



OPERATION AND MAINTENANCE MANUAL

MANURE SPREADERS FOR VINEYARDS AND ORCHARDS



With Balanced Vertical Rollers
Series: V. B. RE - V.B. RS - SP.TS



With Balanced Horizontal Rollers
Series: A. F. O. - A-F-O-RE



Rotary
Series: F. V. S. TOP



CAUTION!!
USE AND MAINTAINANCE
OF THE MACHINE IS
RESERVED FOR
SPECIFICALLY TRAINED
PERSONNEL
IN COMPLIANCE WITH
SAFETY PROCEDURES



REFERENCE DATA FOR YOUR MANURE SPREADER MODEL

This operation-maintenance manual, with declaration of conformity, is included with the SPREADER model _____

Serial No. _____ year of manufacturing _____

tot. weight in kg. _____ max. load in kg. _____

Max. towing hook traction: No. _____

Max. vertical force of towing hook: No. _____

Rated power in kW _____

minimum tractor mass for towing - kg. _____

Ambient Noise: The manure spreader trailer is a machine which is towed and no ambient noise is detectable.

The users must evaluate the noise produced by the tractor, and equip themselves with their own adequate hearing protection in case of extreme noise values (sound pressure > 85 dB(A)).

Sold to Company _____

In the person of its Legal Representative Mr. _____

who acknowledges having checked the product on delivery.

The operating-maintenance booklet and related declaration of conformity must be preserved in a good condition, and made available at all times.



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EC DECLARATION OF CONFORMITY

Directives:

Machinery Directive: 2006/42/EC

Denomination: MANURE SPREADER / SPREADER

Function: The manure spreader, if correctly used, is intended for manure loading, transporting, and spreading in vineyards, orchards, rows of crops and for spreading onto entire fields; it is also suitable for spreading and distributing compost.

Model:

Type:

Series No. :

Trade name: MANURE SPREADER TRAILER

The machine to which this declaration of conformity relates complies with all relevant provisions of the above listed directives.

Name of the person authorized to prepare the technical dossier ZENEGAGLIA SIMONE	Address	Signature
Name of the person authorized to draw up the Declaration of Conformity ZENEGAGLIA SIMONE	Position within the company LEGAL REPRESENTATIVE	Signature

Pozzolengo (BS), Date _____



1 Introduction

Congratulations on your purchase. This manual, written by the manufacturer according to the **2006/42/EC** Directive (Machinery Directive) aims to inform the user on the correct use and maintenance of the machine. Complete reading of the manual is mandatory before use of and maintenance of the machine.

For further details or information on spare parts, and to help us facilitate our service, please refer to the identification data on the page regarding various models. The manual should always be kept within reach of the operator, for rapid consultation when problems or doubts arise.

The user should not tamper with or remove the safeguards or any parts of the machine: any change will result in the voiding of our Declaration of conformity pursuant to the Directive and will void the warranty.

The manufacturer cannot be held responsible for accidents if the machine is modified, tampered with, or if protective safeguards are removed (both fixed and removable) or used for purposes not intended by the manufacturer.

Note: Do not set aside this manual without having thoroughly read it first, and store it inside your vehicle.



This symbol is used to highlight operations or interventions that can cause physical damage to the user or to other people. When this symbol appears, read the instructions carefully and follow them scrupulously.

1.1 General information

This instruction manual refers to manure spreaders:

With Balanced Vertical Rollers	Series: V. B. - N. S. – S.C. – S.C.I.
With Balanced Horizontal Rollers	Series: A. F. O. – A-F-O-RE
Rotary:	Series F. V. S. TOP - F. V. N.

This manual contains all the important information listed in the index; it is an integral part of the machine and must be carefully preserved until the decommissioning of the machine itself, in order to allow the reference to future updates. In case of damage that makes the owner's manual copy unusable, the user can request a copy from the manufacturer



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specifying the type of machine and the serial number on the machine nameplate.

The official language chosen by the manufacturer is Italian.

We take no responsibility for translations into other languages which do not conform to the original meaning. This manual reflects the status of the machine at the time of delivery, and will not be considered inadequate only on the grounds of updates based on new studies or experiences.

You can receive, in the future, revisions or updates.

Agrofer by Zenegaglia Simone & C. S.r.l. reserves the right to update the production and the manuals without any obligation to update previous productions and manuals and without any obligation to inform users of previously supplied machinery. The reporting of proposed updates of manual and/or machines will be regarded as a courtesy.

