

1 INTRODUCTION

Congratulations on your choice of an AgriMetal Leaf and Debris Collector to complement your operation. This equipment has been designed and manufactured to meet the needs of a discerning turf care industry.

Safe, efficient and trouble free operation of your AgriMetal Leaf and Debris Collector requires that you and anyone else who will be operating or maintaining the machine, read and understand the Safety, Operation, Maintenance and Trouble Shooting information contained within the Operator's Manual.



This manual covers the AgriMetal Model 4420 Leaf and Debris Collector. Use the Table of Contents or Index as a guide to locate required information.

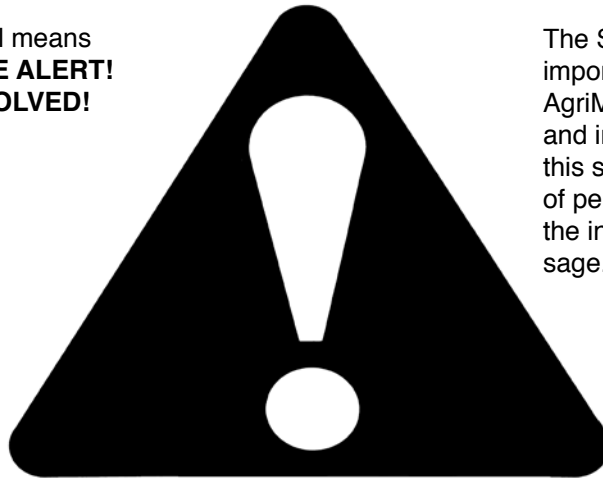
Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your AgriMetal Dealer or Distributor if you need assistance, information or additional copies of the manuals.

OPERATOR ORIENTATION - The directions left, right, front and rear, as mentioned throughout this manual, are as seen from behind the tractor driver's seat and facing in the direction of travel.

2 SAFETY

SAFETY ALERT SYMBOL

This Safety Alert symbol means
ATTENTION! BECOME ALERT!
YOUR SAFETY IS INVOLVED!



The Safety Alert symbol identifies important safety messages on the AgriMetal Leaf and Debris Collector and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons

Accidents Disable and Kill
Accidents Cost
Accidents Can Be Avoided

SIGNAL WORDS:

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guide-lines:

**SI NO LEE INGLES, PIDA AYUDA
A AIGUIEN QUE SI LO LEA PARA
QUE LE TRADUZCA LAS
MIDIDAS DE SEGURIDAD.**

DANGER - Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine 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.

If you have any questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer at AgriMetal Inc., 1006 Rue Principale, Wickham, Quebec, Canada, J0C 1S0. Phone (819) 398-6883 or fax (819) 398-5311.

SAFETY

YOU are responsible for the SAFE operation and maintenance of your AgriMetal Leaf and Debris Collector. **YOU** must ensure that you and anyone else who is going to operate, maintain or work around the Leaf and Debris Collector be familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be adhered to while operating the Leaf and Debris Collector.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

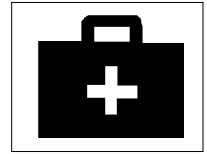
- Leaf and Debris Collector owners must give operating instructions to operators or employees before allowing them to operate the machine, and at least annually thereafter per OSHA (Occupational Safety and Health Administration) regulation 1928.57.
- The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. Most accidents can be avoided.
- A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think SAFETY! Work SAFELY!

2.1 GENERAL SAFETY

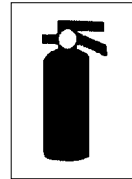
1. Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or unplugging the Leaf and Debris Collector.



2. Have a first-aid kit available for use should the need arise and know how to use it.



3. Have a fire extinguisher available for use should the need arise and know how to use it.



4. Do not allow riders.

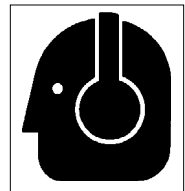
5. Wear appropriate protective gear. This list includes but is not limited to:

- A hard hat
- Protective shoes with slip resistant soles
- Protective glasses or goggles
- Heavy gloves
- Wet weather gear
- Hearing protection
- Respirator or filter mask



6. Install and secure all guards before starting.

7. Wear suitable ear protection for prolonged exposure to excessive noise.



8. Place all controls in neutral, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.


9. Clear the area of people, especially small children, before starting the unit.

10. Review safety related items annually with all personnel who will operating or maintaining the Leaf and Debris Collector.

2.2 EQUIPMENT SAFETY GUIDELINES

1. Safety of the operator and bystanders is one of the main concerns in designing and developing a machine. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following 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.
2. In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.
3. Replace any safety sign or instruction sign that is not readable or is missing. Location of such safety signs is indicated in this manual.
4. Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment. Consult your doctor about operating this machine while taking prescription medications.
5. **Under no circumstances should young children be allowed to work with this equipment. Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.** Review the safety instructions with all users annually.
6. This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible, properly trained and physically able person familiar with machinery and trained in this equipment's operations. If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.
7. Use a tractor equipped with a Roll Over Protective Structure (ROPS).
8. Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - **DON'T TRY IT.**
9. Do not modify the equipment in any way. Unauthorized modification result in serious injury or death and may impair the function and life of the equipment.
10. In addition to the design and configuration of this implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to Safety Messages and operation instruction in each of the appropriate sections of the Tractor and machine Manuals. Pay close attention to the Safety Signs affixed to the Tractor and the machine.

2.3 SAFETY TRAINING

1. Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator or bystander.
2. In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of this equipment.
3. It has been said, "The best safety feature is an informed, careful operator." We ask you to be that kind of an operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. Accidents can be avoided.
4. Working with unfamiliar equipment can lead to careless injuries. Read this manual, and the manual for your tractor, before assembly or operating, to acquaint yourself with the machines. If this machine is used by any person other than yourself, or is loaned or rented, it is the machine owner's responsibility to make certain that the operator, prior to operating:
 - a. Reads and understands the operator's manuals.
 - b. Is instructed in safe and proper use.
5. Know your controls and how to stop tractor, engine, and machine quickly in an emergency. Read this manual and the one provided with your tractor.
6. Train all new personnel and review instructions frequently with existing workers. Be certain only a properly trained and physically able person will operate the machinery. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death. If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.

2.4 SAFETY SIGNS

1. Keep safety signs clean and legible at all times.
2. Replace safety signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety signs are available from your authorized Distributor or Dealer Parts Department or the factory.

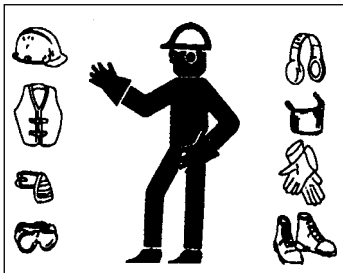
How to Install Safety Signs:

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

2.5 PREPARATION

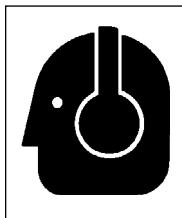
1. Never operate the tractor and machine until you have read and completely understand this manual, the Tractor Operator's Manual, and each of the Safety Messages found on the safety signs on the tractor and machine.

2. Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal, or moving the implement. Do not allow long hair, loose fitting clothing or jewelry to be around equipment.

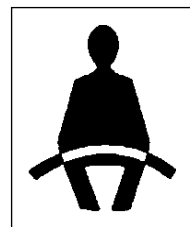


3. **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!**

Tractors with or without equipment attached can often be noisy enough to cause permanent, partial hearing loss. We recommend that you wear hearing protection on a full-time basis if the noise in the Operator's position exceeds 80db. 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, total hearing loss. **NOTE:** Hearing loss from loud noise (from tractors, chain saws, radios, and other such sources close to the ear) is cumulative over a lifetime without hope of natural recovery.



4. Operate the machine only with a tractor equipped with an approved Roll-Over-Protective Structure (ROPS). Always wear your seat belt. Serious injury or even death could result from falling off the tractor ---particularly during a turnover when the operator could be pinned under the ROPS or the tractor.
5. Clear working area of stones, branches or hidden obstacles that might be hooked or snagged, causing injury or damage.
6. Operate only in daylight or good artificial light.
7. Be sure machine is properly mounted, adjusted and in good operating condition.
8. Ensure that all safety shielding and safety signs are properly installed and in good condition.



2.6 OPERATING SAFETY

1. Please remember it is important that you read and heed the safety signs on the Leaf and Debris Collector. Clean or replace all safety signs if they cannot be clearly read and understood. They are there for your safety, as well as the safety of others. The safe use of this machine is strictly up to you, the operator.
2. All things with moving parts are potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognizes potential hazards and follows reasonable safety practices. The manufacturer has designed this Leaf and Debris Collector to be used with all its safety equipment properly attached, to minimize the chance of accidents. Study this manual to make sure you have all safety equipment attached.
3. If a safety shield or guard is removed for any reason, it must be replaced before the machine is again operated.
4. When the use of hand tools is required to perform any part of assembly, installation, adjustment, maintaining, repairing, removal, or moving, be sure the tools used are designed and recommended by the tool manufacturer for that specific task.
5. Personal protection equipment including hearing protection, hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal, or moving. Do not allow long hair, loose fitting clothing, or jewelry to be around moving parts.
6. Always use two people to handle heavy, unwieldy components during assembly, installation, removal or moving.
7. Never place any part of your body where it would be in danger if movement should occur during assembly, installation, operation, maintaining, repairing, removal or moving.
8. Never place yourself between the tractor and machine while implement is in operation.
9. Place all controls in neutral, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
10. Do not walk or work under a raised machine, discharge door or attachment unless it is securely blocked or held in position.
11. A heavy load can cause instability of the tractor. Use extreme care during travel. Slow down on turns and watch out for bumps.
12. Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment. Consult your doctor about operating this machine while taking prescription medications.
13. Do not allow riders on the machine or tractor at any time. There is no safe place for any riders.
14. Never allow children to operate or be around this machine.
15. Do not reach into blower openings when the engine is running. Install and secure access covers before starting engine.
16. Clear the work area of objects which might be picked up and snagged or entangled in the machine.
17. Keep hands, feet, hair, jewelry, and clothing away from all moving and/or rotating parts.
18. Do not stand behind machine when the discharge door is open and blower is running.
19. Do not unhook machine when it is loaded. Hitch can upend.
20. Keep hands and feet away from blower and pick-up head when engine is running. Keep others away.

2.7 TRANSPORT SAFETY

1. The machine is not designed or equipped to travel on public roads. Do not drive or transport on public roads
2. Use a trailer when moving from place to place.
3. Do not exceed 16 kph (10 mph) when moving.
4. Plan your route to avoid rough terrain.
5. Always use a power unit of less than 20 horsepower to prevent overloading the unit.
6. Use a drawbar pin with provisions for a retainer. Install the retainer. Attach safety chain between tractor and machine before moving.
7. Do not drink and drive.
8. Turn into curves or go up or down hills only at a low speed and at a gradual steering angle. Make certain that at least 20% of the tractor's weight is on the front wheels to maintain safe steering. Slow down on rough or uneven surfaces.
9. Never allow riders on either tractor or machine.

2.8 STORAGE SAFETY

1. Store the unit in an area away from human activity.
2. Do not permit children to play on or around the stored machine.
3. Store the unit in a dry, level area. Support the frame with planks if required.

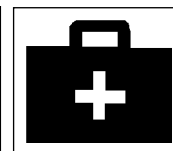
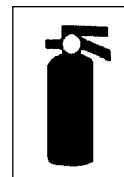
2.9 MAINTENANCE SAFETY

1. Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
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.



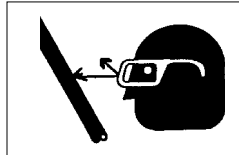
3. Make sure there is plenty of ventilation. Never operate the engine of the towing vehicle in a closed building. The exhaust fumes may cause asphyxiation.
4. Before working on this machine, shut off the engine, set the brakes, and remove the ignition keys.
6. Never work under equipment unless it is blocked securely.
7. Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance work. Use heavy gloves when handling sharp components.
8. Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.
9. A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.



10. Periodically tighten all bolts, nuts and screws and check that all cotter pins are properly installed to ensure unit is in a safe condition.
11. When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.

2.10 HYDRAULIC SAFETY

1. Always place all tractor hydraulic controls in neutral before disconnecting from tractor or working on hydraulic system.
2. Make sure that all components in the hydraulic system are kept in good condition and are clean.
3. Replace any worn, cut, abraded, flattened or crimped hoses.
4. Do not attempt any makeshift repairs to the hydraulic fittings or hoses by using tape, 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 the skin surface.



