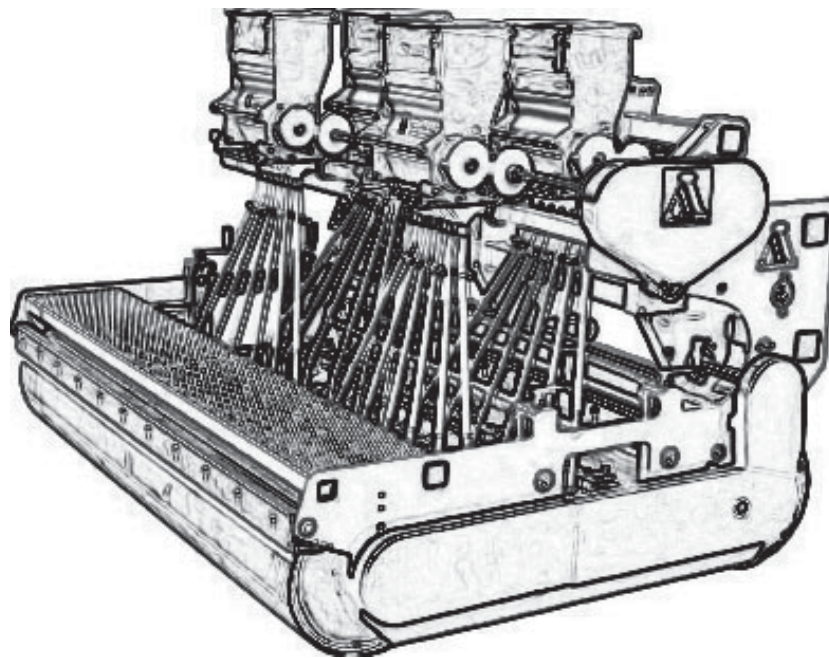


GEARMORE INC.

HIGH DENSITY SEED PLANTERS



**Operation & Seed
Setting Manual
For Model AI-620**

February 2011

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1 INTRODUCTION

Congratulations on your choice of the Gearmore High Density Seed Planter. This machine has been designed and manufactured to meet the needs of a discriminating buyer for the planting of high density, leafy green products.

1.1 OPERATOR'S RESPONSIBILITY

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

Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your Gearmore 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 the driver's seat and facing in the direction of travel.

CUSTOMER INFORMATION

NAME: _____

PURCHASED FROM: _____

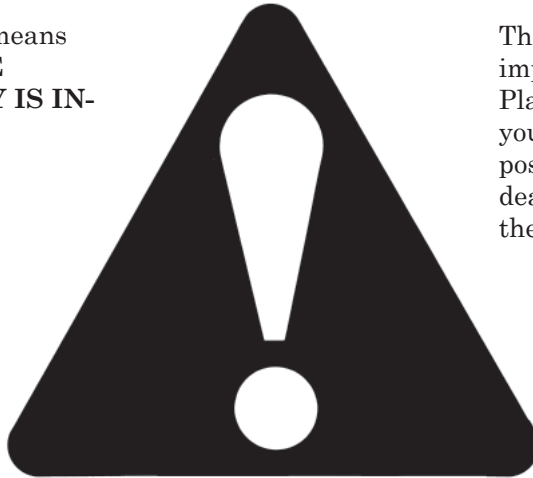
DATE OF PURCHASE: _____

MODEL NUMBER: _____

SERIAL NUMBER: _____

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 Planter and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons

Accidents Disable and Kill
Accidents Cost
Accidents Can Be Avoided

SIGNAL WORDS:

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

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

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

WARNING - Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION - Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

If you have any questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer.

2.1 GENERAL SAFETY

YOU are responsible for the **SAFE** operation and maintenance of your Planter. **YOU** must ensure that you and anyone else who is going to operate, maintain or work around the Planter 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 Planter.

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.