The customer service remains available to provide, upon request, information about updates that Agrofer by Zenegaglia Simone & C. S.r.l. has made on the machines.



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1.2 General Information on Use of Machine

This manual has been written in order to provide users with a general knowledge of the machine and of those maintenance instructions which are deemed necessary to its proper functioning.

Before proceeding to installation, maintenance, and repairs, read the manual carefully for all the necessary information regarding proper use of the machine and for prevention of injury.

The scheduled inspections and maintenance required by the manual are considered the necessary minimum in order to ensure efficiency, safety, and duration of the machine under normal working conditions. The monitoring should be constant and you should act promptly in the event of defective operation or failure.

The ordinary maintenance, checks, and general lubrication must be performed while the machine is off and disconnected from power supply (also cardan, hydraulic, etc.).

WARNING: Any modification of or tampering with the machine, which is not authorized by the manufacturer, and the safety systems, voids any responsibility on the part of the manufacturer related to EC Conformity.

1.3 General Precautions Regarding Use of Machine

These instructions are part of the normal considerations that workers should take while using the machine; therefore, during the designing and constructing of the machinery, the manufacturer holds these instructions as a given about which the operator knows. It is the user's responsibility to inform and train employees (operators and maintainers) through the use of this manual so that these instructions are brought to the attention of the staff performing work on the machine.

- Where there is a safety selector or a safety key lock, the maintenance technician and the operator are required to remove the key and store it either on their person or in a place accessible only to them and to authorized personnel.
- During the change of lubricants always wear oil resistant gloves and wash hands thoroughly with water and detergent afterwards.
- Clean grease and/or oil stains from the floor immediately in order to prevent slips and falls.
- Do not start the machine in case of failure.
- Before using the machine make sure that any unsafe condition has been appropriately removed.
- Ensure that all safeguards and other protections are in place and that all safety devices are in place and working.
- Do not operate the machine in the vicinity of other persons, the operator himself should not stand in the vicinity of any moving parts.
- Do not allow unauthorized personnel to operate the machine.
- Prevent any intervention on the machine unless it is turned off and disconnected from power activating the tractor.
- Do not leave the machine without ensuring it is turned off and positioned on a proper stand, when not in use or unattended.
- Make sure there are no foreign objects in the area of operation.
- Always use personal protective equipment described in par. 3.2 during normal use and maintenance.
- When there is the possibility of being struck by any random objects, use goggles with safeguards, helmets or gloves, if necessary.
- When working with hot material (the oil of the hydraulic circuit can reach temperatures which may cause burns) it may be necessary to use gloves or other protective equipment to prevent burns in case of manual intervention.
- Connection works, commissioning, maintenance, measurements and adjustments of the electrical equipment or its components should be performed by qualified personnel only.



2 Presentation

2.1 Intended Use

The machine cannot operate autonomously, and must be connected to a tractor of adequate capacity, power and size.

The manure spreader, when correctly used, is intended for manure loading, transporting, and spreading in vineyards, orchards, rows of crops and for spreading onto entire fields; it is also suitable for spreading and distributing compost.

Using the machine for spreading of other materials (mounds of earth, gravel, sand or others) is prohibited so as not to damage parts of the machine which are particularly sensitive to abrasion, such as for example, teflon guides, chain transmission elements, removable sides, etc.

The feeding speed of the manure spreader determines the amount of material to be spread.

The maximum feeding speed for spreading operations must not exceed 7 km/h.

The maximum speed for transit on road networks (in the corresponding approved configuration and with all the protections installed) must not exceed 40 km/h.

It is the user's duty to verify the presence of possible incompatibilities in the operating conditions, particularly in regard to the choice of the speed of advance and rotation of the spreading elements.

Any other use is considered improper and is not permitted; otherwise the responsibility for the conformity of the machinery with safety requirements of the applicable European Directives is voided with immediate termination of the warranty terms for the product.

The conditions of use must comply with the specifications under "TECHNICAL SPECIFICATIONS" and respect the operation principles.



Caution!! Every model of manure spreader must be attached only to tractors with adequate capacity and towing power.

Please read the specifications of your manure spreader and check its suitability in relation to your tractor towing hook in order to prevent instability to the convoy you will use and to avoid malfunctions due to unsuitability of the working plants.



Caution!! Do not use the machine for the spreading of materials other than those permitted (manure or compost) such as mounds of earth, gravel, sand or other, and carefully evaluate the conditions of use of the machine before starting spreading operations.