2.11 REFUELLING SAFETY

1. Handle fuel with care. It is highly flammable.
2. Allow engine to cool for 5 minutes before refuelling. Clean up spilled fuel before restarting engine.
3. Do not refuel the machine while smoking or when near open flame or sparks.
4. Fill fuel tank outdoors.
5. Prevent fires by keeping machine clean of accumulated trash, grease and debris.



2.12 TIRE SAFETY

1. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
2. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
3. Have a qualified tire dealer or repair service perform required tire maintenance.
4. When replacing worn tires, make sure they meet the original tire specifications. Never undersize.

2.13 BATTERY SAFETY

1. Keep all sparks and flames away from batteries, as gas given off by electrolyte is explosive.
2. Avoid contact with battery electrolyte: wash off any spilled electrolyte immediately.
3. Wear safety glasses when working near batteries.
4. Do not tip batteries more than 45 degrees, to avoid electrolyte loss.
5. To avoid injury from spark or short circuit, disconnect battery ground cable before servicing any part of electrical system.

2.14 GAS MOTOR SAFETY

BEFORE STARTING ENGINE, READ AND UNDERSTAND THE OPERATING AND MAINTENANCE INSTRUCTIONS THAT CAME WITH YOUR ENGINE.

WARNING: DO NOT

1. DO NOT run engine in an enclosed area. Exhaust gases contain carbon monoxide, an odorless and deadly poison.
2. DO NOT place hands or feet near moving or rotating parts.
3. DO NOT store, spill, or use gasoline near an open flame, or devices such as a stove, furnace, or water heater which use a pilot light or devices which can create a spark.
4. DO NOT refuel indoors where area is not well ventilated. Outdoor refuelling is preferred.
5. DO NOT fill fuel tank while engine is running. Allow engine to cool for 5 minutes before refuelling. Store fuel in approved safety containers.
6. DO NOT remove fuel tank cap while engine is running.
7. DO NOT operate engine if gasoline is spilled. Move machine away from the spill and avoid creating any ignition until the gasoline has evaporated.
8. DO NOT smoke when filling fuel tank.
9. DO NOT choke carburetor to stop engine. Whenever possible, gradually reduce engine speed before stopping.
10. DO NOT run engine above rated speeds. This may result in injury.
11. DO NOT tamper with governor springs, governor links or other parts which may increase the governed engine speed.
12. DO NOT tamper with the engine speed selected by the original equipment manufacturer.
13. DO NOT check for spark with spark plug or spark plug wire removed. Use an approved tester.
14. DO NOT crank engine with spark plug removed. If engine is flooded, place throttle in "FAST" position and crank until engine starts.
15. DO NOT strike flywheel with a hard object or metal tool as this may cause flywheel to shatter in operation. Use proper tools to service engine.
16. DO NOT operate engine without a muffler. Inspect periodically and replace, if necessary. If engine is equipped with muffler deflector, inspect periodically and replace, if necessary with correct deflector.
17. DO NOT operate engine with an accumulation of grass, leaves, dirt or other combustible materials in the muffler area.
18. DO NOT use this engine on any forest covered, brush covered, or grass covered unimproved land unless a spark arrester is installed on the muffler. The arrester must be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands.
19. DO NOT touch hot muffler, cylinder or fins because contact may cause burns.
20. DO NOT run engine with air cleaner or air cleaner cover removed.

WARNING: DO

1. ALWAYS DO remove the wire from the spark plug when servicing the engine or equipment TO PREVENT ACCIDENTAL STARTING. Disconnect the negative wire from the battery terminal if equipped with a 12 volt starting system.
2. DO keep cylinder fins and governor parts free of grass and other debris which can affect engine speed.
3. DO examine muffler periodically to be sure it is functioning effectively. A worn or leaking muffler should be repaired or replaced as necessary.
4. DO use fresh gasoline. Stale fuel can gum carburetor and cause leakage.
5. DO check fuel lines and fittings frequently for cracks or leaks. Replace if necessary.

2.15 SIGN-OFF FORM

AgriMetal follows the general Safety Standards specified by the American Society of Agricultural Engineers (ASAE) and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and/or maintaining the Leaf and Debris Collector must read and clearly understand ALL Safety, Operating and Maintenance information presented in this manual.

Do not operate or allow anyone else to operate this equipment until such information has been reviewed. Annually review this information before the season start-up.

Make these periodic reviews of SAFETY and OPERATION a standard practice for all of your equipment. We feel that an untrained operator is unqualified to operate this machine.

A sign-off sheet is provided for your record keeping to show that all personnel who will be working with the equipment have read and understand the information in the Operator's Manual and have been instructed in the operation of the equipment.

SIGN-OFF FORM



[illegible]

3 SAFETY SIGN LOCATIONS

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!

A

 CAUTION	 ATTENTION
<ol style="list-style-type: none">1. Read Operator's Manual before starting.2. Keep guards and shields in place and access doors closed.3. Keep hands, feet, hair and clothing away from moving parts.4. Stop engine, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging the machine.5. Do not climb on the machine or place hands in any opening when the engine is running.6. Keep people and pets a safe distance from the machine.7. Keep hydraulic lines and fittings tight, in good condition and free of leaks.8. Do not smoke when refuelling.9. Block up machine securely before working under it.10. Keep all hydraulic hoses and connections tight and in good repair.11. Keep hands and feet away from pick-up head when engine running. Keep others away.12. Do not unhook when compartment is full to prevent upending.13. Review safety instructions annually.	<ol style="list-style-type: none">1. Lire attentivement le manuel d'opération avant la mise en marche.2. Garder tous les écrans protecteurs in place.3. Garder les mains, pieds, cheveux et vêtements éloignés des éléments mobiles.4. Arrêter le moteur, placer tous les contrôles à la position "neutre", enlever la clé du contact et attendre que toutes les places soient au point mort avant de faire tout ajustement, réparation ou de débloquer la machine.5. Ne pas grimper sur la machine et ne jamais se placer les mains dans toute ouverture lorsque celle-ci est en marche.6. Garder les gens et les animaux à une distance sécuritaire de la machine.7. Garder tout boyau et fixation hydraulique en bonne condition et sans fissure.8. Ne jamais fumer lors du plein d'essence.9. Immobiliser la machine de façon sécuritaire avant de travailler sous celle-ci.10. Garder les mains et les pieds éloignés du bec d'aspiration lorsque le moteur est en marche. Garder les gens éloignés.11. Garder les mains et les pieds éloignés du bec d'aspiration lorsque le moteur est en marche. Garder les gens éloignés.12. Ne pas désaccoupler lorsqu'il y a du matériel dans la machine pour éviter la levée subite du timon.13. Réviser annuellement le manuel d'opération. <p>NC13-33-0147</p>



REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!



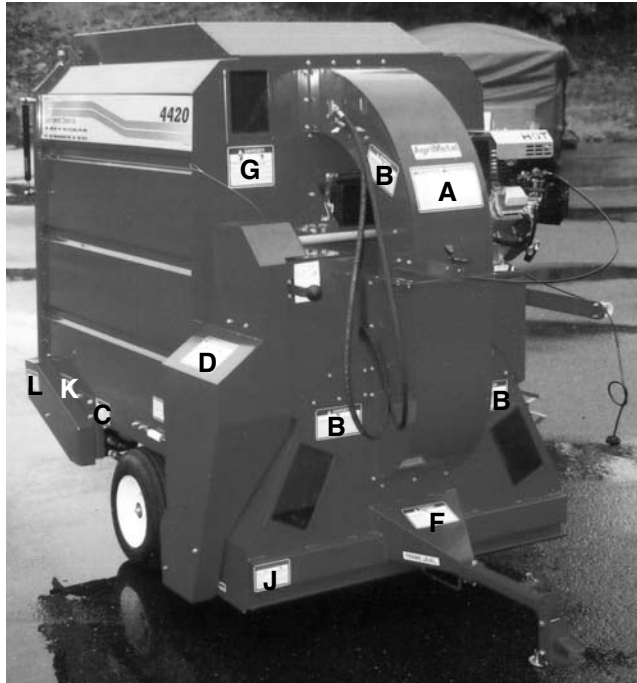
B

 DANGER	
	
<p>BLOWER BLADE HAZARD</p> <p>To prevent serious injury or death from blower blade hazard:</p> <ol style="list-style-type: none"> 1. Do not open blower access doors when the engine is running. 2. Stop engine, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging machine. 3. Do not operate with access doors removed. 	<p>PROPULSEUR EN ROTATION RIS-QUE DE BLESSURE GRAVE</p> <p>À défaut de suivre ces instructions, cela pourrait entraîner de sérieuses blessures ou même la mort.</p> <ol style="list-style-type: none"> 1. Ne jamais ouvrir les portes d'accès du souffleur lorsque le moteur est en marche. 2. Arrêter le moteur, placer tous les contrôles à la position "neutre", enlever la clé du contact et attendre que toutes les places soient au point mort avant de faire tout ajustement, réparation ou de débloquer la machine. 3. Ne jamais opérer sans portes d'accès. <p style="text-align: right; font-size: small;">NC13-33-0112</p>




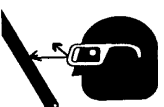
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- Think SAFETY! Work SAFELY!



C

 WARNING  AVERTISSEMENT	
	
HIGH PRESSURE FLUID HAZARD	RISQUE DE LIQUIDE SOUS HAUTE-PRESSION
<p>To prevent serious injury or death from high-pressure fluid:</p> <ol style="list-style-type: none"> 1. Relieve pressure on system before repairing or adjusting. 2. Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands. 3. Keep all components in good repair. 	<p>À défaut de suivre ces instructions, cela pourrait entraîner de sérieuses blessures ou même la mort.</p> <ol style="list-style-type: none"> 1. Éliminer toute pression sur le système hydraulique avant d'effectuer une réparation ou un ajustement. 2. Toujours porter des gants et des lunettes de sécurité lorsque vous recherchez une fuite. Utiliser un morceau de bois ou de carton au lieu de vos mains. 3. Garder toutes les composantes en bonnes conditions.





15-60-0010

REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.



The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!

D

 WARNING  AVERTISSEMENT	
	
<p align="center">ROTATING PART HAZARD KEEP AWAY</p> <p>To prevent serious injury or death from rotating parts:</p> <ol style="list-style-type: none"> 1. Place all controls in neutral or off, stop engine or motor, set park brake, remove ignition key or disable power source and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging. 2. Install and secure all guards before operating. 3. Do not operate with rotating parts exposed. 	<p align="center">PIÈCES EN MOUVEMENT RESTER ÉLOIGNÉS</p> <p>À défaut de suivre ces instructions, cela pourrait entraîner de sérieuses blessures ou même la mort.</p> <ol style="list-style-type: none"> 1. Arrêter le moteur, placer tous les contrôles à la position "neutre" enlever la clé du contact et attendre que toutes les pièces soient au point mort avant de faire tout ajustement, réparation ou de débloquer la machine. 2. Installer tous les écrans protecteurs avant de mettre la machine en fonction. 3. Ne jamais opérer la machine sans écran protecteur. <p align="right">01-60-0115</p>

E

 DANGER	
	
<p align="center">FIRE HAZARD NO SMOKING</p> <p>To prevent serious injury or death from fire:</p> <ol style="list-style-type: none"> 1. Do not smoke when refueling. 2. Keep sparks, flames and hot material away from flammable substances. 3. Stop engine five minutes before refueling. 	<p align="center">RISQUE D'INCENDIE DEFENSE DE FUMÉ</p> <p>À défaut de suivre ces instructions, cela pourrait entraîner de sérieuses blessures ou même la mort.</p> <ol style="list-style-type: none"> 1. Ne pas fumer lors du remplissage. 2. Garder les flammes et toute matière inflammable hors de portée. 3. Arrêter le moteur cinq minutes avant de refaire le plein. <p align="right">01-60-0060</p>


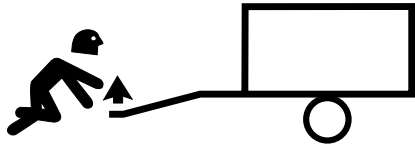
REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!



