1 INTRODUCTION

Congratulations on your choice of an AgriMetal Overseeder 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 Overseeder 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 WB-24 Overseeder. Use the Table of Contents or Index as a guide to locate required information.

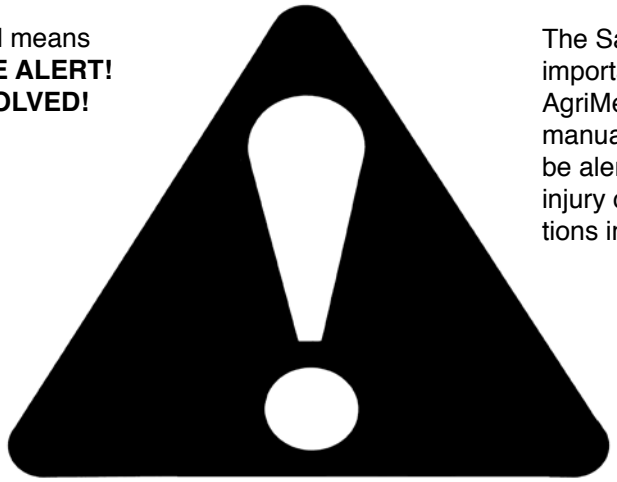
Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your Agri-Metal Dealer if you need assistance, information or additional copies of the manuals.

OPERATOR ORIENTATION - The directions left, right, front and rear, as mentioned throughout this manual, are as seen from behind the operating handle and facing in the direction of seeding.

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 Overseeder 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 at AgriMetal Inc., 1006 Rue Principale, Wickham, Quebec, Canada, J0C 1S0. Phone (819) 398-6883 or fax (819) 398-5311.

SAFETY

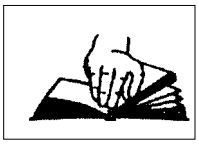
YOU are responsible for the SAFE operation and maintenance of your AgriMetal Overseeder. **YOU** must ensure that you and anyone else who is going to operate, maintain or work around the Overseeder be familiar with the operating and maintenance procedures and related **SAFETY** information contained 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 Overseeder.

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.

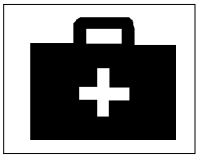
- Overseeder owners must give operating instructions to operators or employees before allowing them to operate the machine, and at least annually thereafter.
- The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL Safety 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

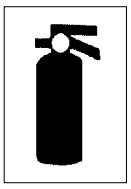
1. Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or unplugging the Overseeder.



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.



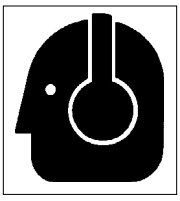
4. Do not allow riders.

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. Slow engines to low idle, stop engines, 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 Overseeder.

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. 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.**

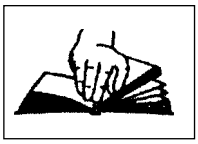
8. Do not modify the equipment in any way. Unauthorized modification result in serious injury or death and may impair the function and life of the equipment.

9. 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 4 wheeler and machine Manuals. Pay close attention to the Safety Signs affixed to the 4 wheeler 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 engine and machine quickly in an emergency. Read this manual and the one provided with your 4 wheeler.

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.

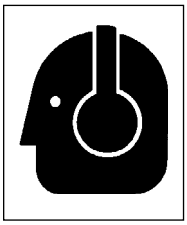
- Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

2.5 PREPARATION

1. Never operate the tractor and machine until you have read and completely understand this manual, the 4 Wheeler Operator's Manual, and each of the Safety Messages found on the safety signs on the 4 wheeler 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. Clear working area of stones, branches or hidden obstacles that might be hooked or snagged, causing injury or damage.

5. Operate only in daylight or good artificial light.

6. Be sure machine is properly mounted, adjusted and in good operating condition.

7. Ensure that all safety shielding and safety signs are properly installed and in good condition.

2.6 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.

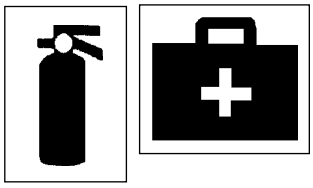
4. Before working on this machine, shut off the engine, set the brake, and turn fuel valve off.

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. Use heavy gloves when handling sharp components.

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.

2.7 OPERATING SAFETY

1. Please remember it is important that you read and heed the safety signs on the Overseeder. 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 Overseeder 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. Read Operator's Manual before starting. Review safety instructions annually.

9. 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.

10. Do not climb on the machine or place hands in any opening when the engine is running.

11. Do not smoke when refuelling.

12. Do not exceed a safe transport speed.

13. Secure access ramps before moving or transporting machine.

14. 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.

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

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

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

2.8 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 the 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 4 wheeler of less than 24 horsepower when moving the unit.

7. Use a drawbar pin with provisions for a retainer. Install the retainer. Attach safety chain between 4 wheeler and machine before moving.

8. Do not drink and drive.

9. Never allow riders on either tractor or machine.

11. Never allow riders on either 4 wheeler or machine.

2.9 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 hitch and wheels with planks if required.

2.10 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.

2.11 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.

2.12 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.

2.13 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 Overseeder 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. Review safety instructions annually.
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 climb on the machine or place hands in any opening when the engine is running.
4. Do not smoke when refuelling.
5. Do not exceed a safe transport speed.
6. Secure access ramps before moving or transporting machine.

ATTENTION

1. Lire attentivement le manuel d'operation avant la mise en marche. Réviser annuellement le manuel d'operation
2. Arrêter le moteur, placer tous les controles 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.
3. Ne pas grimper sur la machine et ne jamais placer les mains dans toute ouverture lorsque le moteur est en marche.
4. Ne jamais fumer lors du plein d'essence.
5. Ne pas excéder une vitesse de transport sécuritaire.
6. Bien sécuriser les rampes avant d'effectuer le transport de la machine.

NC13-33-0199

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 **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.

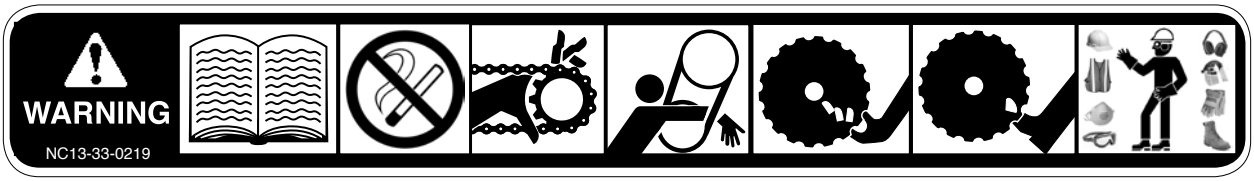
PIÉCES EN MOUVEMENT
RESTER ÉLOIGNÉS

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.

01-60-0110

C



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- Think SAFETY! Work SAFELY!

D

DANGER

FIRE HAZARD
NO SMOKING

To prevent serious injury or death from fire:

1. Do not smoke when refuelling.
2. Keep sparks, flames and hot material away from flammable substances.
3. Stop engine five minutes before refuelling.

RISQUE D'INCENDIE
DEFENSE DE FUMÉ

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

1. Ne pas fumer lors du remplissage.
2. Garder les flammes et toute matiére inflammable hors de portée.
3. Arrêter le moteur cinq minutes avant de refaire le plein.

NC13-33-0109

E

WARNING AVERTISSEMENT

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.

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.

NC-13-33-0113

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.

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.

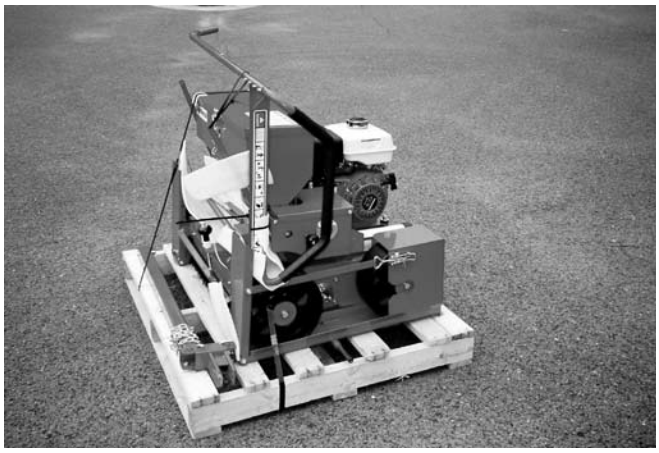
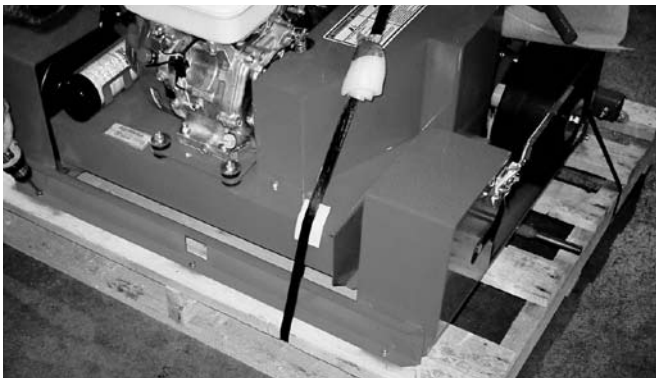


Fig. 1 SHIPPING

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-down screws.



