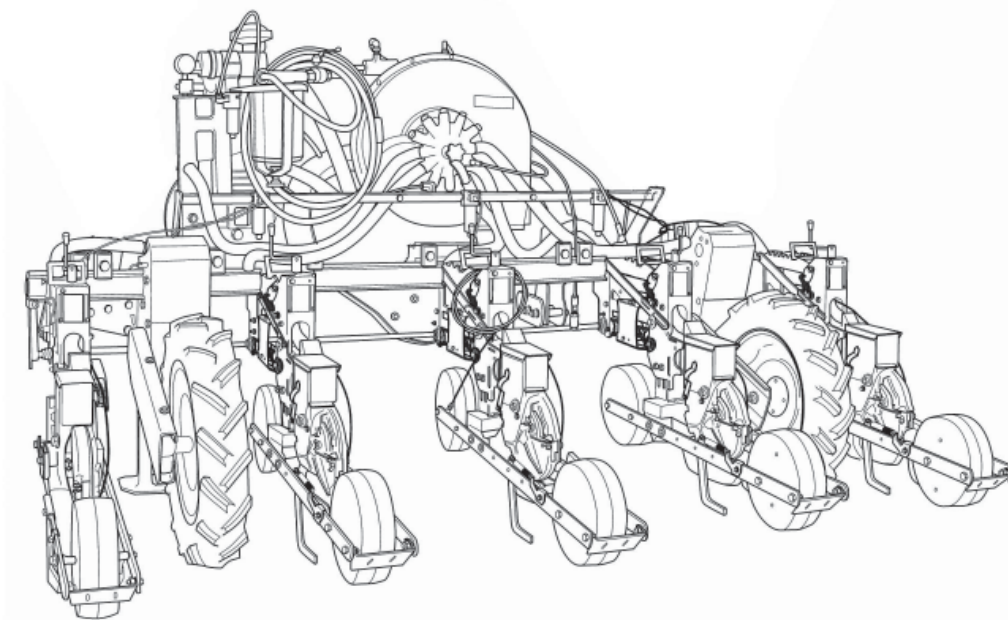




VACUUM PLANTERS



Operation & Maintenance Manual

February 2012

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1 INTRODUCTION

Congratulations for choosing the Gearmore Precision Planter. Our experience, together with the high quality of the product shall allow you to obtain excellent results in the field.

Please read this manual carefully and follow with utmost attention the instructions concerning personal safety and main functionalities of the planter, in order to use it in the best way. Below please find the specific technical instructions to consider for a correct use of the machine:

- ~ Preparation of the ground that you wish to plant
- ~ Distance between two planters
- ~ Seeding depth
- ~ Planting speed
- ~ Seed covering

These points are indicated in detail in this Use & Maintenance Manual and we suggest you strictly adhere to in order to avoid any problems due to misuse of the planter.

Sure to meet your requirements, we wish you much success with our planter.

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: _____

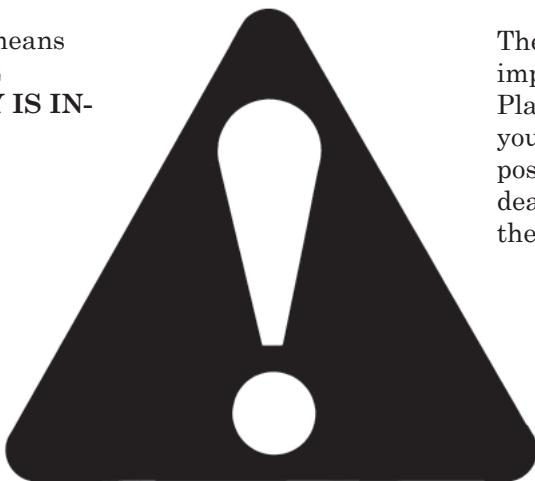
MODEL NUMBER: _____

SERIAL NUMBER: _____

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 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 there after 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.

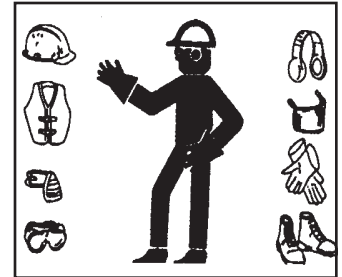


3. Have a fire extinguisher available for use should the need arise and know how to use it.



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.

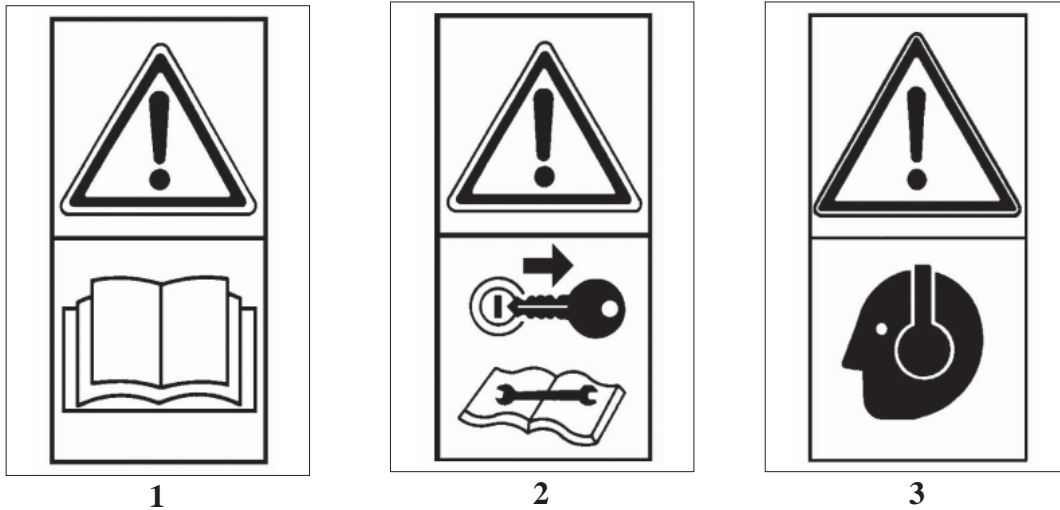
8. Place all controls in neutral, stop tractor engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.

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.

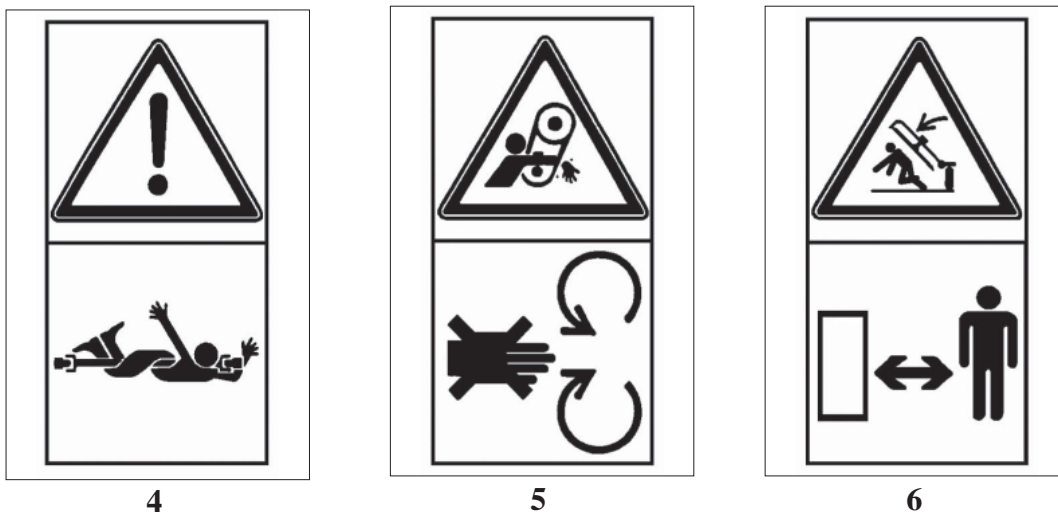
2.2 SAFETY SIGNALS

WARNING SIGNALS



1. Before operating the machine, it is necessary to carefully read the instructions manual.
2. Before any operation of maintenance or repairing, it is absolutely necessary to place the planter on the ground, disconnect the power takeoff, stop the tractor, switch it OFF, remove the key and activate the handbrake.
3. During the processing, wear the protection devices, especially for hearing.

DANGER SIGNALS



4. DO NOT approach the PTO shaft or any other moving device until all motion has stopped. There is danger of becoming entangled.
5. This signal indicates hand shearing danger caused by moving devices. Therefore, do not remove the suitable protections and do not approach the moving devices.
6. Maintain the a safe distance from the machine to avoid the danger of being hit by moving parts lifted - in detail, by the mechanical or pneumatic row markers.

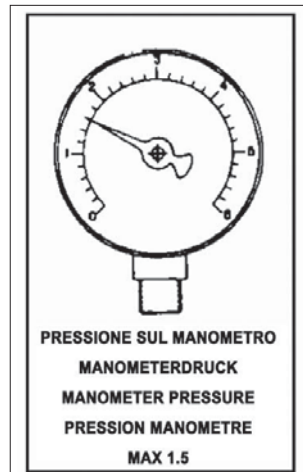
INDICATION SIGNALS



7



8



9



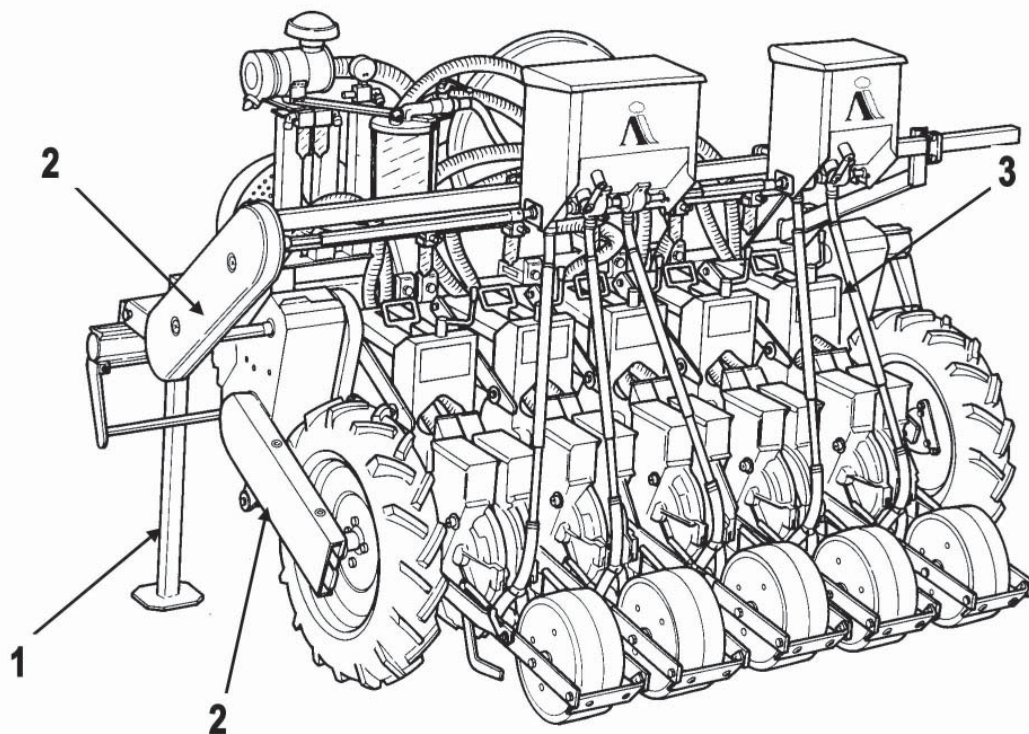
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7. Safety valve homologated for the compressor with fixed calibration.
8. Valve for pressure adjustment.
9. Manometer indicating the pressure of the compressor.
10. Technical data of the pulley driven by the power takeoff, with special reference to the maximum number of revolutions/minute required.