- Planter 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 feature 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!**

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



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

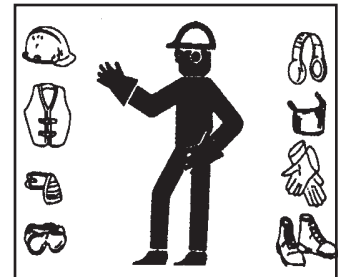


3. Have a fire extinguisher available for use should the need arise and know how to use it.



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

- A hard hat
- Protective shoes with slip resistant soles
- Protective goggles, glasses or face shield
- Heavy gloves
- Protective clothing



5. Install and secure all guards before starting.

6. **DO NOT** allow riders on the inspection platform.



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

8. Place all controls in neutral, stop tractor 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.

10. Review safety related items annually with all personnel who will be operating or maintaining the Planter.

2.2 EQUIPMENT SAFETY GUIDELINES

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.

- 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.
- Replace any safety sign or instruction sign that is not readable or is missing. Location of such safety signs is indicated in this manual.
- **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.
- **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.

- 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 farm machinery and trained in this equipment's operations. If the elderly are assisting with farm work, their physical limitations need to be recognized and accommodated.
- Use a tractor equipped with a Roll Over Protective Structure (ROPS) and a seat belt.
- **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.**
- 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.

In addition to the design and configuration of this implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of the machine. Refer also to Safety Messages and operation instruction in each of the appropriate sections of the tractor and machine manuals. Pay close attention to the Safety Signs affixed to the tractor and the machine.

Think SAFETY! Work SAFELY!

3 SET-UP - ASSEMBLY

This manual gives detailed descriptions on how the planter works.

The seed is distributed by means of special polilatex sponge rollers positioned horizontally in the distributor. This planting system guarantees homogeneous seed distribution in each row line without damaging the seed. Unlike vacuum planters, regular distances between the seeds can not be obtained. However, it is possible to determine the quantity of seed per acre.

This high density planter is for planting maximum seed line width of 66". Other models are available for 58" wide seed line width.

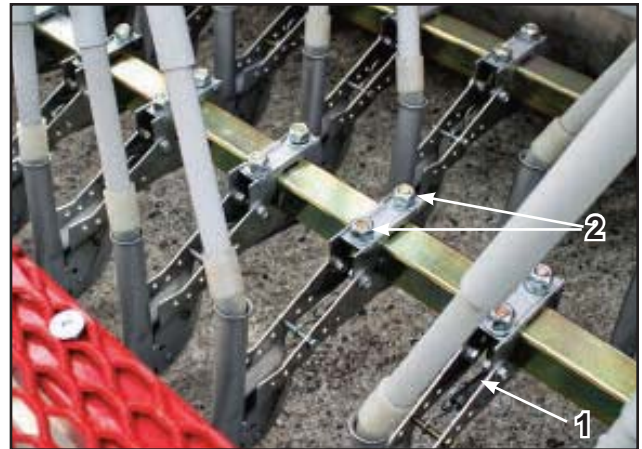
The planter comes completely set-up to insure quality.

The standard planter is fitted with Stainless Steel front and rear rollers.

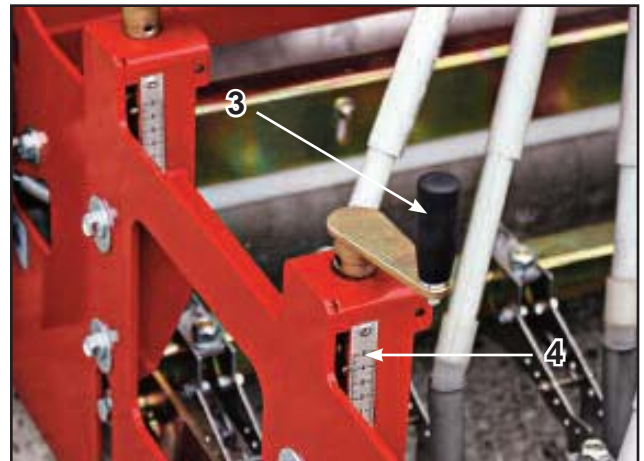
The standard planter is ground driven. Optional hydraulic motor - so the roller turns on soft ground without pushing loose sandy soil on the front side of the rollers.

