from obstacles hidden under the snow may cause injury or damage to your implement. Mark objects that cannot be removed before operating and clear debris from work area.



Assembly & Inspection Safety:

Read the safety guidelines below that must be followed when inspecting and assembling your machine.

1. Inspect implement for shipping damage. If damage does exist, do not use. Notify your dealer immediately to have damaged parts replaced or repaired.
2. Assembly may be required depending on how you purchased your equipment. Follow the assembly procedures as outlined in the manual.
3. Ensure all hardware is secure.
4. Visually inspect hydraulic system for leaks. See **Hydraulic Safety** on p.15.
5. Ensure hydraulic hoses are properly secured.
6. Inspect all fasteners are not loose or missing.
7. Ensure all fasteners and wheel bolts are torqued according to the **Bolt Torque Table** on p.60.
8. Ensure that all applicable safety decals are installed and legible. See section **Replacing Labels** on p.19.
9. Personal protection equipment (PPE) including hard hat, safety glasses, safety shoes, and gloves are recommended during *assembly, installation, operation, adjustment, maintaining, repairing, removal, cleaning, or moving* the unit. Do not allow long hair, loose fitting clothing or jewelry to be around equipment.
10. Gas or diesel powered equipment can often be noisy enough to cause permanent, or partial hearing loss. We recommend that you wear hearing protection on a full-time basis. Noise over 85dB on a long-term basis can cause severe hearing loss. Noise over 90dB adjacent to the operator over a long-term basis may cause permanent hearing loss.
11. When not attached to the power unit, block the implement to prevent movement.



Operation Safety:

Read the safety guidelines below that must be followed when operating your machine.

1. NEVER allow helpers or bystanders under or near the machine.
2. Ensure the implement is securely attached to the power unit before moving.
3. Inspect all fastening devices, do not use if worn or damaged.
4. Make sure that bystanders and children are clear before using or moving the implement.
5. NEVER position yourself between the power unit and the implement while the power unit is running.
6. Avoid distractions: wait until it is safe to operate mobile communication equipment such as cell phones, text messaging devices, pagers or two-way radios. Always give undivided attention to the machine, the job at hand and your surroundings.
7. Keep body AWAY from all rotating parts and NEVER put hands or feet near or under the **snowblower**.
8. Watch for traffic when driving near roadways.
9. Do not permit riders while operating this implement.
10. Exercise extreme caution when on or crossing drives, walks, or roads.
11. Where possible, avoid operating near ditches, embankments and holes.
12. Operate the machine up and down the face of slopes.
13. Avoid changing direction on slopes, wait until you are on level ground if possible.
14. NEVER operate on slopes greater than 20 degrees, or wet, icy, or slippery slopes.
15. NEVER park the power unit on a steep grade or slope.
16. Always wear the seat belt. Sudden contact with a hidden object can result in serious personal injury.
17. Before beginning the job inspect areas of operation for potential hazards, and mark obstructions with stakes or flags that will be seen in tall snow.
18. NEVER operate the **snowblower** when under the influence of alcohol, drugs, or medication.



19. Keep all shields and guards in place.
20. Never dismount from your power unit while it is moving and never leave your implement unattended when the engine is running. Wait at least 60 seconds before dismounting your power unit so that all moving parts on the **snowblower** come to a complete stop.
21. Do not grease or oil attachment while it is in operation.
22. Always be aware of weather conditions before operating. Never operate the **snowblower** without good visibility and light. Dress appropriately and if possible, use a tractor with a cab to shelter you from the snow being blown.
23. Always dress appropriately for the job. Wear PPE and avoid loose clothing, jewelry, and clothing with pull strings. Clothing, accessories and long hair can become entangled in the **snowblower's** rotating parts which could result in severe personal injury or death.
24. Wear appropriate footwear for icy or slippery surfaces.
25. Avoid operating your **snowblower** when there is a layer of ice below the snow unless your power unit is properly equipped for those conditions. Do not exceed 15km/hour (10mph) when clearing snow. Higher speeds can lead to losing traction and steering control or encountering hidden objects with extreme force. Both situations can result in damage to the implement, personal injury and death.
26. Obey all federal and local laws related to snow removal. Never pile up snow near handicap parking areas, electrical boxes, fire hydrants, water drains, shut-off valves, or mailboxes, and never pile snow on sidewalk's, streets or other's property.
27. Never operate your **snowblower** in the dark or when visibility is compromised. Ensure there is adequate light, and that you can see at least 300 feet away.
28. **STOP** operating immediately if bystanders are within 200 feet of you.
29. Ensure chute is never blowing snow towards bystanders, buildings or vehicles. Ice, tough snow, or hidden objects can be propelled from the **snowblower** and cause severe injury.



30. Shut down the power unit immediately if the machine is making any unusual noises, or if there is excessive vibration. This can be an indication that there are hidden objects underneath the **snowblower**, that parts of your implement have been damaged, broken or clogged. Wait five (5) minutes for the engine to cool and rotating parts to be at a complete stop before dismounting your power unit. When it is safe to do so, inspect the machine for clogs, loose parts or damages.



31. Turn off the power unit immediately if the fan blades are broken or the auger begins to make contact with the housing. Broken or bent blades can break free while operating and can be a serious safety hazard. Continue operating only when all broken or damaged parts have been repaired or replaced.



Transport Safety:

1. The safest way to transport the implement from job to job is with the use of a trailer attached to a motor vehicle.
2. Use a towing vehicle and trailer of adequate size and capacity.
3. Do not tow your equipment with a truck or passenger car.
4. Secure the attachment to your trailer using tie downs and chains.
5. The **snowblower** is not designed for travel on public roads or highway speeds. The loss of control can result in death, serious injury or property damage.



DANGER

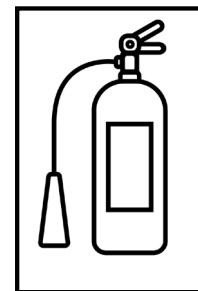
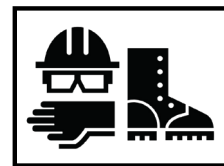
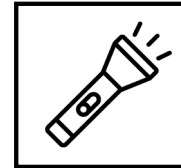
- Do not drive the tractor on public roads with your implement. Doing so could result in damage to your equipment, serious injury or death.
- Do not tow a load that is more than double the weight of the vehicle towing the load.



6. Adhere to all federal, state and local laws when transporting equipment. When applicable, ensure slow moving vehicle (smv) sticker and lights are working properly.
7. Drive at a lower speed if your trailer is not equipped with breaks. Sudden breaking could cause the trailer to swerve or tip causing an accident or damage to the **blower**.
8. Stay alert for overhead objects such as tree and wires.

Maintenance Safety:

1. Good maintenance is your responsibility, follow the maintenance schedule. Poor maintenance is an invitation for trouble. Serious injury and possible death could occur from not maintaining your **snowblower**.
2. Follow good shop practices.
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.
 - Allow equipment to cool before working on it.
3. Stay away until all motion has stopped and the snow blower is securely blocked up before removing material, performing service, and making repairs. Contact with the rotating auger and fan could result in serious injury or death.
4. Use personal protection equipment (PPE) such as eye, hand and hearing protectors.
5. Always have a fire extinguisher and first aid kit nearby.
6. Release hydraulic pressure from your machine prior to beginning any service or maintenance.
7. Never adjust, service, clean or lubricate the implement until all power is shut off when attached to the tow unit.
8. Remove buildup of grease, oil, or debris.
9. Ensure hardware is torqued according to the **Bolt Torque Table** on p.60.
10. Use heavy gloves when handling heavy or sharp components.
11. Read and obey manufacture instructions when handling solvents, chemicals or oils.
12. Collect and dispose of any waste material once repairs to the implement are completed.
13. Be cautious when using a ladder or raised stand to access high spots. Slipping or falling can result in serious injury and death. Stand on solid surfaces to ensure good footing and consider asking someone for assistance.
14. Call your dealer to replace any missing or broken parts. Attempting to use other parts or “makeshift” parts can cause damage to your implement and jeopardize your warranty.



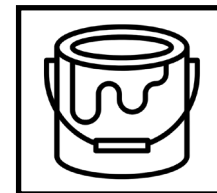
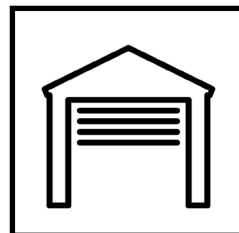
Hydraulic Safety:

1. Make sure that all components in the hydraulic system are kept in good condition and are clean.
2. Before applying pressure to the system, **visually** inspect for leaks.
3. Ensure that all components, lines, hoses, connections and couplings are not damaged and leak-free.
4. Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tapes, clamps or cements. The hydraulic system operates under extremely high pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.
5. Wear proper hand and eye protection when searching for a high pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.
6. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing through the skin.
7. Turn off the power unit and relieve pressure on hydraulic system before maintaining or working on system.
8. All hydraulic work must be done by qualified personnel.
9. Securely support or block hydraulic equipment when conducting service or maintenance to the implement. Hydraulic equipment can accidentally lower or leak which can result in severe injury or death. Always avoid working under hydraulic equipment.



Storage Safety:

1. Store the unit in an area away from human activity.
2. Do not allow children to play on or around the stored implement.
3. Store the unit in a dry, level area. Cover if stored outside.
4. Guard any sharp corners.
5. Ensure components and safety features are not damaged and in good condition before storing the implement. Make repairs now to be ready for the following season.
6. Secure the implement to prevent unwanted movement.



Safety Labels

Safety labeling is an important part of the overall safe use of the implement. Safety labeling can alert and warn you of potential injury or death. It is important to follow these points to help keep your implement safe for you and others who may be using it.

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or that have become illegible.
- Replaced parts that displayed a safety sign should also display the current sign.
- Safety signs are available from your authorized distributor or the factory order desk.

Safety Label Descriptions:



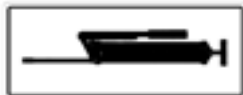
CAUTION

- *Personal Protection Equipment (PPE) is required when operating or maintaining this machine. Failure to wear PPE will result in personal injury.*



NOTE

- *This label is required by California Proposition 65 (Prop 65), which is meant to notify California residents of exposures to prop 65-listed chemicals.*



IMPORTANT

- *The grease gun label indicates grease zerk locations on the machine.*



CAUTION

- *Read and understand all safety and operating instructions in the manual. Read and understand ALL safety labels located on the machine. The most important safety device on this equipment is an informed SAFE operator.*



WARNING

- *Crushing hazard. Stay clear of draft link lifting range while operating rockshaft controls.*



WARNING

- Hydraulic leaks could develop without warning! Never check for leaks with your hands or fingers while the system is pressurized. Hydraulic fluid under pressure may cause serious injury if it comes in direct contact with the skin or eyes. Any hydraulic maintenance or repairs must be done by a qualified professional.



WARNING

- Keep hands and limbs away from rotating parts. Do not operate machine without shields in place. If shield is removed, replace it before operating machine. Risk of crushing or amputation could result.



WARNING

- Risk of injury from flying objects. Stay clear of the auger while it is in use. Machine can expel objects fast enough to cause injury. Impact or impalement could result.



CAUTION

- Shut off engine and remove key before performing maintenance or repair work.



WARNING

- Keep body away from rotating auger. Wait for all moving parts to come to a complete stop before clearing obstructions. Risk of amputation, severe injuries or death.



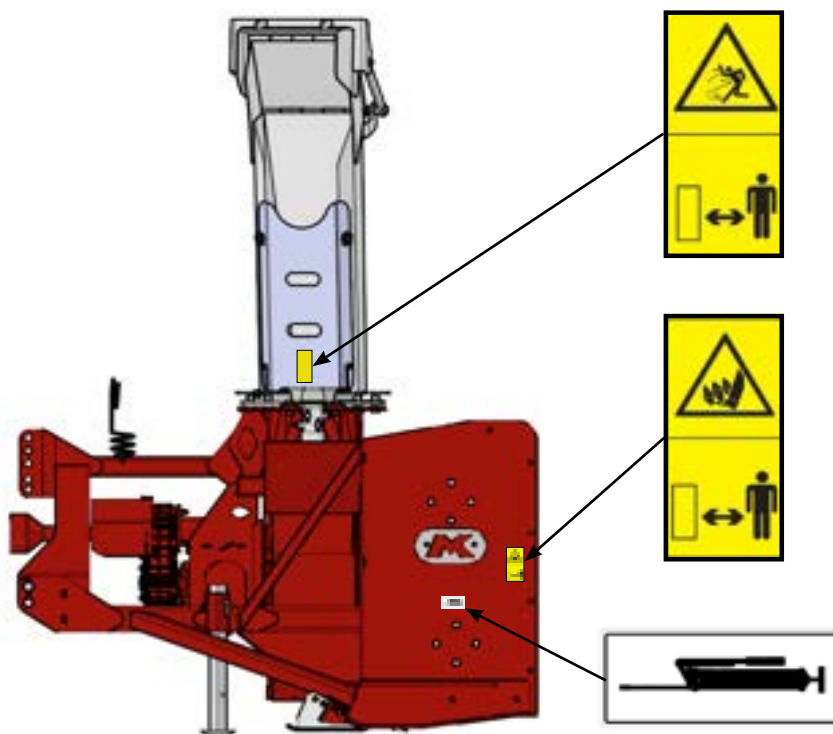
WARNING

- Do not open or remove safety shields while engine is running.

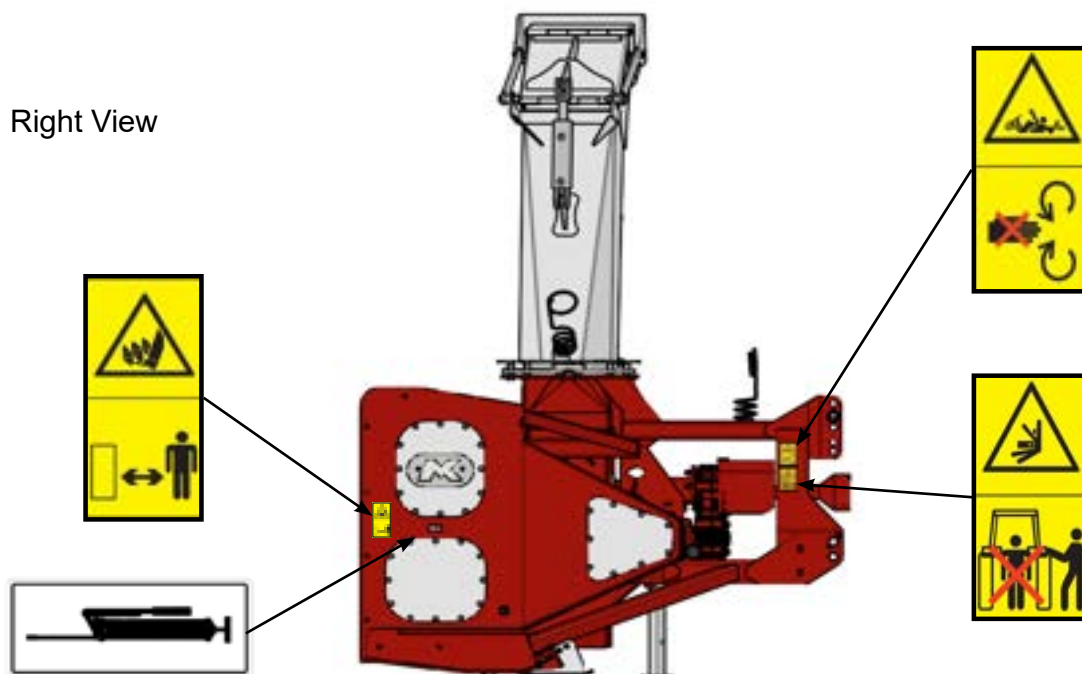
Safety Label Layout:

Safety signs and locations on the equipment are shown in the illustrations below. Good safety practice requires that you familiarize yourself with the label and the safety message it is delivering. See p. **16** for a description of the safety labels.

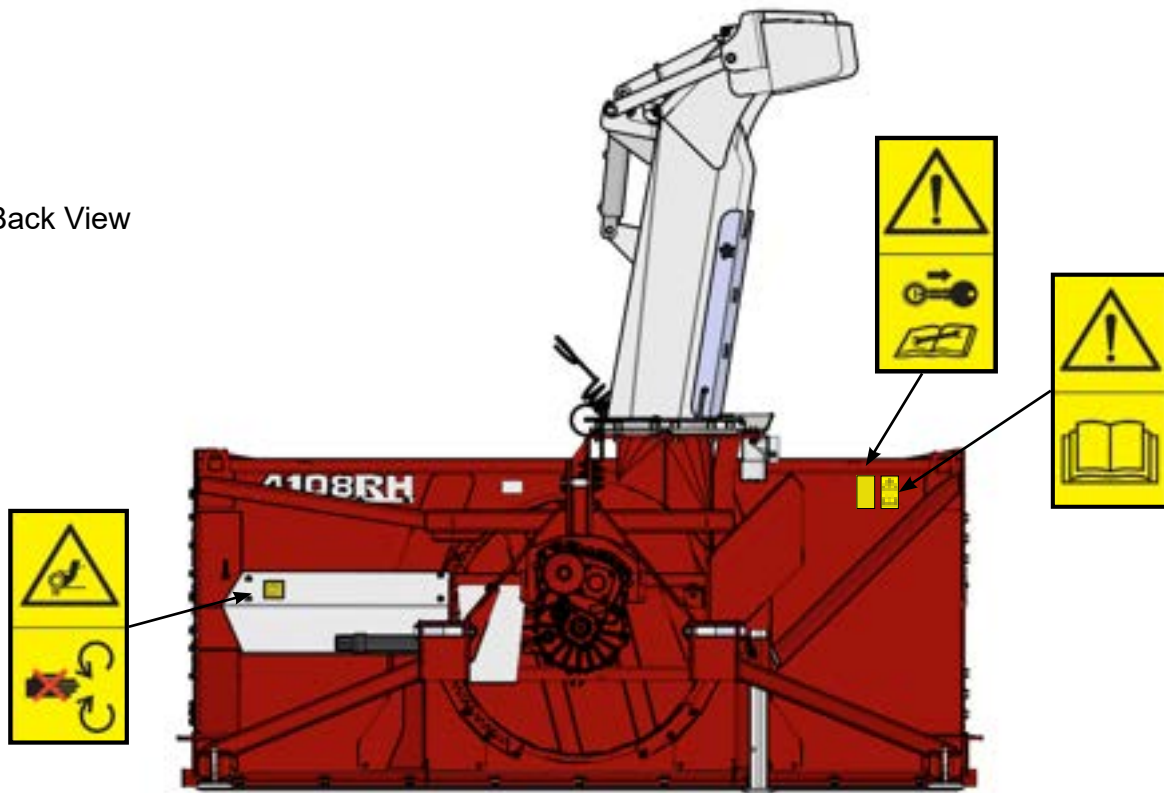
Left View



Right View



Back View



Replacing Labels:

Follow the instructions below if a label needs to be replaced.

1. Be sure that the installation area is clean and dry.
2. Be sure temperature is above 50 °F (10 °C).
3. Determine exact position before you remove the backing paper.
4. Remove the smallest portion of the split backing paper.
5. Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
6. Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
7. Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.



NOTE

- If safety labels have been damaged or removed, new labels must be applied. Contact **MK Martin** for new safety signs.



Components & Features

Read this section carefully to learn about components and features that allow you to adjust and operate your **MK 4000 Series Commercial Snowblower** safely and efficiently. Review the names of the components and the feature descriptions. These names will be used to describe where they are and how they work.

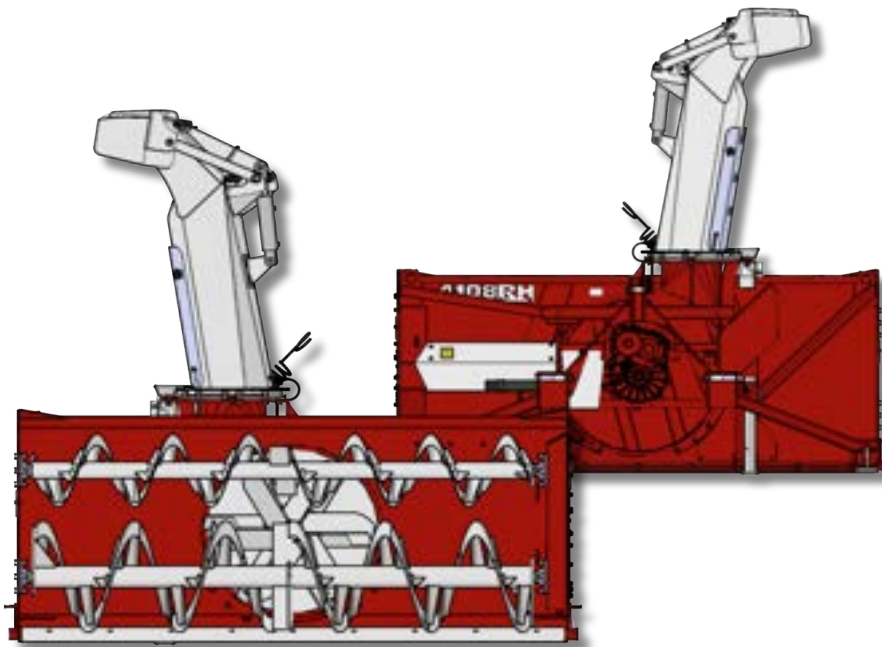
The **black** numbered components are **standard** parts and the **red** numbered parts are **optional** features.



WARNING

- Do not operate if you are not familiar with the components and features of your implement.

MK 4000 Series Commercial Snowblower Components:



1



Dual Augers with High Tensile Ribbon Flighting

2



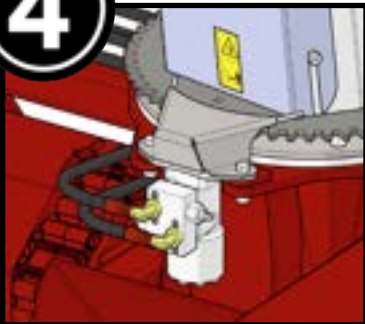
Six Blade Fan

3



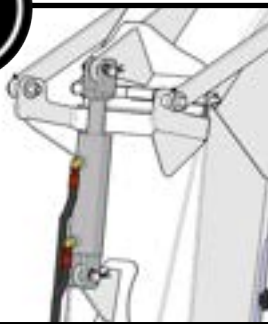
Adjustable Skid Shoes

4



Hydraulic Rotator

5



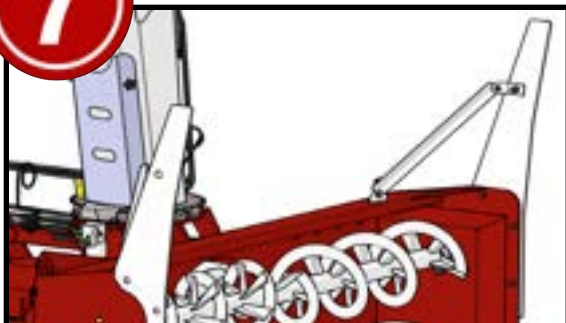
Hydraulic Deflector

6



Carbide Skid Shoes

7



Fixed Bank Cutters

8



Rotating Housing (RH Models Only)

9



Curb Runners

10



1000 RPM Gearbox

11



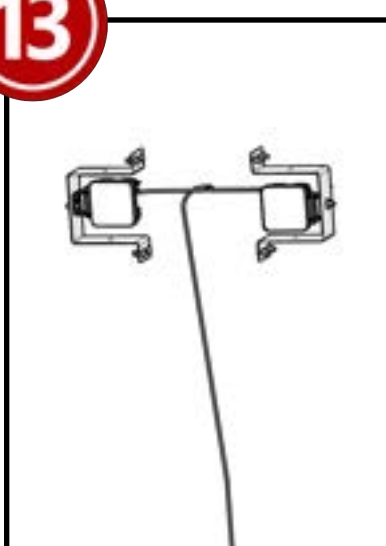
T301 Gearbox

12



Truck Loading Chute

13



Work Light Kit

Product Features:

The numbers of the descriptions below correspond with the numbered images on pages **20 - 21**.

1

Dual Augers with High Tensile Ribbon Flighting:

- To deliver even the heaviest wet snow to the awaiting fan, the **Commercial Blower** uses two machine formed hand-welded augers made with high-tensile steel ribbon flighting to provide strength and durability for years to come.

2

Six Blade Fan:

- The **MK blower** features a 6-blade fan to evacuate high volumes of snow quickly, and to increase the velocity of snow exiting the chute.

3

Adjustable Skid Shoes:

- The **blower** comes equipped with adjustable skid shoes extending the life of the cutting edge and helping to protect surfaces from damage commonly associated with snow removal.

4

Hydraulic Rotator:

- The optional hydraulic rotator is the ideal upgrade for tractors with cabs or for contractors/property managers needing to make frequent adjustments.

5

Hydraulic Deflector:

- Hydraulic deflectors control the distance and arc of the thrown snow and are standard for all 4000 series models.

6

Carbide Skid Shoes:

- It is optional for the **4000 Series Commercial Blower** to have carbide steel skid shoes. This durable material protects the skid shoes from wearing down too quickly.

7

Fixed Bank Cutters:

- The optional bank cutters are ideal for tackling large quantities of snow. The bank cutters can be used to slice the sides of a snowbank causing the snow to fall in front of the blower instead of on top of it. This helps the snow travel quickly to the auger, the fan, and then out the chute.

8

Rotating Housing:

- The rotating housing is available on all RH models. This feature allows you to discharge either to the left or right of the blower, bypassing the chute completely for tighter control on blowing over shorter distances.