2.3 SAFETY NOTICES

Before operating the machine, it is important that you read this manual and all safety notices pertaining to the safe operation of your planter.

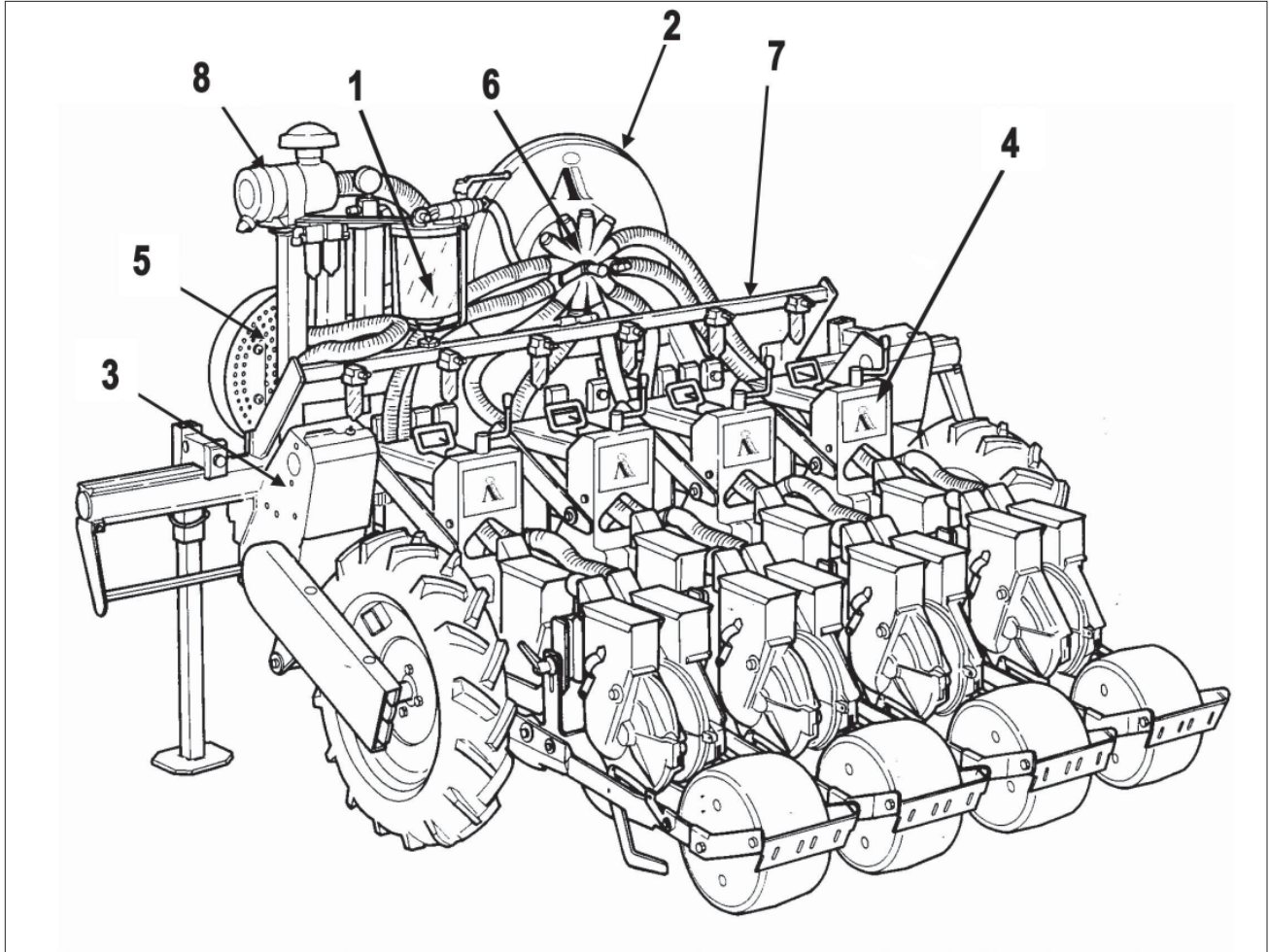
- ~ Block the wheels of the tractor, set the parking brake, and place the gearbox in neutral position before hooking/unhooking the planter or removing/connecting the PTO shaft.
- ~ Once the planter is connected to the tractor, remember to remove the support feet of the planter, connected to the frame bar of the seeder.
- ~ Do not lift or lower the planter with the 3-point hitch of the tractor if persons are between the machines or in the action area of the same.
- ~ Do not unhook the planter from the tractor without first lowering the planter and utilizing the side feet (*Ref. 1*).
- ~ Do not disassemble the guard (*Ref. 2*) for chains protection unless the machine is stopped, parking brake set and the gearbox is in neutral position.
- ~ Open the seeding units to clean the inside of the seed chamber (*Ref. 3*) or to change the disk only if the machine is stopped.
- ~ The disassembling of the protections of the fan transmission belts must occur only with stopped machine and PTO unhooked.



3 SET-UP AND PREPARATION

3.1 DESCRIPTION OF PARTS

Fig. 1



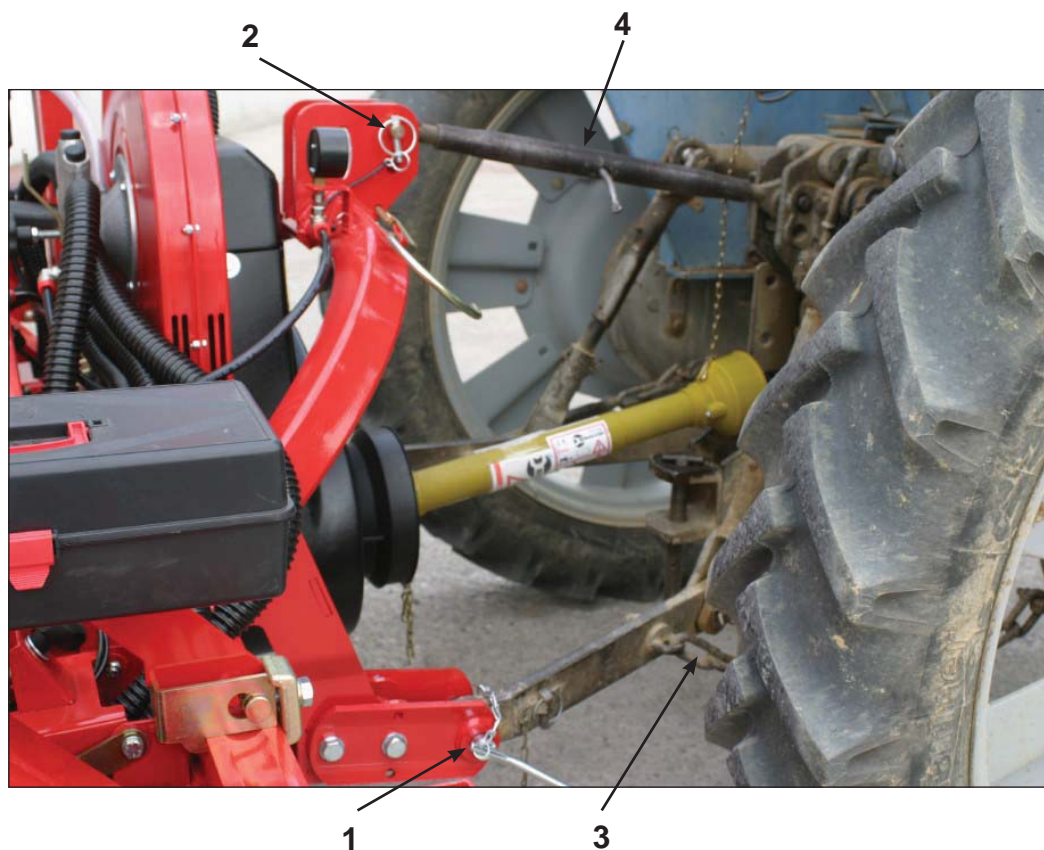
- 1) - Vacuum Seed Emptying Device
- 2) - Suction Fan
- 3) - Gearbox
- 4) - Planter Unit (SNT-3-290)
- 5) - Compressor Assembly (to clean the seed plates)
- 6) - Adjuster of Sucked Air
- 7) - Air Filters Holding Bar
- 8) - Filter for Compressor Head

3.2 ATTACHING THE PLANTER TO THE TRACTOR

To attach the planter to the tractor, proceed as follows:

1. Connect the bottom hitch pins (*Fig. 2, Ref. 1*), to the planter and lock in place with snap rings.
2. Connect the tractor top link to the planter (*Ref. 2*) and lock in place with snap ring.
3. Make sure the planter is level with the ground by adjusting the tractor top link (*Ref. 4*).
4. Tighten the tractor 3-point sway chains so that they are tight (*Ref. 3*).

Fig. 2



3.3 POSITIONING OF THE P.T.O. SHAFT

The PTO shaft supplied with the seeder is of standard length, however sometimes it is necessary to adapt it according to the tractor used. To do so, it is necessary to check first of all that the power takeoff of the planter and the tractor are on the same axis. Then, measure the distance from the groove of the power takeoff of the tractor and that of the planter. This measurement must then be checked on the closed PTO, taking as reference the button A (*Fig. 3*) and the button B. This length must be 2" shorter than the one previously detected between planter and tractor.

Should this not be the case, it is necessary to cut the PTO shaft of a length equal to the detected difference, as illustrated in position C and D (*Fig. 3*).

