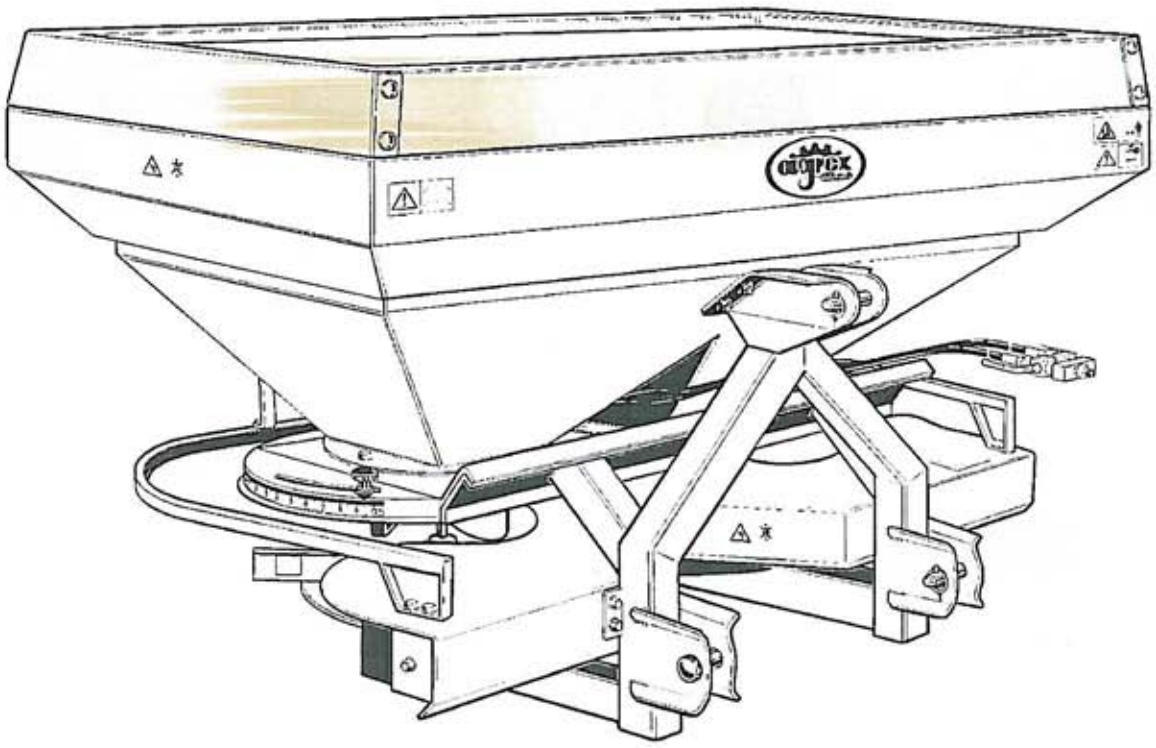
- ☐ XPL800
- ☐ XPL1000
- ☐ XPL1200
- ☐ XPL1500

XPL



USER'S GUIDE

AGREX S.p.A.
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SUMMARY

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1 SECTION – Generality

1.1 Presentation

This manual gives information, instructions and everything else you will need to understand, correctly operate and perform routine maintenance on spreaders mod. **«XPL»**, hereinafter also referred to as the machine, and of all the accessories produced by **AGREX Spa of Villafranca Padovana (Padua) Italy**, hereinafter also referred to as the Manufacturer.

You will not find a complete description of the various parts, or a detailed explanation of how they work herein. Nonetheless, you will find all the information you will usually need to operate the machine safely and to look after it properly.

Compliance with the instructions herein, together with careful, meticulous maintenance, is the only way to assure proper operation, lasting service and economic running of the machine.

Failure to comply with the provisions herein, negligent operation, incorrect use of the machine or performance of unauthorized changes may lead to the Manufacturer declaring its warranty covering the machine void.

THE MANUFACTURER ALSO DECLINES ANY RESPONSIBILITY FOR DAMAGES AS A RESULT OF THE ABOVE-MENTIONED ACTIONS OR FOLLOWING FAILURE TO COMPLY WITH THE INSTRUCTIONS HEREIN.

For any repairs or overhauls entailing operations of some complexity, you must contact an authorized Customer Support Centre with specialized personnel, or the actual Manufacturer, who will be glad, in any case, to assure prompt, accurate technical servicing and anything else required to restore the machine to full working order.

WARNING

This manual is an integral part of the machine and must be kept with the machine at all times, even when it is moved or sold. It must be kept in a safe place where personnel in charge of work on the machine know where to find it. Said personnel must look after it and keep it intact for future reference for the entire duration of the machine's service life.

If it is damaged or misplaced, you must ask the Manufacturer for a copy without delay.

1.1.1 Who the manual is intended for

This manual is an essential tool for personnel who, in their various capacities, are somehow involved with the machine.

The various job profiles are given below:

USER: A user is the person, or body, or company who has purchased or hired the plant and who intends to use it for its intended purposes. They are responsible for the machine and for the training of anyone involved with it.

OPERATOR: skilled technical personnel sent by AGREX S.p.A. to install the machine and train operators. Technicians are able to perform operations of a complex nature on the plant, or any work in unusual situations.

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1.2 Warranty conditions

The manufacturer warrants its brand-new products for a period of 24 (twenty-four) months from the date of delivery and/or for a period stated on the contract of sale.

When the machine is delivered, check for damage and make sure all its parts are accounted for.

Your sole remedy under warranty is the repair or replacement free of charge of any parts that prove defective following careful inspection by the Manufacturer's technical department.

Under no circumstances shall the replacement or repair of parts under warranty extend their original warranty period.

The purchaser shall nonetheless be entitled to exercise his/her warranty rights only if additional conditions concerning warranty coverage, also featured in the contract of sale, have been complied with.

1.2.1 Warranty exclusions

The warranty shall expire (in addition to arrangements given in the supply contract) if:

- The machine is manoeuvred improperly and this is attributable to the operator.
- Damage is attributable to insufficient maintenance.
- Repairs are performed by the user without the Manufacturer's permission.
- Instructions given herein are not followed.
- There is an exceptional occurrence.

The warranty does not cover damage deriving from negligence, carelessness, poor and improper use of the machine and any parts subject to normal wear during operation.

In addition, the warranty shall cease to be valid if parts are replaced with non-original spare parts.

REMOVING SAFETY DEVICES FEATURED ON THE MACHINE SHALL AUTOMATICALLY RESULT IN THE WARRANTY BECOMING VOID AND RELIEVE THE MANUFACTURER OF ALL LIABILITY.

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1.3 Customer service

DANGER

PERFORMING REPAIRS, WORK OR CHANGES OF ANY KIND OTHER THAN THOSE INDICATED HEREIN IS STRICTLY PROHIBITED.

Requests for servicing must be forwarded straight to the Technical Servicing Centre authorized by **AGREX SPA**, which will send skilled personnel and provide any necessary information and explanationùs.

When applying, remember to quote:

- Machine type
- Serial number and year of manufacture
- Type of problem encountered

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2 SECTION – General features

2.1 Machine markings

Each machine features an identification plate (Pic. 1), whose data are given below:

- **(A) MANUFACTURER**
- **(B) ABSORBED POWER**
- **(C) MAXIMUM LOADING**
- **(D) WEIGHT WHEN EMPTY**
- **(E) MODEL**
- **(F) SERIAL NUMBER**
- **(G) YEAR OF MANUFACTURE**

Picture 1

Removing, replacing or in any way altering the identification plates on the machine or any accessories it comes with is strictly prohibited.

The machine is supplied with:

- «Operation and maintenance manual»
- «Manufacturer's declaration of conformity»

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2.1.1 Spreader description

The spreader consists of:

1- **Frame**
2- **Gear box**
3- **Hopper**
4- **Hydraulic control**

The XPL series spreaders have been conceived to spread different types of fertilizers, as well as seeds, salt and granulated materials in general.

It is strictly forbidden to spread iron pieces, stones, grivel, glass and similar materials as they may injure people and cause damages.

- The fertilizer spreader is equipped with a regulation system that allows carrying out a spreading that varies from 12 to 24 meters.
- The system that controls the fertilizer spreading is composed by an adjustable lock gate that assures the best accuracy in the spreading and in the dosing also with superconcentrated products and seeds.
- **Easy to charge:** the models XPL 800, XPL 1000, XPL1200 and XPL 1500 are 105 cm, 115 cm, 125 and 141 cm high respectively.
- **Highest safety standards:** all rotating and transmission parts are protected by guards and protection devices in compliance with CE provisions.
- **Simple design and functioning: by moving sideways the adjusting lever it is possible to obtain three different spreading patterns: afull with 180° spreading pattern and 90° spreading pattern to the left or to the right.**

A single worker can do himself all the necessary operations by himself

Picture 2

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2.1.2 Scheduled use

The machine has been built in conformity with European Union standards given in directive 98/37/EC as described in the manufacturer's declaration supplied with each machine.