F

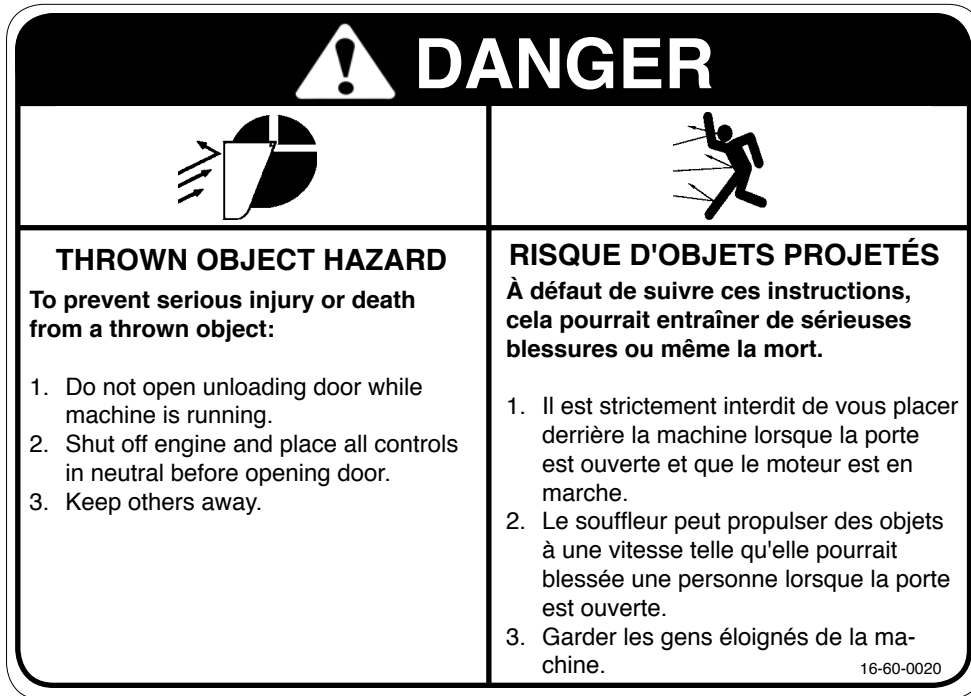
 DANGER	
	
<p>UPENDING HAZARD To prevent serious injury or death from upending hazard:</p> <ol style="list-style-type: none"> 1. Do not unhook Collector when compartment is full to prevent upending. 2. Do not stand over hitch when unhooking. 3. Support rear frame with large blocks before unhooking when compartment is full. 	<p>LEVEE SUBITE DU TIMON À défaut de suivre ces instructions, cela pourrait entraîner de sérieuses blessures ou même la mort:</p> <ol style="list-style-type: none"> 1. Ne pas désaccoupler lorsqu'il y a du matériel dans la machine pour éviter la levée subite du timon. 2. Ne pas rester au-dessus du timon lors du découplage. 3. Lorsque la machine contient du matériel, vous devez obligatoirement installer des blocs sous la partie arrière de celle-ci pour effectuer son découplage. <p style="text-align: right;">NC13-33-0146</p>

REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

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- Think SAFETY! Work SAFELY!

G



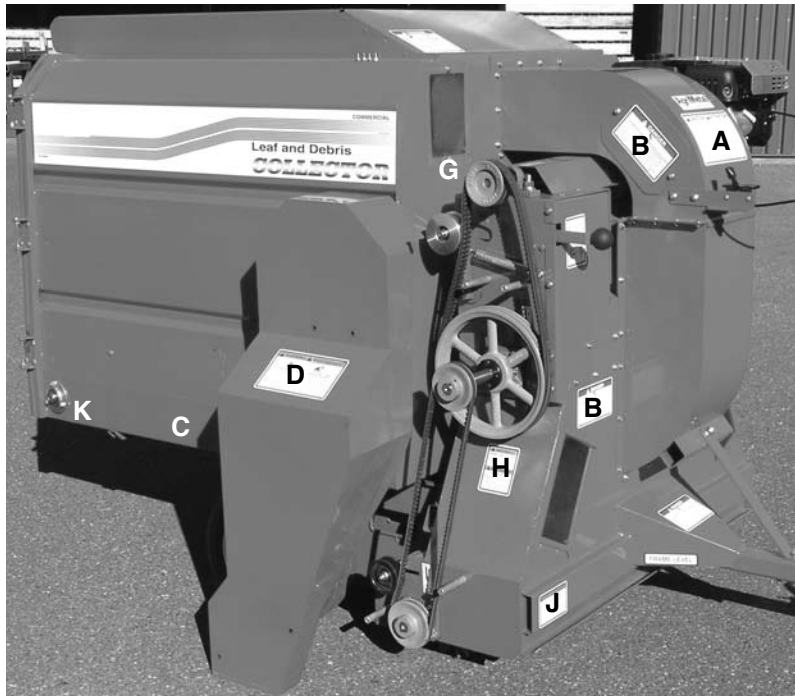
H







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The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!



J



 WARNING  AVERTISSEMENT	
	
<p align="center">ROTATING BLADE HAZARD</p> <p>To prevent serious injury or death from rotating blade hazard:</p> <ol style="list-style-type: none"> 1. Keep hands and feet away from pick-up head when engine is running. Keep others away. 2. Stop engine, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging machine. 	<p align="center">BROSSE ROTATIVE EN MOUVEMENT</p> <p>À défaut de suivre ces instructions, cela pourrait entraîner de sérieuses blessures ou même la mort.</p> <ol style="list-style-type: none"> 1. Garder les mains et les pieds éloignés du bec d'aspiration lorsque le moteur est en marche. Garder les gens éloignés. 2. Arrêter le moteur, placer tous les contrôles à la position "neutre", enlever la clé du contact et attendre que toutes les places soient au point mort avant de faire tout ajustement, réparation ou de débloquer la machine. <p align="right">NC13-33-0098</p>

REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.





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- Think SAFETY! Work SAFELY!

K

	WARNING		AVERTISSEMENT
MISSING SHIELD HAZARD		GARDE ABSENT	
<p>To prevent serious injury or death from exposed hazard:</p> <ol style="list-style-type: none"> 1. Install and secure shields before operating. 2. Keep hands, feet, hair and clothing away from moving parts. 		<p>À défaut de suivre ces instructions, cela pourrait entraîner de sérieuses blessures ou même la mort.</p> <ol style="list-style-type: none"> 1. Installer les gardes de façon sécuritaire avant la mise en marche de la machine. 2. Garder les mains, pieds, cheveux et vêtements éloignés des éléments mobiles. 	
		<small>NC-13-33-0113</small>	

L

	WARNING		AVERTISSEMENT
			
ROTATING PART HAZARD KEEP AWAY		PIÈCES EN MOUVEMENT RESTER ÉLOIGNÉS	
<p>To prevent serious injury or death from rotating parts:</p> <ol style="list-style-type: none"> 1. Place all controls in neutral or off, stop engine or motor, set park brake, remove ignition key or disable power source and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging. 2. Install and secure all guards before operating. 3. Do not operate with rotating parts exposed. 		<p>À défaut de suivre ces instructions, cela pourrait entraîner de sérieuses blessures ou même la mort.</p> <ol style="list-style-type: none"> 1. Arrêter le moteur, placer tous les contrôles à la position "neutre" enlever la clé du contact et attendre que toutes les pièces soient au point mort avant de faire tout ajustement, réparation ou de débloquer la machine. 2. Installer tous les écrans protecteurs avant de mettre la machine en fonction. 3. Ne jamais opérer la machine sans écran protecteur. 	
		<small>01-60-0110</small>	

REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

4 ASSEMBLING

4.1 MACHINE ASSEMBLY

The machine is shipped from the factory in a partially disassembled configuration and attached to a pallet that provides for easy moving and handling. Always use tools, equipment and forklifts of appropriate size and capacity for the job. Always use 2 men when lifting, moving and assembling the machine.

When the machine is shipped, follow this procedure when preparing for the customer:

1. Clear the area of bystanders especially small children before starting.
2. Remove the pallet tie-downs.
3. Use a forklift to lift the pallet/machine from the truck. Carry the load close to the ground as it is moved to the assembly area and positioned.
4. Remove machine, hitch and control tie-downs and lay-out.



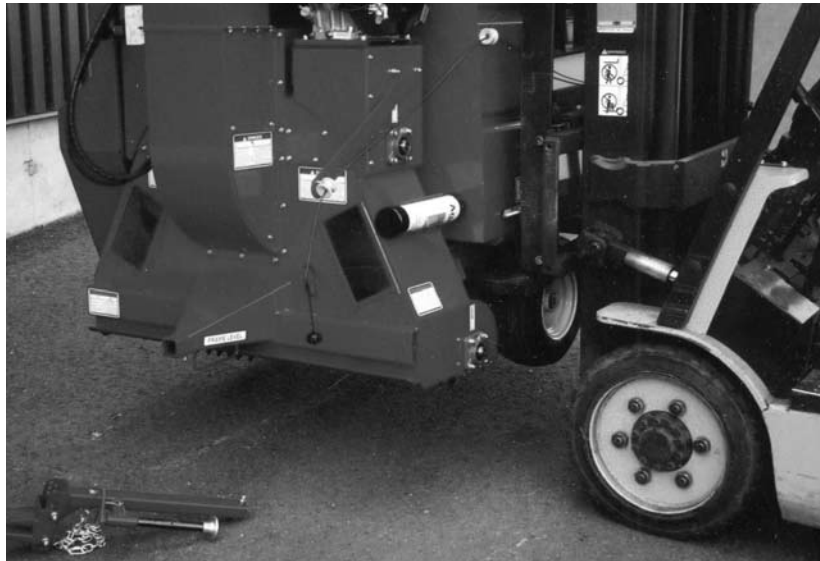
Wrapped



On Pallet

Fig. 1 SHIPPING

5. Slide the hitch into the frame and secure. Tighten fasteners to their specified torque. Tighten the anchor bolt and set screw.
6. Place jack in the down position.



Moving



Mounting

Fig. 2 HITCH

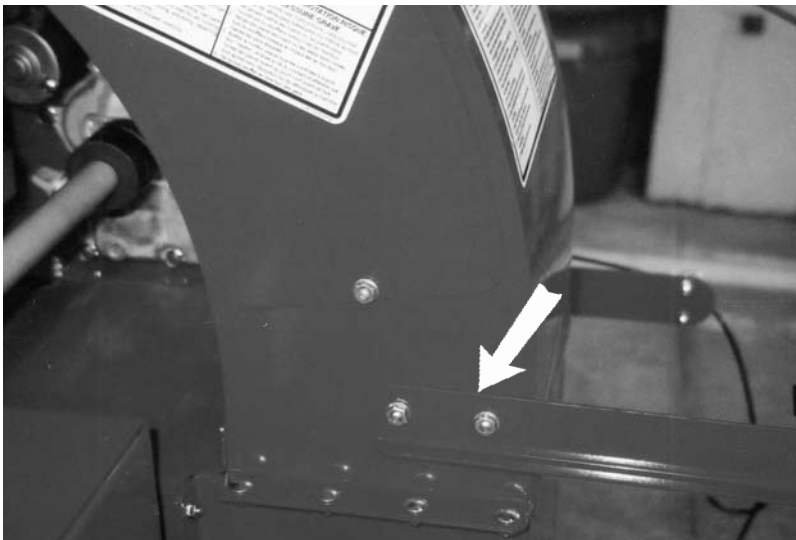
7. Disconnect the throttle control from the engine and lay the control assembly to the side so it can be attached to the frame.
8. Mount control assembly to the side of the blower frame. Tighten fasteners to their specified torque.



Shipping



Access Cover



Installed

5 OPERATION



OPERATING SAFETY

- Please remember it is important that you read and heed the safety signs on the Leaf and Debris Collector. Clean or replace all safety signs if they cannot be clearly read and understood.
- If a safety shield or guard is removed for any reason, it must be replaced before the machine is again operated.
- Always use two people to handle heavy, unwieldy components during assembly, installation, removal or moving.
- Place all controls in neutral, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- Do not allow riders on the machine or tractor at any time. There is no safe place for any riders.
- Do not allow anyone who is not familiar with the safety rules and operation instructions to use this machine.
- Never allow children to operate or be around this machine.
- Do not reach into blower openings when the engine is running. Install and secure access covers before starting engine.
- Clear the work area of objects which might be picked up and snagged or entangled in the machine.
- Keep hands, feet, hair, jewelry, and clothing away from all moving and/or rotating parts.
- Do not stand behind machine when the discharge door is open and blower is running.
- Do not unhook machine when compartment is full. Hitch may upend when hitch is unhooked.
- Keep hands and feet away from pick-up head when engine is running. Keep others away.

