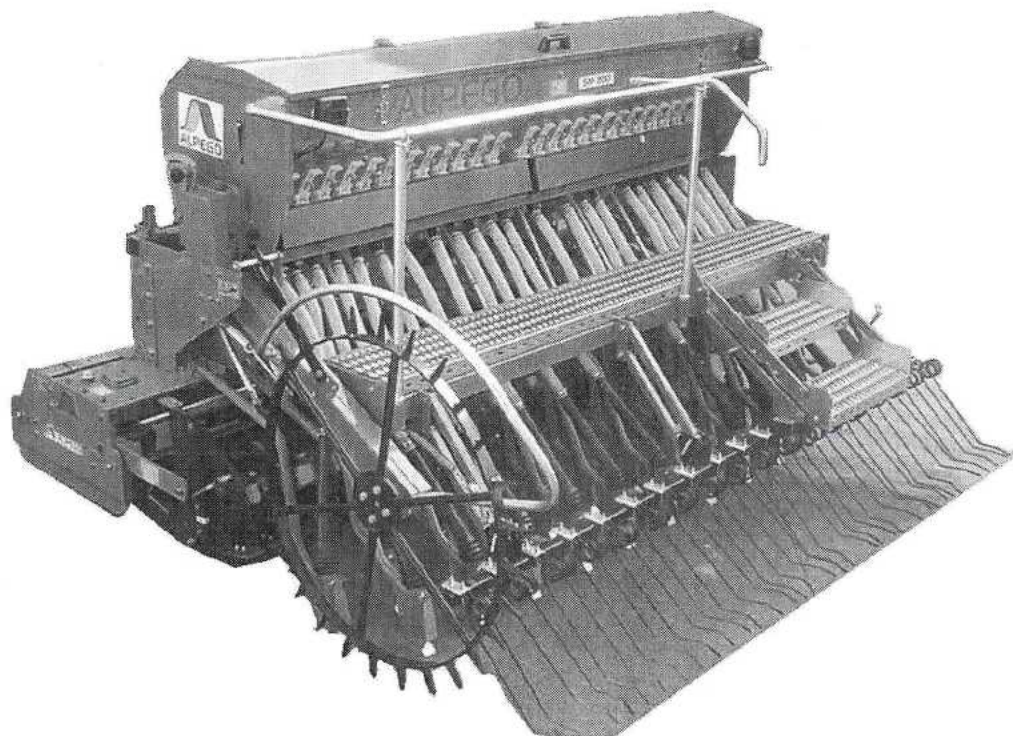
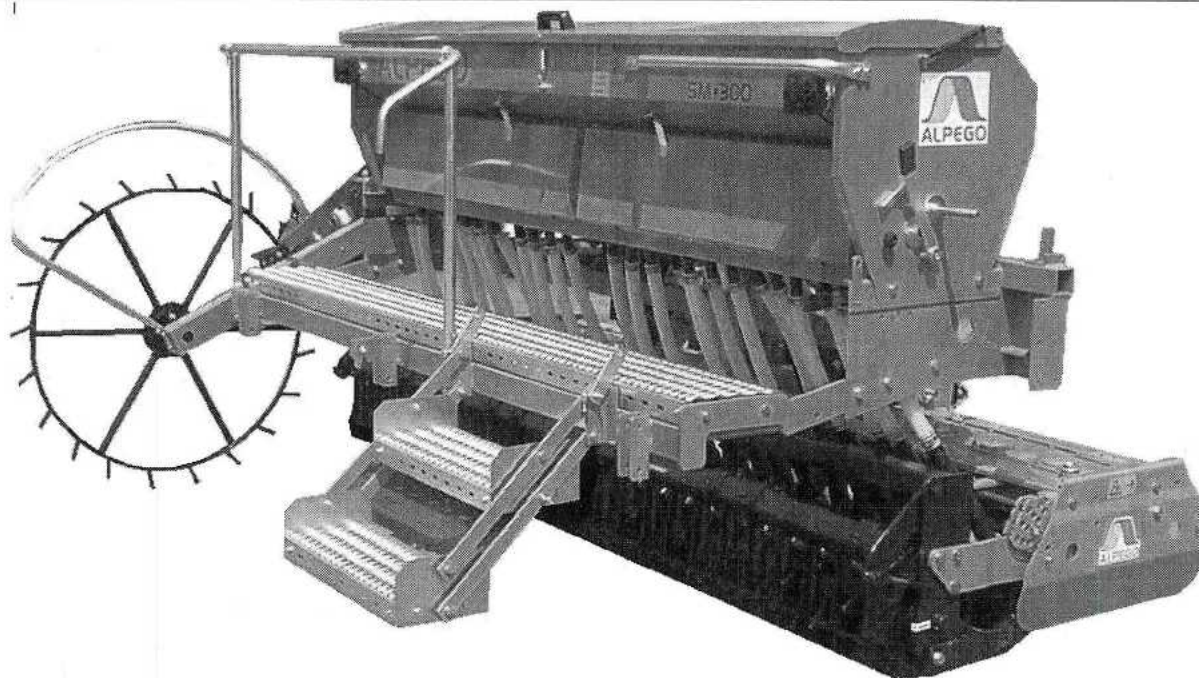


SEEDER MODEL

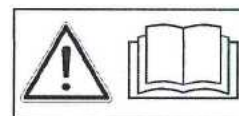


SM



SMS

USER AND MAINTENANCE MANUAL



Consult this manual carefully before using the machine. Knowing the machine in detail is essential for safe usage. This manual should be kept for the whole working life of the machine.

- Thank you for choosing Alpego, you have purchased a top quality product that is guaranteed by a decade of experience.
- Before leaving the factory, each machine is carefully inspected to guarantee that it is in perfect condition.
- Should you however, find any faults in the product, kindly contact your retailer immediately.
- Please do not hesitate to contact us should you need further information or assistance, our aim is to constantly improve the product, keeping it at top level.



LOOK OUT FOR THE TRIANGLE. IT INDICATES DANGER

THE TERM MACHINE REPLACES THE COMMERCIAL DESCRIPTION OF THE ITEM DESCRIBED IN THIS MANUAL.

ALL DATA AND DESCRIPTIONS REPORTED IN THIS MANUAL ARE TO BE CONSIDERED INFORMATIVE. THE PRODUCER IS NOT BOUND TO MAINTAIN THESE CHARACTERISTICS WHICH COULD BE VARIED WITHOUT PRIOR WARNING.



1. GENERAL INFORMATION

- 1.1 Purpose of the manual
- 1.2 Documents supplied with the machine
- 1.3 Guarantee
- 1.4 Machine identification

2. TECHNICAL SPECIFICATIONS

- 2.1 Description of the **SM – SMS** machine
- 2.2 Components of the **SM – SMS** seeder
- 2.3 Technical data table: **SM**
- 2.4 Technical data table: **SMS**

3. SAFETY REGULATIONS

- 3.1 Using the machine safely
- 3.2 Carrying out maintenance safely
- 3.3 Hydraulic connections (accessories)
- 3.4 Road circulation
- 3.5 Clothing
- 3.6 Ecology
- 3.7 Safety signals

4. INSTALLATION

- 4.1 Lifting the machine
 - 4.2.1 Applying the **SM** seeder
 - 4.2.2 Assembling the **SM** kit components
 - 4.2.3 Application to the **SM** harrow
 - 4.3.1 Applying the **SMS** seeder
 - 4.3.2 Assembling the **SMS** kit components
 - 4.3.3 Application to the **SMS** harrow
- 4.4 Regulating the seeder to the **SM** harrow
- 4.5 Regulating the seeder to the **SMS** harrow
- 4.6 Assembly drawing: quick triangle kit, **SM – SMS**
 - 4.6.1 **SM** hydraulic sowing exclusion kit
 - 4.6.2 Assembly drawing: **SM** hydraulic seeder exclusion kit
 - 4.6.3 Assembly drawing: RD+P41 roller blades on **SMS**
 - 4.6.4 Assembly drawing: RE-300 + SP4/PK4/P5/G5 roller blades on **SMS**
 - 4.6.5 Assembly drawing: RH-300 + SP4/PK4/P5/G5 roller blades on **SMS**
 - 4.6.6 Assembly drawing: **RG + SM / SMS RH+SM** roller blade kit
- 4.7 Assembling the **SM-SMS** transmission wheel
- 4.8 Assembling the transmission wheel limit switch

5. USER INSTRUCTIONS

- 5.1 **SM / SMS** speed change
- 5.2 **SM / SMS** distribution regulator
- 5.3 Regulation of the distance between rows **SM**
- 5.4 Selecting the distributor rollers **SM / SMS**
- 5.5 Closing plate position **SM / SMS**
- 5.6 Regulation of the sowing depth **SM**
- 5.7 Regulation of the pressure on the soil **SM**
 - 5.8.1 Row marking device **SM / SMS**
 - 5.8.2 Hydraulically commanded row marking device **SM / SMS**
- 5.9 Row marking device on harrow **SM / SMS 300**
- 5.10 Adjusting the rear spring harrows
- 5.11 Protections against coulter clogging
- 5.12 Seed level in the hopper

6. MAINTENANCE

- 6.1 Checks and controls
- 6.2 Lubrication
- 6.3 End of season operations
- 6.4 Discharging the seeds from the hopper

7. HECTARE COUNTER

- 7.1 Instrument description
- 7.2 Use
- 7.3 Programming the working width
- 7.4 Programming the wheel circumference
- 7.5 Assembling the speed sensor

8. SOWING TABLE

- 8.1 Sowing table
- 8.2 Checking the sowing quantity

1.1 PURPOSE OF THE MANUAL

- This manual has been prepared by the machine manufacturer and it is an integral part of the documentation that comes with the machine.
- In this manual you can find detailed and precise explanations regarding the correct use of the machine and it also establishes correct machine application and its limits.
- To guarantee the safety of persons using the machine; working economy and longer durability, you must follow the instructions given in this manual at all times.
- The manual has been divided into various sections. Consulting the index makes searching for specific topics easier.
- The illustrations in this manual are indicative. Even if you notice a difference with the machine you possess, safety and information are still fully guaranteed.

1.2 DOCUMENTS THAT COME WITH THE MACHINE

The following documents must be supplied with the machine:

- User and maintenance manual
- Spare parts catalogue
- EC declaration of conformity

1.3 GUARANTEE

When delivered, make sure that the machine and its accessories have not been damaged during transportation. **Any complaints should be presented to the retailer in writing within 6 days.**

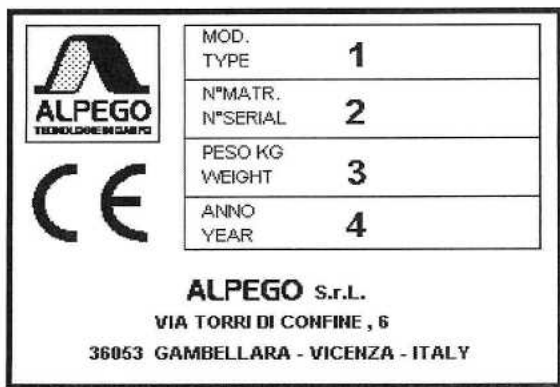
GUARANTEE DECADENCE

The guarantee is immediately rendered null and void if:

- there is a manoeuvring error;
- the instructions described in this manual are not followed;
- non-original spare parts are used;
- any modification is made to the machine without prior authorisation by the manufacturer.

1.4 MACHINE IDENTIFICATION

The machine identification plate, which gives the following information, can be found at the front of the hopper on the left hand side.



1-Model of machine

2-Serial number

3-Maximum machine weight

4-Manufacturing year

The indicated weight corresponds to the machine complete with standard shoe accessories.

2.1 MACHINE DESCRIPTION

The machine is basically made up of a load bearing frame, to which are applied the seed hopper and the sowing devices. The seeder is ideal for working in combination with a harrow transported by a tractor, equipped with lifting group and a three point hitch.

The seeder should only be used for agricultural work, and more specifically for sowing on soil.

It is ideal for sowing **cereals: Wheat, barley rye, oats, rice.**

For **fine seeds** and fodder: **Rape, clover, alfalfa, rye-grass.**

For **big seeds:** **Soya, peas.**

The seeds are spread continuously over the ground by a toothed roller for each row and are deposited on the soil by **SM** cutter bar coulter organs. The **SMS** scatter seeder places seeds on the soil using a rake made up of sowing pipes positioned on the harrow rear clod smasher. The distributed quantities are regulated by a system with speed change (gear) which is moved by the transmission wheel that in turn is activated by its adherence to the ground.

The coulters present on the **SM** version work independently and have a wide oscillation range in order to adapt themselves to the soil surface. The **SMS** model keeps sowing at a constant depth when the rear clod smasher has been adjusted correctly.

Only the operator in the driving seat can carry out the various sowing operations.