Once the PTO has been cut, it is possible to mount the PTO, pressing the button A (*Fig. 4*) and connecting it on the power takeoff of the seeder. It must slide freely, otherwise it is advisable to clean and lubricate the power takeoff or the inside of the PTO itself. Finally please note that the button blocks alone on the groove of the power takeoff. The same operation has to be repeated on the tractor.



IMPORTANT: The inclination angle of the PTO, with working planter, must never exceed plus or minus 15°.

WARNINGS:

- The PTO shaft is provided with a manual of use and maintenance, drawn up by the manufacturer. This manual must be read carefully before operating with the PTO itself.
- A PTO shaft not correctly connected represents a great danger and may cause serious damages to the persons and to the machine.
- Never approach the PTO shaft before switching off the tractor engine and removing the ignition key.

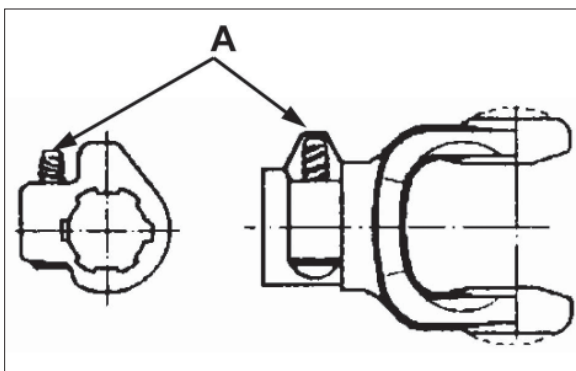
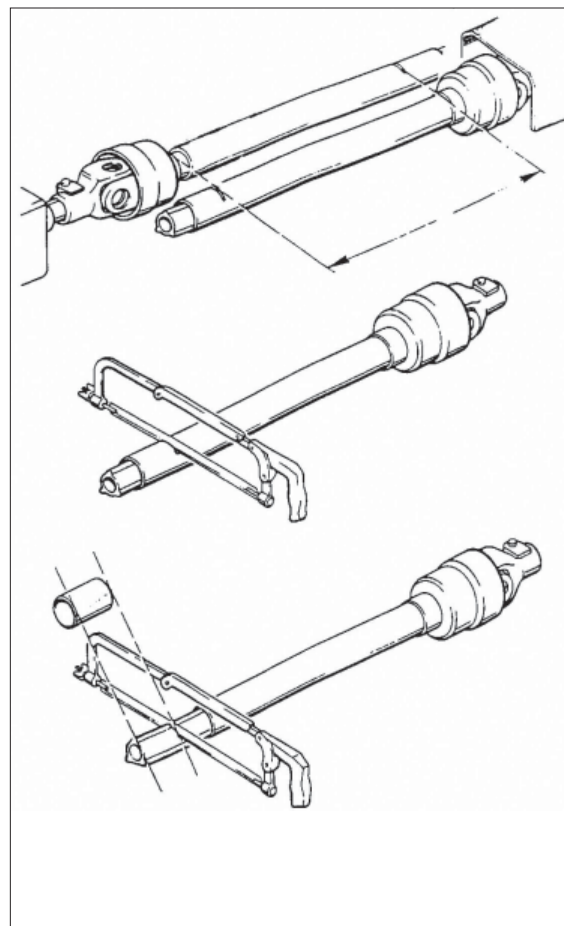


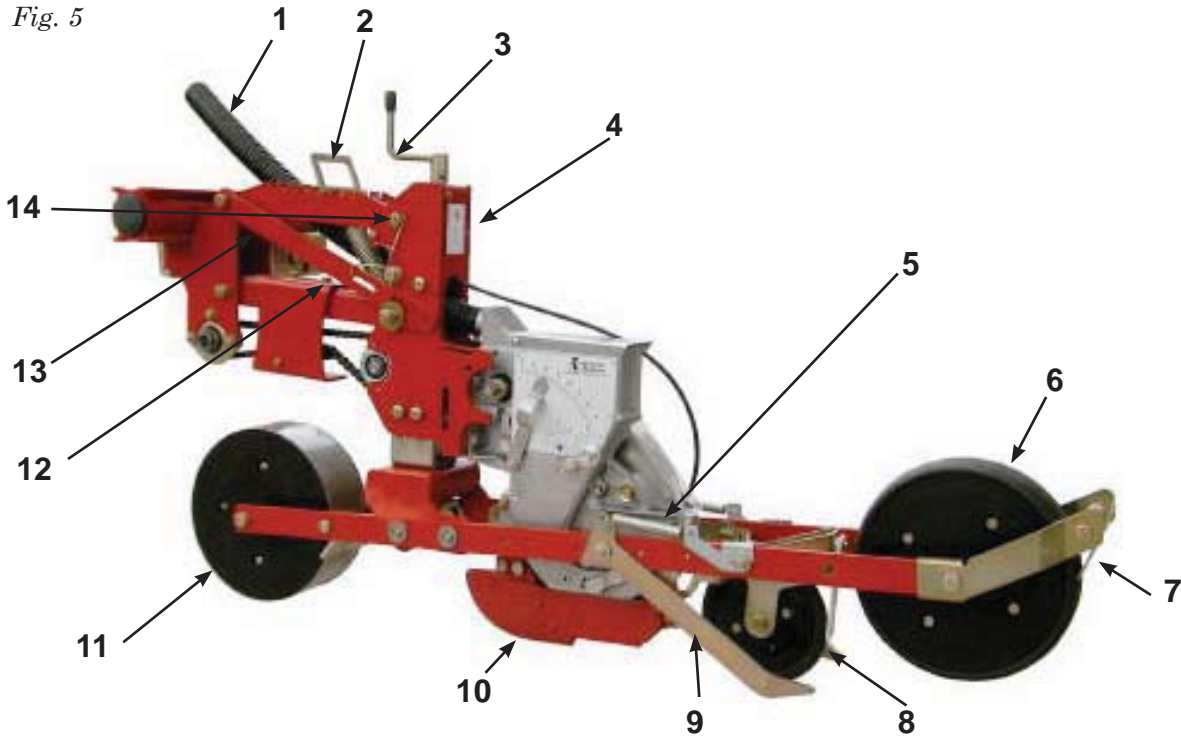
Fig. 3



4 PLANTER ELEMENTS

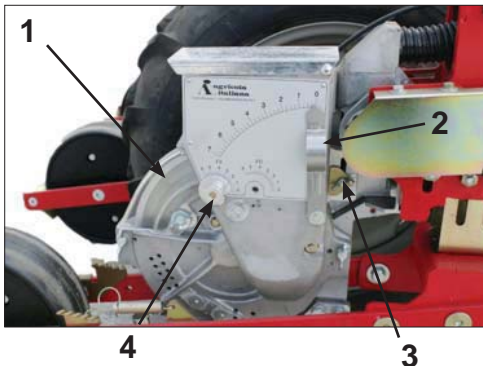
4.1 SINGLE COULTER PLANTER SN-1-130

Fig. 5



- 1) - 35 mm suction air pipe
- 2) - Device equipped with spring to adjust the pressure of the coulter on the ground
- 3) - Crank to adjust the seed depth
- 4) - Gauge to adjust the seeding depth
- 5) - Tensioning spring of the soil covering bars
- 6) - Rear wheel to control the seeding depth (in rubber)
- 7) - Mud scraper
- 8) - Seed pressing wheel in rubber (optional)
- 9) - Soil covering bars (for seed pressing wheel)
- 10) - Coulter
- 11) - Front wheel to control the seeding depth (in steel)
- 12) - Stop screw for planter lifting row
- 13) - Bracket to lift the planter with possibility of transport block
- 14) - Spring to lock/unlock the planter lifting bracket

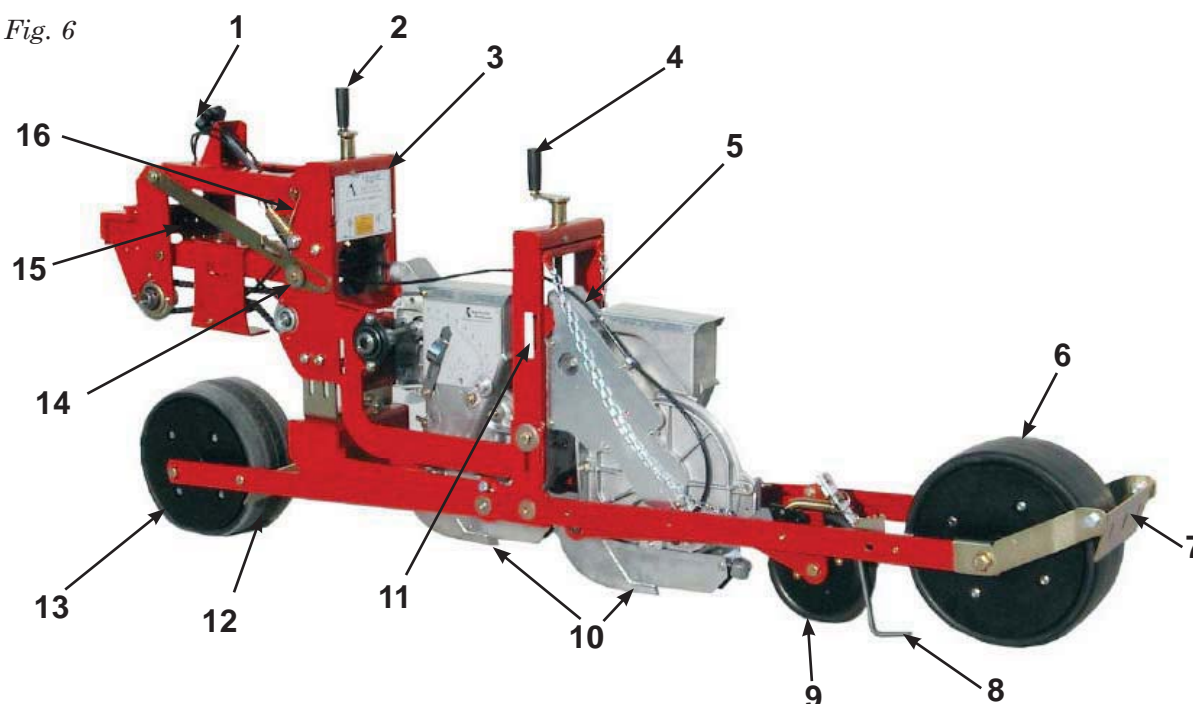
Fig. 5a



- 1) - Window for the visibility of the seed plate
- 2) - Upper seed selector to eliminate double seeds (with scale from 1 to 7)
- 3) - Screw for device of seed feeding
- 4) - Lower seed selectors to eliminate double seeds (with indexes from 1 to 5)