5.1 TO THE NEW OPERATOR OR OWNER

AgriMetal Leaf and Debris Collectors are designed to efficiently pick up material from the ground and collect it in the machine compartment. A variety of material can be gathered and transported to the unloading area. Grass clippings, leaves and others debris can easily be picked up.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment. It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the machine.

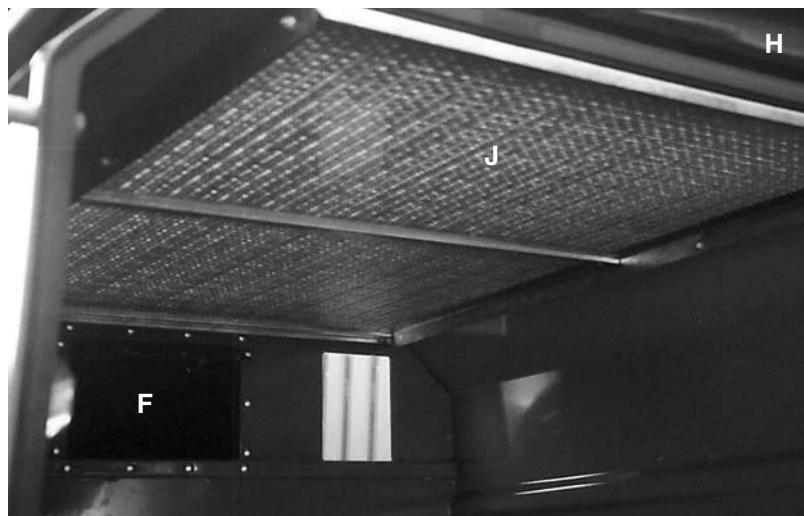
Follow all safety instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the worksite. Untrained operators are not qualified to operate the machine.

Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the machine safely and how to set it to provide maximum field efficiency. By following the operating instructions in conjunction with a good maintenance program, your Leaf and Debris Collector will provide many years of trouble-free service.

5.2 MACHINE COMPONENTS

The AgriMetal Leaf and Debris Collector is a large trailer with a blower on the front. The blower creates a vacuum to pick up debris through the pick-up head. The material is blown into the containment chamber at the rear. The unit is unloaded by opening the rear door and using the manual crank to turn conveyor chain on the bottom of the compartment. An optional hydraulic drive unloading system is also available. Power is provided through a self contained gas engine mounted on the front of the frame.

- A Pick-Up**
- B Blower**
- C Gas Engine**
- D Blower Drive**
- E Brush Drive**
- F Blower Discharge**
- G Compartment**
- H Discharge Door**
- J Screen**
- K Hydraulic Unloading Drive**



5.3 BREAK-IN

Although there are no operational restrictions on the Collector when it is used for the first time, it is recommended that the following mechanical items be checked:

A. After operating for 1 hour:

1. Check alignment of pulleys and sprockets. Align as required.
2. Check belt and chain tension. Adjust as required.
3. Torque all fasteners and hardware.
4. Check condition of blower bearings.
5. Check the pick-up head brush for entangled material. Remove any entangled material.
6. Check tire pressure. Inflate as required.

B. After operating for 10 hours:

1. Repeat steps 1 through 6 listed above. (Section A).
2. Change engine oil.
3. Go to the normal servicing and maintenance schedule as defined in the Maintenance Section.

5.4 PRE-OPERATION CHECKLIST

Efficient and safe operation of the AgriMetal Leaf and Debris Collector requires that each operator reads and understands the operating procedures and all related safety precautions outlined in this section. A pre-operation checklist is provided for the operator. It is important for both personal safety and for maintaining the machine in good mechanical condition that this checklist be followed.

Before operating the Collector and each time thereafter, the following areas should be checked off:

1. Lubricate the machine per the schedule outline in the Maintenance Section.
2. Check the tension and alignment of all belts and pulleys. Adjust tension and align as required.
3. Check the pick-up head brush. Remove any twine, wire or other material that has become entangled.
4. Check that all bearings turn freely. Replace any that are rough or seized.
5. Make sure that all guards and shields are in place, secured and functioning as designed.

5.5 CONTROLS

Before starting to work, all operators should familiarize themselves with the location and function of the controls.

1. Gas Engine:

Read the engine manufacturers operator's manual before starting for more detailed instructions.

a. Ignition Switch:

This key operated switch controls the electric power to the engine.

OFF - Turn the key fully counter-clockwise to stop the fuel flow and turn the engine off.

RUN - Turn clockwise on detent to the run position. This is the position where the engine will continue to run.

START - Turn fully clockwise to the last spring-loaded detent position to engage the starter solenoid and start the engine. Release the key when the engine starts and it will return to the RUN position.

b. Choke:

This lever loop controls the position of the choke. Move the lever rearward to close the choke for starting when the engine is cold. Move the lever forward to open the choke as the engine warms. Always move the lever fully forward when operating the machine.

c. Fuel Supply Valve:

This valve controls the supply of fuel to the engine. Turn the valve at right angles to the fuel line to turn the fuel supply off and parallel to turn on.

d. Throttle - Max Speed:

This lever, through a push/pull cable, sets the throttle position. Move the lever forward to set the engine speed at maximum RPM.

e. Throttle - Low Idle:

This lever, through a push/pull cable, sets the throttle position. Move the lever rearward to set the engine speed at low idle.



Engine



Throttle

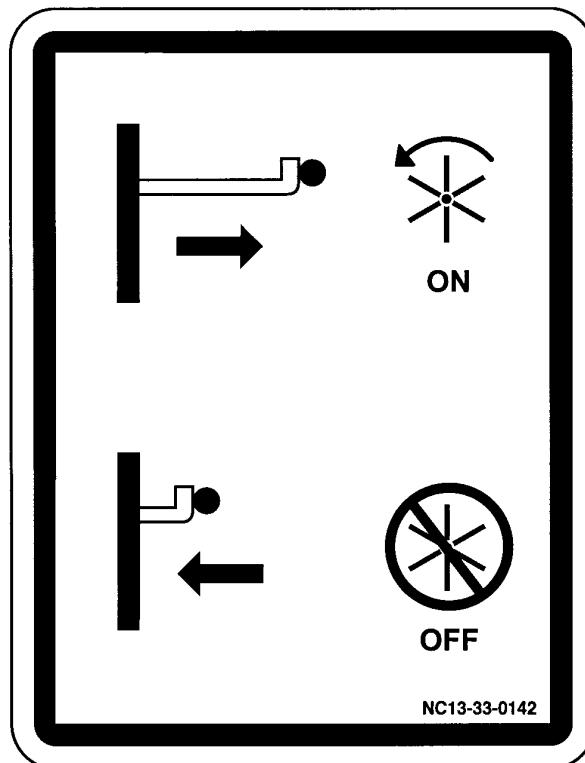
Fig. 5 CONTROLS

2. **Blower Engage:**

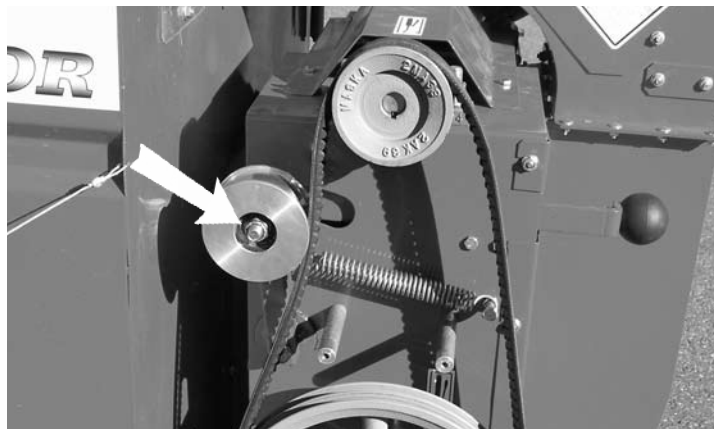
The right side of the frame is equipped with a push/pull lever that is used to set idler pulley position to set the primary belt tension to engage the blower and brush. Push the lever in to engage the drive. Pull out to disengage. Always set the engine at mid-range and feather the control when engaging.



Control Lever



Schematic



Idler Pulley

Fig. 6 DRIVE SYSTEM

3. **Unloading Crank:**
The machine is designed with a manual unloading system. Use the crank to turn the conveying chain located on the bottom of the compartment. Be sure to stow the crank on the left front corner of the compartment.



Unloading



Stowed

Fig. 7 UNLOADING CRANK

5.6 ATTACHING/UNHOOKING

The Leaf and Debris Collector should always be located on a level, dry area that is free of debris and other foreign objects. When attaching the machine to a power unit, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Make sure there is enough room and clearance to safely back up to the machine.
3. While backing up, align the hitch with the drawbar.
4. Stop tractor, set park brake, remove ignition key and wait for all moving parts to stop before dismounting.
5. Use a drawbar pin with provisions for a mechanical retainer. Install the retainer.

NOTE

The machine is supplied with 2 clevises to allow it to connect to an ATV or a tractor. Mount the clevis to the hitch appropriate for the power unit.



Drawbar Pin



Attached

Fig. 8 ATTACHING

6. Attach the safety chain around the drawbar cage to prevent unexpected separation.
7. Raise jack.
8. Pull anchor pin on jack, turn jack to parallel to hitch and repin.

9. **Connect the hydraulic system (Optional hydraulic unload):**

- a. Use a clean cloth or paper towel to clean the dirt and build up from around the couplers and the male tips.
- b. Insert the male tips into the couplers. Make sure they are locked in place.
- c. Route the hoses along the pole and secure in place with clips, tape or plastic ties. Be sure they do not drop on the ground or get pinched when turning. Provide sufficient slack for turning.



Fig. 9 HYDRAULIC HOSES

10. Use the hitch clevis to change brush height above the ground. Tighten mounting bolts to their specified torque if the clevis position is changed.

NOTE

When setting the position of the flail tips above the surface, turn the rotor so the flail mount is pointing straight down.



Mid



High

Fig. 10 CLEVIS POSITIONS

11. Set the length of the hitch to prevent interference between the tire of the power unit and the machine frame.
12. Tighten anchor bolt and set screw to their specified torque when hitch is properly positioned.

IMPORTANT

Turn sharply at a slow speed while watching tire/frame clearance. Extend or retract hitch to provide at least 2-4 inches (50-100 mm) clearance.

13. Reverse the above procedure when unhooking from the tractor.



Clearance (Typical)



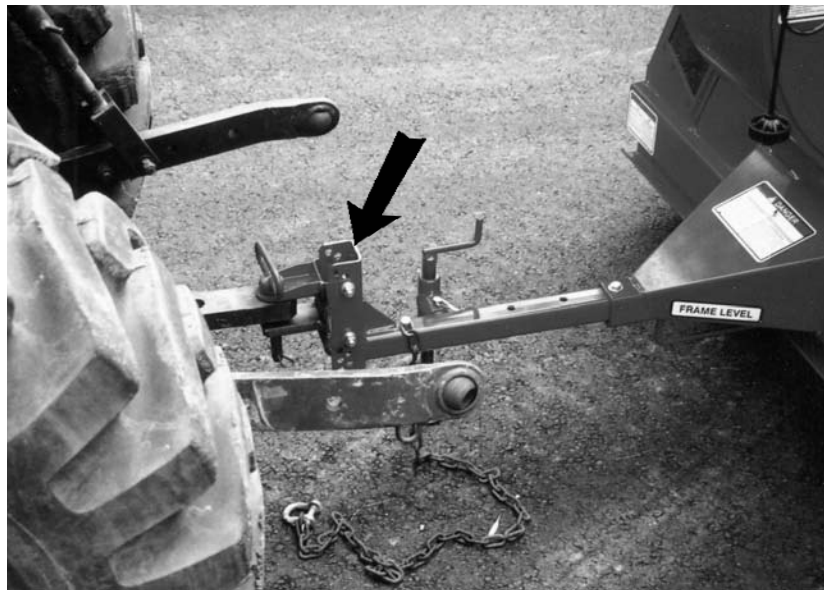
Hitch

Fig. 11 HITCH LENGTH

14. Remove the hitch clevis to change height of the brush or flail above the ground. Tighten mounting bolts to their specified torque if the clevis position is changed.