For the plan and the realization of the machine in object they have been examined and continuations the Norms of the directive 98/37CE which

UNI EN 14018	UNI EN 1553	UNI EN 982	ISO 11684	ISO 3757-2
--------------	-------------	------------	-----------	------------

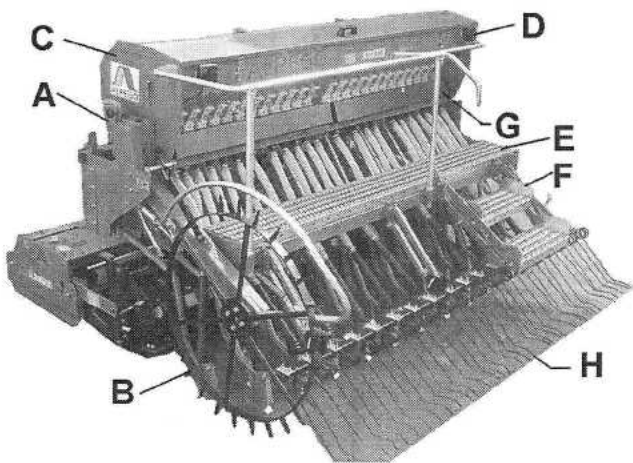
Seed drills SM/SMS have been realized for the combination with rotary harrow type "ALPEGO" who guarantee the respect of norm EN 708

2.2 SM / SMS SEEDER COMPONENTS

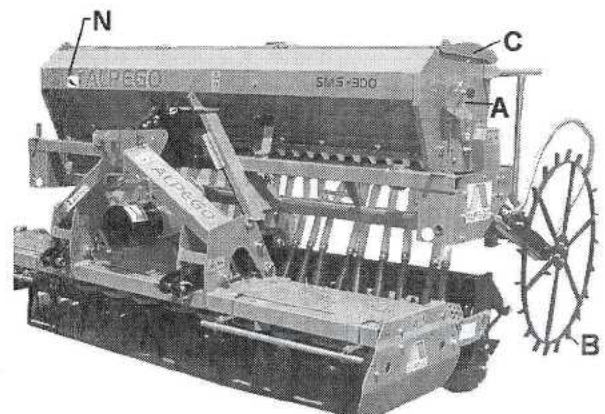
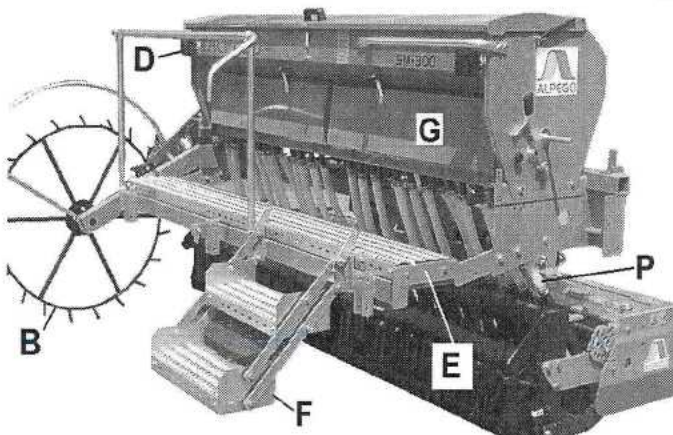
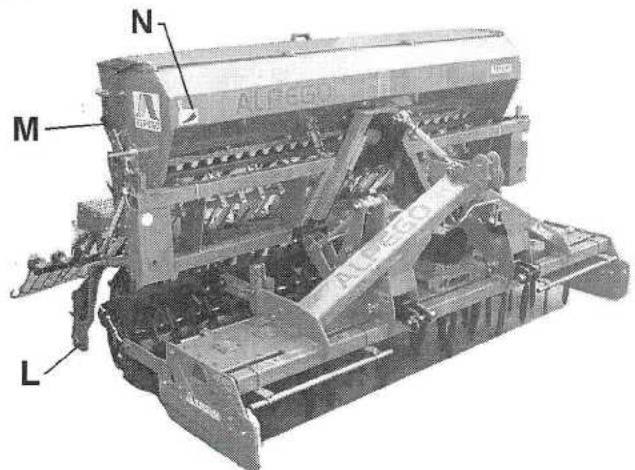
- A) Speed change
- B) Sowing wheel
- C) Hopper
- D) Rear lights
- E) Footboard
- F) Hopper loading ladder

- G) Seed collecting tanks
- H) Seed covering comb
- L) Shoe coulter
- M) Doser regulation lever
- N) Seed level indicator
- P) Sowing pipe

SM

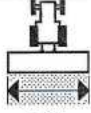

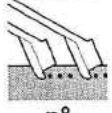
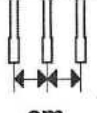



SMS



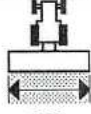

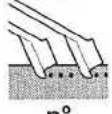
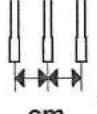

2 - TECHNICAL SPECIFICATIONS

2.3 TECHNICAL DATA TABLE: SM

model	 cm.	 cm.	 n°	 cm.	Hopper capacity litres	 Kg.
SM-250	250	250	19	13	455	523
SM-300	300	300	23		555	681

* with shoe coulters

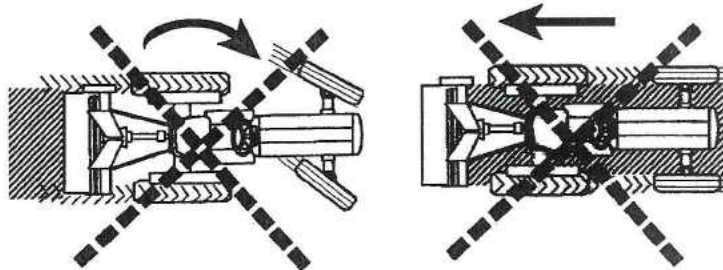
2.4 TECHNICAL DATA TABLE: SMS

model	 cm.	 cm.	 n°	 cm.	Hopper Capacity litres	 Kg.
SMS-250	250	250	20	12.5	455	410
SMS-300	300	300	24		555	480

3 - SAFETY REGULATIONS

3.1 USING THE MACHINE SAFELY

- Read the user and maintenance manuals carefully before starting, using and carrying out maintenance on the equipment.
- The producer cannot be held responsible for any injury caused to people or animals, and damage to things because of the non observance of the safety regulations.
- The machine cannot be used for purposes other than those expressly indicated in this manual.
- It is forbidden for people to drive the tractor if they do not have a suitable driving licence, if they do not have the necessary experience, or if they are not in good health.
- Carefully examine the adhesive labels on the machine and respect the indications they give. Safety stickers should always be legible. They should be kept clean and they must be replaced when they cannot be read properly (if required, replacements can be requested from your dealer)
- While working do not allow people, animals or things to approach the working range of the sods and stones that are being thrown out by the machine.
- It is absolutely forbidden to enter the area between the tractor and the machine to reach the external commands of the hydraulic lifter.
- You must always remain seated in the tractor driving seat. You can only leave your driving seat when the tractor power takeoff has been disengaged and the handbrake pulled up.
- During working stops: switch off the motor, place the machine on the ground, disengage tractor power takeoff and pull the tractor handbrake up.
- Never work if the protections have been removed.
- Do not take turns while the machine is resting in the ground. Never work in reverse.
- Never use the machine to transport people, animals or things.
- Do not work on ground or in places that compromise machine stability.
- Always lift the machine when changing direction or reversing.



3 - SAFETY REGULATIONS

- Do not drop the machine violently onto the ground, but lower it gently instead. If lowered violently, all machine components would become heavily stressed, and this could compromise their integrity.
- The seeder can transport chemical substances used to fatten the seeds. Do not allow people, children, or pets to approach the seeder.
- Do not allow people to reach the seed tank, and do not let them try to open it when the seeder is operating or ready to start working.
- Make sure that no foreign bodies (string, sack paper, etc.) enter the tank while it is being filled with seeds, fertiliser and insecticides.

3.2 CARRYING OUT MAINTENANCE SAFELY

- DO NOT allow unauthorised people to carry out maintenance operations or to tamper with the machine in any way.
- Maintenance and repairs should be carried out in a suitable and well equipped workshop.
- Always use original accessories and spare parts as instructed by the manufacturer. If you fail to do this, the guarantee will be rendered null and void, and you could risk operational irregularities that could prejudice the safety of the machine.
- When carrying out maintenance on the machine disconnect the hydraulic hoses from the tractor inlets.
- When carrying out any kind of operation on the machine, disengage the tractor power takeoff, pull the handbrake up, remove the ignition key and make sure that nobody gets into the tractor.

3.3 HYDRAULIC CONNECTION (for ACCESSORIES).

- When connecting the hydraulic pipes to the tractor hydraulic system, make sure that the hydraulic systems of the machine tool and the tractor are not pressurised.
- Plugs and inlets that are part of the hydraulic connections between the tractor and the machine tool should be marked using colours in order to exclude incorrect positioning. Failing to do this could cause accidents.
- The hydraulic system is under pressure. To avoid accidents, use suitable auxiliary instruments when searching for leakage points.
- Never exceed the oleodynamic system pressure.

3.4 ROAD CIRCULATION

- When circulating on the road, it is necessary to follow the Highway Code of the country where the machine is being used.
- **When circulating on the road, the machine and any accessories must have suitable signals and protection systems.**
- Always remember that roadholding, braking and changing direction could be influenced by the weight of the machine applied to the tractor lifter.
- When taking turns, take into consideration the action of the centrifugal force that moves the machine barycentre.
- During transportation, or whenever it is necessary to lift the machine, the tractor lifting group should be regulated in such a manner as to keep the machine at a maximum distance of approx. **35 cm** from the ground.

3 - SAFETY REGULATIONS

- Do not circulate on roads if the machine is dirty with soil, grass or other things that could dirty the road and block normal traffic.
- Before transporting, regulate and fix the chains of the tractor side lifting arms. With the machine raised, move the command lever of the hydraulic lifter to the locked position.
- Any movements made outside the work area should be carried out with the equipment in the transport position.
- When being used, make sure that the supplied lights system operates perfectly.
- Applying additional pieces of equipment to the tractor causes the weight to distribute differently over the axes. You should add suitable ballasts at the front of the tractor to balance the weight on the axes.
- Respect the maximum axis weights, the total mobile weight, transport regulations and the Highway Code.

3.5 CLOTHING

- You should put on clothes protecting the body with no hanging parts that could get stuck in moving components. Remove watches, rings, necklaces, etc. that could cause injury in dangerous situations. Pull up long hair into a ponytail.
- The machine driver may have to wear suitable safety equipment (glasses, gloves, mask, helmet, shoes, etc.).



3.6 ECOLOGY

Regulations in your country regarding the use and disposal of lubricating products, maintenance operations and machine cleaning must be respected. Carefully observe the indications given on the packaging of the products used. Respect current standards for scrapping the machine.

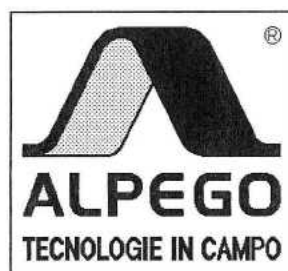
3.7 SAFETY SIGNS

A good number of labels on the machine point out the sources of danger. Observe them carefully and follow the indications for a safe use of the machine. These stickers should be kept clean and legible; if damaged they should be replaced.


figure	code	indications
<p>PRIMA DI USARE L'ATTREZZATURA E' OBBLIGAZIONE LEGGERE IL LIBRETTO</p>	D02612	It is a MUST to read the user and maintenance manual and safety instructions before using the equipment. These must be followed during use.
	D02627	Indicates the hooking point for machine transportation.
	D02614	Indicates the danger of crushing by rotating belts and pulleys.
<p> 1 NON APRIRE IL COPRICOCCO A MACCHINA FUNZIONANTE F NE PAS OUVRIRE LE COUVERCLE QUAND LA MACHINE EST EN TRAIN DE TRAVAILLER. D DER DECKEL MIT DER MASCHINE IN BETRIEB NICHT OFFNEN GB DO NOT OPEN THE COVER WHEN MACHINE IS WORKING </p>	D06334	Indicates that it is dangerous to open the hopper lid when the seeder is working.

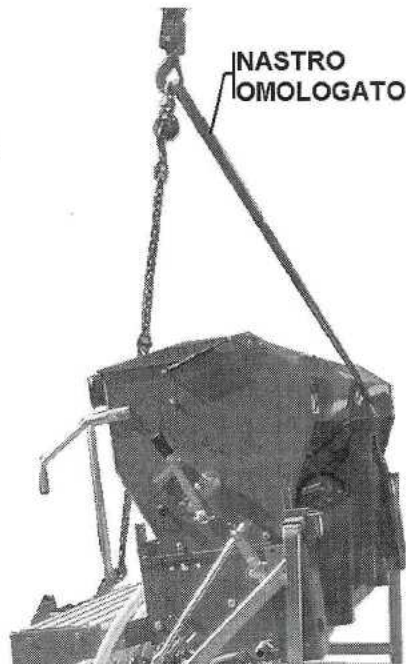
3 - SAFETY REGULATIONS

figure	code	Indications
	D06335	The safety screw that holds the seeder must be locked to the triangular quick coupling before transportation or sowing.
	D02616	Indicates the position of a support leg, which should always be locked to maintain stability when the machine is not being used.
	D02609	Indicates that it is forbidden to climb on top of the machine while it is working.
	D08161	Indicates transmission wheel assembly.
	D07640	Indicates transmission wheel limit switch assembly on various harrow models.
	D08704	Indicates the number of revs necessary for carrying out the sowing test and the constant/weight multiplication ratio after 32 revs. to find the quantity of seeds per hectare to be distributed.



4.1 LIFTING THE MACHINE

 The machine should be lifted and transported with the right means, suitable for its weight, and by personnel trained in this kind of work. Hook the machine in the two points indicated in the figure and proceed. A chain that is suitable for the machine capacity can be hooked to the rear (footplate) but a homologated belt is recommended for the front to stop the hopper from being damaged. Hook the two chains or belts (at a height that does not ruin the machine surfaces) to a single chain for lifting. The machine should not be raised by more than 200 mm from the ground while carrying out these operations.



REAR HOOKING POINT



FRONT HOOKING POINT



4.2.1 APPLYING THE SM SEEDER



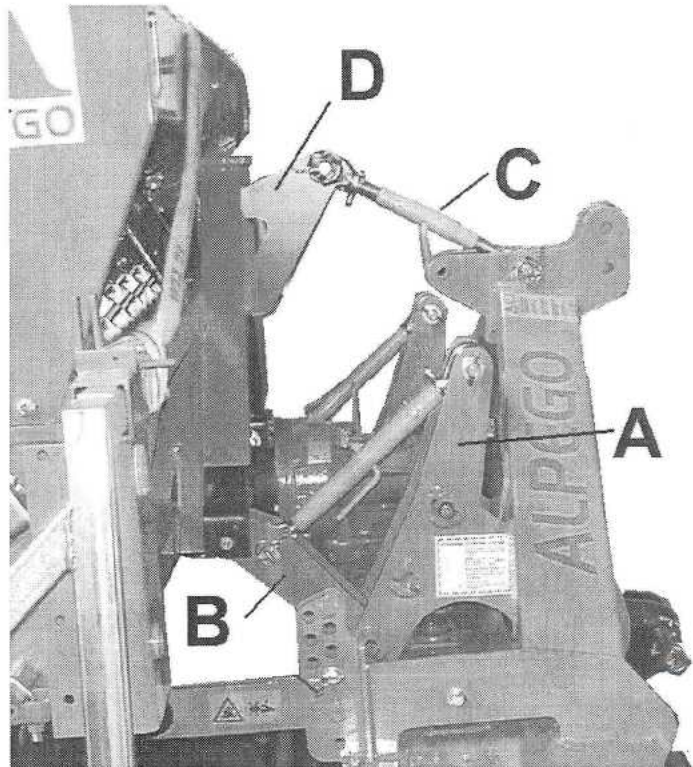
Adjustments and regulations should be made while the tractor is off, the ignition key is out and the seeder is firmly supported on its own support legs.

Specific assembly kits for each type of machine are essential when connecting the seeder to a machine for working the soil. These kits include:

- The upper arm **A**, that should be connected stably to the machine.
- The lower arm **B**, that should be fitted to the frame under its equivalent upper arm.
- The tension rods for the third point **C** and those for connecting the upper arm to the lower one in order to lock the triangle.
- The universal triangle **D** for connecting the seeder. The rotating harrow that the seeder is applied to does not need a **rear power takeoff**.