3.1 SEED SOIL OPENERS

The soil openers are mounted on two tandem bars to allow clearance for obstructions (*Ref. 1*). The minimum distance between the openers is 1 ¼" (32 mm). The openers oscillate to better follow the terrain. Adjustable tension springs are mounted on each opener to obtain the correct amount of down pressure. To change the opener spacing, loosen the two nuts (*Ref. 2*) and re-position the soil openers.



The exact depth setting is adjusted by the 4 depth adjustment handles (*Ref. 3*). The planter has 4 depth setting gauges (*Ref. 4*) to insure exact depth of all soil openers. Screw depth control handles simultaneously so as not to exert side force on the modular frame.



3.2 OPTIONAL HYDRAULIC MOTOR

The optional hydraulic motor (*Ref. D*) is recommended when planting in difficult soil conditions, especially sandy soils. It's purpose is to prevent the rollers from dragging - stalling in extremely loose sandy soil and start pushing soil on the front side of the roller. It's use does not affect seed planting speed or rate.



3.3 ROLLERS, FRONT & REAR

The planters come with stainless steel rollers, front and rear. The spring loaded soil scrapers prevent soil from building up on the rollers. Inspect and adjust the scrapers to keep them operating properly. Do not allow soil to build up on the rollers. You can adjust the center bolts to keep proper pressure on the center of the roller scrapers.

- a. Stainless steel rollers 12.8" (325 mm) diameter. (*Fig. 1*)



Figure 1

3.4 SEED RATE SETTINGS

The data for setting the number of seeds per acre is based on the following:

1. Diameter of the roller. (12.8" - 325 mm)
2. Planting width
3. Number of openers per bed
4. Number of seeds per acre

3.5 TRANSMISSION SYSTEM

The major feature of our transmission system is that seeding begins as soon as the planter starts forward, thus seed distribution is always maintained regardless of variation of the tractor speed. Maximum speed of 2.5 MPH (220 feet per minute) is recommended.

3.6 SEED ROLLERS

The planters come standard with special polilatex soft sponge rollers (T24) which were designed for planting large quantities of seeds. Also available is hard sponge rollers SR-75, which was developed for very small seeds. When planting small quantities of very small seeds, install the 1/2 plug to reduce seed volume.

NOTE: *When changing seeds it is very important to perform careful cleaning of the seed rollers to avoid contamination.*

3.7 SEED HOPPERS / DISTRIBUTORS

The 8 outletseed hoppers have a capacity of 12.7 quarts. The seed distributors are available with 4, 6 or 8 outlets. To change seeds, just lower the two levers (*Fig. 10, Ref. 6*) and pull the distributor toward you. Removing the seed roller is very simple. Just loosen the two bolts on the gear side (*Fig. 10, Ref. 7*), turn support (*Fig. 11, Ref. 8*) about 10 degrees and remove the roller (*Fig. 11, Ref. 9*) together with the gear.