Mid



High

Fig. 12 CLEVIS POSITIONS

5.7 FIELD OPERATION



OPERATING SAFETY

- Please remember it is important that you read and heed the safety signs on the Leaf and Debris Collector. Clean or replace all safety signs if they cannot be clearly read and understood.
- If a safety shield or guard is removed for any reason, it must be replaced before the machine is again operated.
- Always use two people to handle heavy, unwieldy components during assembly, installation, removal or moving.
- Place all controls in neutral, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- Do not allow riders on the machine or tractor at any time. There is no safe place for any riders.
- Do not allow anyone who is not familiar with the safety rules and operation instructions to use this machine.
- Never allow children to operate or be around this machine.
- Do not reach into blower openings when the engine is running. Install and secure access covers before starting engine.
- Clear the work area of objects which might be picked up and snagged or entangled in the machine.
- Keep hands, feet, hair, jewelry, and clothing away from all moving and/or rotating parts.
- Do not stand behind machine when the discharge door is open and blower is running.
- Do not unhook machine when compartment is full. Hitch may upend when hitch is unhooked.
- Keep hands and feet away from pick-up head when engine is running. Keep others away.

Although the Leaf and Debris Collector is easy to use, each operator should review this section to familiarize himself with the detailed safety and operating procedures. When using the machine, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Review and follow the Pre-Operation Checklist (see Section 5.4).
3. Attach the machine to the tractor (see Section 5.6). Be sure the hitch length is set to provide clearance between the frame and tire.

4. Starting Machine:

- a. Stop tractor engine, set park brake, remove ignition key and wait for all moving parts to stop before dismounting.
- b. Push the control lever in to disengage drive system.
- c. Close the choke if the engine is cold.
- d. Move the throttle to its 1/2 throttle position.
- e. Turn the ignition key fully clockwise to engage starter. Release key when engine starts.
- f. Run the engine for a few minutes to allow it to warm.
- g. Gradually open the choke.
- h. Engage drive system with control lever when engine is at mid speed range.
- i. Increase throttle setting to maximum speed for operation.
- j. Start tractor to start working.



Engine



a. Control Lever

b. Throttle

Fig. 13 PICK-UP HEAD

5. Stopping:

- a. Stop forward movement.
- b. Slow engine RPM.
- c. Disengage machine control.
- d. Stop engine using ignition key.
- e. Stop engine on tow unit, set park brake, remove ignition key before dismounting.

6. Emergency Stopping:

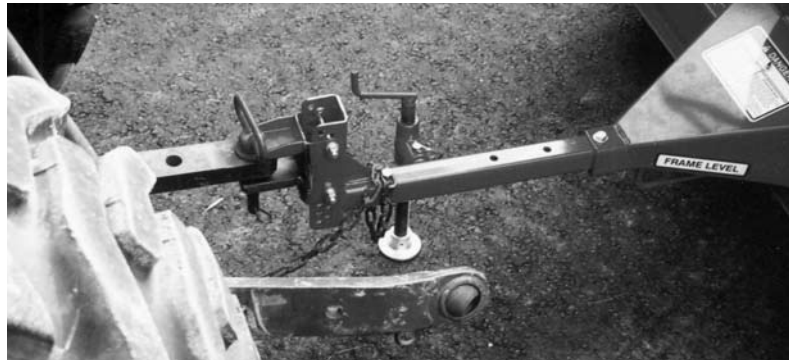
- Stop forward motion and stop machine engine if an emergency occurs. Correct emergency situation and disengage control lever before starting engine and resuming work.
7. Close the rear door and be sure the door is securely latched before starting to work.
 8. Drive to the working area.

9. **Operating Height:**

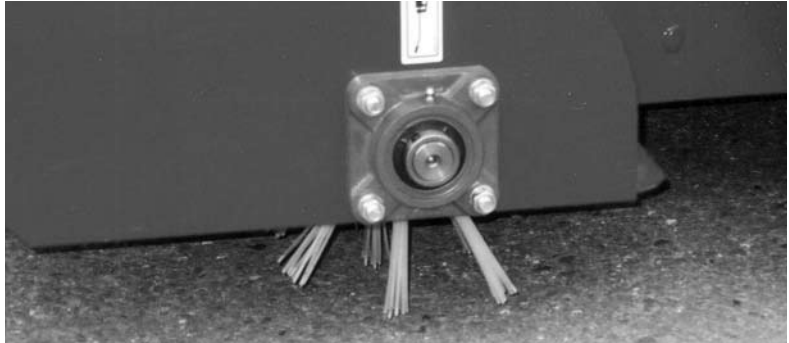
- a. Move the machine to a hard level surface area.
- b. Use the hitch clevis position to set the height of the flails or brush tips above the surface.
- c. Set to between 3/8 inch and 5/8 inch (9 mm and 15 mm) above the surface to start.
- d. Raise if the engine is pulling down or if scalping is occurring.
- e. Lower if the working area is not being picked up completely.

NOTE

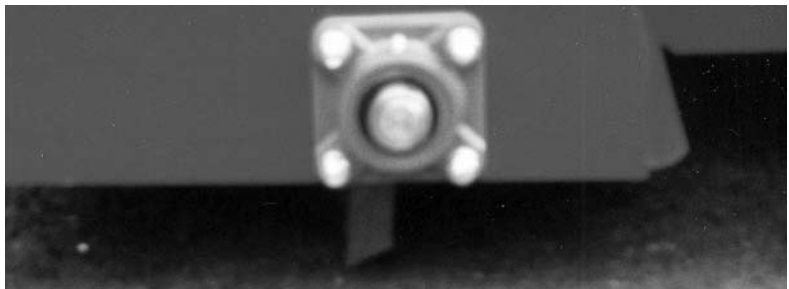
If the frame is set too low, the tips of the brush or flails will contact the grass and consume a lot of power. Set so the ends just dislodge the leaves or debris so they can be picked up.



Clevis



Brush



Flail

Fig. 14 OPERATING HEIGHT

10. **Travel Speed:**

Set the travel speed appropriate for the job being done. Travel faster if all the debris is being picked up. Slow down if some debris is not being picked up. Use the sight glasses on the front of the pick-up to monitor the job being done. Material should always be moving across the glass when traveling at the correct ground speed. When the movement stops, the Collector is full or plugging.



Fig. 15 WORKING

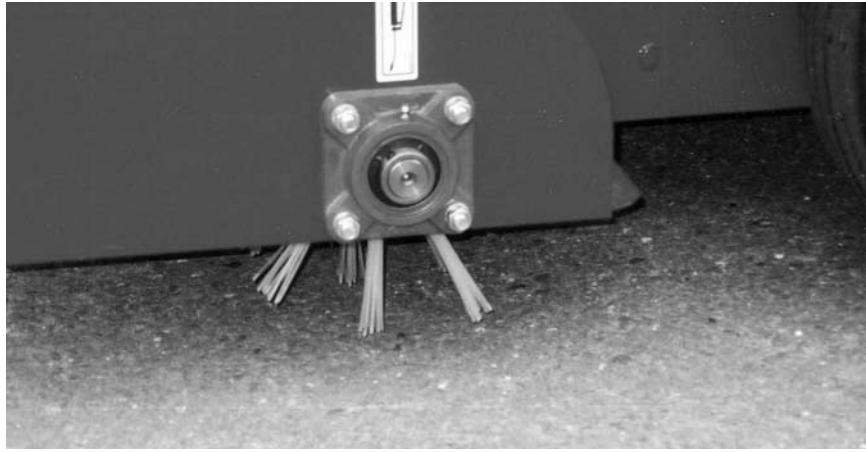
11. **Rotors:**

Two types of rotors are available with the machine:

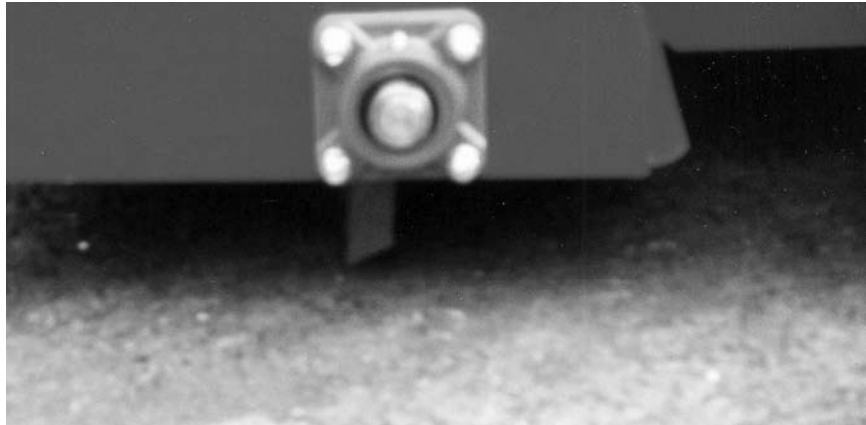
- a. Brush.
- b. Flails.

Use the brush when picking up loose material on top of a grass surface. It acts like a gentle dethatcher on grass.

Use the flail rotor when the leaves or debris is matted or compacted and the material needs to be dislodged or broken loose prior to being picked up. It also works well to pick up pine needles and leaves in the fall.



Brushes



Flail

Fig. 16 ROTORS

12. **Screen:**

Each machine is equipped from the factory with a 1/2 inch screen mounted in the channels above the compartment.

Normally the screen will not get plugged with material during operation. However if it does, tap the screen to dislodge material or if it is caked on, use a garden hose to wash it off.

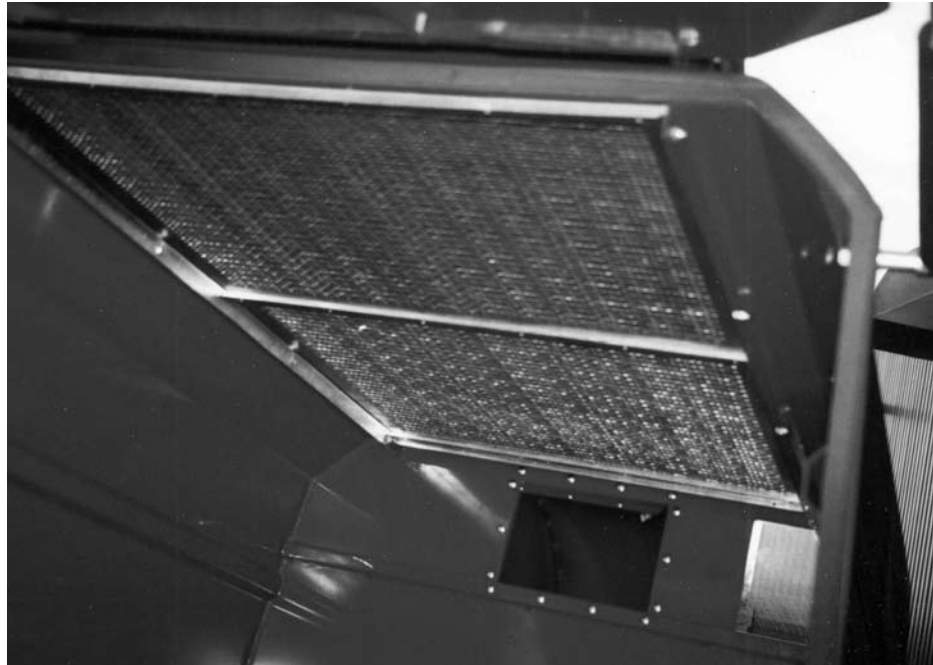


Fig. 17 SCREEN

Always close and latch the rear access door before starting to work.

13. **Filled:**

The operator will know when the compartment is full by watching the window in the upper left corner of the compartment. Also it will not pick up more debris when the compartment is full. Take to the unloading area.

IMPORTANT

Do not overfill. If the compartment is overfilled, the blower and pick-up head can plug.




Fig. 18 WINDOW


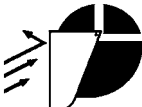
14. Discharge Door:

Do not open the discharge door if anyone is next to the back of the machine. The blower moves a large amount of air through the machine that carries trash and debris with it. This debris can be propelled fast enough to injure anyone in its path.

Stop the blower whenever anyone must be next to discharge door or inside compartment.


Release the latch on the left rear corner of the compartment to open the door to unload. Swing the door fully forward parallel to the side of the compartment when unloading.

**DANGER**



THROWN OBJECT HAZARD
To prevent serious injury or death from a thrown object:

1. Do not open unloading door while machine is running.
2. Shut off engine and place all controls in neutral before opening door.
3. Keep others away.

**DANGER**

RISQUE D'OBJETS PROJETÉS
À défaut de suivre ces instructions, cela pourrait entraîner de sérieuses blessures ou même la mort.