2.2 Nameplate

The exact quote of model, serial number and year of manufacturing will facilitate the identification of the machine, and allow fast and accurate answers to all your questions.

Always report those data when you contact our Customer Service Department or ask for spare parts.

These data can be identified from the nameplate installed on your machine.

Under no circumstances are the data on the plate to be altered in any way.

You need to know your machine serial number when you contact the manufacturer for information or to order spare parts.



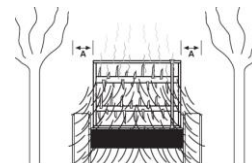
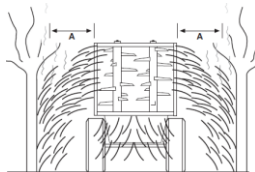
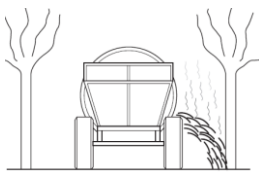
DO NOT REMOVE THE MACHINE NAMEPLATE, WHICH IS DEEMED AN INTEGRAL PART OF THE MACHINE ITSELF

2.3 Working Principles

The manure spreaders are designed and manufactured for manure loading, transporting, and spreading in vineyards, orchards, rows of crops and for spreading onto entire fields; they are also suitable for spreading and distributing compost.

Spreaders must be connected to the towing hook and the cardan power of a tractor in order to operate the spreader assembly. The spreaders must also be connected to the tractor hydraulic distribution for the operation of hydraulically controlled moving elements such as the orientable rudder, the chain which advances the material inside the spreader tank, the sides that hydraulic side pushing material inside the spreader tank, and any other accessories installed upon request.

2.3.1 How to Use



Lateral spreading is achieved with models: Rotary Series: F. V. S. TOP	Rear spreading is achieved with models: With Balanced Vertical Rollers Series: V. B. RE – V.B. RS	Rear spreading is achieved with models: With Balanced Horizontal Rollers Series: A. F. O. – A-F-O-RE
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3 Identification of Operators

The operators are identified as follows:

- In charge of operation: Personnel of the machine purchasing Company
- In charge of adjusting and routine maintenance: Personnel of the machine purchasing Company
- In charge of machine cleaning: Personnel of the machine purchasing Company
- Specialized maintenance technician: Technician authorized by the Manufacturer

3.1 Professional Requirements of Operators

3.2 Machine Purchasing Company

The manure spreaders are designed and built for professional use.

The Employer of the purchasing Company must prohibit non-employees, untrained and unauthorized people from using the machine.

The responsible or delegated person must ensure that operators:

- a) have the opportunity to consult the operational and maintenance manual;
- b) understand the content;
- c) are informed, and properly trained on health and safety risks, and other machine related risks;
- d) use PPE provided for processing;
- e) do not wear loose clothing, ornaments or other items that could get caught in moving parts of the machine;
- f) possess proper knowledge and means to address any health emergencies.

3.3 Operator's Requirements

The minimum requirements for operators are:

- a) Basic technological knowledge;
- b) Specific experience in the operation of the machine;
- c) A sufficient level of general knowledge and basic technique to understand the contents of the manual;
- d) Knowledge of safety regulations:
 - General (health and safety, and cross-related)
 - Specific (to the machine type and characteristics).

In the various operational steps operators should wear appropriate personal protective equipment according to the requirements of the operating conditions (see Chapter 4)





3.4 Operator's Duties

Operators are expected to:

1. Connect the manure spreader to the towing hook of the tractor
2. Connect the spreader hydraulic and electric power supply devices to the tractor
3. Place the operator's control devices inside the tractor cabin
4. Connect the device to the cardan shaft between the tractor and the manure spreader
5. Check the proper positioning of the safety devices required for the transit of the spreader on road networks (rollers protections, casings, etc.).
6. Check the proper operation of the manure spreader light-signalling devices (rear lights, brake lights, flashing lights, etc.)
7. Drive the tractor with the manure spreader attached up to the location of loading of the material to be spread
8. Provide for the loading of the material into the manure spreader tank using machines and equipment suitable for picking up, lifting and laying the material into the spreader tank
9. Drive the tractor with the attached manure spreader to the spreading location
10. Provide for preparing and adjusting the manure spreader functions before starting the work
11. Drive the tractor during spreading, adjusting the speed and the number of rotations of the cardan transmission according to the operational requirements of the spreading location
12. Check that there are no persons near the convoy made by the tractor with the attached spreader and in the spreading areas, before driving the manure spreader and activating its mechanical components
13. Comply with the safety procedures for spreading operations related to the work location (open field, between rows, etc.) as arranged by the employer on the basis of the risks evaluation of the company
14. Clean and wash the manure spreader at the end of operation
15. Check the integrity of the various components in order to verify that no breakages or damage occurred during the work due to particular impracticability of the workplace
16. Park the manure spreader at the end of the working shift
17. Provide for the replenishment of the correct level of lubrication and greasing of various components particularly vulnerable to contamination, friction or corrosion (chains, guides, etc.)
18. Keep the ignition key of the tractor in a safe place to avoid use of the manure spreader by unauthorized personnel

