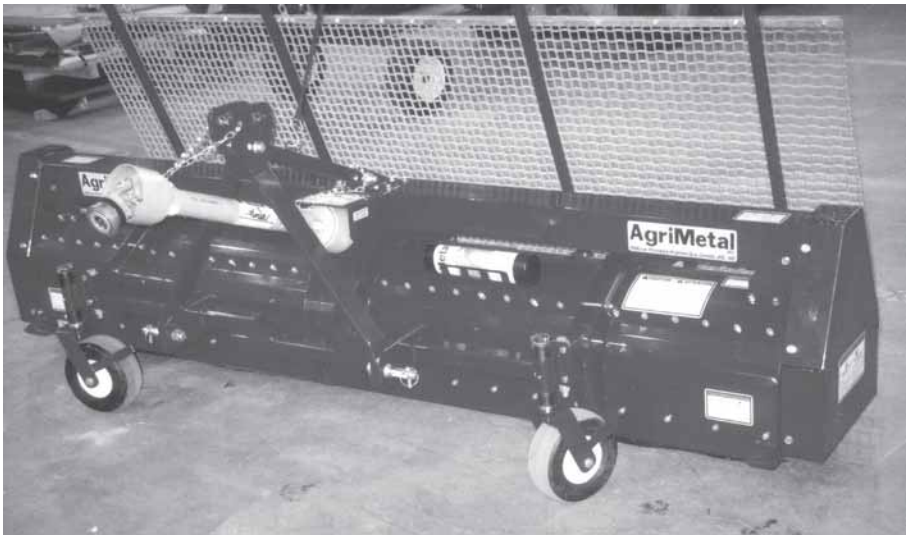
1 INTRODUCTION

Congratulations on your choice of an AgriMetal P.T.O. Core Breaker 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 Core Breaker 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 Models 690 and 930 Core Breakers. Differrences are covered where appropri-



ate. Use the Table of Contents or Index as a guide to locate required information.

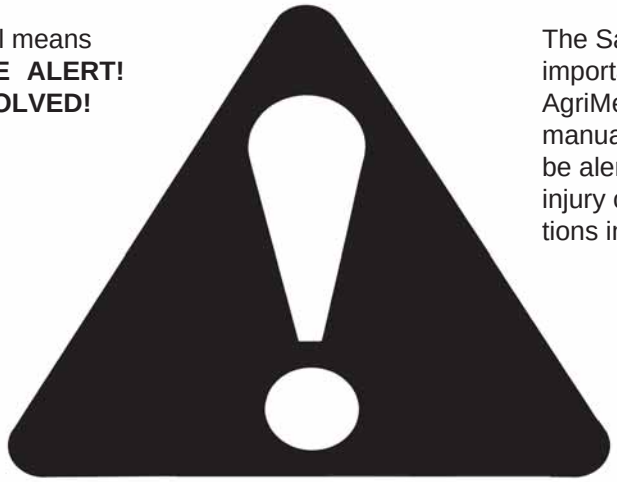
Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your AgriMetal Dealer or Distributor if you need assistance, information or additional copies of the manuals.

OPERATOR ORIENTATION - The directions left, right, front and rear, as mentioned throughout this manual, are as seen from 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 Core Breaker 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:

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.

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

If you have any questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer or 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 Core Breaker. **YOU** must ensure that you and anyone else who is going to operate, maintain or work around the Core Breaker 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 Core Breaker.

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.

- Core Breaker 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.

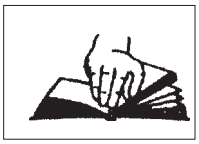
- A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.

- 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!

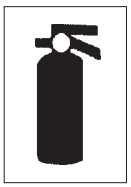
2.1 GENERAL SAFETY

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



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.



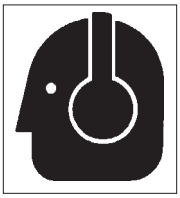
4. Do not allow riders.

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
   - Hearing protection

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 Core Breaker.

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 power unit, engine and machine Manuals. Pay close attention to the Safety Signs affixed to the power unit 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 power unit, 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 power unit and machine quickly in an emergency. Read this manual and the one provided with your power unit.

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.

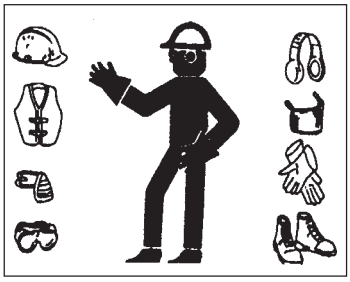
- Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.

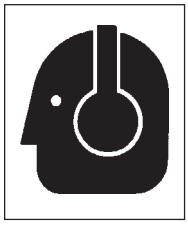
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.

- 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 power unit and machine until you have read and completely understand this manual, the Power Unit Operator's Manual, and each of the Safety Messages found on the safety signs on the power unit 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!
Power Units 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 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.

4. Cover with a weather-proof tarpaulin and tie down securely.

2.7 OPERATING SAFETY

1. Please remember it is important that you read and heed the safety signs on the Core Breaker. 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 Core Breaker 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 power unit and machine while machine 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. Use extreme care during travel. Slow down on turns and watch out for bumps.

11. 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.

12. Do not allow riders on the machine or power unit at any time. There is no safe place for any riders.

13. Before you operate the machine, check over all pins, bolts, and connections to be sure all are securely in place. Replace any damaged or worn parts immediately.

14. Keep all hydraulic lines, fittings and couplers tight and free of leaks before using.

15. Do not allow anyone who is not familiar with the safety rules and operation instructions to use this machine.

16. Never allow children to operate or be around this machine.

17. Do not place hands or feet under the machine at any time. Keep others away also.

18. Clear the work area of objects which might be picked up and snagged or entangled in the machine.

19. Keep hands, feet, hair, jewelry, and clothing away from all moving and/or rotating parts.

2.8 TRANSPORT SAFETY

1. Comply with state and local laws governing highway safety and movement of machinery on public roads.

2. The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.

3. At all times when driving the power unit and equipment on the road or highway under 20 mph (32 kph), use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem. Do not exceed 20 mph (32 kph). Reduce speed on rough roads and surfaces.

4. Plan your route to avoid heavy traffic.

5. Use draw bar pins with provisions for a retainer. Install the retainer.

6. Do not drink and drive.

7. Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc. Watch for traffic when operating near or crossing roadways.

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 power unit's weight is on the front wheels to maintain safe steerage. Slow down on rough or uneven surfaces.

9. Never allow riders on either tractor or machine.

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 an engine in a closed building. The exhaust fumes may cause asphyxiation.

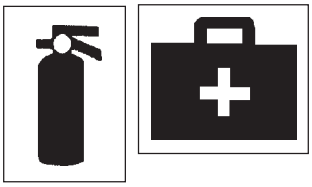
4. Before working on this machine, shut off the engine, set the brakes, and remove the ignition keys.

5. Never work under equipment unless it is blocked securely.

6. Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance work.

7. 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.

8. A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.



9. Periodically tighten all bolts, nuts and screws and check that all cotter pins are properly installed to ensure unit is in a safe condition.

10. When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.

2.10 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 Core Breaker 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.

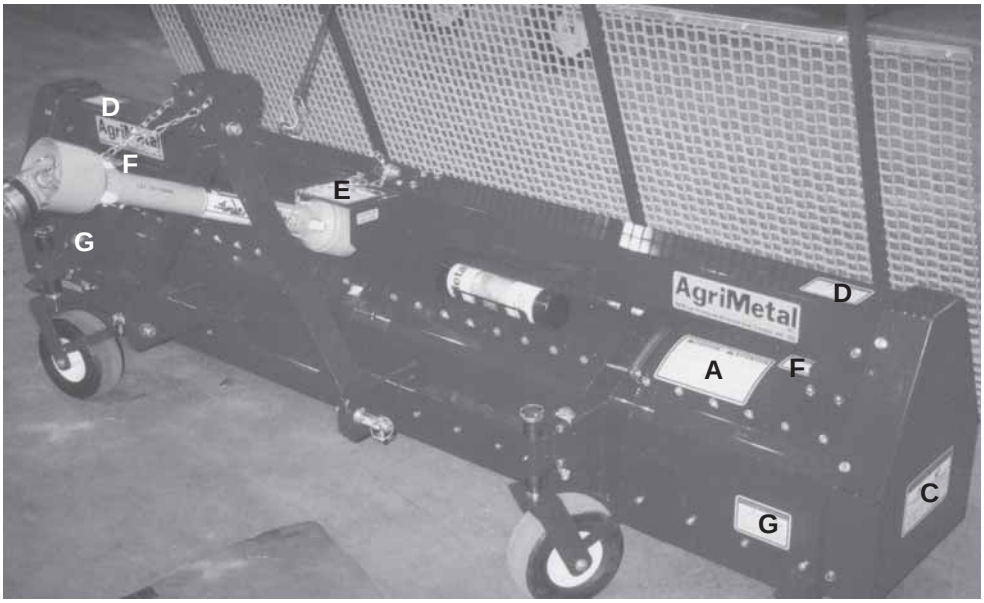
SIGN-OFF FORM

DATE	EMPLOYEES SIGNATURE	EMPLOYERS SIGNATURE

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

1. Read Operator's Manual before starting.
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 the machine.
3. Do not allow riders on the machine or tractor.
4. Keep guards and shields in place and secure.
5. Keep hands, feet, hair and clothing away from moving parts. Keep others away.
6. Review safety instructions annually.

ATTENTION

1. Lire attentivent le manuel d'opération avant la mise en marche.
2. Arréter 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.
4. Garder tous les écrans.
5. Garder les mains, pieds, cheveux et vétements éloignés des éléments mobiles. Garder les gens éloignés.
6. Reviser annuellement le manual d'opération.

NC13-33-0126

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

WARNING

MISSING SHIELD HAZARD

To prevent serious injury or death from exposed hazard:

1. Install and secure shields before operating.
2. Keep hands, feet, hair and clothing away from moving parts.

AVERTISSEMENT

GARDE ABSENT

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

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.

01-60-0070

C

WARNING **AVERTISSEMENT**

ROTATING PART HAZARD
KEEP AWAY

To prevent serious injury or death from rotating parts:

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.

PIÈCES EN MOUVEMENT
RESTER ÉLOIGNÉS

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

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.

01-60-0115

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**

ROTATING PART HAZARD

To prevent serious injury or death from part hazard:

1. Keep all guards and shields in place.
2. Keep hands, feet, hair and clothing away from moving parts.
3. Keep others away.

PIÈCE EN MOUVEMENT

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

1. Garder tous les écrans protecteurs en place.
2. Garder les mains, pieds, cheveux et vêtements éloignés des éléments mobiles et rotatifs.
3. Garder les gens et les animaux à une distance sécuritaire de la machine.

01-60-0110

E

DANGER

ROTATING DRIVELINE HAZARD
KEEP AWAY

To prevent serious injury or death from rotating driveline:

1. Keep all guards in place when operating.
2. Operate at 540 RPM.
3. Keep hands, feet, hair and clothing away from moving parts.
4. Keep U joint angles equal and small as possible.
5. Do not exceed driveline manufacturer's recommended operating length.

PRISE DE FORCE IN ROTATION
RESTER ÉLOIGNÉ

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

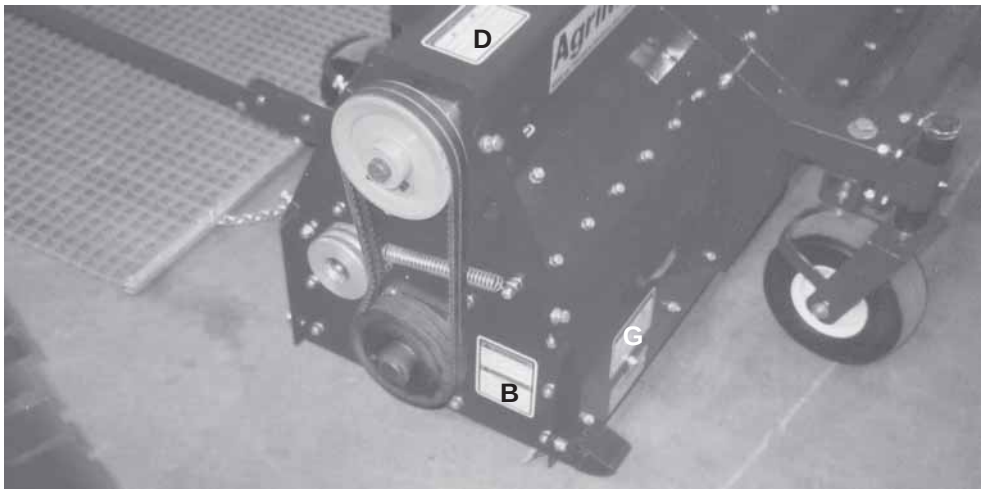
1. Garder tous les écrans rpotecteurs en place.
2. Operer à 540 Tours/minute.
3. Garder les mains, pieds, cheveux et vêtements éloignés des éléments mobiles.
4. Garder les angles de joint en U égales et le plus petit possible.
5. Ne pas excèder la longueur d'opération de la prise de force recommandé par le manufacturier.