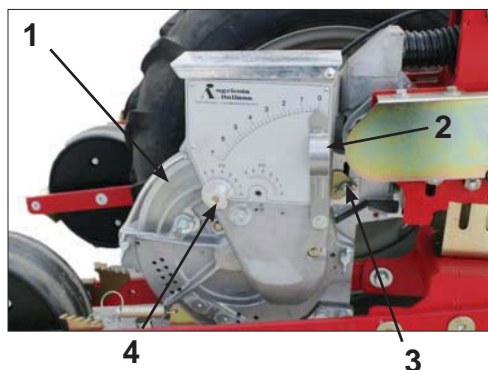
4.2 TANDEM COULTER PLANTER

Fig. 6



- 1) - Device equipped with spring to adjust the pressure of the coulter on the ground
- 2) - Crank to adjust the seed depth
- 3) - Gauge to adjust the seeding depth
- 4) - Crank to adjust the seed depth
- 5) - Pipe for air issued by the compressor
- 6) - Rear wheel to control the seeding depth (in rubber)
- 7) - Mud scraper
- 8) - Soil covering bars (for seed pressing wheel)
- 9) - Seed pressing wheel in rubber (optional)
- 10) - Coulter
- 11) - Gauge to adjust the seeding depth (rear part)
- 12) - Mud scraper
- 13) - Front wheel to control the seeding depth (in rubber)
- 14) - Stop screw for the planter lifting row
- 15) - Bracket to lift the seeding planter with possibility of transport block
- 16) - Spring to lock/unlock the planter lifting bracket

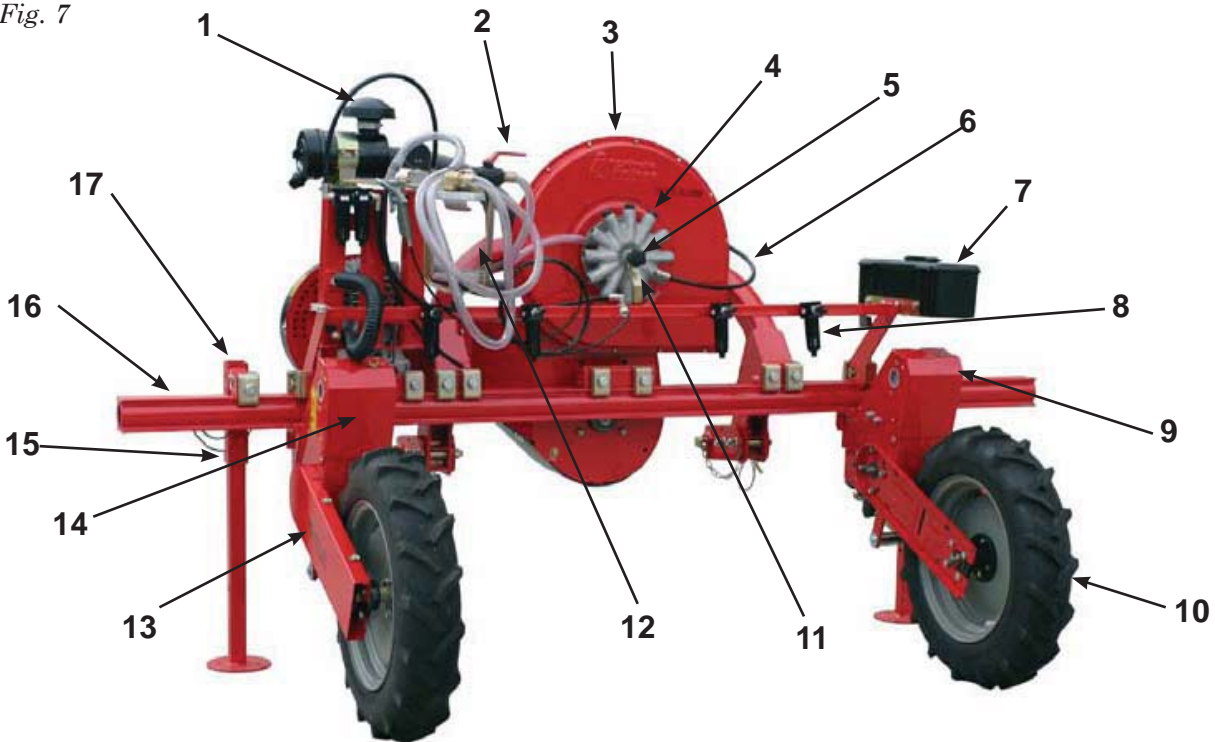
Fig. 6a



- 1) - Window for the visibility of the seed plate
- 2) - Selecting index of the upper part in the seed row on the disk (with scale from 1 to 7)
- 3) - Screw to adjust the seed feeding depth
- 4) - Selectors of the lower part in the seed row on the disk (with indexes from 1 to 5)

4.3 GROUP DIAGRAM OF THE PLANTER FRAME (REAR VIEW)

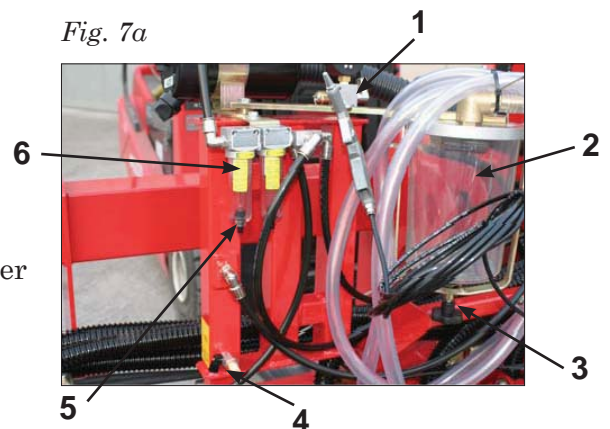
Fig. 7



- 1) - Filter for the compressor in suction
- 2) - Handle to open the seed recovery
- 3) - Suction fan
- 4) - Air intakes of the suction fan
- 5) - Black handle to adjust the sucked air
- 6) - Connection pipe of the pressure gauge
- 7) - Toolbox
- 8) - Humidity recovery filters
- 9) - Right gearbox
- 10) - Drive wheel
- 11) - Handle for the lockup of the suction adjuster
- 12) - Container for the recovery of the seed
- 13) - Gears of transmission
- 14) - Left gearbox
- 15) - Support foot
- 16) - Toolbar
- 17) - Foot support

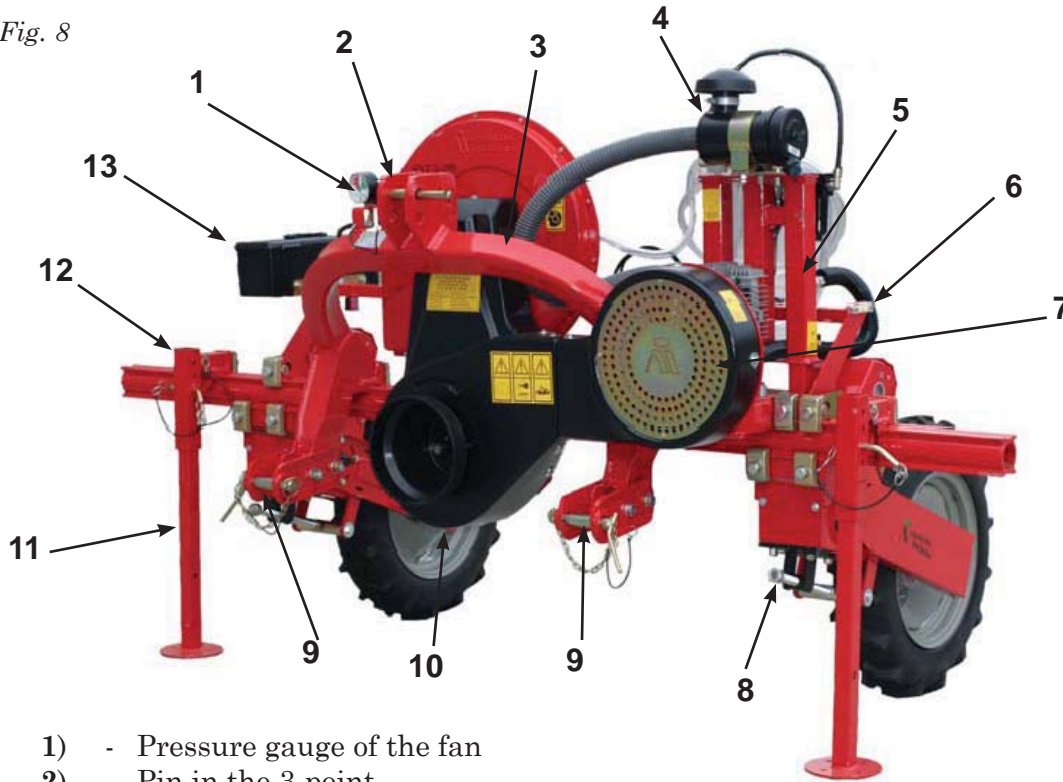
- 1) - Gun for cleaning
- 2) - Container for the collection of the seed
- 3) - Handle for the extraction of the container
- 4) - Cock to exhaust the pressure
- 5) - Vent of the filters
- 6) - Humidity recovery filters

Fig. 7a



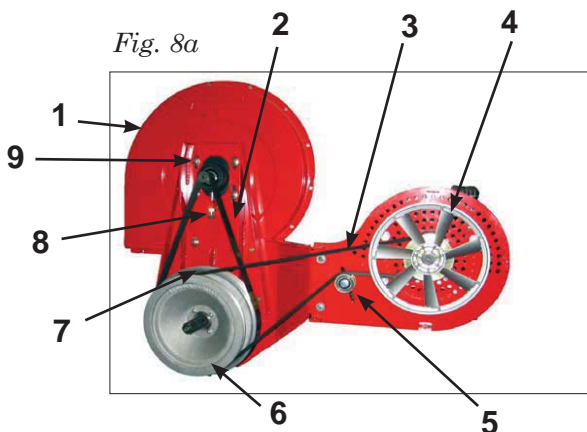
4.4 GROUP DIAGRAM OF THE PLANTER FRAME (FRONT VIEW)