1. Il est strictement interdit de vous placer derrière la machine lorsque la porte est ouverte et que le moteur est en marche.
2. Le souffleur peut propulser des objets à une vitesse telle qu'elle pourrait blesser une personne lorsque la porte est ouverte.
3. Garder les gens éloignés de la machine.



Latch



Opened

Fig. 19 DISCHARGE DOOR

15. Unloading:

Drive to the unloading area:

- a. Open rear latch.
- b. Swing door completely open.
- c. Use the unloading crank to turn the unloading conveyor.
- d. Tap the screen to dislodge any loose material.
- e. Move the machine forward if required to completely empty the compartment.
- f. Disconnect unloading crank and store on the left front corner of the compartment.
- g. Close and latch the door before resuming work.



Starting



Unloaded



Crank Location


Fig. 20 UNLOADING


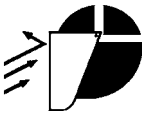
16. Discharge Door (Optional Hydraulic Unloading):

Do not open the discharge door if anyone is next to the back of the machine. The blower moves a large amount of air through the machine that carries trash and debris with it. This debris can be propelled fast enough to injure anyone in its path.

Stop the blower whenever anyone must be next to discharge door or inside compartment.


Pull on the rope on the front left corner to release the latch on the rear corners of the compartment to open the door to unload. Swing the door fully up when unloading.

**DANGER**



THROWN OBJECT HAZARD
To prevent serious injury or death from a thrown object:

1. Do not open unloading door while machine is running.
2. Shut off engine and place all controls in neutral before opening door.
3. Keep others away.

**DANGER**

RISQUE D'OBJETS PROJÉTÉS
À défaut de suivre ces instructions, cela pourrait entraîner de sérieuses blessures ou même la mort.

1. Il est strictement interdit de vous placer derrière la machine lorsque la porte est ouverte et que le moteur est en marche.
2. Le souffleur peut propulser des objets à une vitesse telle qu'elle pourrait blesser une personne lorsque la porte est ouverte.
3. Garder les gens éloignés de la machine.



Rope



Opened

Fig. 21 DISCHARGE DOOR

17. Unloading (Optional Hydraulic Unloading):

Drive to the unloading area:

- a. Open rear latch.
- b. Swing door completely open.
- c. Use the hydraulic system to turn the unloading conveyor on the bottom of the compartment.
- d. Tap the screen to dislodge any loose material.
- e. Move the machine forward if required to completely empty the compartment.
- f. Place the hydraulic system in the off position.
- g. Close and latch the door before resuming work.



Unlatching Rope



Door Opened



Unloaded

Fig. 22 UNLOADING

18. Slopes:

The machine can have a high center of gravity that can lead to tipping on slopes or hills. It is recommended that the machine always be operated up or down slopes rather than across. On steep slopes with a machine that is almost full, it is recommended that additional loading be done when driving down the hill. Do not risk getting stuck or tipping over.



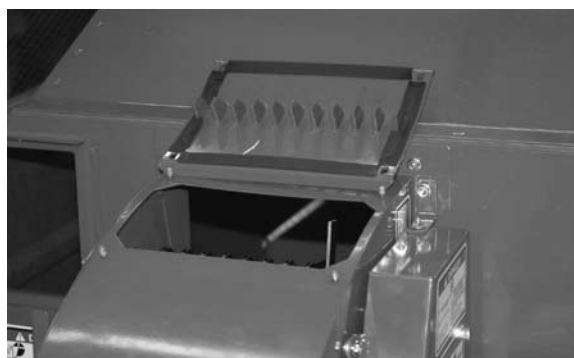
Fig. 23 SLOPES

19. Chopper:

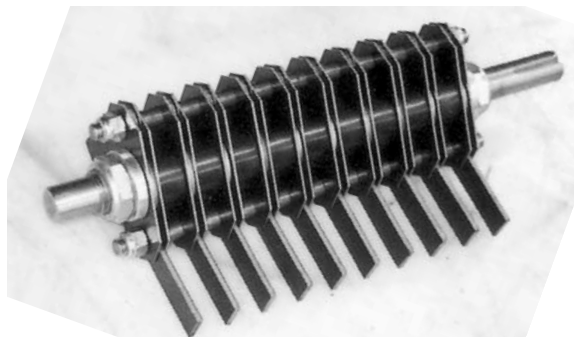
The duct between the blower and the debris compartment is designed to accept a chopper for cutting debris into smaller pieces. It can be installed at the factory or after it has been used. Check frequently for entangled material and be sure the blades are sharp.



Installed



Open



Rotor

Fig. 24 CHOPPER

20. **Turning:**

The hitch is designed with 3 different length positions. Set the hitch length to provide clearance between the machine frame and tire on the power unit. Do not allow the tire to hit the frame when turning.





Fig. 25 TIRE CLEARANCE (TYPICAL)

21. Unplugging:

Follow this procedure when unplugging.

- a. Stop engine, set park brake, remove ignition key and wait for all moving parts to stop moving.
- b. Use the ignition key to stop the engine on the machine. Wait for all moving parts to stop.
- c. Open rear door and clean out blower discharge.
- d. Remove access doors and clean out ducts.


 **DANGER**



BLOWER BLADE HAZARD

To prevent serious injury or death from blower blade hazard:

1. Do not open blower access doors when the engine is running.
2. Stop engine, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging machine.
3. Do not operate with access doors removed.

 **DANGER**

PROPULSEUR EN ROTATION RISQUE DE BLESSURE GRAVE

À défaut de suivre ces instructions, cela pourrait entraîner de sérieuses blessures ou même la mort.

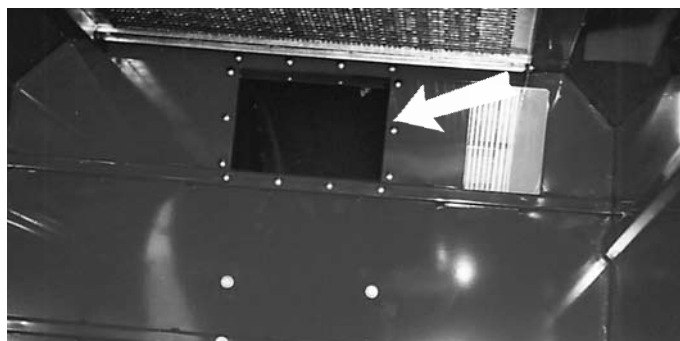
1. Ne jamais ouvrir les portes d'accès du souffleur lorsque le moteur est en marche.
2. Arrêter le moteur, placer tous les contrôles à la position "neutre", enlever la clé du contact et attendre que toutes les places soient au point mort avant de faire tout ajustement, réparation ou de débloquer la machine.
3. Ne jamais opérer sans portes d'accès.



Right Side



Left Side



Blower Discharge

Fig. 26 UNPLUGGING

- e. Install and secure access doors.
- f. Close and latch rear door.

22. **Picking Up:**

Leaves and debris are dislodged by the brush and flails as the machine moves across the working area. Observe the access windows on each side of the pick-up to see the flow of material. All material should move smoothly through the area behind the windows.

When material stops flowing past the windows, stop the forward motion and set engine speed at low idle. In most cases, the material will fall back to the ground. Back up 3 feet (1 m) to clear the pick-up head. Slowly increase blower speed to pick up material and clear the plug.

Stop the engine on the machine if the flow stops. Open the window and clean out the duct prior to resuming work.



Windows



Opening (Typical)

Fig. 27 PICK-UP

23. **Unhooking:**

When the compartment is full, the center of gravity is shifted behind the wheels. As a result, the hitch will lift the rear of the power unit. If the machine is unhooked, the hitch will come up and the machine will upend.

Do not unhook the machine when the compartment is filled to prevent upending.



Fig. 28 UPENDING

IMPORTANT

Support the rear frame with large blocks if it is necessary to unhook when the compartment is filled.

24. **Moving:**

The Collector is not designed to be driven on a public road. It is not equipped with the required lights and reflectors for road travel.

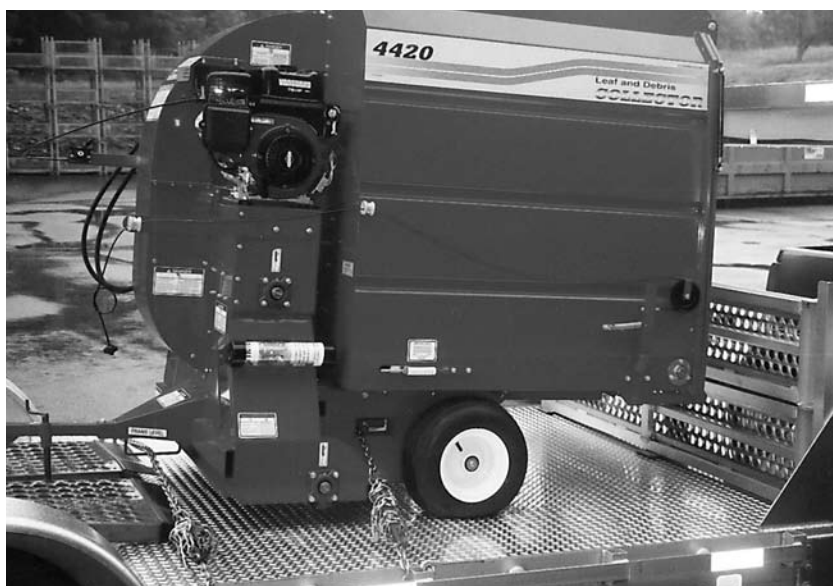
Drive the unit from the collecting area to the unloading area.

Load the unit on a trailer and tie down when it is necessary to transport on a public road.

Do not drive faster than 10 mph (16 kph) at any time to maintain control of the unit. It can be difficult to control or stop a unit that is filled with material.



Driving



Transporting

Fig. 29 MOVING

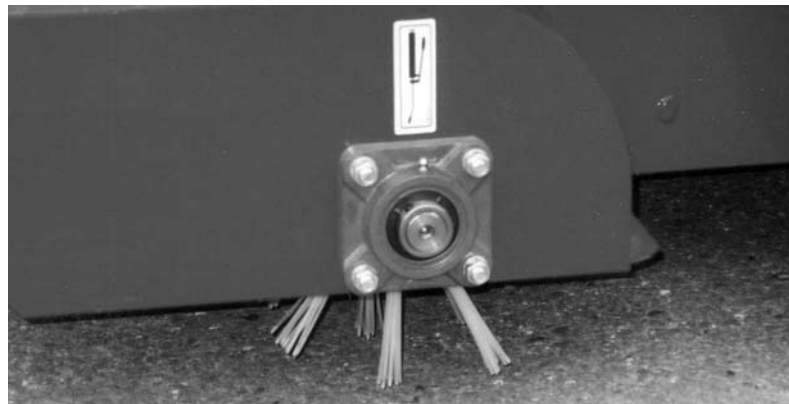
25. Operating Hints:

- a. Do not allow riders.
- b. Travel at 1 to 4 mph (2 to 6 kph) to get the best results. Observe the job being done to determine the best travel speed. Increase the speed if all the material is being picked up. Slow down if some is being left.

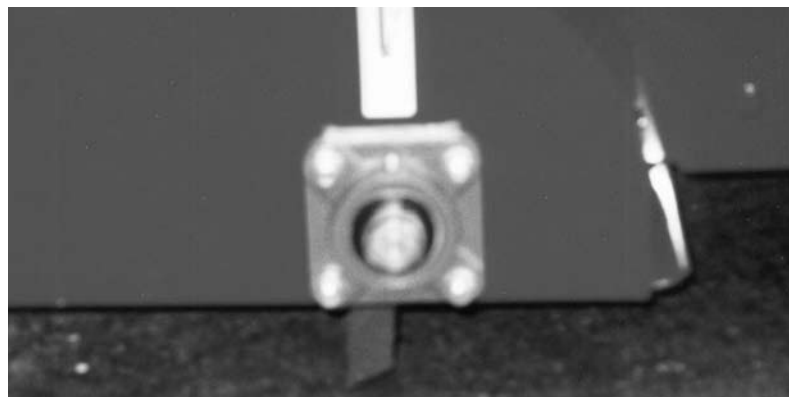


Fig. 30 WORKING

- c. Use the hitch clevis to set the height of brush or flails above the ground. Generally a height of 3/8 to 5/8 inches (9 to 15 mm) gives the best results. Raise the frame if the grass is being scalped.
- d. Use the flail for picking up loose leaves and other loose material. Use the brush to dislodge any compacted or matted material.
- e. Do not unhook a loaded machine to prevent upending.
- f. Watch the flow of material past the windows on the pick-up to determine the best travel speed. Material should always be moving past the windows. When it stops moving, the compartment is full or the machine is plugging.