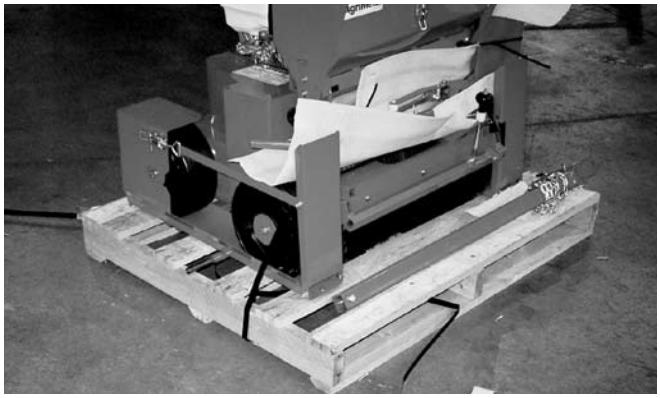
Hitch Frame

Hitch - Rear

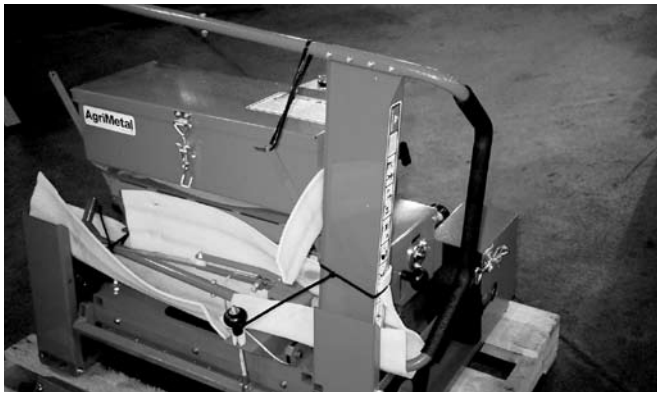
Hitch - Front

Fig. 2 HITCH

5. Cut steel straps and plastic ties holding machine and components to pallet.



Steel Straps



Plastic Ties

Removed

Fig. 3 CUTTING

6. Remove foam sheeting from machine.

7. Lay out handle.

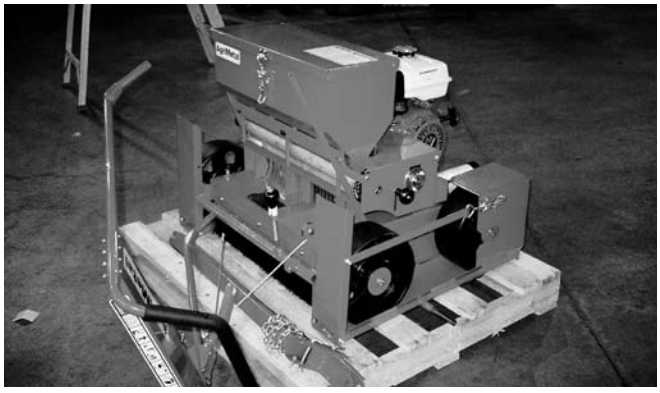


Fig. 4 HANDLE

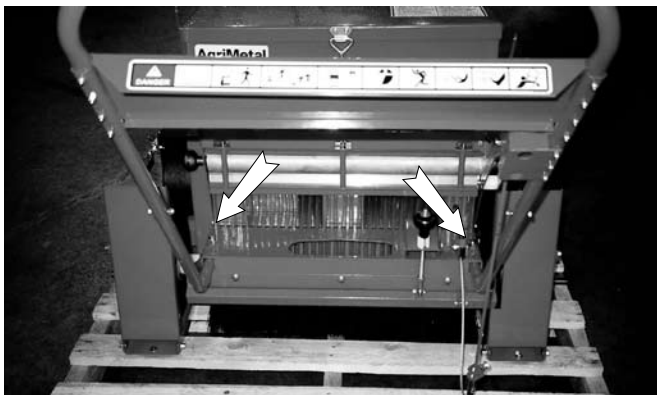
8. Install handle assembly into mounting pockets on lower frame.

9. Tighten set screws to their specified torque.

NOTE

Be sure cable is not tangled or caught on a component.

Pockets



Set Screws

Fig. 5 HANDLE MOUNTING

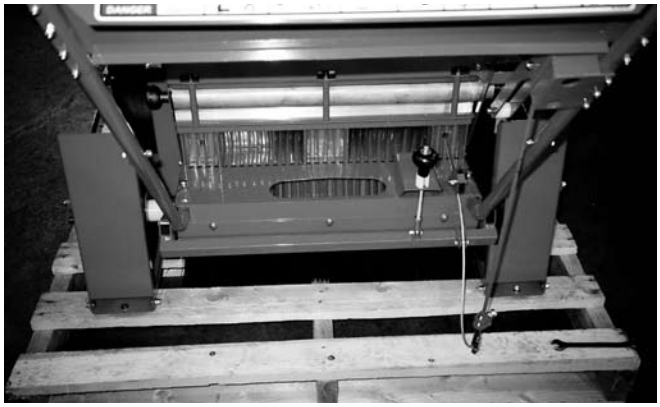
10. Install the control cable and lever:

    a. Loosen the cable anchor bracket set screws.

    b. Slide the cable anchor bracket up the control rod.

    c. Install the bottom of the control rod into its frame bracket.

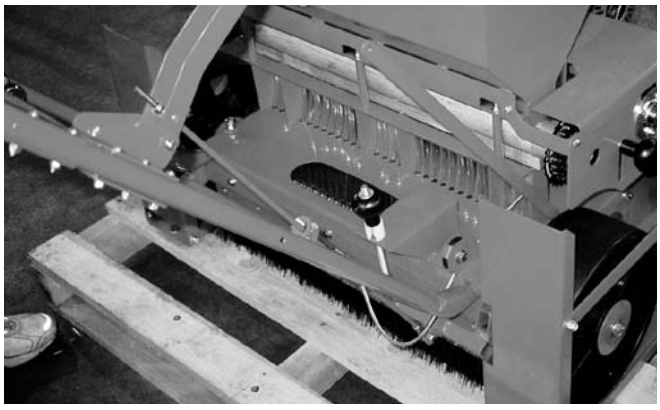
    d. Tighten fasteners to their specified torque.



Cable

Anchor Bracket

Positioned

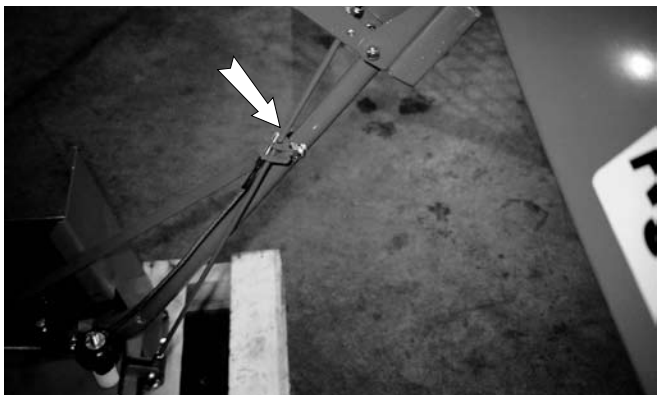


Routing

Fig. 6 CONTROL CABLE

11. Position cable anchor bracket:

    a. Move bracket up to the scribe marks.



Scribe Marks

    b. Tighten set screw and jam nut to their specified torque.

Positioned

Fig. 7 ANCHOR BRACKET

12. Open seed box.

Fig. 8 SEED BOX

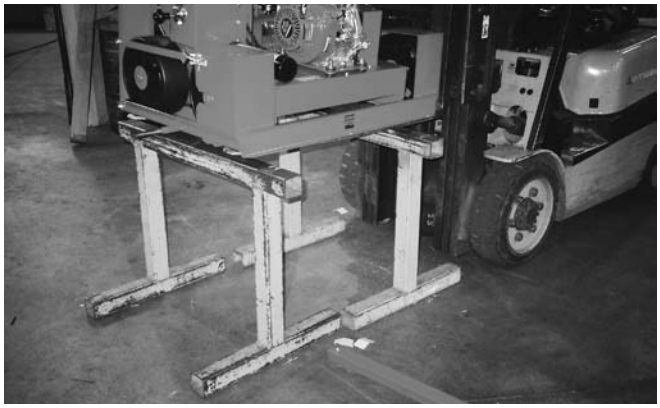
13. Raise machine.

Fig. 9 RAISE MACHINE

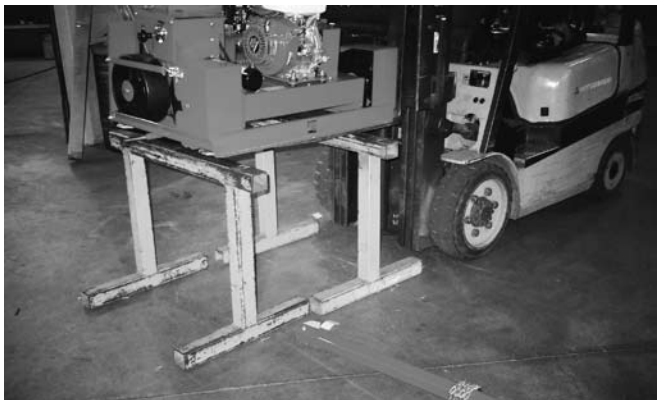
14. Remove pallet.

15. Support frame on stands.

Stand



Stand



Supporting

Fig. 10 SUPPORT FRAME

16. Attach hitch:

    a. Slide hitch into frame.

Installed

    b. Secure with fasteners under frame.

    c. Tighten fasteners to their specified torque.