The machine is designed to be used ideally for sowing and fertilising of gardens, sports fields and small green areas.

The following can be spread:

- **solid mineral fertilisers in granular or powder form**
- **seeds**
- **salt and sand**

The machine should be carried and driven by tractors or self-propelled machines with a power suitable to the spreader weight when it is completely full.

The machine must be operated only outdoors and when visibility is sufficient to see where the product is being spread.

The machine is designed for professional use and the operators in charge must be certified fit and be able to read and understand the contents of this manual.

Operators must also use the machine in compliance with the current regulations concerning safety, conditions for use and characteristics of the machine.

2.1.3 Non-scheduled use

NEVER spread materials not specified in this manual: this would affect the safety of the machine users and persons working nearby.

NEVER disable the machine safety devices or remove the danger notices.

NEVER allow the machine to be used by disabled persons or children.

DO NOT transport people or animals during work and when moving the machinery from one place to another.

Consequently, the manufacturer shall NOT BE held responsible for any damage to equipment or property or bodily injury as a result of its improper use or any use other than that for which the machine is intended.

2.2 Control devices

To start or to stop the exit of the product from the hopper you have to operate on the botton "open" and "close" in the tractor hydraulic circuit. As for the regulation of the spreading the machine is equipped with the following control levers;

Product quantity control levers: they are on the machine sides. If you push the lever toward the tractor you can increase the quantity of fertilizer to spread, whereas if you pull the lever you can decrease the quantity of product spread until it is completely closed

Spreading control lever: They are under the hopper in the rear part of the spreader. Moving the lever toward the center the width of the spreading will decrease; moving the lever outward the width of the spreading will increase.

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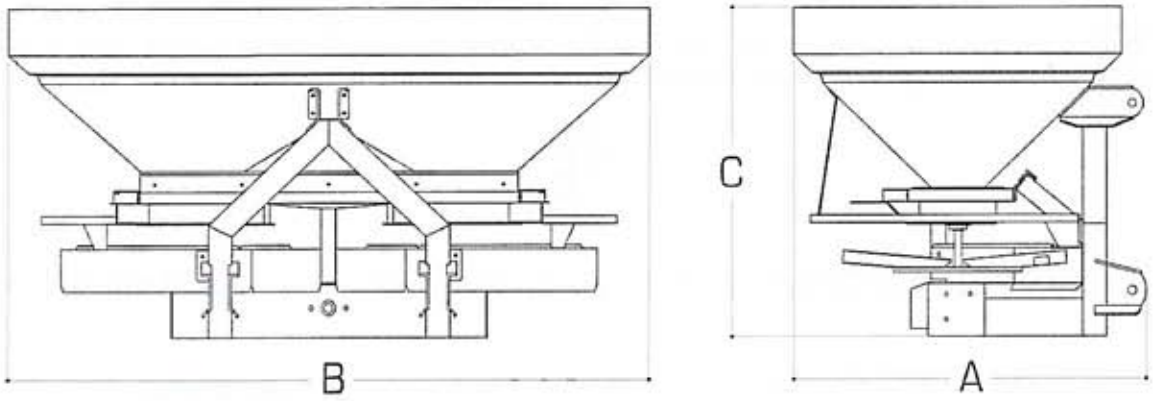
2.3 Technical data

Model	XPL 800	XPL 1000	XPL 1200	XPL 1500
Capacity (l)	800	1000	1200	1500
Maximun loading (kg)	1500	1500	1500	1500
Weight when empty (kg)	230	247	264	290
Spreading width (m)	12 – 24	12 – 24	12 – 24	12 – 24
A Lenght (cm)	120	120	120	120
B Width (cm)	215	215	215	215
C Height (cm)	105	115	125	141
Tractor power required (HP)	110 – 130	110 – 130	110 – 130	110 – 130

Chart 1

Max P.T.O. speed: 540 rpm



Picture 3

2.4 Standards applied

The machine has been designed and produced in conformity with the provisions of directive 98/37/EC, namely all moving parts have been made harmless by using guards, barriers and safety systems.

The machine has also been designed to the following directives and standards:

EN 14017:2005 Agricultural and forestry machinery – Solid fertilizer distributors – Safety (2005)

UNI EN 1553 Agricoltural self-propelled, mounted semi-mounted and trailed machines - Common safety requiments (2001)

ISO 11684:1995 Tractors, machinery for agriculture and forestry, powered lawn and garden equipment - Safety signs and hazard pictorials - General principles. (1995)

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3 SECTION – Safety and accident prevention

3.1 Safety

The user must instruct personnel as to risks deriving from accidents, devices installed for the purpose of operator safety, and general safety rules provided for by directives and legislation in the country where the machine is being used.

Operator safety is one of the primary concerns of any machine manufacturer. When producing a new machine, every effort is made to allow for all potential hazardous situations and, of course, to adopt appropriate safety devices.

Nonetheless, the level of accidents caused by careless and inexpert use of various machines is still very high.

Lack of attention, thoughtlessness and overconfidence often lead to accidents, as can fatigue and drowsiness.

Hence this manual must be read very carefully, concentrating in particular on the section on safety rules.

WARNING

The Manufacturer declines all responsibility for failure to comply with safety and accident-prevention regulations provided for by legislation, and with the provisions herein

DANGER

WATCH OUT FOR THIS SYMBOL IN THE MANUAL: IT INDICATES A HAZARDOUS SITUATION.

Depending on the danger involved, this symbol may have one of three meanings:

DANGER

The **"DANGER"** label indicates the highest level of danger and is intended to warn you that if the operations described are not performed properly, they will result in serious injury, death or long-term health risks.

WARNING

The **"WARNING"** label warns you that if the operations described are not performed properly, they may result in serious injury, death or long-term health risks.

CAUTION

The **"CAUTION"** label warns you that if the operations described are not performed properly, they may result in damage to the machine and/or injury.

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IN ACCORDANCE WITH OF THE DIRECTIVE 98/37/CE NOTE THE FOLLOWING CONVENTIONS:

DANGER ZONE: Any area inside and/or near a machine that potentially compromises the safety or health of any exposed person there.

EXPOSED PERSON: Any person with all or part of his/her body inside a danger zone

OPERATOR: The person(s) in charge of installing, running, adjusting, servicing, cleaning, repairing and transporting a machine.

3.1.1 General safety rules

DANGER

Failure to comply with the provisions of **"Section 3 - Safety and accident prevention"** and any tampering with safety devices shall relieve the Manufacturer of any responsibility in case of accident, damage or malfunctioning of the machine.

GENERAL WARNINGS:

- The user undertakes to entrust the machine only to qualified and suitably trained personnel.

- The user is required to take all necessary measures to ensure that unauthorized personnel have not access to the machine.

- The user undertakes to suitably instruct his personnel on the application and observance of safety rules. For this reason, he undertakes to ensure that all persons receive directions for using the machine and safety rules appropriate to their tasks.

- The user must contact the Manufacturer to report any defects or malfunctions detected in safety systems, as well as any situation presumed to be dangerous.

- The user at all times, must use personal protective gear provided for by legislation, and follow the instructions herein.

- The user must comply with all safety symbols and warnings applied on the machine.

- The user must not take their own initiative to perform operations or work outside their area of competence.

- The user are required to report to their superior any problems or hazardous situation encountered to their superiors.

- The machine has been tested only with the equipment supplied only. Fitting parts of different makes or making changes may alter the machine's characteristics and hence compromise its safe operation. Consequently, the Manufacturer declines any responsibility for any damage that might derive from use of non-original parts.

- The machine must be used only for the purpose for which it has been designed alone.

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• The machine must not be run with safety devices removed.

3.1.2 Safety signs

The machine has been produced adopting every possible safety standard to assure operator safety.