Brush



Flail

Fig. 31 HEIGHT

5.8 TRANSPORTING



TRANSPORT SAFETY

- The machine is not designed or equipped to travel on public roads. Do not drive or transport on public roads
- Use a trailer when moving from place to place.
- Do not exceed 16 kph (10 mph) when moving.
- Plan your route to avoid rough terrain.
- Always use a power unit of less than 20 horsepower to prevent overloading the unit.
- Use a drawbar pin with provisions for a retainer. Install the retainer. Attach safety chain between tractor and machine before moving.
- Do not drink and drive.
- Turn into curves or go up or down hills only at a low speed and at a gradual steering angle. Make certain that at least 20% of the tractor's weight is on the front wheels to maintain safe steering. Slow down on rough or uneven surfaces.
- Never allow riders on either tractor or machine.

When transporting the machine, review and follow these instructions:

1. Clear the area of bystanders, especially small children.
2. Do not drive on a public road as the machine is not equipped with the required lights and reflectors.
3. Use a trailer to move the Collector from work-site to work-site.
4. Insure that the machine is securely attached to the tractor with a mechanical retainer through the drawbar pin. Always use a safety chain between the tractor and machine.
5. Do not allow riders.
6. Never exceed a safe travel speed. Never travel faster than 10 mph (16 km/h).
7. Always shift to a lower gear when going down hill to use the engine as a restraining force.
8. Apply the brakes carefully to prevent jackknifing.
9. Never disengage tractor drivetrain and coast down hills. Always keep tractor in gear.



Driving



Transporting

Fig. 32 MOVING

5.9 STORAGE



STORAGE SAFETY

- Store the unit in an area away from human activity.
- Do not permit children to play on or around the stored machine.
- Store the unit in a dry, level area. Support the frame with planks if required.

At the end of the season, the machine should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary down time at the beginning of the next season. Follow this procedure:

1. Thoroughly wash the machine with a pressure washer or water hose to remove all dirt, mud, debris or residue.
2. Make sure all the water drains out of the compartment and blower.
3. Lubricate all grease points to remove any water residue from washing.
4. Coat the unloading drive chain, conveying chain and coupler between the engine and blower drive with a good quality chain lubricant to prevent rusting.
5. Remove any material that has become entangled around any moving part.
6. Run the machine for a couple of minutes at low RPM to dry the inside of the blower.
7. Touch up all paint nicks and scratches to prevent rusting.
8. Move the machine to its storage area.
9. Store in a dry, level spot.
10. Store in an enclosed building if possible. If space is not available, cover with a waterproof tarpaulin and tie down securely.
11. Unhook from the tractor (see Section 5.8).
12. Place planks under the jack for added support if required.
13. Store in an area away from human activity.
14. Do not allow children to play around the stored unit.



Fig. 33 STORED

6 SERVICE AND MAINTENANCE



MAINTENANCE SAFETY

- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
- 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.
- Make sure there is plenty of ventilation. Never operate the engine of the towing vehicle in a closed building. The exhaust fumes may cause asphyxiation.
- Before working on this machine, shut off the engine, set the brake, and turn fuel valve off.
- Never work under equipment unless it is blocked securely.
- Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance work. Use heavy gloves when handling sharp components.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
- Periodically tighten all bolts, nuts and screws and check that all cotter pins are properly installed to ensure unit is in a safe condition.
- When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.

6.1 SERVICE

6.1.1 FLUIDS AND LUBRICANTS

1. **Grease:**
Use an SAE multipurpose high temperature grease with extreme pressure (EP) performance. Also acceptable is an SAE multipurpose lithium base grease.
2. **Engine Oil:**
Use an SAE 10W30 or 10W40 multi-viscosity oil meeting the American Petroleum Institute (API) classification of SF, SG, SH or SJ for normal operating temperatures. Consult the engine manual for unusual operating conditions. Do not mix oil types or viscosities.

Crankcase Capacity: 1.6 L (1.7 US qt)

3. **Engine Gasoline:**
Use a standard automotive super unleaded gasoline for all operating conditions.

Fuel Tank Capacity: 3.5 US gal (15 liter)
4. **Storing Lubricants:**
Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.

6.1.2 GREASING

Use the Maintenance Checklist provided to keep a record of all scheduled maintenance.

1. Use a hand-held grease gun for all greasing.
2. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
3. Replace and repair broken fittings immediately.
4. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

6.1.3 SERVICING INTERVALS

The period recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication or oil changes.

8 Hours or Daily


1. Check engine oil level (gas engine only).
2. Check fuel level.



Fig. 34 ENGINE

40 Hours or Weekly

1. Check blower drive belt tension. Be sure spring has some gap between the coils when the drive is engaged.
2. Check rotor drive belt tension. Move the idler pulley to set the belt tension.

**WARNING**

Machine is shown with guard removed for illustrative purposes only. Do not operate machine with guard removed.

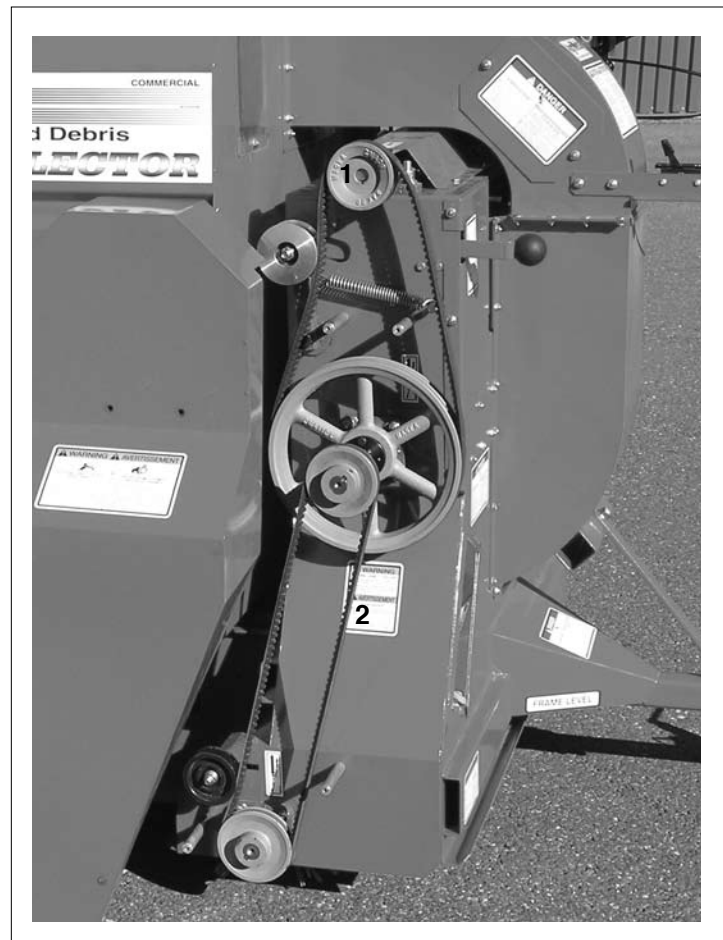


Fig. 35 DRIVE SYSTEM TENSION

3. Check unloading drive roller chain tension.

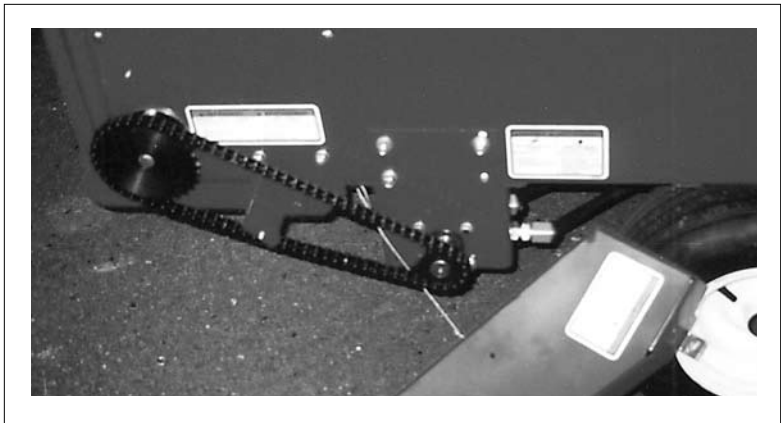


Fig. 36 ROLLER CHAIN

4. Clean engine air cleaner.



Fig. 37 AIR CLEANER

5. Change engine oil.
6. Check tire pressure.
7. Check brush and flail condition.



Fig. 38 DRAIN PLUG

8. Clean screen.

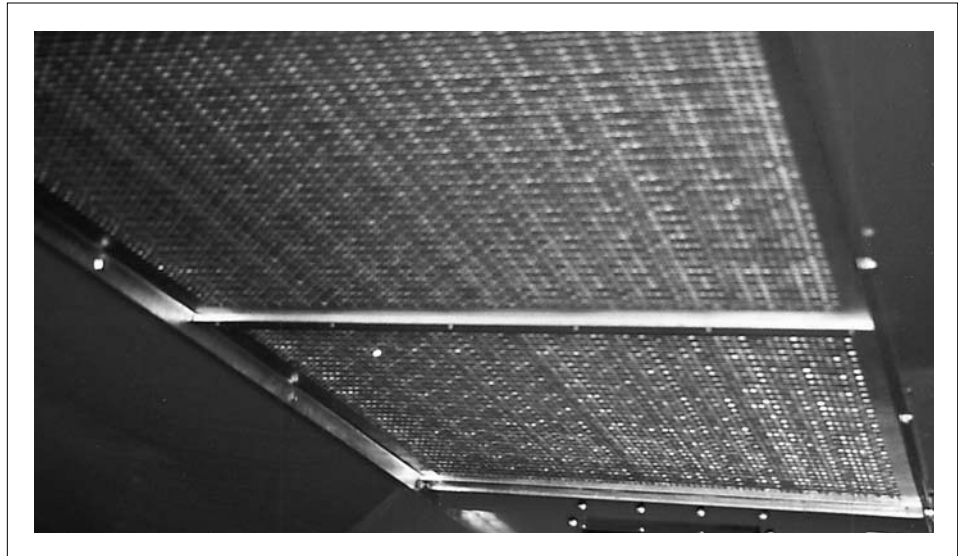


Fig. 39 SCREEN

6 Months

1. Grease bearings:

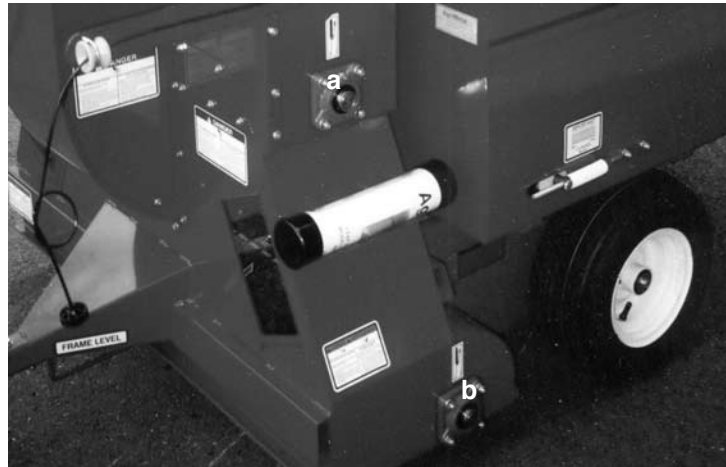
- a. Blower shaft.
- b. Pick-up shaft.
- c. Input drive shaft.

IMPORTANT
Do not over grease.



WARNING

Machine is shown with guard removed for illustrative purposes only. Do not operate machine with guard removed.



Left Side



Right Side

Fig. 40 BEARINGS

2. Lubricate unloading drive roller chain.



Fig. 41 ROLLER CHAIN

Annually

1. Clean machine.



Fig. 42 MACHINE

6.1.4 SERVICE RECORD

See Lubrication and Maintenance sections for details of service. Copy this page to continue record.

ACTION CODE:	CK	CHECK	CL	CLEAN
	G	GREASE	CH	CHANGE

[illegible]

6.2 MAINTENANCE

By following a careful service and maintenance program for your machine, you will enjoy many years of trouble-free operation.