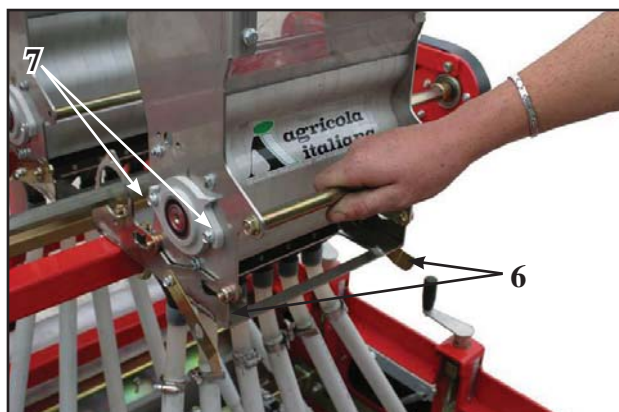


Figure 10

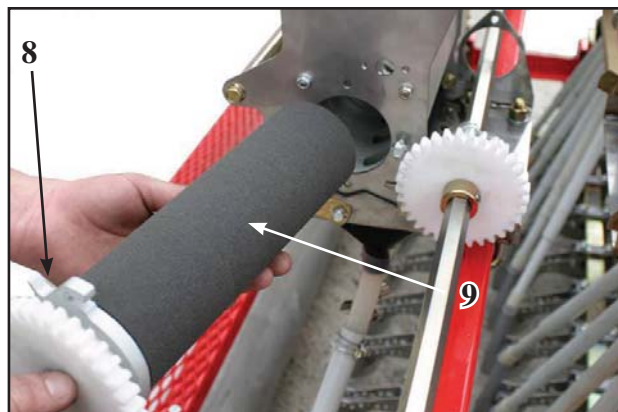


Figure 11

3.8 ROLLER DRIVE SYSTEMS

The planter is available with 3 different roller transmissions.

Figure A - Standard ground drive on front and rear roller.



Figure A

Figure B - Optional hydraulic motor drive to the front roller only.



Figure B

Figure C - Optional hydraulic motor drive to the front roller with chain and sprocket drive to rear roller.



Figure C

4 SPROCKET CHANGES

The planter was designed for allowing any quantity of seed output you may require. For this reason sprocket changes are in 3 groups so as to obtain the maximum of 320 different ratios.

Figure 1 - illustrates on the left side of the machine 4 possible sprocket combinations.

SPROCKET COMBINATIONS		
1st	A 13	B 30
2nd	A 16	B 22
3rd	A 30	B 13
4th	A 22	B 16

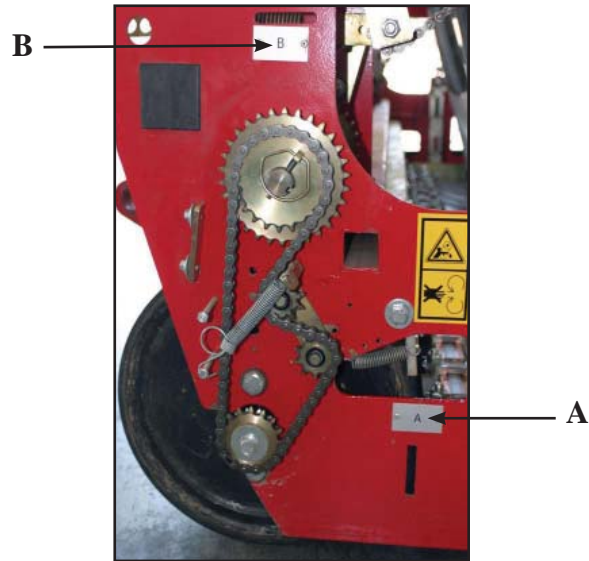
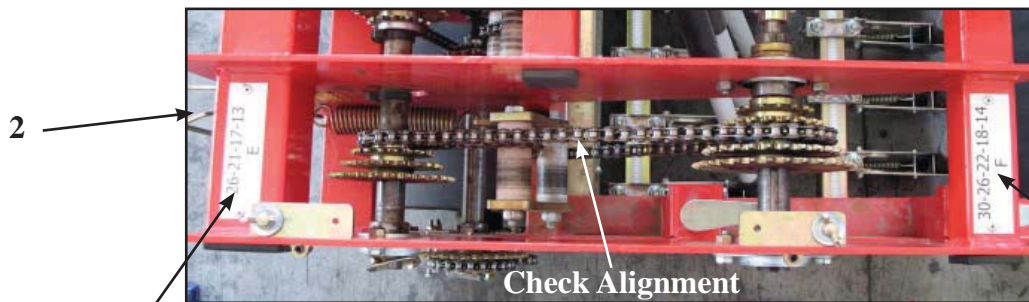


Figure 1

Figure 2 - illustrates on the left inside of the planter with 20 sprocket combinations. This operation is to be performed while the planter is stationary. Once lever (2) is released, position the chain on the desired sprockets making sure that the chain is properly aligned on the sprockets. Then fasten lever (2) and tighten.