01-60-0125

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

WARNING

MISSING SHIELD HAZARD

To prevent serious injury or death from exposed hazard:

1. Install and secure shields before operating.
2. Keep hands, feet, hair and clothing away from moving parts.

AVERTISSMENT

GARDE ABSENT

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

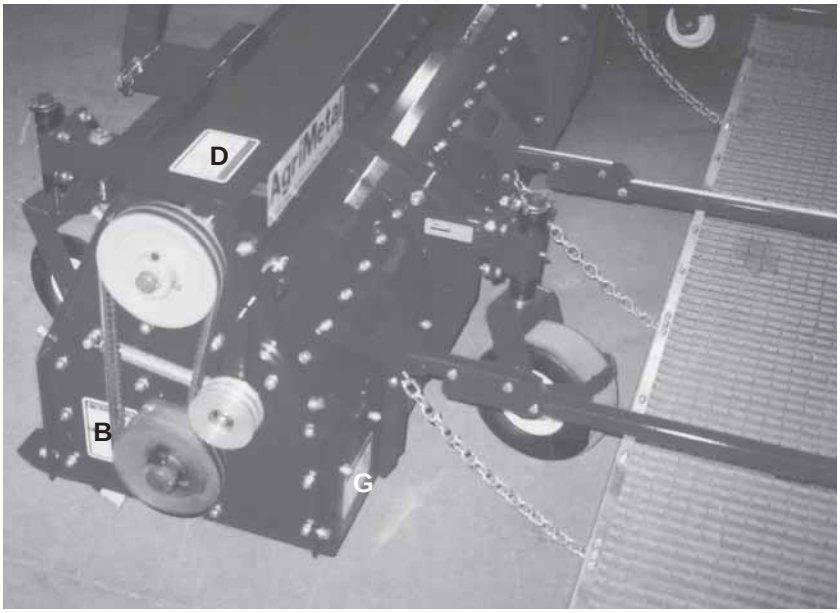
1. Installer les gardes de façon sécuritaire avant la mise en marche de la machine.
2. Garder les mains, pieds, cheveux et vêtements éloignés des éléments mobiles.

NC13-33-0113

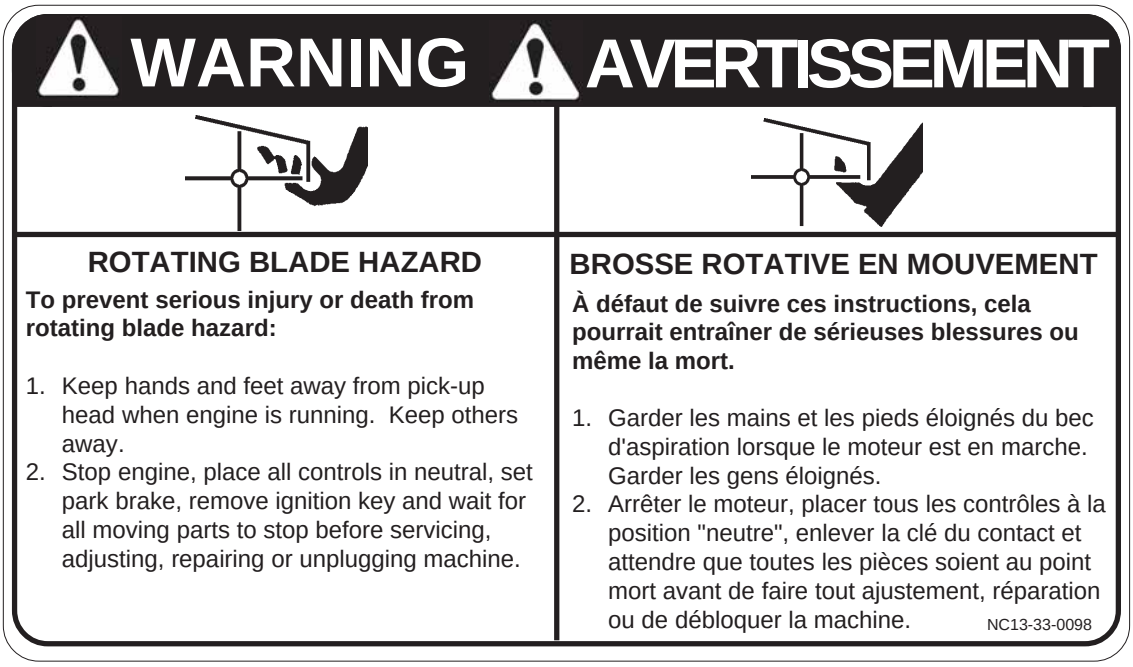
REMEMBER - If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

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!



G



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:

Fig. 1 SHIPPING CONFIGURATION

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 plastic wrap.

Fig. 2 UNWRAPPED

5. Remove strapping.

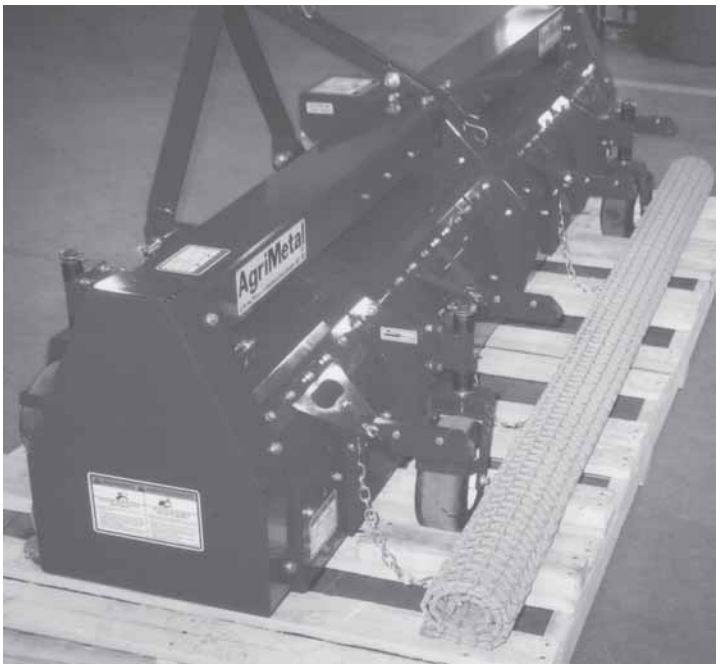


Fig. 3 STRAPPING

6. Remove rear support frame and lay-out.

Lay-Out

7. Open rear support bundle.

Opened

Fig. 4 REAR SUPPORT FRAME

8. Roll out the rear mesh drag.

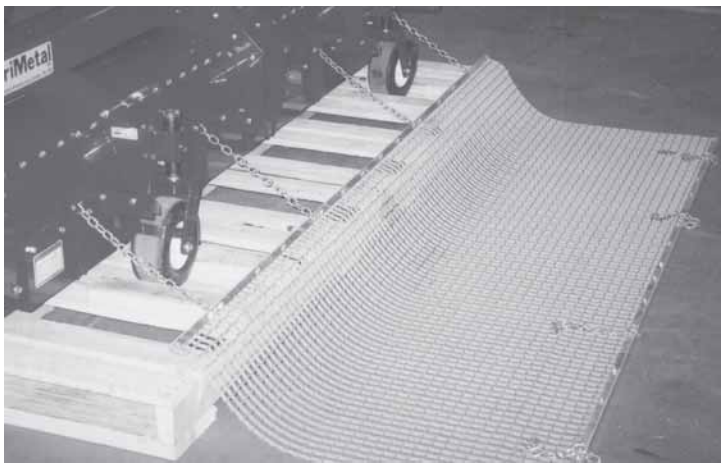
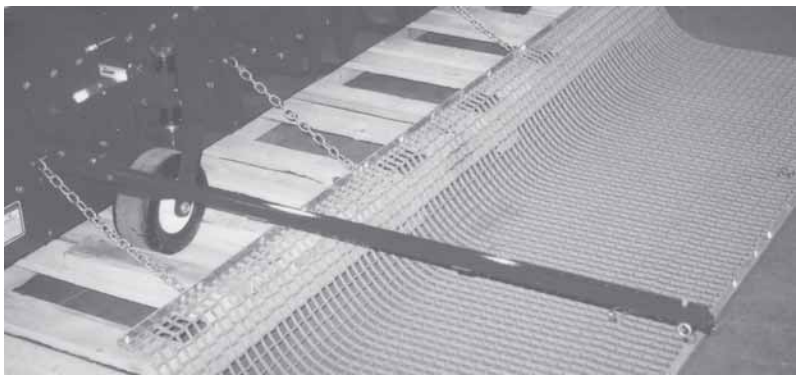
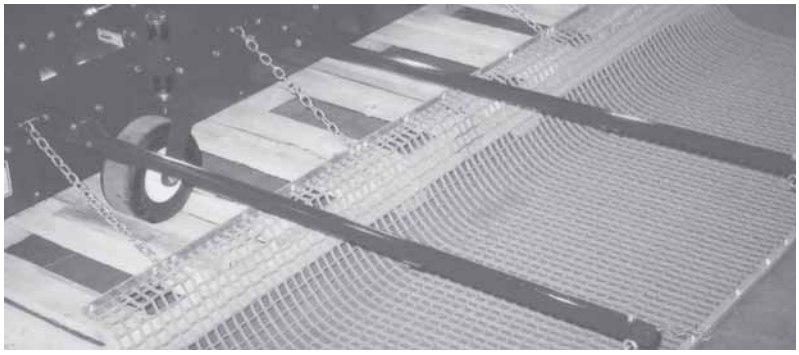


Fig. 5 REAR MESH DRAG

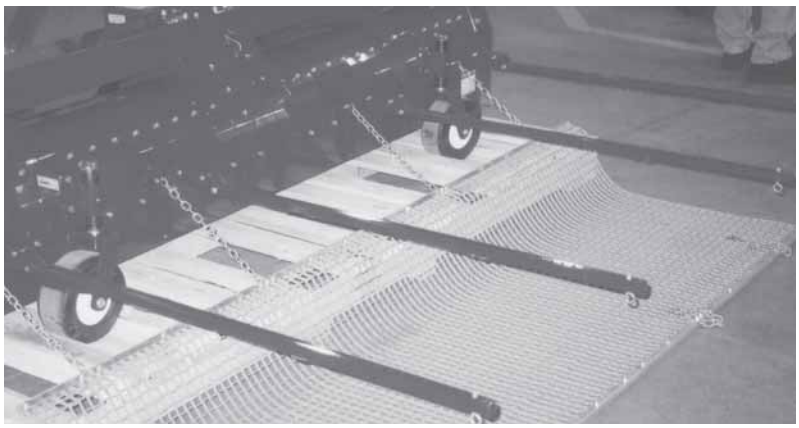
9. Mount the longitudinal frame members to the rear of the frame.



Left Side



Center



Installed

Fig. 6 LONGITUDINAL FRAMES

10. Mount the rear cross member.

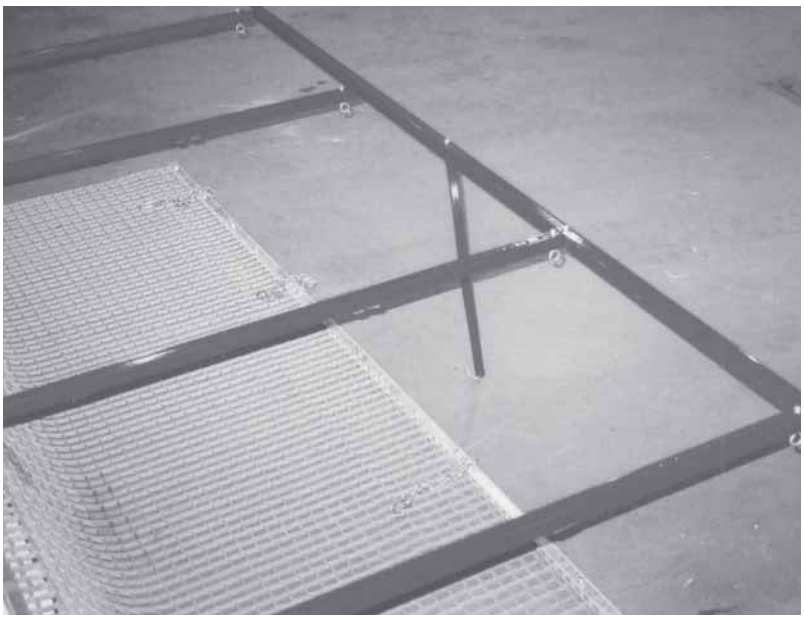
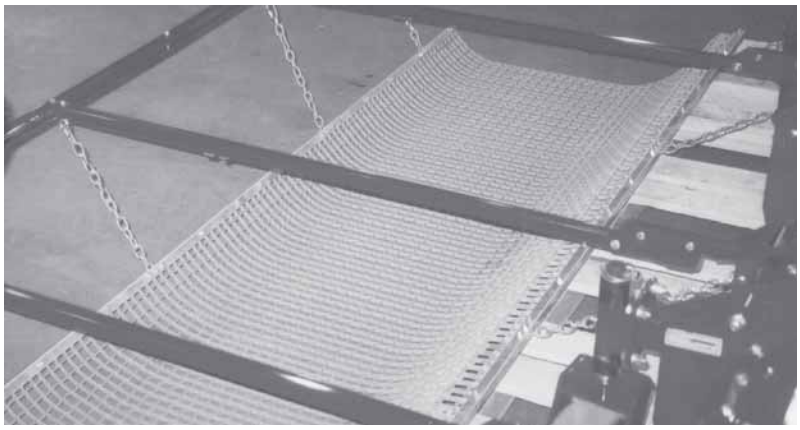