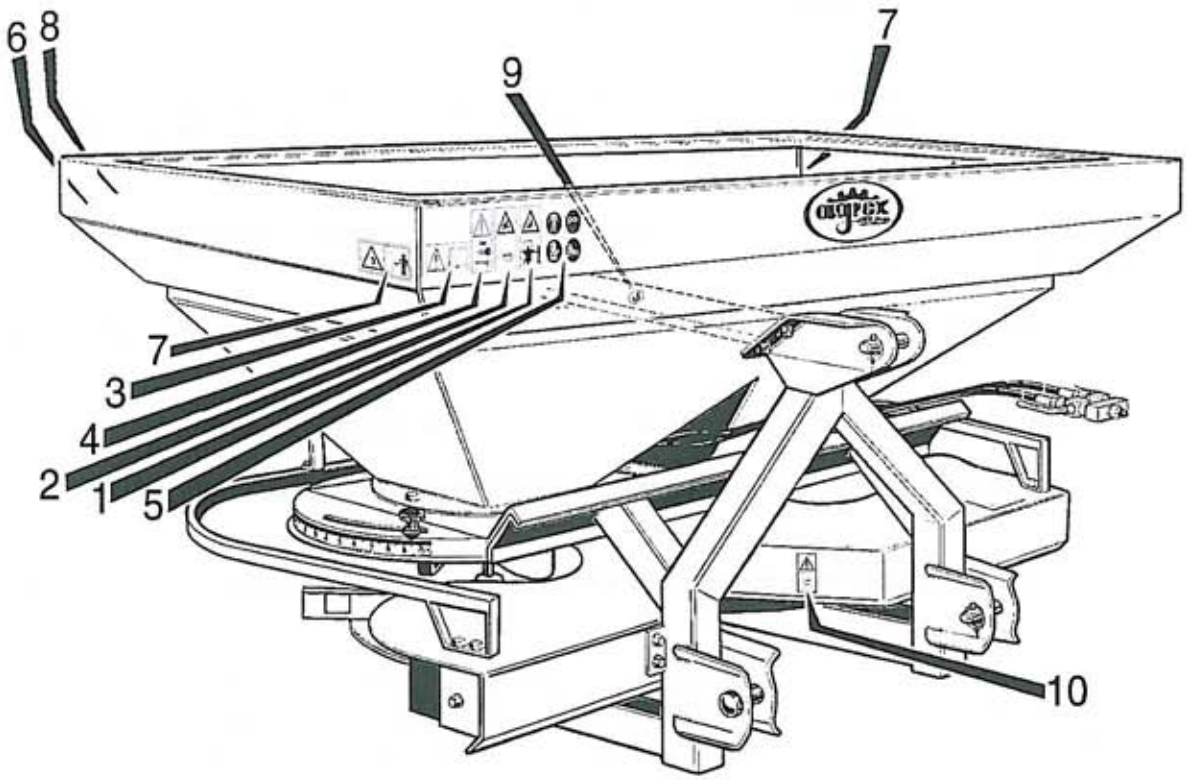
Nonetheless, the machine may present further residual hazards that cannot be eliminated altogether under certain conditions of use.

The safety symbols (pictograms) applied on various points of the plant are intended to draw the user's attention and warn him/her of danger: consequently, it is necessary to know the meaning of said symbols and to memory them. Any symbols that have been damaged, misplaced or belong to parts that have been changed must be replaced with other original symbols, requesting them to from the Manufacturer, and must be applied in exactly the same place.

DANGER

KEEP ADHESIVES CLEAN, AND REPLACE THEM AS SOON AS THEY START PEELING OFF OR ARE DAMAGED.

Referring to figure read the following descriptions carefully, committing their meanings to memory.



Picture 4

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1

2

3

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10

1. Warning! Risk of crushing; do not stand between the machine and the tractor.
2. Warning! Risk of injury by pressurised liquids; read the Operation and Maintenance Manual before proceeding to operations on the machine.
3. Warning! Read the Operation and Maintenance Manual carefully.
4. Warning! Before performing any maintenance operations, remove the tractor's ignition key and read the Operation and Maintenance Manual.
5. Always wear a work suit, safety gloves and safety shoes. Always wear safety goggles during machine loading and maintenance operations.
6. Warning! Distribution parts in movement; never enter the hopper while the machine is running.
7. Warning! Keep a safe distance from the machine; risk of sprayed product.
8. Warning! Risk of falling, do not mount the machine for purposes of transportation.
9. This indicates the coupling point to be used for machine lifting.
10. Warning! Never exceed a value of 540 rpm in the power takeoff.

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3.2 Safety devices

The machine features **GUARDS:** Stationary devices that prevent direct contact with moving parts or any other hazardous part of the machine. Said guards can be removed only with the aid of special tools. When the machine is operating, said devices must be fitted correctly.

CONSEQUENTLY, THE MANUFACTURER DECLINES ALL RESPONSIBILITY FOR ANY DAMAGE RESULTING FROM TAMPERING WITH GUARDS AND SAFETY DEVICES.

3.3 Noise hazard

Sound level (airborne noise) measured from one metre away with the machine running was as follows:

Sound pressure at the operator's position measured according to EN 1553:2001 Standard - Appendix B.

$$L_{pA} = 83.5 \text{ dB(A)}$$

3.4 Dust hazard

WARNING

When spreading powder fertilisers, dust can form in the air especially when it is windy. You are therefore advised to wear a mask to protect the respiratory system.

Fertilisers in general can irritate the skin and eyes: contact the supplier for information on the personal protection measures to be adopted.

3.5 Clothing

WARNING

Wear suitable clothing. Avoid baggy, loose-fitting clothing: It might get caught up in moving parts. Long hair should be tied back. Operators should not carry scissors or sharp tools in their pockets.

During maintenance and repair work, workers are required to wear protective clothing, cut-proof gloves, and non-slip boots with reinforced

3.6 Ecology and pollution

WARNING

• Comply with laws in force in the country where the machine is being used regarding use and disposal of products employed in cleaning and servicing the machine, and comply with the instructions issued by the manufacturers of said products.

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• Dispose of any special waste by handing waste materials in to suitably authorized firms, and demand a receipt attesting the disposal.

• Dispose of any packaging left over from the machine's transport in conformity with the regulations in force.

• If the machine is to be dismantled, comply with the pollution-prevention regulations provided for by the country it is used in, exercising particular care when it comes to lubricants and electric components.

• Collect all spent products from the hydraulic circuits in appropriate containers. Deliver all spent oil recovered to authorised collection centres (spent oil consortiums).

3.7 Safe use

WARNING

Safety standards: HOW TO AVOID ACCIDENTS

• To avoid accidents, pay close attention to the warning notices affixed on the machine and read this guide carefully.

• The use of the spreader is restricted to the fuctions, for which it has been designed and which are described in the present guide. The manufacturer will not be held responsible for any damages to things or injuries to people caused by a wrong use of the spreader.

• Before starting the spreader, make sure all protection devices and guards are mounted correctly.

• Make sure no bystanders (especially children) or animals are in the working area. This is extremely important when the spreader is being used near pubblic or easily accessible roads.

• Minors (under 18) are not allowed to operate the spreader.

• The spreader can be used with every kind of tractor of suitable power, whose couplings are compatible with those of the spreader and which is equipped with all P.T.O. and cardan shaft protection devices.

• Before connecting the P.T.O., make sure the revolution number of the tractor corresponds to that of the spreader. In any case, **never exceed 540 rpm.**

• It is strictly forbidden to spread iron pieces, stones, grivel, glass and similar materials as they may injure people and cause damages to things.

• Never load the hopper with wet products as they may obstruct the outlets.

• During work, wear close-fitting and laced-up garments, heavy safety shoes, and safety gloves and mask especially while spreading powdery fertilizers in windy weather.

• After using the spreader, turn the engine off, apply the handbrake, lower the spreader to the ground, disengage the P.T.O. and, if the hopper is still partially full, even the product up in order to avoid accidental tippings.

• Do not carry out any maintenance or cleaning operation while the spreader is connected to the 3-point hitch of the tractor.

• It is strictly forbidden to transport persons while the spreader is in operation or during transfers.

• During transfers, make sure the P.T.O. is disengaged.

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• When travelling on public roads, connect the spreader to the tractor as described on the present guide. A wrong connection may alter the vehicle stability. It is necessary to abide by the national traffic code.

• We remind you that a careful operator is the best insurance against accidents.

• The area the machine is used in should be considered a **«DANGER ZONE»**, especially for anybody not trained in its use.

• Be careful of people and animals in the machine operating range: this is important when working on land or roads open to the public.

• When people are «exposed», i.e. are in the «DANGER ZONE», the operator must stop the machine instantly, and possibly have the person removed.

• Whilst the machine is operating, operators must be in a position where they have full control of the machine so that they can take immediate action at any time and in any event.

• Check periodically the machine as a whole, and its safety devices, at regular intervals to ensure they are intact.

• If safety guards are removed, make sure they are refitted properly before using the machine again..

• Maintenance or repair work must be performed by personnel qualified for the specific tasks.

• At the end of maintenance and repair work, before re-using the machine the technical manager must ensure that the work has been completed and that the protections have been re-fitted.

• Transport of persons or animals during work and when moving the machine from one place to another is strictly forbidden.

• Regularly check the condition of the protections for the cardan shaft, bearing in mind that only cardan shafts with protections in good condition must be used.

• Never enter the hopper with the fertilizer spreading devices in motion.

• In order to avoid the formation of lumps of fertilizer and the clogging of the hopper, do not spread fertilizer on extremely humid or rainy days (if necessary, use the hopper-cover tarpaulin provided as an optional). Whenever clogging occurs, immediately switch off the machine to avoid damaging the fertilizer spreading devices. Remove lumps of fertilizer only after first switching off the tractor. Wear personal protective equipment (safety gloves, goggles) during machine cleaning operations.

• Use cranes with adequate load capacity to load fertilizer sacks weighing more then 30 kg.

• Always use the loading platform during all loading operations (the use of the loading platform is foreseen for Model XPL 1500).

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4 SECTION - Handling and installation

CAUTION

The fertiliser spreader and accessories are generally partially fitted at the factory and shipped in cardboard packaging or on pallet. To complete assembly, follow the instructions given in this manual.