Fasteners

Fig. 11 ATTACH HITCH

17. Mount the right tire.

Axle

18. Secure with fastener and washers.

19. Tighten fasteners to their specified torque.

Installed

Fig. 12 RIGHT TIRE

20. Remove stands and lower frame to ground.

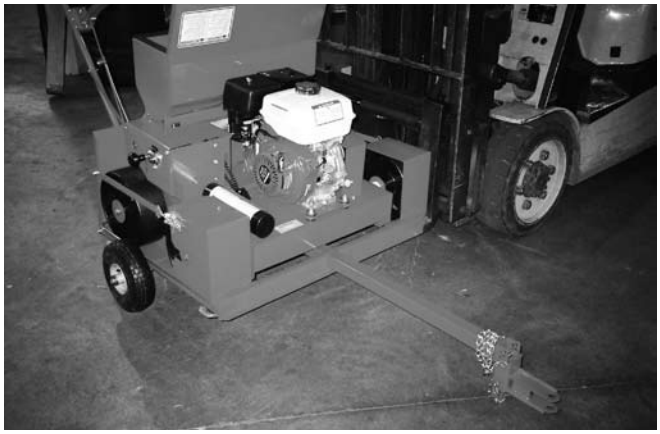
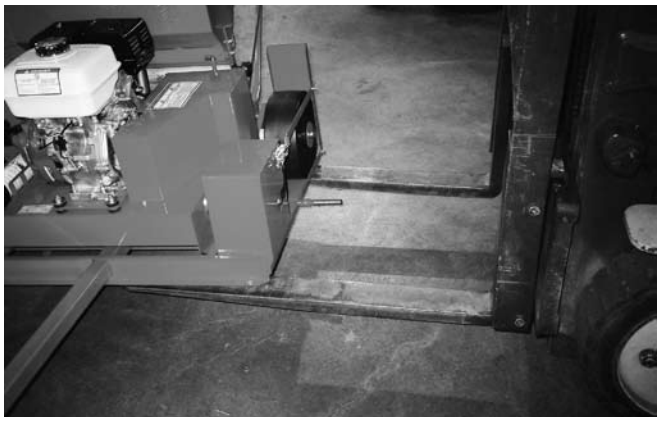


Fig. 13 LOWERED

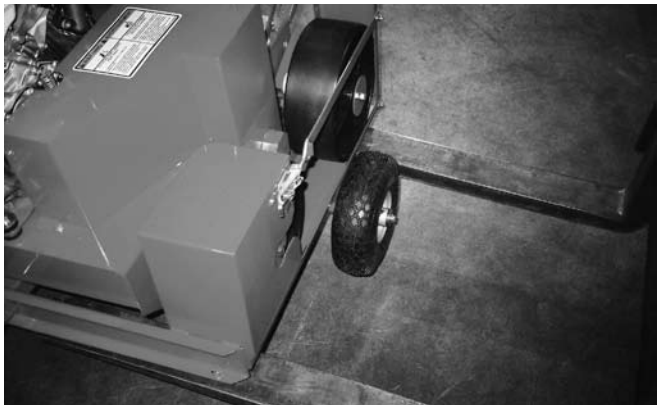
21. Mount the left tire.



Axle

22. Secure with fastener and washers.

23. Tighten fasteners to their specified torque.



Installed

Fig. 14 LEFT TIRE

24. Remove control system shipping block.

Shipping

Removed

Fig. 15 SHIPPING BLOCK

5 OPERATION

OPERATING SAFETY

- 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.
- Read Operator's Manual before starting. Review safety instructions annually.
- 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.
- Do not climb on the machine or place hands in any opening when the engine is running.
- Do not smoke when refuelling.
- Do not exceed a safe transport speed.
- Secure access ramps before moving or transporting machine.
- 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.
- 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.
- Do not allow anyone who is unfamiliar with the safety rules and operation instructions to use this machine.

5.1 TO THE NEW OPERATOR OR OWNER

AgriMetal Overseeders are designed to efficiently place seed into a grass-covered surface. It works well on most grass surfaces including golf course greens.

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 Overseeder will provide many years of trouble-free service.

5.2 MACHINE COMPONENTS

The AgriMetal Overseeder is a self-propelled machine designed to place seeds into a grass-covered surface like a golf course green. It is powered by a small gas engine that turns coulters under the deck to create a small furrow for the seed. The coulters turning pull the header over the planting surface. Seed from the tank is metered into tubes that place it into the furrow created by the opener. Power to drive the metering system is transmitted through a roller chain driven by the front axle into the metering gearbox.

The overseeder comes with a trailer for moving from location to location.

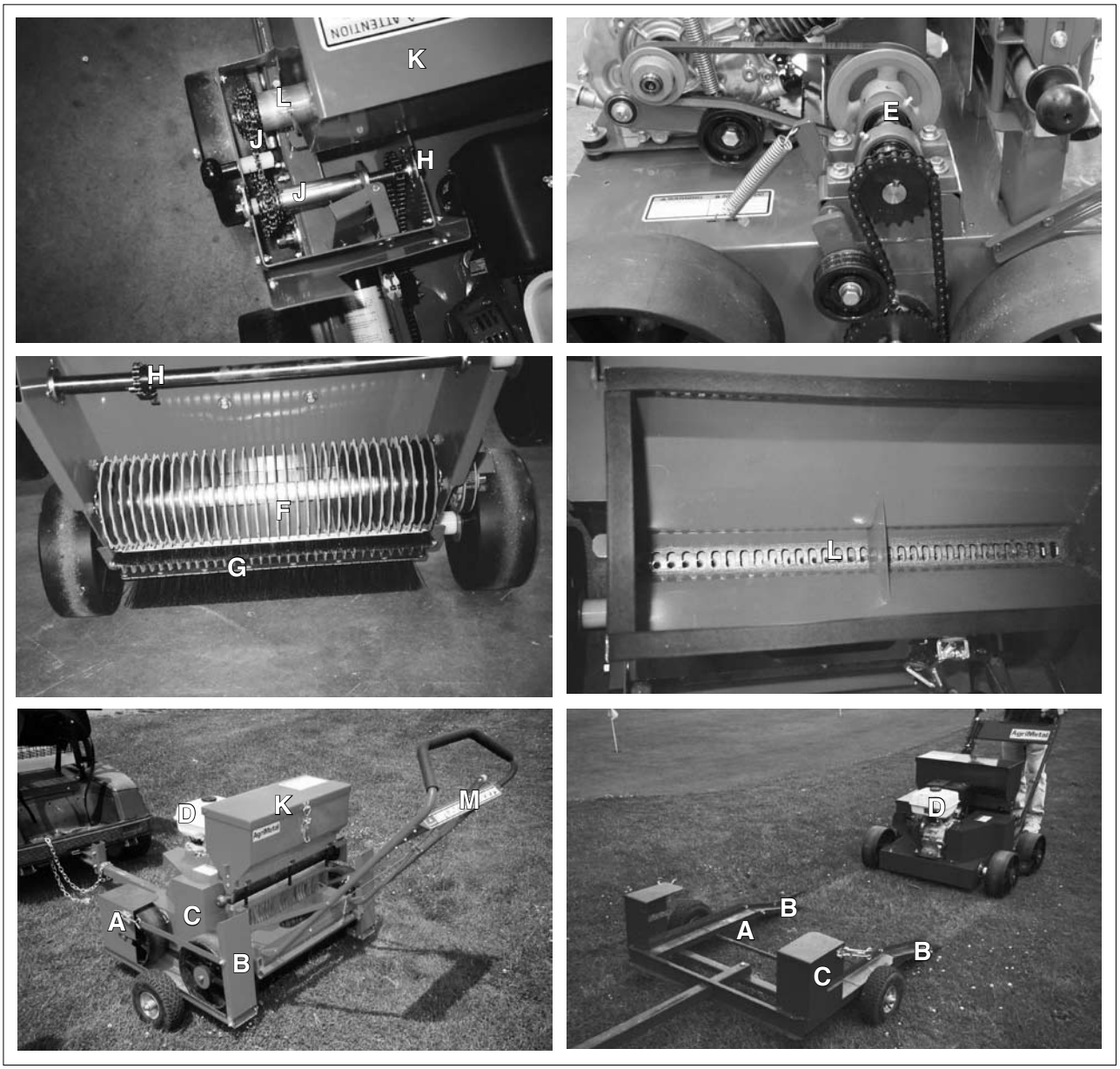


Fig. 16 PRINCIPLE COMPONENTS

A Trailer
B Loading Ramp
C Transport Lock Bracket
D Engine
E Coulter Drive
F Coulters
G Openers
H Metering Drive
J Metering Drive System
K Seed Box
L Metering Roller
M Metering Control

5.3 BREAK-IN

Although there are no operational restrictions on the overseeder 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 drive bearings.

5. Check the coulters and openers for entangled material. Remove any entangled material.

6. Check tire pressure. Inflate as required.

7. Check engine fluid levels. Top up as required.

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

1. Repeat steps 1 through 7 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 Overseeder 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 overseeder 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 the belts and chains. Adjust tension and align as required.

3. Check the coulters and openers. 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.

6. Check engine fluid levels. Top up as required.

5.5 CONTROLS

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

1. **Gas Engine:**
   A 9 hp Honda engine is used with the unit. Always read the engine Operator's manual supplied with the machine for the detailed operating procedures.

   a. **Ignition Switch (Manual Start)**
   This rotary switch controls the electrical power to the engine electrical system. Turn the switch clockwise to turn the electrical system ON and the engine will run. Turn counter-clockwise to stop the engine.

   b. **Fuel Shut-Off Valves**
   Each engine is equipped with a valve between the fuel tank and carburator. Slide the fuel valve toward the block to turn ON and away for OFF. Turn the fuel OFF when not in use or before transporting.

   c. **Choke:**
   This lever 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.

   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.

   f. **Starting Rope:**
   This retracting rope and T bar is used to turn the engine over for starting. Grasp the T bar firmly and pull the rope sharply to start the engine.