Fig. 7 REAR CROSS MEMBER

11. Connect the chains between the support frame and the drag mesh.

Right

12. Tighten fasteners to their specified torque.



Installed

Fig. 8 CHAINS

13. Move the machine off the pallet.

Fig. 9 OFF PALLET

14. Grease the male portion of the driveline and check that each portion of the guard turns freely.

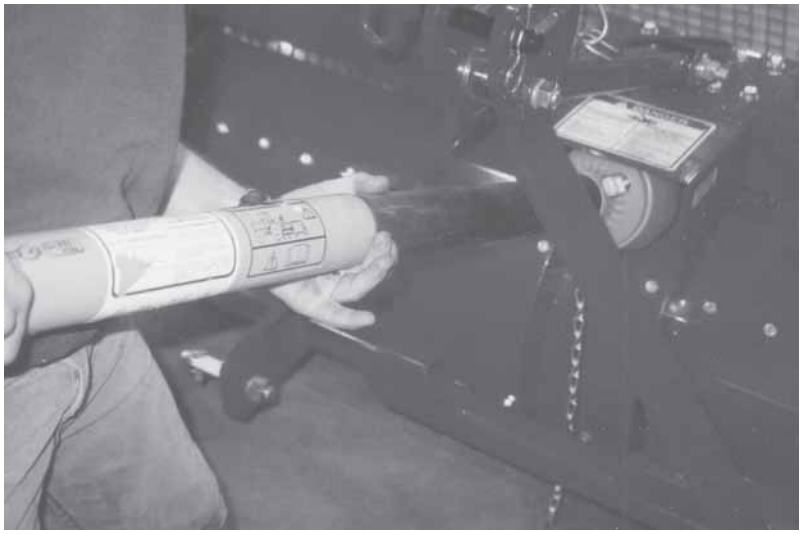


Fig. 10 DRIVELINE

15. Install driveline.

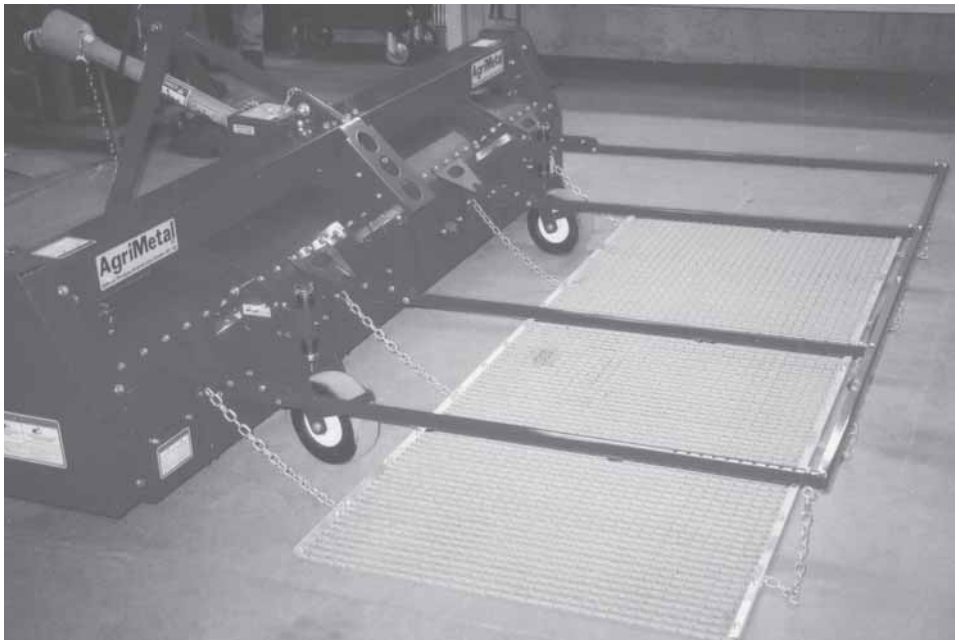


Fig. 11 ASSEMBLED

IMPORTANT

Be sure to check and measure the length of the driveline when attaching to a tractor. Shorten if required to prevent damaging the tractor or core breaker.

5 OPERATION

OPERATING SAFETY

- Do not allow riders on the machine or power unit at any time. There is no safe place for any riders.
- 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 anyone who is not familiar with the safety rules and operation instructions to use this machine.
- Do not place hands or feet under the machine at any time. Keep others away also.
- Never allow children to operate or be around this machine.
- 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.

5.1 TO THE NEW OPERATOR OR OWNER

AgriMetal Core Breakers are designed to break-up all types of cores from all kinds of soils (agricultural lands, parks, playgrounds, gardens, fairways, turf, etc.) in an easy, even and efficient way.

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.

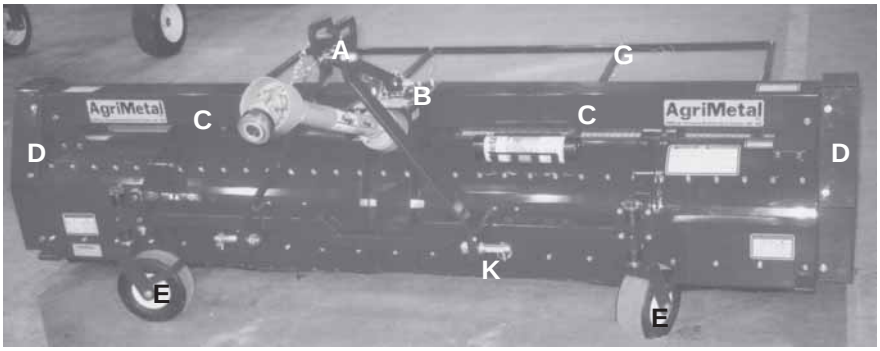
Follow all safety instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the worksite. Untrained operators are not qualified to operate the machine.

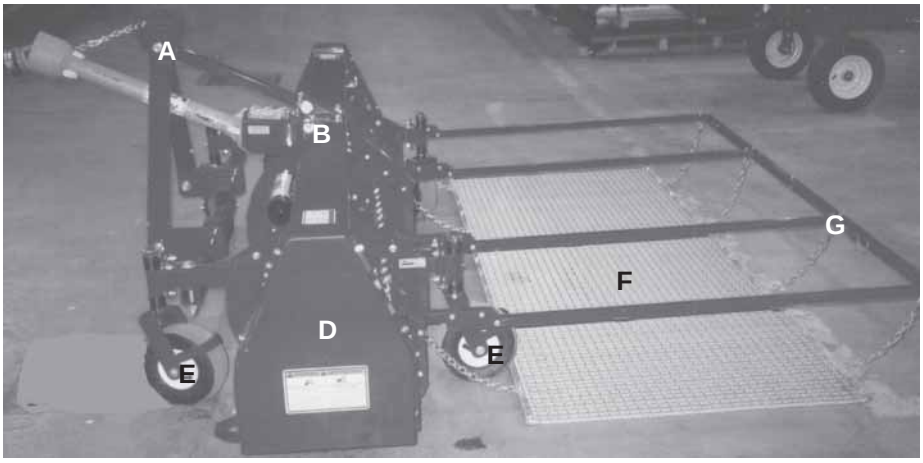
Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the machine safely and how to set it to provide maximum field efficiency. By following the operating instructions in conjunction with a good maintenance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

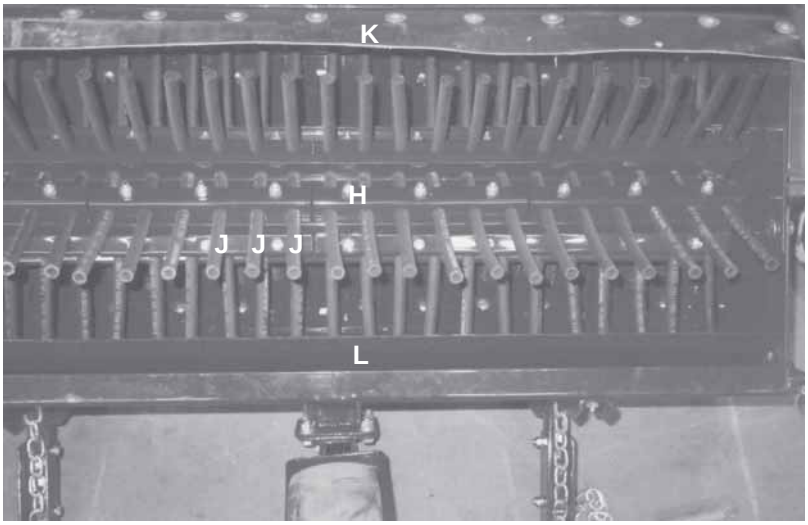
5.2 MACHINE COMPONENTS

The AgriMetal Core Breaker consists of a rotating rotor inside a shroud for picking up and breaking up cores after an area has been aerated. The cores enter the shroud under the front flap and are moved around under the shroud where they contact the blades and are broken up. The soil is distributed across the surface of the ground and the organic material moves out the back. Four caster wheels carry the machine during operation. Spacers on the castor staffs are used to set the height of the rotor above the ground.

Power to the rotor is supplied from the PTO on the tractor through the gear box in the center. The power then goes to each end and down to the rotor on each end through belt drives. A pivoting drag mesh on the back of the frame folds down for operation.







A	**3 Point Hitch Frame**
B	**Center Gear Box**
C	**Cross Shafts**
D	**Belt Drives**
E	**Castor Wheels**
F	**Drag Mesh**
G	**Drag Frame**
H	**Rotor**
J	**Finger**
K	**Intake Flap**
L	**Exit Flap**

Fig. 12 PRINCIPLE COMPONENTS

5.3 BREAK-IN

Although there are no operational restrictions on the Core Breaker 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. Torque all fasteners and hardware.

2. Check condition of rotor wheel bearings.

B. **After operating for 10 hours:**

1. Repeat steps 1, 2 and 3 listed above. (Section A).

2. Go to the normal servicing and maintenance schedule as defined in the Maintenance Section.

3. Check condition of rubber finger. Replace any that are broken or worn.

5.4 PRE-OPERATION CHECKLIST

Efficient and safe operation of the AgriMetal Core Breaker require 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 Core Breaker and each time thereafter, the following areas should be checked off:

1. Lubricate the machine per the schedule outline in the Maintenance Section.

2. Use only with a tractor with the appropriate power level for the machine.

3. Be sure that the machine is properly attached to the tractor with retainers in each mounting pin.

4. Check for entangled material. Remove all entangled material.

5. Check the condition of all hoses. Replace any that are broken or worn.

6. Check that all bearings turn freely. Replace any that are rough or seized.

7. Make sure that all guards and shields are in place, secured and functioning as designed.

5.5 EQUIPMENT MATCHING

To insure the safe and reliable operation of the Core Breaker, it is necessary to use a tractor with the correct specifications. Use the following list as a guide in selecting a tractor to use on the machine.

1. **Horsepower:**
   The Core Breakers are designed to be used on tractors with 25 to 40 horsepower depending on the Model.

2. **3 Point Hitch:**
   The Core Breakers are equipped with a Category 1 - 3 point hitch. Be sure the tractor 3 point hitch is in the proper configuration.

   Install the lift arm blocks or shorten the stop chains to place the arms into the non-sway configuration. Refer to the tractor manual for details.

IMPORTANT

Do not exceed the recommended horsepower levels. The use of excessive horsepower will void the warranty.

Table 1 Minimum Horsepower Recommended

Model	Horsepower
690	to 25
930	to 30

5.6 DRIVELINE DIMENSION

A PTO driveline is supplied with the machine. To accommodate the variety of 3 point hitch geometry available today, the driveline can be too long for some machines or too short for others. It is very important that the driveline be free to telescope but not bottom out when going through its working range. If the driveline bottoms out, the bearings on both the machine and tractor PTO shaft will be overloaded and fail in a short time.

1. **To determine the proper length of the driveline, follow this procedure:**

    a. Clear the area of bystanders, especially small children.

    b. Attach the Core Breaker to the tractor (see Section 5.7) but do not attach the driveline.

    c. Raise the machine until the input shaft is level with the tractor PTO shaft.

    d. Measure the dimension between the locking groove on the tractor PTO shaft and the attaching bolt on the Core Breaker.

    e. Measure the same dimensions on the compressed driveline.

    f. If the compressed driveline dimension exceeds the machine dimension, the driveline will have to be cut.

2. **When cutting the driveline, follow this procedure:**

    a. Subtract the Machine Dimension (A) from the Uncut Driveline Dimension (B) or (B-A). This dimension determines how much too long the driveline is.

    b. Add another inch (25 mm) to the dimension to be sure it doesn't bottom out to determine C the cut off dimension.

    c. Use a hacksaw to cut dimension C from both ends. Cut both the plastic tubes and the metal cores.

    d. Use a file to remove the burrs from the edges that were cut.

    e. Assemble the two ends of the shaft.

    f. Make sure that the shaft can telescope freely. If it does not, separate the two parts and inspect for burrs or cuttings on the shaft ends. Be sure it telescopes freely before installing.