3.5 Maintenance Technicians' Duties for ROUTINE and EXTRAORDINARY MAINTENANCE

The maintenance technicians must meet the same requirements of the operators.

ROUTINE MAINTENANCE	EXTRAORDINARY MAINTENANCE
Intended subject: User of machine	Intended subject: Specialized technician
The subject will be responsible for: <ul style="list-style-type: none"> • Cleaning and washing the machine • Checking and adjusting the tension of the chain transmitting movement to the mechanical parts • Lubricating and replenishing the lubricant level • Greasing of sliding guides, pins, etc. • Checking and restoring the pressure of the tyres • Installing and properly securing the protective casings to the spreading organs • Performing the operations described in the specific paragraph ROUTINE MAINTENANCE of this manual 	Subject will be responsible for: <ul style="list-style-type: none"> • Verifying and checking the good condition of preservation and operation of mechanical parts and hydraulic and electrical devices; • Restoring the proper functioning of the machine following a malfunction, a breakage or an incident • Contacting the manufacturer for the necessary permissions for the replacement of major components (transmission components, spreading elements, etc.)



4 Individual Protection Devices

The use of personal protective equipment is to be considered mandatory in order to be adequately prepared for the residual risks related to the use and maintenance of the manure spreader. Depending on the hazards, more appropriate protection devices should be adopted according also to the following general indications:



Head Protection

A protective helmet must be used, in circumstances of potential fall of material or equipment from heights, or of risk of collisions with fixed obstacles at operator's level.



Eyes Protection

The use of eyeglasses is mandatory in operations that can cause random solid particles, for example, in the event of hydraulic system maintenance where oil spraying could occur.



Hands Protection

The use of protective gloves is recommended in all operations involving handling of equipment or sharp, abrasive or corrosive materials. Hands protection is also recommended for all operations involving the risk of contact with synthetic chemicals considered hazardous (lubricating oils, grease, hydraulic oils, etc.)



Feet Protection

The use of safety shoes is to be regarded as mandatory for all operations with the manure spreader.



High Visibility Overalls

Use of high visibility working clothing is to be considered mandatory during transit on road networks and in general for all operations performed with the manure spreader.



Hearing Protection

The obligation of using hearing protection, and in particular headsets, regards staff involved in the use of the tractor with the attached manure spreader for all those works which level of exposure to noise is higher than the expected parameters.



Respiratory Protection

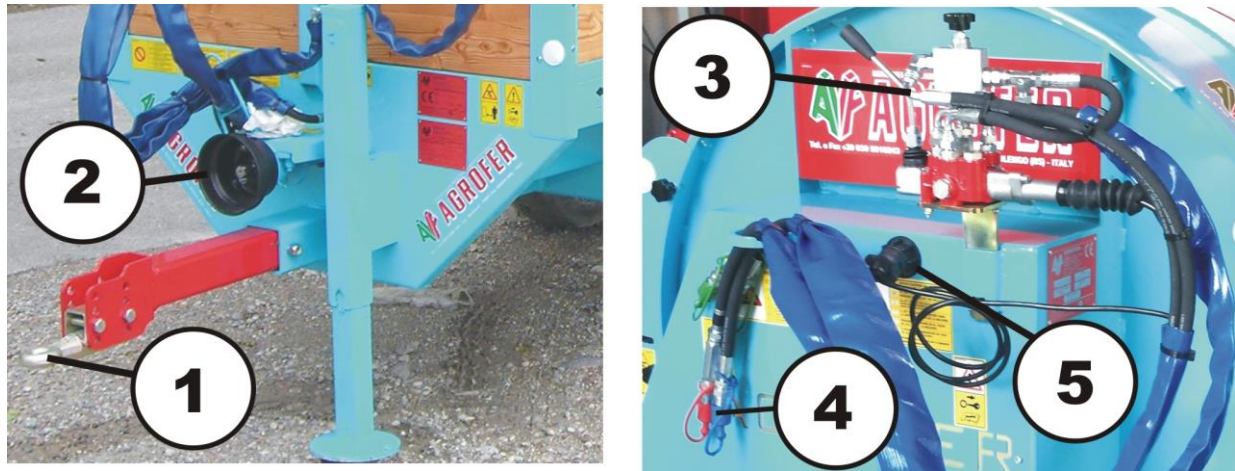
A system checking the use of appropriate personal protection equipment (P.P.E.) for the respiratory tract will be ensued in all events of potential diffusion of powders or dangerous substances.