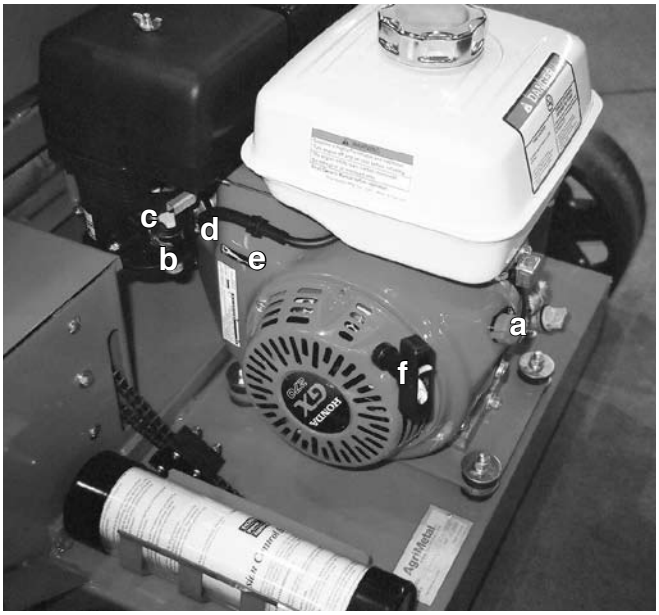
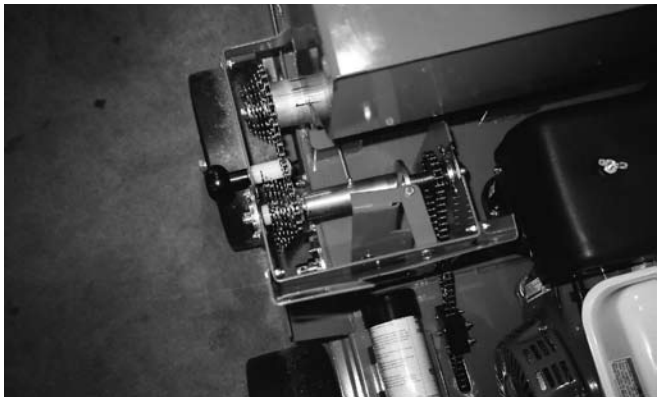


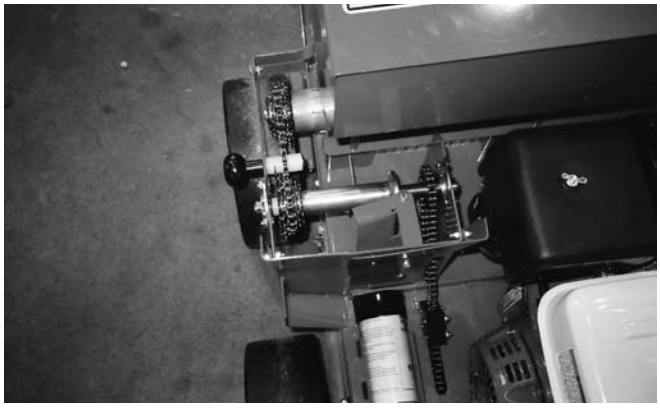
Fig. 17 ENGINE CONTROLS

2. **Metering Control:**
This 2-position pivoting lever on the right side of the handle controls the position of the clutch between the axle drive and gearbox. Pull the lever back to engage the drive system and allow the clutch to engage. Push the lever forward to disengage the drive system and disengage the clutch.



Engaged - Clutch

Engaged - Lever



Disengaged - Clutch

Disengaged - Lever

Fig. 18 METERING CONTROL

5.6 ATTACHING/UNHOOKING

The Overseeder should always be located on a level, dry area that is free of debris and other foreign objects. When attaching the machine to a 4 wheeler, 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 4 wheeler, 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.

6. Attach the safety chain around the drawbar cage to prevent unexpected separation.

7. Reverse the above procedure when unhooking from 4 wheeler.

Aligned

Drawbar Pin / Retainer / Safety Chain

Attached

Fig. 19 ATTACHING

5.7 FIELD OPERATION

OPERATING SAFETY

- 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.
- Read Operator's Manual before starting. Review safety instructions annually.
- 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.
- Do not climb on the machine or place hands in any opening when the engine is running.
- Do not smoke when refuelling.
- Do not exceed a safe transport speed.
- Secure access ramps before moving or transporting machine.
- 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.
- 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.
- Do not allow anyone who is unfamiliar with the safety rules and operation instructions to use this machine.

Although the Overseeder 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. Move or transport machine to working area.

Towing

Hauling

Fig. 20 MOVING / TRANSPORTING

3. Lower ramps.

4. Pull overseeder off of trailer.

Ramps Down

Unloaded

Fig. 21 UNLOADING

5. **Starting Machine:**

   a. Disengage seed metering clutch by moving control up which raises machine up.

   b. Close the choke if the engine is cold.

   c. Move the throttle to its 1/2 throttle position.

   d. Turn the ignition switch to ON.

   e. Pull sharply on the starting rope to start the engine.

   f. Run the engine for a few minutes to allow it to warm.

   g. Gradually open the choke.

   h. Increase throttle setting to maximum speed for operation.

   i. Engage seed metering clutch by pulling control lever back.

6. **Stopping:**

   a. Slow engine to low idle.

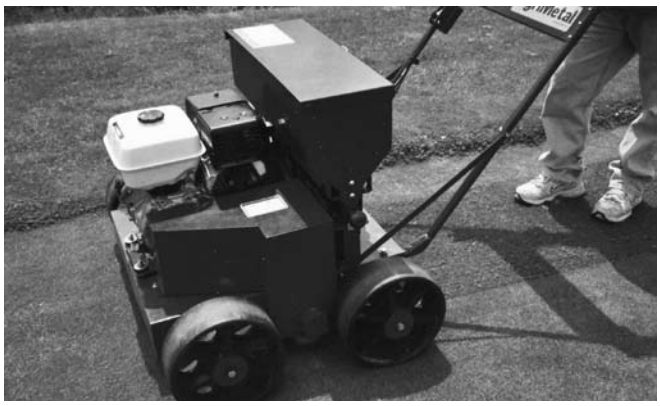
   b. Stop engine by turning ignition switch to OFF.

   c. Or push down on handle to lift the front of the frame, raising the drive wheels off of ground.

7. **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.

8. Drive to the working area.

Engine



Working

Lifting

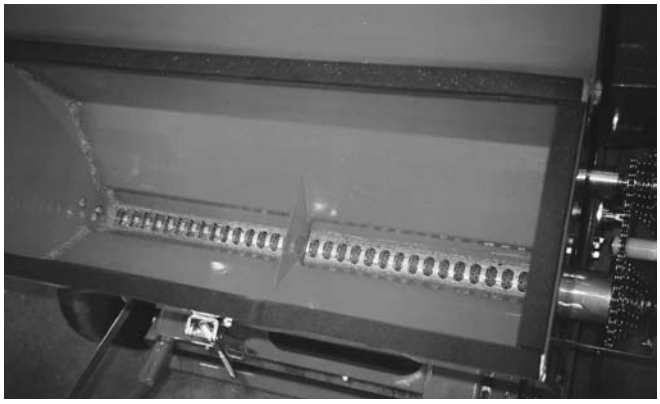
Fig. 22 STARTING / STOPPING

9. **Travel Speed:**
Set the travel speed appropriate for the job being done. The coulter cutting system is connected directly to the engine through the roller chain drive on the left side of the frame Generally full throttle setting works well for most applications.

Fig. 23 WORKING

10. **Seed Box:**
The seed box is mounted on the top of the frame and provides a supply of seed for planting. Seed is metered by the roller under the seed box into the seed tubes for planting.

Seed



Metering Roller

Roller Removed

Fig. 24 SEED BOX

11. **Planting Pattern:**
Planting can be done in many different ways or patterns. Use the technique that fits your application best for coverage, germination, etc.

Single Pass

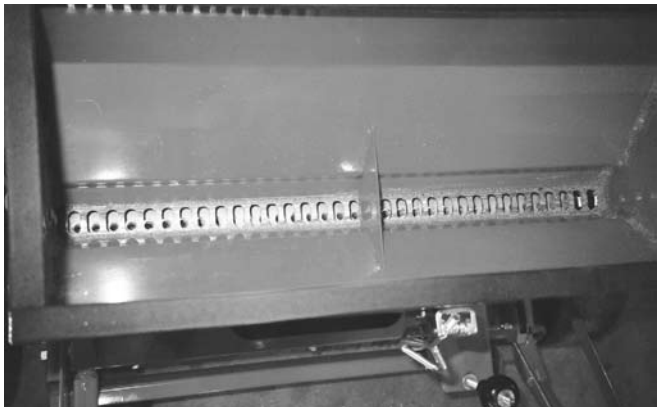
Diagonal Pass

Fig. 25 PLANTING PATTERN

12. **Metering Roller Cleaning:**
The metering roller must be kept clean and free of obstructions to properly meter the seed for planting. Remove the roller from below the seed box and use an air hose to remove all foreign material from the roller. Do not allow any material to build up on the roller to prevent effects on seeding rate and/or blockage of a seed tube. Clean completely at the end of every work day.

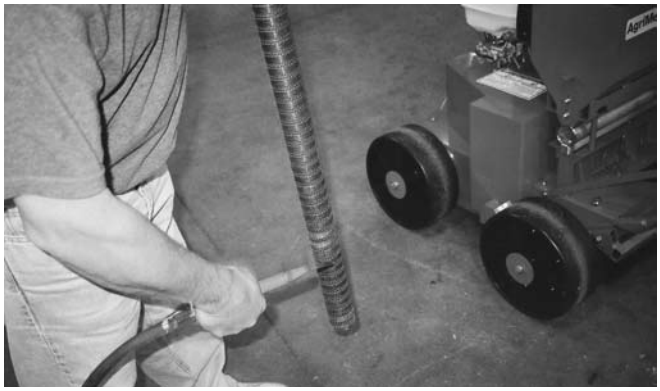
IMPORTANT

Clean thoroughly before storing.



Box

Roller Removal



Cleaning

Fig. 26 METERING ROLLER CLEANING

13. **Metering Rate:**
The roller chain gear box on the left side of the frame is used to set the roller metering rate. Move the roller chain to the sprockets specified in Table 1 for the desired seeding rate. To move the roller chain to a new set of sprockets, follow this procedure:

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

b. Stop and disable engine.

c. Open the cover over the gear box.

d. Loosen the roller chain tensioning sprocket positioning bolt.

e. Move the roller chain off the side of the large sprocket.

f. Turn the metering system to remove chain from large sprocket.

g. Check Table 1 to determine which set of sprockets is needed to produce the desired seeding rate.

h. Install roller chain on the new set of sprockets.

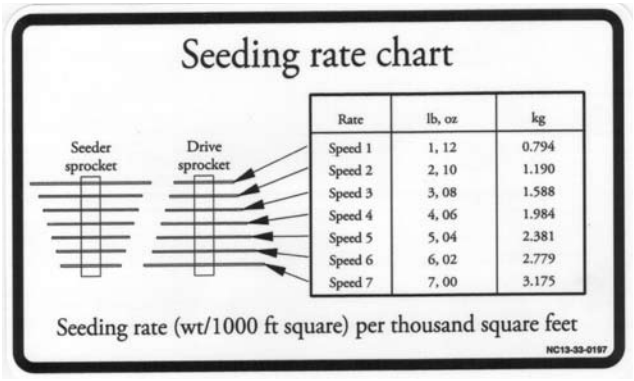
i. Turn the system to move the chain completely onto the new sprocket.

j. Move the tensioning sprocket to tighten chain.