Fig. 8



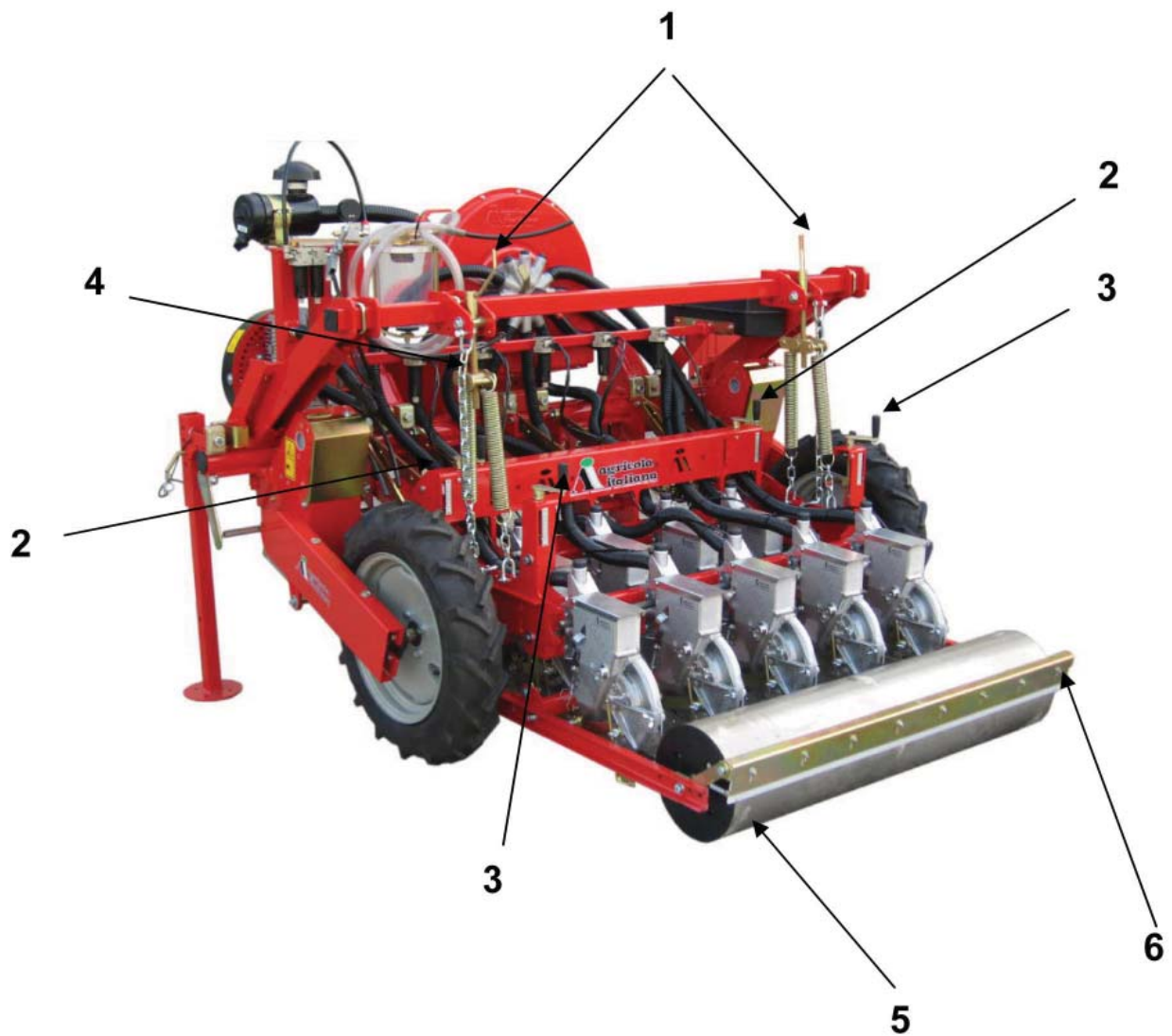
- 1) - Pressure gauge of the fan
- 2) - Pin in the 3-point
- 3) - 3-Point hitch
- 4) - Compressor air filter
- 5) - Compressed air radiator
- 6) - Level for the leveling of the machine
- 7) - Compressor fan
- 8) - Screw for the inclination of the wheels of the gearbox
- 9) - Pin for the connection to the tractor
- 10) - Standard PTO
- 11) - Support feet
- 12) - Connection to the support feet
- 13) - Toolbox

Fig. 8a



- 1) - Fan
- 2) - Poly belt 580 J16
- 3) - Belt A 77
- 4) - Compressor fan
- 5) - Belt tensioning device of the compressor
- 6) - Compressor pulley
- 7) - Fan pulley
- 8) - Belt tensioning device
- 9) - Screws to fix the fan (qty. 6)

4.5 MODULAR PLANTER



- 1) - Handles for adjusting the weight of the module
- 2) - Front crank to adjust the front seed depth
- 3) - Rear crank to adjust the rear seed depth
- 4) - Chain to hold up module during transport
- 5) - Front and rear stainless steel rollers
- 6) - Mud scrapers for roller

5 TRANSMISSION AND SEEDER BODY

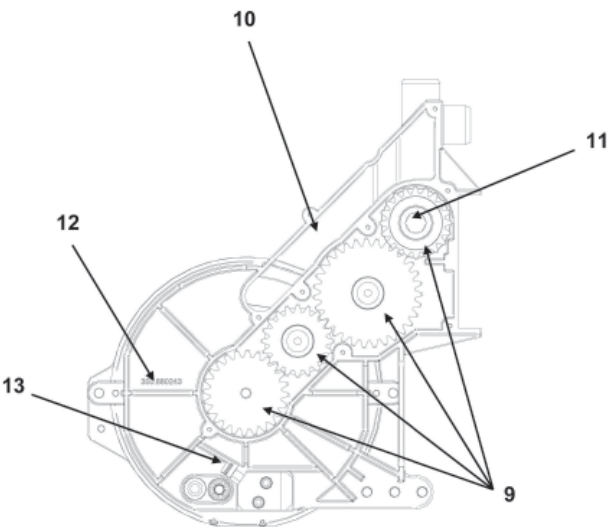
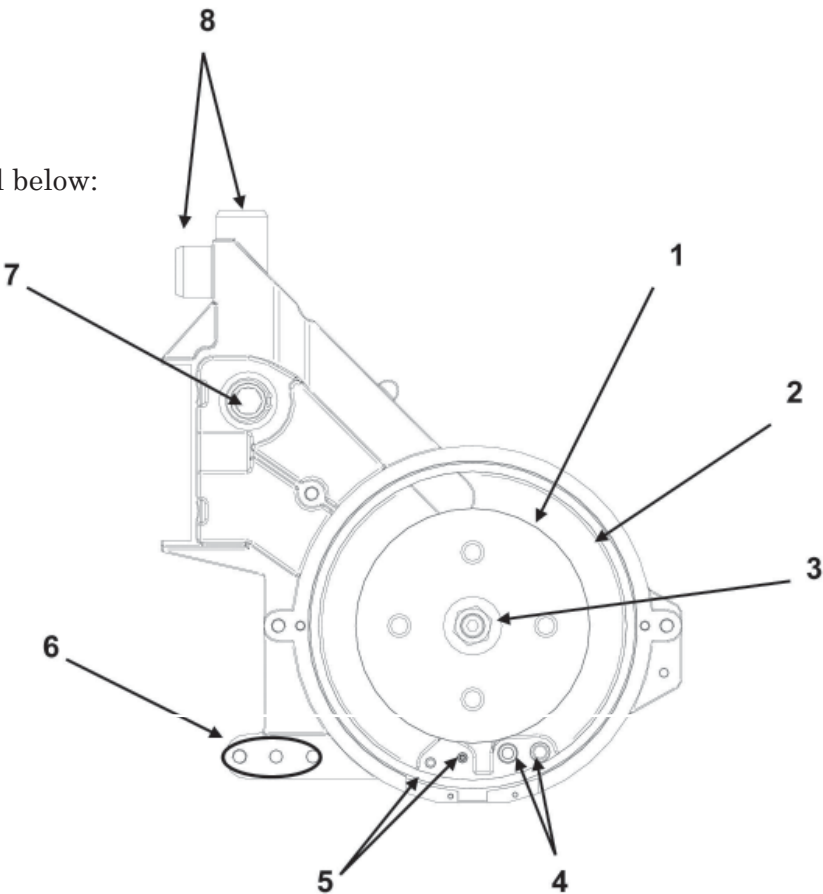
5.1 TYPES OF TRANSMISSIONS

There are two types of seeders; right and left. The left hand standard transmission housing is shown. The transmissions supplied are numbered as follows:

<u>Left Hand</u>		<u>Right Hand</u>
201/09	-	202/08
243/09	-	342/08
343/09	-	242/08

The transmission is described in detail below:

- 1) - Chamber of seed suction
- 2) - Gasket where the seeding disk lays
- 3) - Flange with hexagon for the support of the seeding disk
- 4) - Holes for disconnection of the seed (for individual row and double falling)
- 5) - Nozzles to clean the disk holes
- 6) - Connection for the seeding coulter
- 7) - Transmission hexagon
- 8) - Connection for suction pipe



The transmission is described in detail below:

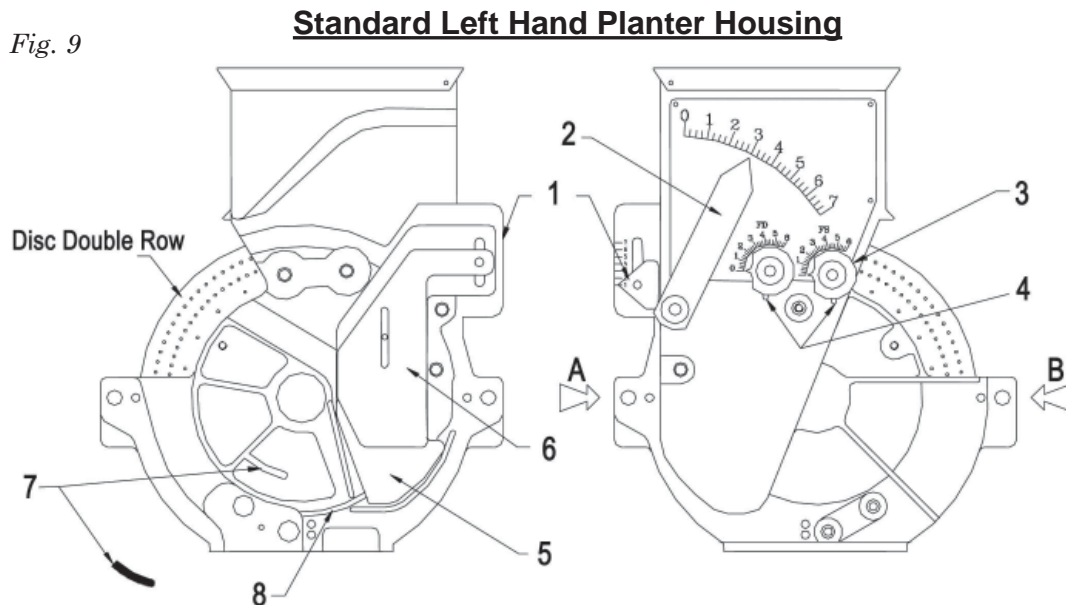
- 9) - Series of transmission gears
- 10) - Suction chamber
- 11) - Transmission hexagon
- 12) - Reference number of the transmission
- 13) - Connection of the pipe for air issued by the compressor

5.2 SEEDER BODY

The suction of the fan is carried to the seeder body by flexible hose. On the disk side of the seeder body (*Fig. 9*) there is the seed chamber (*Ref. 5*) which is continuously fed from the seed hopper. It is necessary to adjust the chamber shutter (*Ref. 6*) so that a limited number of seeds are released from the chamber. In most cases it is recommended that you set the shutter opening on the third notch from the bottom (*Ref. 1*).