9

Curb Runners:

- The optional curb runners are made with carbide to prevent the vulnerable areas at the foot of your **snowblower** from getting damaged and to increase the overall performance life of your machine. This is also an excellent option for those regularly blowing snow on narrow pathways or corners that have curbs.

10

1000 RPM Gearbox:

- This feature allows larger tractors to run at 1000 RPM PTO. The gearbox raises the input shaft to allow the PTO shaft to run at a lesser angle on large tractors. This increases the efficiency and life of the drive-line components. The reduction box allows you to reverse the rotation so you can mount a regular **snowblower** to the front of a tractor.

11

T301 Gearbox:

- The T301 Gearbox transfers the PTO power to the fan and drive chain assembly allowing the fan and both augers to rotate.

12

Truck Loading Chute:

- The truck loading chute is ideal for dispensing large amounts of snow at a time in a specific area (ex. when loading a truck). The truck loading chute has a triple hinged deflector to increase the accuracy. It also has two hydraulic deflectors, one to alter the angle of the deflector, and one to extend or retract the height of the chute. The additional height and increased accuracy allows for easy clearance when blowing snow into trucks.

13

Work Light Kit:

- The work light kit is available on all truck loading chutes. It helps you operate your machine with clear visibility when working in dark or snowy environments.

Specifications & Dimensions

The table below specifies characteristics for each of the **MK 4000 Series Commercial Snowblower** models.

Models	4097	4108	4120
HP (Rec.)	200		
Cutting Width	97"	108"	120"
Main Body Height	47"		
Mount	Cat.2 & 3		
Impeller (Fan)	36" 3/8" AR400		
Impeller Depth	12"		
Impeller Blades	6		
Impeller Output Shaft	2 1/2"		
PTO Drive (RPM)	1000		
Rotating Housing	N/A		
Stages	2		
Rotor	Ribbon Flighting (Flight Notching Available)		
Rotor (Tube)	4-1/2" OD Heavy Wall		
Rotor (Flighting)	1/2" x 3" (Bottom) 5/16" x 2 1/4" (Top)		
Rotor (Diameter)	23" (Bottom) 15" (Top)		
Rotor (Drive Shaft)	1 3/4"		
Roller Chain	#100		
Cutting Edge	1/2" x 6" Heat Treated Bolt-On		
End Plates	3/8" AR400 x 48" High		
Chute Diameter	13"		
Chute Rotator	Hydraulic		
Deflector Stages	2		
Chute Deflector	Hydraulic		
Work Light Kit	Standard (TL Models Only*)		



NOTE

- The RH models have the same specs as the table above, however they include a rotating fan housing.

Models	4097RH	4108RH	4120RH
Rotating Housing	Standard		
Weight	3490	3610	3745

Assembly & Inspection

The **4000 Series Commercial Snowblower** models were designed to fit a variety of tractors. Although the size of our models may differ, assembly instructions remain consistent. The chute and deflector are packaged separately and require assembly. If you purchased optional features such as the fixed bank cutters, curb runners, truck loading chute and/or work light kit, these items may also require assembly. Follow the instructions that apply to your implement and power unit in the order they are presented.

Inspection Steps:

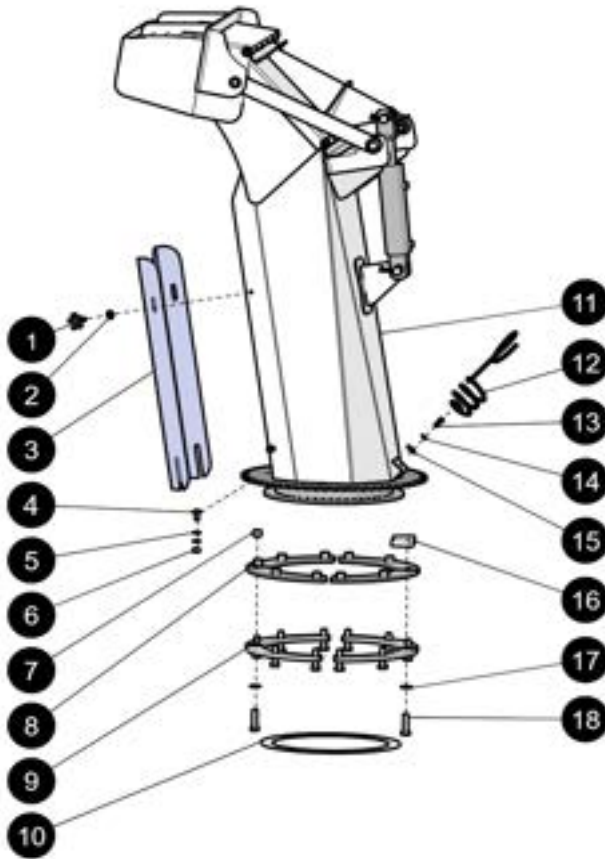
Before operating, it is important to inspect your machine. Doing so can prevent accidents, damage to equipment, and personal injury.



Inspection Checklist	☒
Review section Assembly & Inspection Safety on p.10.	
The power unit engine is turned off and the implement is on ground level.	
The Operator's Manual is in the canister.	
All safety decals are in place and legible.	
There are no signs of cracks or stress on machine.	
The auger and impeller are free from debris.	
All bolts and pins are secure.	
Cutting edge, auger flighting, impeller and skid shoes are in good condition.	
Skid shoes have been adjusted for the task at hand. See p.43.	
Check shear sprocket, idler sprocket, and auger sprocket for wear. Replace if worn.	
Adjust chain tension. See p.59.	
No bent impellers or auger flighting that could break off and become dangerous.	
Work area is clear of obstacles and hidden objects.	
Work area is clear of bystanders.	
Operator is wearing all necessary PPE and weather-appropriate clothing.	
All components, lines, hoses, connections and couplings are not damaged, are leak-free, and will not come into contact with moving parts.	
The connecting points on hoses and fittings are free from debris.	
Hydraulic hoses are routed correctly and not kinked, pinched or twisted.	
Wiring harness (if applicable) is routed correctly and connection points are secure.	
Wires (if applicable) are not frayed, pinched or broken and are away from moving parts.	
Weather conditions and visibility allow you to see 300 feet away.	

Chute Assembly:

Upon arrival, the chute will be packaged separate from the **snowblower**. Follow the assembly instructions in the *Chute Assembly Steps* table and use the image and parts list below as a reference.



TIP

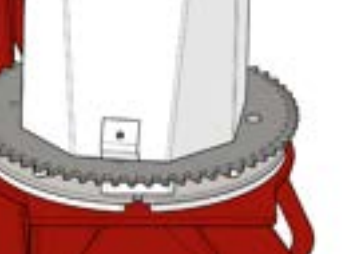
- The chute cover can be removed with the adjustable knobs (1) in the case that snow, ice or foreign objects becomes clogged in the chute. For safety, the cover should remain on during operation.



IMPORTANT

- Follow the chute assembly steps in the order they are presented. The **chute stop** prevents the chute from rotating towards the operator and prevents the hydraulic hoses/electric wires (when used) from getting wound around the chute. If installed incorrectly, it could damage the machine or cause a safety hazard.

Item #	Description
1	Adjustable Knob
2	3/8 Flatwasher
3	Hood Front Plate
4	1/2-13 Carriage Bolt
5	1/2 Lockwasher
6	1/2-13 Nut
7	5/8-11 Nylon Locknut
8	Poly Hood Guide Top Flange
9	Poly Hood Guide
10	Poly Ring
11	4000 Hood
12	Hose Holder
13	3/8 x 1 Bolt
14	3/8 Lockwasher
15	3/8 x 1 1/2 Fender Washer
16	Chute Stop
17	5/8 Narrow Flatwasher
18	5/8 x 2 1/4 Bolt

Chute Assembly Steps		
Step	Before	After
1. Place Ring Set the ring (10) down on the hood base. Add a light coat of grease to the ring. See p.50 for more information.		
2. Place Chute Place the chute's base directly on top of the poly ring (10).		
2. Place Washers and Bottom Clamps Place the 5/8 narrow flatwashers (17) on top of the holes on the hood base followed by the first set of poly hood guide clamps (9).		
3. Attach Top Clamps Complete one set of clamps at a time. Insert the 5/8 x 2 1/4 bolts (18) through the bottom of the hood base and the poly hood guide clamp (9). Use your hand to hold the bolts in place when sliding on the poly hood guide top flange clamp (8), and secure it with the 5/8-11 nylon locknuts (7). Repeat this process for all remaining clamps.		
4. Add Chute Stops & Hose Holder There are two chute stops that stop the chute from over-rotating: the chute stop bolt (4), and the chute stop piece (16). A. Remove the two nuts on the opposite side of the hydraulic chute rotator, and slide the chute stop (16) onto the bolts. B. Bolt the chute stop bolt on the right side of the chute stop piece. Use the 1/2-13 carriage bolt (4), two 1/2 lockwashers (5) and secure with a 1/2-13 nut (6). C. Bolt the hose holder (12) to the side of the chute, using the 3/8 x 1 bolt (13), 3/8 lockwasher (14), 3/8 x 1 1/2 fender washer (15) and weld nut.	  	  

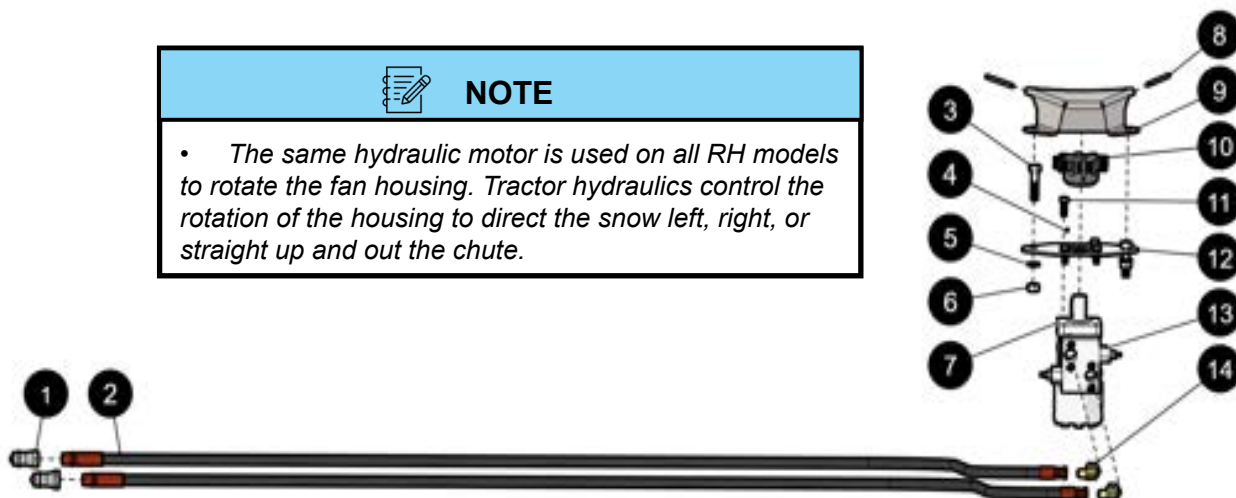
Hydraulic Chute Rotator Assembly:

The hydraulic chute rotator uses a hydraulic motor, controlled by the operator's use of tractor hydraulics to rotate the direction of the chute. The hydraulic chute rotator is standard on all **4000 Series Commercial Snowblowers**. Follow the instructions in the *Hydraulic Chute Rotator Assembly Steps* table and use the image and parts table below as a reference.



NOTE

- The same hydraulic motor is used on all RH models to rotate the fan housing. Tractor hydraulics control the rotation of the housing to direct the snow left, right, or straight up and out the chute.



Item #	Description
1	Agri-ball Nipple
2	Hose
3	1/2-20 x 2 Fine Thread Bolt
4	3/8 Lockwasher
5	1/2 Lockwasher
6	1/2-20 Gr.2 Nut
7	Hydraulic Motor Chute Rotator
8	Shield Hose Guide
9	Shield
10	9 Tooth Gear
11	3/8 x 1 Bolt
12	Motor Mount
13	Cross Over Relief Valve
14	90° Elbow



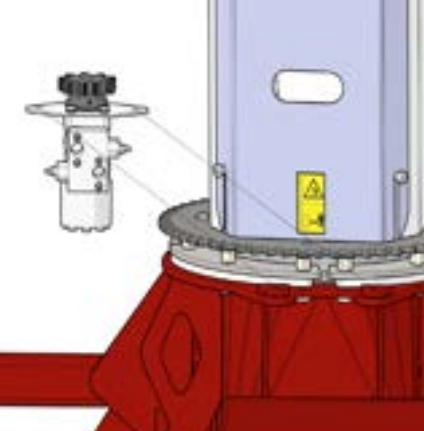
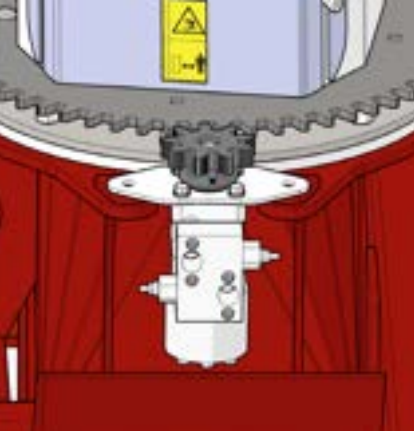
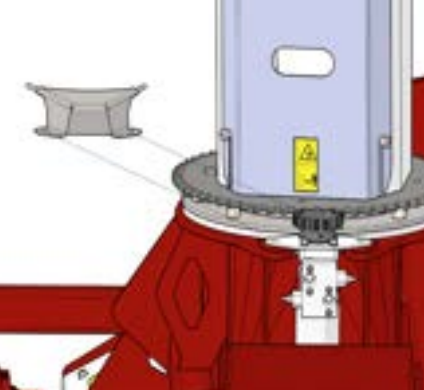
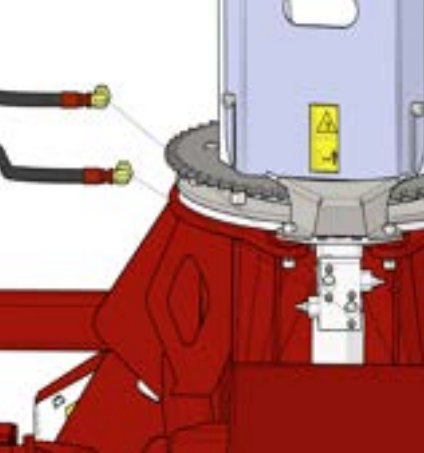
TIP

- The hydraulic rotator's shield has rods that act as guides for the deflector. All shields are manufactured with the rods straight. However, rods may need to be bent in for smaller blowers and bent out for larger blowers.
- To bend the rod:** use a short piece of 3/8 pipe for a lever, or an adjustable wrench to bend the rod. Do not use a hammer as it has less control of the bend. Keep the height of the rod the same, only bend it inwards or outwards.

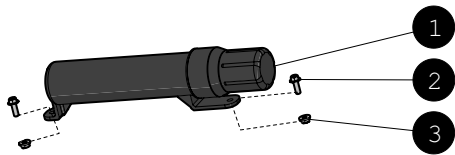


- The rods should be slightly inside the root of the gear teeth as shown in the illustration above.

Hydraulic Chute Rotator Assembly Steps

Step	Before	After
1. Place Rotator Place the hydraulic chute rotator (7) so its holes line up with the holes on the hood base.		
2. Place Shield Place the shield (9) on top of the gear (10).		
3. Bolt Rotator Attach the hydraulic rotator (7) and shield (9) to the hood base using the 1/2"-20 x 2 bolts (3), 1/2" lockwashers (5) and 1/2"-20 gr.2 nuts (6).		
4. Attach Hoses to Rotator See Hydraulic Safety on p.15. When installing the hydraulic elbows (14), turn them "no more than 4 rounds", then tighten the jam-nut to secure the elbow in the direction you want it to go in.		

Operator's Manual Assembly:



Item #	Description
1	Operator's Manual Canister
2	1/4 x 3/4 Flange Serrated Screw
3	1/4-20 Flange Serrated Nut

Operator's Manual Assembly Steps

Step	Before	After
Bolt the operator's manual canister to the outside of the cross shaft cover using the 1/4 x 3/4 flange serrated screws (2) and 1/4-20 flange serrated nuts (3).		

Hydraulic Deflector Assembly:



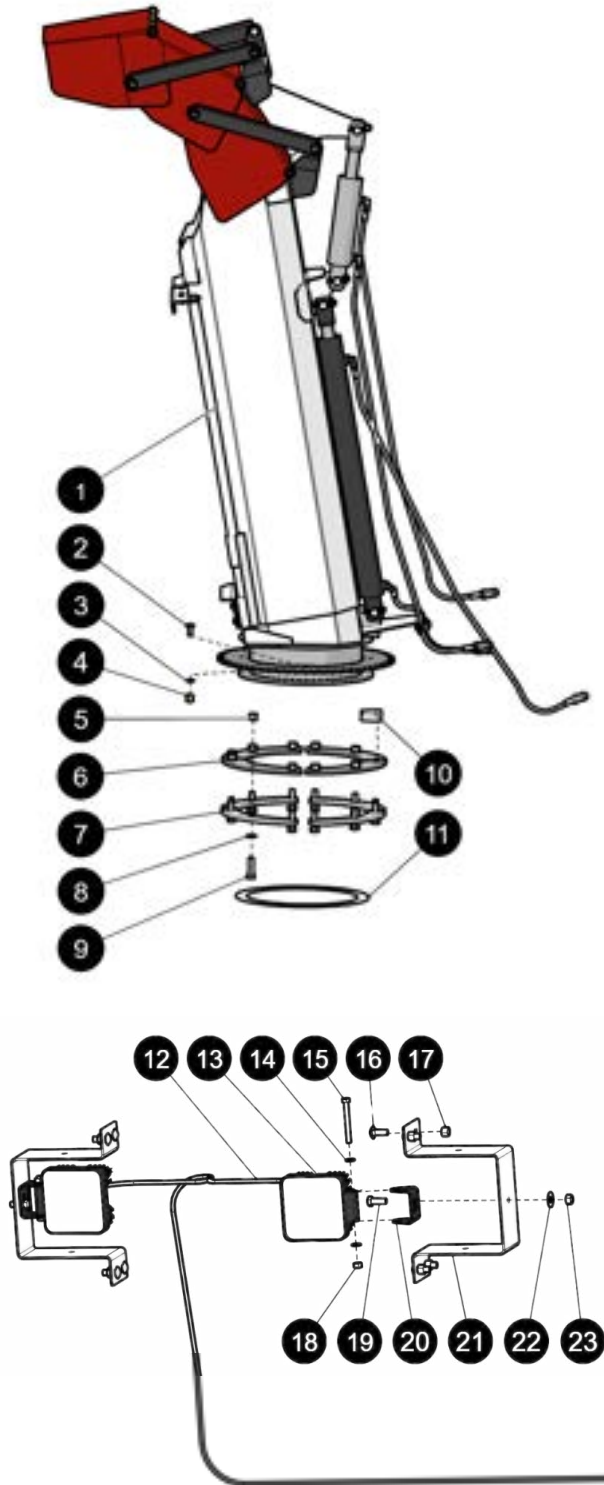
Item #	Description
1	Hair Pin
2	Cylinder Pin
3	Welded Cylinder
4	90° Elbow
5	Hydraulic Hose
6	Agri-ball Nipple

Hydraulic Deflector Assembly Steps

Step	Before	After
1. Attach Deflector Attach the hydraulic deflector to the chute by inserting the cylinder pins (6) followed by the hair pins (5).		
2. Attach Hoses See Hydraulic Safety on p.15. Attach the hydraulic hoses to the deflector and then to your power unit. See p.42.		

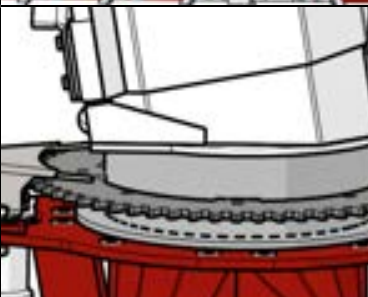
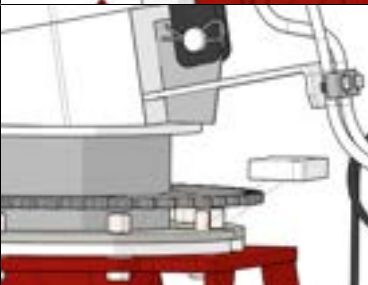
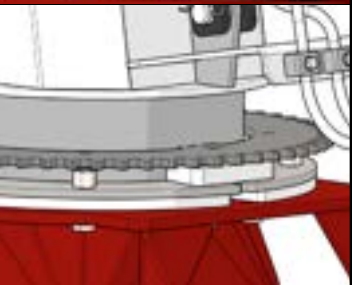
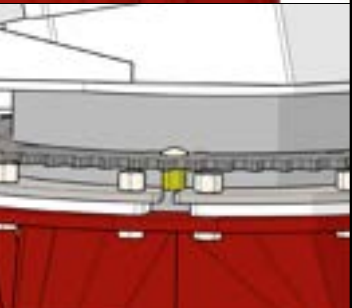
Truck Loader Chute & Work Light Kit Assembly (Optional):

The truck loader chute is available as an option for your **4000 Series Commercial Snowblower**. The work light kit is standard on all truck loader chute models. Follow the assembly instructions in the *Truck Loader Chute Assembly Steps* and *Work Light Kit Assembly Steps* tables and use the images and parts lists below as a reference. See **Product Features** on p.22 for more information about the use of these products.



Item #	Description
1	Truck Loader Chute
2	1/2 x 1 1/4 Carriage Bolt
3	1/2 Lockwasher
4	Stop Nut
5	5/8-11 Nylon Locknut
6	Poly Hood Guide Top Flange
7	Poly Hood Guide
8	5/8 Narrow Flatwasher
9	5/8 x 2 1/4 Bolt
10	Chute Stop
11	Poly Ring
12	Work Light Wire
13	Work Lamp
14	5/16 SAE Flatwasher
15	5/16-18 x 2 3/4 Bolt
16	3/8 x 1 Carriage Bolt
17	3/8-16 Nylon Locknut
18	5/16-18 Nut
19	3/8 x 1 Hex Bolt
20	Work Lamp Stand
21	Work Light Mount
22	3/8 Flatwasher
23	3/8-16 Gr.2 Nut

Truck Loader Chute Assembly Steps

Step	Before	After
1. Place Ring Set the ring (11) down on the hood base. Add a light coat of grease to the ring. See p.50 for more information.		
2. Place Chute Place the chute's base directly on top of the poly ring (11).		
2. Place Washers and Bottom Clamps Place the 5/8 narrow flatwashers (8) on top of the holes on the hood base followed by the first set of poly hood guide clamps.		
3. Attach Top Clamps Complete one set of clamps at a time. Insert the 5/8 x 2 1/4 bolts (9) through the bottom of the hood base and the poly hood guide clamp (7). Use your hand to hold the bolts in place when sliding on the poly hood guide top flange clamp (6), and secure it with the 5/8-11 nylon locknuts (5). Repeat this process for all remaining clamps.		
4. Add Chute Stops There are two chute stops that stop the chute from over-rotating: the chute stop bolt (2), and the chute stop piece (10). A. Remove the two nuts on the opposite side of the hydraulic chute rotator, and slide the chute stop (10) onto the bolts. B. Bolt the chute stop bolt on the right side of the chute stop piece. Use the 1/2-13 carriage bolt (2), two 1/2 lockwashers (3) and secure with a 1/2-13 nut (4).	 	 



NOTE

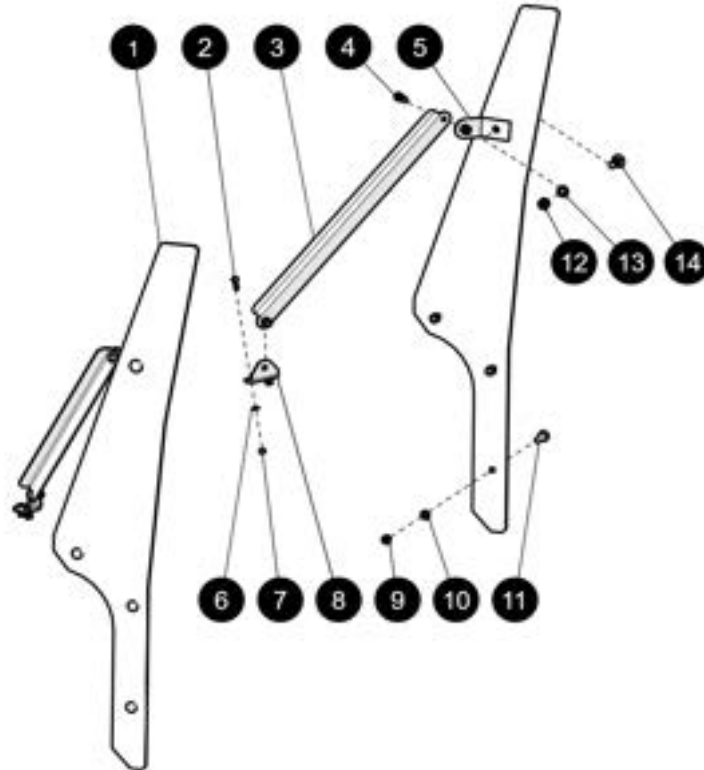
- The deflectors should already be assembled for you. For more information see instructions on p.31.
- The work light kit is standard and should already be assembled for you. Follow the instructions in the table below to assemble or remove the work light kit. Use the images and parts table on p.32 as a reference.