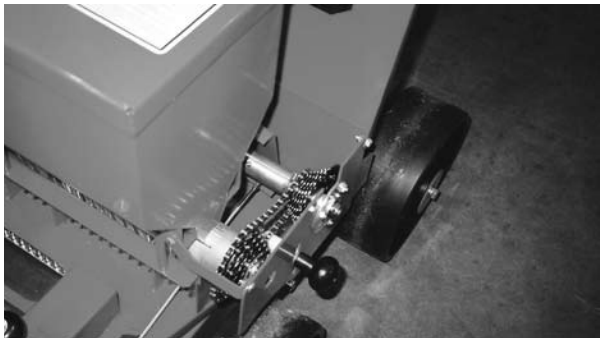
k. Tighten tensioning sprocket anchor bolt.

l. Close and secure cover.

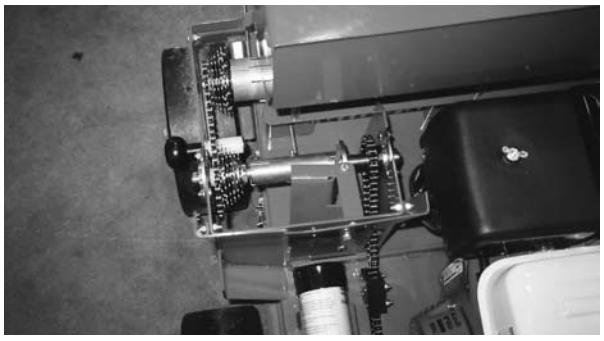
Table 1



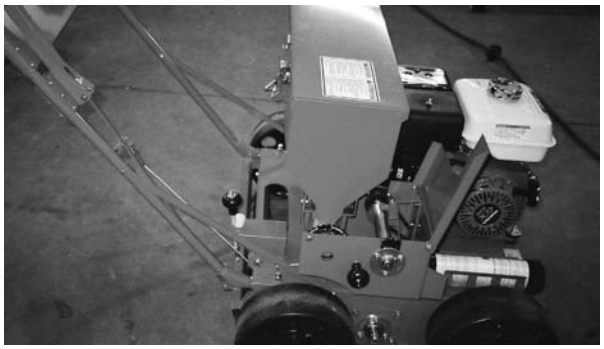
Loose Tightener



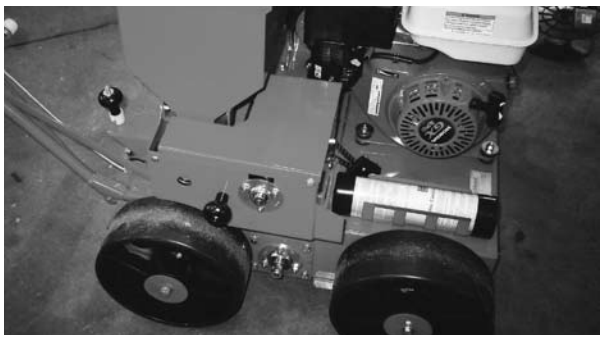
Slow Rate



Fast Rate



Tight Tightener



Cover Closed

Fig. 27 GEAR BOX

14. **Principals of Operation:**
Review the adjacent photos and schematic to understand how the machine functions when operating.

a. **Coulters:**
These powered coulters are used to cut through the plant cover on the surface being seeded. The coulters are powered by the engine through a Roller chain drive system.

b. **Openers:**
Behind each coulter is an opener to spread the surface and allow the seed to fall into the furrow and reach the soil.

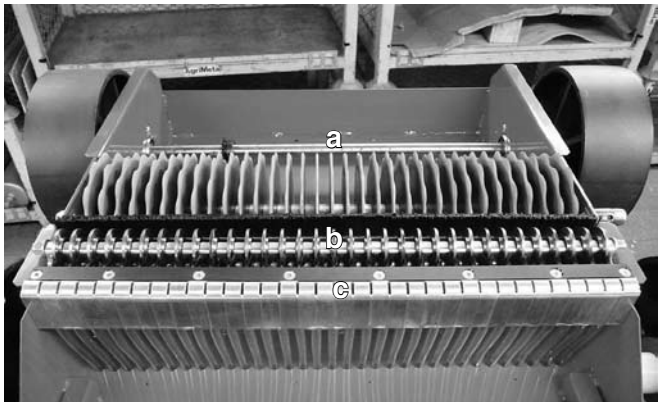
c. **Seed Slots:**
The machine is designed with seed openings at the bottom of the seed tubes that direct the seed into the furrows created by the openers.

d. **Seed Tubes:**
A seed tube follows each coulter/opener and directs the flow of seed into the furrow as it moves over the surface.

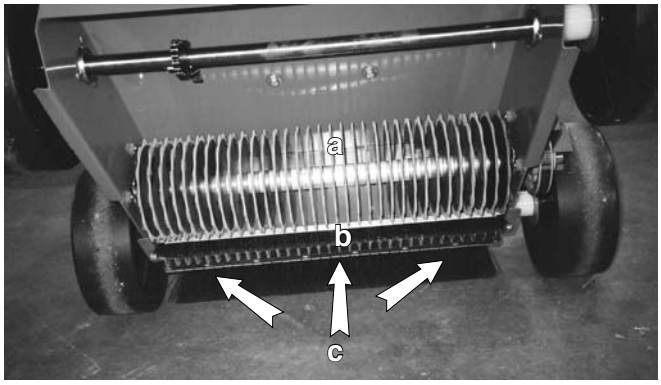
e. **Brush:**
A brush located on the back of the frame is used to even the seed and move it into the furrows.

f. **Metering System:**
A small roller below the seed box meters out a pre-determined amount of seed that drops down through the seed tubes into the furrows.

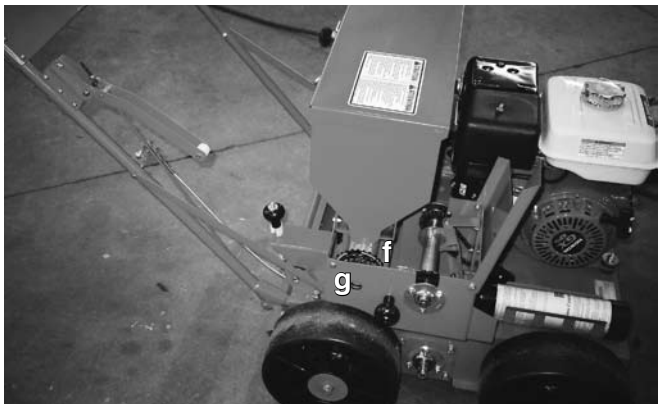
g. **Gear Box:**
A roller chain and sprockets gear box is located between the driven coulter shaft and the metering roller. Position the roller chain on the appropriate set of sprockets to provide the desired seeding rate.



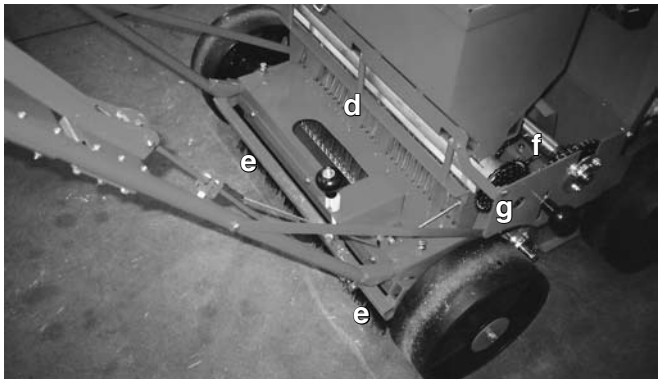
a. Coulter b. Opener c. Seed Slots
Schematic



Bottom



Side View



Back View

Fig. 28 PRINCIPALS OF OPERATION

15. **Unloading/Loading:**
Each machine is designed with a trailer for moving from place to place. When loading or unloading overseeder, follow this procedure:

a. Drive to the unloading area.

b. Stop engine and wait for all moving parts to stop.

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

d. Release latch on left ramp and lay out.

e. Release latch on right ramp and lay out.

f. Roll overseeder off of trailer.

g. Reverse the above procedure when loading machine onto trailer.

h. Be sure to push ramp latches over center to secure.

Left latch

Right Latch

Ramps Down

On Ramp

Unloaded

Fig. 29 UNLOADING / LOADING

16. **Moisture:**
The seed box lid is designed with a rubber seal around it to minimize or eliminate the chance of rain or moisture from getting into the seed. It must be kept in good condition to prevent the entry of moisture. Any moisture in the box can prevent the seed from moving smoothly through the machine. Check the condition of the seal weekly. Use an air hose to blow moisture out of the box if any is found.

Fig. 30 SEAL

17. **Seed Placement:**
It is recommended that the rows be checked occasionally to see that seed has been placed in each row. Gently pull each row open to see if there is seed in it. If a row does not have seed, check the system for plugs. Unplug before proceeding.

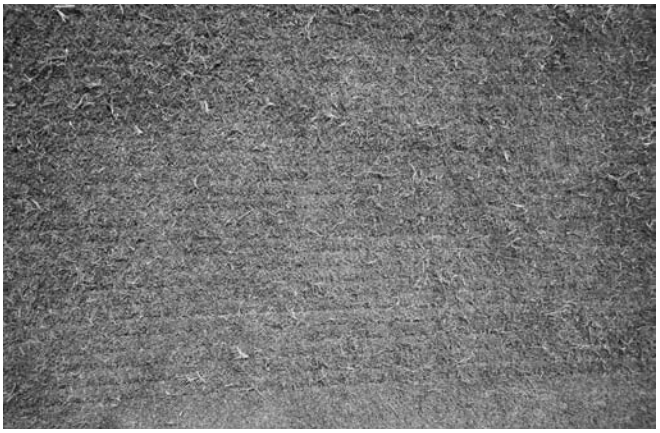


Fig. 31 SEED ROWS

18. **Unplugging:**
The seed box metering roller, seed tubes and seed discharge opening must all be clean and free of debris and foreign material to allow the seed to move freely through the machine.