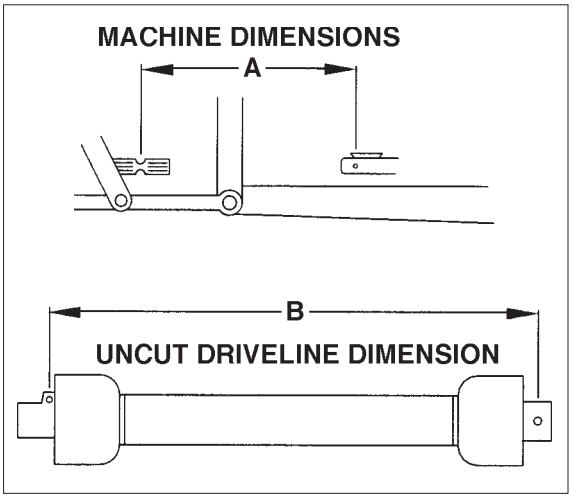


Fig. 13 DRIVELINE DIMENSIONS

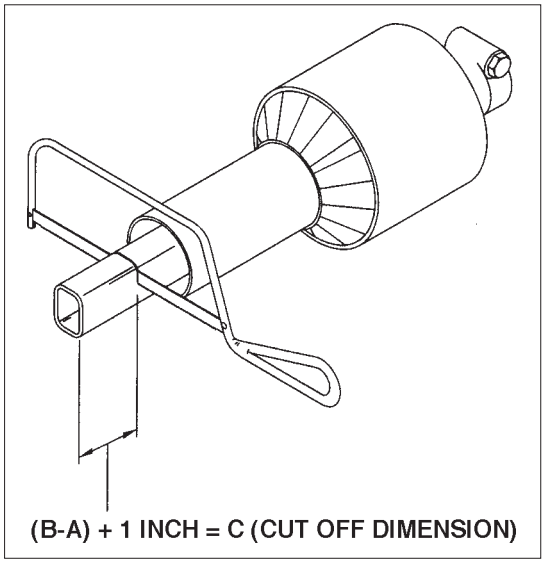


Fig. 14 CUT OFF DIMENSION

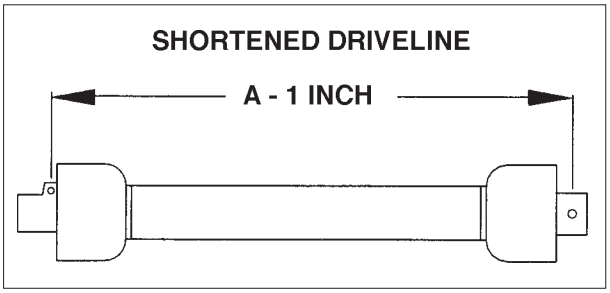


Fig. 15 SHORTENING

g. Make sure the plastic covering shield is free to rotate on the shaft before installing on the machine.

h. Lubricate male end of shaft.

5.7 MOUNTING AND UNHOOKING TRACTOR

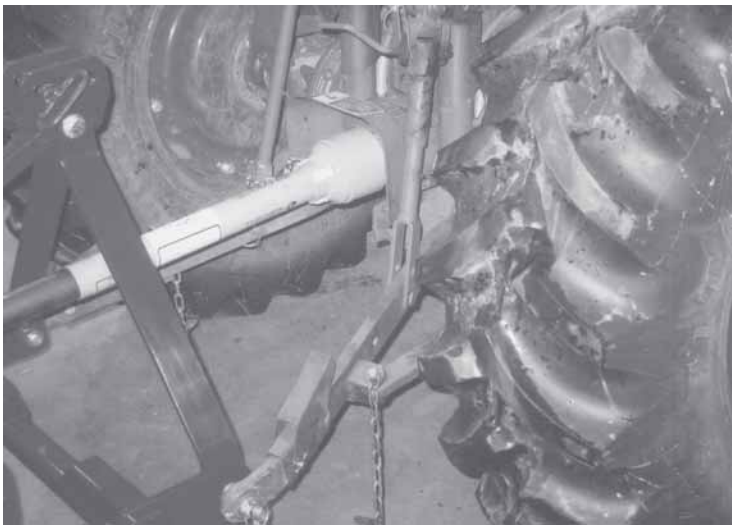
When attaching Core Breaker to a tractor, follow this procedure:

1. Clear the area of bystanders especially small children before starting.

2. Make sure there is enough room and clearance from obstacles to safely back up to the machine.

3. Back slowly up and align the lower link arms to the pins on the machine.

Left Link



Right Link

Fig. 16 LOWER ARMS

4. Unpin the anti sway assemblies.

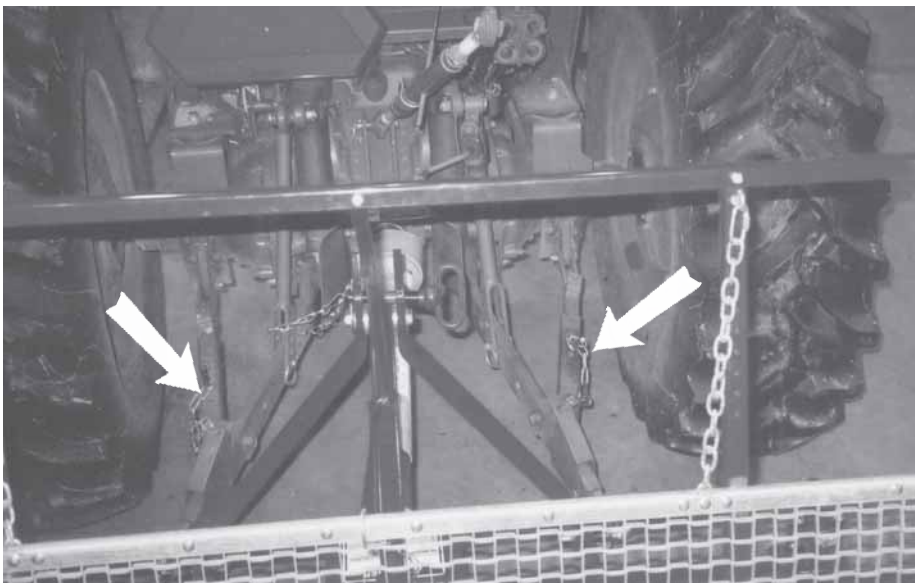


Fig. 17 ANTI-SWAY

5. **Attach the PTO Driveline:**

   a. Check that the driveline telescopes easily and that the shield rotates freely.

   b. Attach the driveline to the tractor by pulling back on the lock ring retracting the lock pin, slide the yoke over the shaft and push on the yoke until the lock pin clicks into position. Pull on the yoke to be sure it is locked in position.

   c. Attach PTO shaft guard anchor chain to the tractor frame to prevent the shield from turning.

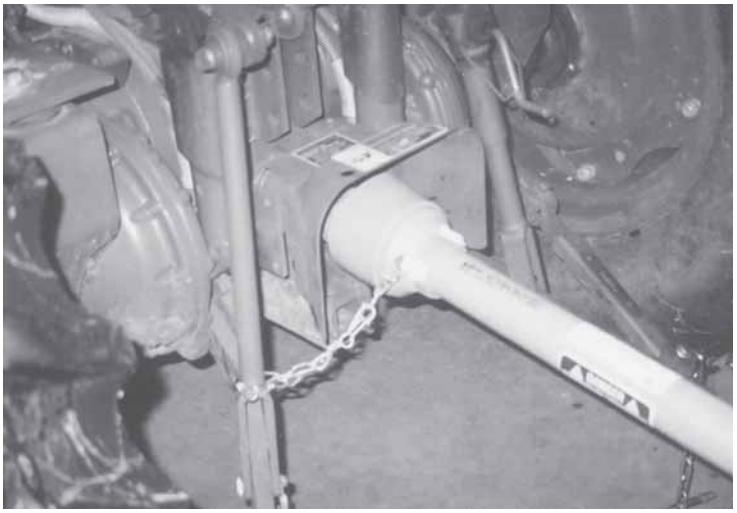
IMPORTANT

Always attach both the anchor chains to the frame to secure the guards.

NOTE

Remove the drawbar pin if it interferes with the driveline as it goes through its working range.

Yoke



Anchor Chains

Fig. 18 DRIVELINE

6. Align the left lower link arm with the left arm.

NOTE

It may be necessary to add weight to the lower lift arms to bring them to the required height.

7. Insert the left pin through the ball and install the retainer.

8. Align the right arm to the pin by turning the jack screw on the arm.

9. Insert the right pin through the ball and install the retainer. Return the jack screw to its starting position.

10. Remove the top pin and install the top link. Use the turnbuckle to align the top link. Insert the pins and install the retainers. Return the turnbuckle to its original length and lock.

11. Secure the anti-sway assemblies.

12. Level the machine for and aft, and side to side using the jack screw on the right arm and the turnbuckle on the top link.

13. Use the turnbuckle to set the upper link pin in the center of its slot.

14. To unhook from the tractor, reverse the above procedure. Always park the machine in a dry, level area. Place planks or boards under the frame to prevent sinking into the soil. Always place the machine into transport configuration for storage.

Fig. 19 TOP LINK

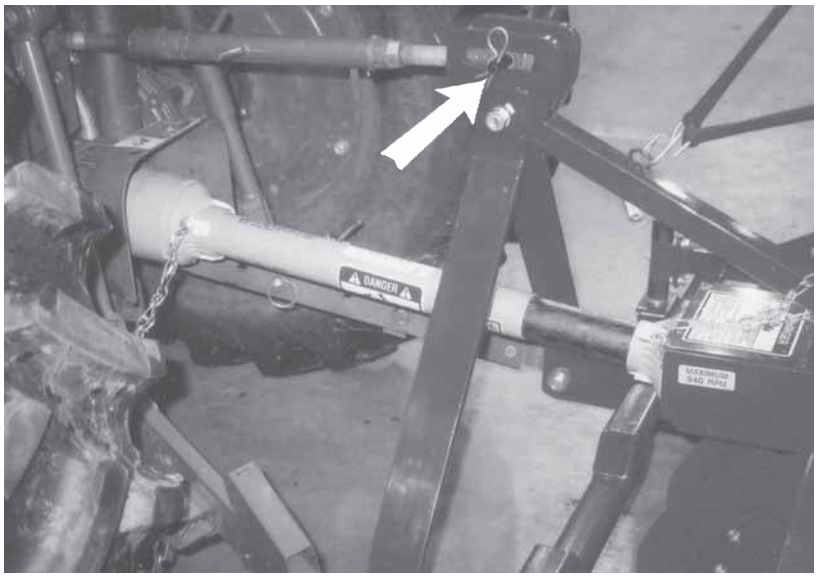


Fig. 20 PIN CENTERED

5.8 FIELD OPERATION

OPERATING SAFETY

- Do not allow riders on the machine or power unit at any time. There is no safe place for any riders.
- 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 anyone who is not familiar with the safety rules and operation instructions to use this machine.
- Do not place hands or feet under the machine at any time. Keep others away also.
- Never allow children to operate or be around this machine.
- Clear the work area of objects which might be picked up and snagged or entangled in the machine.
- Keep all hydraulic lines, fittings and couplers tight and free of leaks before using.
- Keep hands, feet, hair, jewelry, and clothing away from all moving and/or rotating parts.

Aerators are used to penetrate a lawn surface and remove cores to allow water and nutrients to reach the roots. Core Breakers are used to gather the cores and separate the tatch from the organic soil. The cores go under the shroud and are picked up by the fingers. As they go around the rotor they hit the blades where the impact separates the tatch from organic material. The tatch comes out under the back of the shroud. When operating 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 power unit (see Section 5.7). Be sure the frame is level and set at right height.
4. Transport to the working area (refer to Section 5.9).
5. Place all controls in neutral before starting the tractor.
6. Place the hitch control on the tractor in the float position to allow the machine to follow the ground contour.

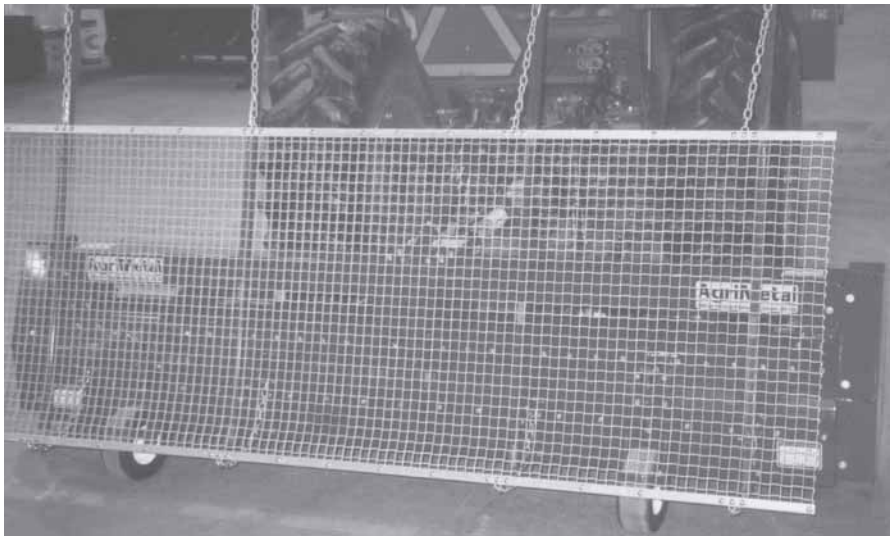


Fig. 21 MOVING

7. Lower drag screen and rear frame to the ground.

8. **Starting:**

   a. Place throttle at low idle and start engine.

   b. Slowly engage PTO.

   c. Lower the 3 point as you move over the working area.

   d. Increase engine speed to 540 RPM.

   e. Move slowly across the area to have the cores breake up.