Work Light Kit Assembly Steps

Step	Before	After
1. Bolt to Chute Bolt the work light mounts (21) to the truck loader chute (1) using the 3/8 x 1 carriage bolts (16) and 3/8-16 nylon locknuts (17).		
2. Attach Lamps Attach the work lamps (13) to the work lamp stands (20) using the 5/16-18 x 2 3/4 bolts (15), 5/16 SAE flatwashers (14), and 5/16-18 nuts (18).		
2. Attach Stands Attach work lamp stands (20) to work light mounts (21) using the 3/8 x 1 hex bolts (19), 3/8 flatwashers (22) and 3/8-16 gr.2 nuts (23).		
3. Connect Wire Connect the work light wire (12) to the work light lamps (13) and connect the end of the wire to your power unit plug when it is safe to do so.		

Fixed Bank Cutters Assembly (Optional):

The fixed bank cutters are available as an option for your **4000 Series Commercial Snowblower**. Follow the assembly instructions in the *Fixed Bank Cutters Assembly Steps* table and use the images and parts list below as a reference. See **Product Features** on p.22 for more information about the use of this product.



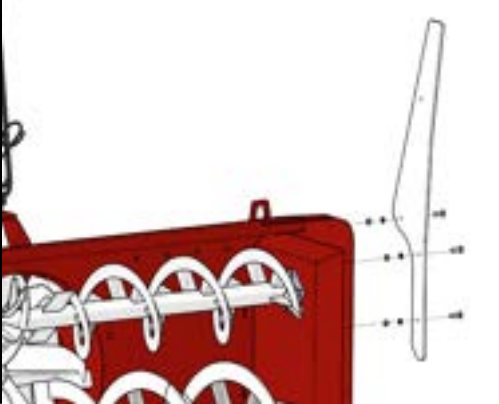
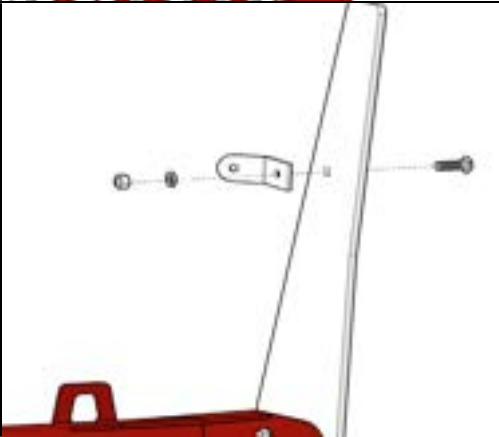
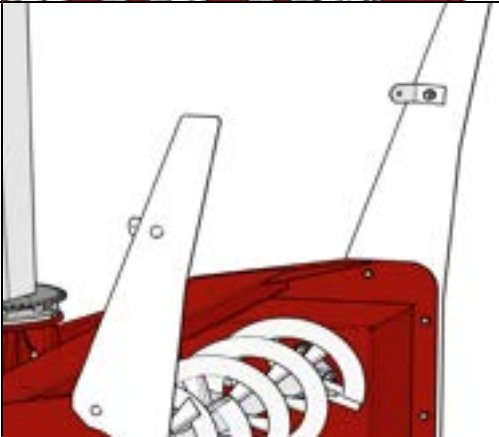
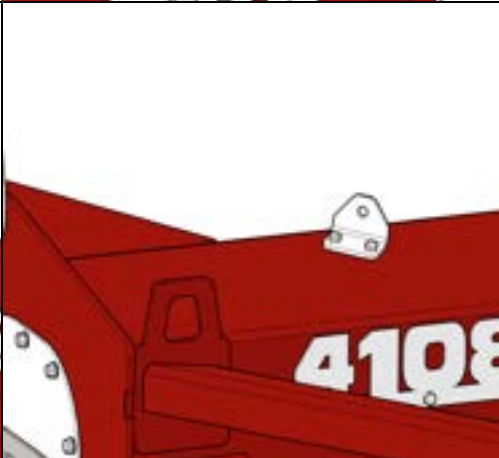
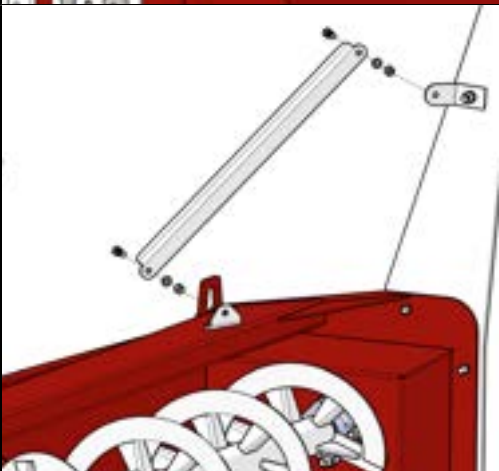
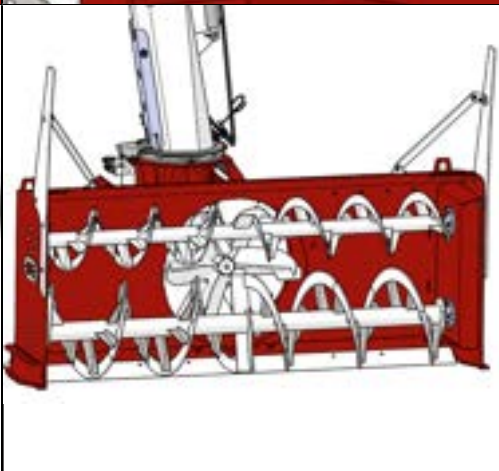
**CAUTION**

- Use heavy gloves when assembling sharp or heavy parts. Never transport heavy equipment by yourself.



Item #	Description
1	Bank Cutters
2	3/8 x 1 Bolt
3	Braces
4	1/2 x 1 1/4 Bolt
5	Upper Support Bracket
6	3/8 Lockwasher
7	3/8-16 Gr.2 Nut
8	Lower Support Bracket
9	1/2-13 Nut
10	1/2 Lockwasher
11	1/2 x 2 Carriage Bolt
12	5/8 x 2 Carriage Bolt
13	5/8 Lockwasher
14	5/8-11 Gr.2 Nut

Fixed Bank Cutter Assembly Steps

Step	Before	After
1. Bolt Bank Cutters Attach the bank cutters (1) to the front of the snowblower on the outside of the frame using the (9), (10), and (11).		
2. Bolt Upper Support Bracket Bolt the upper support bracket (5) to both bank cutters (1) using the (12), (13), (14).		
3. Bolt Lower Support Bracket Bolt the lower support bracket (8) to the top of the snowblower frame using the (2), (6), (7).		
4. Attach Braces Attach the top and bottom of both braces (3) to the upper and lower support brackets (5 & 8) using the 1/2 x 1 1/4 bolts (4), 1/2 lockwashers (10) and 1/2-13 nuts (9).		

Operation

This section describes how to operate your **snowblower** and the procedures necessary to complete various tasks safely and efficiently. Not all situations will be addressed, proceed with caution and use the safety guidelines. Following the procedures below will help provide a safe working environment for the operator, bystanders, and anyone else on the work site.

The owner or operator has the responsibility of being familiar with the operation of the implement and must train all other operators before they start working with the machine.



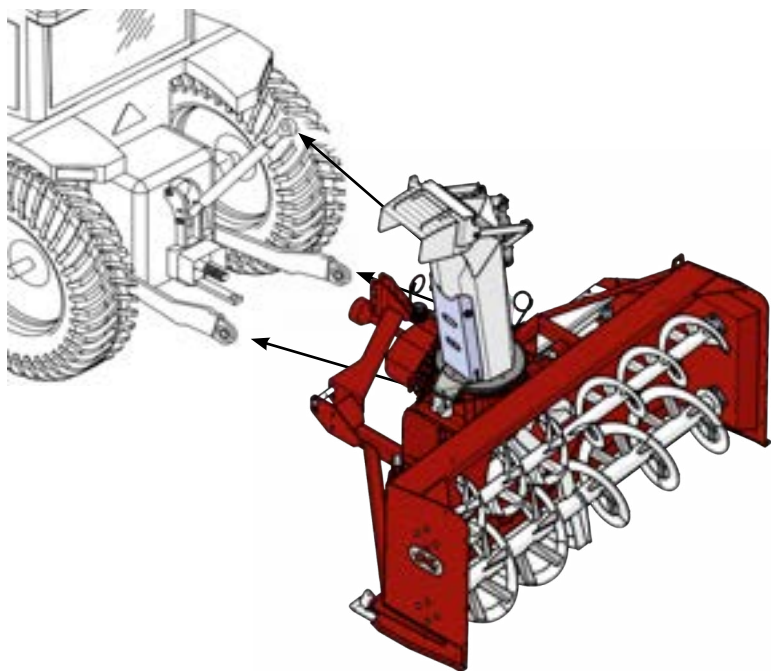
DANGER

- *First time operators must read and completely understand the material in this manual before operating the **4000 Series Snowblower**, and review this manual at least once per season there after.*
- *Attaching the **Snowblower** will add extra weight to your power unit. It is necessary that a minimum 20% of tractor weight be put on the front wheels of your tractor to keep the machine balanced. If the tractor is unbalanced, there is a risk of tipping over, or losing steering control which could result in property damage, personal injury, or death.*



Attaching Snowblower to 3PH Tractor:

1. Back the tractor up to the **snowblower** that is on level ground.
2. Line up the tractor's lift arms so that they are sitting between the **snowblower's** A-frame.
3. Turn off the power unit before proceeding.
4. Fasten the lower 3PH link to the lower hitch mount.
5. Lengthen or shorten the top link until the link can be pinned onto the top hitch mount.
6. Insert the lift pins and use the lynch pins to secure the tractor's lift arms to your implement.



Installing PTO Shaft:

Once the **snowblower's** A-frame is secured to the tractor, you will be able to determine the length and angle of the PTO shaft. The length of the PTO shaft on the **4000 Series Snowblower** is standard to fit a variety of tractors. However, the instructions demonstrate how to adjust the length and angle of your PTO when needed. To install the PTO shaft correctly before beginning operations, follow the steps below in the following order:

- A. Check Length of PTO Shaft
- B. Alter Length of PTO Shaft (if needed)
- C. Alter Angle of PTO Shaft (if needed)
- D. Attach PTO Shaft
- E. Adjust Park Stand



NOTE

- Any malfunctions upon altering the length of the PTO shaft will not be covered under warranty. See a qualified professional or call **MK Martin** to replace broken parts or to perform service and maintenance on your PTO.



DANGER

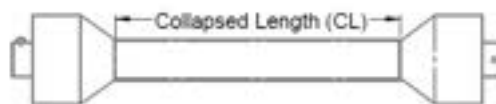


- Do not allow anyone to stand in between the **snowblower** and the tractor when securing the attachment. Doing so could result in damage to equipment, injury, and death.

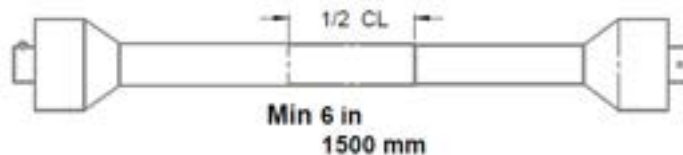
A. Check Length of PTO Shaft:

The length of the PTO shaft located on the **4000 Series Snowblower** may be too short or too long depending on the type of tractor you are using. Only make alterations to the length of the PTO shaft if absolutely necessary.

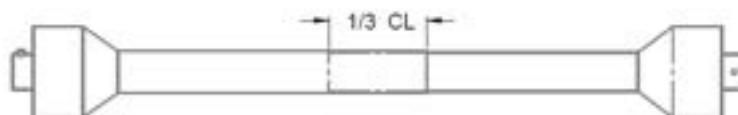
1. Raise or lower the equipment until the PTO out of the tractor is horizontal with the input shaft on the **snowblower**.
2. Measure lock-pin groove to lock-pin groove or bolt hole and compare it with the measurement on the tractor. The difference between these two measurements needs to be cut from both halves of the PTO shaft plus $\frac{1}{2}$ ".



Working Length overlap is 1/2 of above collapsed length



Minimum Overlap in Transport Position 1/3 of collapsed length



B. Alter Length of PTO Shaft:

When altering the length of the PTO shaft, follow the checklist below:

PTO Checklist	☒
Use a sharp hacksaw to cut the PTO Tube.	
Use a fine file to remove any sharp edges and burrs from sawing.	
Clean off all dirt and filings from tube, carefully test for smooth fit.	
Apply a light coat of grease to the outside of the small tube.	
Re-install the shields.	
Install on equipment and re-check.	

Telescopic tubes of PTO should overlap a minimum length to meet ideal conditions and transmitting power. The table below can be used as a guide to find maximum permissible length of PTO.

PTO Description	Over-all Length Closed	Over-all Length Opened Max	Telescopic Tube Overlap
T80-076P	40 1/2"	53"	8"
T90-071P	39"	51"	8"

C. Alter Angle of PTO Shaft:

PTO Shafts are made to transmit power with angle at universal joints. However, these angles should be kept at a minimum. Larger angles shorten the life of PTO. The table below shows the correlation between the angle and PTO lifespan using the example of a **snowblower** attached to a 60HP tractor operating at a maximum capacity (of 60HP continuous).



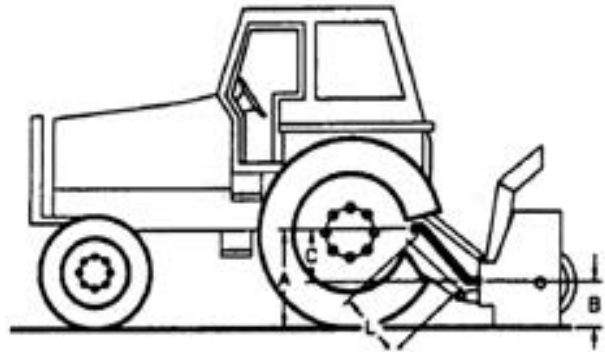
WARNING

- Tractor that is too large may overpower blower! It is dangerous to use a tractor that is too big or too powerful. The tractor will always be able to overload the blower even when it is at maximum capacity. If the tractor is too high or the angles are too large it will result in a shortened life span for the universal joints. Reference the angles in this section to ensure the longest lifespan for your PTO and safe and smooth operation.

HP	PTO Angles	Estimated Life in Hours
60 @ 540 RPM	5°	450 hours
	10°	195 hours
	15°	90 hours
	20°	40 hours
	25°	20 hours

To *alter* the PTO angle, first you have to *determine* the PTO angle. Follow the steps below using the image and tables provided to determine the PTO angle.

1. Ensure the **snowblower** is level with the ground.
2. Measure A, B and L.
3. Subtract B from A ($A - B = C$)
4. Divide L by C ($L / C = F$)
5. Compare F Factor in the table below to find the PTO angle (Interpolate if necessary).



Letter	Description
A	PTO height at tractor
B	PTO height at blower
C	A-B
L	Cross center distance in working position
F	F Factor

F Factor	Angle
6	10°
3.75	15°
2.75	20°
2.15	25°
1.75	30°

The lifespan of the PTO is directly related to the universal joint angle of the PTO. Reduce the angle as much as possible by increasing the distance between the tractor and the snowblower. See the images below that demonstrate examples of acceptable angles, and angles to avoid.



TIP

- If impossible to increase the distance between tractor and **snowblower**: it is recommended to use a larger size PTO that is a greater capacity PTO. Contact your dealer for more details.
- For **snowblowers** of 100HP: an additional gearbox is available that can be mounted on the existing **snowblower** gearbox, which increases the input shaft height. This reduces the angle at PTO Joints. The additional gearbox has an input speed of 1000 RPM which greatly increases PTO capacity. **The 1000 RPM Gearbox is standard on the 4000 Series Snowblower.**



Avoid Large Angles at PTO Joints



Acceptable Angles at PTO Joints



Avoid Non-Equal Angles at PTO Joints



Acceptable Equal Angles at PTO Joints



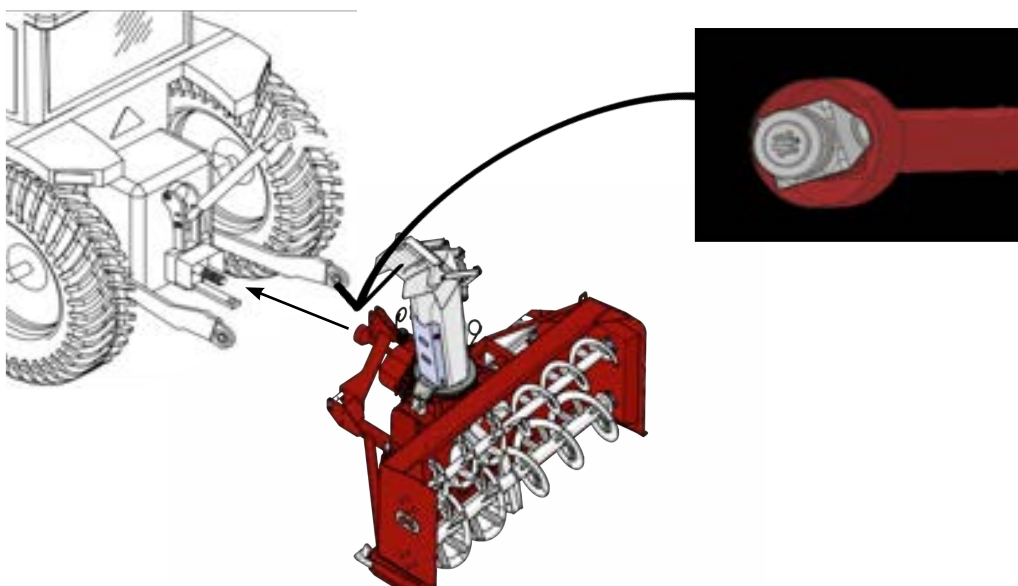
WARNING

- Do not change **snowblower** angle to obtain a scraping affect! Always keep the tractor PTO and **snowblower** input shaft parallel to one another. Changing the angle of the **snowblower** can cause damage to the implement. This practice can become harmful to the PTO if the angle is unequal at each end. It can cause a fan speed variation as well as a drastic increase of weight on the cross and bearings.

D. Attach PTO Shaft:

Once the **snowblower's** A-frame is attached to the tractor and the length and angle are acceptable for operation, you can install the PTO shaft. Follow the steps below:

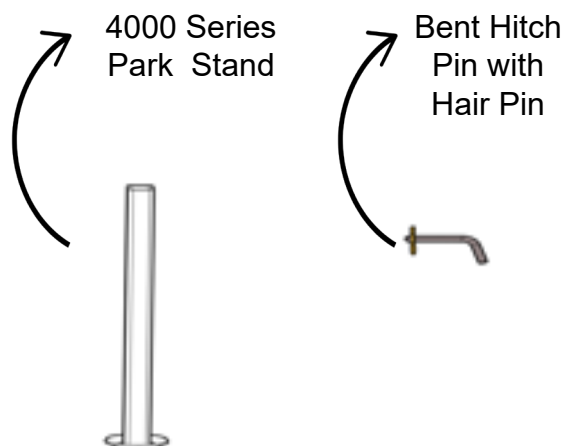
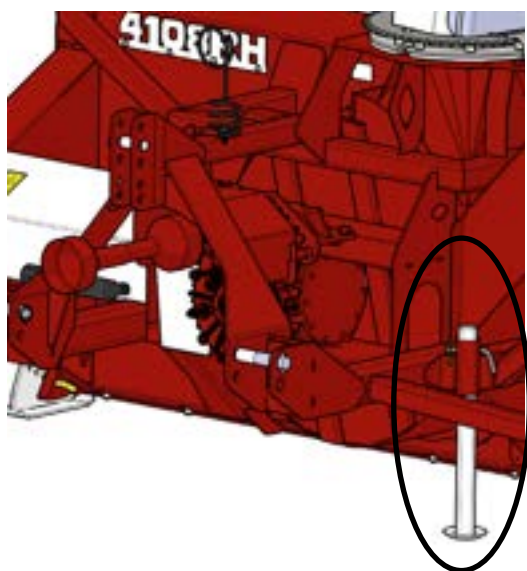
1. Ensure tractor is turned off and no parts are moving.
2. Line up the splines with the notches.
3. Push the locking button down.
4. Engage the shaft and the coupler.
5. Test the connection by pulling slightly on the shaft to ensure it is properly engaged.



E. Adjust Park Stand:

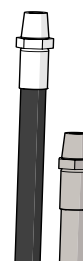
Once the **snowblower** is attached to the tractor, it no longer needs to use the park stand for support. Follow the steps below to adjust the park stand before beginning operation:

1. Ensure tractor is turned off and no parts are moving.
2. Double-check the **snowblower** is on ground level, the A-frame and PTO are both securely attached to the tractor.
3. Remove the bent hitch pin and hair pin.
4. Lift the park stand and install the bent hitch pin in the lower hole to be in operating position.



Attaching Hydraulic Hoses to 3PH Tractor:

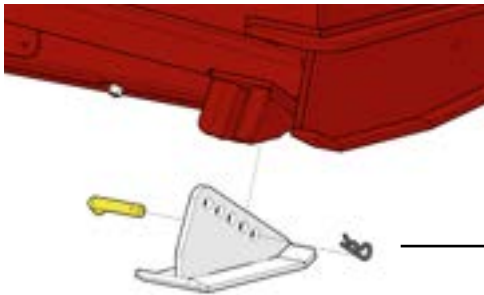
1. Make sure the couplers and fittings are free from debris.
2. Connect the hose ends to their corresponding couplers.
3. Attach the couplers to the tractor by pushing them into the corresponding ports until they lock. If you are unsure of which ports to attach the hoses too, refer to your power unit's operator's manual.
4. Avoid twisting or crossing the hoses. Doing so could interfere with the hydraulic pressure. The hoses should remain secured by hose clamps or hose holders on the **snowblower**.
5. Use hose clamps, holders or zip ties to secure the hoses to the **snowblower** if there is extra length after attaching.
6. Once the hoses are securely attached, turn on your power unit and test the hydraulic system. If there are abnormal noises, excessive bulging or improper functioning, turn off the power unit immediately and **visually** inspect the attachments before repeating these steps.



Adjusting Skid Shoes:

The skid shoes on the **4000 Series Snowblower** are designed with several holes so that you can manually adjust the height of your skid shoes. Adjust one skid shoe at a time by following the steps below:

1. Ensure tractor is turned off and no parts are moving.
2. The **snowblower** is blocked up, the A-frame and PTO are both securely attached to the tractor.
3. Remove the bent pin and hair pin.
4. Adjust skid shoes.
5. Re-insert bent pin and hair pin.



DANGER

- **Do not** begin adjustments to the implement until it has been securely attached to the power unit, and the unit is turned off.
- **Never** go under the machine to make adjustments. **Never** take the risk of placing yourself beneath a hydraulic system. Cutting edges are heavy and sharp, use heavy gloves to avoid injury.



Condition	Adjustment	Skid Shoe
Ground is Level	Insert the bent hair pin in the 3rd or 4th hole.	
Light Snow (gravel, soil or rocky pathways)	Adjust skid shoes down (insert bent pin in the 1st or 2nd hole) so the cutting edge is further away from the ground. This will help avoid hitting objects or getting material other than snow in the auger, fan or chute.	
Light Snow (paved or cement pathways)	Adjust skid shoes up (insert bent pin in the 4th or 5th hole) so cutting edge is lower to the ground. The cutting edge will completely clear the surface of snow and ice.	
Heavy Wet/ Packed Snow	Adjust skid shoes down (insert bent pin in the 1st or 2nd hole) so cutting edge is higher from the ground. This will avoid overloading the snowblower and slowing you down. Go over a section several times, re-adjusting skid shoes if needed.	

Best Practices:

The **4000 Series Snowblower** is intended to clear light or packed snow from the surface. Unintended use risks damaging your implement. Review **Intended Use** on p.3. The following procedures explain how to safely operate your **snowblower** when completing specific tasks and how to avoid damaging your machine.

Pre-Operation:

Before operating your **snowblower**, it is important to test your equipment. Follow the *Pre-Operation Checklist* table below.

Pre-Operation Checklist	☒
Inspection Checklist is complete. See p.26.	
Review Work Area Safety on p.9.	
Review Operation safety on p.11.	
Review Hydraulic Safety on p.15.	
All shields/guards are in place.	
Snowblower is securely attached to power unit. See p.37 and 41.	
Turn on power unit and allow it a few minutes to warm up.	
Using the hydraulic controls inside the tractor, carefully raise and lower the snowblower , noting any pinch, stretch or kink points in the hydraulic hoses.	
Adjust any strained or loose hoses.	
Test hydraulic chute rotator.	
Test hydraulic chute deflector.	
Test hydraulic rotating housing (if applicable).	
Adjust PTO angle. See p.39 - 41.	

Start Operation:

Follow the steps below to operate your **4000 Series Commercial Snowblower**.

1. Engage the PTO and slowly bring the blower up to operating speed.
2. Adjust the chute deflector so the snow is going in the direction you want it to go.
3. Select a slow reverse gear and start driving backwards.
4. Adjust the chute rotator as you operate your **snowblower** so that the snow is always pointing in the direction you want it to go.
5. Pick up speed when certain the PTO angle and level of the **snowblower** are set for the job at hand.



TIP

- Adjust the chute rotator and deflector so the snow is going in the same direction as the wind.



DANGER

- Objects thrown from **snowblower** at high speeds can cause property damage, injury and death! Keep distance from machine, and keep deflector pointing away from yourself and others. Be aware of bystanders.



Stop Operation:

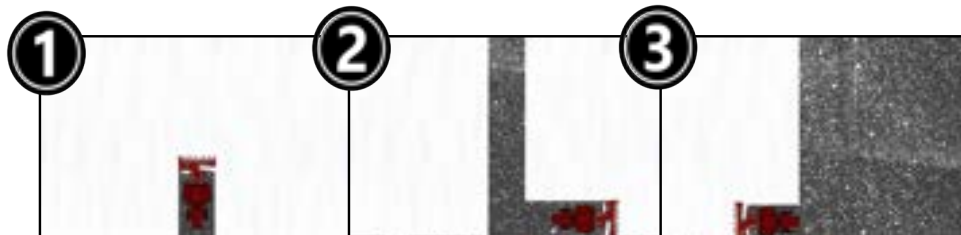
When stopping your operation, follow the checklist below.