While working it should also be considered that:

- In presence of fog or snow, visibility is reduced to a minimum and it is essential, in case of exiting the driving cabin, to wear high visibility garments
- In order to reduce the risks derived from working in isolated places, make sure to carry a cell phone with the reference phone numbers to use in case of emergency
- Never drive under no circumstances if alcohol or psychotropic drugs have been used
- It is forbidden to consume alcohol while driving and at work
- The speed of work should be commensurate to the conditions of the transiting terrain



5 Operation of the Manure Spreader



For all models of manure spreaders built by **AGROFER** S.r.l., a few simple actions are needed for installation and preparation to work, as follows:

- 1** Attach the spreader by joining its towing eye to the towing hook of the tractor
- 2** Connect the cardan transmission by installing a cardan shaft to the PTO of the tractor and the manure spreader
- 3** Take the hydraulic control devices inside the tractor cabin
- 4** Connect the quick couplings of the manure spreader hydraulic system to the tractor distributor
- 5** Plug the electric power cable between the tractor and the manure spreader

To correctly perform the operations described above, see the detailed instructions in section 14 "INSTALLATION AND PREPARATION FOR USE"

6 Suitable Characteristics of the Selected Tractor

The manure spreader is suitable for installation on tractor having a towable mass adequate to the mass of the spreader (see weights and dimensions in the technical sheets specific for each model);
The tractor must have a power supply connection of 12 volts;
The tractor must have a hydraulic distributor which allows the connection of the quick couplings to feed the hydraulic system of the manure spreader which, depending on the model and installed options, (drawbar with lateral movement, side on chain, chain, etc.) ensures a supply pressure of at least 90 BAR;
The tractor must have a PTO for the connection of the cardan shaft with the manure spreader, capable of producing a number of revolutions equal to 540 RPM;
In case of doubt, consult the instruction manual of your tractor to determine the suitability of the connection to the manure spreader.





7 Ambient Noise

The manure spreader is a type of machine which is towed by a tractor and its noise is due to the application of the PTO of the cardan supply which conveys the motion to the spreading organs and to the application of the chain conveying the material to the spreading organs. In normal operating conditions, the machine noise does not exceed 80 dB (A) and is normally dominated by the noise of the tractor to which it is connected.

The exposure to noise of the operator driving the tractor depends on the characteristics of the vehicle cabin (open, closed, etc.). It is advisable to follow the information given in the tractor manufacturer's manual for the choice of any individual hearing protection device, in case the noise value deems necessary to use a protection. Operators of the manure spreader will have to be duly informed and educated on the risks and precautions to take in regard to the noise emitted by the tractor which they will be seating on during work, also in relation to the type of working surface.

8 Mechanical Vibrations in Use of Machine

The manure spreader is a type of machine which is towed by a tractor and does not transmit mechanical vibrations to the driving position of the tractor used for spreading operations.

The vibrations transmitted to the tractor to which the manure spreader is attached, depend solely on the operating modes adopted, such as the driving speed, and the characteristics of the surface to be covered during spreading operations. There are no risks arising from mechanical vibrations to hands/arms as the manure spreader is not in direct contact with the operator's upper limbs, while the vibrations to which the operator is exposed relate to the characteristics of the tractor driver's seat.

It is therefore advisable to refer to the data reported on the tractor manufacturer's manual for the choice of possible protective measures for the operator in case the vibrations value deems the measures necessary.

9 Dangers and Protections



9.1 Improper Use and Contraindications

The machine must be used for the purposes intended by the Manufacturer; see Chapter 2.