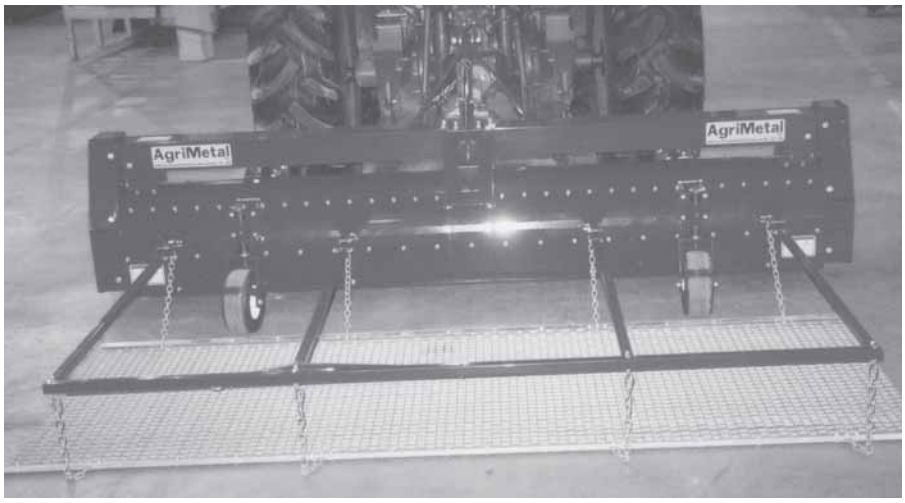


Fig. 22 DRAG SCREEN

9. **Travel Speed:** Drive at a speed that is appropriate for the conditions. Normally 2-4 mph (3-7 kph) works best.

10. **Riders:** Do not allow riders at any time. There is no safe place for riders on the Core Breaker or the tractor. Keep others off.

Fig. 23 BREAKER HARDWARE

11. **Breaker Hardware:** Rubber finger are mounted on the rotor to pick up the cores and move them around the housing. As they move around, they impact the blades where the soil and tatch are separated. The soil is distributed over the ground and the tatch material spills out under the rear shroud.

a. Rubber finger
b. Finger Clamp
c. Rotor
d. Stationary blade
e. Inlet Flap
f. Outlet Flap

12. **Working Surface:**
Always inspect the working area before starting. Any bad surface or foreign object can damage the finger. Avoiding the object works best. Keep rubber finger in good working order to obtain the required job. Replace any damaged or worn components whenever found.

13. **Operating Height:**
The best results are obtained when the finger ends are set to be slightly off the surface of the ground. Use the castor wheel spacer position to set the good height above the ground.

14. **Castor Wheel Position:**
The castor wheel shaft is designed with a series of spacers above and below the frame tube. Raise the frame, remove the retainer and slide the shaft out. Each castor shaft is equipped with 1/2 inch and one 1/4 inch spacer. Each spacer can be positioned above or below the frame tube to provide the desired rotor height above the ground.

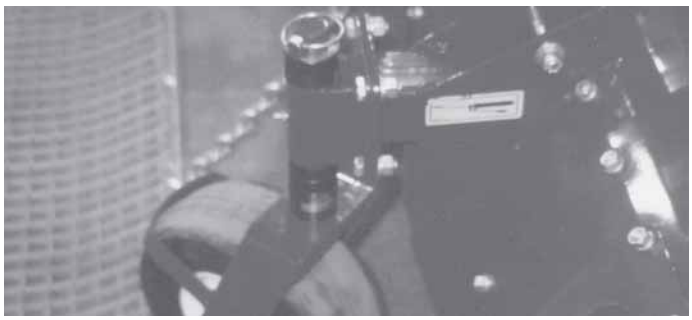
Place the spacers where desired, install shaft and retainer. Repeat with other wheels. Be sure to place spacers in the same configuration on each shaft to keep the frame level.

Fig. 24 FINGER POSITION

Factory Configuration

Shaft Removal

Shaft Removed



New Position

Fig. 25 CASTOR WHEELS

5.9 TRANSPORTING

TRANSPORT SAFETY

- Comply with state and local laws governing highway safety and movement of machinery on public roads.
- The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.
- At all times when driving the power unit and equipment on the road or highway under 20 mph (32 kph), use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem. Do not exceed 20 mph (32 kph). Reduce speed on rough roads and surfaces.
- Plan your route to avoid heavy traffic.
- Use a drawbar pin with provisions for a retainer. Install the retainer.
- Do not drink and drive.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc. Watch for traffic when operating near or crossing roadways.
- 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 power unit's weight is on the front wheels to maintain safe steerage. 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. Be sure that the towing unit has sufficient size and mass to control the Core Breaker during transport.
3. Insure that the machine is securely attached to the power unit with a mechanical retainer through the mounting pins.
4. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.
5. Always use hazard flashers on the power unit when transporting unless prohibited by law.
6. Do not allow riders.
7. Never exceed a safe travel speed. Never travel faster than 20 mph (32 km/h). The ratio of the power unit weight to the machine weight plays an important role in defining acceptable travel speed. The following table summarized the weight ratio to travel speed.

Table 2 Travel Speed vs. Weight Ratio

Road Speed	Weight of fully equipped or loaded implement(s) relative to weight of Towing machine
Up to 32 km/h (20 mph)	1 to 1, or less
Up to 16 km/h (10 mph)	2 to 1, or less
Do not tow	More than 2 to 1

8. Always shift to a lower gear when going down hill to use the engine as a restraining force.
9. Never disengage power unit drivetrain and coast down hills. Always keep power unit in gear.

5.10 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. Place planks or boards under the frame for support 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. Turn the frame over to wash the rotor and working components.
2. Lubricate all grease points to remove any water residue from washing.
3. Inspect for worn or failed components. Order the replacement parts now and repair when time allows to eliminate unnecessary down time at the start of next season.
4. Remove any material that has become entangled around any moving part.
5. Touch up all paint nicks and scratches to prevent rusting.
6. Move the machine to its storage area.
7. Store in a dry, level spot.
8. Place in the transport configuration.
9. Unhook from the power unit (see Section 5.7).
10. Store in an enclosed building if possible. If space is not available, cover with a waterproof tarpaulin and tie down securely.
11. Store in an area away from human activity.
12. Do not allow children to play around the stored unit.

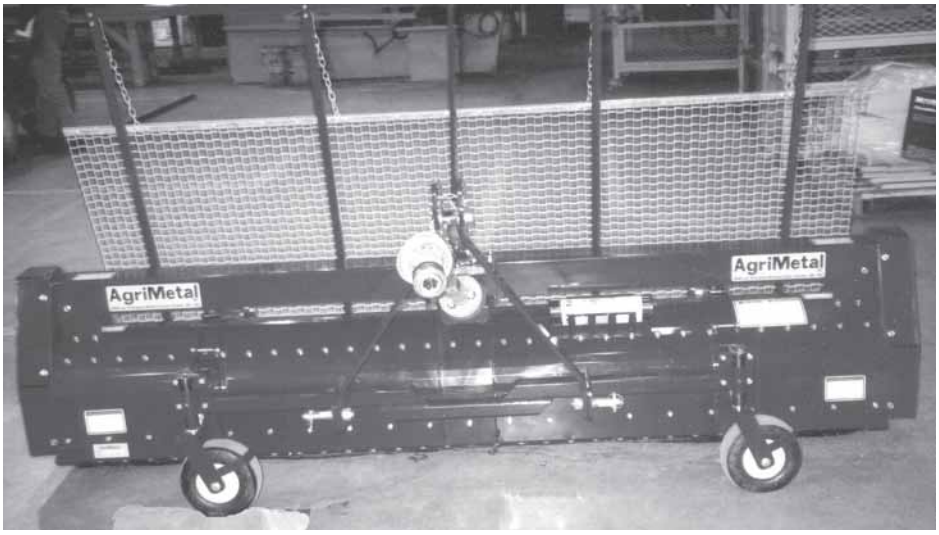


Fig. 26 STORED

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 an engine in a closed building. The exhaust fumes may cause asphyxiation.
- Before working on this machine, shut off the engine, set the brakes, and remove the ignition keys.
- 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.
- 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. **Gear Box Oil**:
   Use an SAE 90EP synthetic oil meeting the American Petroleum Institute (API) classification of 5F, 5G, 5H OR 5J for normal operating temperatures.

   Gear Box Capacity: 1.0 L (0.9 US qt.)

3. **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. Grease PTO driveline (4 locations).

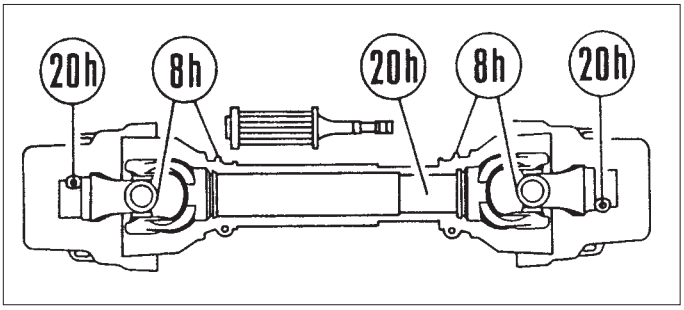


Fig. 27 PTO DRIVELINE

2. Check condition of Core Breaker rubber fingers. Replace any worn or broken parts.

3. Check for entangled material. Remove entangled material.

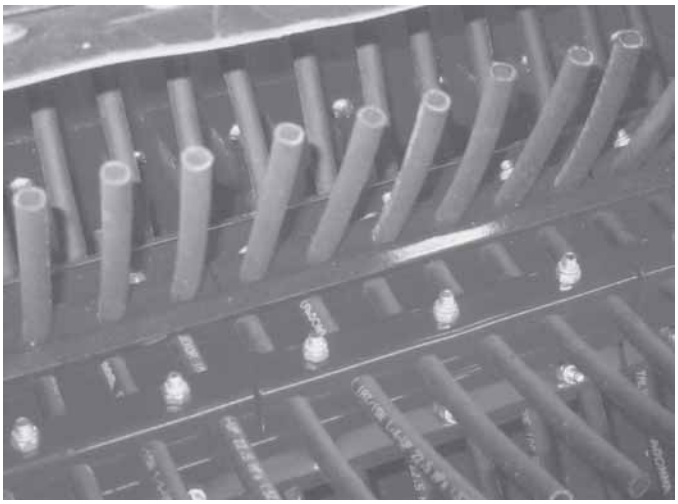


Fig. 28 BREAKER COMPONENTS

20 Hours

1. Grease PTO driveline.

2. Grease the wheels with 1 shot of grease (4 locations).

Fig. 29 WHEEL (TYPICAL)