Stop Operation Checklist	☒
Lower any raised hydraulic equipment.	
Disengage the PTO to stop the blower.	
Place tractor in park on a flat surface and turn off the engine.	
Remove switch key, wait approximately 5 minutes for machine to cool down.	
Do not exit the cab until all moving parts have come to a complete stop.	

Task-Specific Tips:

Large Areas:

When clearing a large area such as a parking lot start by clearing a path down the middle to separate the lot in half. Clear one half at a time starting from the center and blowing snow to one side. This process reduces the amount of snow being piled up on one side. See the illustration below.



Rotating Housing (only applicable to RH Models):

With the rotating housing, you have the ability to dictate which direction the snow will exit the blower. Using the hydraulic controls from inside your cab, you can rotate the fan housing to direct snow out the left side, the right side, or straight up and out of the **snowblower's** chute. See the illustrations below.



Right



Left



Center

Paved Driveways:

For paved driveways, the **4000 Series Snowblower** can be adjusted to scrape snow and ice directly off the surface. Follow the steps below to clear snow from paved driveways safely, and without damaging your implement.

1. Lengthen the top 3PH link to tilt the **blower** forward. This will help the cutting edge scrape the surface of your driveway. Ensure that the PTO is still in proper position when adjusting the tilt angle of your **snowblower**. See p.39.
2. Adjust the skid shoes so the cutting edge is lower the ground to scrape away ice or frozen snow. See **Adjusting Skid Shoes** on p.43.
3. Drive slowly and increase speed when certain **snowblower** no longer needs adjustments to continue operation.



IMPORTANT

- Always obey all federal and local laws related to snow removal. Never pile up snow near handicap parking areas, electrical boxes, fire hydrants, water drains, shut-off valves, or mailboxes, and never pile snow on sidewalk's, streets or other's property.



Gravel Driveways:

For gravel driveways it is important to remain cautious during operation. If your **snowblower** is too close to the ground, there is a risk of the auger picking up loose gravel instead of snow which could damage the equipment and become a safety hazard.

To avoid picking up loose gravel:

1. Shorten the top 3PH link to tilt the **blower** back slightly. This will help prevent the cutting edge from scraping the surface and scooping up gravel.
2. Adjust the skid shoes to raise the **blower** above the gravel. See **Adjusting Skid Shoes** on p.43.
3. Drive slowly to assess the operation and ensure only snow is being caught by the auger and thrown through the chute.



WARNING

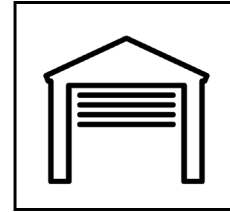
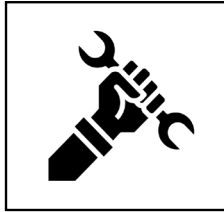
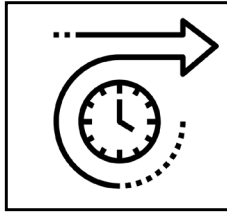
- Sudden impact from obstacles hidden under the snow may cause injury or damage to your implement. Mark objects that cannot be removed before operating and clear debris from work area.



Storage

After the season's use or when the machine will not be used for a period of time, completely inspect all parts of the **snowblower**. Replace or repair any damaged components to prevent any unnecessary down time at the beginning of the next season.

Your implement is an important investment. Spending some time to protect it from rust and corrosion will result in a safer, longer service life and better performance.



Storage Checklist	
Review section Storage Safety on p. 15.	☒
Carefully remove any excess snow or ice that may be clogging the snowblower .	☐
Remove all remaining materials from around the machine.	☐
Check the cutting edge and plow bolts for wear and follow the replacement instructions under Replacing Cutting Edge on p. 49.	☐
Inspect the snowblower for any loose, worn, or damaged parts. Tighten and replace as necessary.	☐
Sand down scratches and the edges of areas that are missing paint.	☐
Repaint any chipped or scraped areas to prevent rust and corrosion.	☐
Replace any safety decals that are missing or not readable. See section Safety Labels on p. 16.	☐
Guard any sharp corners.	☐
Ensure all pins, latches, and locks are secure.	☐
Store your implement on a level surface, in a clean and dry area. If that is not possible, cover your snowblower with a waterproof tarpaulin and tie it down securely.	☐
Block the implement to prevent any unwanted movement.	☐
Service all grease and lubrication points. See p. 50.	☐
Ensure hydraulic hose ends are covered to prevent contamination.	☐

 **CAUTION**

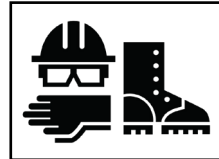
- Use caution when spraying near the edges of safety decals or spraying near torn or damaged safety decals as water-spray could peel them off.



Service & Maintenance

Good maintenance is your responsibility. To keep your **snowblower** in good condition, we suggest carefully following a service and maintenance program.

Review the maintenance checklist before beginning any service or maintenance on your **4000 Series Snowblower**.

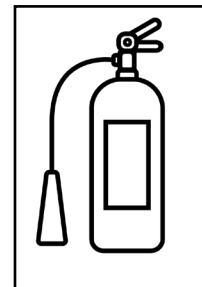


Maintenance Checklist	☒
Review section Maintenance Safety on p.14.	
Release hydraulic pressure before doing any maintenance.	
Keep service area clean and dry.	
Use adequate light for the job at hand.	
All electrical outlets and tools are properly grounded.	
All rotating parts including the drive shaft, auger and fan are at a complete stop.	
Never work under equipment unless it is blocked up securely to prevent any movement.	
A fire extinguisher and first aid kit are readily accessible.	
Parts replacement should only be performed by qualified personnel to ensure safe and complete installation.	
Always use PPE such as eye, hand, foot, and hearing protectors.	
Use heavy gloves when handling heavy or sharp components.	
The power unit is turned off prior to beginning any service, cleaning, lubrication or maintenance on your implement.	
The hydraulic system, hoses and couplings are free of debris and leaks.	
Hoses that are rubbing, pinched or crimped have been re-routed.	
All nuts, bolts, and screws have been torqued according to the Bolt Torque Chart on p.60.	



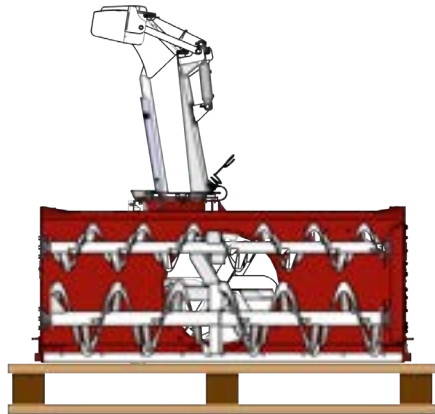
WARNING

- The service & maintenance instructions are only to be followed by qualified personnel.



Blocking up 4000 Series Snowblower:

1. Place two 6" x 6" blocks under each side of the **snowblower** or a large enough skid.
2. Lower the **snowblower** until it is securely placed on the blocks to stop movement.



NOTE

- To service the **snowblower** while it is attached to the power unit, it must be blocked up off the ground. Do not block higher than needed.



DANGER

- When adjusting or replacing parts, do not place yourself or other persons or any part of your body under a raised **snowblower**!

Replacing Cutting Edge:

Follow the steps below to remove and replace cutting edge. Only replace cutting edge when completely worn out. Block up your implement before beginning, and use the parts pages as a reference.

1. Block up **snowblower**.
2. Remove 1/2 x 1 1/2 plow bolts and 1/2-13 nylon locknuts.
3. Replace the cutting edge.
4. Re-insert bolts and nuts.



WARNING

- Cutting edge is heavy! Handle with care and use heavy gloves!



Replacing Skid Shoes:

Overtime the front of the skid shoes may wear down. When the front of both skid shoes have lost 1/2 of their metal thickness, they need to be replaced to perform properly and to avoid damaging the frame of your **snowblower**. Ensure the **snowblower** is blocked up to prevent movement.

1. Block up **snowblower**, and remove one skid shoe at a time.
2. Remove hair pin followed by 3/4 x 3 1/2 bent pin.
3. Replace the skid shoes.
4. Re-insert hair pin followed by 3/4 x 3 1/2 bent pin.

Hydraulic Oil:

Hydraulic oil is an important part of your **snowblower**. Monitoring your hydraulic oil will prevent hydraulic failures and result in long-lasting equipment with good performance. Hydraulic oil level in the power unit should be checked daily, and the quality of the oil should be inspected every 50 hours. If the oil is dirty or smells burnt, it should be replaced. Be sure to relieve the system of pressure before performing any service to the hydraulic system.



WARNING

- Be aware that hydraulic leaks could develop without warning. Do not check for leaks with your hands or fingers while the system is pressurized.



WARNING

- Personal injury can result from hydraulic oil pressure and hot oil. Hydraulic oil pressure can remain in the hydraulic system after the engine has been stopped. Serious injury can be caused if this pressure is not released before any service is done on the hydraulic system. Make sure all of the attachments have been lowered and the oil is cool before removing any components or lines. All hydraulic parts replacement should be performed by qualified personnel.

Lubrication:

To keep your **4000 Series Snowblower** in good condition, there are several areas that need to be lubricated on a regular basis and before entering storage. Use the legend below to determine lubrication spots and the type of lubrication required.

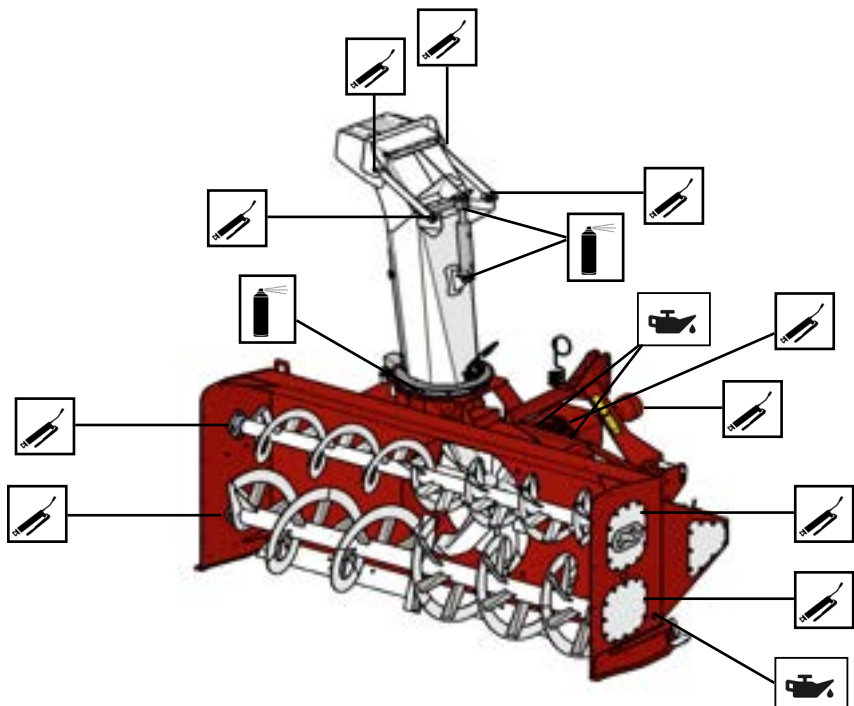


CAUTION

- Unusual play or noise could be an indication of worn parts. Inspect components before each use. Parts replacement should be done only by qualified personnel.

Lubrication Legend

	Multi-Purpose Spray Lube
	Multi-Purpose Oil Lube
	Multi-Purpose Grease Lube
	Intervals at which lubrication is required



Grease:

To prevent premature wear, use the table and images below that indicate which parts require grease lubrication at which frequency. Follow the *Grease Lubrication Checklist*.

Item #	Part	Frequency (hrs)
1	Auger Bearings (x4)	16
2	Deflector Pivot Bars (x4)	50
3	1000 RPM Gearbox	16
4	Drive Sprocket Bearing	16
5	Drive Shaft Cross Bearing	8
6	PTO Shield Bearings (x2)	8
6.1	PTO Cross Bearings (x2)	8
6.2	PTO Telescopic Tubes (x2)	16



CAUTION

- Do not over-grease parts. Using too much grease can cause the seals to be forced off and allow dirt and debris to contaminate the bearings.



Grease Lubrication Checklist

- Lubricate with a good Lithium EP2 grease or equivalent.
- Use hand-held grease gun for all greasing. One shot of grease is adequate.
- Wipe grease zerk with a clean cloth before greasing, to avoid injecting dirt and grit.
- Replace any broken zerk fittings immediately.
- If grease zerk will not take grease, remove and clean thoroughly. Also clean lubricant passageway.
- Replace zerk fittings if necessary.
- Ensure all components at grease points are moving with ease and there is no friction or visible rust forming.



WARNING

- Do not run the machine without guards in place. The PTO, drive shaft, augers, sprockets and chain are all in motion and serious injury could result. Possible entanglement and amputation hazard.



1. Auger Bearings



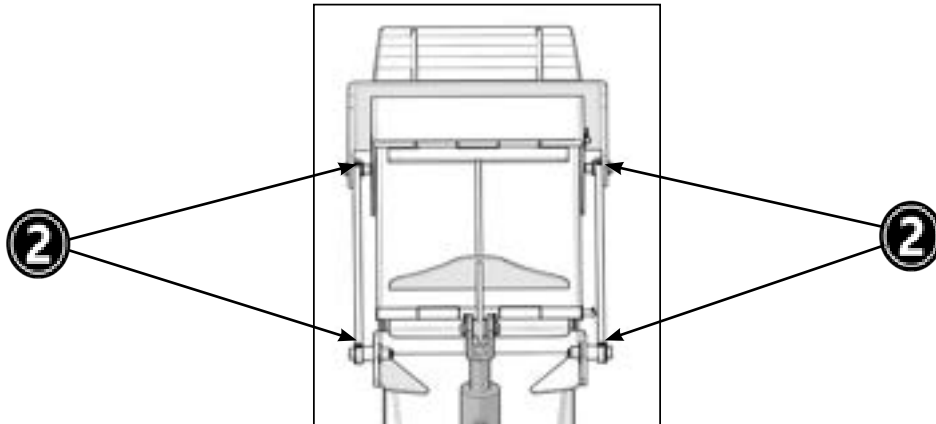
Apply grease every 16 hours to all 4 auger bearings.



2. Deflector Pivot Bars



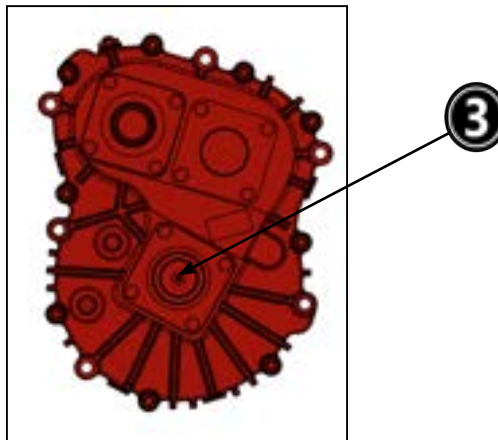
Apply grease every 50 hours to the grease zerks on the chute deflector pivot bars.



3. 1000 RPM Gearbox



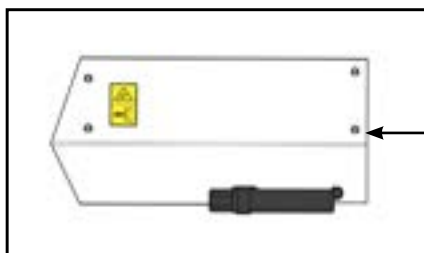
Apply grease every 16 hours to the grease zerk on the front of the 1000 RPM gearbox.



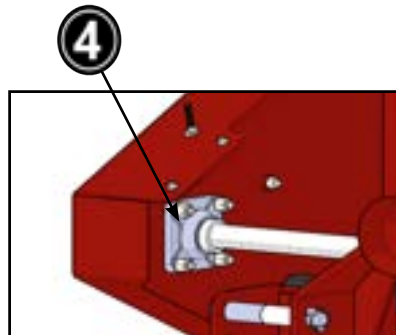
4. Drive Sprocket Bearing



Remove the cross shaft cover and apply grease to the drive sprocket bearing every 16 hours.



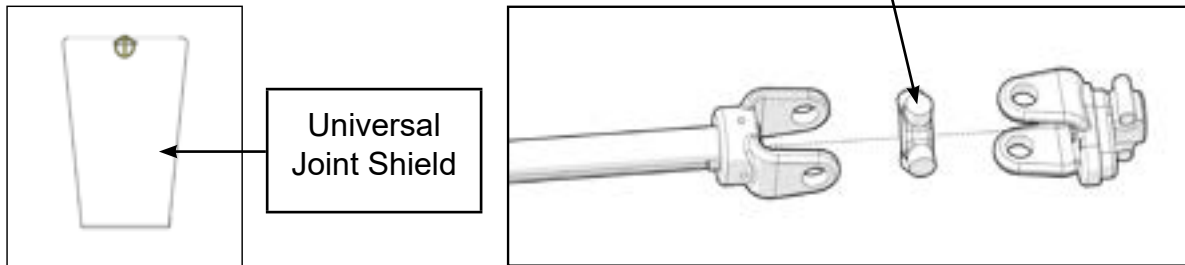
Cross Shaft Cover



5. Drive Shaft Cross Bearing



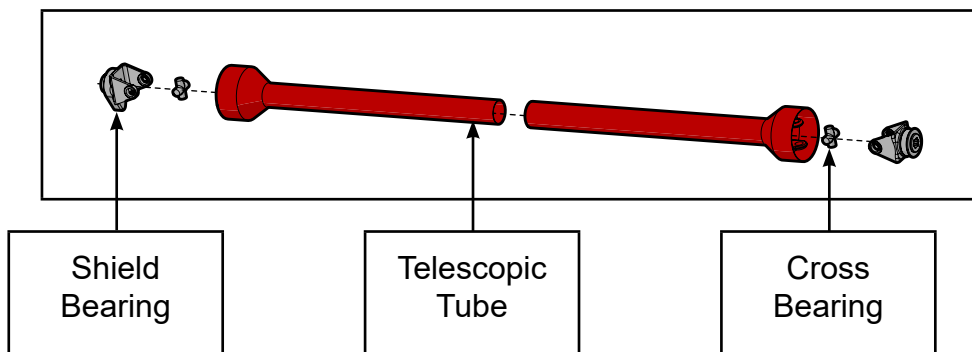
Every 8 hours, remove the universal joint shield and apply grease to the drive shaft cross bearing.



6. PTO (Shield Bearings, Cross Bearings, Telescopic Tubes)



Remove the PTO shield and separate the parts to apply lubrication. Apply grease to the shield bearings and cross bearings every 8 hours, and apply grease to the telescopic tubes every 16 hours.



Lubrication Spray:

To ensure freedom of movement and prevent corrosion, use the table and images below that indicate which parts require lubrication at which frequency. Follow the *Lubrication Spray Checklist*.

Item #	Part	Frequency (hrs)
1	Chute Deflector Hinges & Cylinder	50
2	Poly Ring	50



WARNING

- Lubricating spray can be harmful to eyes and skin. If contact is made, wash immediately. Wear PPE such as safety glasses and gloves to avoid personal injury.

Lubrication Spray Checklist

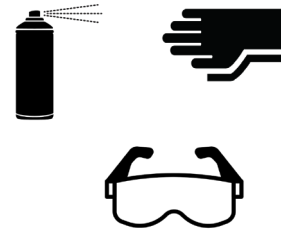


Use a light oil or lubricating spray.

Avoid contact with eyes. Wash off any lubricant that makes contact with skin or eyes immediately.

Ensure you are in a well-ventilated area to avoid breathing in any harmful chemicals.

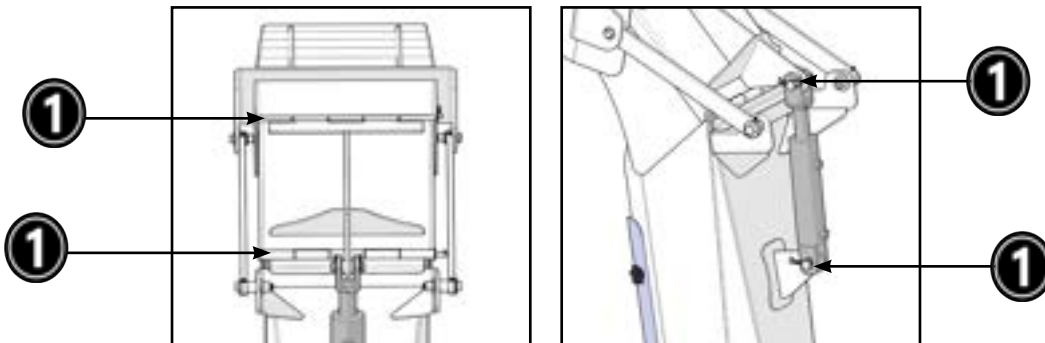
When finished with application, return oil spray to a dry location away from heat and sunlight.



1. Chute Deflector Hinges & Cylinder



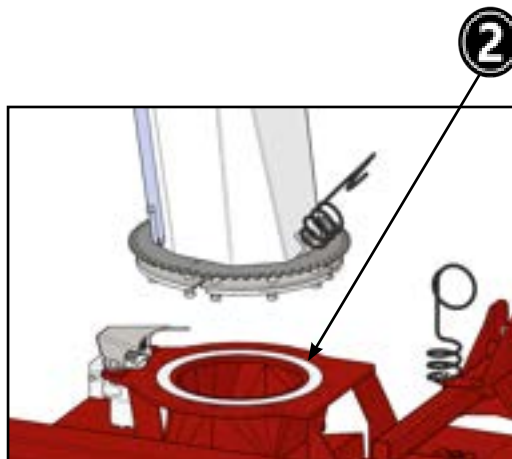
Every 50 hours, or at the beginning of every season, apply a light coat of lubricant spray to the deflector hinges and to both ends of the chute's hydraulic deflector.



2. Poly Ring



Every 50 hours, or at the beginning of every season, apply a light coat of lubricant spray to the chute's poly ring.



Change Oil:

To prevent premature wear and sludge build up, it is important to keep up with oil changes. Use the table and images below that indicate which parts require an oil change at which frequency. Follow the *Oil Change Checklist* and the *Oil Change Procedure* for each item in the table below.

Item #	Part	Frequency (hrs)
1	Drive Chain	500/Annually
2	T301 Gearbox	500/Annually
3	1000 RPM Gearbox	500/Annually

Oil Change Checklist	☒
Check oil level while it is cold, oil expands when it is hot.	
Ensure the machine is level and blocked up to prevent unwanted movement.	
Change oil while it is still warm.	
Ensure you are in a well-ventilated area to avoid breathing in any harmful chemicals.	
When finished with application, return oil to a dry location away from heat and sunlight.	

Oil Change Procedure:

1. Remove Oil:

- Ensure machine is level and blocked up securely, see p.49.
- Change oil while it is still warm.
- Remove the oil drain plug, and drain the gearbox oil into a safe container or catch pan. If you are changing the oil for a gearbox and your gearbox does not have an oil drain plug, use a suction or siphon pump.
- When oil is finished draining, put back the oil drain plug that was previously removed.
- Dispose of oil responsibly.



NOTE

- After draining oil, If you notice large pieces of metal it is possible your machine parts are worn and require replacement. Seek assistance from qualified professionals to avoid causing damage to your implement.

2. Add Oil:

- Ensure machine is level and blocked up securely, see p.49.
- Use a cloth to clean the oil fill area of any debris.
- Remove the plug from one of the oil fill locations and add oil.
- Fill until oil level plug. **Do not overfill.**



WARNING

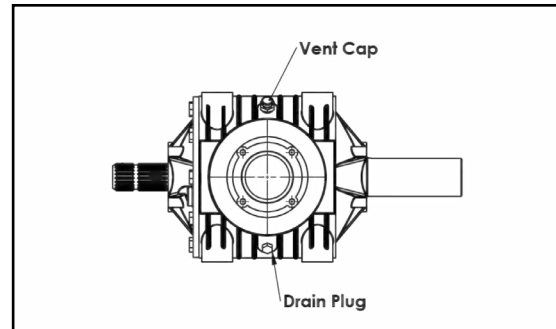
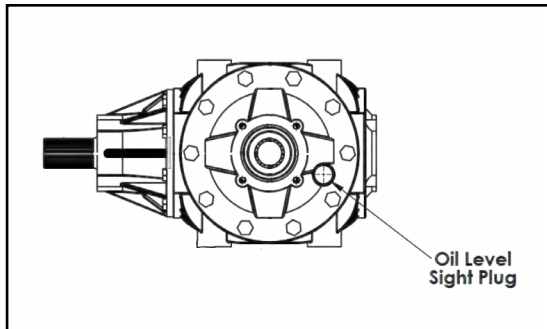
- Do not overfill! Overfilling can cause damage to the gearbox, increase temperature and cause foaming.
- Snowblower** should be level when changing oil. Check oil level before performing an oil change.
- Never mix two different oils together. A chemical reaction could occur and cause damage to implement or personal injury.

1. T301 Gearbox



Perform your first oil change after 50 hours. Plan to change your gearbox oil every 500 to 600 hours or more frequently with heavy use. Check oil level monthly, and change your gearbox oil at least once a year for optimal performance.