In particular, **DO NOT** use the machine:

- Without protection and/or with safety devices disabled, or missing
- Unless it has been properly installed and secured in all intended points
- In an explosive atmosphere or in a place where there is a risk of fire
- For processing materials other than those specified in the intended use; see Chapter 2
- In dangerous conditions or if the machine is malfunctioning
- Improperly or if you are untrained personnel
- At speeds exceeding the maximum indicated
- Contrarily to specific rules
- In case of incorrect or defective power
- In case of serious deficiencies in maintenance
- After modifications or unauthorized interventions
- With total or partial non-observance of the instructions
- With materials and tools other than those provided by the manufacturer
- Without the adoption of appropriate personal protective equipment provided to operators
- In case of abnormal noise or vibrations during operation.



Do not use the machine in one or more of the following situations:

- Transit on the roads without having properly placed safeguards to spreading organs and the related light signals provided for each spreader
- With tractors having inadequate size and load
- With persons present in dangerous machine operating areas
- For purposes and operations other than those for which the machine was built
- If you are unauthorized personnel
- With protections not properly in place and ineffective.
- Wearing open or dangling clothing such as ties, scarves, torn garments, unbuttoned jackets or blouses with open zippers that can get caught in moving parts.



CAUTION

ANY MODIFICATION NOT AUTHORIZED BY THE MANUFACTURER, WHICH ALTERS THE INTENDED FUNCTIONALITY, MODIFYING RISKS AND/OR GENERATING ADDITIONAL ONES, WILL BE THE EXECUTOR'S FULL RESPONSIBILITY. THESE CHANGES, IF DONE WITHOUT PERMISSION OF THE MANUFACTURER, WILL ALSO VOID ALL GUARANTEES ISSUED, AND VOID THE DECLARATION OF CONFORMITY ENSUED BY APPLICABLE DIRECTIVES.

9.2 Safety Protections – Security Systems

The machine is equipped with the following safety devices:

Hydraulic:

- Pressure relief valve on the main circuit

Electric:

- Low voltage system (12 V)
- Fuses for intercepting anomalous overheating of the power supply circuit from the tractor battery

Mechanical:

- Safety casings for the spreading organs
- Safety casings for the mechanical transmission assemblies with chains and sprockets
- Cardan joint protective cuff
- Drawbar lock pin for on-road use with anti-extension safety plugs
- Anti-extension safety plugs on all pins and casings latches or fasteners.

10 Residual Risks



The residual risks from machine use can be identified in the following way:

- Death or injury risks by shock, crushing, dragging, shearing and cutting for people who may be exposed to the operating range of the manure spreader due to the presence of dangerous moving mechanical parts
- Risk of injury by shock, crushing and running over of people exposed within range of the manure spreader during transit operations and spreading
- Risk of injury for persons exposed near the sides and the back of the manure spreader for potential random material
- Risk of death or injury due to crushing, dragging, and shearing of lower limbs and whole body of people inside the tank during cleaning, washing or removal of obstacles to the proper functioning with the machine connected to the power supply
- Risk of injury by shock and crushing during connection operations of the spreader to the tractor in case of unexpected movement (due to lack of stability of the manure spreader) or mishandling of the operators;
- Risk of injury by shock and crushing in the event of an unexpected release of the machine casings, sheet metal guards, or steel mesh if not properly secured
- Risk of burns and injuries to skin and eyes in case of sudden rupture of a pressured hydraulic pipe resulting in violent leakage of jet of hot oil;
- Risk of injury due to crushing in the event of loss of stability and tipping of the spreader when transiting on road or on rough paths, or during spreading operations caused by unbalanced spreader load



11 Dangers associated with operation

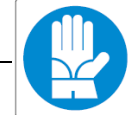
Safety precautions

Personal protective equipment



11.1 While Attaching Manure Spreader to Tractor

Personal protective equipment for these operations:



Risk of injury due to impact and crushing of hands or lower limbs in case of unexpected movement of the manure spreader during approach and alignment of the towing eye to the towing hook of the tractor

Can be avoided, instructing operators that any attempts to hook to and unhook the manure spreader from the tractor must be carried out in accordance with the following precautions:

Coordinate closely, with the operator driving the tractor, all the approaching movements between eye and towing hook, performing operations very slowly to prevent unexpected movement that could give rise to the dangers at issue

Check that there are no bumps in the ground under the tractor wheels to avoid unexpected rises or falls of the towing hook during the approach

Check that the ground upon which the standing foot rests is solid and does not give the possibility of sinking under the effect of foot "punching"

Keep the standing foot on the ground until the spreader has been correctly hooked and the safety devices have been added for the coupling