3. Check the oil level in the center gear box. Top up as required.

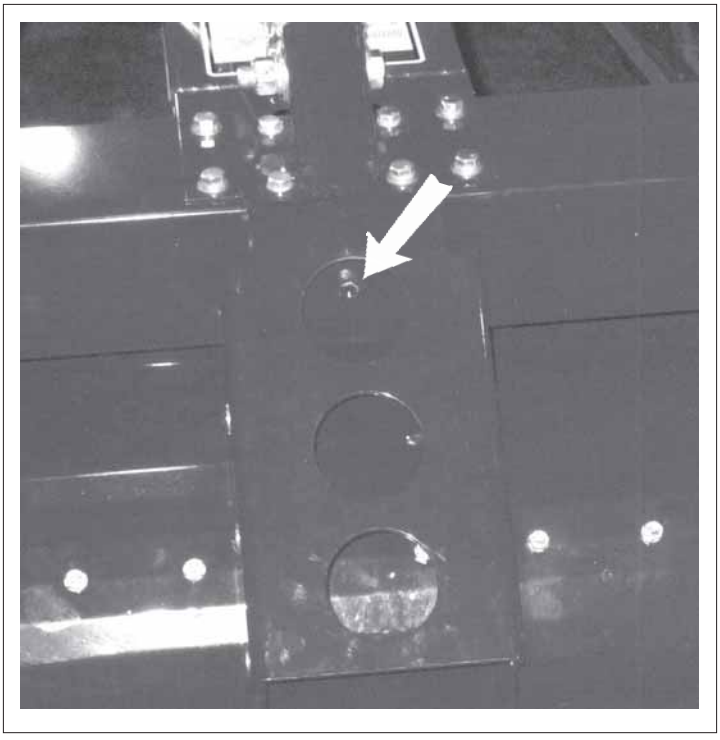


Fig. 30 OIL LEVEL

At The Beginning And End Of The Season

1. Grease pivoting shaft of caster wheel assembly.

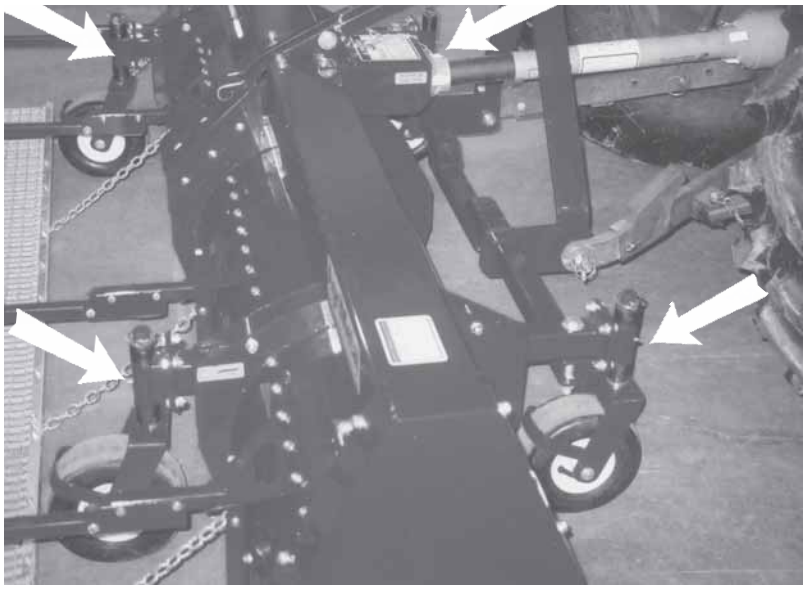
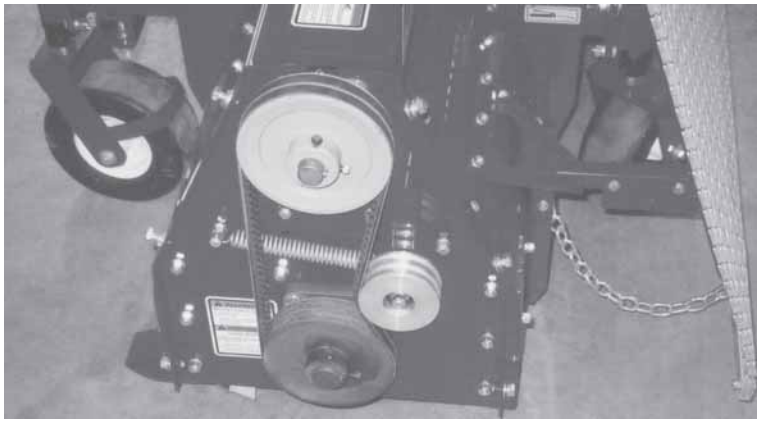


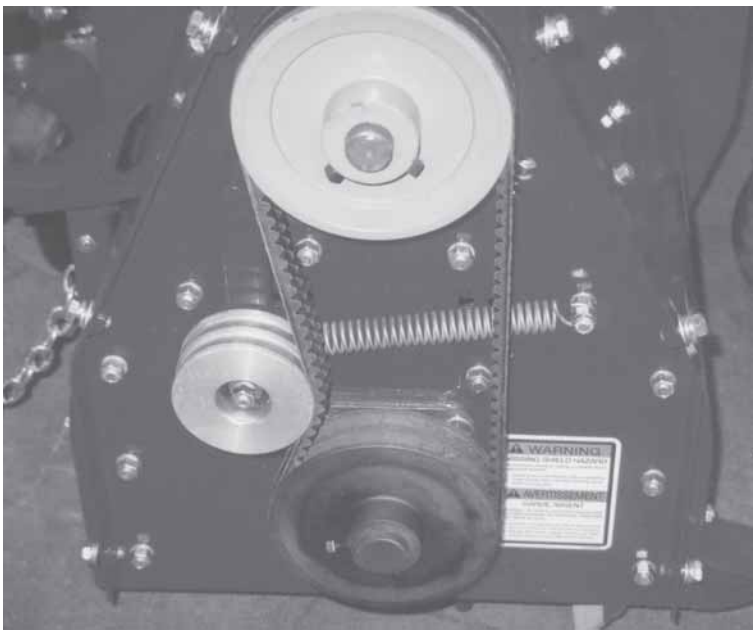
Fig. 31 CASTOR SHAFTS

2. Check condition and tension of each set of drive belts.

3. Wash machine.



Left



Right

Fig. 32 DRIVE BELTS

⚠ WARNING

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

6.1.4 SERVICE RECORD

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

ACTION CODE: ✓ CHECK G GREASE CL CLEAN

HOURS / SERVICED BY / MAINTENANCE																							
8 Hours or Daily																							
G PTO Driveline (4)																							
✓ Breaker Rotor fingers																							
✓ Entangled Material																							
20 Hours																							
G PTO Driveline																							
G Wheels (4)																							
✓ Oil Level/Center Gear Box																							
Beginning & End Of Season																							
G Pivoting Shaft/Wheel Assembly																							
✓ Drive Belts																							
CL Machine																							

6.2 MAINTENANCE

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

6.2.1 CASTOR SHAFT SPACERS

The machine is designed with spacers above and below the mounting tube to allow the operator the change the height of the rotor from the ground. Raise or lower the wheel frames to set the rotor height. When setting the spacer position, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Raise the frame next to wheel.
3. Remove the retainer through the top of the castor shaft.
4. Slide shaft out of mounting tube.
5. Reposition spacers appropriate to provide the required frame height.

NOTE

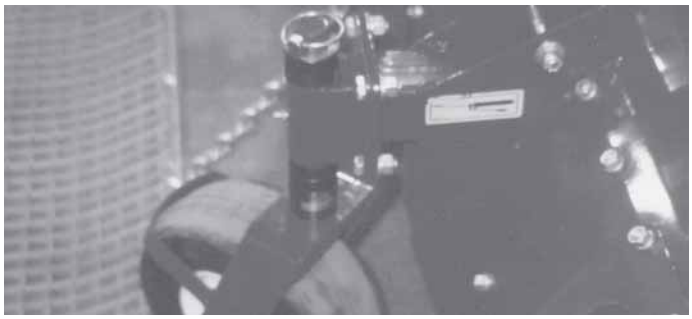
Each shaft is equipped with six 1/2 inch and one 1/4 inch spacers to allow for 1/4 inch settings of the frame.

6. Install shaft and retainer.
7. Repeat with the other wheels. Be sure the spacers are set the same on all wheels.

Factory Configurations

Shaft Removal

Shaft Removed



New Position

Fig. 33 CASTOR SHAFT SPACERS

6.2.2 ROTOR DRIVE BELT TENSION AND ALIGNMENT

A set of V belts on each end transmits rotational power to the rotor. 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.

3. Remove the guards over each set of belts.

4. If the spring is in place, the belts will be properly tensioned.

5. Replace belts or spring if any are damaged or broken.

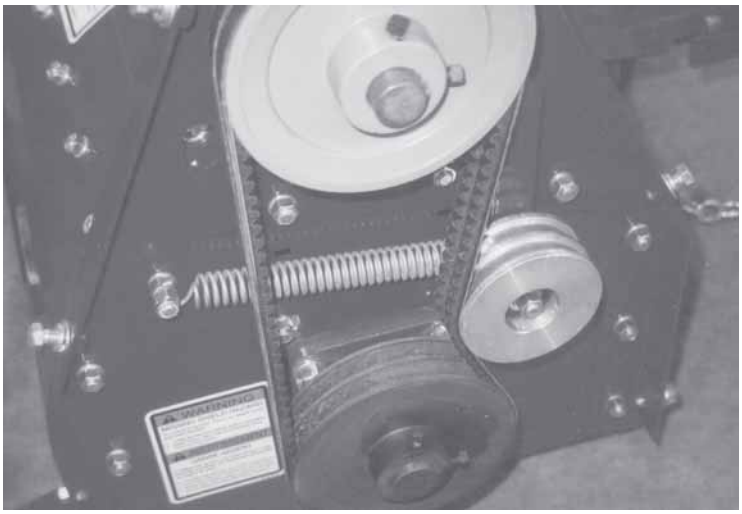
6. Remove guard over belt, release tensioner and replace belt when required.

7. Lay a straight edge across the pulley faces to check the alignment. Adjust alignment if pulley faces very 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.

8. Replace and secure guards on each end.



Left

Right

Fig. 34 DRIVE BELTS

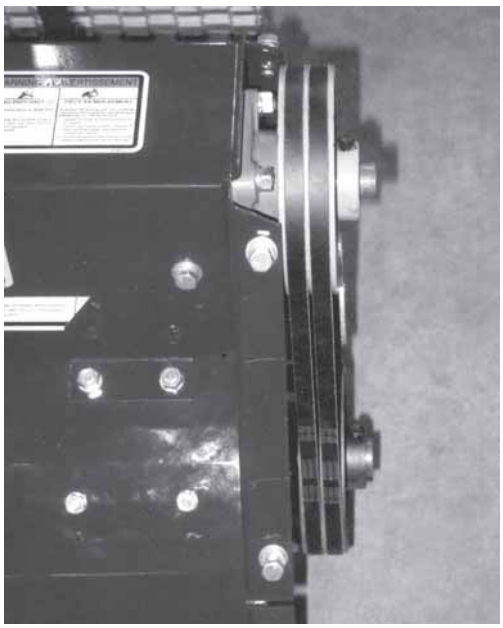


Fig. 35 PULLEY ALIGNMENT

6.2.3 GEAR BOX

The machine is designed with a gear box in the center that directs rotational power to each belt drive on the ends. Check the oil level every 20 hours.

When maintaining the gear box, 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.

3. **Check Oil Level:**

    a. Remove the level plug from the gear box when the machine is cold.

    b. Oil should just fill the threads.

    c. Add oil through the fill plug as required.

    d. Install and tighten fill plug.

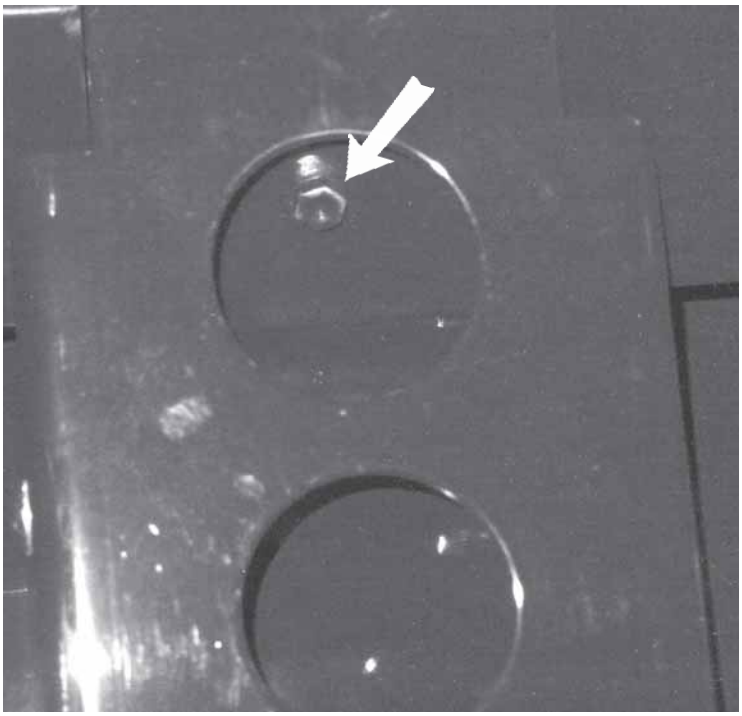


Fig. 36 LEVEL PLUG

7 REPAIRS

The Core Breaker is equipped with rubber finger that are mounted to a turning rotor. As the finger wear during use, the wheels will have to be raised to lower the frame or eventually replace the finger themselves.

When replacing the finger, follow this procedure:

1. Clear the area of bystanders, especially small children.

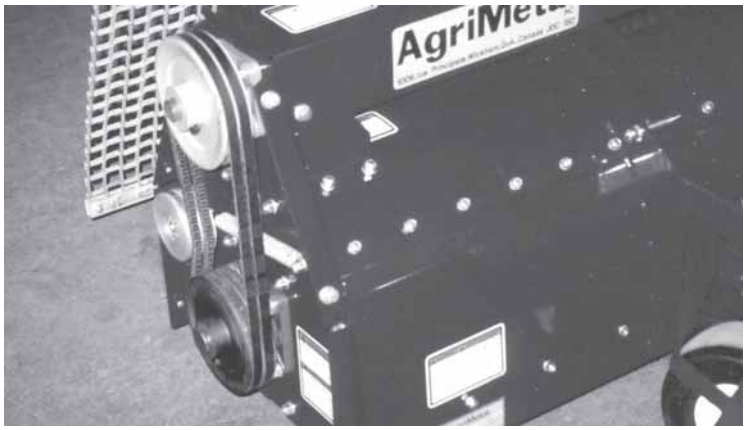
2. Stop machine in an area that will allow access from all sides.