4.2.2 ASSEMBLING THE SM KIT COMPONENTS

- Mount the upper arms "**A**" to the machine frame, locking them with one single pin in the rear upper hole of the frame.
- Connect the lower arm "**B**" to the lowest hole of the frame. The lower arm will then be coupled with the upper arms (**A**), that are positioned lower down.
- Regulate the two lower tension rods "**C**" so they are the same length, mount one end of the rod to the upper part of the upper arm and the other end to the "central" hole of the lower arm. The tension rod for the third point should be positioned in one of the two rear holes. You can choose the correct hole according to how perpendicular the seeder is to the harrow.
- Assemble the universal triangle "**D**". The lower connections should be connected to the two lower arms (**B**), and the third point of the triangle should be connected to the tension rod (**C**) of the machine third point. At this point you can connect the seeder to the harrow.

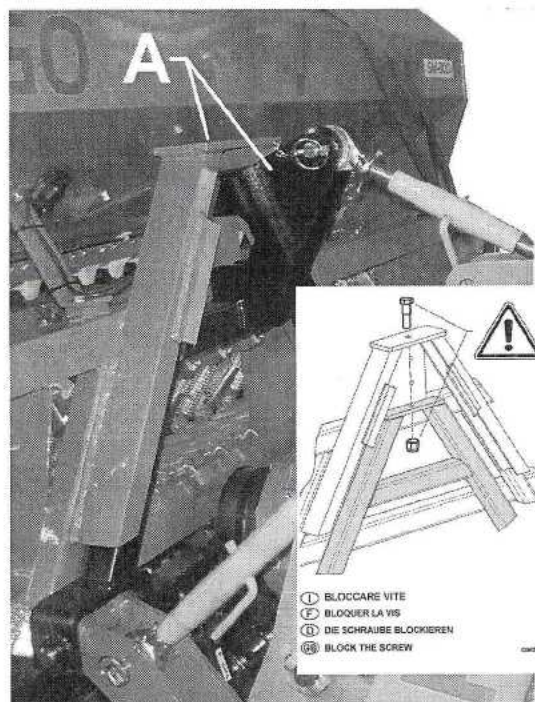


4.2.3 APPLYING TO AN SM HARROW

! Applying the machine to a tractor is a very delicate phase, so be very careful when following the instructions. Work on a horizontal surface with the seeder placed steadily on its support legs.

Proceed as follows:

- To make connection easier, use grease to lubricate the triangle guides
- Move the tractor towards the seeder and use the lifter to move the quick coupling triangle to the vertical side of the seeder coupling triangle.
- For good seeder connection, make sure that the mechanical organs of the two machines do not obstruct each other before lifting the rotating harrow.
- Lift the harrow until the two parts are perfectly connected along the triangle guides, then use area **A** to lock everything.
- Lock the seeder triangle to the universal triangle using an **M 16x1.5x70** screw and tighten with the appropriate bolt. **This operation is essential for making the whole structure safe.**
- Remove the seeder support legs.
- Lower the lifter, putting the combined equipment in the work position and make sure that all sowing organs can oscillate. Also make sure that the seeder wheel and the seed covering harrow can oscillate. Make sure that the equipment is in the correct position, perpendicular to the soil, and if necessary adjust the third tractor hitch.

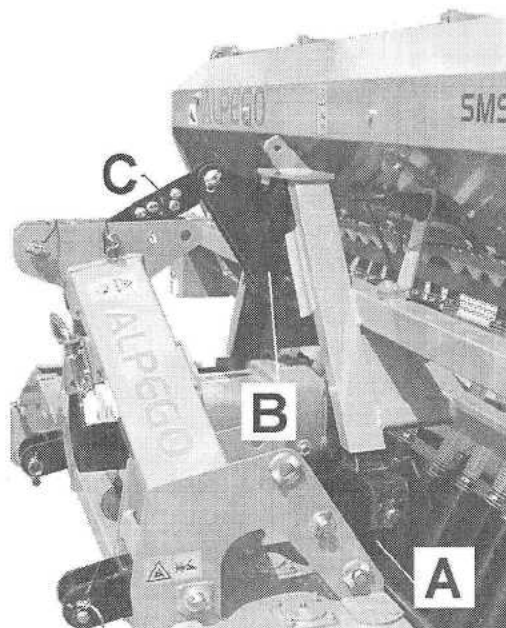


4.3.1 APPLYING THE SMS SEEDER

! The machine should be regulated and prepared for working with the tractor switched off, the key out and the seeder on the ground steadily supported by its support legs.

You need just one kit for the **RD-RE-RG-RH** models when applying the seeder to a machine for working the soil. This kit includes:

- The two triangle supports (**A**), that should be mounted steadily on the equipment frame.
- The universal triangle **B**, for connecting the seeder. The rotating harrow the seeder is applied to does not need a **rear power takeoff**.
- The tension rod for the third point **C** to lock the triangle.



4.3.2 ASSEMBLING THE COMPONENTS OF THE SMS KIT

- Connect the triangle supports "**A**" to the machine frame, locking them with 2 pins in the lower holes at the rear of the frame.
 - Place the tension rod plates of the third point in the central hole of the 3rd point plate of the harrow. You can choose the correct hole according to how perpendicular the seeder is to the harrow
 - Assemble the universal triangle "**B**". The lower connections should be connected to the two triangle supports (**A**) and the triangle third point should be connected to the tension rod (**C**). Check the perpendicularity of the triangle with the machine it is coupled to.
- At this point, you can connect the seeder to the harrow.

4.3.3 APPLYING TO AN SMS HARROW



Applying the machine to a tractor is a very delicate phase, so be very careful when following the instructions. Work on a horizontal surface with the seeder placed steadily on its support legs.

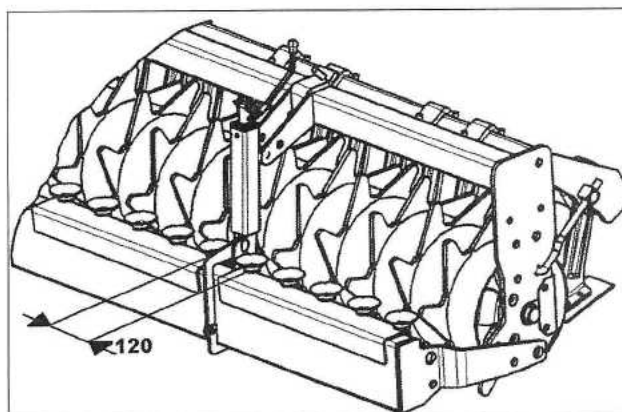
Proceed as follows:

- Loosen the crank support screws on the rear clod smasher and the U-bolt on the roller frame.
- Using grease, lubricate the triangle guides to make connection easier.
- Move the tractor towards the seeder and use the lifter to move the quick coupling triangle to the vertical side of the seeder coupling triangle.

- Insert the seeder pipe supports into the rear clod smasher and move the bar crank outwards until it reaches a good position for making later adjustments.

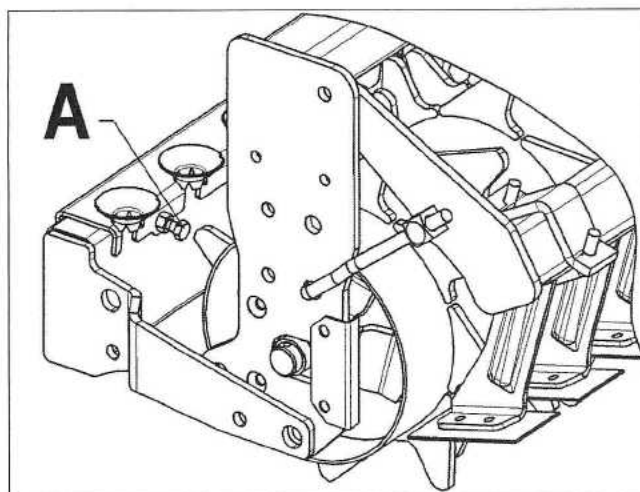


Make sure that the crank does not invade the 120mm step between one pipe carrying support and the other.



- For good seeder connection, make sure that the mechanical organs of the two machines do not obstruct each other before lifting the rotating harrow.
- Lift the harrow until the two parts match perfectly along the triangle guides, then use area **A** to lock everything.
- Fix the seeder triangle to the universal triangle using an **M 16x1.5x70** screw then tighten with the relative bolt. **This operation is essential for making the whole structure safe.**
- Lower the lifter, putting the combined equipment in the work position and make sure that all sowing organs can oscillate. Also make sure that the seeder wheel and the seed covering harrow can oscillate. Make sure that the equipment is in the correct position, perpendicular to the soil, and if necessary adjust the third tractor hitch.

- Lock the support pipes to the rear clod smasher by tightening the screws **A**. Make sure that the correct distance (120mm) is kept between the seeder pipes.



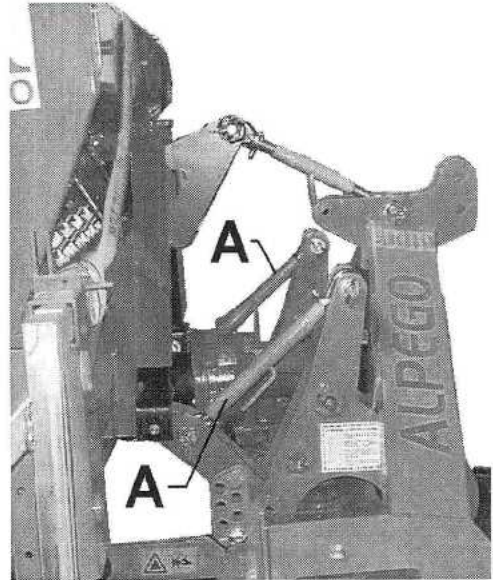
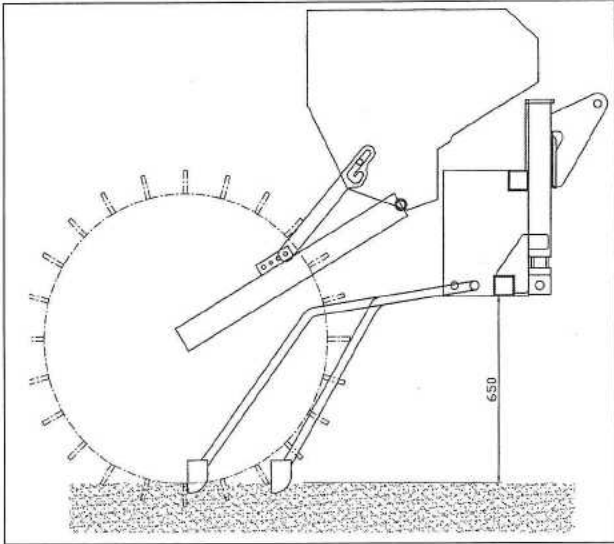
4.4 REGULATING THE SEEDER TO THE SM HARROW

The position of the seeder must be adjusted correctly to the rotating harrow.

Before regulating the seeder, put the rotating harrow in the working position to check the correct sowing depth.

Regulate points **A** of the triangle universal coupling kit to register the pressure and the sowing depth.

Ideally, the seeder should be kept at a height of 650 mm from the ground when working. Make sure that the sowing elements have the maximum space for moving. Regulate the height of the tractor lifting arms so that the seeder does not touch the ground while it is being transported.

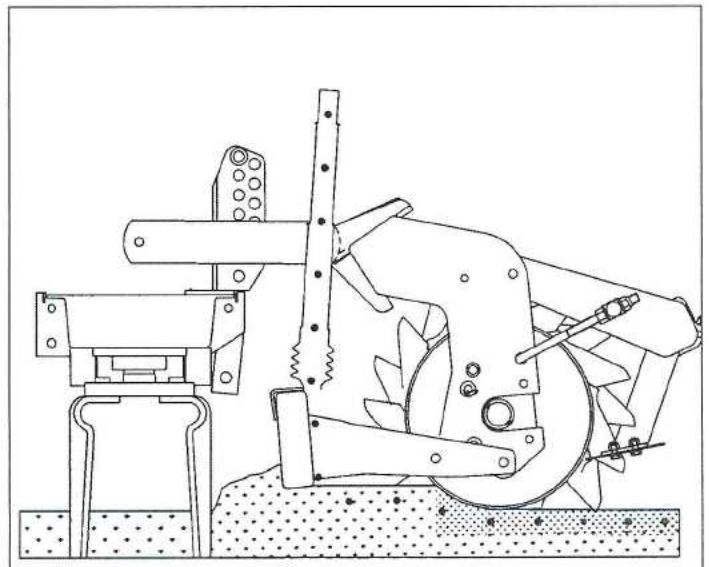
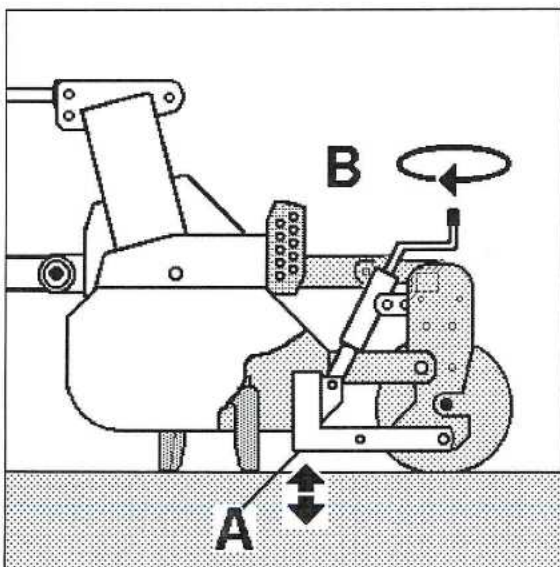


4.5 REGULATING THE SEEDER TO THE SMS HARROW

The SMS wheelbarrow seeder does not need to be regulated when it is coupled to the harrow, but the following points are very important:

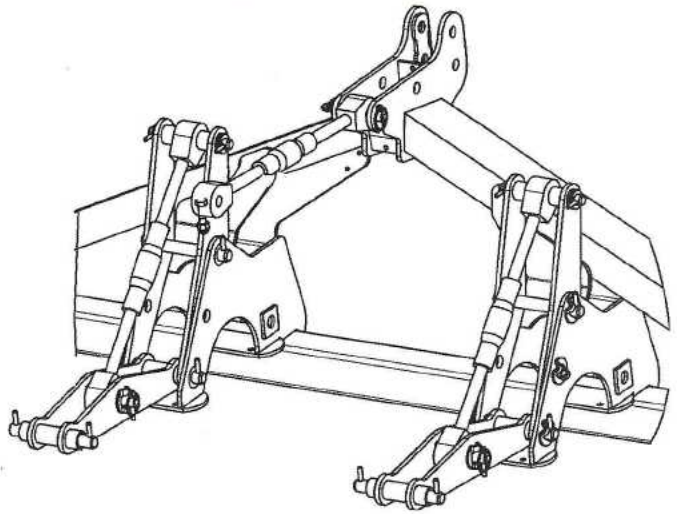
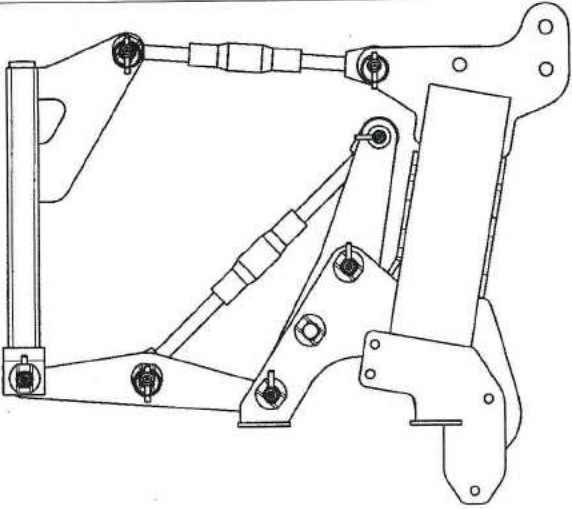
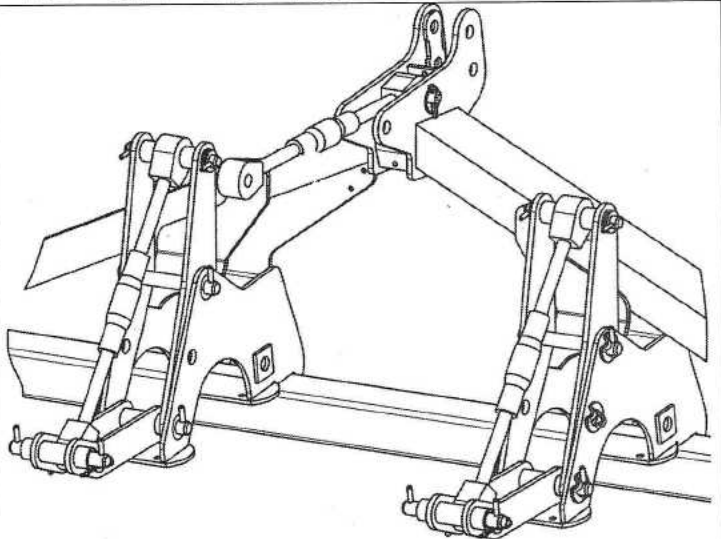
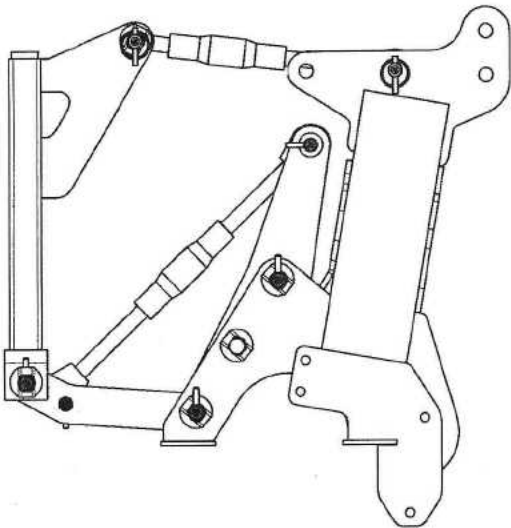
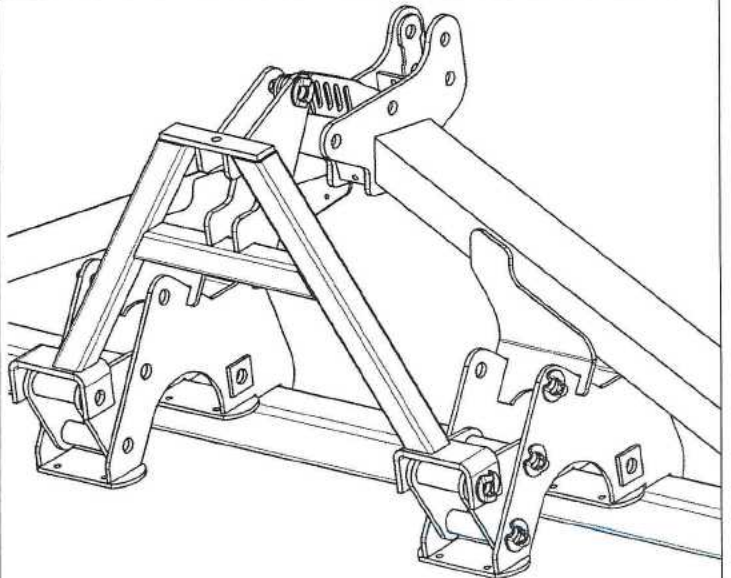
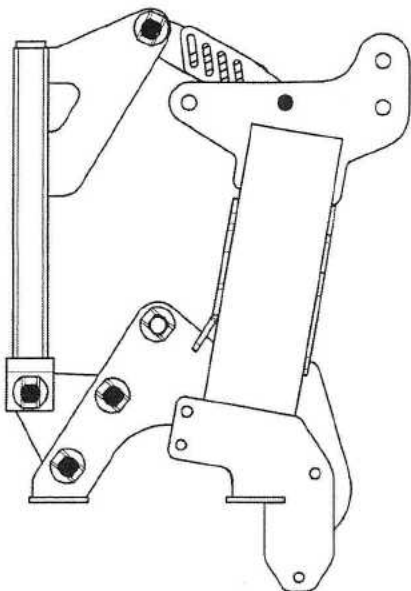
- Regulate the rotating harrow when it is in the working position to check the correct sowing depth.
- Regulate the rear clod smasher, which is positioned above the harrow, and to which the sowing pipe racks are fixed. As well as carrying out the normal functions already described in the harrow user and maintenance manual, this device can be used to regulate the sowing bed depth using handle **B**.

Regulate the height of the tractor lifting arms so that the seeder does not touch the ground while being transported.



4.6 ASSEMBLY DRAWING: QUICK TRIANGLE KIT

The drawings below must be followed in order to assemble the kit components correctly

S05067 SM + SG**S05068 SM + RD - RE - RG - RH****S05085 SMS + RD - RE - RG - RH / FP-FH**

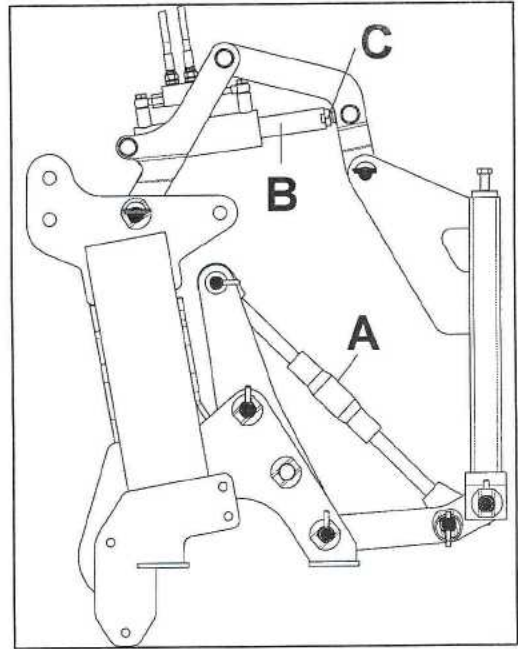
4 INSTALLATION

4.6.1 HYDRAULIC SEEDER EXCLUSION KIT: SM

A hydraulic seeder exclusion kit (cod. **S06310**) can be added to the **SM-250** and **SM-300** seeders. The exclusion kit should be applied to the third harrow hitch where the normal tension rod in kits S05068 and S05069 is normally positioned. Use the exclusion kit to stop the seeder from working while still using the machine the seeder is connected to. This lets the operator use just the harrow at any moment during soil preparation.

When connecting the cylinder to the seeder quick triangle, proceed as follows:

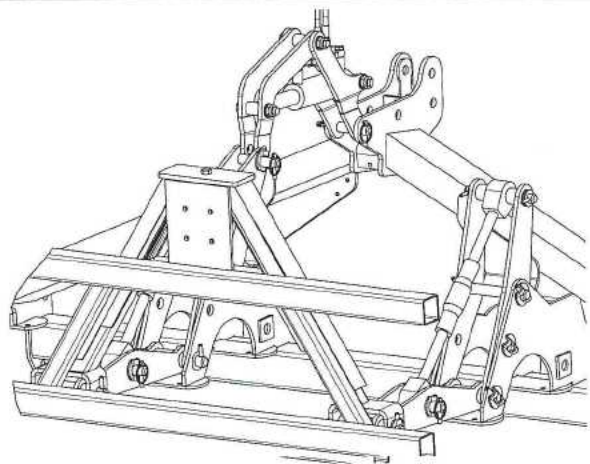
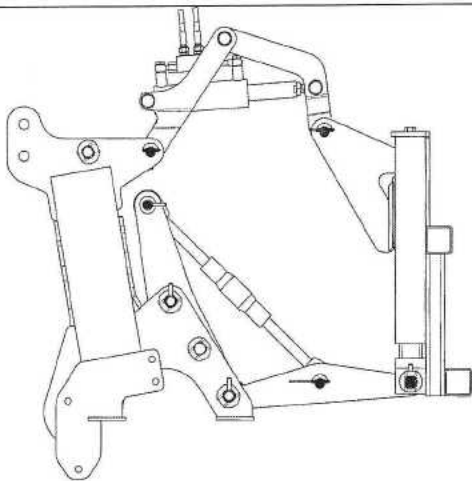
- Fix the cylinder to the third harrow point and make rod **B** emerge fully.
- Connect the triangle to the fork end of the kit as shown in the diagram.
- Use the threaded screw **C** on the terminal part of the cylinder rod to position the triangle perfectly perpendicular to the ground.
- Regulate the sowing depth using the two tension rods **A**. Remember that the ideal working height of the seeder from the ground is **650 mm**.



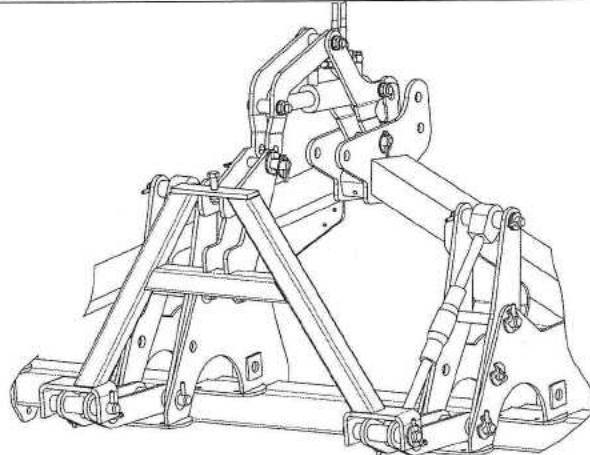
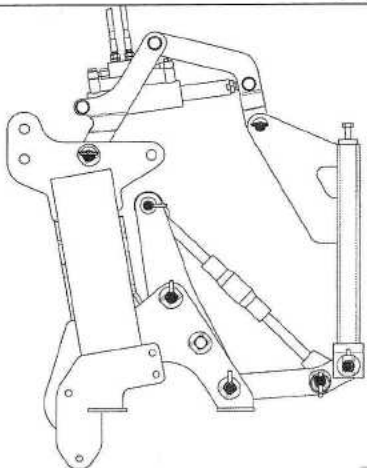
4.6.2 ASSEMBLY DRAWING: SM HYDRAULIC SEEDER EXCLUSION KIT

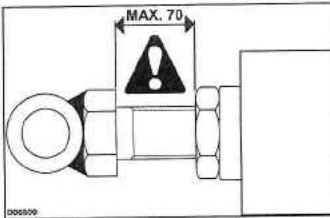
The drawings below must be followed in order to assemble the kit components correctly.

S06310 SG



S06310 RD-RE-RG-RH

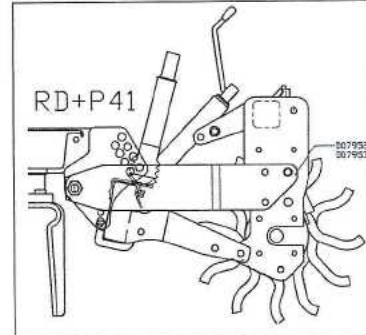




Do not allow the threaded screw C to yield. It must not exceed the maximum emission quota for triangle regulation indicated on the adhesive label (70 mm) on the S06310 kit.

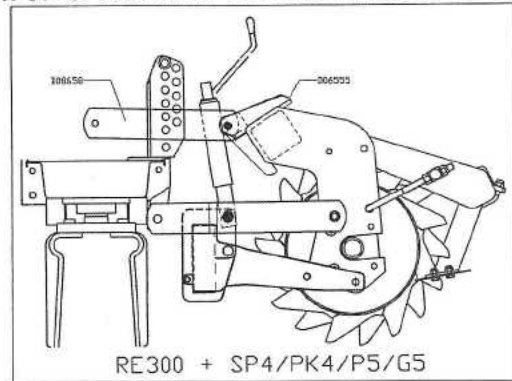
4.6.3 ASSEMBLY DRAWING: SMS + RD + RULLO P41 ROLLER BLADES

A longer side roller blade (D07952 / D07953) must be used if the SMS wheelbarrow seeder is combined with an RD 250/300 harrow and a P41 type spiked roller. A longer blade must be used because the roller spikes damage the telescopic sowing pipes mounted on the rear clod smasher rack.



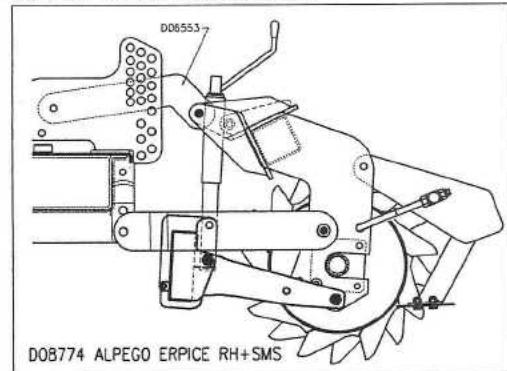
4.6.4 ASSEMBLY DRAWING: SMS + RE300 ROLLER BLADE on SP4/PK4/P5/G5 TYPE ROLLER

If you use the SM mechanical seeder and SMS spiked seeder with an RE 300 harrow (but only with this model) you MUST connect an SP4 or PK4 or P5 and G5 roller because these rollers are ideal for supporting stress while the seeder is working. To do this you need a special kit (S00108) that adapts the standard machine roller blades to a bigger roller.