Wear the correct personal protective equipment listed above



Risk of injury from impact and crushing of hands in the installing operations of the removable cardan shaft device

Can be avoided instructing operators that attempts to install the removable cardan shaft device must be carried out in accordance with the following precautions:

Turn off the tractor engine in order to ensure total stationary PTO

Adequately support the cardan shaft during connection with the PTO if necessary, due to size and weight, getting help from a different operator so as to prevent the risk of slipping and dropping the shaft with potential injury to the lower limbs



Risk of injury due to slipping and falling or taking a false step in case of mounting on the drawbar or on spreader structures or on rear tractor structures while attaching the manure spreader

Can be avoided instructing operators that attempts to attach the spreader to the tractor must be carried out in accordance with the following precautions:

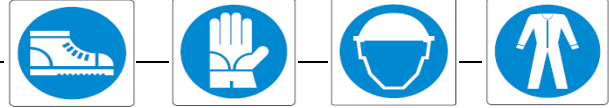
Avoid getting on the spreader structures or on the drawbar, or on the aluminium rear of the tractor given the lack of specific measures regarding climbing and resting on surfaces and structures for the operators

All the operations of hooking and release of the connection systems can be performed on the ground without having to climb on the machine structures.



11.2 While Connecting the Power Supply

Personal protective equipment for these operations:



Risk of electrocution in the event of a faulty socket, plug or electrical cable with potential accidental contact with live elements

Can be avoided checking periodically the condition and efficiency of the electric connections and electrical wiring in general.

Should be absolutely prohibited to unqualified personnel to operate on the electric system.

Avoid connections that are not covered in this manual such as improvised connections with the poles of the tractor battery, jointed loose cables or the like.

The only permitted connection is the one between the control terminal and the tractor electric socket.

11.3 While Connecting the Hydraulic Supply

Personal protective equipment for these operations:



Risk of splashing or spraying of liquid under pressure during connection of quick couplings to the tractor distributor, if not properly installed and connected.

Can be avoided instructing operators that attempts to connect the quick couplings to the tractor distributor must be performed in accordance with the following precautions:

Turn off the tractor engine in order to ensure that the hydraulic circuits are not powered

Identify correctly the various couplings according to the type (male or female) and the colour of the installed plastic protection (green, red, blue, etc.) which indicates the type of circuit activated through the connection

Wear personal protective equipment for these operations (shown above), with particular attention to compulsory use of safety goggles, given the risk of unexpected splashes on the face or in the eyes of the operator



Firmly grasp the quick couplings and hook them up promptly in the chosen position, paying particular attention to the potential counter pushing of the tractor circuit at the time of installation.



Risk of unexpected movements of mechanical organs while connecting the quick couplings to the tractor distributor.

Can be avoided instructing operators that attempts to connect the quick couplings to the tractor distributor must be performed in accordance with the following precautions:

Turn off the tractor engine in order to ensure that the hydraulic circuits are not powered

Check that the levers or control devices of the tractor hydraulic circuits are not accidentally operated (material resting on the devices or pushing on the sides, etc.)

Check that the control levers of the spreader are not accidentally operated

Maintain control devices free from any objects occasionally placed on top (gloves, clothing, tools, etc.)

Keep the tractor cabin in perfect clean condition.



11.4 While Checking Operation Position

Personal protective equipment for these operations:



Risk of injury by clashing and crushing of body and limbs during control operations of proper closing of spreading organs protective casings, of correct fastening of sheet metal guards to all moving and transmission parts, of proper installation of cuffs to cardan shaft, of installation of anti-extension metal plugs to pins and fixtures, and so on.

Can be avoided instructing operators that checking proper operation of machine can result in the following risks:

- Risk of crushing hands between closing parts
- Risk of dropping sheet metal casings with potential injuries to lower limbs
- Risk of cuts and bruises on hands for the potential presence of metallic burrs on the casings edges due to wear or friction
- Risk of being crushed between the moving parts of the steering drawbar (optional)
- Risk arising from an incorrect fastening of protection cuffs on the cardan shaft which could rotate together with the PTO shaft, when activated;

11.5 While Loading Material into Spreader Tank

Personal protective equipment for these operations:



Risks arising from the operation of a manure loader near the manure spreader.



Can be avoided instructing operators that during loading of material in the manure spreader tank, the following precautions must be observed:

Check that the area intended for loading of material into manure spreader tank is free from obstacles that could impede the safe circulation of vehicles and pedestrians

Check that there are no animals or people in the area of operation of the manure loader.