Before planting it is necessary to test the suction and seed pick-up. With the tractor stopped, lift the planter and activate the fan. Turn the transmission tire by hand and observe that seeds are being held in place in all the disk holes. Note: (*Fig. 9*) shows double lines of seed holes. However, most planters sold are single line. If the disk picks up more than one seed, you will need to adjust the outer singulator (*Ref. 2*) and inner singulator (*Ref. 4*) until only one seed fills each disk hole. If you are still getting doubles, you will need to decrease the fan vacuum. If not all disk holes are filled, you will have to increase the fan vacuum.

Finally, the operator must check that the distance between the seeds placed on the ground with the planter working, matches the desired spacing between seeds.

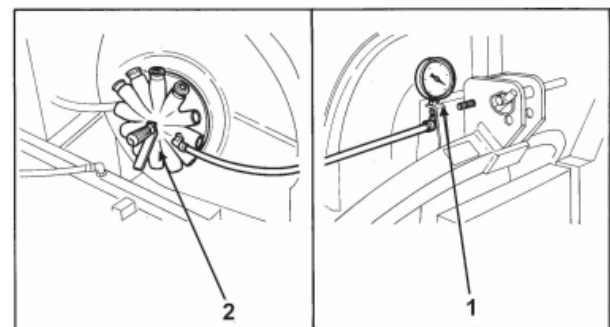


5.3 SETTING THE VACUUM FAN

The vacuum pressure must be set to hold the seeds against the seed plate holes. The PTO of the tractor turns the fan. For fine vacuum adjustment, turn the handle on the manifold of the fan (*Fig. 10, Ref. 2*).

The pressure gauge (*Ref. 1*) has two zones: a green zone that indicates the suction from 200 to 400 (suitable for small seeds, up to onion seeds) and a red zone 500 to 700 (suitable for larger seeds).

Fig. 10

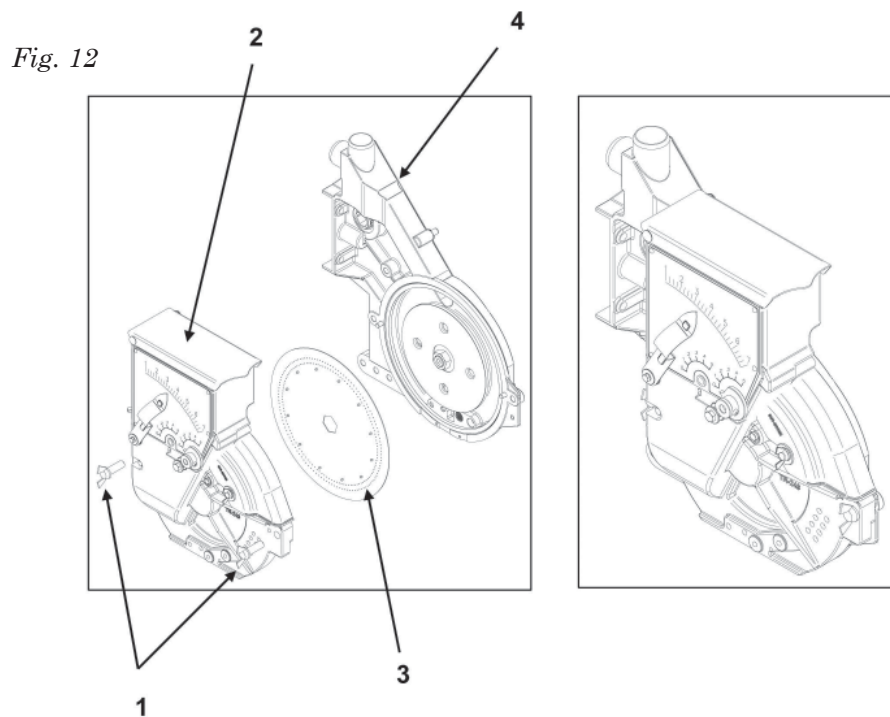


5.4 INSTALLATION OF THE SEED DISK

To install the seed disk, follow the procedure as follows:

- 1) Remove the two wing screws shown in (*Fig. 12, Ref. 1*) and the outer cover (*Ref. 2*). The disks for raw seeds has on one side a series of brass pins for agitation.
- 2) Mount the disk so these pins are visible.
- 3) The disks for pelleted or round seed do not have brass pins. For these disks, mount with the countersunk holes to the inside, thus not visible.

NOTE: Each disc is stamped with the number of holes and their diameter.



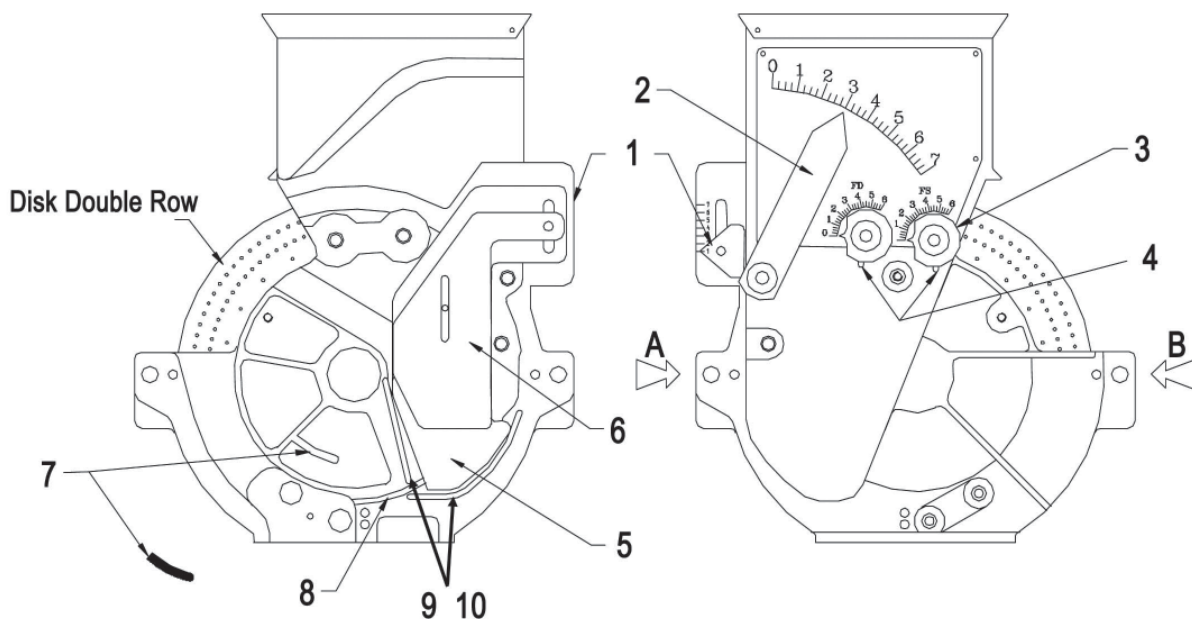
5.5 REDUCING OR INCREASING SEED FLOW

As previously mentioned, the chamber (*Fig. 9, Ref. 5*) is adjusted by chamber shutter (*Ref. 6* and the normal opening is the third notch from the bottom (*Ref. 1*). However, pelleted seeds flow fast and you may want to lower the shutter.

IMPORTANT NOTES:

- The capacity of the hopper with the optional hopper extension is 3.18 quarts (equal to 3.5 liters).
- The capacity of the seed body is 1.36 quarts (1.5 liters).
- For pelleted seeds, use seed disks without agitator pins.
- When using seed plates without pins, the rubber gusset (*Ref. 7*) must be in place in position (*Ref. 8*).
- When using seed plates with brass agitator pins, store rubber gasket in position (*Ref. 7*).
- We suggest that you inspect the felts (*Ref. 9 & 10*) every 200 acres of planting. These felts are to keep the seed plates clean from dirt and dust. Incase they are dirty, scrap and clean the felts.
- If seed starts to overflow from the back of the seed housing, you should lower the chamber shutter. Do not fill seed hoppers until in the field.

Fig. 13



5.6 SEED PLATES

POPULAR SEED PLATES		
SEED	HOLES	MM
Dill	90 - 120 - 180	0.8
Asparagus	36 - 45	2
Aster	45	0.7
Basil	90 - 180	0.8
Swisschard Beet	24 - 52	2.2 - 2.5
Artichoke	12	1.8
Card	12	1.8
Carrot (Napoli F1)	90*	0.9 - 2
Carrot Pelleted	90*	1.8
Carrot (Cal. 160 - 180)	90	0.7 - 0.75 - 0.8
Carrot (Cal. 180 - 200)	120	0.9 - 1
Cauliflower	90*	0.8
Cabbage	24*	0.8
Cabbage Broccoli	24*	0.8
Coleslaw	24*	0.8
Chinese Cabbage	24*	0.8
Brussels Cabbages	90*	0.8
Cabbage Turnip	24*	0.8
Cabbage Savoy	24*	0.8
Gherkin	20	1.5
Cucumber	12	1.5
Onion	60 - 90 - 120	1.1
Onion Pelleted	60*	2.1 - 2.5
Coriander	90	1.8
Fennel	90	1.1 - 1.2
Salad	60 - 90	1.8 - 2
Lettuce	60 - 90 - 120	0.55 - 0.6
Lavender	45	0.65
Milk Thistle	72	1.8
Sweet Balm	220*	0.45
Golden Sweet Balm	42*	0.5
Yarrow	220*	2
Poppy	72*	0.5
Paprika	120	1.4
Pine	85 - 100	1.8 - 2.1
Red Hot Chili Pepper	90	0.8

5.6 SEED PLATES (CONTINUED)

POPULAR SEED PLATES (CONTINUED)		
SEED	HOLES	MM
Pepper	90	0.8
Pyrethrum	90	0.5
Green Pea	60	4.2 - 5.6
Tomato	24	0.9
Tomato "Posterella"	12 - 3	0.8 - 0.9
Leek	90	0.9 - 1
Persil	180	0.65 - 0.8
Chicory	60 - 90 - 120	0.65 - 0.75
Turnip	24* - 36* - 42*	0.65 - 1
Big Radish	60*	1.4
Small Radish	60*	0.7
Savage Rocket	120* - 180*	0.45
Spinach	45 - 60 - 90 - 120	1.3 - 1.4
Valerian	90 - 120	0.8
Watermelon	3	2.1
Chard Pelleted	36* - 42* - 45*	2.1 - 2.5
Naked Chard	42	2.5
Sunflower (Small)	12 - 22 - 26	2.5 - 3 - 3.5
Melon	6	2.5
Parsnip (***With Long Pins)	60	1.2***
Soya	52	5
Durrha	72 - 90	1.8 - 1.9
Squash	6	2.5



IMPORTANT

- This table describes the number of holes and the diameter in millimeter. Bare in mind, that the size and specific weight of the seed may vary from different seed suppliers.
- The seed plates marked with an asterisk (*) indicates that the plates do not have pins.
- In order to assure the correct size of the seed plate holes, you must send a sample of the seed you plan to use to us for testing. At that time we can also give you the settings for the inner and outer singulator.