Follow this procedure when unplugging:

a. Stop engine and wait for all moving parts to stop.

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

c. Open seed box. Check and be sure all openings are free of debris and foreign material.

d. Clean as required.

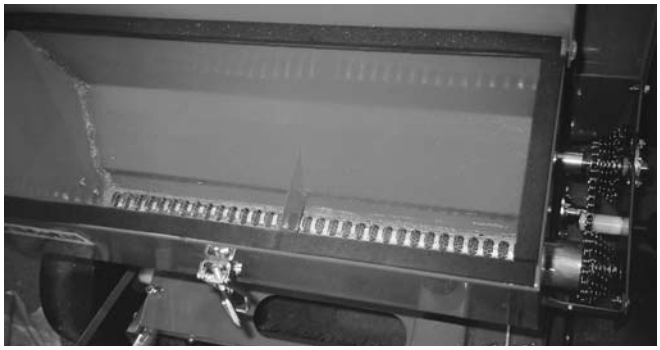
e. Remove metering roller and clean if debris and foreign material can be seen through openings.

f. Check seed tubes.

g. Use and air hose to blow out if plugged.

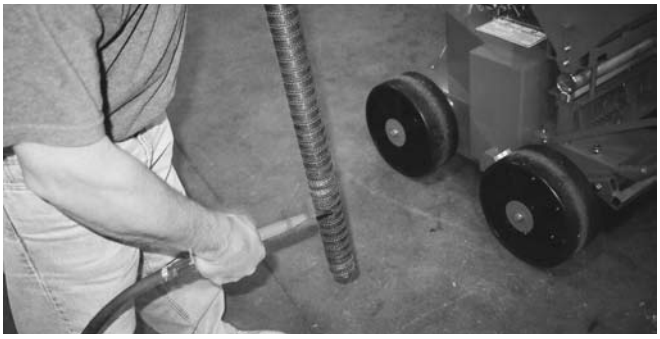
h. Check discharge slots.

i. Clean if plugged or material is lodged in the opening.

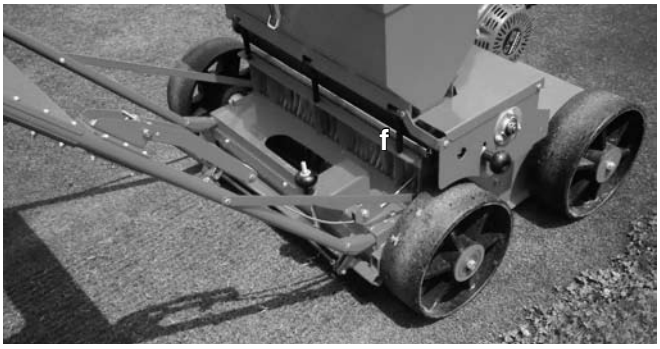


Seed Box

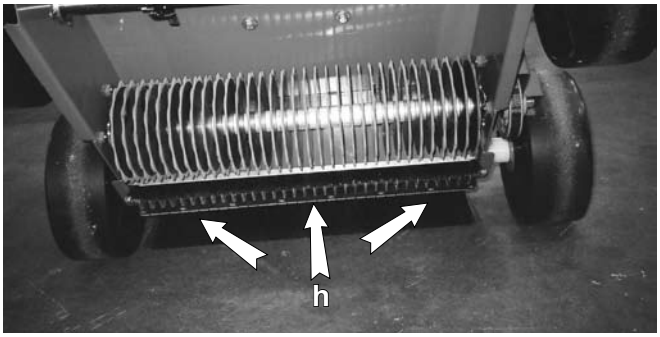
Blow Out



Roller Cleaning



Seed Tubes



Discharge Slots

Fig. 32 UNPLUGGING

19. **Operating Hints:**

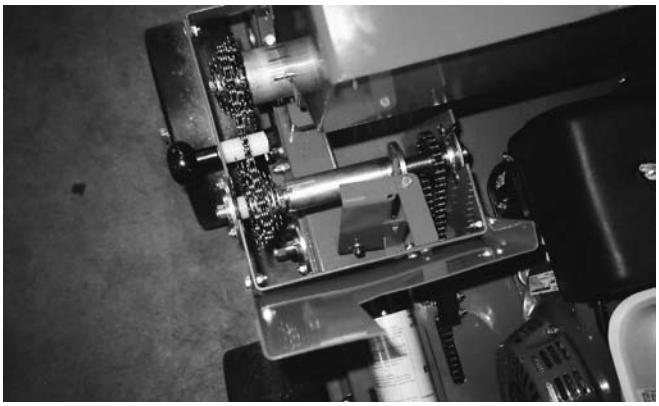
a. Do not allow riders.

b. Travel at 2 to 3 mph (3 to 5 kph) to get the best results. Observe the job being done to determine the best seeding speed.

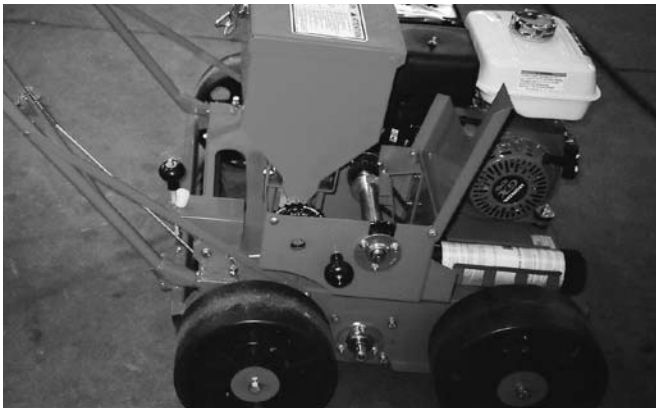
Fig. 33 WORKING

c. Be sure the gear box roller chain is fully around both sprockets when setting a new seeding rate. Always move the tensioner UP to set the chain tension.

NOTE
Always keep a small droop in chain. Do not over-tighten.



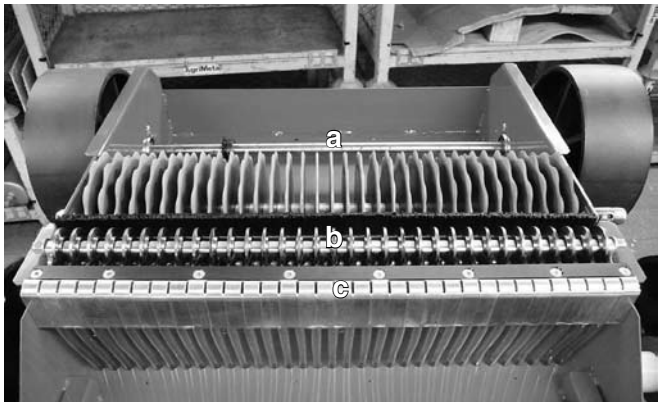
Sprockets



Tensioners

Fig. 34 GEAR BOX

d. Check the bottom of the deck to be sure the coulters, openers and seed slots are clean and in good condition. Use high pressure air to clean seed slots.



a. Coulter b. Opener c. Seed Slots

Fig. 35 BOTTOM OF DECK

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 the 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 4 wheeler of less than 24 horsepower when moving the unit.
- Use a drawbar pin with provisions for a retainer. Install the retainer. Attach safety chain between 4 wheeler and machine before moving.
- Do not drink and drive.
- Never allow riders on either tractor or machine.
- Never allow riders on either 4 wheeler 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 overseeder from work-site to work-site.
4. Insure that the trailer is securely attached to the 4 wheeler with a mechanical retainer through the drawbar pin. Always use a safety chain between the 4 wheeler and trailer.
5. Do not allow riders.
6. Never exceed a safe travel speed.

Towing

Hauling

Fig. 36 TRANSPORTING

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. Use a vacuum to remove all the excess seed from the seed box, metering roller and seed tubes. Or use an air hose to blow all the residual material from the box, roller and tubes. Clean thoroughly to prevent any remaining material from clogging the machine when next used.
2. Thoroughly wash the machine with a pressure washer or water hose to remove all dirt, mud, debris or residue.
3. Make sure all the water drains out of all areas of the machine.
4. Lubricate all grease points to remove any water residue from washing.
5. Remove any material that has become entangled around any moving part.
6. Touch up all paint nicks and scratches to prevent rusting.
7. Move the machine to its storage area.
8. Store in a dry, level spot.
9. Store in an enclosed building if possible. If space is not available, cover with a waterproof tarpaulin and tie down securely.
10. Unhook trailer from the 4 wheeler (see Section 5.8).

Fig. 37 STORED

11. Place planks under the wheels and hitch for added support if required.
12. Store in an area away from human activity.
13. Do not allow children to play around the stored unit.

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: 1.0 L (1.0 US qt)

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

   Fuel Tank Capacity: 1.0 US gal (3.7 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.

IMPORTANT

Over-greasing may damage bearing seals. If seals are damaged, replace bearings immediately.

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.

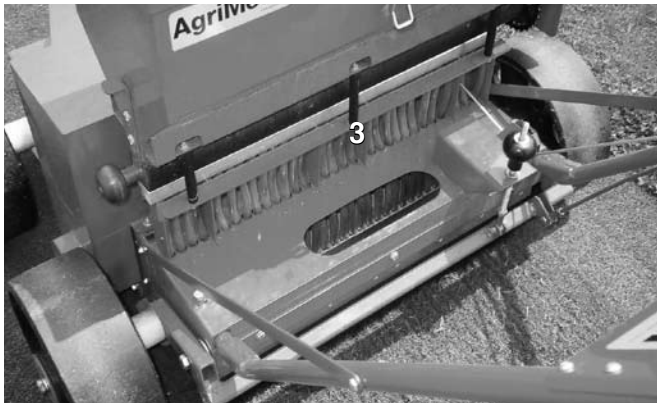
8 Hours or Daily

1. Check engine oil level.

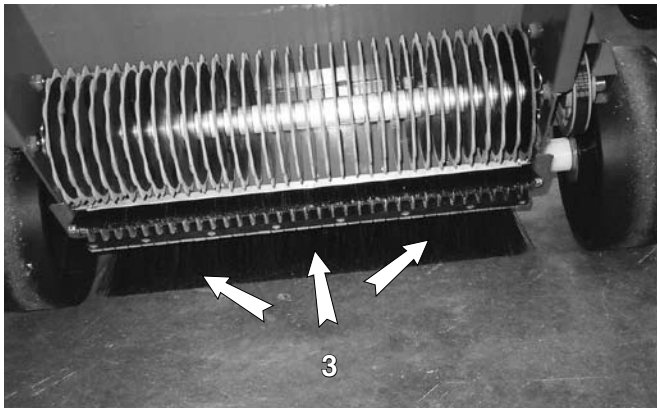
2. Check fuel level.