3. Unhook machine from the tractor (see section 5.7).

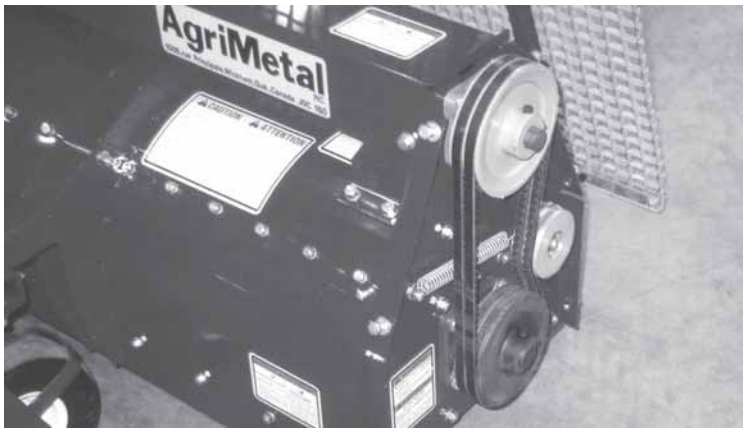
4. Remove belt guard covers.

WARNING

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



Left

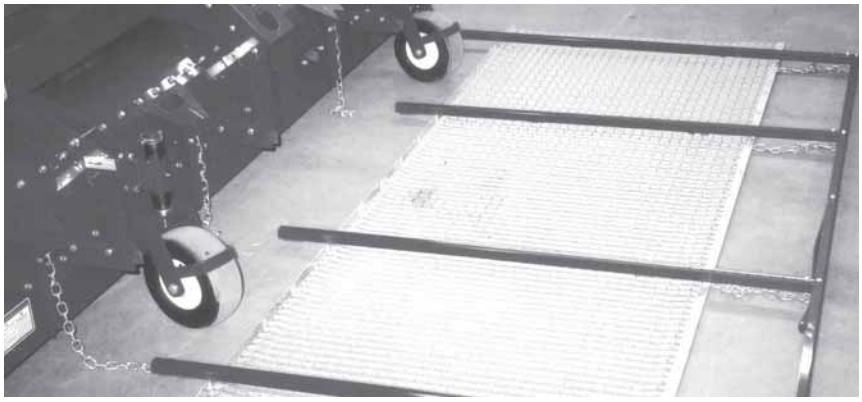


Right

Fig. 37 BELT GUARD COVERS

5. Remove drag mesh and mounting frame from the rear of the machine.

Removing



Removed

Fig. 38 DRAG MESH REMOVED

6. Lay the machine on its back.

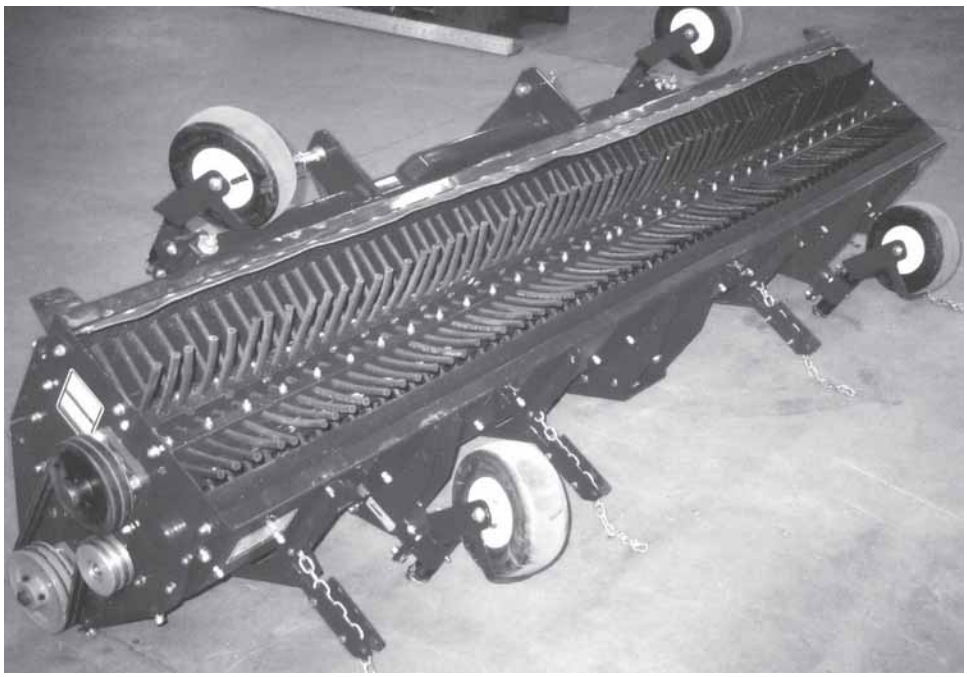


Fig. 39 TIPPED OVER

7. Unhook idler pulley spring.

⚠ WARNING

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

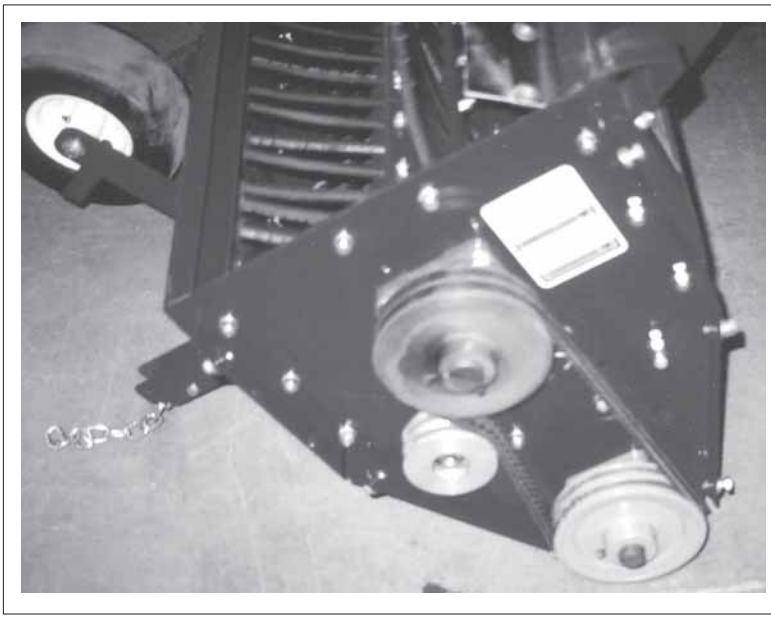


Fig. 40 UNHOOKED SPRING

8. Remove belts from pulleys.

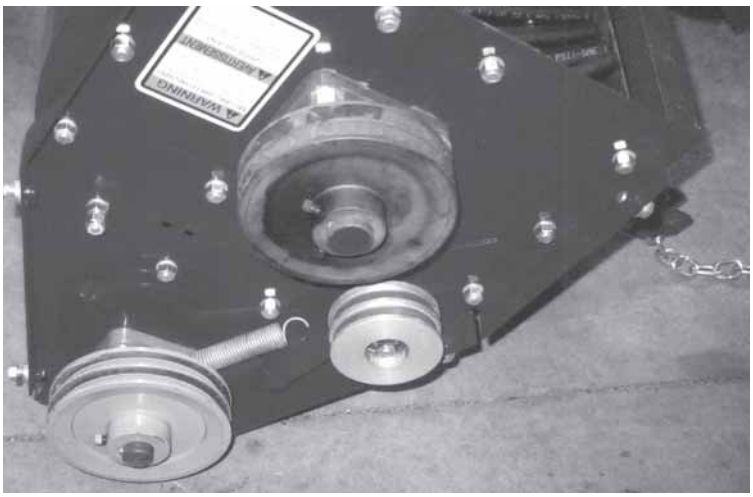
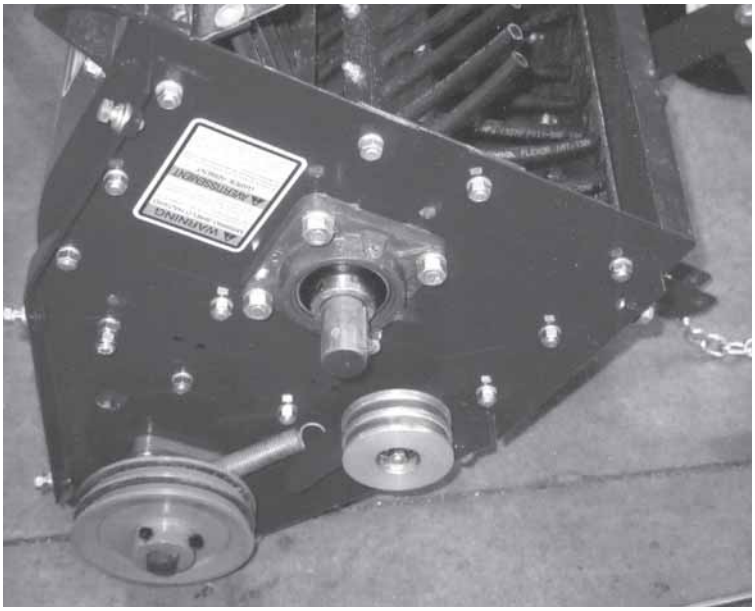