Type of lubrication: **SAW 90** or **80-90W EP Gear Lube**

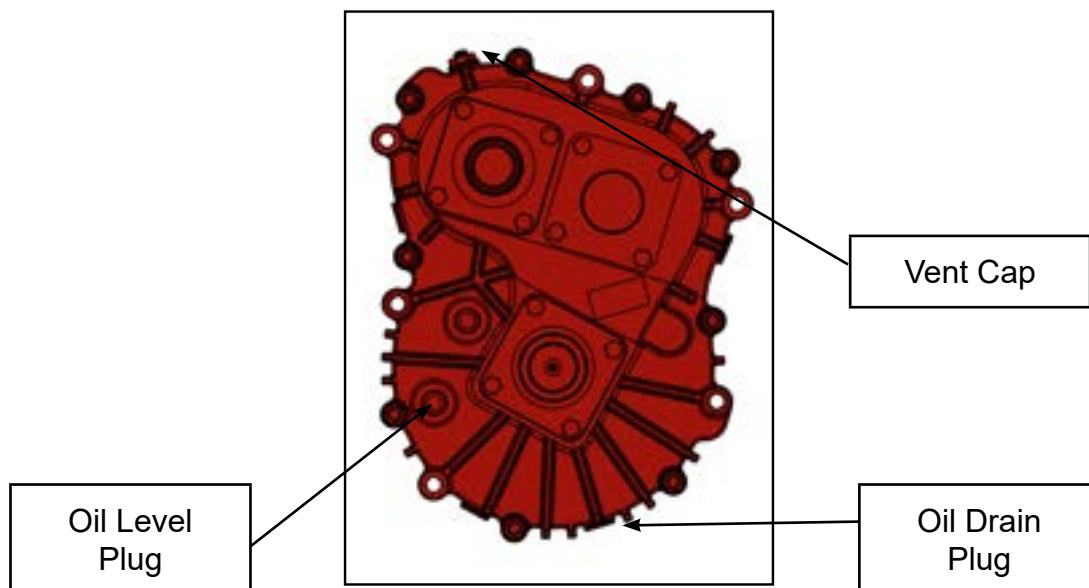


2. 1000 RPM Gearbox



Perform your first oil change after 50 hours. Plan to change your gearbox oil every 500 to 600 hours or more frequently with heavy use. Check oil level monthly, and change your gearbox oil at least once a year for optimal performance.

Type of lubrication: **SAW 90** or **80-90W EP Gear Lube**

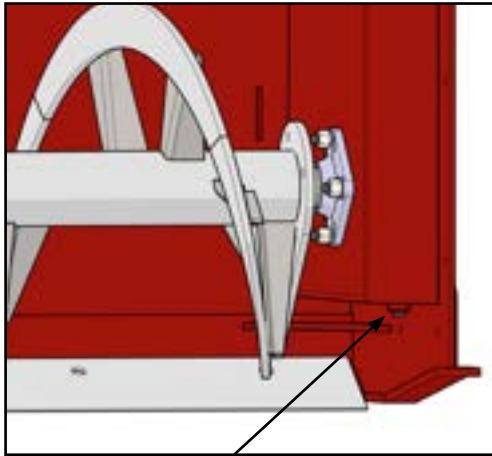


3. Oil Bath Chain

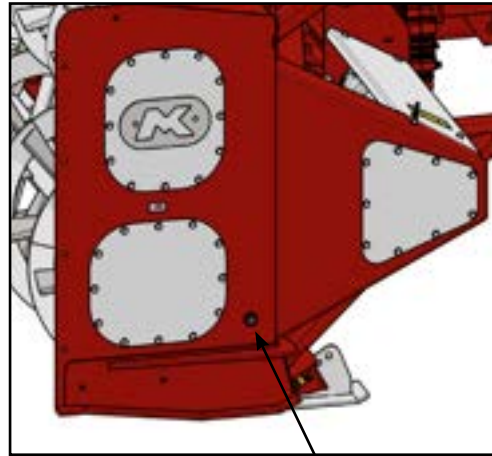


Perform your first oil change after 50 hours. Plan to change your oil every 500 to 600 hours or more frequently with heavy use. Check oil level monthly, and change your oil at least once a year for optimal performance.

Type of lubrication: **Non-detergent Petroleum Based Oil**



Oil Drain Plug



Oil Level Plug

Shear Bolts:

Shear bolts are built to break under shocks on the fan or the auger as a second layer of protection. If the shear bolt breaks, it is important to replace it immediately with the same category bolt. The shear bolt must be kept tight to maintain efficiency of the shearing mechanism and to prevent damaging or enlarging the mounting holes.

There are two locations on the **4000 Series Snowblower** that contain shear bolts: the auger drive shaft and the PTO drive-line.

To replace shear bolts, follow the steps in order, using the illustrations as a reference. Always use the same size bolt and nut when replacing shear bolts.



CAUTION

- *Replacing shear bolts requires lifting heavy parts. Prevent potential strain injury, use approved lifting equipment and safety practices, or ask for help when moving heavy, bulky parts.*



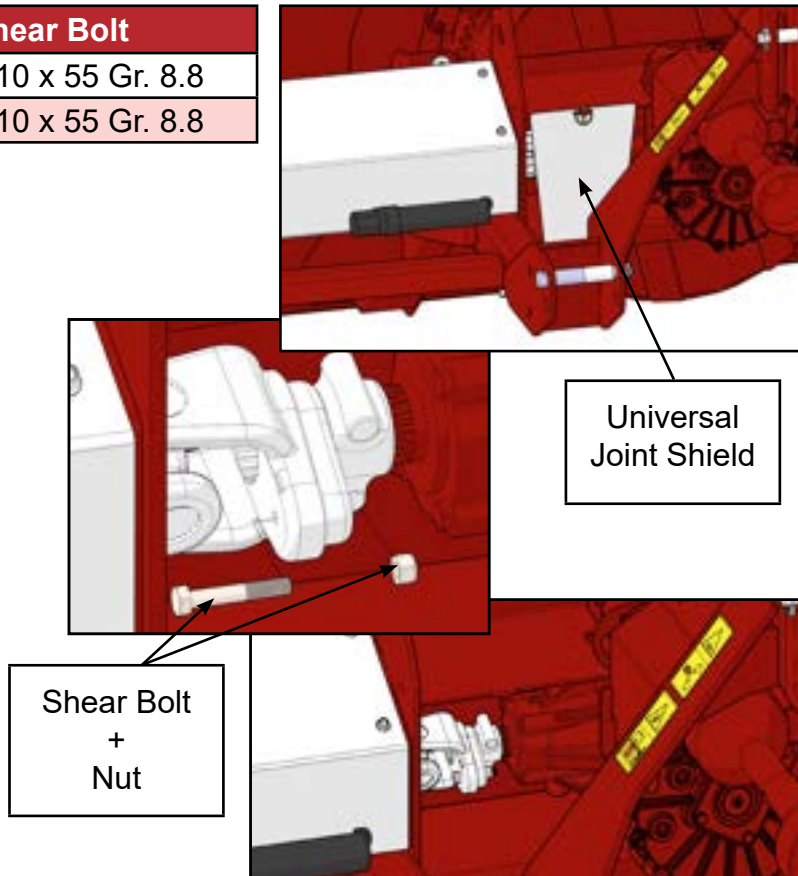
IMPORTANT

- *The gearbox shafts are made with special alloy steel. However they are case hardened to increase capacity to shock load. These shafts cannot be broken under normal loads. However, undesirable objects may enter the fan and either bend or break the gearbox shaft. It is understood that the gearbox cannot be built to resist every possible overload and consequently, gearbox fan shafts will not be replaced under warranty. Therefore, the user of the **snowblower** must be very careful.*

Auger Drive Shaft:

Model	Shear Bolt
4097, 4108, 4120	M10 x 55 Gr. 8.8
4097RH, 4108RH, 4120RH	M10 x 55 Gr. 8.8

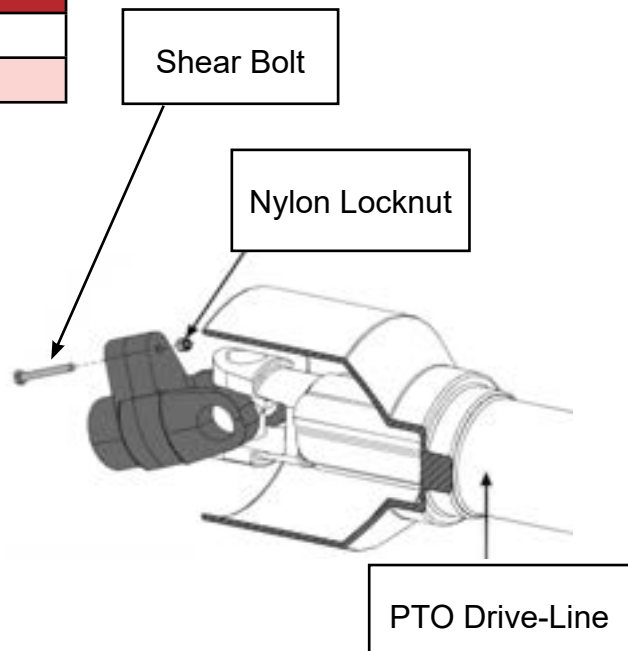
1. Follow **Stop Operation Checklist** on p.**45**.
2. Ensure machine is blocked up to prevent unwanted movement. See p.**49**.
3. Remove the universal joint shield. Set the shield and lynch pin in a safe place.
4. Align the holes on the universal joint that connects the auger drive shaft to the T301 Gearbox.
5. Insert the new shear bolt with a new hex nylon locknut.
6. Tighten nylon locknut.
7. Replace universal joint shield.



PTO Drive-Line:

Model	Shear Bolt
4097, 4108, 4120	M12 x 65 - 8.8
4097RH, 4108RH, 4120RH	M12 x 65 - 8.8

1. Follow **Stop Operation Checklist** on p.**45**.
2. Ensure machine is blocked up to prevent unwanted movement. See p.**49**.
3. If unable to safely reach the location of the shear bolt (where the PTO connects to the 1000 RPM Gearbox), you may need to separate the PTO from the tractor.
4. Remove the old hardware if needed.
5. Insert the new shear bolt with a new hex nylon lock nut.
6. Tighten nylon lock nut.
7. Re-attach the PTO if separation was necessary.



Adjusting Chain Tension:

The drive chain should be adjusted during inspection to check for wear and tension, and to allow a **1/4" sag** in the bottom span of the chain between the shear and auger sprocket. Follow these steps to adjust chain tension:

1. Follow **Stop Operating Checklist** on p.45.
2. For a better view of the chain adjustment, take off the auger chain box front cover by removing the 3/8 x 1 bolts and the 3/8 washers and placing them in a safe place.
3. Use one hand to put light pressure on the tensioner treaded rod, and use the other hand to loosen the 3/8-16 nylon locknut.
4. To loosen the chain, push the rod down and when the chain is loose enough, tighten the nylon locknut. To tighten the chain, lift the rod up and when the chain is tight enough, tighten the locknut. There should always be a **1/4" sag** between the shear and auger sprocket.
5. If removed, reattach auger chain box front cover. Make sure bolts are tightened to the correct torque.



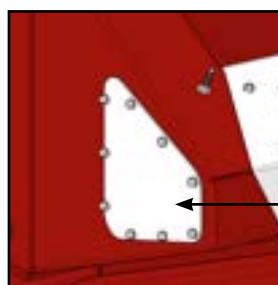
WARNING

• Do not run the machine without guards in place. The sprockets and chain are all in motion and serious injury could result. Possible entanglement and amputation hazard.

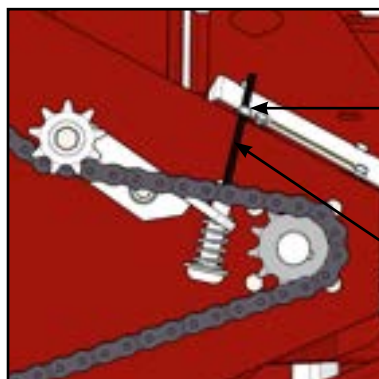


IMPORTANT

• Do not over tension drive chain. A tight drive chain will overload auger drive shaft and bearings, and accelerate chain and sprocket wear.

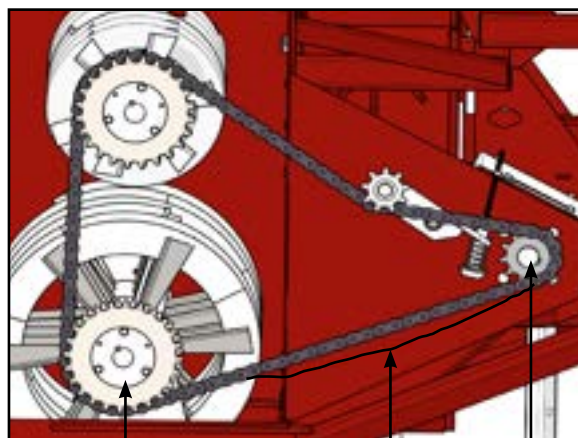


Front Cover



3/8-16 Nylon Locknut + 3/8 Flatwasher

Tensioner Treaded Rod



Auger Sprocket

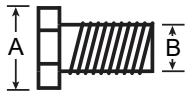
1/4" Sag

Shear Sprocket

Bolt Torque Table

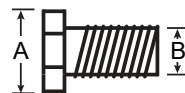
These tables are offered as the suggested maximum torque values for dry (not lubricated) threaded products and are only a general guide. Check tightness of bolts periodically and replace hardware with the same strength bolt when needed. Torque specification for bolts are identified by their head markings as shown below.

METRIC TORQUE SPECIFICATIONS



Wrench Size: "A"	Thread Size: "B" Fine	Class 8.8		Class 10.9		Thread Size: "B" Coarse	Class 8.8		Class 10.9	
		N-m	lbs-ft	N-m	lbs-ft		N-m	lbs-ft	N-m	lbs-ft
10 mm	6 x 0.75	---	---	---	---	6 x 1.0	11.3	8.3	16.5	12.2
13 mm	8 x 1.0	27	20	38	28	8 x 1.25	27.3	20.1	40.1	29.6
16 mm	10 x 1.25	52	38	73	54	10 x 1.5	54	40	49	36
18 mm	12 x 1.25	95	70	135	100	12 x 1.75	93	69	137	101
21 mm	14 x 1.5	150	111	210	155	14 x 2.0	148	109	218	161
24 mm	16 x 1.5	225	166	315	232	16 x 2.0	230	170	338	249
27 mm	18 x 1.5	325	240	460	339	18 x 2.5	329	243	469	346
30 mm	20 x 1.5	460	339	640	472	20 x 2.5	464	342	661	487
34 mm	22 x 1.5	610	450	860	634	22 x 2.5	634	468	904	667
36 mm	24 x 2.0	780	575	1100	811	24 x 3.0	798	588	1136	838
41 mm	27 x 3.0	---	---	---	---	27 x 3.0	1176	867	1674	1234
46 mm	30 x 2.0	---	---	---	---	30 x 3.0	1597	1178	2274	1677

SAE TORQUE SPECIFICATIONS



Wrench Size: "A"	Thread Size: "B" Fine	SAE 2		SAE 5		SAE 8		Thread Size: "B" Coarse	SAE 2		SAE 5		SAE 8	
		lbs-ft.	N-m	lbs-ft.	N-m	lbs-ft.	N-m		lbs-ft.	N-m	lbs-ft.	N-m	lbs-ft.	N-m
7/16"	1/4-28	6	8.1	10	13.6	14	19.0	1/4-20	5	6.8	8	10.8	12	16.3
1/2"	5/16-24	13	17.6	19	25.7	27	36.6	5/16-18	11	14.9	17	23.0	25	33.9
9/16"	3/8-24	23	31.2	35	47.4	49	66.4	3/8-16	20	27.1	31	42.0	44	59.6
5/8"	7/16-20	36	48.8	55	74.5	75	101.6	7/16-14	32	43.4	49	66.4	70	94.9
3/4"	1/2-20	55	74.5	85	115.2	120	162.6	1/2-13	49	66.4	75	101.6	107	145.0
13/16"	9/16-18	79	107.0	122	165.3	172	233.1	9/16-12	70	94.9	109	147.7	154	208.7
15/16"	5/8-18	110	149.1	170	230.4	240	325.2	5/8-11	97	131.4	150	203.3	212	287.3
1-1/8"	3/4-16	192	260.2	297	402.4	420	569.1	3/4-10	173	234.4	266	360.4	376	509.5
1-5/16"	7/8-14	184	249.3	474	642.3	668	905.1	7/8-9	166	224.9	429	581.3	606	821.1
1-1/2"	1.0-12	274	371.3	705	955.3	995	1348.2	1.0-8	250	338.8	644	872.6	909	1231.7

Troubleshooting

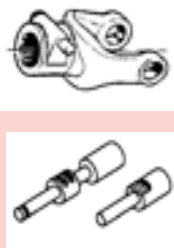
The following tables describes issues you could encounter with your **4000 Series Snowblower**, the possible cause, and the proposed solution. For any issue not listed below, call **MK Martin** or your local dealer.

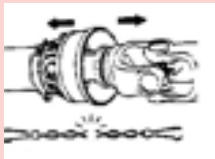
Snowblower Troubleshooting:

Issue	Possible Cause	Solution
Chute/Rotating Housing won't rotate.	Hydraulic hose is broken, obstructed or is not connected properly.	See Stop Operation on p. 45 and Hydraulic safety on p. 15 . Visually inspect hose and connection. Replace hose if needed.
	There is ice built-up around the base of the chute/ice built-up in fan housing.	See Stop Operation on p. 45 and carefully remove ice.
Chute is getting clogged.	Auger is rotating too fast.	Decrease motor speed.
	Tractor is moving too fast.	Decrease ground speed.
Discharge chute throws snow at the operator.	The chute was assembled incorrectly and the chute stop is not in it's proper location.	See Stop Operation on p. 45 and re-assemble chute. See Chute Assembly on p. 27 .
Deflector does not throw snow the preferred distance.	Deflector angle has not been adjusted.	Adjust hydraulic deflector.
Auger and/or impeller stalls (will not turn).	Hidden objects are stuck in auger or blower housing.	See Stop Operation on p. 45 and carefully clear objects manually. See Work Area Safety on p. 9 .
	Auger or PTO shear bolt has sheared.	Follow instructions to replace shear bolt on p. 57 - 58 .
Impeller is throwing small amounts of snow.	Inadequate snow to fill the impeller.	This is normal when clearing shallow snow.
	PTO is operating at a speed lower than 1000 RPM.	Operate PTO at 1000 RPM.
	Tractor is moving too slow.	Gradually increase ground speed.
Skid shoes are wearing too fast	Snowblower is not parallel to ground.	See Stop Operation on p. 45 and ensure blower is leveled.
Snowblower makes intermittent clicking noise.	Auger flighting or fan blades are bent or broken.	Stop operation immediately. See Stop Operation on p. 45 . Repair/replace damaged parts.
Snow is left on the ground.	Skid shoes are too low to the ground.	See p. 43 to re-adjust skid shoes.

Snowblower makes excessive noises or vibrates excessively.	Auger is making contact with the ground.	Adjust snowblower so that it is level with the ground or see p. 43 to adjust skid shoes.
	Dirty or frozen snow is making contact with the auger.	Wait for snow to become softer and refrain from operating in unsafe weather conditions.
	Auger is making contact with hidden objects or material other than snow (ex. gravel).	See Stop Operation on p. 45 and carefully clear objects manually. See Work Area Safety on p. 9 .
	Auger or fan is damaged.	Stop operation immediately. See p. 45 . Repair/replace damaged parts.

PTO Troubleshooting:

Issue	Possible Cause	Solution
Quick-disconnect yoke damaged or seized 	Quick disconnect pin dirty (insufficient maintenance).	Clean, oil and grease telescopic tubes. See Lubrication on p. 50 . Replace both tubes if necessary.
	Quick-disconnect pin defective (forced into place, incorrect handling).	Replace Quick disconnect-pin.
	Excessive Shaft Length or Axial Load too high.	Shorten shaft length. See Alter Length of PTO Shaft on p. 39 .
	 NOTE • Newer PTO shafts may have a locking collar. (Issue, Cause and Solution will still be similar).	
Deformed, Distorted, or Worn or pounded yoke 	Excessive shaft length or Axial too high.	Shorten shaft length. Replace defective yokes. Clean and grease telescopic tubes. See p. 50 . Replace both tubes if necessary.
	Excessive working angle and torque.	Verify compatibility between shaft and working conditions (torque vs. angle). Replace defective yokes. Engage PTO more carefully, and use appropriate safety device. Avoid excessive angle. See Alter Angle of PTO Shaft , on p. 39 .
	Overload caused by high starting and peak torque.	Disengage PTO during lifting/lowering the implement. Change to a larger PTO size.
Cross Arms worn on Cross Kit/Bearing Caps turning in their cross journal/ Overheated caps 	Extreme torque peak or shock load. Axial loads too large.	Use appropriate safety device. Change to a larger PTO or shorten PTO shaft. See Alter Length of PTO Shaft on p. 39 .
	Excessive continuous torque/excessive working angle.	Verify compatibility between shaft and working conditions (torque vs. angle). Replace defective bearings.
	Inadequate greasing.	Carefully follow greasing instructions. See Lubrication on p. 50 .

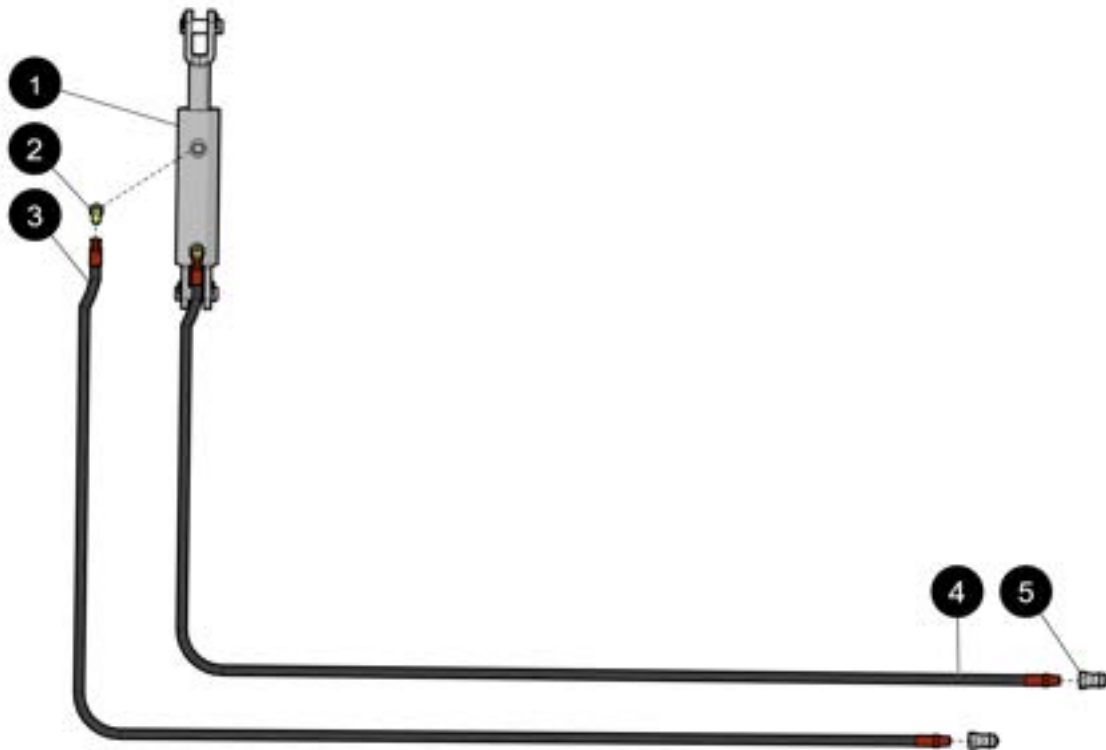
Telescopic tube failure or twisting 	Excessive torque or shock load.	Use appropriate safety device and change to a larger PTO size.
	Short tube engagement (overlap).	Replace the PTO drive shaft with one of adequate length. Replace defective tubes.
Accelerated wear of telescopic tubes 	Extreme load when sliding.	Change to a PTO with coated tube.
	Short tube engagement.	Replace PTO drive shaft with one of proper length. See Check Length of PTO Shaft on p.38.
	Inadequate greasing.	Carefully follow greasing instructions. See Lubrication on p.50.
	Weather conditions or material (sand etc).	Replace defective tubes.
Excessive wear of shield bearings 	Insufficient lubrication	Follow lubrication instructions.
	Incorrect chain mounting.	Mount chain to allow maximum angularity.
	Shield interfering with implement.	Avoid shield contact with machine or tractor. Replace shield bearings.
Chain failure 	Incorrect chain mounting.	Mount chain to allow maximum angularity.
	Shield interfering with implement.	Avoid shield contact with machine or tractor. Replace defective parts.
Guard cone damaged 	Guard cone in contact with implement or tractor.	Eliminate interference between guard cone and any part of implement or tractor.
	Excessive angularity.	Avoid excessive angles. Replace damaged guard cone.
Guard tubes damaged (deformed and split at one side) 	Guards are in contact with tractor or implement.	Eliminate interference between guard cone and any part of the implement or tractor.
	Guard tube overlap too short or no overlap with PTO tube extended.	Replace damaged tubes. Adjust guard tube length with longer tubes.

Parts

The following pages contain illustrations of parts of the **MK 4000 Series Commercial Snowblower** along with the part descriptions, numbers, and quantities for each of their respective models.