Fig. 38 ENGINE

3. Check condition of seed tubes. They should all be open and clean.



Top



Bottom

Fig. 39 SEED TUBES

40 Hours or Weekly

1. Check primary drive belt tension spring.
2. Check coulter roller chain drive tension spring.
3. Grease the cross shaft bearings.

WARNING

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

4. Grease the clutch bushing.
5. Check the condition of the seed box seal.
6. Clean engine air cleaner.

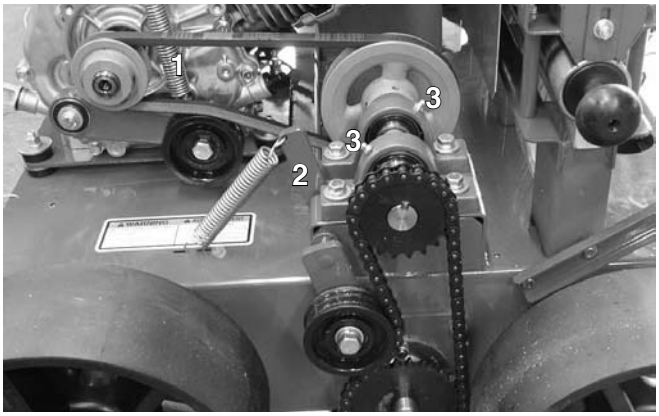


Fig. 40 DRIVE SYSTEM BELT TENSION

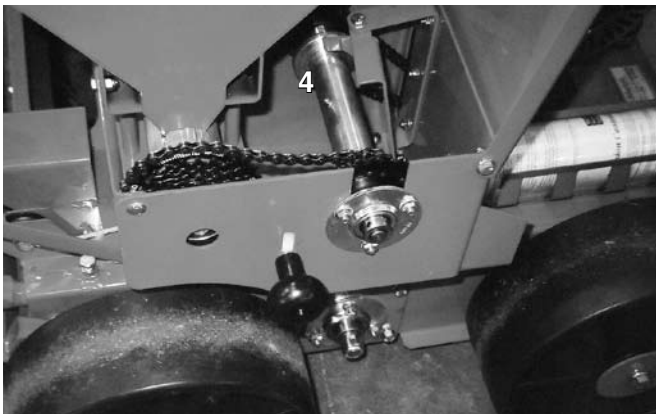


Fig. 41 CLUTCH BUSHINGS

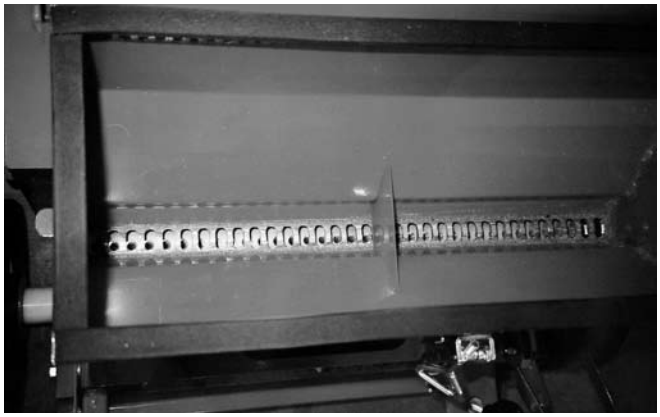


Fig. 42 SEED BOX SEAL

Fig. 43 AIR CLEANER

7. Check condition and tension on the axle and metering roller drive chains.

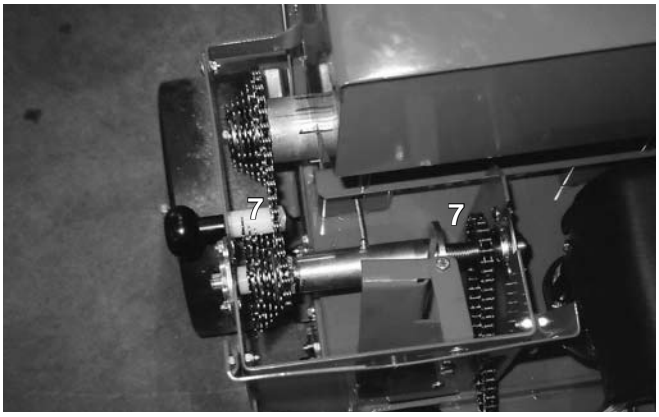


Fig. 44 DRIVE CHAINS

8. Check condition of coulters, openers and seed tubes by tilting deck back and looking under frame. Remove any entangled material.

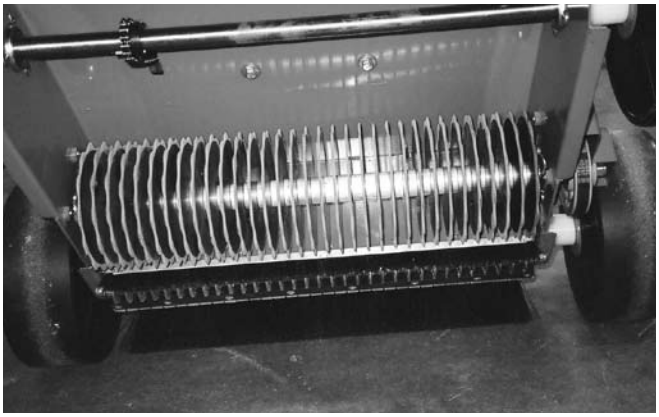


Fig. 45 BOTTOM SIDE

9. Check metering roller. Remove and clean with air hose.

Removing

Air Hose

Fig. 46 ROLLER

100 Hours or 3 Months:

1. Change engine oil.

Fig. 47 DRAIN PLUG

2. Check tire pressure.

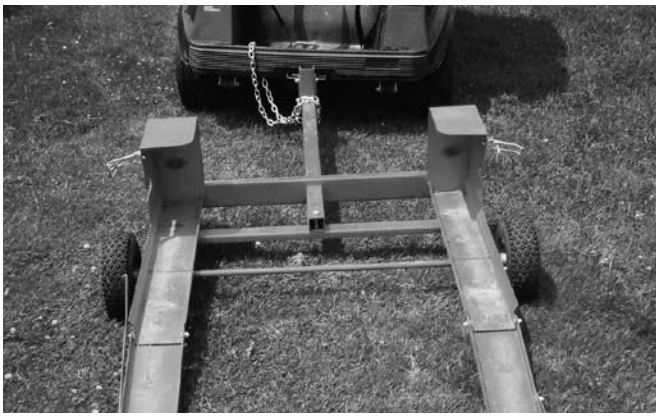


Fig. 48 TIRES

Annually

1. Clean machine

Fig. 49 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

MAINTENANCE / HOURS / SERVICED BY																							
8 Hours or Daily																							
CK Engine Oil Level																							
CK Fuel Level																							
CK Seed Tubes																							
40 Hours or Weekly																							
CK Drive System Belt Tension																							
G Cross Shaft Bearings																							
G Clutch Bushing																							
CK Seed Box Seal																							
CL Engine Air Cleaner																							
CK Axle & Metering Roller Drive																							
Chains																							
CK Coulters, Openers & Seed																							
Tubes																							
CK Metering Roller																							
100 Hours or 3 Months																							
CH Engine Oil																							
CK Tire Pressure																							
Annually																							
CL Machine																							

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 turn ignition off 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.

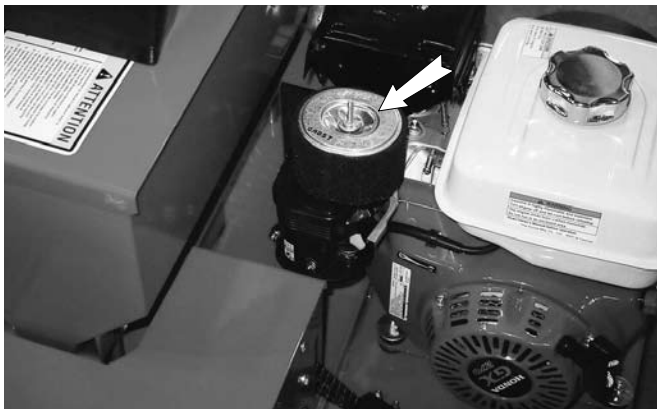


Fig. 50 AIR CLEANER

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.

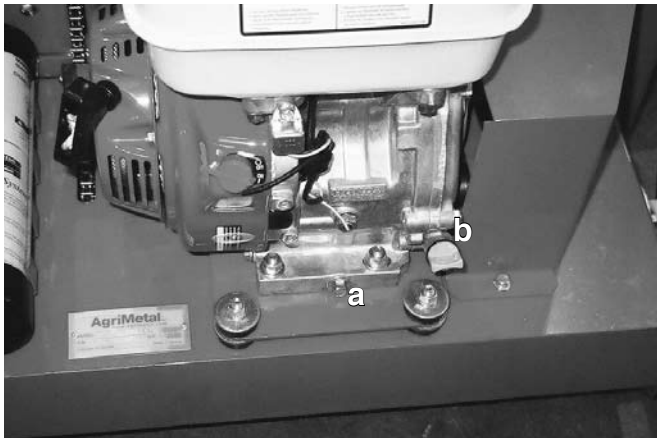
7. Dispose of the used oil in an approved container.