In some cases, depending on customer requirements, the machine is delivered fully assembled.

Upon receipt of the goods, carefully check to ensure that no damage has occurred during transport.

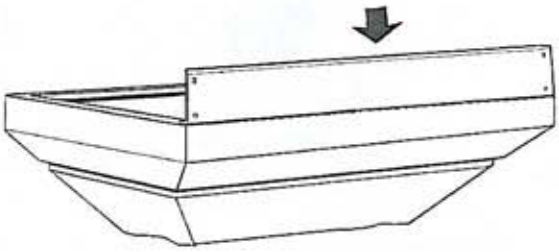
4.1.1 Assembly of hopper extensions

WARNING

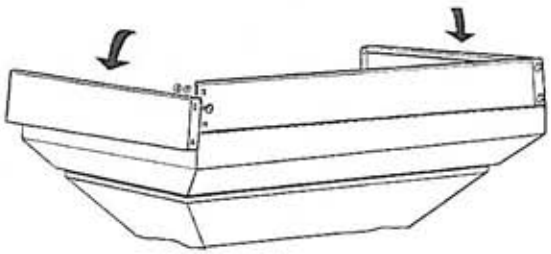
Before proceeding to hopper extension assembly/disassembly, uncouple the fertilizer spreader from the tractor and make sure that the fertilizer spreader is parked on solid, level ground.

Wear safety gloves and safety shoes for all the operations below.

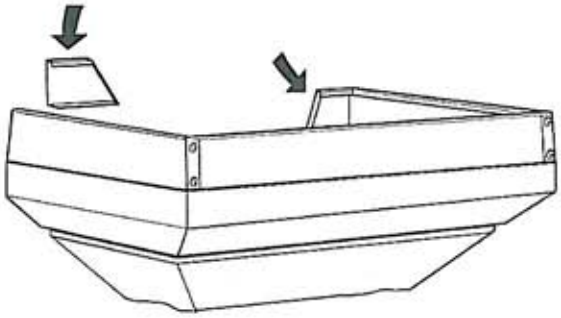
Proceed as follows to assemble hopper extensions:



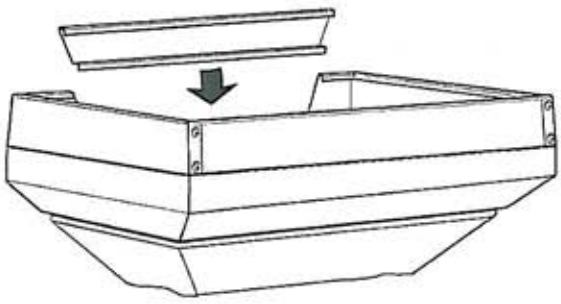
1. Fasten the longer lifting panel to the front part of the fertilizer spreader. Do not tighten the fixing screws all the way at this point.



2. Fasten the two lateral panels



3. Fasten the rear angle bars.



4. Fasten the rear lifting panel.

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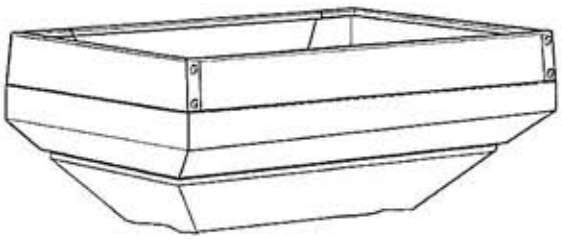

5. Tighten all screws in order to solidly connect the hopper extension to the standard hopper.

4.2 Handling

The packages must be handled by lift truck only, adequate for the weight to be lifted.

If the machine is not immediately assembled and temporary storage is required, the machine must be kept in a dry covered place.

To protect the various parts from atmospheric agents you are advised to leave the packaging intact.

In order to correctly lift the fertilizer spreader, make sure that it has been adequately connected to the lifting points indicated in the figure.

1. Fertilizer spreader lifting point.

2. Type of harness to be made using a cable adequately sized to the weight of the load to be lifted (see Technical Data).

4.3 Hitching

WARNING

The spreader can be hitched to any tractor of suitable power (see technical specifications).

Before hitching the spreader to the tractor, apply the handbrake and make sure the P.T.O. is disengaged. Wear safety gloves.

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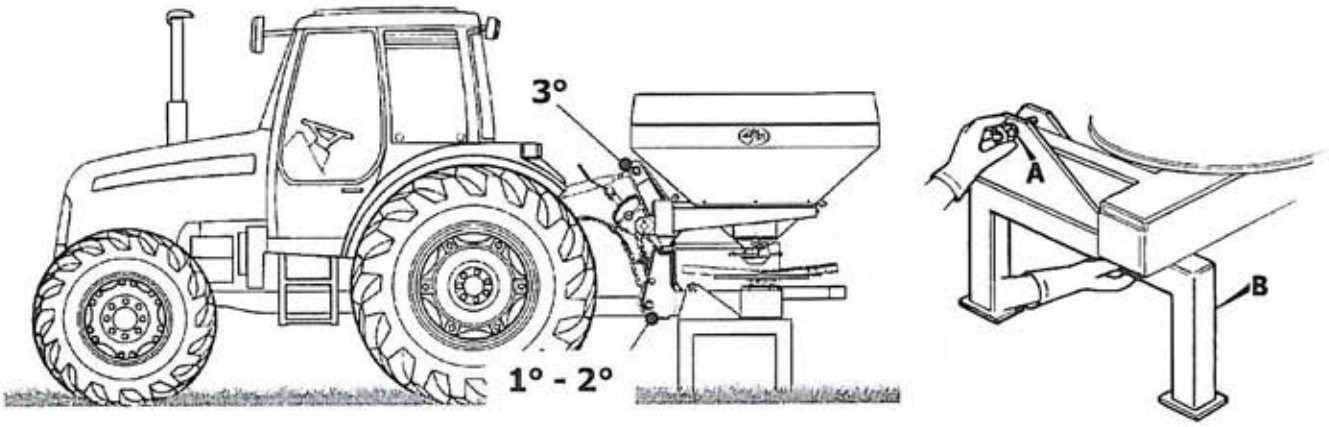


Picture 5

1 - Apply the minimum front ballast to the tractor (see Appendix A).

2 - Fix de lower bars of the tractor lifting machanism to the lower couplings of the spreader (Pic. 5) and then secure with safety pins.

3 - Connect the upper bar of the 3-point hitch with the suitable pin and safety split pin.

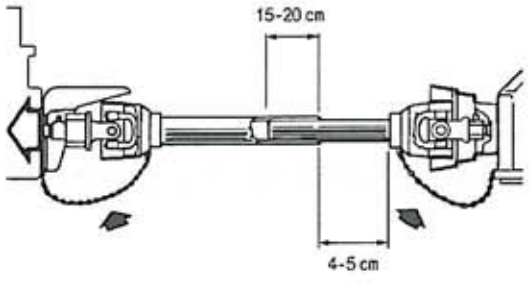
4 - To increase the machine firmness, fasten the lower bars of the 3-point hitch with the suitable tie-rods.

5 - Place the drive-shaft, making sure the backstop has been relased at the power takeoff and that the screw on the drive-shaft of the fertilizer spreader is locked. Read the handbook of the drive-shaft

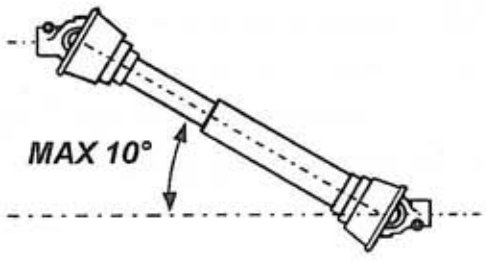
6 - Lift the spreader from the ground using the tracctor liftiing bars. Release the two support feet B by un-screwing the respective locking handwheels A.

When the P.T.O. shaft is a maximun exstention, the two inner tubes have to overlap at least 15-20 cm. When the P.T.O. shaft is completly closed, there must be a gap of at least 4-5 cm to avoid collisions with the outer side (Pic. 6).

The working angle of the P.T.O. has to be the smallest possible; preferably it should not exceed 10° (Pic. 7), so has to make the P.T.O. shaft and the machine last longer.



Picture 6



Picture 7

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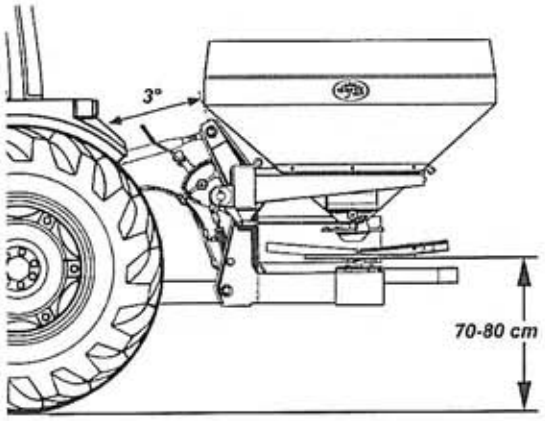
7 – Adjust the 3-point lifting mechanism of the tractor so that the working position of the spreader i horizontal (70-80 cm above the ground) see (Pic. 8).