4.6.5 ASSEMBLY DRAWING: SMS + RH-300 ROLLER BLADE + REAR CLOD SMASHER

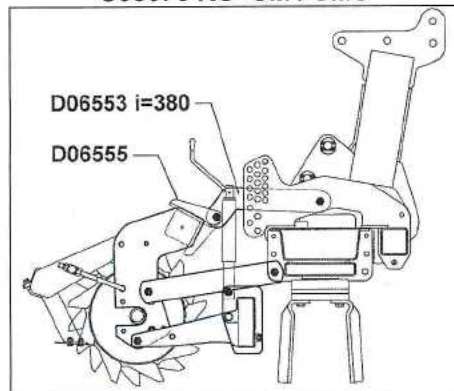
You MUST connect a shorter upper roller blade (D06553) to the SMS spiked seeder if you are using it in combination with an RH 300 harrow. The shorter blade lets the roller work in several positions without coming into contact with the seeder frame.



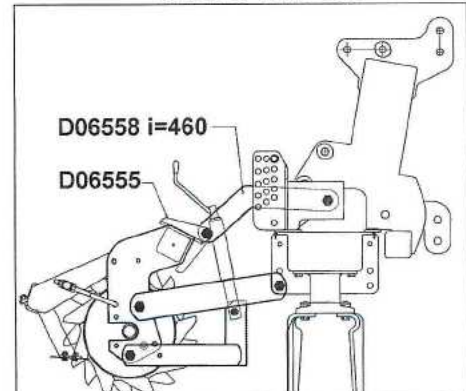
4.6.6 ASSEMBLY DRAWING: RG AND RH ROLLER KIT

It is possible to use a roller blade kit (RG code S05076 and RH code S05077) with harrow models RG and RH. If added, the kit allows the user to move the SM / SMS seeder closer to the machine. Follow the indications given in the drawings when replacing the upper blades.

S05076 RG+SM / SMS



S05077 RH+ SM



4.7 ASSEMBLING THE TRANSMISSION WHEEL

To optimise seeder operation and reduce the stress on the mechanical transmission organs during sowing, the transmission wheel should be mounted as indicated below.

The machine is supplied with the transmission wheel disconnected and with 4 springs pre-assembled on the wheel hub.

To fit the transmission wheel, proceed as follows:

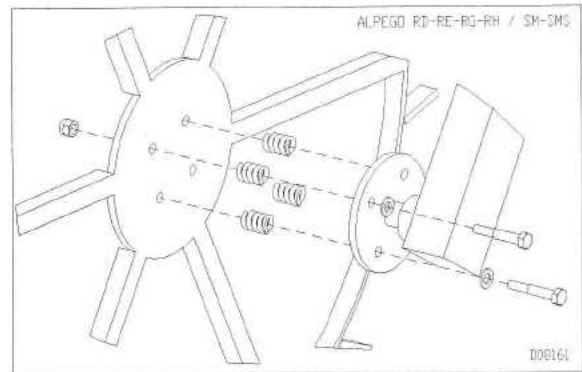
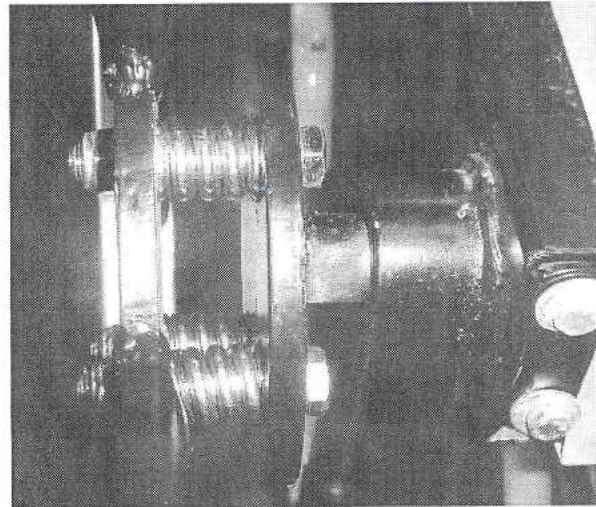
- Unscrew the wheel hub nuts;
- Make sure that the 4 springs are already fixed to the hub;
- Position the wheel on the transmission hub, making sure that the handle pin is external to the hub;
- Tighten the 4 nuts.



As the 4 springs have been positioned between the hub and the wheel, keep a bolt tightening depth of 5mm from the end of the screw in order to give good flexibility.

flexibility.

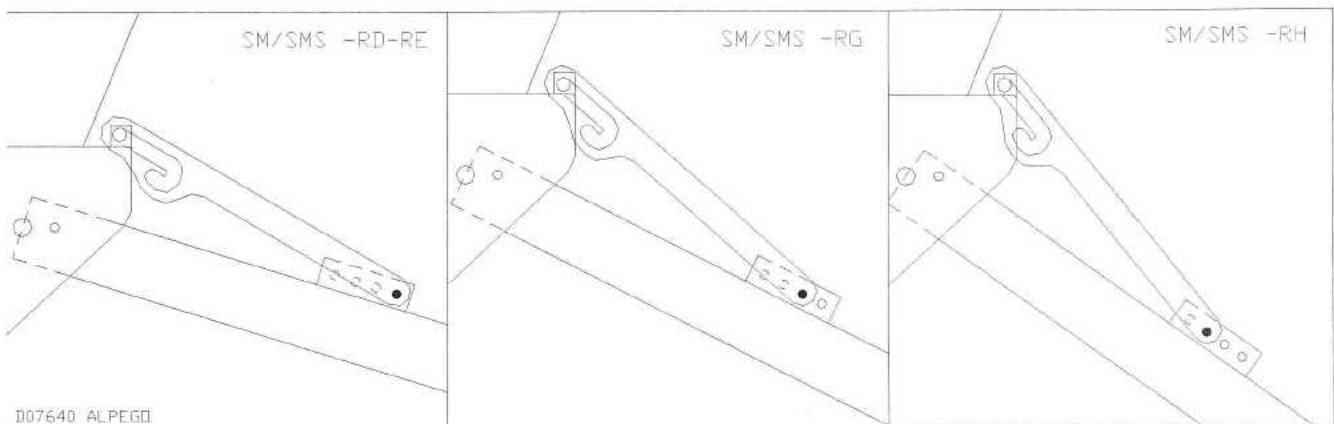
Use the diagram on the right to check correct assembly. You can find this diagram on the sticker close to the wheel hub.



4.8 ASSEMBLING THE TRANSMISSION WHEEL LIMIT SWITCH

Regulate the limit switch according to the harrow model being used. This MUST be done to keep a safety height that does not stress the transmission wheel. Above all, there is no contact between the transmission wheel and the soil when the combined equipment is lifted.

You should use the diagrams below for more help and also the stickers that are close to the wheel hub.



The quantity of seed that is distributed per hectare is determined by the following variables:

- the position of the speed change lever;
- the number of blades on the command pinion;
- the regulator opening levels (doser);
- the distance between the rows.

The sowing table towards the end of this manual shows the various level positions and the speed change, according to the type of seed being used and the quantity of seed per hectare being sown.

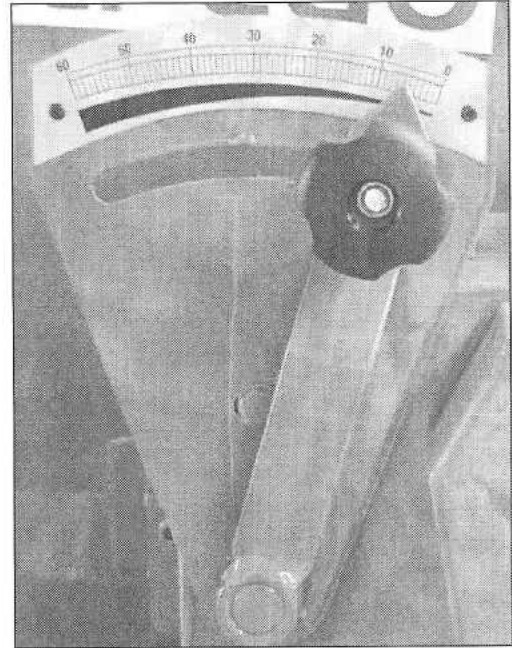
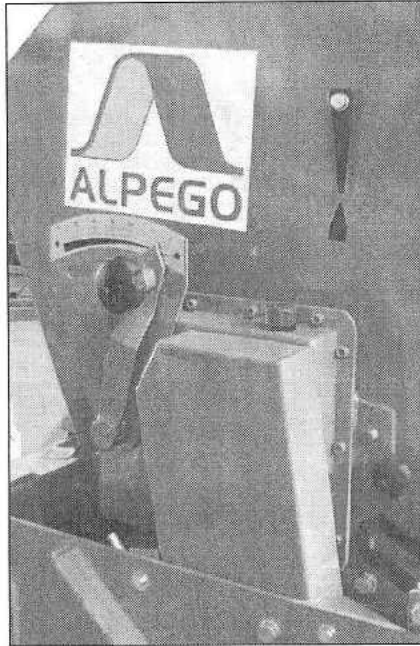
5.1 SPEED CHANGE: SM / SMS

Regulating the speed gear

The left wheel is the driving wheel that moves the gear box and the seed distributor group. The movement goes from the wheel axis to a pinion and from the pinion to a 60-position speed gear. The speed gear can be regulated using the level.

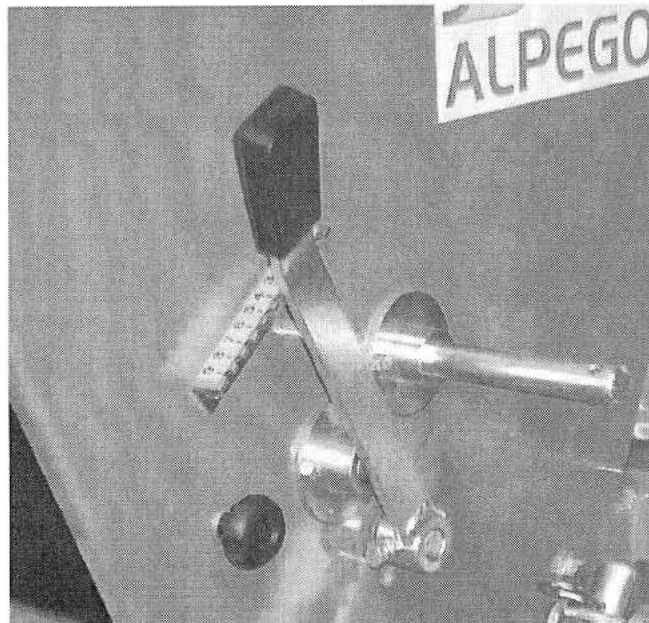


When you want to vary the quantity of seeds to be distributed, zero the regulation lever and then move it to the corresponding position in the graduated section.



5.2 DISTRIBUTION REGULATOR: SM / SMS

The distribution regulator lever is on the right side of the machine and can be positioned along a 10-position scale. The distribution regulator lever should be opened more or less according to the type of seed that is being used. The seeds can be discharged from the hopper by taking the lever beyond the maximum opening. The correct lever position can be found in the sowing index table.



5.3 REGULATING THE DISTANCE BETWEEN THE ROWS: SM

The distance between the rows is determined by the number of coulters. When you have to increase the distance between the rows because of special sowing requirements, remove the coulters as follows:

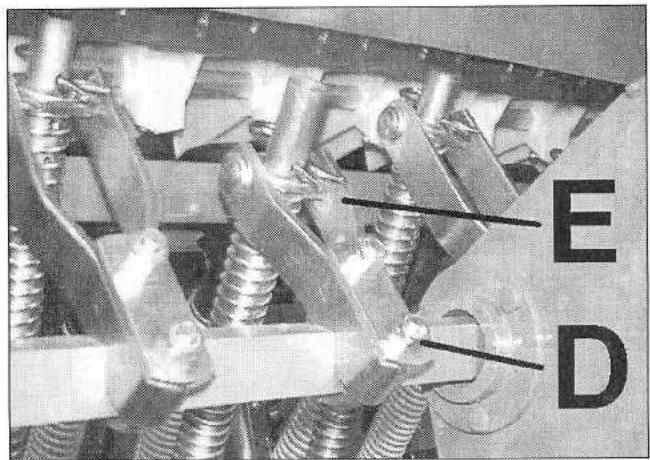
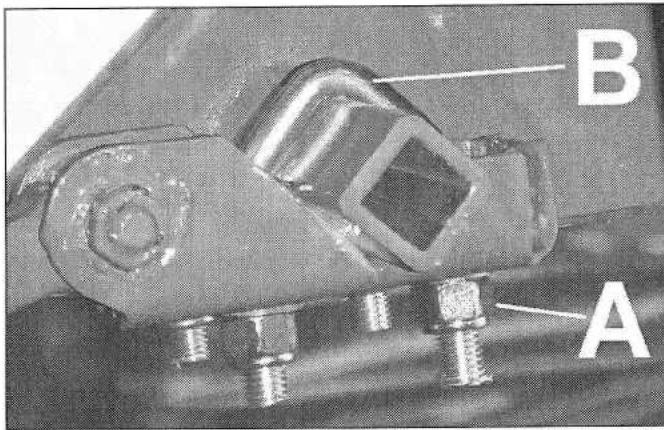
CAUTION

To find the correct screw and bolt tightening torque:

- Loosen the nut (A) and remove the shaft (B) from the upper bar
- Remove the telescopic tube;
- Loosen the nut (D) and remove the upper fork (E), freeing the complete coulters.

Once you have the necessary number of coulters, take them all to the same distance as follows:

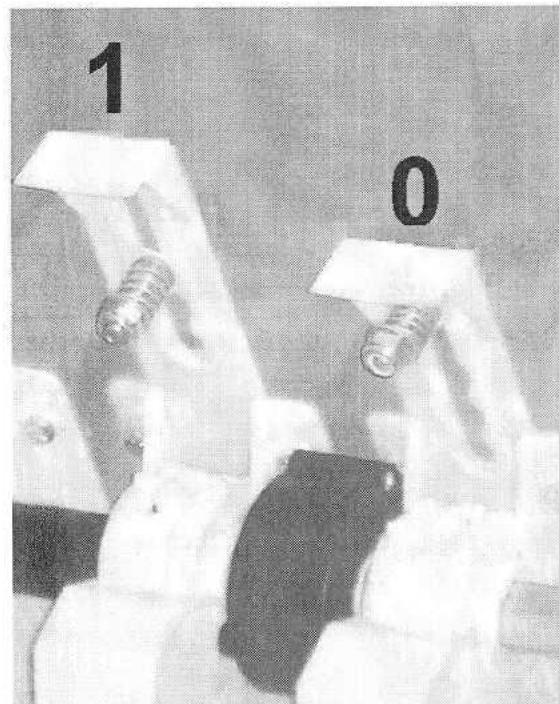
- Loosen the nut (A) and slide the shaft (B) along the bar.
- Loosen the nut (D) and slide the fork (E) along the upper pipe section until the spiral pipe is aligned with the respective coulters.
- Connect the telescopic tube to the distributor, which should be more aligned with the coulters.
- Lock nuts (A) and (D).