Part	Page #
<i>Hydraulic Deflector.....</i>	65
<i>Hydraulic Chute Rotator.....</i>	66
<i>Chute.....</i>	67
<i>Truck Loading Chute.....</i>	69
<i>Work Light Kit.....</i>	71
<i>Housing Rotator Motor & Mount.....</i>	72
<i>Carbide Skid Shoes.....</i>	73
<i>Curb Runners.....</i>	73
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<i>T301 Gearbox.....</i>	75
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<i>MK 4000 Series (Models: 4097, 4108, 4120) - Back View.....</i>	81
<i>MK 4000 Series (Models: 4097, 4108, 4120) - Front View.....</i>	83
<i>MK 4000 Series (Models: 4097RH, 4108RH, 4120RH) - Back View.....</i>	85
<i>MK 4000 Series (Models: 4097RH, 4108RH, 4120RH) - Front View.....</i>	87
<i>Rotating Housing (Models: 4097RH, 4108RH, 4120RH).....</i>	89

Hydraulic Deflector:



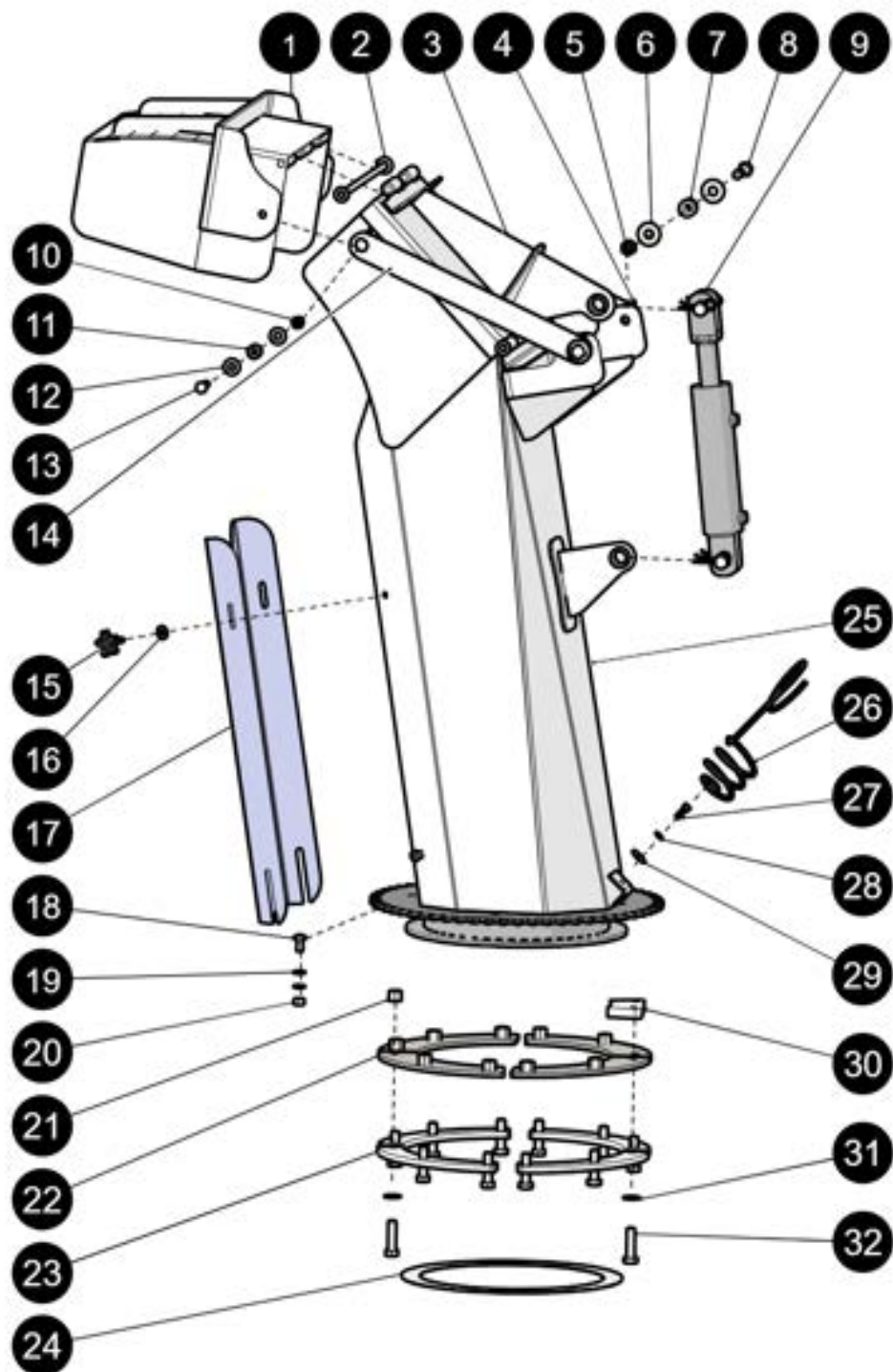
Item #	Part #	Description	Qty
1	MK21918	2 1/2 x 6 Welded Hyd Cylinder	1
2	6801-0608	3/8 MJIC x 1/2 MORB 90 Degree	2
3	37070	1/2 NPT 3/8 Hose 140" 3/8 JIC Deflector Hose Top	1
4	37069	1/2 NPT 3/8 Hose 134" 3/8 JIC Deflector Hose	1
5	S71-4	Agri-ball Nipple 1/2 NPT	2

Hydraulic Chute Rotator:



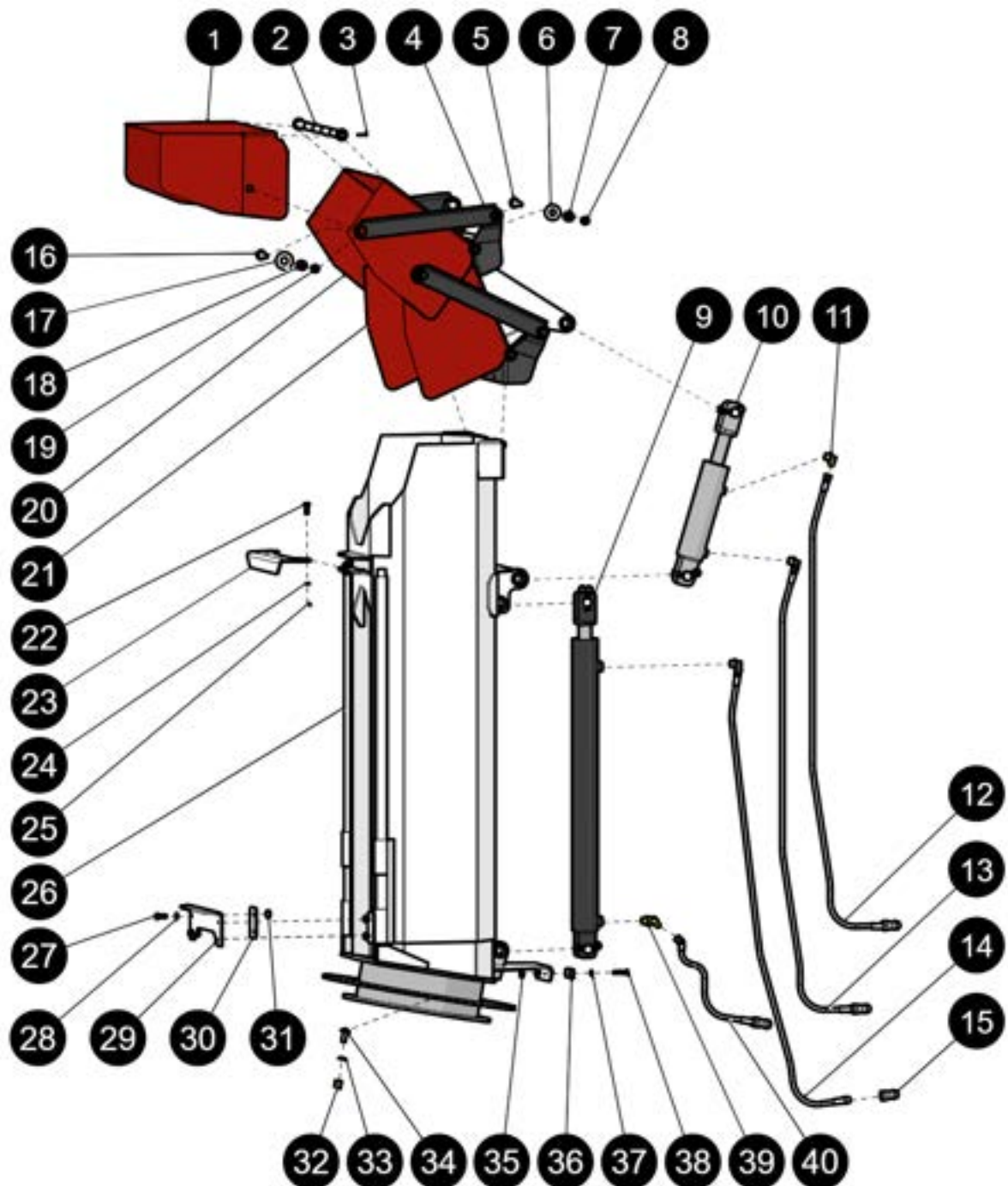
Item #	Part #	Description	Qty
1	S71-4	Agri-ball Nipple 1/2 NPT	2
2	55385	1/2 NPT 3/8 Hose 108" 3/8JIC Swivel	2
3	xzhcs5020nf5	1/2-20 x 2 Fine Thread Bolt	2
4	xzlw37	3/8 Lockwasher	4
5	xzlw50	1/2 Lockwasher	2
6	xznut50nf	1/2-20 Gr.2 Nut	2
7	hydMLHPQ315C4UD	Hydraulic Motor Chute Rotator	1
8	23931	Hydraulic Chute Rotator Shield	1
9	MKMT9T	9 Tooth Gear for Hydraulic Rotator	1
10	xzhcs3710nc5	3/8 x 1 Bolt	4
11	31232	Motor Mount Hyd Hood Turner	1
12	6801-0610	9/16 JIC - 7/8-14 ORB	2

Chute:



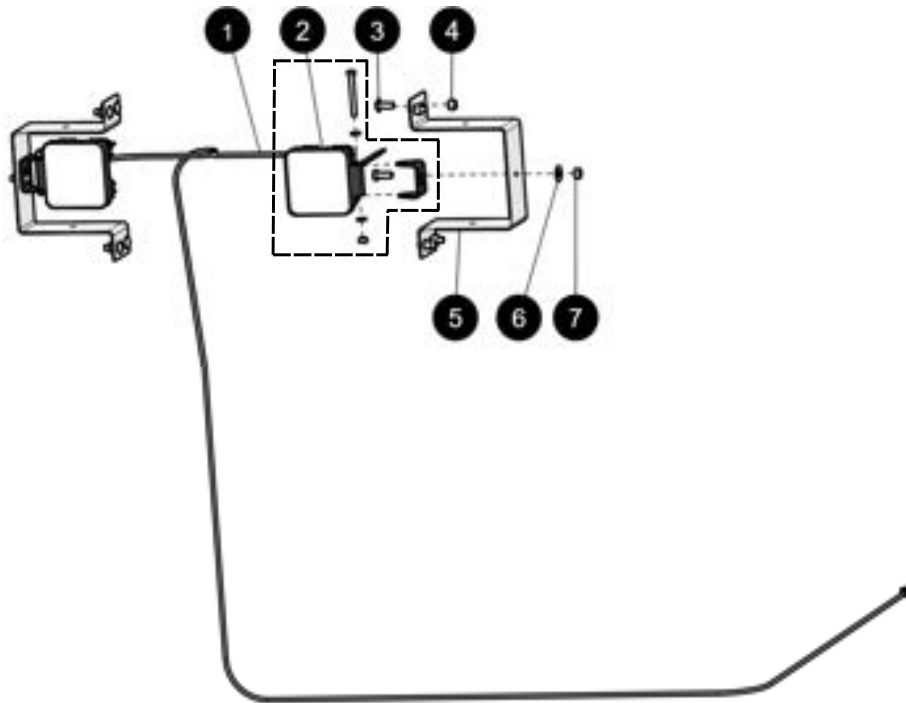
Item #	Part #	Description	Qty
1	37004	Top Deflector Assy	1
2	37059	Deflector Pin Assy	2
3	37001	Double Deflector Bottom	1
4	506-641	1/4-28 Straight Grease Nipple	4
5	xznylnut62	5/8-11 Nylon Locknut	2
6	xzfw62	5/8 Flatwasher	4
7	37020	4000 Hood Bottom Deflector Bushing	2
8	xzhcs6230nc	5/8 x 3 Bolt	2
9	MK21918	Hydraulic Deflector, see p.65.	1
10	xznylnut50	1/2-13 Nylon locknut	2
11	37019	4000 Top Bushing	2
12	xzfw50	1/2 Flatwasher	4
13	xzhcs5017nc5	1/2-13 x 1 3/4 Bolt	2
14	37017	Top Deflector Pivot Bar	2
15	933LB-4715-2AY	3/8-16 x 1 1/4" Stud Closed Hold 5 point Adjustable Knob	2
16	xzfw37	3/8 Flatwasher	1
17	37033	Hood Front Plate	1
18	xzcar501nc	1/2-13 Carriage Bolt	1
19	xzlw50	1/2 Lockwasher	2
20	xznut50nc	1/2-13 Nut	1
21	36972	Poly Hood Guide Top Flange	4
22	36971	Poly Hood Guide	4
23	Gepoly10807	UHMW Ring 1/8 x 17 x 14.25[97D/108D 2007]	1
24	37005	4000 Hood	1
25	OC18328	Hose Holder 3.375/.312/12 Wire Form	1
26	xzhcs3710nc5	3/8 x 1 Bolt	1
27	xzlw37	3/8 Lockwasher	1
28	xzfenderw37	3/8 x 1 1/2 Fender Washer	1
29	xznylnut62	5/8-11 Nylon Locknut	12
30	56462	Chute Stop	1
31	xzfwxae62	5/8 Narrow Flatwasher	12
32	xzhcs6222nc5	5/8 x 2 1/4 Bolt	12

Truck Loading Chute (Optional):



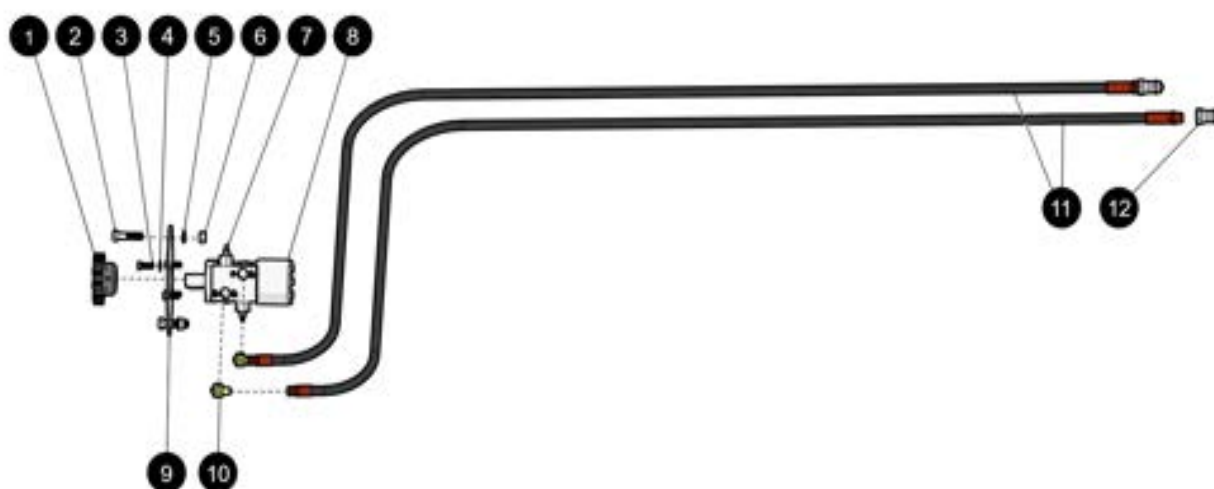
Item #	Part #	Description	Qty
1	34236	Third Deflector	1
2	34241	Hinge Pin Assembly	3
3	pinco1210	1/8 x 1 Cotter Pins	3
4	34239	Linkage Arm Assembly	4
5	xzcar5025nc5	1/2-13 x 2 1/2 Carriage Bolt	4
6	34242	Spacer Washer	2
7	34730	Linkage Arm Bushing	4
8	xznylnut50	1/2-13 Nylon Locknut	4
9	cylHYS25FEM30-10	2.5 x 30 FEM Welded Cylinder (40.25 retracted)	1
10	MK21918	2 1/2 x 6 Welded Hyd cylinder Land L tilt & Lift	1
11	6801-0608	3/8 MJIC x 1/2 MORB 90 Degree	3
12	34803	Hyd Hose Deflector Cylinder	1
13	34802	Hyd Hose Deflection Cylinder	1
14	34801	Hyd Hose Extension Cylinder	1
15	S71-4	Agri-ball Nipple 1/2 npt	4
16	xzcar5020nc5	1/2-13 x 2 Carriage Bolt	4
17	xzfw75	3/4 Flatwasher	2
18	34730	Linkage Arm Bushing	4
19	xznylnut50	1/2-13 Nylon Locknut	4
20	34235	Second Deflector	1
21	34232	First Deflector	1
22	xzhcs3710nc5	3/8 x 1 Bolt	2
23	34265	Guide Tie Bar Upper	1
24	xzlw37	3/8 Lockwasher	2
25	xznut37nc	3/8-16 Gr.2 Nut	2
26	34263	Truck Chute Outer Assembly	1
27	xzhcs3710nc5	3/8 x 1 Bolt	2
28	xzlw37	3/8 Lockwasher	2
29	34258	Tie Bar Lower	1
30	34286	Mount Bracket Lower Tie Bar	2
31	xbnut37nchw	3/8 Heavy Wall Nut Bare	2
32	20852	Stop Nut	1
33	xzlw50	1/2 Lockwasher	1
34	xzcar5012nc	1/2 x 1 1/4 Carriage Bolt	1
35	xbnut31nchw	5/16-18 Nut	2
36	10179	Hose clamp short	2
37	xzlw31	5/16 Lockwasher	2
38	xzhcs3115nc	5/16 x 1 1/2 Gr.2 Bolt	2
39	6802-0608	3/8 male JIC x 1/2 male SAE 45 degree elbow	1
40	34800	Hyd Hose Extension Cylinder	1

Work Light Kit (Optional for TL chutes):



Item #	Part #	Description	Qty
1	60764	Work Light Wire	1
2	n/a	Work Lamp	2
3	xzcar3710nc5	3/8 x 1 Carriage Bolt	8
4	xznylnut37	3/8-16 Nylon Locknut	8
5	60740	Work Light Mount	2
6	xzfw37	3/8 Flatwasher	2
7	xznut37nc	3/8-16 Gr.2 Nut	2

Housing Rotator Motor and Mount (RH Models):



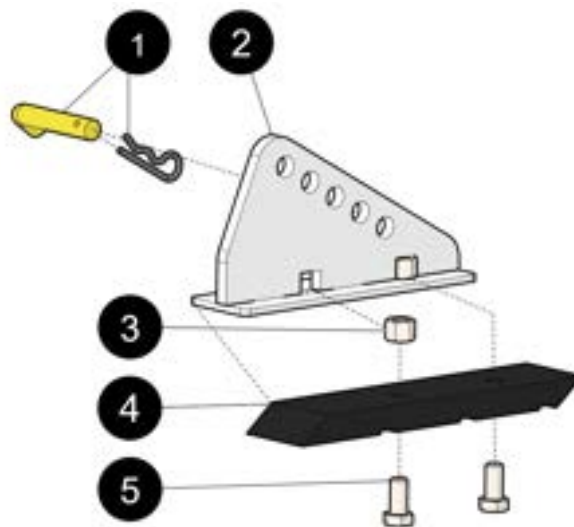
NOTE

- The housing rotator motor is only available on the RH models. The RH models have a fan housing with teeth, so the gear on the motor can rotate it back and forth. The same rotator is used on all models to rotate the chute, see p.45.



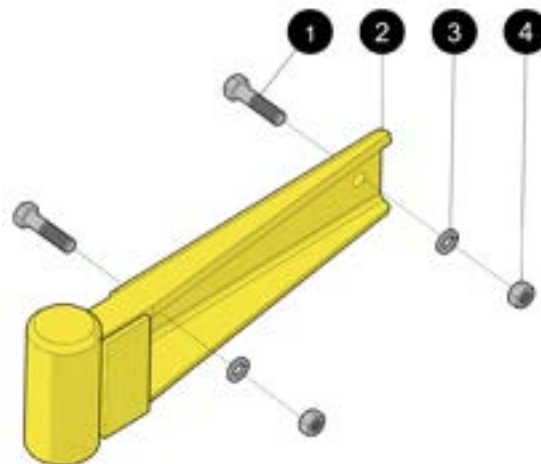
Item #	Part #	Description	Qty
--	37210	4000 Housing Rotator	1
1	MKMT9T	9 Tooth Gear for Hydraulic Rotator	1
2	xzhcs5020nf5	1/2-20 x 2 Fine Thread Bolt	2
3	xzhcs3710nc5	3/8 x 1 Bolt	4
4	xzlw37	3/8 Lockwasher	4
5	xzlw50	1/2 Lockwasher	2
6	xznut50nf	1/2-20 Gr.2 Nut	2
7	MK52760	Cross Over Relief Valve	1
8	hydMLHPQ315C4UD	Hydraulic Motor	1
9	31232	Motor Mount Hyd Hood Turner	1
10	6801-0610	9/16 JIC - 7/8-14 ORB	2
11	55385	1/2 NPT 3/8 Hose 108" 3/8JIC Swival	2
12	S71-4	Agri-ball Nipple 1/2 NPT	2

Carbide Skid Shoes (Optional):



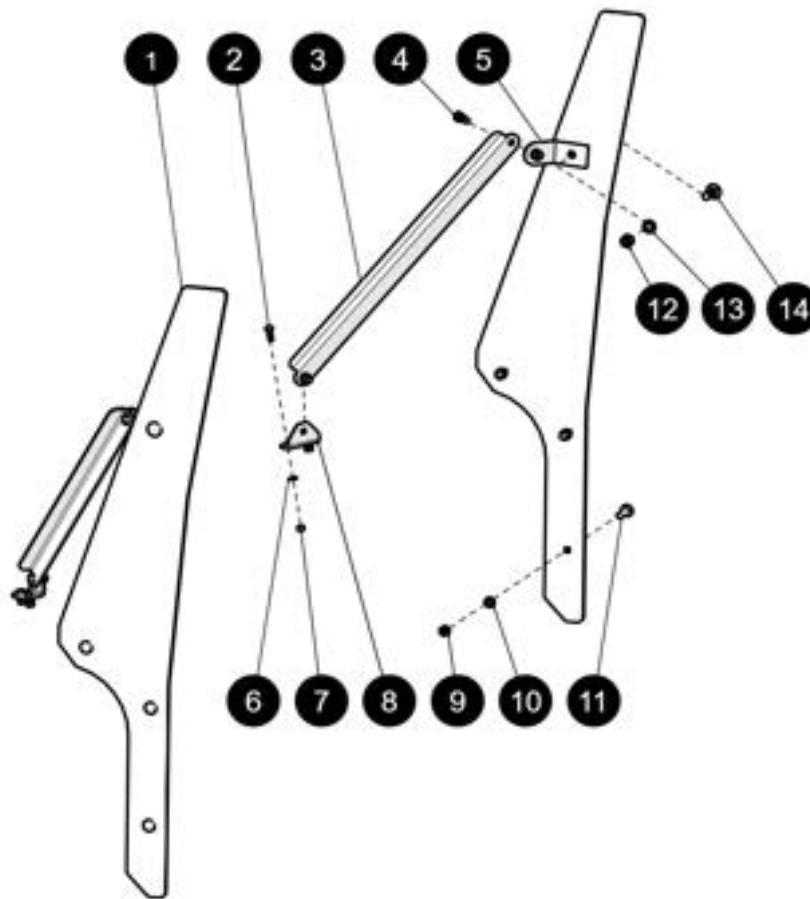
Item #	Part #	Description	Qty
1	50219	3/4 x 3 1/2 bent hitch pin with hair pin	2
2	36988	Skid Shoe Bracket Assy	2
3	xznylnut62	5/8-11 Nylon Locknut	4
4	36989	Carbide Skid Shoe	2
5	xzhcs6212nc5	5/8 x 1 1/4 Bolt	4

Curb Runners (Optional):