Picture 8

8 – Connect the hoses of the double-acting hydraulic couplings of the tractor (Pic. 8). In this way the shutters can be easily controlled from the driver's seat. Another aspect that the flow regulation on the hydraulic cylinder offers is that one varies the lever opening and closing speed.
Before connecting yhe hidraulic hoses or carry out any mantenance work on the hydraulic system, lower the spreader to the ground, tur the engine off and drop the pressure.

4.4 Preliminary cleaning

Once all connections have been made, the whole machine must be cleaned of dirt that has built up during transit, storage and handling.

Use suitable non-corrosive degreasing products and dry all machine parts - exposed metal and paintwork alike - using soft, dry cloths.

4.5 General inspection

WARNING

Before starting to use the machine, safety devices must be checked to ensure they are efficient and working perfectly.

To work in complete safety it is necessary to:

- Tighten the bolts and all locking devices.
- Make sure all safety guards are properly installed.
- Do not leave tools or other objects not belonging to the machine inside the hopper or on the mechanical parts.

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5 SECTION – Use

5.1 Prior to use

Before operating the machine, the operator must have read and understood all parts of this manual, especially those given in "Section 2" on Safety.

Check the machine's conditions carefully, especially parts most subject to wear and tear.

5.2 Starting up

The machine must be operated exclusively by skilled personnel, who have been properly trained in the use of the machine and in the main safety procedures. Before starting the machine, personnel are required to make themselves familiar with its controls.

5.3 Adjustments

Warning

In order to avoid accidents and dangerous situations every machine adjustments has to be done exclusively with the machine switched off and the ignition keys have to be disconnected.
The adjustment should be done accordingly to this use and maintenance manual

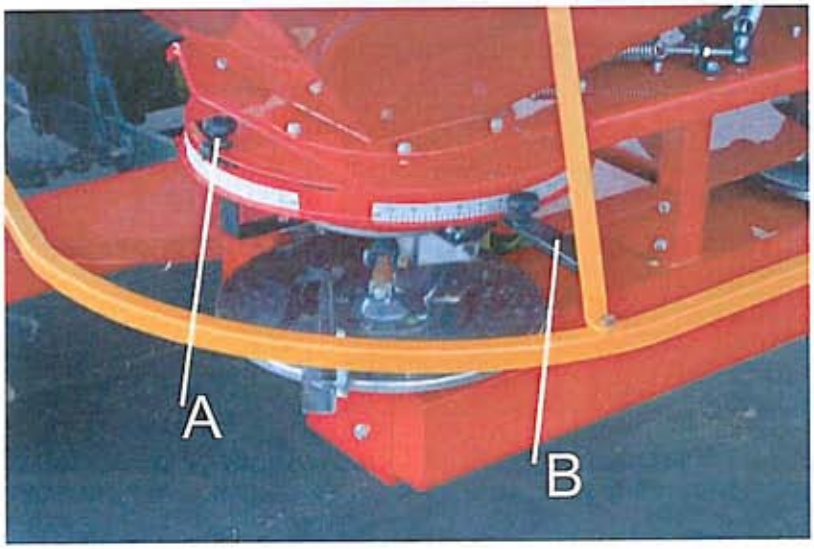
The machine control is described in 2.2 Control Devices.

5.3.1 Product spreading adjustment

1- Release the adjusting lever by screwing out the ball cranck handle (**A**).

2- Set the lever at the spreader side in order to increase or decrease the quantity of product to be spread. If you pull the lever toward the tractor the quantity will increase whereas if you push it the quantity will decrease until the spreading is completely stopped.

3- Lock the adjusting lever by screwing the ball cranck handle.



Picture 9

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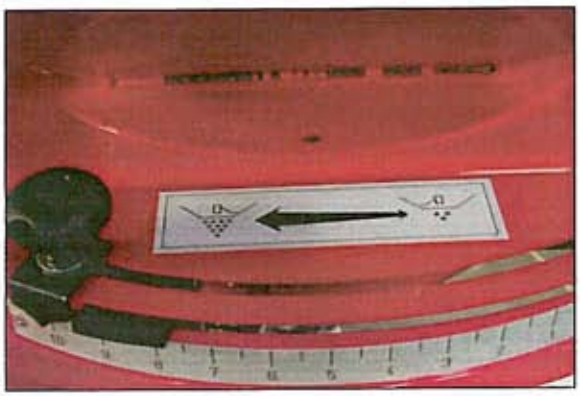
5.3.2 Spreading width adjustment

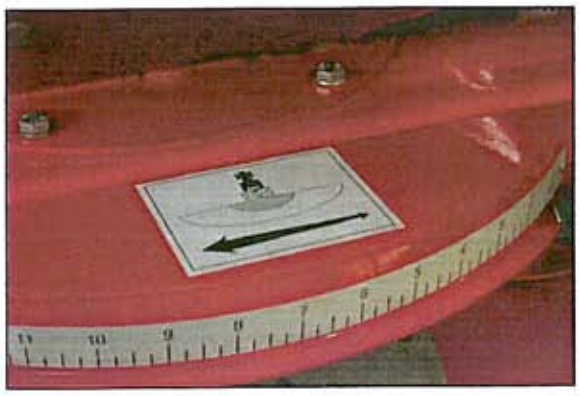
1- Release the adjusting lever by screwing out the the ball cranck handle (**B**)

2- Increase or decrease the spreading width using the levers located in the fertilizer spreader rear. Pull the lever toward the centre of the machine to increase the width, push it to decrease it.

3- Lock the adjusting lever by screwing the ball cranck handle.



Product spreading adjustment lever.

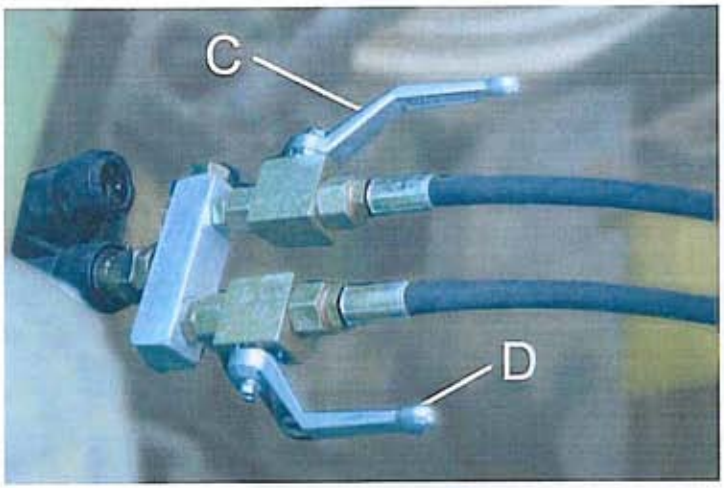


Spreading width adjustment lever.

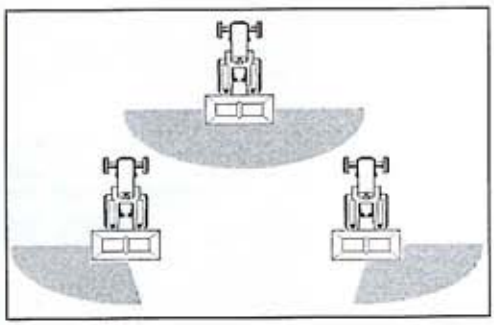
5.3.3 Spreading patterns

It is possible to obtain three different spreading patterns by operating on the ball valves of the hydraulic sytem.

- 180° spreading width: (**C**) and (**D**) valves are open
- 90° right side spreading: (**D**) valve is closed; (**C**) valve is open
- 90° left side spreading: (**D**) valve is open; (**C**) valve is closed.



Picture 10



Picture 11

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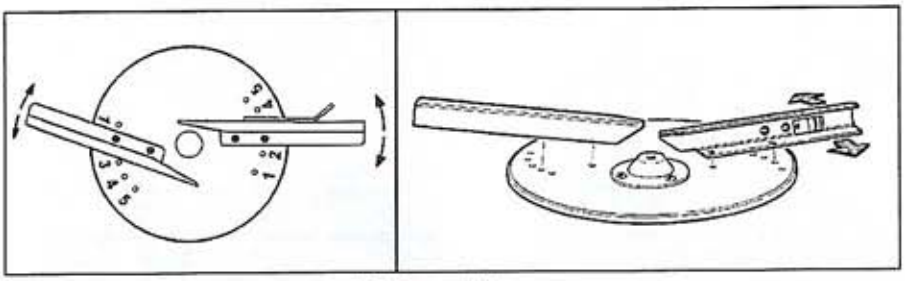
5.3.4 Adjusting the blades.