When you have finished regulating, make sure that only the distributor shutters from which telescopic pipes leave are open. All the others should be closed.

Example: the blades in position (1) are open. The blades in position (0) are closed.

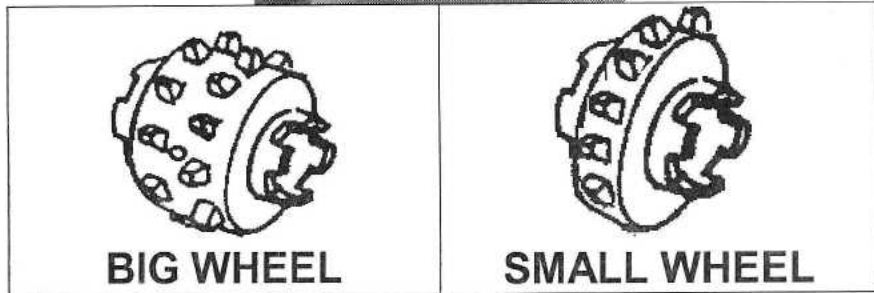
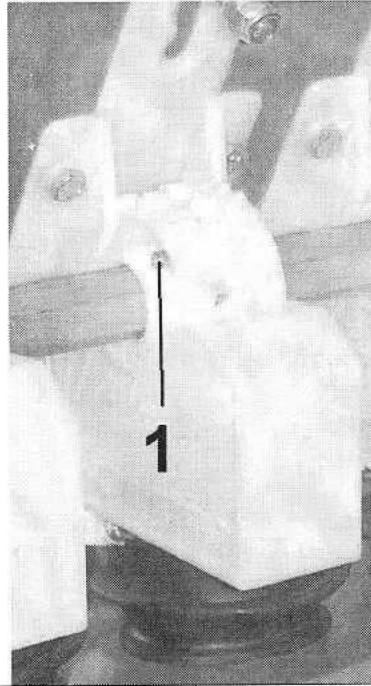
You can stop sowing from the coulters by closing the blade. (0)



5.2 SELECTING THE DISTRIBUTOR ROLLERS: SM / SMS

Before starting to sow, choose the type of roller you will use taking into consideration the size of the seeds to be sown. The machine can be used to sow both normal and big seeds. If you are sowing tiny seeds, use the right-hand distribution wheel because it has small teeth, and stop the left-hand wheel (big teeth) from dragging. To do this push the drive stop towards the outside of the crown (1).

N.B: Be careful when selecting the type of wheel to be used for sowing (see sowing table)



5.5 SM / SMS CLOSING PLATE POSITION

The closing blades of the seed exit mouths can be set at **three different positions**:

POSITION "0"

In this position the blade is fully down and completely closes the seed exit mouth. This position excludes the distributor wheel, which does not receive seeds.

POSITION "1"

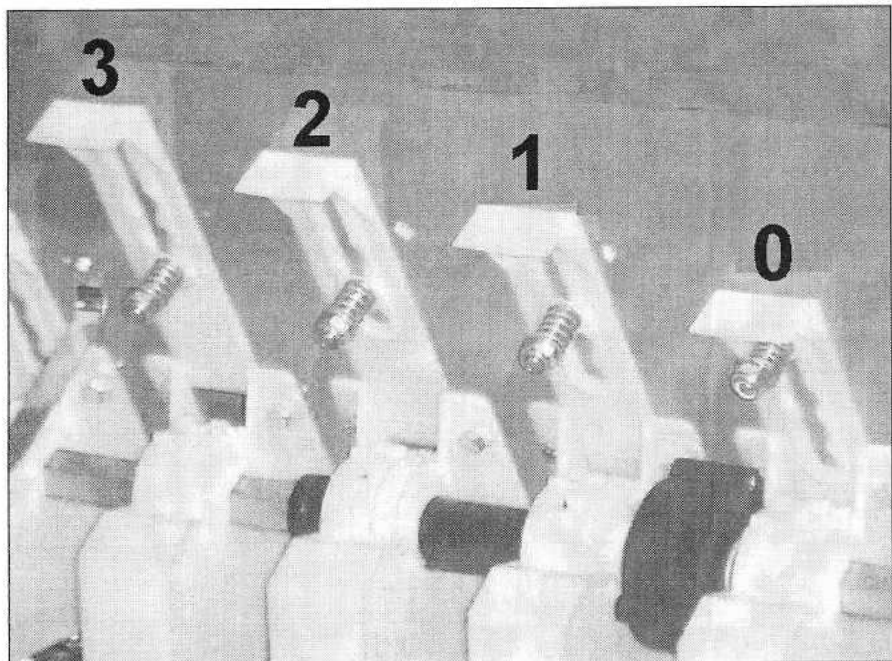
In this position the blade is raised to the first notch. This position is ideal for small seeds because it partially opens the seed exit mouth.

POSITION "2"

Open position, and useful for sowing normal and large seeds.

POSITION "3"

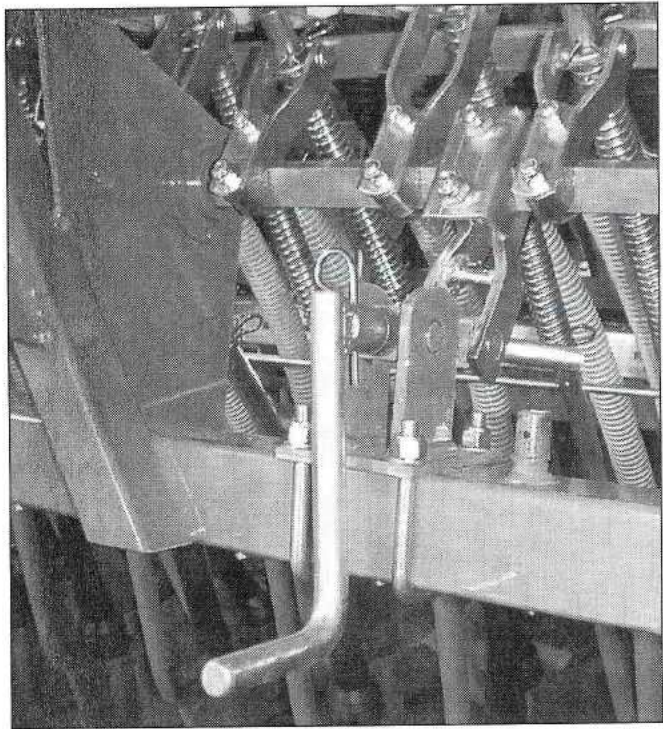
This is the maximum opening position and is ideal for emptying the hopper.



5.6 REGULATION OF THE SOWING DEPTH SM

Seeds have to be placed at the correct depth in the sowing bed for the shoots to sprout well. All the coulter sowing depths are regulated together; to do this use the handle and change the position of the coulter. The handle works on the pressure springs to give greater coulter thrust, which automatically plants the seeds deeper into the soil.

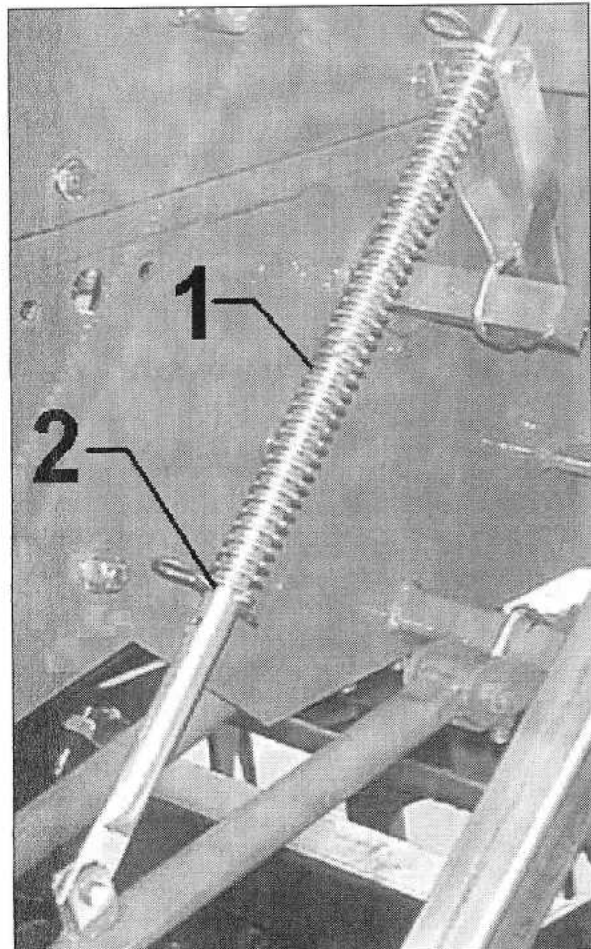
Turning the lever clockwise lowers the coulters, therefore also the sowing depth.



5.7 SOIL PRESSURE REGULATION: SM

The pressure of the coulter on the soil depends on the length of the spring (1), in other words on the position of the pin (2).

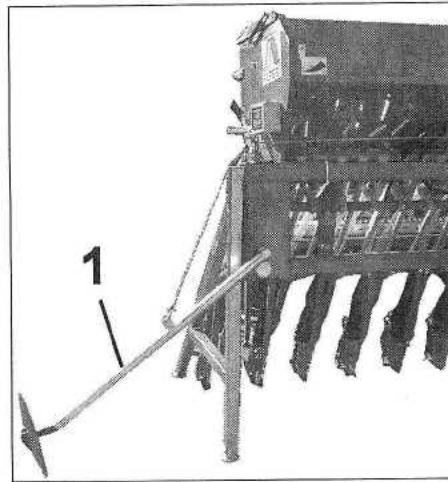
Maximum compression is therefore obtained when the pin (2) is in its highest position.



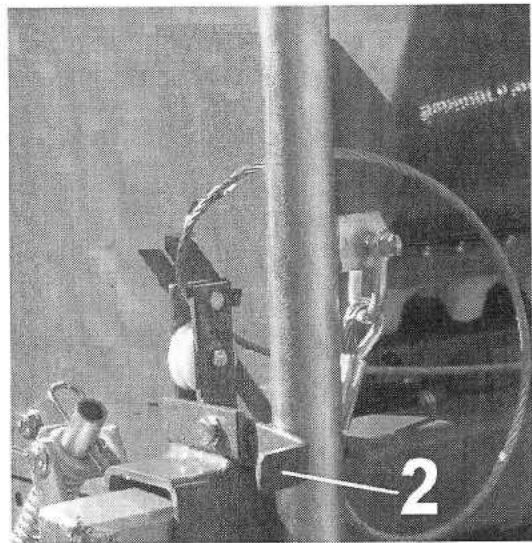
5.8.1 ROW MARKING DEVICE ON SM / SMS SEEDER – 250/300 (ACCESSORY).

The row marker traces a reference line that is firstly parallel to the run of the tractor and is then used by the tractor for correct sowing at a pre-set distance. The line should be positioned at the centre of the tractor during the following run.

NB: The tractor centre, and not the tractor wheels, should be above the lines marked by the row marking discs.



When transporting the seeder, make sure that the row markers are locked in position by the retainers 2, and that the discs are turned inwards.



5.8.1 HYDRAULIC ROW MARKER COMMAND: SM (ACCESSORY)

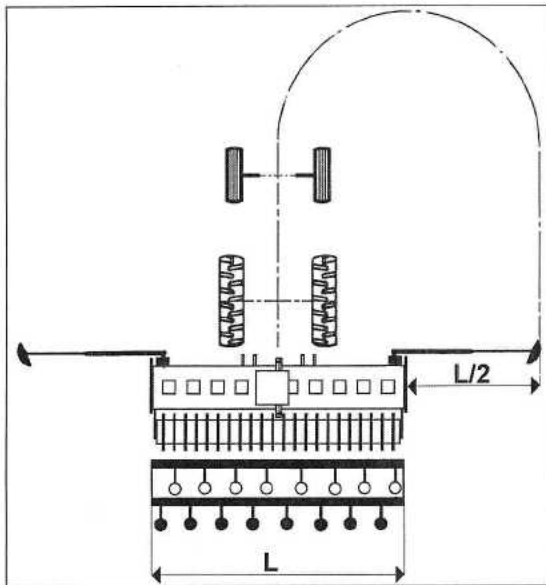
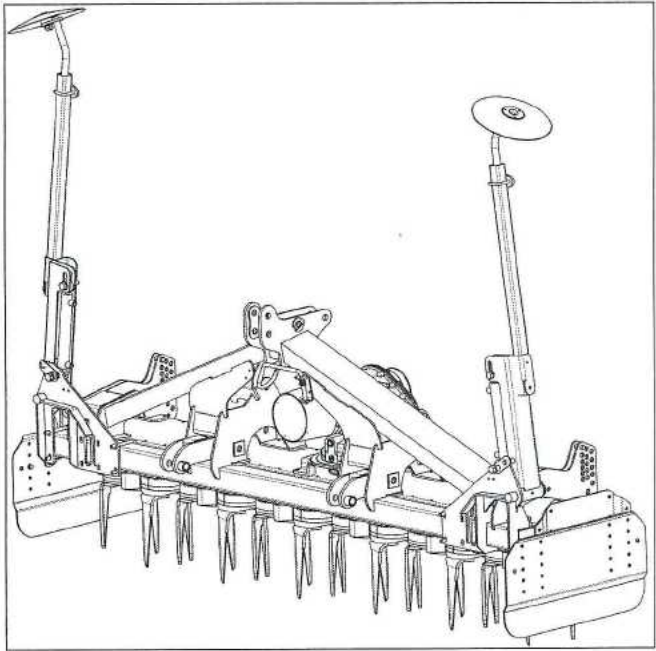
A hydraulic command for controlling the row marking arms can be used with the machine if requested. This command raises one row marking arm and lowers the other using a jack connected to the hydraulic distributor of the tractor.



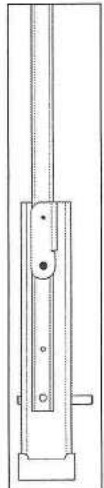
5.9 ROW MARKING DISCS: SM / SMS-300 (ACCESSORY).

The row marking disc traces a reference line in the soil that is parallel to the tractor run. When the tractor has finished its run and has changed direction, the reference line should be kept in the middle of the tractor frame. Doing this gives equally spaced sowing rows.

- Positioning the row marking disc in a more or less oblique manner gives a sufficiently deep track, even in hard soil.
- The disc arm length is determined by calculating half of the width of the machine.
- When changing direction, the row markers should be moved using the manual hydraulic command.