Fig. 41 BELTS REMOVED

9. Use a pulley puller to remove drive pulley.

Puller



Removed

Fig. 42 PULLEY

⚠ WARNING

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

10. Loosen and remove bottom clamping bolts.

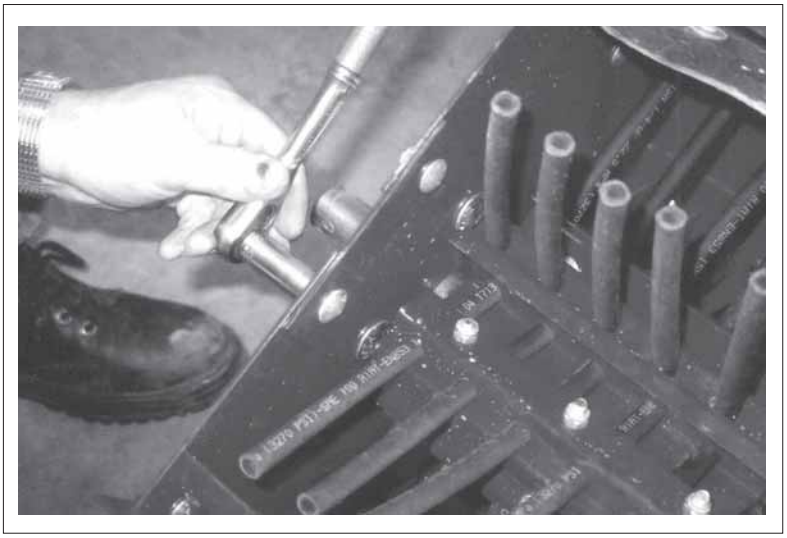


Fig. 43 CLAMPING BOLTS

11. Remove bearing housing moutning bolts.

Fig. 44 MOUNTING BOLTS

12. Use an Allen wrench to loosen set-screws in the locking collar.

13. Loosen locking collar.

Fig. 45 ALLEN WRENCH

14. Repeat with the other end of the rotor.

15. Place stands on each end of the machine.

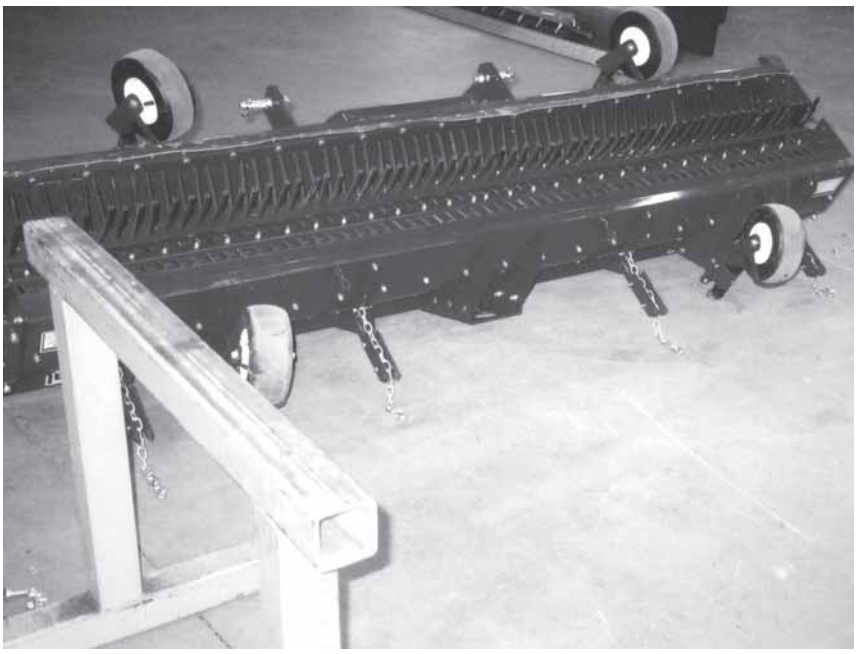


Fig. 46 STANDS

16. Lift the rotor out of the frame and set on the stands.

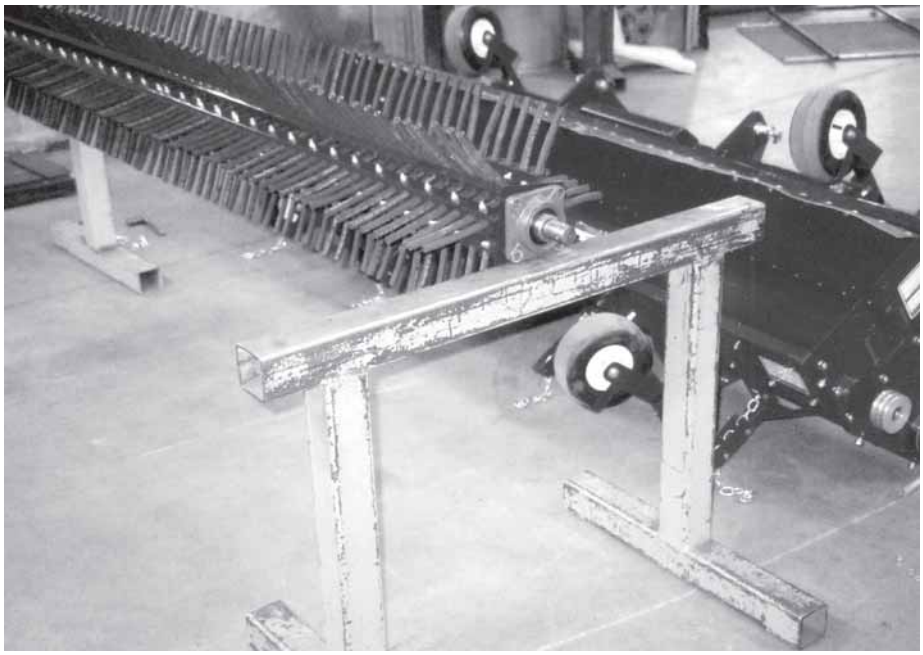
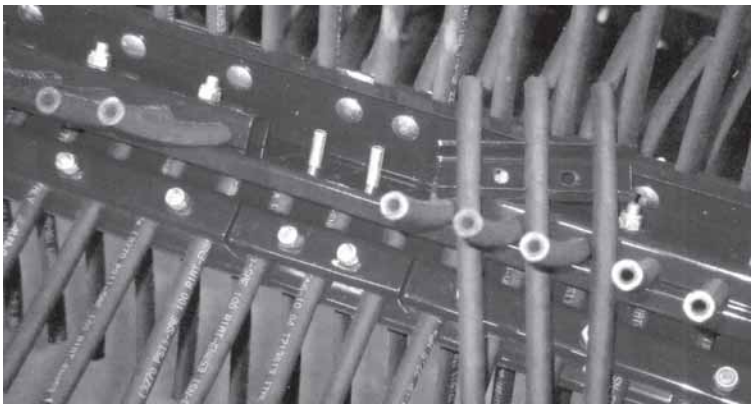


Fig. 47 ROTOR ON STANDS

17. Loosen and rmeove the finger clamping bolts and the clamp.

Loosening



Clamp Removed

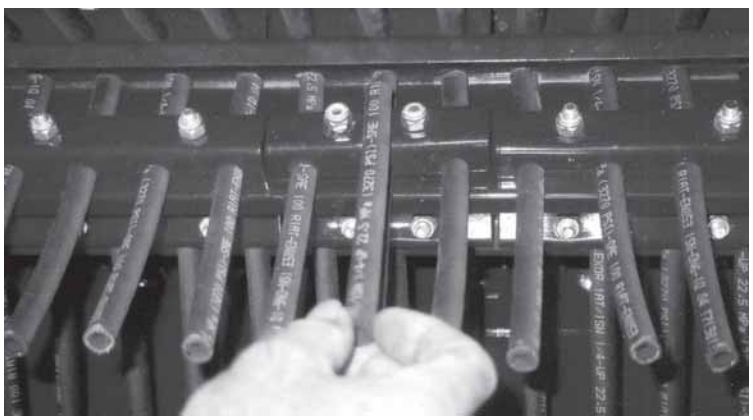
Fig. 48 CLAMPING HARDWARE

18. Replace fingers as required.

IMPORTANT

Always mount replacement fingers so the arc is aligned with the direction of rotation. If the finger curves to the side, it will hit the blades as it rotates and be damaged.

Hose



Aligned

Fig. 49 REPLACEMENT HOSES

19. Inspect the condition of the blades mounted to the inside of the housing. Straighten or replace if damaged or worn.

20. Loosen and remove mounting bolts to replace blades.

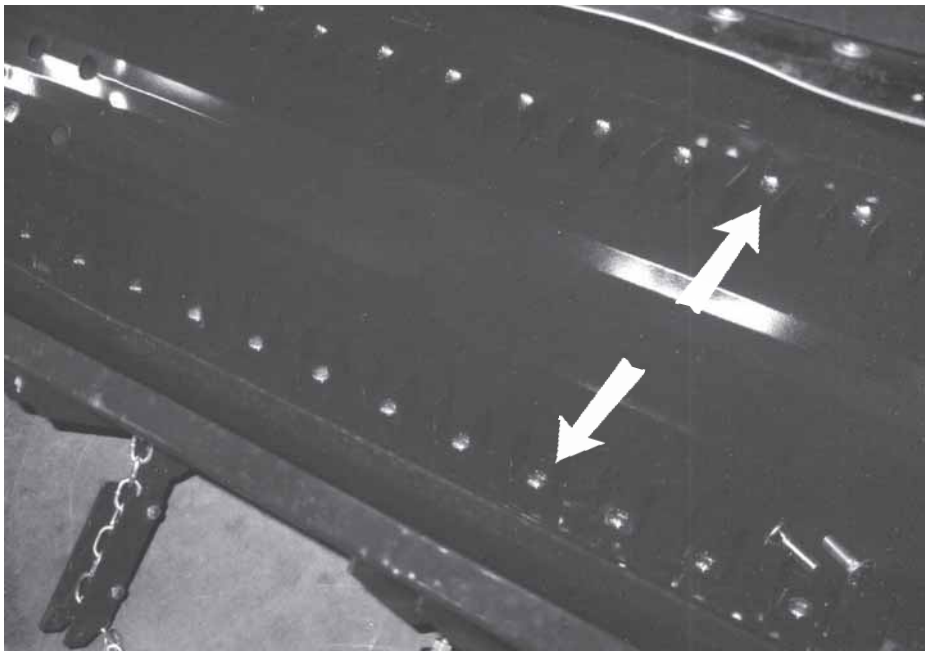
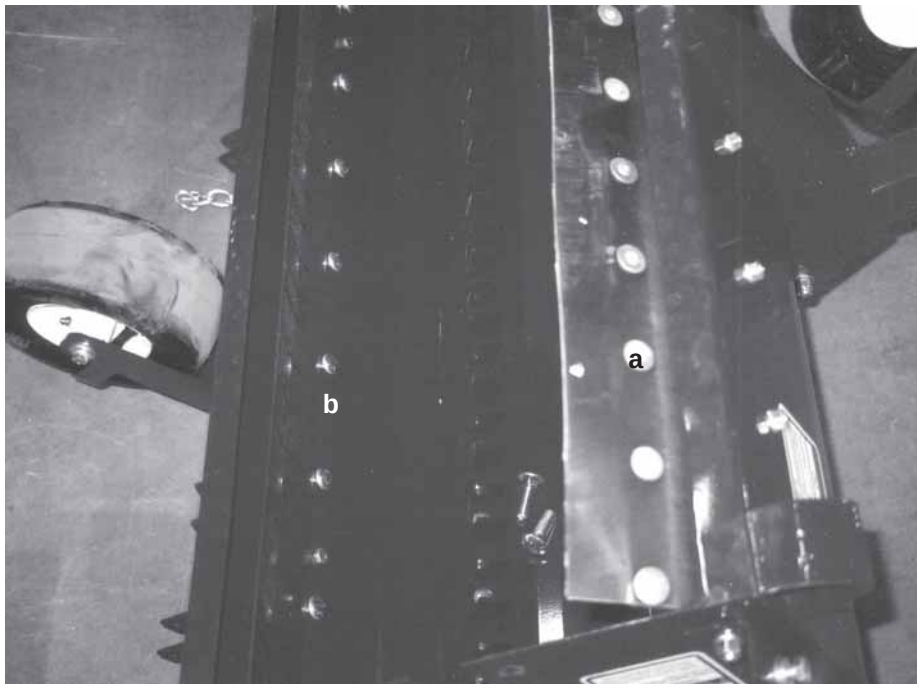


Fig. 50 BLADE ROWS

21. Check condition of intake flap and exit flap.

22. Replace if damaged or worn.



a. Intake **b. Exit**

Fig. 51 FLAPS

23. Reverse the above procedure to re-assemble the machine.

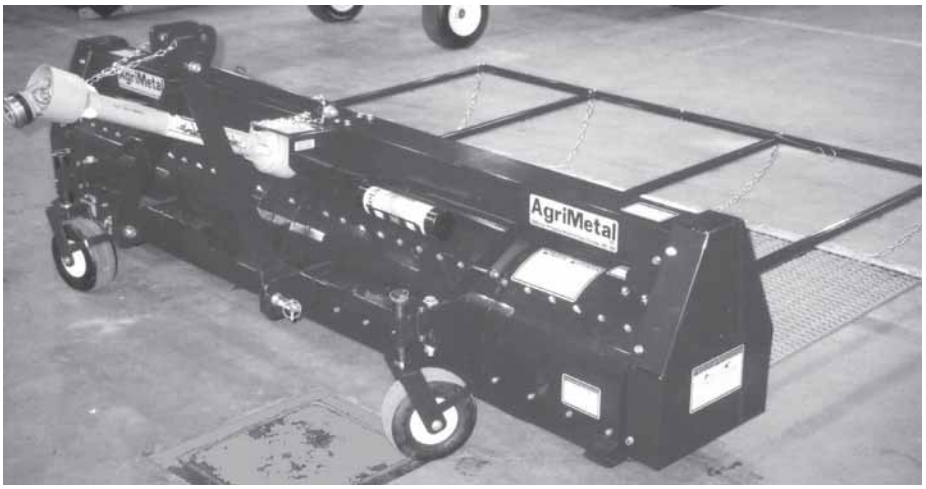


Fig. 52 RE-ASSEMBLED

8 TROUBLE SHOOTING

The AgriMetal Core Breaker is a rotor with rubber finger that pick up cores and separate the tatch from the organic material. 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
Doesn't pick up cores.	Rotor set too high.	Lower machine or replace fingers.
Cores come out front.	Rotor set to low.	Raise rotor adjustment.
	Front flap damaged or worn.	Replace front flap.
Cores come out back.	Rotor too high.	Lower machine or replace finger.
	Blades worn.	Replace blades.
	Going to fast.	Slow down speed.
Machine vibrate.	Foreign material entangled over rotor.	Remove foreign material from rotor.
	Rotor set to low.	Raise rotor adjustment.
Machine does'nt run.	Drive line shear pin broken.	Reaplace shear pin.

IMPORTANT
Use only genuine AgriMetal parts for all repairs to the machine.

9 SPECIFICATIONS

9.1 MECHANICAL

CORE BREAKER

MODEL	690 3-POINT HITCH	930 3-POINT HITCH
Machine storage length	42" (107 cm)	42" (107 cm)
Machine storage width	77" (196 cm)	101" (257 cm)
Machine storage height	55" (140 cm)	55" (140 cm)
Machine weight	600 lbs (273kg)	700 lbs (318kg)
Hitch	3-Point	3-Point
Drive	PTO 540 rpm	PTO 540 rpm
Recommended HP	25 HP	30 HP
Productivity	3.65 acres/hour	5 acres/hour
Flexible steel drag mat	36" x 72" (91 x 183 cm)	36" x 96" (91 x 244 cm)
Shipping dimensions	80" x 48" x 48" HEIGHT (203 x 122 x 122 cm HEIGHT)	104" x 48" x 48" HEIGHT (265 x 122 x 122 cm HEIGHT)
Shipping weight	700 lbs (318 kg)	800 lbs (364 kg)

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

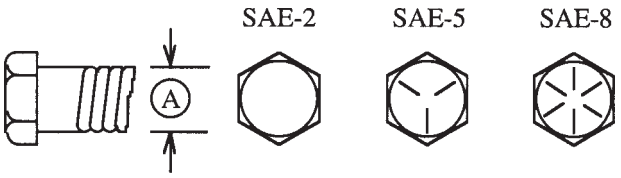
9.2 BOLT TORQUE

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.

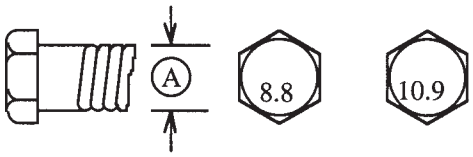
ENGLISH TORQUE SPECIFICATIONS

Bolt Diameter "A"	Bolt Torque * SAE 2 N.m	SAE 2 (lb-ft)	SAE 5 N.m	SAE 5 (lb-ft)	SAE 8 N.m	SAE 8 (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 (N.m)	8.8 (lb-ft)	10.9 (N.m)	10.9 (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.

10 INDEX