6.2.1 CLEANING AIR CLEANER

1. Review the Operator's Manual for the engine.
2. Place all controls in neutral, stop engine and remove ignition key before maintaining.
3. Remove the cover over the air cleaner.
4. Remove the foam from the engine.
5. Use an air hose to blow the dust and debris out of the foam.
6. Install foam.
7. Install and secure the cover.



Fig. 43 AIR CLEANER

6.2.2 CHANGING ENGINE OIL

1. Review the Operator's Manual for the engine.
2. Place all controls in neutral, stop engine and remove ignition key before maintaining.
3. Allow the engine to cool before changing the oil. Hot oil can cause burns if it contacts exposed skin. It is best to change oil while the engine is warm to keep the contaminants in suspension.
4. Place a pan under the drain plug.
5. Remove the drain and allow the oil to drain for 10 minutes.
6. Install and tighten the drain plug.
7. Dispose of the used oil in an approved container.
8. Fill the crankcase with specified oil.
9. Run the engine for 1-2 minutes and check for oil leaks.
10. If leaks are found around the drain plug, tighten slightly.
11. Check engine oil level. Top up as required.



Fig. 44 ENGINE

6.2.3 DRIVE BELT TENSION AND ALIGNMENT

A set of V belts transmits rotational power to the blower and pick-up head. They must be kept properly tensioned and the pulleys aligned to obtain the expected performance and life.

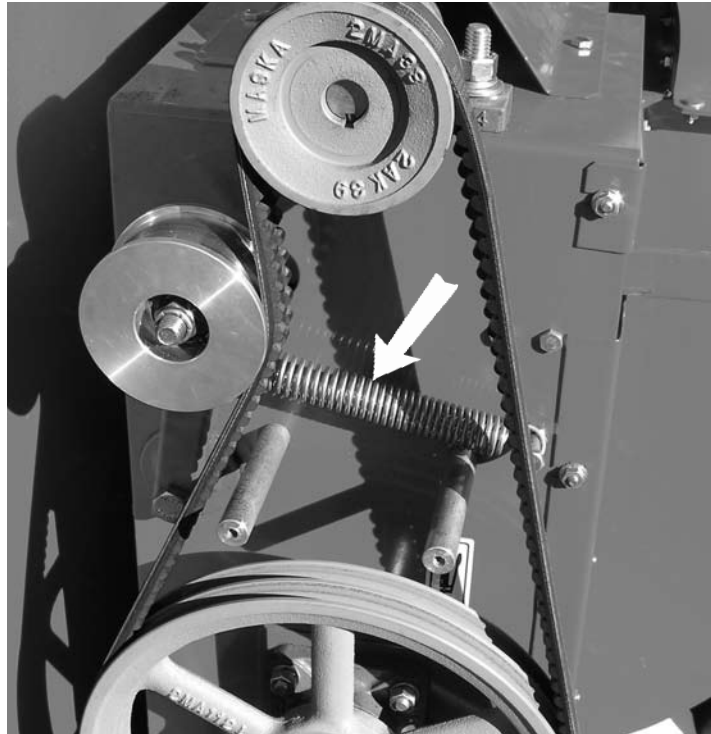
To check the tension and alignment, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Place all controls in neutral, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before dismounting.
4. Remove guard over belts.
5. The blower drive belt tension is set by a spring loaded idler:
 - a. The belt should be set so that it does not slip when operating.
 - b. The tension spring should have at least 3 mm (1/8 inch) space between the coils to provide the required tension when engaged.
 - c. Move the spring anchor bolt to a new position to provide the required coil spacing if the coil spacing is less than 3 mm (1/8 inch) when engaged.

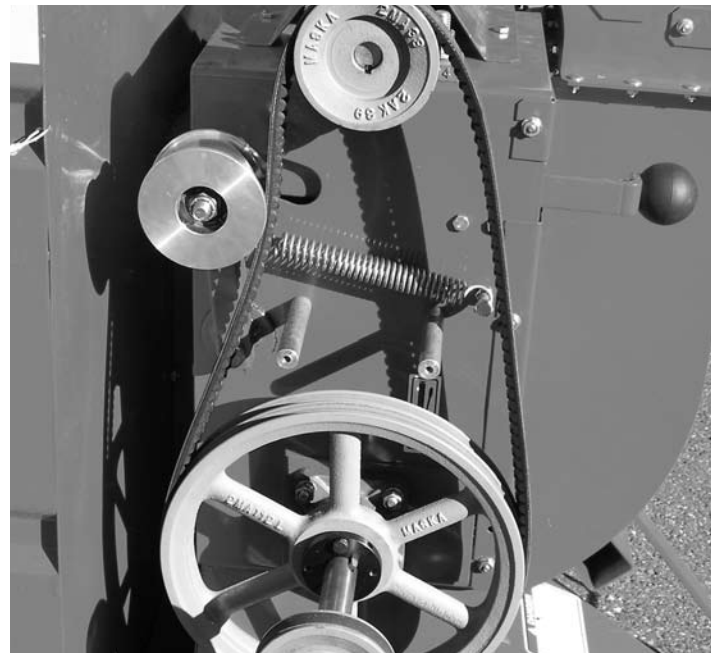


WARNING

Machine is shown with guard removed for illustrative purposes only. Do not operate machine with guard removed.



Engaged



Disengaged

Fig. 45 TENSION SPRING

6. **Pick-up drive belt:**

- a. The idler pulley should be positioned so the pick-up drive belt does not slip when operating.
- b. Loosen idler pulley anchor bolt and tap pulley into its new required position.
- c. Tighten anchor bolt to its specified torque.

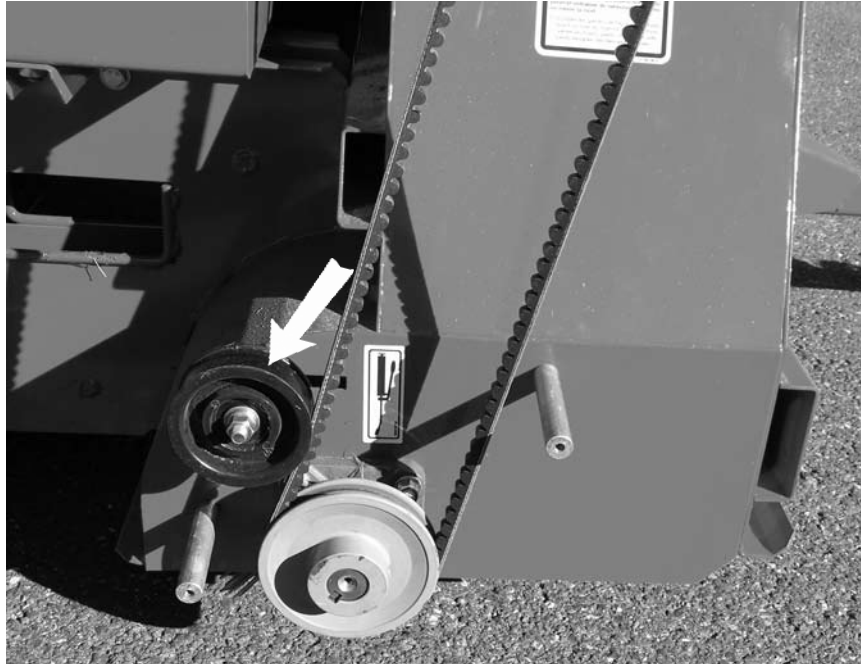


Fig. 46 IDLER PULLEY

7. Always check and maintain pulley alignment. Lay a straight edge across the pulley faces to check the alignment. Adjust alignment if pulley faces vary more than 1/32 inch (.7 mm).



WARNING

Machine is shown with guard removed for illustrative purposes only. Do not operate machine with guard removed.



Fig. 47 ALIGNMENT (TYPICAL)

7 TROUBLE SHOOTING

The AgriMetal Leaf and Debris Collector is a large portable compartment with a rotor for picking up trash and debris. It is a simple system that requires minimal maintenance.

In the following Trouble Shooting section, we have listed many of the problems, causes and solutions that can help you to solve the problems that you might encounter.

If you encounter a problem that is difficult to solve, even after having read through this trouble shooting section, please call your local distributor or dealer. Before you call, please have this Operator's Manual and the serial number of your machine at hand.

PROBLEM	CAUSE	SOLUTION
No trash is being picked up.	No suction.	Loose blower belt. Set belt tension.
		Compartment full. Empty machine.
	Plugged blower/ducts.	Unplug blower and ducts.
	Screen plugged.	Clean screen.
	Pick-Up head to high.	Lower hitch clevis and pick-up head.
Machine vibrates.	Blower out of balance.	Stop machine. Inspect impeller. Repair or replace as required.
	Loose pulley.	Tighten pulley hardware.
	Blower worn out.	Replace the impeller.
	Debris tangled in blower.	Remove material from blower.
	Debris tangled in brush.	Remove material from brush.
Scalping turf.	Machine stopped.	Keep moving.
	Machine too low.	Raise pick-up head.

8 SPECIFICATIONS

8.1 MECHANICAL

	4420
PICK-UP HEAD WIDTH	44" (112 CM)
HOPPER CAPACITY	2 CU. YARD
MACHINE LENGTH	96" (244 CM)
MACHINE WIDTH	51" (130 CM)
MACHINE HEIGHT	68" (173 CM)
MACHINE WEIGHT	920 LBS (418 KG)
DOUBLE SIDES IMPELLER	STANDARD
IMPELLER SIZE	22 1/2" X 9" X 1/4" (57 CM X 23 CM X .64 MM)
# OF BLADES	12
IMPELLER RPM	1245 RPM
FLAIL NYLON HAMMER	STANDARD
BRISTLE NYLON BRUSH	OPTIONAL
HYDRAULIC	OPTIONAL
UNLOADING CONVEYOR MANUAL	STANDARD
UNLOADING CONVEYOR HITCH	ADJUSTABLE DRAW BAR
TIRE DIMENSION	TURF SAVER 16 X 6.5 -8
VANGUARD ENGINE	7.5 HP ELECTRIC START
SHIPPING DIMENSION	78" X 51" X 74" HEIGHT
LENGTH/WIDTH/HEIGHT	(198 X 130 X 188 CM HEIGHT)
SHIPPING WEIGHT	980 LBS (445 KG)
TRACTOR SIZE REQUIRED	900 LBS (410 KG)

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

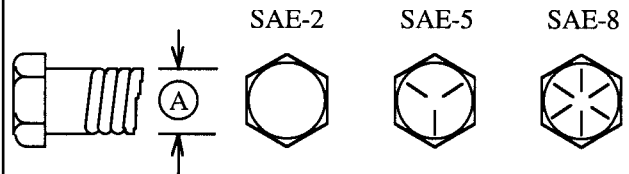
8.2 BOLT TORQUE

CHECKING BOLT TORQUE

The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

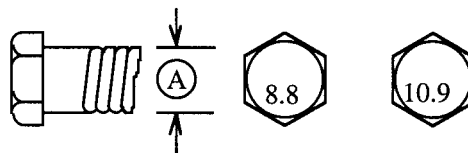
ENGLISH TORQUE SPECIFICATIONS

Bolt Diameter "A"	Bolt Torque *					
	SAE 2		SAE 5		SAE 8	
	N.m	(lb-ft)	N.m	(lb-ft)	N.m	(lb-ft)
1/4"	8	(6)	12	(9)	17	(12)
5/16"	13	(10)	25	(19)	36	(27)
3/8"	27	(20)	45	(33)	63	(45)
7/16"	41	(30)	72	(53)	100	(75)
1/2"	61	(45)	110	(80)	155	(115)
9/16"	95	(70)	155	(115)	220	(165)
5/8"	128	(95)	215	(160)	305	(220)
3/4"	225	(165)	390	(290)	540	(400)
7/8"	230	(170)	570	(420)	880	(650)
1"	345	(225)	850	(630)	1320	(970)



METRIC TORQUE SPECIFICATIONS

Bolt Diameter "A"	Bolt Torque*			
	8.8		10.9	
	(N.m)	(lb-ft)	(N.m)	(lb-ft)
M3	.5	.4	1.8	1.3
M4	3	2.2	4.5	3.3
M5	6	4	9	7
M6	10	7	15	11
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	225	166	310	229
M20	435	321	610	450
M24	750	553	1050	774
M30	1495	1103	2100	1550
M36	2600	1917	3675	2710



Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

* Torque value for bolts and capscrews are identified by their head markings.

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