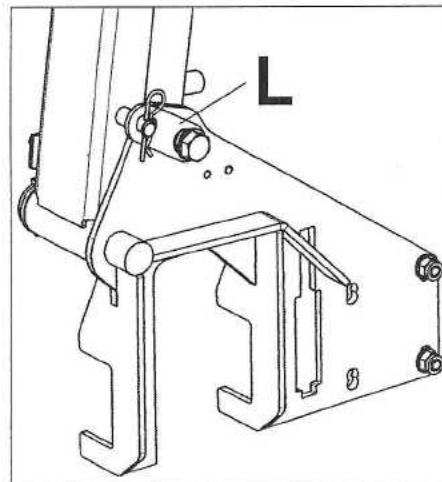


Before using, make sure that the square pipe is positioned as shown in the figure. This gives the correct reference track, which is equal to half the tractor width.



Disconnect the safety shafts L whenever you move the discs. Use the pressurised hydraulic system of the tractor to do this.

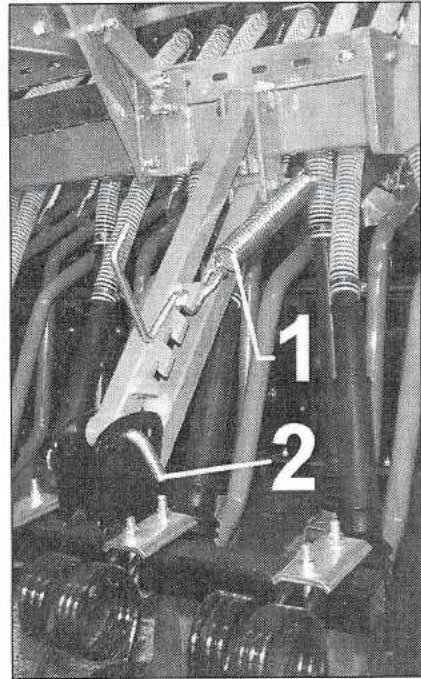
Before removing the hydraulic system from the tractor, remember to raise both discs and to make them safe using the shaft L.



5.10 REGULATING THE REAR SPRING HARROWS

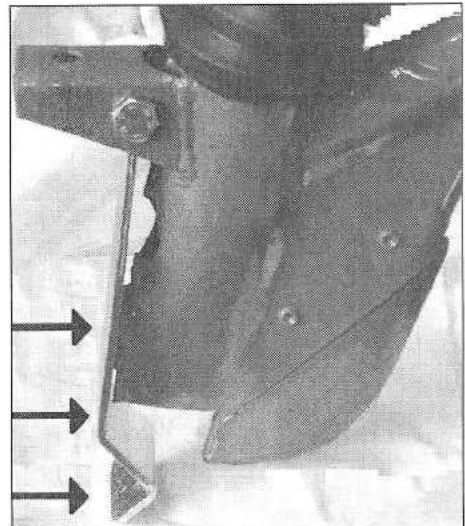
The depth that the harrow penetrates the ground can be varied by:

- Increasing the spring pressure using the lever **1**.
- The angle of the springs, therefore their slant against the ground, can be varied by moving the pin in the holed sector **2**



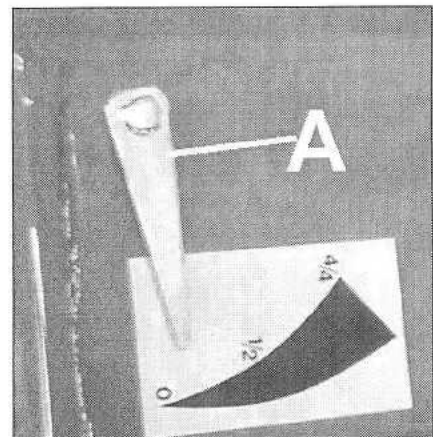
5.11 PROTECTIONS AGAINST COULTER CLOGGING

These devices are applied to the rear of the coulters and stop the coulters from clogging if incorrect manoeuvres are made, for example reversing with the seeder implanted in the ground.



5.12 SEED LEVEL IN THE HOPPER

The level of seeds in the hopper can be checked by the operator without getting off the tractor. Just check the position of the indicator **A**

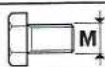





All maintenance operations should be carried out with the tractor switched off, the ignition key removed and with the seeder solidly on the ground on its support legs.

6.1 CHECKS AND CONTROLS

During the first 8 working hours it is important to check that all the bolts are perfectly tight, because the power generated while machine is at work moves the structure. If necessary tighten bolts as indicated in the chart. If necessary, tighten as shown in the table. Check coultter connection and the seed covering harrow springs every 50 working hours.

	M 8	M 10	M 12	M 14	M16	M20	M 22	M 24
	13	17	19	22	24	30	32	36
driving torque Kgm	3	6	10	14	21	40	54	70
driving torque Nm	30	59	98	137	205	390	530	685

6.2 LUBRICATION



Read the warnings on the containers carefully. Always keep oil and grease out of the reach of children. Avoid contact with the skin. After using the product, wash hands well. You have to follow the current anti-pollution laws when handling used oil.

Check lubricant level in these parts when starting the machine for the first time:

- Chain transmission of the sowing wheel.
- Row marking disc supports
- Sowing wheel pin

The speed change is of the oil bath type, therefore:

- Check the level using the inspection hole
- Change the oil after the first **10 working hours**, and then at intervals of **1000 hours**.

Use "ELF GIRELF 140" oil or similar.

The total quantity needed is **1.8 Litres**

Check lubrication more frequently if the machine is under heavy working conditions.

6.3 END OF SEASON OPERATIONS

If you do not use the machine for long periods, the following should be carried out in order to maintain its integrity:

- Carefully remove all the seeds from the hopper and the distribution organs.
- Wash the equipment carefully with water, in particular the tank, then dry. Do not use a hydrocleaner.
- Carefully check and if necessary replace any damaged or worn parts.
- Completely tighten all screws.
- Grease the transmission chain, and lubricate all unpainted parts.
- Protect the machine with a cloth.
- Position it in a dry place and on a flat surface, out of reach of unauthorised people.

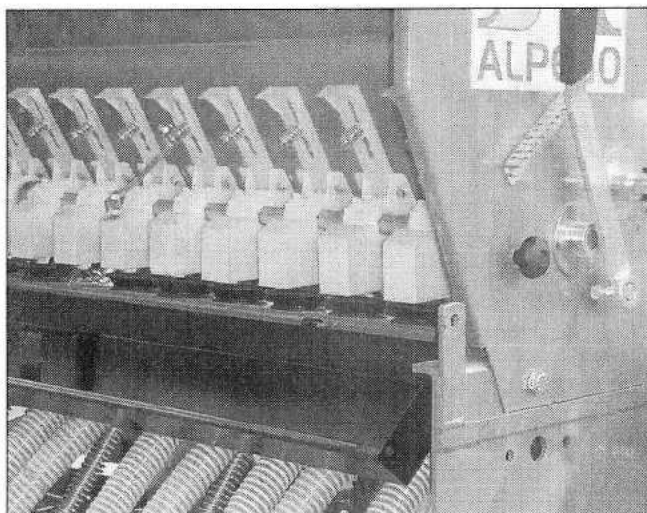
It is an advantage to have the machine ready for use the next time you need it.

6.4 EMPTYING SEEDS FROM THE HOPPER

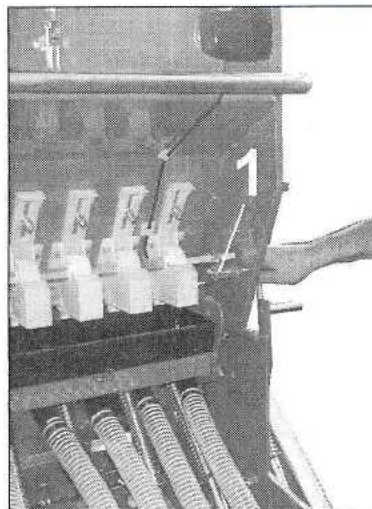
To empty the seeds from the hopper:

- Open the seed collection tray. **(A)**
- Remove the stop lever **(1)** from both machine sides and push the telescopic pipe carrying frame forwards. **(B)**
Move the tray under the seed exiting mouths. **(B)**
- Move the doser lever beyond the maximum position (10) to discharge the seeds.
- Open the shutters to maximum (pos. 3 see section 5.5)
- Rotate using the handle **(2)** used for distributor roller testing.

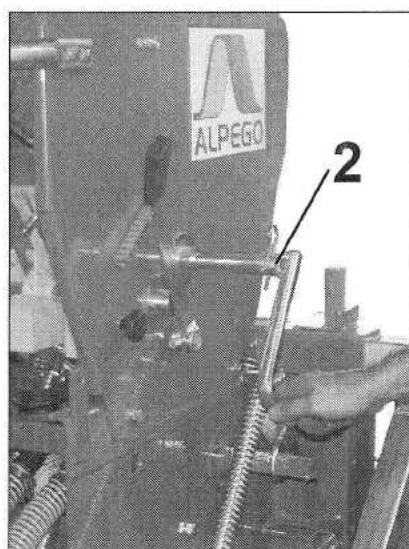
When this has been done, replace the frame and the tray in the working position.



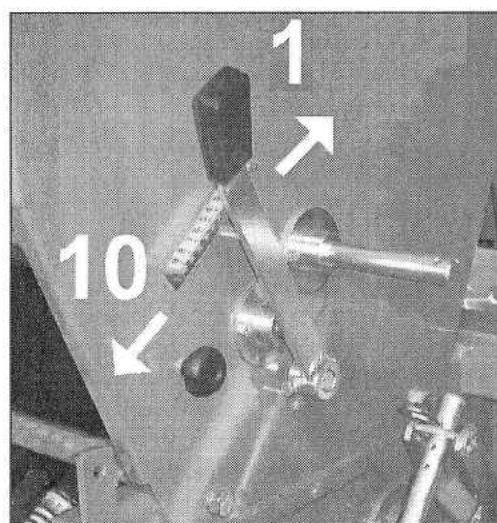
A



B



C



D



BATTERY POWERED HECTARE COUNTER

MC 3000 V1.0

(ACCESSORY)



The instrument is supplied with nickel-cadmium batteries (3 x 12 VOLT - 800 mAh) with residue charge. It is recommended to recharge the batteries only when they are fully discharged. Remember that the indication arrow on the display switches on approx. 50 hours before total discharge (**ref. G**)

To recharge the batteries connect the 2-pole recharge connector (con.2) to the 12 Volt battery of the machine. Open the box that holds the hectare counter, because the connector is inside then connect the red wire to the positive pole (+) and the black wire to the negative pole (-).

RECHARGE TIME IS 10 - 12 HOURS

Exceeding this time limit can damage the batteries.

During the recharge period **THE SPEED SENSOR SHOULD BE CONNECTED TO THE INSTRUMENT.**

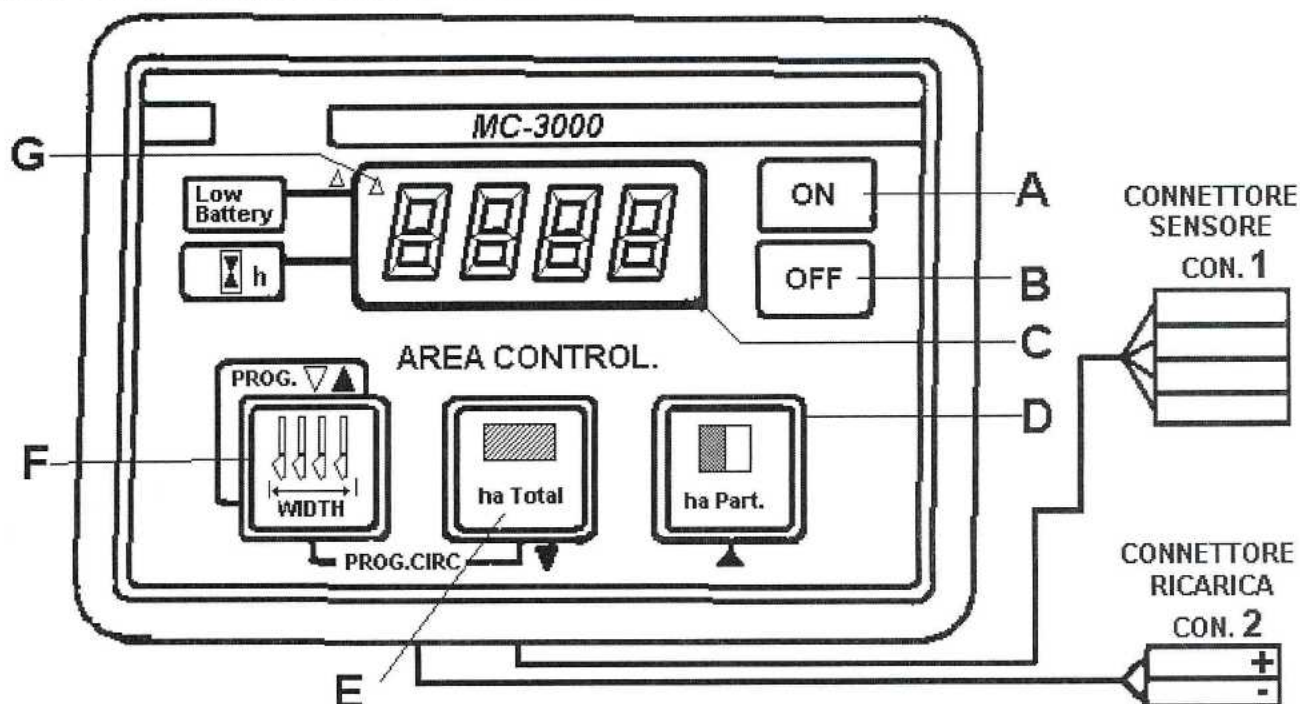
If it is not connected, the batteries will not recharge.

The instrument uses a very low current, even when it is switched off. If you do not use it for long periods, **disconnect the speed sensor connector (con.1).** Doing this keeps the batteries insulated, but remember that the hectare and constant values will be lost.

Replace batteries with equivalent ones when completely run-down. Alternatively, connect the permanent supply cable of the **MC 3000** hectare counter to the battery.



7.1 MC 3000 HECTARE COUNTER DESCRIPTION



- **A** - "ON" KEY: switches the instrument on
- **B** - "OFF" KEY: switches the instrument off
- **C** - 4-FIGURE LIQUID CRYSTAL DISPLAY: Shows the partial and total area, the width and the working hours (at switch on).
- **D** - "ha Part" and "+" KEY: shows the partially worked area in hectares. During the programming phase, increases the displayed value.
- **E** - "ha Total" and "-" KEY: Shows the total area worked in hectares. During the programming phase, decreases the displayed value.
- **F** - "width" KEY: Shows the working width in metres and centimetres. The operator can program the width by keeping this key pressed for three seconds.
- **G** - "LOW BATTERY" INDICATION ARROW: When lit, the batteries have another approx. 50 hours of life.