6 ADJUSTMENTS

6.1 ADJUSTING DRIVE WHEELS

To adjust the depth of the drive wheels, simply turn bolt nut (*Fig. 19, Ref. 1*). Make sure all the drive wheels are set at the same depth.

Fig. 19

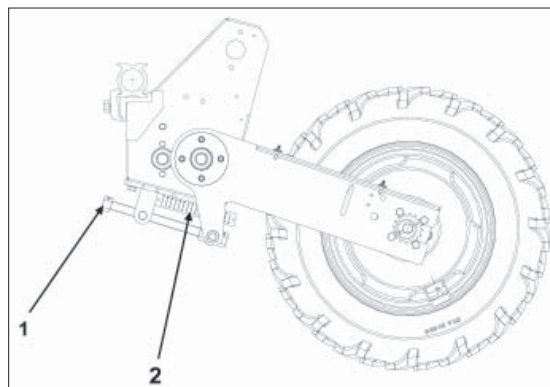
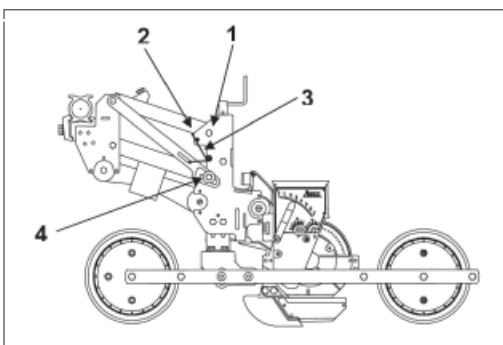


Fig. 20



To have the planters follow the contour of the ground, the bolt (*Fig. 20, Ref. 4*) should be at the mid point of the slotted bracket.

6.2 LIFTING AND LOWERING THE PLANTER

To lift the planter follow the procedure described below:

Position the spring (*Fig. 22, Ref. 3*) to point (*Ref. 1*). You should then note that bracket (*Ref. 4*) is in the locked slotted position. To stop the distribution of seeds, disconnect the knurled sleeve (See page ??? for details). Figure 22 shows the planter in the lifted locked position.

To bring the planter to working position (*Fig. 23*), remove spring (*Ref. 3*) from point (*Ref. 1*) to point (*Ref. 2*). Figure 23 shows planter in released position.

Fig. 22

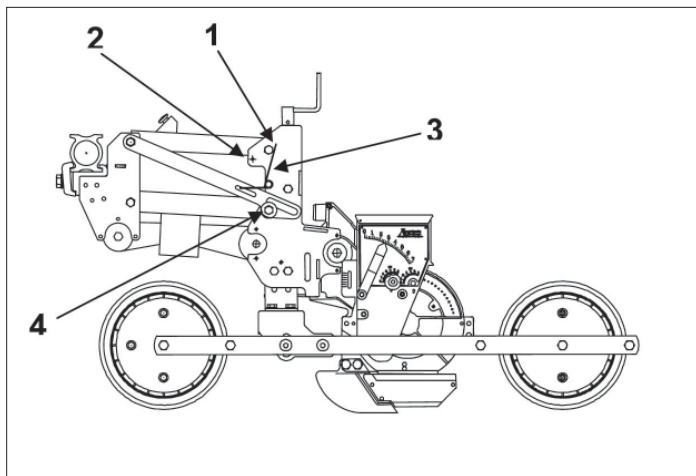
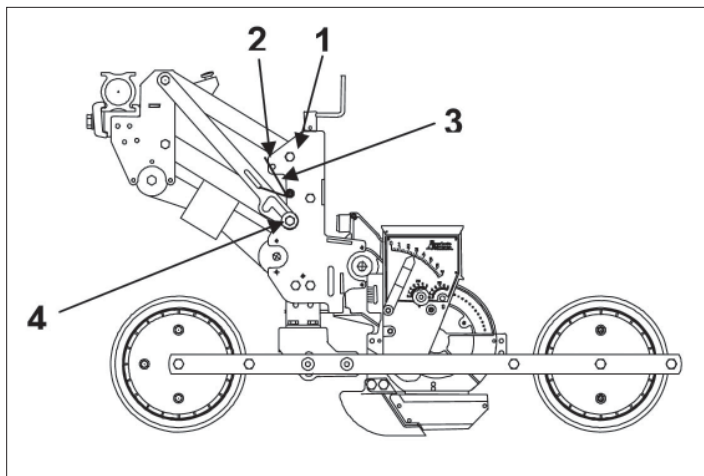


Fig. 23

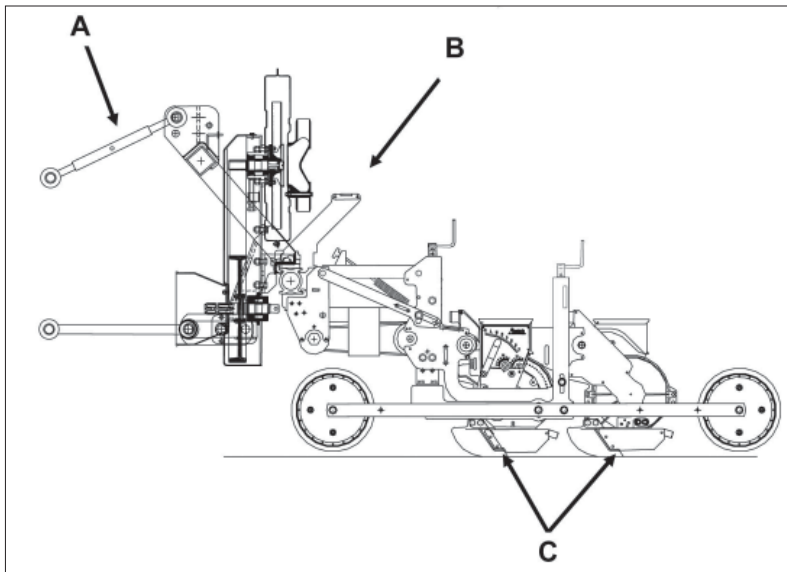


6.3 POSITIONING THE PLANTER ON THE GROUND

1. Attach the planter to the tractor. Find a perfectly hard, flat area and adjust the tractor top link (A) until both coulters (C) are level with the ground.
2. Once that is done, make sure bracket (B) is also in the level position.

At this point the machine is ready to set the seed depth in the field.

Fig. 24

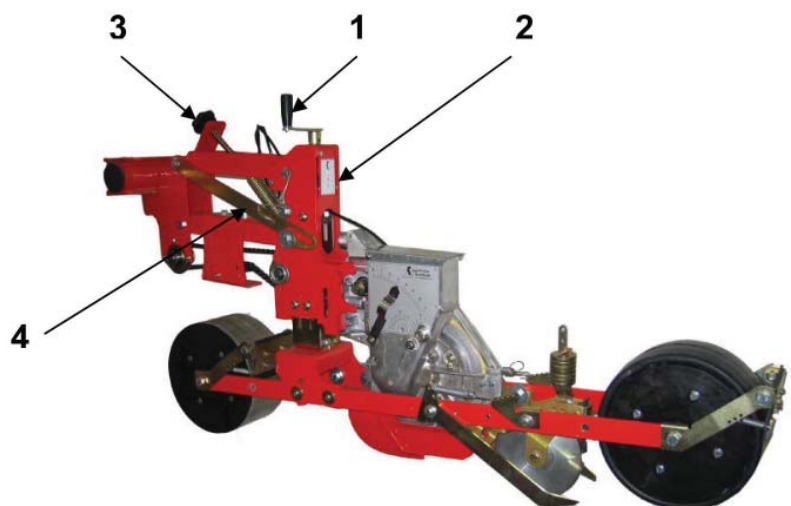


6.4 SEEDING DEPTH

Fig. 25

The seeding depth is regulated by the screw handle (Fig. 25, Ref. 1).

Make sure that all planters are at the same number on the seeding depth numbered chart (Ref. 2).



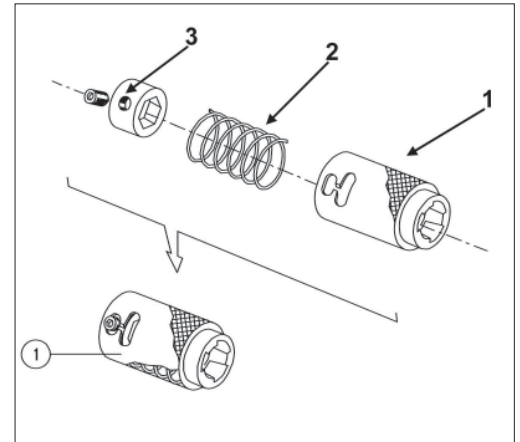
6.5 DISCONNECTING PLANTER UNITS

Every planter is equipped with a fast disconnect. This is a knurled handle over a spring (*Fig. 30, Ref. 2*). The handle and sleeve (*Ref. 3*) are placed on the hexagon shaft.

To disconnect a planter, rotate the knurled handle (*Ref. 1*) to the right from the sleeve (*Ref. 3*). Now the planter is disconnected from the hexagon shaft. Then lift the planter above the ground and lock in place.

This operation is only used when you are ending a planting that does not require all the planters.

Fig. 30



6.6 AIR COMPRESSOR TO CLEAN HOLES IN SEED PLATES

Since the seed plates have very small holes, air is introduced to the seed plates after the vacuum is cut off and the seeds drop into the furrow. This is to insure that the plate holes are free of impurities and is clean for the next seed pick-up.