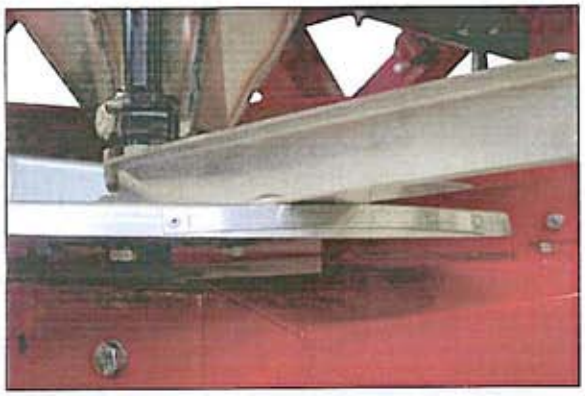
According to the different specific weights or the fertilizers, change the position of the spreading discs by fixing them in the stops 1-2-3-4-5 .

One of the two blades is equiped with a graduate sliding plate. The small stop on the sliding plate determines the setting position. The setting of the plate must be carried out only on particular occasions, as it is adjusted by the manufacturer before the delivery.



Picture 12

1. Unscrew the paddles screw.

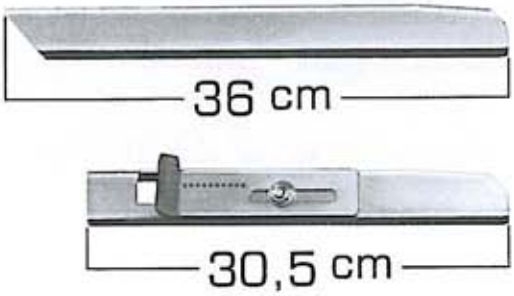


2. Move the paddles to the new position.

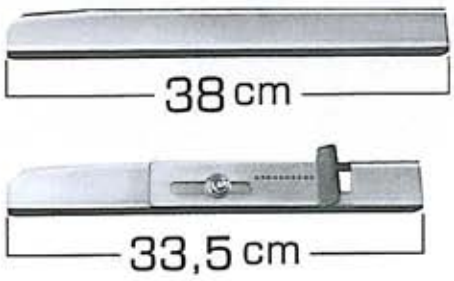
The type of paddle to be assembled on the spreading disk must be selected according to the spreading width being adopted.

In particular:

- Spreading widths of 12 and 18 m require "short" paddles to be assembled on the spreading disk (see fig. 13)
- Spreading widths of 24 m require "long" paddles to be assembled on the spreading disk (see fig. 14).



Picture 13. "Short" paddles



Picture 14. "Long" paddles

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5.3.5 Mixers

The fertilizer spreader is supplied with two types of internal mixer (see figure) to be assembled in the machine depending on the type of fertilizer to be spread.

The assembly of mixer Type A is recommended for granular-type fertilizer.
The assembly of mixer Type B is recommended for powder-type fertilizer.

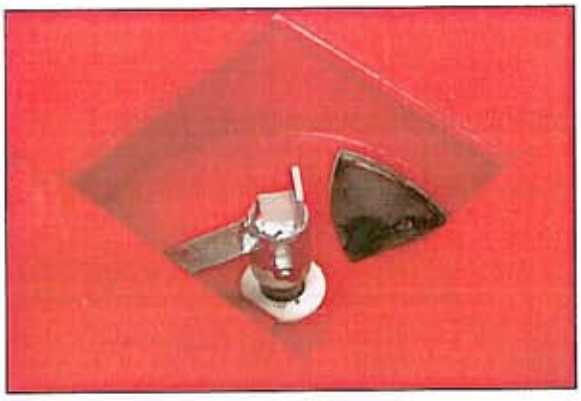
Mixer Type A

Mixer Type B

IMPORTANT!

Proceed as follows to replace the mixer:

- Uncouple the machine from the tractor and position it securely on a flat, hard surface.
- Unloosen the fixing screws.
- Replace the mixer.
- Tighten the fixing screws.



(1)

(2)

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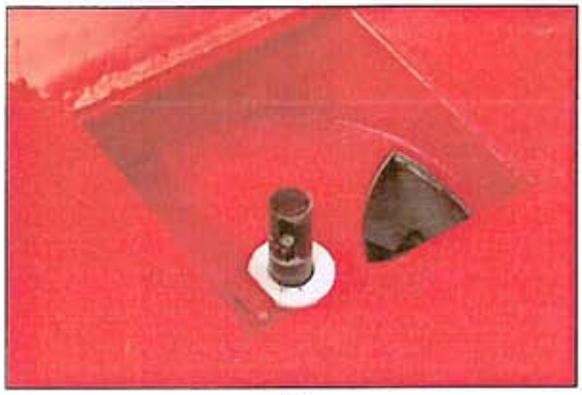
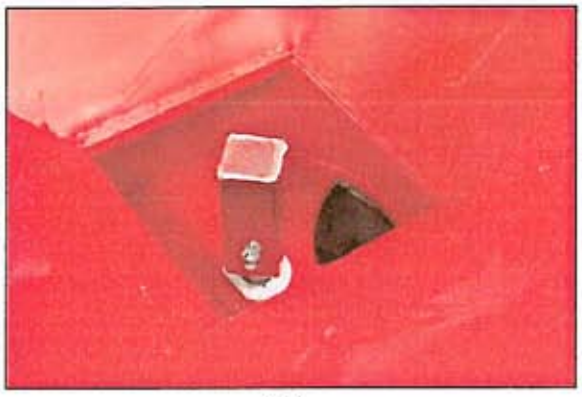


(3)



(4)

5.3.6 Loading the machine's hopper

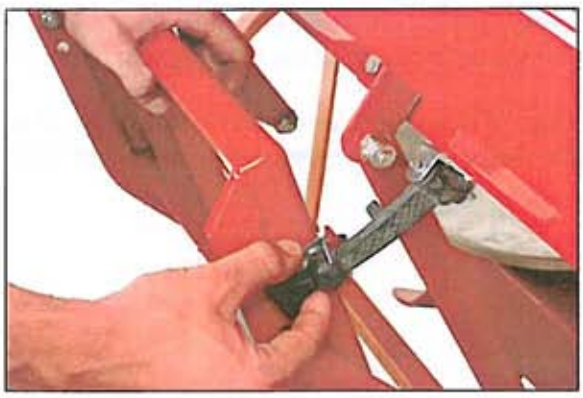
It is very important to check the stability of the fertilizer spreader after coupling to the tractor.

- Before loading the fertilizer spreader, follow the instructions provided in Appendix A to this manual in order to calculate the minimum front ballast to be applied to the tractor required to ensure the stability necessary after the tractor and fertilizer spreader have been coupled together.
- Lower the fertilizer spreader into loading position (until it touches the ground), switch off the tractor's engine, and set the parking brake in order to prevent any and all accidental movement.
- Stand on the loading platform for all fertilizer spreader loading operations.
- Fill the hopper to the required level, making sure to distribute the fertilizer homogeneously inside to a flat level on top.
- **Never load the hopper above its maximum acceptable loading level – See Table 1 Technical Data.**
- After completing loading operations, re-close the loading platform into transport position and fasten it to the machine using the respective fixing rod

Remember that the product to be spread must be clean, and that stones and scraps of metal can both create risk and irreparably damage the machine's moving parts.

5.3.6.1 Use of the loading platform

Models with 1500 capacity hopper is equipped with loading platforms in order to limit the loading height to 1250 mm.



1. Release the fixing rod.

2. Lower the loading platform completely.

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3. Perform all loading operations from a balanced position on the loading platform.

4. After completing loading operations, reclose the loading platform and fasten it in place using the respective fixing rod.

5.3.7 Distribution

- Operate the tractor power take off.

- Set the tractor hydraulic system control in order to open (and close) the batching selvage.
Thanks to the stirrer moving, the product goes onto the spreading disc and, because of a centrifugal force, it will be cast outward by the spreading vanes.

5.3.8 Driving technique suggestions

The quality of spreading depends greatly on the operator's driving technique.

- During fertilizer spreading, maintain the speed indicated in the spreading tables as constantly as possible. Spreading the fertilizer at insufficient speed increases the concentration of the fertilizer spread on the soil, whereas excessive speed decreases such concentration.

- During spreading, adopt evenly-distanced spreading passages in order to maintain constant distance from all previous spreading passages.

- Stop spreading in the vicinity of the ends of the drills and during manoeuvres. In order to avoid spreading fertilizer outside the edges of the field, switch spreading back on again only after approaching the end of the field at a distance equal to the maximum rear spreading length (see the spreading tables).

- Grains of fertilizer are very lightweight and their trajectory of movement varies with the amount of wind. For this reason, stop spreading when wind speed is too high, otherwise the distribution of the fertilizer spread over the soil will be irregular.

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5.3.9 Setting the flow rate

When using fertilizer with characteristics other than those indicated in the spreading tables, the flow rate must be set using the new type of fertilizer.

Proceed as follows:

DANGER

All these operations must be performed with the machine switched off.

Only the operations described in Points 13 and 14 can be performed with the machine switched on.