7.2 USING THE MC 3000 HECTARE COUNTER

After having installed and connected the speed sensor, press the "ON" key (ref. A) to switch on the hectare counter. The instrument shows all the display segments for 2 seconds as an initial test, then it shows the working hours for 3 seconds. After this, the display shows the total area.

To zero the totalisers (partial and total area), keep the corresponding key pressed until the display shows "0.00". To zero the working hours, keep any key pressed while the display shows the hours after the initial switch on test.

The instrument switches off automatically after 6 hours if it does not receive impulses from the speed sensor, but it saves the hectares and constants. To switch on the hectare counter again, press the "ON" key.

7.3 PROGRAMMING THE WORKING WIDTH

Press the "width" key (ref. F) for approx. 3 seconds, until the letter "L" on the display starts flashing. At the same time press the "+" key (ref. D) to increase the value, or the "-" key (ref. E) to decrease it, until the value needed (from 0.10 to 9.90 metres) is shown in metres and centimetres.

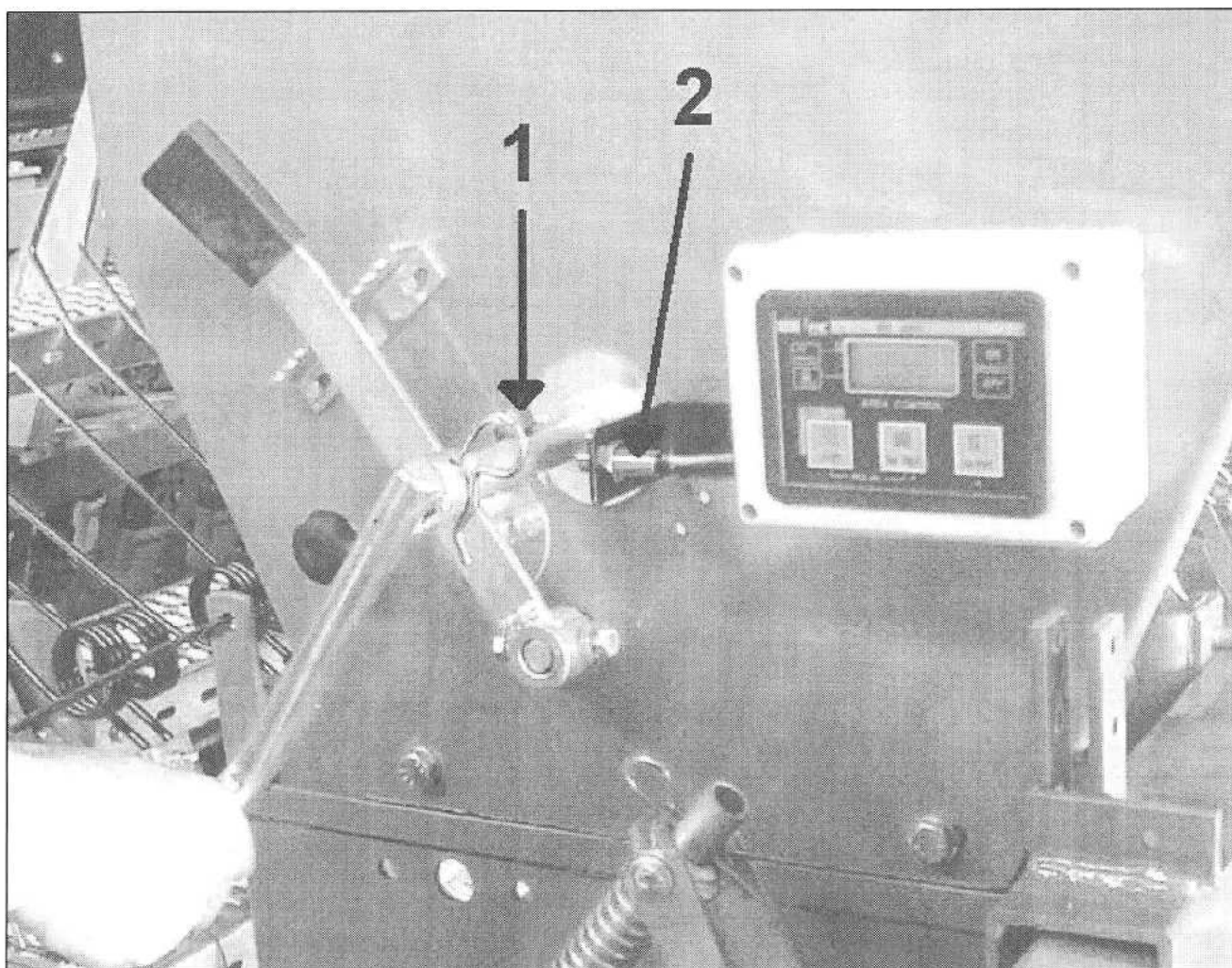
When the "width" key (ref. F) is released, the instrument saves the set value and goes back to displaying the programmed working width.

7.4 PROGRAMMING THE WHEEL CIRCUMFERENCE

Press the “**width**” and “**ha Total**” keys (ref. F and E) together for about 3 seconds, until the display shows the value of the constant preceded by a flashing letter “**C**”. Press the “**+**” key (ref. D) to increase or the “**-**” key (ref. E) to decrease the value of the constant, which can be varied from 1 to 1400 cm. **The correct value to set is 360 cm.** If you press the “width” key (ref. F) for approx. 3 seconds, the instrument saves the set value and returns to displaying the working width.

7.5 ASSEMBLING THE SPEED SENSOR

Fix the supplied magnet to the seeder mixer shaft (**1**) inside the relative hole. Fix the sensor holding staff to the seeder and insert the sensor (**2**). Lock it with the regulation bolts, keeping a distance of no more than **10 mm** between the sensor and the magnet.



8.1 SOWING TABLE

The sowing tables are indicative, because the quantities of the same type of seed that are distributed can vary greatly because of dust, humidity and variations in the specific weight. For precise sowing, do a sowing test while the machine is stopped so that the seeder can be regulated differently if necessary.

8.2 CHECKING THE SOWING QUANTITY

Place a reference signal **on the movement transmission wheel**. Carry out **2-3 rotations** to load the seeds into the seeder.

Insert the seed collection tray under the seed distributor.

Let the **movement transmission wheel do 32 rotations**, weigh the seeds that have been collected in the trays (value expressed in kg), and multiply the weight by the number given in the following table that corresponds to your seeder.

The number expressed in Kg gives the quantity of seeds needed for every hectare.

2.50 mt. seeder	multiplier 40
3.00 mt seeder	multiplier 33.3

Example:

2.50 mt. seeder x... indicated weight of 3,525 kg. x 40 = 141 Kg. (seeds per hectare)

3.00 mt. seeder x ... indicated weight of 7.448 kg. x **33.3** = 248 Kg. (seeds per hectare)

Note:

If the distance between the rows to be sown is different from the one given in the "sowing tables", use the formula below to find the quantity of seed to be distributed per hectare:

$$\frac{\text{Distance between the rows X Quantity indicated in table}}{\text{New sowing distance}} = \text{Quantity to be distributed}$$

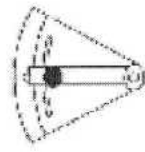
Example: You want to sow rows of wheat with an inter-row distance of 140 mm (**not indicated in the table**). Compare the column of the closest inter-row distance, in our case 147 mm, as a model. You can see that with the gear in position 23 and the doser in position 2, the quantity distributed per hectare is 156 kg.

The quantity for an inter-row distance of 140 mm is therefore:

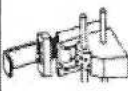










$$\frac{147 \times 156}{140} = 163.8 \text{ Kg. per hectare}$$

SEME SEEDS - SEMENCE SAMEN	TRIFOGLIO CLOVER - TREFLE KLEE	ERBA MEDICA LUCERNE - LUCERNE PFRIEMENGRAS	CIPOLLIA ONION - OIGNON ZWIEBEL	SOIA SOYA BEAN SOYA - SOJA	PISELLI LISCI PEAS - POIS ERBSEN	SORGO SORGHUM SORGHO SORGHUM																																																									
							0,77÷0,80	0,57	0,7÷0,8	0,8	0,7÷0,8																																																				
PESO SPECIFICO SPECIFIC GRAVITY POIDS SPECIFIQUE SPEZIFISCHES GEWICHT	1	1	1	2	2	3																																																									
							120	130	147	158	360	416	500																																																		
POSIZIONE LAMELLE SPECIFIC GRAVITY POSITION LAMELLES - RIEGEL POSITION	1	1	1	2	3	3																																																									
							120	130	147	158	360	416	500																																																		
RULLO DISTRIBUTORE DISTRIBUTOR ROLLER - ROULEAU DISTRIBUTEUR VERTEILER	1	1	1	2	3	3																																																									
							120	130	147	158	360	416	500																																																		
POSIZIONE DOSATORE DOSAGE POSITION POSITION DOSEUR REGLER	1	1	1	2	3	3																																																									
							120	130	147	158	360	416	500																																																		
Distanza tra le file DISTANCE BETWEEN ROWS DISTANCE ENTRE RANGS REIHENABSTAND	mm																																																														
	0	5	8	10	13	16	20	23	26	30	33	36	40	43	46	50	55	60																																													
POSIZIONE DEL CAMBIO GEAR BOX POSITION POSITION DE LA BOITE VITESSES GETRIEBE- SCHÄTUNG	mm							mm							mm																																																
	120							130							147							158							360							416							500																				
	-							-							-							-							-							-							-																				
	-							-							-							-							-							-							-																				
	-							-							-							-							-							-							-																				
	-							-							-							-							-							-							-																				
	-							-							-							-							-							-							-																				
	-							-							-							-							-							-							-																				
	-							-							-							-							-							-							-							-													
	-							-							-							-							-							-							-							-													
	-							-							-							-							-							-							-							-													
	-							-							-							-							-							-							-							-													
	-							-							-							-							-							-							-							-													
	-							-							-							-							-							-							-							-													
	-							-							-							-							-							-							-							-													
	-							-							-							-							-							-							-							-													
	-							-							-							-							-							-							-							-													
	-							-							-							-							-							-							-							-							-						

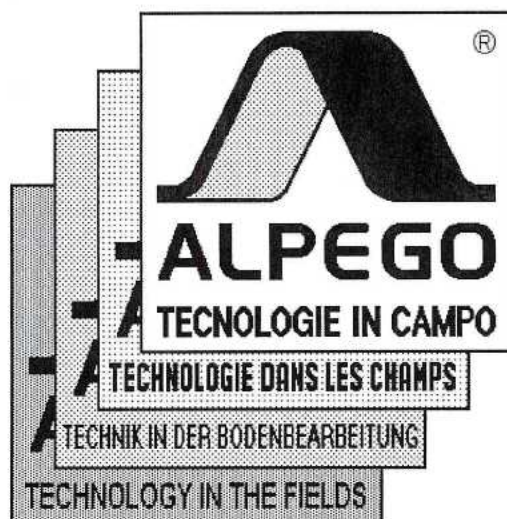
QUANTITA - QUANTITY - QUANTITE - MENGE (Kg / ha)



D07309

SEME SEEDS SEMENCE - SAMEN	CICORIA CHICORY CHICORE ZICHORIE	BIETOLE ORD. ORD. BEETS BETTERAVES ORD. NOIR - RUBEN	BIETOLE CONF. SUGAR BEETS BETTERAVES CALIBREES KANDIERS - RUBEN	MAIS HIBISCO MAIZE MAIS MAIS			MAIS YELLOW MAIZE MAIS MAIS			CAROTE CARROT CAROTTE KAROTTE	VECCIA WETCH VESCE WICKE	FAMINO DEL VESUVIO VICIA FABAMINOR			
				0,45	0,35	0,4	0,75±0,8	0,79	0,48				0,89	0,8	
PESO SPECIFICO SPECIFIC GRAVITY POIDS SPECIFIQUE SPECIFISCHES GEMICHT	1	1	1	2	2	2	1	1	0,89	0,8	2				
POSIZIONE LAMELLE SPECIFIC GRAMTY POSITION LAMELLES RIEGEL POSITION															
RULLO DISTRIBUTORE DISTRIBUTOR ROLLER ROULEAU DISTRIBUTEUR VERTELER	1	2	3	4	7	2	1	2	2	5					
POSIZIONE DOSATORE DOSAGE POSITION POSITION DOSEUR REGLER	1	2	3	4	7	2	1	2	2	5					
DISTANZA TRALEFILE DISTANCE BETWEEN ROWS DISTANZA ENTRA RANGS REIHNENABSTAND		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm				
POSIZIONE DEL CAMBIO GEAR BOX POSITION POSITION DE LA BOITE VITESSES GETRIEBES- SCHATUNG	0	400	500	400	500	400	500	400	500	400	500				
QUANTITA - QUANTITY - MENGE (Kg / ha)	5	-	-	-	-	-	-	-	-	-	-				
	8	-	-	-	-	-	-	-	-	-	-				
	10	-	17	28	23	8	28	13	8	49	35	30	78	70	61
	13	-	22	35	28	16	43	25	16	72	52	45	98	87	77
	16	-	27	43	34	21	56	34	21	99	71	61	167	150	132
	20	5	34	54	44	30	73	47	30	129	92	80	206	185	163
	23	6	40	62	49	36	89	58	36	156	112	97	269	241	212
	26	7	46	68	56	42	111	66	42	180	128	111	309	277	244
	30	9	53	77	62	50	130	80	50	216	154	134	349	313	275
	33	10	61	87	70	57	154	92	57	243	173	150	402	361	317
	36	11	67	96	77	64	164	102	64	272	194	167	-	-	-
40	12	75	107	87	73	195	116	73	309	221	191	-	-	-	
43	14	81	117	94	-	216	-	-	339	242	210	-	-	-	
46	15	88	127	102	-	234	-	-	-	-	-	-	-	-	
50	17	96	140	112	-	269	-	-	-	-	-	-	-	-	
55	20	-	-	-	-	-	-	-	-	-	-	-	-	-	
60	25	-	-	-	-	-	-	-	-	-	-	-	-	-	

USATE SEMPRE RICAMBI ORIGINALI
EMPLOYEZ TOUJOURS LES PIÈCES DE RECHANGE ORIGINALES
IMMER DIE ORIGINAL-ERSATZTEILE VERWENDEN
ALWAYS USE ORIGINAL SPARE PARTS



ALPEGO s.r.l. Via Torri di Confine, 6 36053 GAMBELLARA - VICENZA - ITALY
tel. 0444/646100 - fax 0444/646199
E-mail: info @ alpego.com Internet: www.alpego.com