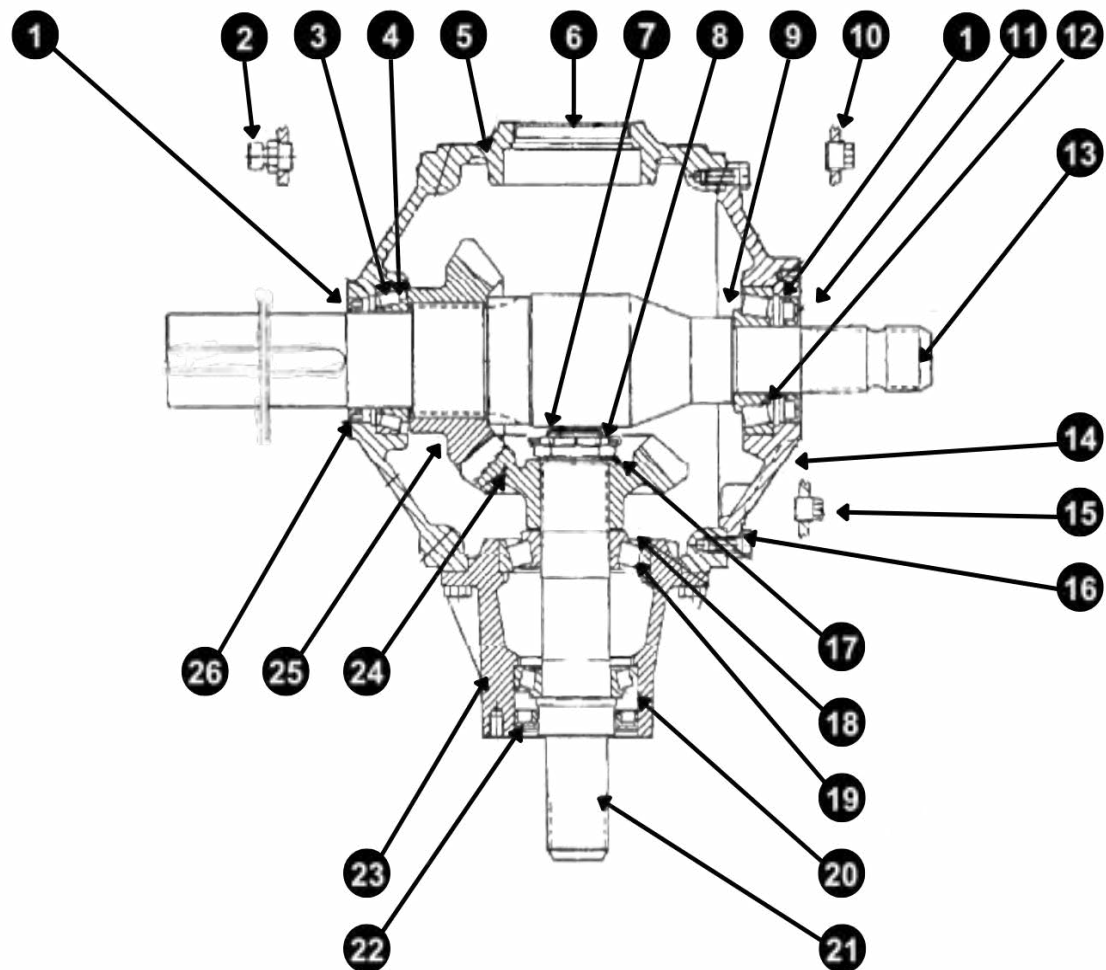
Item #	Part #	Description	Qty
1	34115	Curb Runner Assembly	2
2	xzhcs5020nc	1/2 x 2 Bolt	4
3	xzlw50	1/2 Lockwasher	4
4	xznut50nc	1/2-13 Nut	4

Fixed Bank Cutters (Optional):



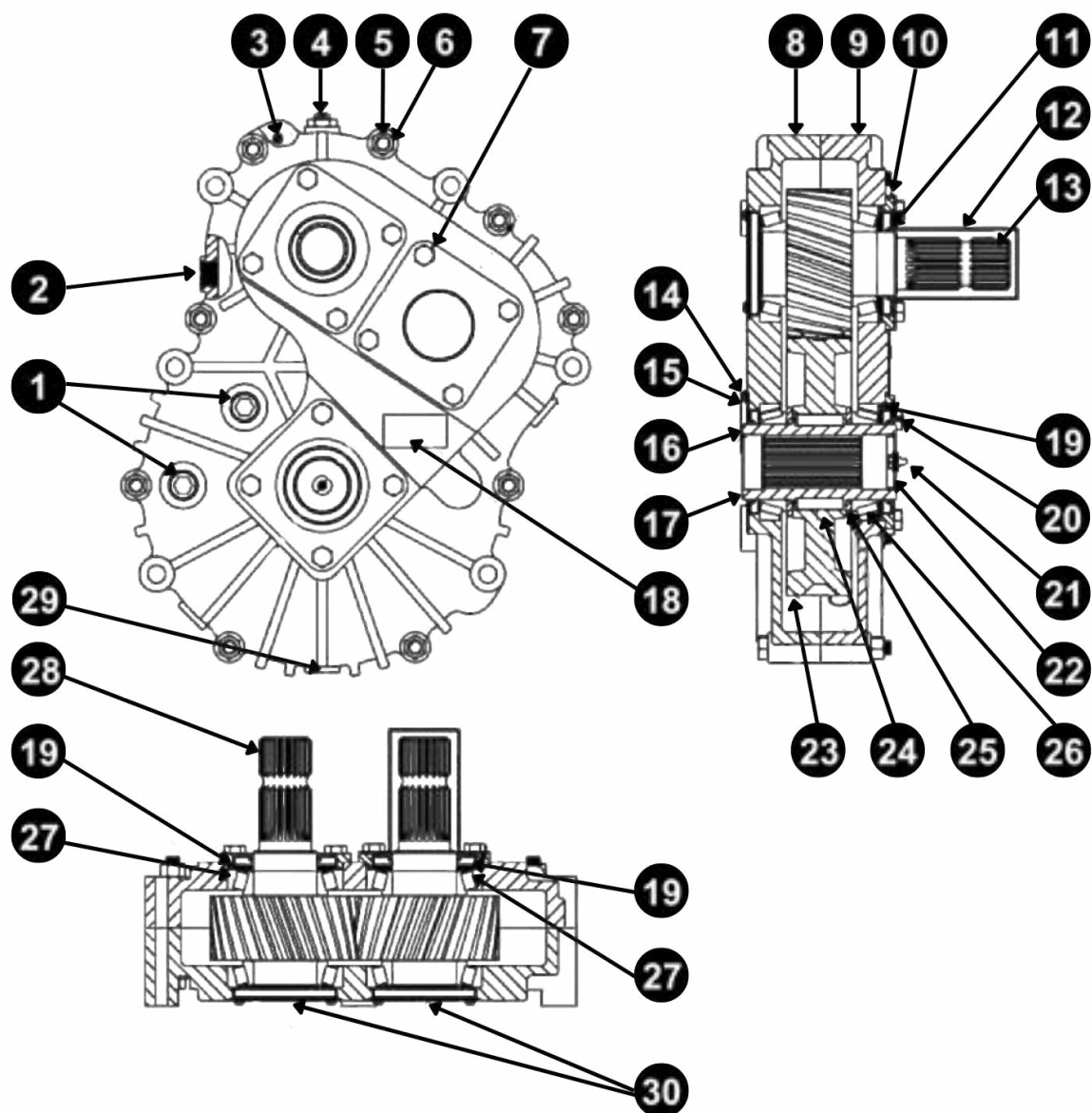
Item #	Part #	Description	Qty
1	56413	Bank Cutters for 4000 Oil Bath	2
2	xzhcs3710nc5	3/8 x 1 Bolt	4
3	34317	Brace Bank Cutters	2
4	xzhcs5012nc	1/2 x 1 1/4 Bolt	4
5	61685	Upper Support Bracket	2
6	xzlw37	3/8 Lockwasher	4
7	xznut37nc	3/8-16 Gr.2 Nut	4
8	61686	Lower Support Bracket	2
9	xznut50nc	1/2-13 Nut	10
10	xzlw50	1/2 Lockwasher	10
11	xzcar5020nc	1/2 x 2 Carriage Bolt	6
12	xzcar6220nc	5/8 x 2 Carriage Bolt	2
13	xzlw62	5/8 Lockwasher	2
14	xznut62nc	5/8-11 Gr.2 Nut	2

T301 Gearbox:



Item #	Part #	Description	Qty
1	0.703.7500.00	Shim 99.7	2
2	8.6.7.00269	Oil Filler Plug 1/2" GAS	1
3	8.0.9.00976	Bearing 32013 X	1
4	0.110.7500.00	Shim 79.7	1
5	0.301.0300.00	Casing	1
6	0.121.7101.00	Cap	1
7	0.132.7107.00	Nut M40x1.5	1
8	8.4.7.01112	Cotter Pin B4x60	1
9	0.252.7500.00	Shim 65.3	1
10	8.6.5.00203	Plug 1/2" GAS	1
11	8.7.3.00331	Oil Seal 45x85x10	1
12	8.0.9.00107	Bearing 30309	1
13	0.301.4200.00	Shaft	1
14	0.301.1303.00	Cover	1
15	8.6.5.00006	Plug 3/8" GAS	1
16	8.1.1.00061	Bolt M10x25 8.8	18
17	0.244.7510.00	Shim 40.3x1.0	1
18	0.712.7500.00	Shim 70.3	1
19	8.0.9.00268	Bearing 30310	1
20	8.0.9.00459	Bearing 30210	1
21	0.301.2200.00	Shaft 1 3/4" Z20	1
22	8.7.3.01296	Oil Seal 55x90x10	1
23	0.301.1301.00	Extension	1
24	0.301.5003.00	Gear Z20 M7.8	1
25	0.301.5200.00	Gear Z20 M7.8	1
26	8.7.3.00077	Oil Seal 65x85x10	1

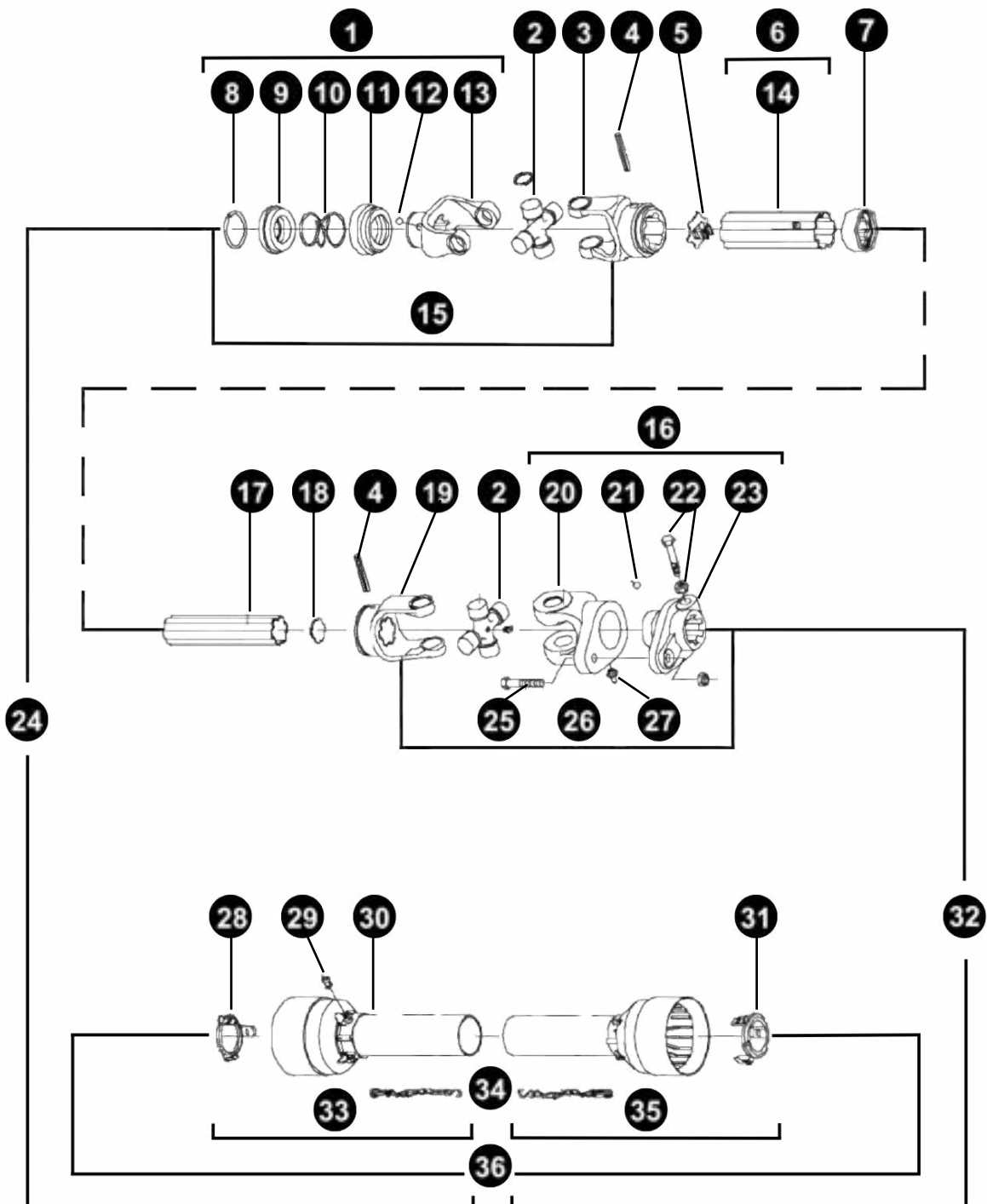
1000 RPM Gearbox :



Gearbox:

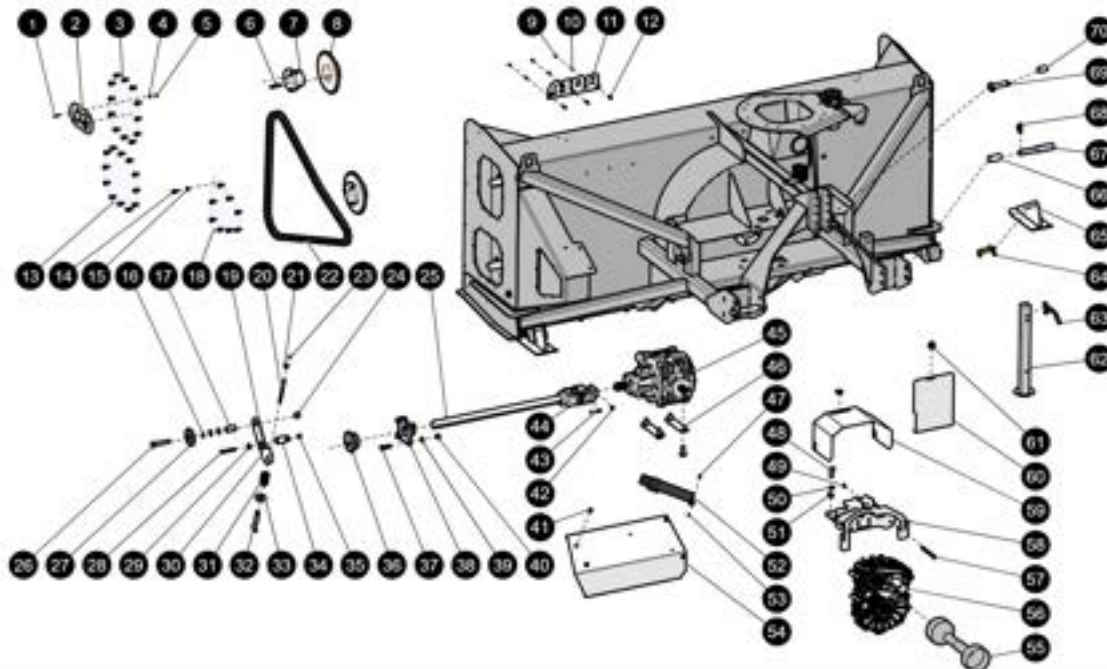
Item #	Part #	Description	Qty
1	108551	Plug 3/4-14 NPT	2
2	108550	Plug 1/2-14 NPT	3
3	52701	Dowel Pin [8x20]	2
4	52702	Pressure Vent 5 PSI 1/2-14 NPT	1
5	145932	Bolt [M12x1.75x105mm]	9
6	174008	Nylon Locknut [M12x1.75]	9
7	206593	Bolt [M10x1.5x20mm]	12
8	52681	Lower Housing 1.84:1	1
9	52682	Upper Housing 1.84:1	1
10	52683	Hollow Cover	3
11	52684	Seal [55 x 90 x 8]	2
12	52685	Protective Guard	1
13	52686	Middle Gear Shaft 1-3/4Z20 1.84:1	1
14	206596	Washer [M4]	12
15	206595	Button Head Screw [M4x0.7x8mm]	12
16	52696	Seal Retainer W/Hole	3
17	52695	Output Shaft 1-3/4Z20	1
18	206565	Name Plate	1
19	52687	Shims [Ø90 x Ø99.8]	--
20	52688	Seal [65x90x8]	2
21	52689	Grease Fitting [M6x1.0]	1
22	52690	End Cap [47x8]	1
23	52694	Output Gear 1.84:1	1
24	52693	Round End Key [16x10x40]	2
25	52692	Spacer [65x94x5]	2
26	52691	Bearing 32013	2
27	52698	Bearing 30211	4
28	52699	Input Gear Shaft 1-3/4Z20 1.84:1	1
29	52700	Magnetic Plug 1/2-14 NPT	1
30	52697	End Cap [90x8]	2

PTO (Comer V90 1000 RPM):



Item #	Part #	Description	Qty
1	141.029.320	Complete collar yoke C13	1
2	180.019.043	Cross journal set	2
3	151.019.166	Outer yoke	2
4	190.000.243	Roll pin for outer and inner tube	2
5	180.018.393	Outer cap	1
6	152.280.248.0720	Complete outer tube	1
7	180.018.437	Wiper	1
8	190.000.451	Outer circlip	1
9	151.016.486	Sliding sleeve collar	1
10	180.016.487	Spring	1
11	180.016.483	Fixed sleeve	1
12	190.000.078	Ball ø 1/2"	3
13	151.019.320	Yoke C13	1
14	190.000.215	"DANGER" Label for outer tube	1
15	121.029.544.00	U-Joint for enter tube	1
16	143.290.005	Complete shear bolt B35	1
17	159.280.159	Inner tube	1
18	180.018.435	Inner cap	1
19	151.019.167	Inner yoke	1
20	151.019.136	Yoke for B35 (M12x65)	1
21	190.000.023	Ball ø 5/16"	24
22	165.000.576	Bolt & nut M16x80	2
23	151.019.139	Hub for B35 (M12x65)	1
24	123.396.040.00	Half female shaft with guarding	1
25	165.000.512	Bolt & nut M12x65 Cl. 8.8	6
26	121.029.557.00	U-Joint for inner tube	1
27	190.000.021	Grease nipple M10x1	1
28	180.019.121	Guard retaining collar for outer tube	1
29	190.000.019	Bolt	1
30	190.000.215	"DANGER" Label for outer guard tube	1
31	180.019.122	Guard retaining collar for inner tube	1
32	123.496.010.00	Half male shaft with guarding	1
33	142.296.021.9920	Half female guard	1
34	180.016.025	Safety chains	2
35	142.297.024.9920	Half male guard	1
36	142.290.239.9920	Complete guard with instruction manual	1

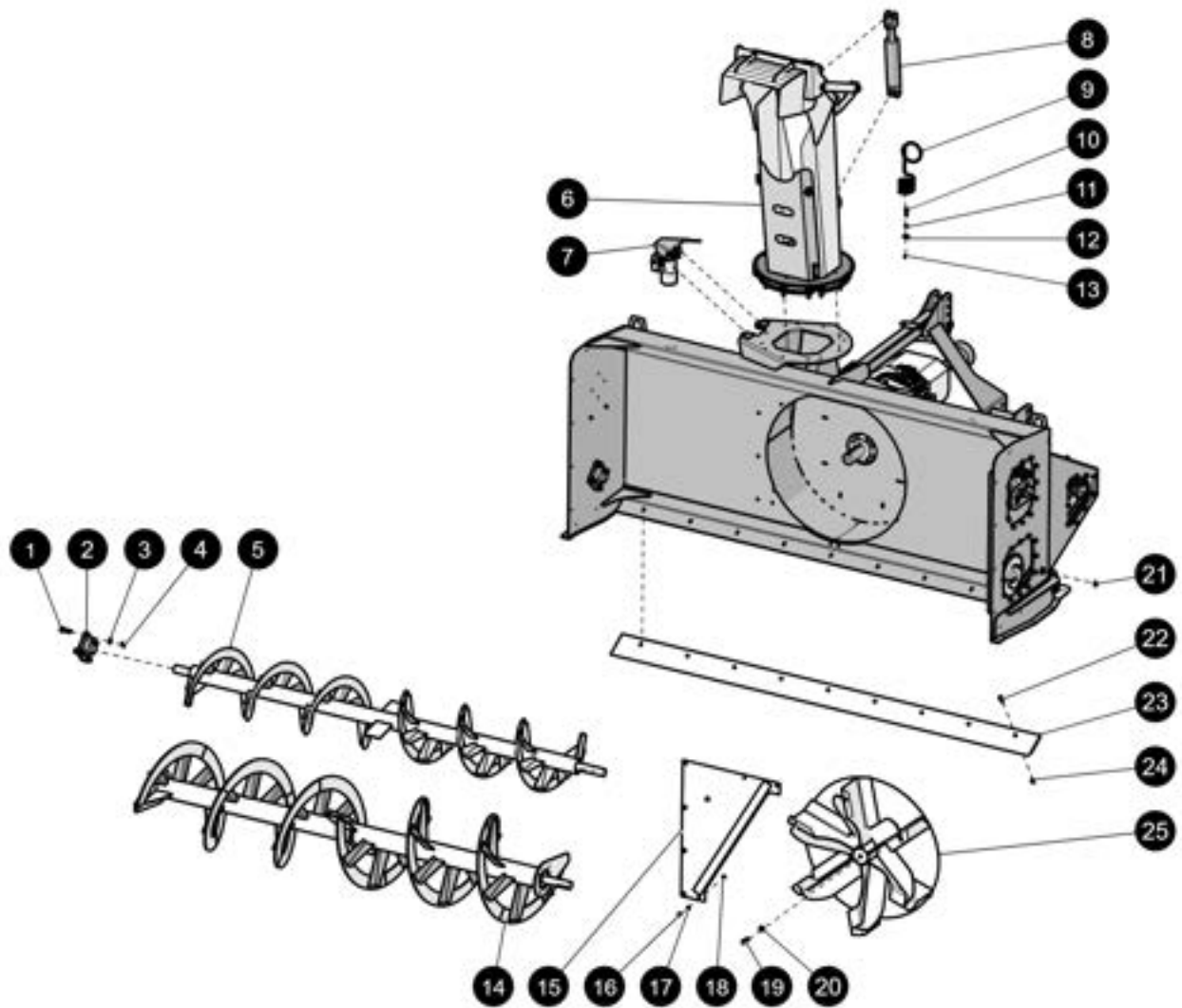
MK 4000 Series (Models: 4097, 4108, 4120) - Back View:



Item #	Part #	Description	4097	4108	4120
			Qty		
1	XZHS02520100GR2B	1/4-20 X 1 HCS Gr.2 Bare Bolt	4	4	4
2	37068	Branding Logo	2	2	2
3	56361	Auger Chain Box Cover Top	1	1	1
4	xzlw25	1/4 Lockwasher	4	4	4
5	xznylnut25nc	1/4-20 Nylon Locknut	4	4	4
6	MF037250MKB	3/8 x 3/8 X 2 1/2 Machine key	4	4	4
7	HHR1	Hub H-R1	2	2	2
8	100A24H	100A 24 Tooth HR1 Hub Reversed	2	2	2
9	xznylnut25nc	1/4-20 Nylon Locknut	2	2	2
10	xzlw25	1/4 Lockwasher	2	2	2
11	37556	4097 Name Plate	1		
	37557	4108 Name Plate		1	
	37572	4120 Name Plate			1
12	XZHS02520100GR2B	1/4-20 X 1 HCS Gr.2 Bare Bolt	3	3	3
13	56352	Auger Chain Box Cover Bottom	1	1	1
14	xzhcs3710nc5	3/8 x 1 Bolt	33	33	33
15	xzlw37	3/8 Lockwasher	33	33	33
16	xzfw5ae75	Narrow 3/4 Flatwasher	3	3	3
17	56350	Chain Tensioner Sprocket Support	1	1	1
18	56353	Auger Chain Box Cover Front	1	1	1
19	56341	Chain Tensioner Main Arm	1	1	1
20	56345	Tensioner Treaded Rod	1	1	1
21	xzfw37	3/8 Flatwasher	1	1	1
22	56408	4000RH Auger Chain	1	1	1
23	xznylnut37nc	3/8-16 Nylon Locknut	1	1	1
24	xznylnut75nc	3/4-10 Nylon Locknut	1	1	1
25	56427	97 Auger Drive Shaft	1		