1. While keeping the spreading disk held firmly in place, rotate the mixer shaft using an appropriate tool until the disk becomes completely unscrewed (rotating the shaft clockwise for the left disk and counterclockwise for the right disk).

2.

3.

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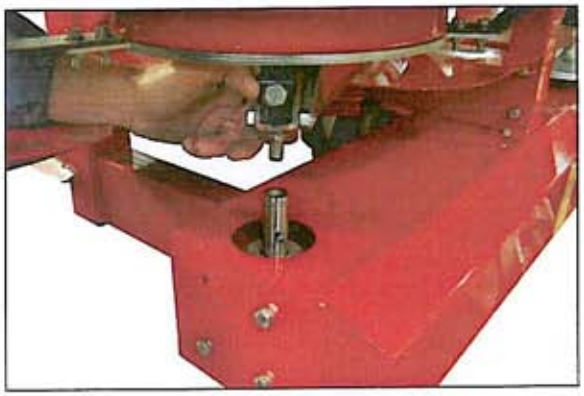
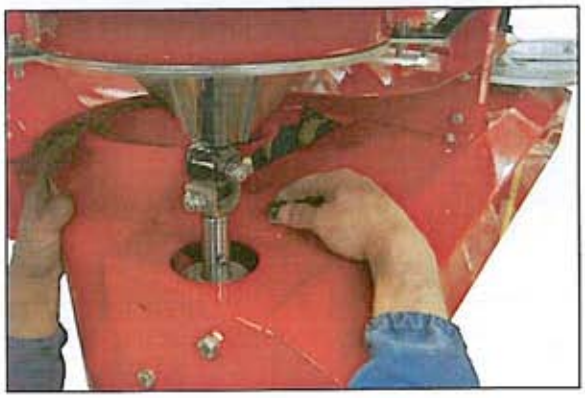


4. Remove the spreading disk.

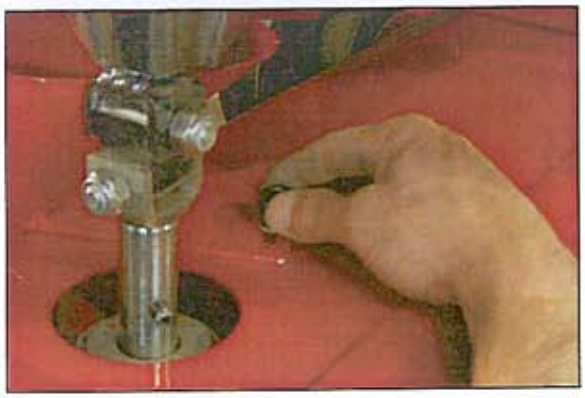
5. Screw the mixer shaft back onto the disk support pin.

6.

7. Position the deviator tube as shown in the figure.



8. Screw in the locking handwheel until the deviator tube is fastened to the protective case.



9.

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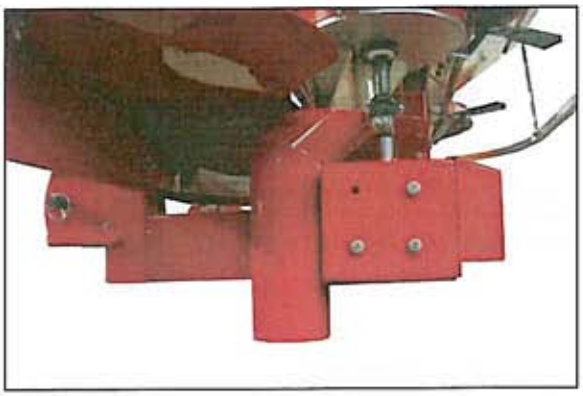

10. Position a container with at least 25 liter capacity beneath the deviator tube.

11. Adjust the hydraulic circuit ball valves as follows (consult the section entitled "Adjustable spreading" on Page 24):

- Spreading at 90° to the right, if the flow rate test is being made on the right mouth.
- Spreading at 90° to the left, if the flow rate test is being made on the left mouth.

12. Set the product adjustment lever in the position in which the flow rate must be measured.
13. Get on the tractor, switch on the engine and switch on the power takeoff.

14. Use the tractor's hydraulic control and open fertilizer delivery. Keep fertilizer delivery open for exactly 20 seconds (using a stopwatch, when possible). After 20 seconds, switch off fertilizer delivery, switch off the power takeoff and then switch off the tractor's engine.

15. Weigh the amount of fertilizer that has fallen into the container or multiply the volume (expressed in liters) of fertilizer collected by the specific weight of the fertilizer being used (in order to obtain the quantity of fertilizer collected expressed in kg).

16. Calculate the total flow rate of the fertilizer spreader in kg/minute by multiplying the quantity (in kg) collected in the container by 6.

$$Total\ flow\ rate = 6 \bullet Quantity\ of\ fertilizer\ collected\ (kg)$$

Oss. this method permits the calculation of the quantity of fertilizer delivered by the fertilizer spreader under normal spreading conditions (with both fertilizer dropping mouths open).

17. Repeat the operations above from Point 3 onwards in order to measure the flow rate in the other positions in which the product adjustment lever can be set.

After completing these measurement operations, switch off the tractor and re-position the spreading disk by repeating the operations above in inverse order.

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5.3.10 How to calculate the quantity to be spread in kg/hectare

After learning the flow rate of the fertilizer leaving the fertilizer spreader, apply the formula below to calculate the necessary quantity expressed in kg/hectare:

$$Quantity\ of\ \ fertilizer(kg/ha) = 600 \cdot \frac{Total\ \ fertilizer\ flow(kg/min)}{Spreading\ with\ (m) \cdot advance\ speed\ (km/h)}$$

where:

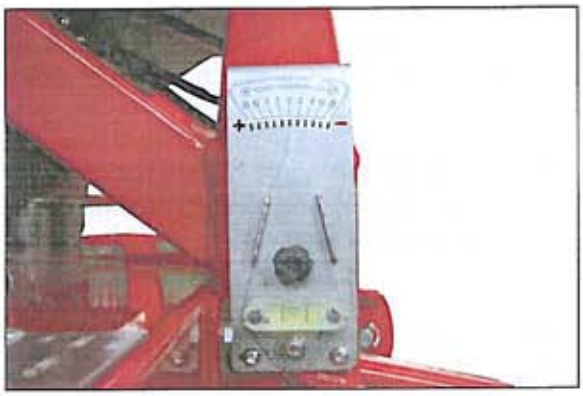
- Total fertilizer spreader flow: this is the value obtained during flow rate testing.
- Spreading width: this is the intended width with which the fertilizer will be spread.
- Advance speed: this is the tractor's advance speed during fertilizer spreading.

5.3.11 Late top-spreading

For the late top spreading must be tilt the spreader.

Proceed as follows to adjust the spreader:

1. Consult the spreading tables and adjust the 3-point lifting mechanism of the tractor for set the spreader tilt.
2. Read the spirit-level for verify the spreader tilt.



Spirit-level

5.3.12 Discharging the hopper

Proceed as follows in order to discharge any fertilizer remaining inside the hopper after spreading:

1. After first checking the graduated horizontal level indicator, adjust the length of the attachment arm of the third power origin point in such way that fertilizer spreader is inclined in the direction of its rear end by around -6°.
   Important! During this operation, continuously check to make sure that the adjustment screw does not become completely unthreaded and DO NOT proceed further whenever the screw appears likely to become completely unscrewed.
2. Position a collection container beneath the spreading disks at the rear of the fertilizer spreader.
3. Use the tractor's hydraulic control to open fertilizer delivery.

After hopper discharging operations have been concluded, re-adjust the length of the attachment arm of the third power origin point in order to return the fertilizer spreader in horizontal position.

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6 SECTION – Maintenance

6.1 Routine maintenance

DANGER

BEFORE CARRYING OUT ANY MAINTENANCE WORK ON THE MACHINE, DETACH THE TOWING VEHICLE AND DISENGAGE THE SPREADER DISC TRANSMISSION BY MEANS OF THE LEVER PROVIDED.

ALWAYS SWITCH OFF THE TRACTOR'S ENGINE BEFORE PROCEEDING TO MAINTENANCE.

The various maintenance operations are described below.

The time intervals given refer to normal operating conditions; consequently, if the machine is subjected to particularly heavy duty, they must be reduced accordingly.

The purpose of these instructions is to assure efficiency, reduce wear and generally make the machine last longer: the user has everything to gain from keeping the machine in pristine condition.

6.1.1 Daily cleaning

After each day's work, the machine must be cleaned thoroughly, removing any waste and/or residues left behind after processing, or other damp or dusty materials.