E = 13-17-21-26

Figure 2

F = 14-18-22-26-30

SPROCKET COMBINATIONS					
1°	E13	F14	11°	E21	F14
2°	E13	F18	12°	E21	F18
3°	E13	F22	13°	E21	F22
4°	E13	F26	14°	E21	F26
5°	E13	F30	15°	E21	F30
6°	E17	F14	16°	E26	F14
7°	E17	F18	17°	E26	F18
8°	E17	F22	18°	E26	F22
9°	E17	F26	19°	E26	F26
10°	E17	F30	20°	E26	F30

Figure 3 - illustrates on the left inside of planter closest to the A-frame with 4 sprocket combinations. This operation is to be performed while the planter is stationary. Release lever (1) and move the chain to the desired sprockets based on the combinations provided in the table. Then fasten lever (1) and tighten.

SPROCKET COMBINATIONS		
1°	C = 13	D 30
2°	C = 20	D 26
3°	C = 26	D 20
4°	C = 30	D 13

D = 30-26-20-13

C = 13-20-26-30

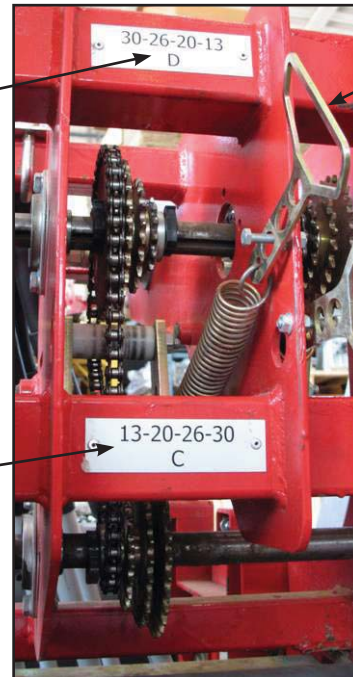


Figure 3

5 TESTING FOR SEED POPULATION

Before planting it is necessary to calibrate the planter to achieve your requirements in quantity of seed per acre.

You will need 3 items in order to set the correct seeds per acre:

- ~ Scale in grams
- ~ Container to catch seeds
- ~ Roller marker to count out feet

1. Fill one hopper/distributor with the seed you want to plant.
2. Remove the tubes from the seed soil openers of the one distributor.
3. Place a container over the tube to collect the seeds.
4. Operate by driving forward until the correct distance is traveled which is 164 feet, for 80" furrow spacing.
5. Use a precision scale to weigh the dispensed seed in grams and take that value times the number of distributors on your planter.
6. To achieve the desired amount of seed required, adjust the sprockets accordingly.



IMPORTANT! - After adding the seed to the hopper and before beginning to plant, you must engage the hydraulic motor long enough to get the seeds down to the soil openers. This usually takes a short time, but this insures that seeding will begin as soon as you drive forward.

6 LIMITED WARRANTY



GEARMORE, INC., warrants each new Gearmore product to be free from defects in material and workmanship for a period of twelve (12) months from date of purchase to the original purchaser. This warranty shall not apply to implements or parts that have been subject to misuse, negligence, accident, or that have been altered in any way.

Our obligation shall be limited to repairing or replacement of any part, provided that such part is returned within thirty (30) days from date of failure to Gearmore through the dealer from whom the purchase was made, transportation charges prepaid.

This warranty shall not be interpreted to render us liable for injury or damages of any kind or nature, direct, consequential or contingent, to person or property. This warranty does not extend to loss of crops, loss because of delay in harvesting or any other expenses, for any other reasons.

Gearmore in no way warrants engines, tires, or other trade accessories, since these items are warranted separately by these respective manufacturers.

Gearmore reserves the right to make improvements in design or changes in specification at any time, without incurring any obligations to owners or units previously sold.

GEARMORE, INC.
13477 Benson Ave.
Chino, CA 91710

Always refer to and heed machine operating warning decals on machine.