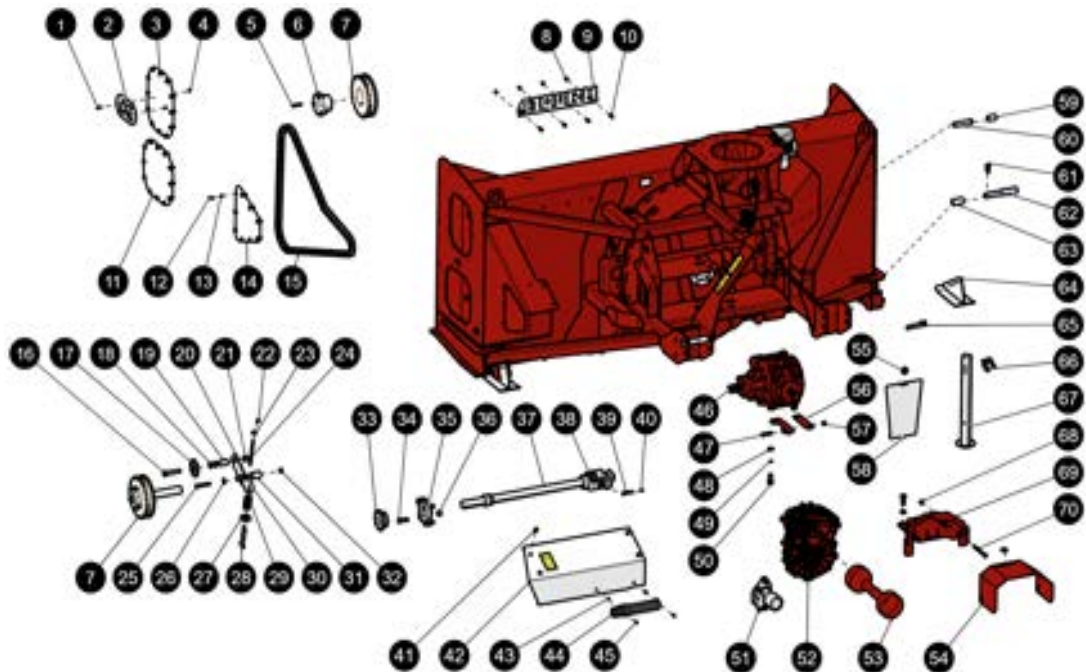
	56354	108 Auger Drive Shaft		1	
	56441	120 Auger Drive Shaft			1
26	xzhcs7540nc	3/4 x 4 Bolt	1	1	1
27	cnxsi100a9	#100 - 9T Idler Sprocket, 3/4" Bore	1	1	1
28	xzhcs5035nc	1/2-13 x 3 1/2 Bolt	1	1	1
29	xzfw50	1/2 Flatwasher	1	1	1
30	56347	Chain Tensioner Spring Plate	1	1	1
31	Sprc9657K574	Compression Spring, 3" Long, 1.687" OD, 1.333" ID	1	1	1
32	56342	Tensioner spring bar	1	1	1
33	fw100	1 Flatwasher	1	1	1
34	56349	Chain Tensioner Pivot	1	1	1
35	xznut50nc	1/2-13 Nut	1	1	1
36	2741T164	100B11 Sprocket, 1 3/4" Bore, 3/8" Keyway, 2 Set Screws	1	1	1
37	xzhcs6220nc5	5/8-11 x 2 Bolt	4	4	4
38	cnxHCFS209-28	1 3/4 Bearing 4 Bolt Flange with Locking Collar	1	1	1
39	xzlw62	5/8 Lockwasher	4	4	4
40	xznylnut62	5/8-11 Nylon Locknut	4	4	4
41	xzhfss3707nc5	3/8 x 3/4 Hex Flange Serrated Screw	4	4	4
42	zp519-000-511	PTO Shear-Bolt & Nut / M10 x 55	1	1	1
43					
44	cnx191366	Universal Joint for 4000 Series Cross Shaft	1	1	1
45	cnxT301-302Gear box	T301 Snowblower Gearbox, see p.75.	1	1	1
46	34275	Gearbox Retainer	2	2	2
47	xzhfss2507nc5	1/4 x 3/4 Flange Serrated Screw	2	2	2
48	xzm16x35	M16 x 2 x 35 Bolt	8	8	8
49	xznylnut50	1/2-13 Nylon Locknut	3	3	3
50	xzlw62	5/8 Lockwasher	8	8	8
51	xzfw62	5/8 Flatwasher	8	8	8
52	DJA70111	Operator's Manual Tube Small	1	1	1
53	xznut25fs	1/4-20 Flange Serrated Nut	2	2	2
54	56449	Cross Shaft Cover 4097	1		
	56355	Cross Shaft Cover 4108		1	
	56453	Cross Shaft Cover 4120			1
55	PTO Assembly, see p.79 - 82.		1	1	1
56	34818	1000 RPM Gearbox Kit 120 Meteor, see p.77.	1	1	1
57	xzhcs5060nc5	1/2 x 6 Bolt	3	3	3
58	34817	Gearbox Bracket	1	1	1
59	61681	Cover PTO	1	1	1
60	37031	Universal Joint Shield	1	1	1
61	wal385501	3/16 Lynch Pin	1	1	1
62	55224	4000 Series Stand	1	1	1
63	SO7112600	5/8 x 4 bent hitch pin with hair pin	1	1	1
64	wal385003	3/4 x 3 1/2 bent hitch pin with hair pin	2	2	2
65	37178	4000 standard skid shoes	2	2	2
66	wal381707	1 1/8 x 2 3/4 lift arm bushing	2	2	2
67	MKMSB108LP	108 SB Cat 2 & 3 Lift pin	2	2	2
68	wal385507	7/16 Standard Lynch Pins	3	3	3
69	wal387505	Cat 2 top link pin 1 x 3 9/16	1	1	1
70	wal381703	1 x 2 top link bushing	1	1	1

MK 4000 Series (Models: 4097, 4108, 4120) - Front View:



Item #	Part #	Description	4097	4108	4120
			Qty		
1	xzhcs6220nc5	5/8-11 x 2 Bolt	16	16	16
2	cnxHCFS209-28	1 3/4 Bearing 4 Bolt Flange with Locking Collar	4	4	4
3	xzlw62	5/8 Lockwasher	16	16	16
4	xznylnut62	5/8-11 Nylon Locknut	16	16	16
5	56423	4097 Top Oil Bath Auger Assembly	1		
	56338	4108 Top Oil Bath Auger Assembly		1	
	56437	4120 Top Oil Bath Auger Assembly			1
6	36997	4000 Series Hood, see p.67.	1	1	1
7	61687	Hydraulic Chute Rotator, see p.66.	1	1	1
8	MK21918	Hydraulic Deflector, see p.65.	1	1	1
9	OC18328	Hose Holder 3.375/.312/12 Wire Form	1	1	1
10	xzhcs3715nc5	3/8 x 1 1/2 Bolt	1	1	1
11	xzlw37	3/8 Lockwasher	1	1	1
12	xzfenderw37	3/8 x 1 1/2 Fender Washer	1	1	1
13	xznut37nc	3/8-16 Hex Fin Gr.2 Nut	1	1	1
14	56419	4097 Bottom Auger Oil Bath Assembly	1		
	56334	4108 Bottom Auger Oil Bath Assembly		1	
	56433	4120 Bottom Auger Oil Bath Assembly			1
15	24135	Fan Cover Assy	1	1	1
16	xznut37nc	3/8-16 Hex Fin Gr.2 Nut	8	8	8
17	xzlw37	3/8 Lockwasher	8	8	8
18	xzcar3710nc	3/8 x 1 Carriage Bolt	8	8	8
19	xzhcs6215nc5	5/8 x 1 1/2 Bolt	1	1	1
20	xzlw62	5/8 Lockwasher	1	1	1
21	knp246-102	3/4 Magnetic Pipe Plugs	2	2	2
22	xbpb5015nc5	1/2 x 1 1/2 Gr.5 Plow Bolt Bare	7	9	9
23	VBL37555	3/4 x 6 x 96 Cutting Edge	1		
	VBL36927	3/4 x 6 x 107 Cutting Edge		1	
	VBL37579	3/4 x 6 x 119 Cutting Edge			1
24	xznylnut50	1/2-13 Nylon locknut	7	9	9
25	36977	4000 Series Fan Assy	1	1	1

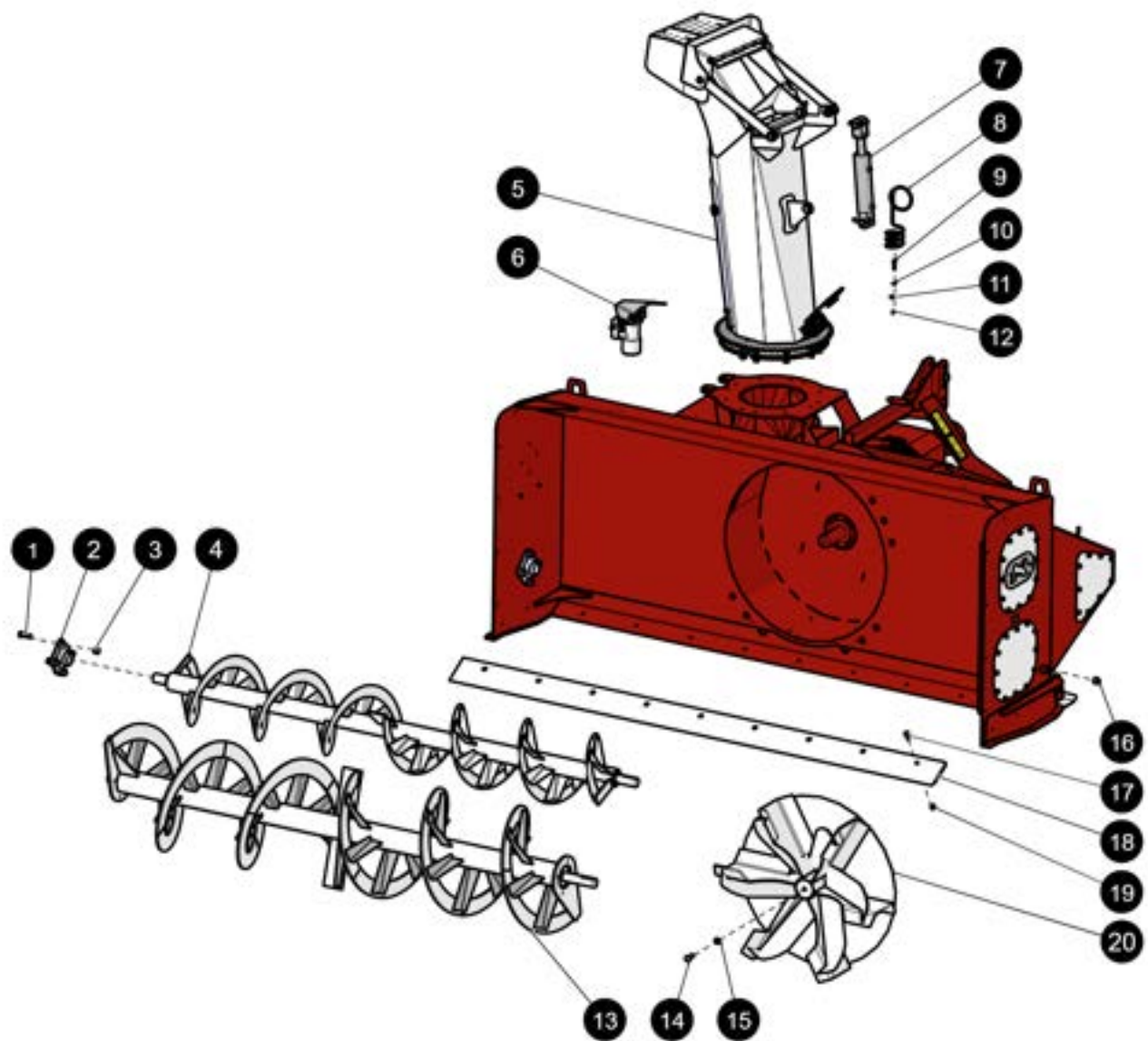
MK 4000 Series (Models: 4097RH, 4108RH, 4120RH) - Back View:



Item #	Part #	Description	4097RH	4108RH	4120RH
			Qty		
1	XZHS02520100GR2B	1/4-20 X 1 HCS Gr.2 Bare Bolt	2	2	2
2	37068	Branding Logo	1	1	1
3	56361	Auger Chain Box Cover Top	1	1	1
4	xznylnut25nc	1/4-20 Nylon Locknut	2	2	2
5	MF037250MKB	3/8 x 3/8 X 2 1/2 Machine key	4	4	4
6	HHR1	Hub H-R1	2	2	2
7	100A24H	100A 24 Tooth HR1 Hub Reversed	2	2	2
8	xznylnut37nc	3/8-16 Nylon Locknut	4	4	4
9	61723	4097RH Name Plate	1		
	37217	4108RH Name Plate		1	
	61711	4120RH Name Plate			1
10	xzhcs3710nc5	3/8 x 1 Bolt	4	4	4
11	56352	Auger Chain Box Cover Bottom	1	1	1
12	xzhcs3710nc5	3/8 x 1 Bolt	33	33	33
13	xzlw37	3/8 Lockwasher	33	33	33
14	56353	Auger Chain Box Cover Front	1	1	1
15	56408	4000RH Auger Chain	1	1	1
16	xzhcs7540nc	3/4 x 4 Bolt	1	1	1
17	cnxsi100a9	#100 - 9T Idler Sprocket, 3/4" Bore	1	1	1
18	xzfwxae75	3/4 SAE Flatwasher	2	2	2
19	56350	Chain Tensioner Sprocket Support	1	1	1
20	56341	Chain Tensioner Main Arm	1	1	1
21	xznylnut75nc	3/4-10 Nylon Locknut	1	1	1
22	xznylnut37nc	3/8-16 Nylon Locknut	1	1	1
23	xzfw37	3/8 Flatwasher	1	1	1
24	56345	Tensioner Treaded Rod	1	1	1
25	xzhcs5035nc	1/2-13 x 3 1/2 Bolt	1	1	1

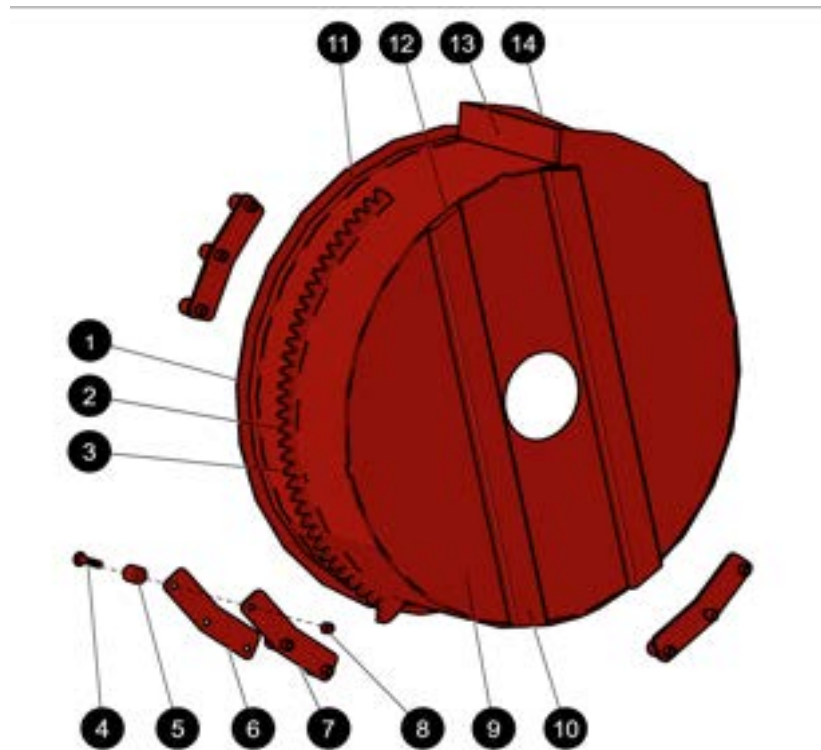
26	xzfw50	1/2 Flatwasher	1	1	1
27	fw100	1 Flatwasher	1	1	1
28	56342	Tensioner spring bar	1	1	1
29	Sprc9657K574	Compression Spring, 3" Long, 1.687" OD, 1.333" ID	1	1	1
30	56347	Chain Tensioner Spring Plate	1	1	1
31	56349	Chain Tensioner Pivot	1	1	1
32	xznut50nc	1/2-13 Nut	1	1	1
33	2741T164	100B11 Sprocket, 1 3/4" Bore, 3/8" Keyway, 2 Set Screws	1	1	1
34	xzhcs6220nc5	5/8-11 x 2 Bolt	4	4	4
35	cnxHCFS209-28	1 3/4 Bearing 4 Bolt Flange with Locking Collar	1	1	1
36	xznylnut62	5/8-11 Nylon Locknut	4	4	4
37	56427	97 Auger Drive Shaft	1		
	56354	108 Auger Drive Shaft		1	
	56441	120 Auger Drive Shaft			1
38	cnx191366	Universal Joint for 4000 Series Cross Shaft	1	1	1
39	?	M10 x 1.5 x 60 Hex Bolt (Shear Bolt)	1	1	1
40	?	M10 Nut	1	1	1
41	xzhfss3707nc5	3/8 x 3/4 Hex Flange Serrated Screw	4	4	4
42	56418	Cross shaft cover 4097RH	1		
	56409	Cross shaft cover 4108RH		1	
	56442	Cross Shaft Cover 4120RH			1
43	xznut25fs	1/4-20 Flange Serrated Nut	2	2	2
44	DJA70111	Operator's Manual Tube Small	1	1	1
45	xzhfss2507nc5	1/4 x 3/4 Flange Serrated Screw	2	2	2
46	cnxT301-302Gear box	T301 Snowblower Gearbox, see p.75.	1	1	1
47	xzhcs5022nc5	1/2-13 x 2 1/4 Bolt	1	1	1
48	xzfw75	3/4 Flatwasher	8	8	8
49	xzlw75	3/4 Lockwasher	8	8	8
50	xzm12x65	M12 x 65 - 8.8	4	4	4
51	61687	Assy Rotator Motor, see p.72.	1	1	1
52	34818	1000 RPM Gearbox Kit 120 Meteor, see p.77.	1	1	1
53	PTO Assembly, see p.79 - 82.		1	1	1
54	61681	Cover PTO	1	1	1
55	wal385501	3/16 Lynch Pin	1	1	1
56	34275	Gearbox Retainer	2	2	2
57	xznylnut50nf	1/2-13 Nylon Locknut	1	1	1
58	55364	Universal Joint Shield	1	1	1
59	wal381703	1 x 2 top link bushing	1	1	1
60	wal387505	Cat 2 top link pin 1 x 3 9/16	1	1	1
61	wal385507	7/16 Standard Lynch Pins	3	3	3
62	MKMSB108LP	108 SB Cat 2 & 3 Lift pin	2	2	2
63	wal381707	1 1/8 x 2 3/4 lift arm bushing	2	2	2
64	37178	4000 standard skid shoes	2	2	2
65	wal385003	3/4 x 3 1/2 bent hitch pin with hair pin	2	2	2
66	SO7112600	5/8 x 4 bent hitch pin with hair pin	1	1	1
67	55224	4000 Series Stand	1	1	1
68	xznylnut50	1/2-13 Nylon Locknut	3	3	3
69	34817	Gearbox Bracket	1	1	1
70	xzhcs5060nc5	1/2 x 6 Bolt	3	3	3

MK 4000 Series (Models: 4097RH, 4108RH, 4120RH) - Front View:



Item #	Part #	Description	4097RH	4108RH	4120RH
			Qty		
1	xzhcs6220nc5	5/8-11 x 2 Bolt	16	16	16
2	cnxHCFS209-28	1 3/4 Bearing 4 Bolt Flange with Locking Collar	4	4	4
3	xznylnut62	5/8-11 Nylon Locknut	16	16	16
4	56423	4097 Top Oil Bath Auger Assembly	1		
	56338	4108 Top Oil Bath Auger Assembly		1	
	56437	4120 Top Oil Bath Auger Assembly			1
5	36997	4000 Series Hood, see p.67.	1	1	1
6	61687	Hydraulic Chute Rotator, see p.66.	1	1	1
7	MK21918	Hydraulic Deflector, see p.65.	1	1	1
8	OC18328	Hose Holder 3.375/.312/12 Wire Form	1	1	1
9	xzhcs3710nc5	3/8 x 1 Bolt	1	1	1
10	xzlw37	3/8 Lockwasher	1	1	1
11	xzfenderw37	3/8 x 1 1/2 Fender Washer	1	1	1
12	xznylnut37nc	3/8-16 Nylon Locknut	1	1	1
13	56419	4097 Bottom Auger Oil Bath Assembly	1		
	56334	4108 Bottom Auger Oil Bath Assembly		1	
	56433	4120 Bottom Auger Oil Bath Assembly			1
14	xzhcs6217nc	5/8-11 x 1 3/4 Gr.2 Hex Bolt	1	1	1
15	xzlw62	5/8 Lockwasher	1	1	1
16	knp246-102	3/4 Magnetic Pipe Plugs	2	2	2
17	xbpb5015nc5	1/2 x 1 1/2 Gr.5 Plow Bolt Bare	7	9	9
18	VBL37555	3/4 x 6 x 96 Cutting Edge	1		
	VBL36927	3/4 x 6 x 107 Cutting Edge		1	
	VBL37579	3/4 x 6 x 119 Cutting Edge			1
19	xznylnut50	1/2-13 Nylon locknut	7	9	9
20	36977	4000 Series Fan Assy	1	1	1

Rotating Housing (Models: 4097RH, 4108RH, 4120RH):



Item #	Part #	Description	4097RH	4108RH	4120RH
			Qty		
1	55292	4000 RH Retainer Ring	1	1	1
2	55319	4000 RH Rotating Housing Gear	1	1	1
3	55294	4000 RH Fan Band	1	1	1
4	xzcar5025nc	1/2 x 2 1/2 Carriage Bolt	9	9	9
5	55301	Rotating Housing Clamp Spacer	9	9	9
6	55300	Housing Clamp Pad UHMW	3	3	3
7	55299	Rotating Housing Clamp	3	3	3
8	xznylnut50	1/2-13 Nylon Locknut	9	9	9
9	55296	4000 Rotating Housing Backplate	1	1	1
10	55336	Fan Back Stifner	2	2	2
11	55358	4000 RH UHMW housing ring	1	1	1
12	55359	Support Cap	2	2	2
13	55321	Fan Ledger	1	1	1
14	55322	Housing Deflector	1	1	1

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Elmira, ON CA N3B 2Z3



Purchaser's warranty protection is valid only when this completed form or a copy of this form is on file with MK Martin Enterprise Inc. By filling out this form, the purchaser has acknowledged delivery of equipment and owner's/operator's manual and has accepted the condition of the equipment.

Date of delivery to purchaser: _____

Type of Equipment: _____

Model #: _____ **Serial #:** _____

Retailer's signature indicates:

- Equipment was properly assembled as directed by manufacturer.
- Equipment was tested for functionality and operates properly.
- Purchaser was instructed in safe and proper operating procedures.
- Warranty was explained to purchaser.
- Purchaser was given the operator's manual.

Retailer Company: _____

Retailer Address: _____

Retailer Signature: _____

Purchaser's signature indicates:

- Acceptance of equipment fully assembled.
- Received operator's manual.
- Clearly understands conditions of warranty.
- Received instructions of safe and proper operation of equipment.

Purchaser Company: _____

Purchaser Mailing Address: _____

Purchaser Phone Number: _____

Purchaser Signature: _____



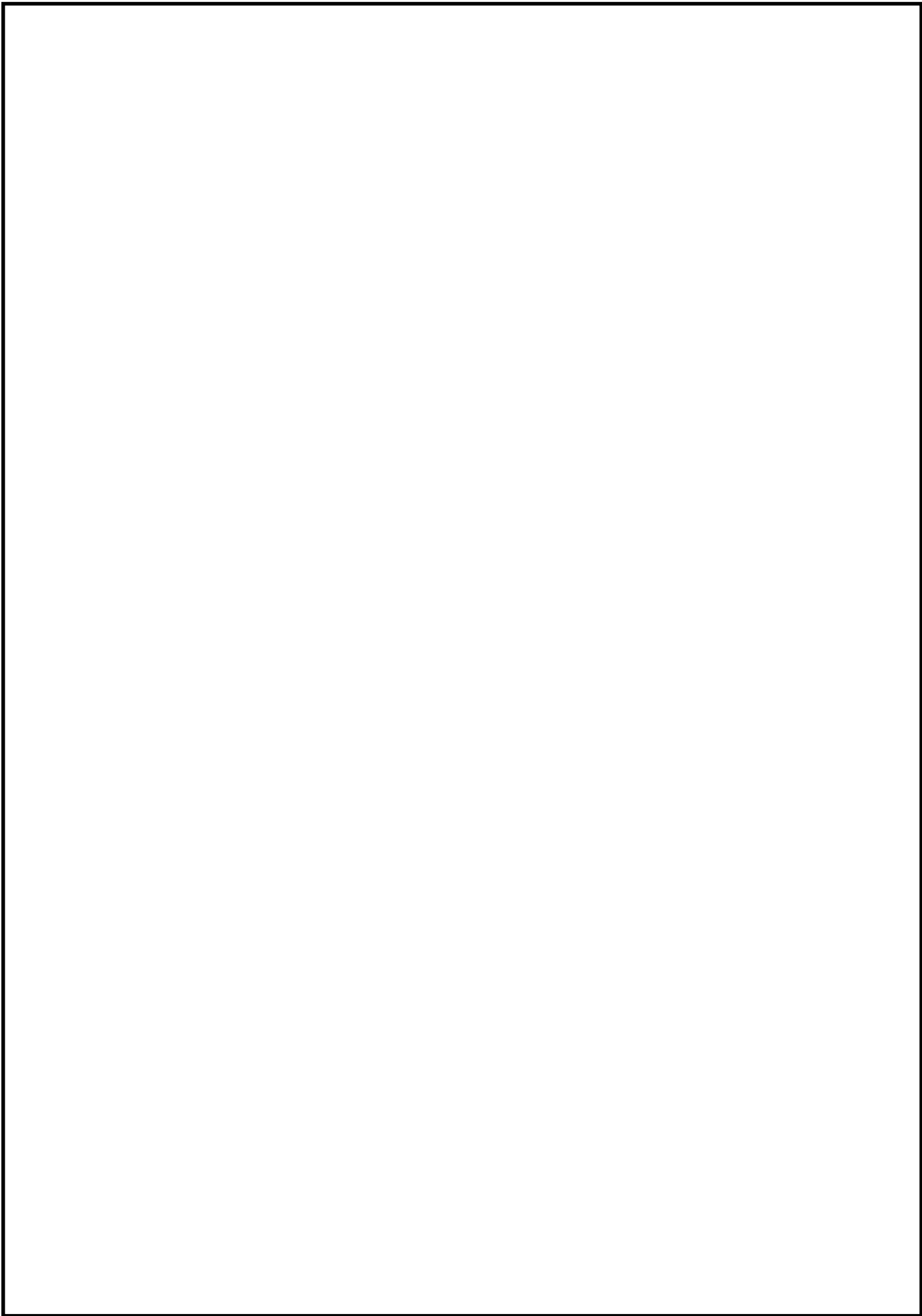
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Do not tape all edges or use staples.

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