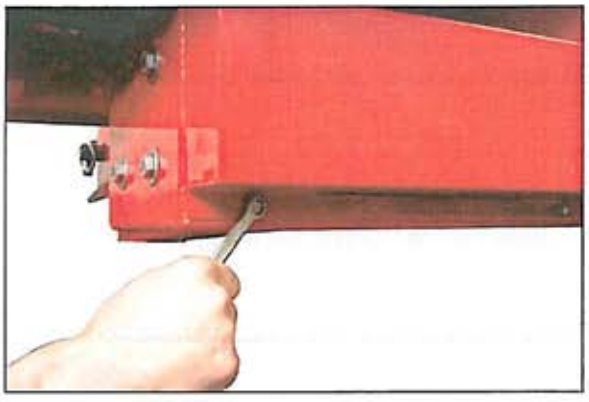
6.1.2 General checks

The vibrations produced during work and movement of the equipment from one place to another may in the long term cause loosening of the bolts. You are advised to check the nuts and bolts roughly every 50 working hours.

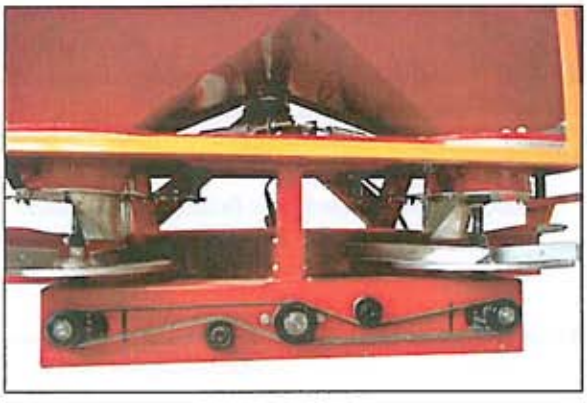
Grease the PTO shaft cross every 10 hours and check the tension of the belts that drive the spreading discs.

6.1.3 Tension drive belts

To tension drive belts, proceed as follows:



1. Loosen screws securing the lower guard.



2. Remove lower guard.

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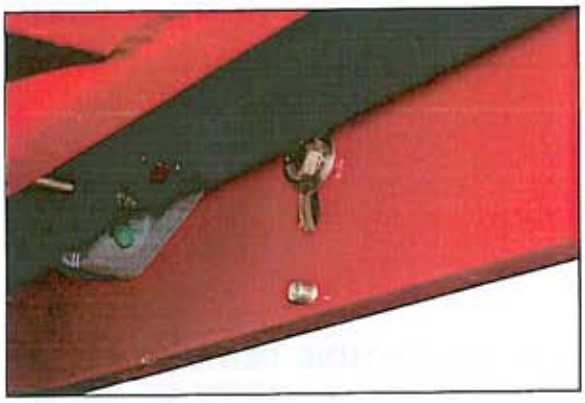
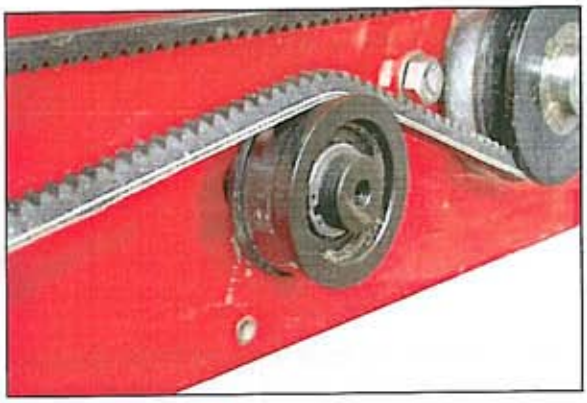
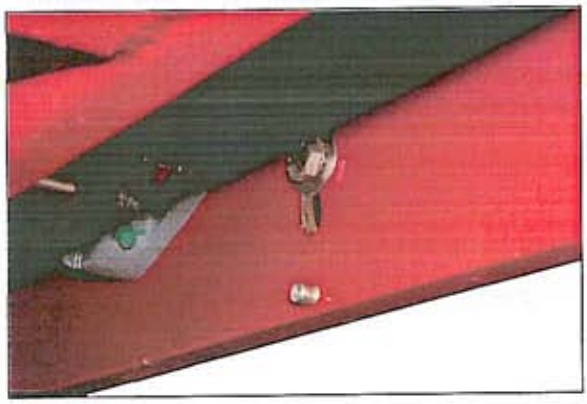


3. Loosen screw securing the belt-tensioner.



4. Move belt-tensioner and increase drive belt tension.



5. Tighten screw securing the belt-tensioner.

6. Once you've finished, refit the driveline guard and tighten fastening screws.

6.1.4 Spreading paddle assembly/disassembly

WARNING

Before proceeding to the assembly/disassembly of the fertilizer spreader paddles, switch off the tractor's engine and set the parking brake.

1. Loosen the screws that fasten the spreader paddle to the fertilizer spreader disk.
2. Replace the old fertilizer spreader paddles with new ones and re-tighten the fixing screws.

Warning! The fertilizer spreader's paddles must be assembled in the correct disk rotation direction.

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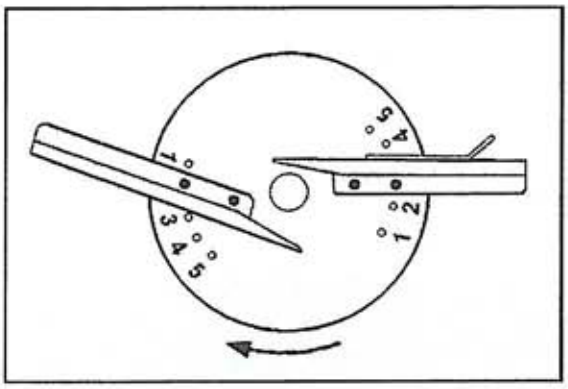
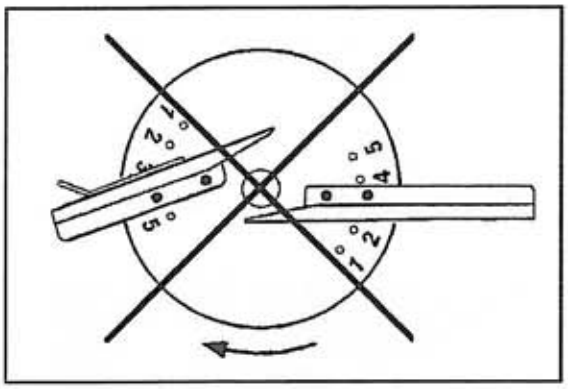


Correctly assembled paddles

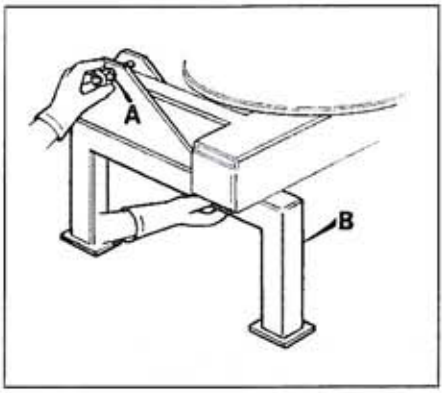


Incorrectly assembled paddles

6.2 Extra maintenance

It is essential to conduct a general inspection of the machine's mechanical parts at regular intervals.
In particular, it is necessary to check the usury of the vanes.

6.3 To keep in mothball



PARK THE FERTILIZER SPREADER ONLY WITH THE HOPPER EMPTY AND ONLY ON SOLID, LEVEL GROUND. ALWAYS USE THE SUPPORT FEET PROVIDED.

If the machine is not employed for a long time it is necessary to check its mechanical and electrical parts, so that to avoid problems when bringing it into use again.

All parts subjected to wear must be carefully controlled. The worn out and damaged parts should be immediately replaced by original spare parts provided by the distributor or the producer.

Besides, check that the bolts of the machine are not shaked loose during the working.

Such instructions are meant to maintain the machine in good conditions, riducing its wear and tear and prolonging its life.
Uncouple the fertilizer spreader from the tractor by undoing the operations indicated in Section 4.2 (Coupling to the tractor).

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After the fertilizer spreader has been uncoupled, couple the cardan shaft to the respective support (see the respective figure) in order to avoid damaging the protections provided for the cardan shaft itself.

In the same way, fasten the hydraulic distributor to its own support (see the respective figure).

6.4 Re-start

WARNING

Before putting the machine back into service, it is always a good idea to check its general conditions: its current state will depend on the conditions it was mothballed in.

6.5 Dismantling the machine

Should the decision be made to dismantle the machine, its components must be sorted into groups of like materials and disposed of individually in accordance with the local laws in force on disposal of special waste.

WARNING

WHEN DISPOSING OF THE VARIOUS COMPONENTS, ONLY GO THROUGH A LEGALLY AUTHORIZED FIRM THAT WILL ISSUE A RECEIPT ATTESTING TO DISPOSAL.

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7 SECTION – Spare parts

7.1 Spare parts

All the spare parts can be ordered from the manufacturer, quoting:

- **machine model**
- **machine's serial number**
- **year of manufacture**
- **reference code of the part** (to be found in the spare parts catalogue);

- **means of transport**: if no preference is specified, the manufacturer shall do its best to ensure you receive good service, though it declines all responsibility for any delays in shipment as a result of force majeure.

Lastly, remember you can always contact the manufacturer for your servicing.

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