As a rule, the air compressor is calibrated from 25 to 40 PSI. It is necessary from time to time, to eliminate condensation of water collected in the filters. With the compressor operating, unscrew the valves under the black filters. Furthermore it is a good rule to open the valve at the bottom of the red manifold in the evening.

Always verify the oil level on the compressor transparent nut (*Fig. 31, Ref. 1*).

Also, check to make sure filter is clean, especially when working in dusty conditions (*Fig. 32, Ref. 1*).

Fig. 31

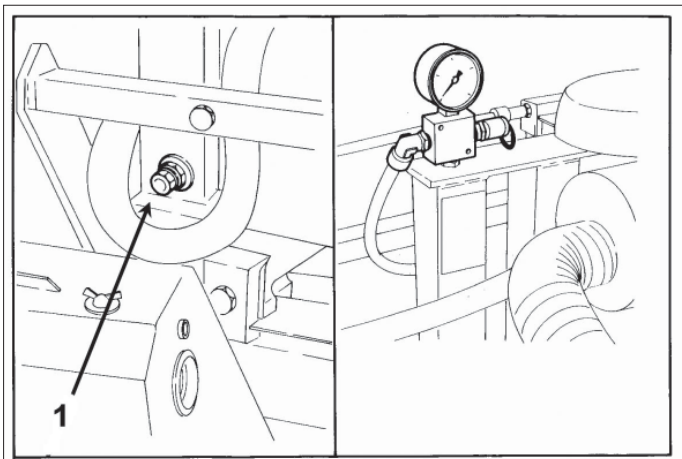
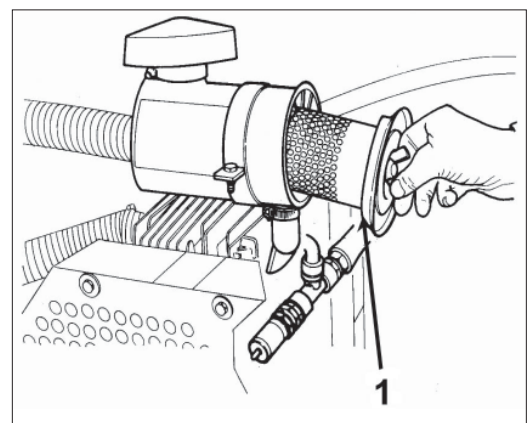
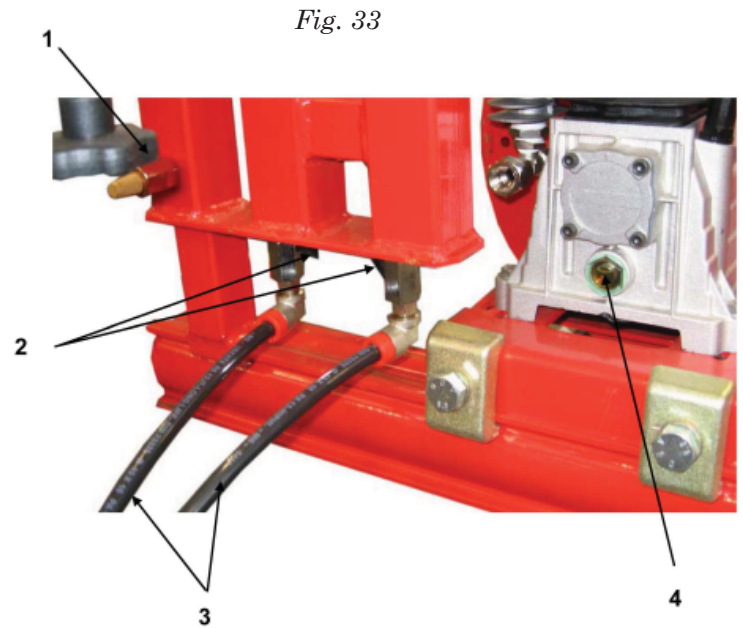


Fig. 32



6.7 SERVICING THE AIR COMPRESSOR

- Exhaust valve (*Fig. 33, Ref. 1*) is for adjusting valve pressure. The pressure must not exceed 40 P.S.I. Note that pressure can vary according to the PTO speed.
- There are two (*Ref. 2*) exhaust valves on the bottom of the air radiator. We suggest that you drain the condensation twice a day and leave them open at night.
- Note that the drain tubes are (*Ref. 3*).
- The red plug (*Ref. 4*) shows the level of oil in the air compressor.
- To lubricate the air compressor use SAE 10W-40 motor oil (Texaco Havoline Extra or equal).



6.8 VACUUM FAN BELT ADJUSTMENT

It is important that the vacuum fan is operating effectively.

IMPORTANT - Never exceed over 500 R.P.M. of the tractor PTO speed. After 8 hours of operation the belt may loosen. To tighten the belt, do the following operation:

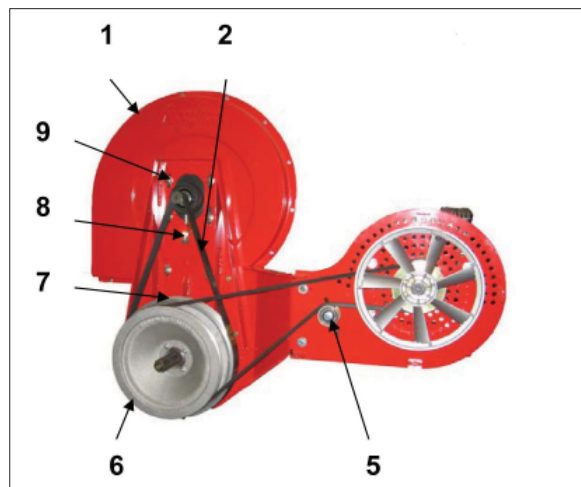
1. Remove the fan belt cover (*Fig. 34, Ref. 1*) (not shown).
2. Loosen the nut (*Ref. 5*).
3. Move the pulley up until belt is very tight and lock in place with the nut (*Ref. 5*).



WARNING!

- Loose belts wear fast as it will slip/overheat and wear out.
- Any noise coming from the fan area signals a loose belt.
- Belt adjustment can be performed only after the tractor is stopped.
- Never engage the PTO at high R.P.M. as that can damage the belt.

Fig. 34



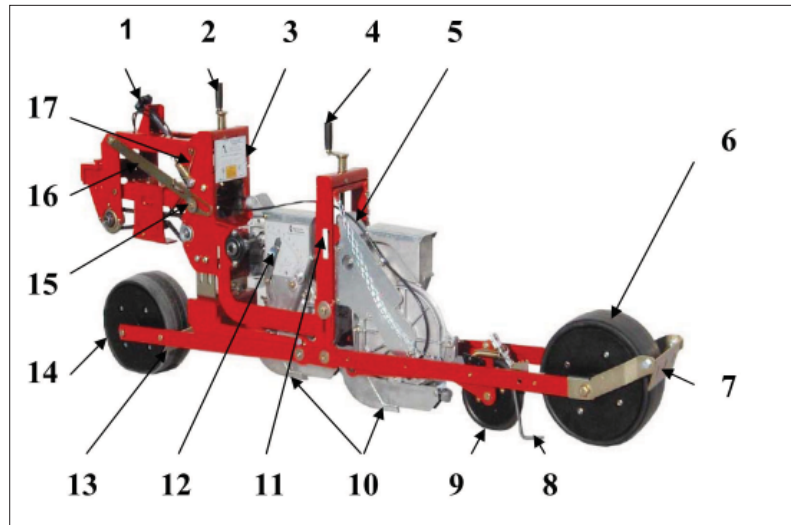
6.9 COULTER CLOGGING

To prevent the clogging of coulters, especially in clay and damp soils, the tractor should be moving forward. Even small backward movements could cause the coulters to plug. The coulters must always be clean to insure even and correct spacing of the seeds.



CAUTION - After the first few hours of use, make sure all hardware is tightened.

Fig. 35

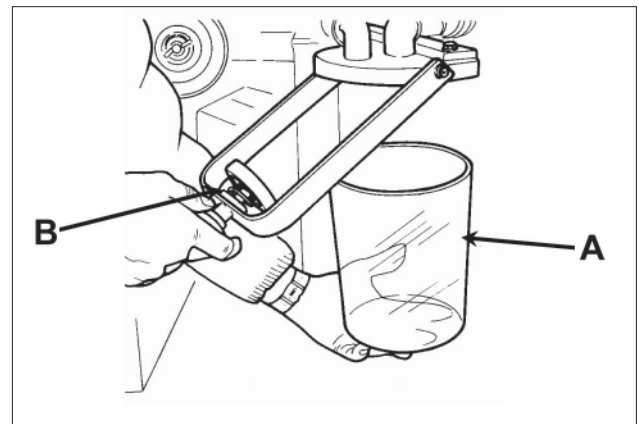


6.10 SEED EMPTYING DEVICE

The planters are equipped with a pneumatic vacuum system to quickly empty the seed hoppers.

Open the valve situated between the tank (A) and the fan. Then place the plastic dip tube into the planter hopper. You will then see the seeds flowing into the clear container. Once all the planters are emptied, close the valve. Remove the container by loosening the screw (B).

Note: You can open the planter body and vacuum the inside for the remaining seeds.



7 TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTIONS
Skips in seed placement	Insufficient suction volume.	Increase the suction, verifying that there are no air leaks from the pipes and that the belt is well tensioned.
	The holes of the disk are too small with reference to the size of the seed.	Verify the diameter of the seed and if necessary change the disk.
	The seed selector is not in the correct position.	Detect the correct position of the selector.
	Wear of the gaskets located on the planter cover.	Replace the gaskets.
	Disks worn out.	Change the disks.
Total seed skips	The quantity of seed is too low.	Add seeds.
	Pipe of sucked air perforated or not connected.	Check the air circuit.
	Planter is not connected to hex shaft.	Reconnect planter knurled coupling (See Fig. 30)
	The inner and/or outer singulators are totally out of position.	Readjust singulator by stopping tractor, raise planter and turn drivewheel by hand.
Seed doubles	The seed singulators are not in the correct position.	Correct the position of the seed singulator.
	The holes of the disk are too large with reference to the size of the seed.	Verify the diameter of the seed and if necessary change the seed plate.
	The suction is too strong.	Reduce the suction of the fan.
Bunch of seeds	Clogged coulters.	Clean coulters.
		Avoid lowering the planter too fast.
		Shorten the tractor top link so coulters are pointing down in the front.
Sliding of the drive wheel	Blockage in planter body.	Open the planter bodies to see if one of them is blocked.
	Gearbox locked up.	Check the gearbox and the drive wheel.
	Soft ground.	Lower the drive wheels.

8 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.

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13477 Benson Ave.
Chino, CA 91710

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