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.



a. Drain Plug **b. Fill Plug**

Fig. 51 ENGINE

6.2.3 DRIVE BELT TENSION AND ALIGNMENT

A set of V belts transmits rotational power to the coulters. 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, turn off ignition and wait for all moving parts to stop before servicing.

4. Remove guard over belts.

5. The drive belt tensions are set by spring-loaded idler pulleys:

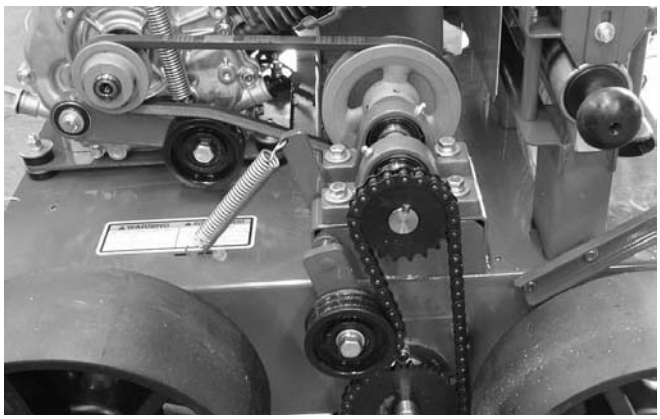
   a. The idler pulleys should be set so that the the belts do not slip when operating.

   b. The tensioning spring should have a spacing of 1 mm (1/16" inch) between the coils for the belts to be tensioned properly.

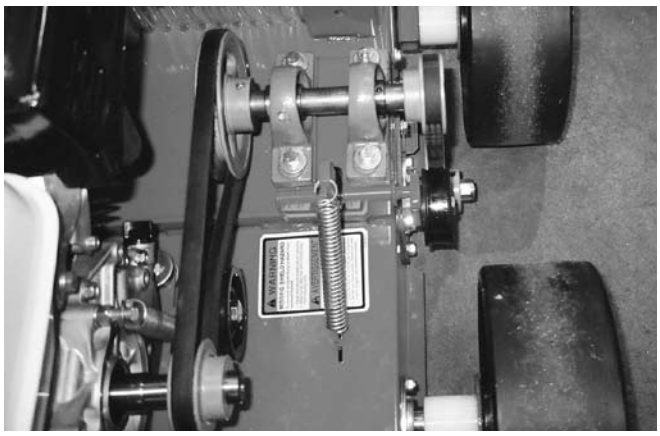
WARNING

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

6. 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).



Idler Pulleys



Alignment

Fig. 52 BELT TENSION / ALIGNMENT

6.2.4 METERING RATE

The roller chain gear box on the left side of the frame is used to set the roller metering rate. Move the roller chain to the sprockets specified in Table 1 for the desired seeding rate. To move the roller chain to a new set of sprockets, follow this procedure:

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

b. Stop and disable engine.

c. Open the cover over the gear box.

d. Loosen the roller chain tensioning sprocket positioning bolt.

e. Move the roller chain off the side of the large sprocket.

f. Turn the metering system to remove chain from large sprocket.

g. Check Table 1 to determine which set of sprockets is needed to produce the desired seeding rate.

h. Install roller chain on the new set of sprockets.

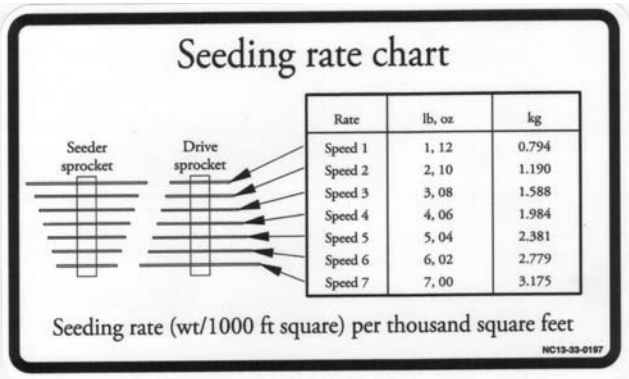
i. Turn the system to move the chain completely onto the new sprocket.

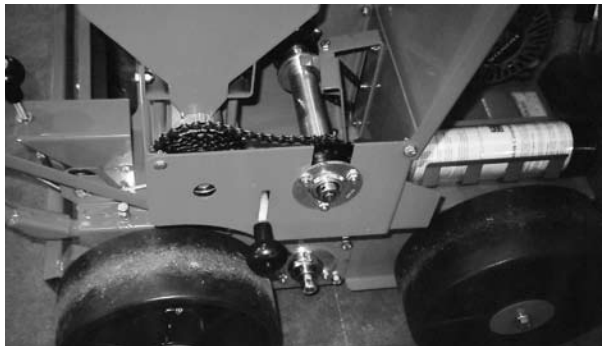
j. Move the tensioning sprocket to tighten chain.

k. Tighten tensioning sprocket anchor bolt.

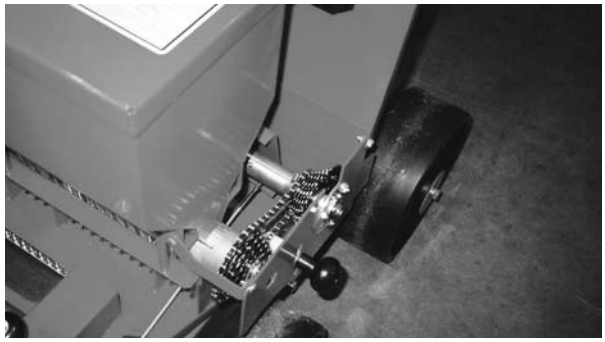
l. Close and secure cover.

Table 1

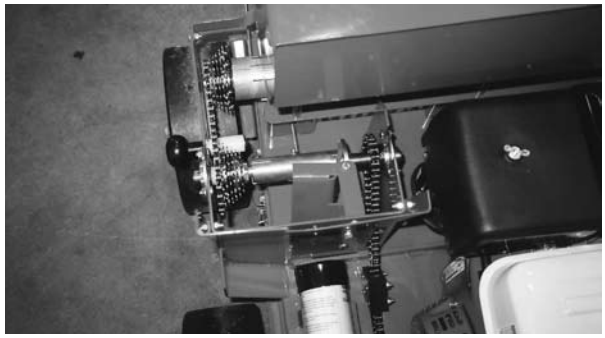




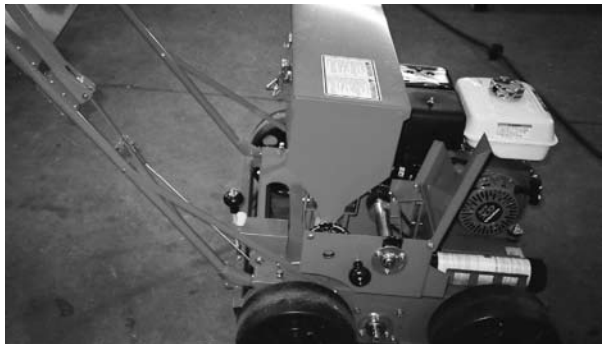
Loose Tightener



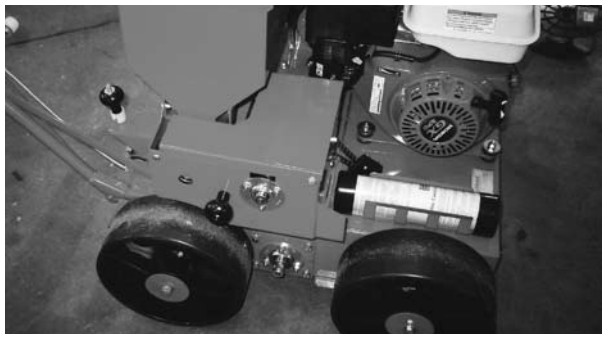
Slow Rate



Fast Rate



Tight Tightener



Cover Closed

Fig. 53 GEAR BOX

7 TROUBLE SHOOTING

The AgriMetal Overseeder is a machine that creates an opening in a grass surface and places a selected amount of seed in a furrow. 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 dealer. Before you call, please have this Operator's Manual and the serial number of your machine at hand.

PROBLEM	CAUSE	SOLUTION
No seed is being planted.	Clutch disengaged.	Lower machine into the ground.
	Seed box empty.	Load seed into box.
	Plugged metering roller.	Clean metering roller.
	Seed tube(s) plugged.	Clean seed tube(s).
	Seed discharge plugged.	Clean seed discharge.
Engine won't run.	Ignition switch off.	Turn on ignition switch.
	No fuel.	Fill fuel tank.
Machine doesn't move.	Loose drive belt.	Replace drive belt tension spring.

8 SPECIFICATIONS

8.1 MECHANICAL

WORKING WIDTH	**24" (60 cm)**
NUMBER OF BLADES	**33**
BLADES CENTER TO CENTER	**3/4" (1.90 cm)**
HEIGHT	**43" (109 cm)**
WIDTH	**40" (102 cm)**
LENGTH	**56" (142 cm)**
ENGINE	**9 HP HONDA**
MACHINE WEIGHT	**370 LBS (182 kg)**
SHIPPING WEIGHT	**400 LBS (168 kg)**
SHIPPING DIMENSIONS	**38"X46"X36" (96.5x117x91 cm)**

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

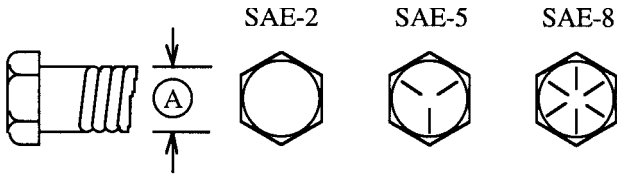
8.2 BOLT TORQUE

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.

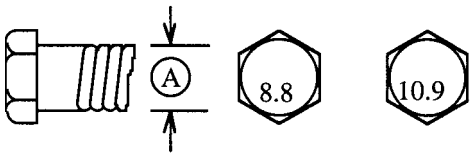
ENGLISH TORQUE SPECIFICATIONS

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