Check that the spreading organs safeguards are properly installed and secured before loading the material, to ensure that there are no impediments to the proper closing of the safeguards due to the presence of excess material or obstacles

Check that the manure loader is perfectly stable and placed on the ground, and is in correct operating conditions according to the related manufacturer's operating instructions

Check that loading of materials into the manure spreader tank complies with its capacity to avoid wasting excess material during transit and spreading

Check that while loading the material, warning labels and light-signalling devices of manure spreader are not soiled and rendered illegible

Remove material accidentally placed on the spreader structures outside the tank so that it is not lost during transit on road networks.

ATTENTION !!! Operators of the manure loader as well as operators using the manure spreader must be informed, instructed and trained on proper and safe use as required by current legislation on health and safety on the workplace.

All operations on manure loader and manure spreader must be carried out in accordance with the guidelines provided by their respective manufacturers in the user and maintenance instruction manuals.



(Example of a manure loader)



11.6 While Transiting on Road Networks

The manure spreader can transit on road networks only after approval.

Personal protective equipment for these operations:



Risks arising from an incorrect marching order.

Can be avoided instructing operators that transit on road networks involves the preparation of the convoy consisting of tractor and spreader and the following precautions should be observed:

Check that the tractor is suitable for towing the manure spreader in terms of weight and required power

Check that devices intended for road transit have been correctly installed, from light-signalling systems to spreader braking systems, etc.

Check the presence and the correct installation of safety plugs (pins, screws, etc.) in order to prevent hazardous uncontrolled movements of casings, plugs, etc.

Disconnect the cardan and hydraulic shaft so as to prevent dangerous accidental operations during road transit

Check that no objects or tools are resting on manure spreader or tractor, which may be dropped during road transit

Check the operation of the light-signals before marching on road networks

Check the manure spreader braking system efficiency before marching on road networks

Make sure the parking brake has been disconnected before starting the march on road networks

Check that the material loaded into the manure spreader cannot be accidentally lost on road networks due to vibrations or bumps for a rough road surface.

11.7 While Spreading Material

Personal protective equipment for these operations:



Risks of serious injury or death in the event of accidental contact with moving mechanical parts.

Can be avoided instructing operators that the spreading of the material shall be carried out in accordance with the following precautions:

Always check that there are no people in the operation area of the manure spreader

Check that the material to be spread is not directed towards people or animals near the operation place

Check that all safety devices protecting transmission components (cardan shaft, etc.) are properly installed

Keep a moderate marching speed.



Risk of serious injury or death in case of people run over during transit of spreader and spreading of material

Can be avoided instructing operators that the transit of spreader and spreading of material shall be carried out in accordance with the following precautions:

Check that no people are present in the area and on the marching path of the manure spreader

Pay close attention to the presence of children or animals that may unexpectedly move into unsafe areas of operation of manure spreader and tractor

Proceed with extreme caution in those situations where there is no complete visibility of the road ahead (blind spots, etc.)



Risks of serious injury or death in the event of a tipping or tilting tractor or manure spreader during transit and spreading of material.

Can be avoided instructing operators that the transit and spreading of the material shall be carried out in accordance with the following precautions:

Check the path to cover with tractor and manure spreader for large bumps, potholes or other obstacles that could lead to risk of convoy tipping or tilting

N.B. The regulations on machinery safety require that the driver's sitting position of a self-propelled vehicle must be equipped with a suitable protective structure of an approved type, and require also the implementation of an efficient operator restraint system.

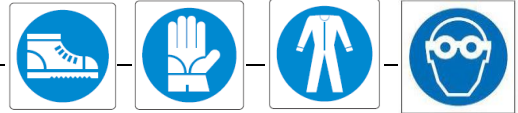
Therefore, check the instructions given by the tractor manufacturer to identify which restraint system (normally consisting of an abdominal safety belt) is provided to keep the operator in the driving seat safe, in the event of tipping or tilting of the vehicle.

Make sure your tractor is complying with the rules concerning allocation of life support systems in the event of tipping or tilting

Do not use tractors not equipped with driver's protective structures in the event of vehicle tilting or tipping.

11.8 While Washing and Cleaning Tank and Entire Spreader

Personal protective equipment for these operations:



Risk of serious injury or death in case of intervention on the manure spreader with safeguards removed or not correctly installed with tractor connected and drive systems in operation.

Can be avoided instructing operators that washing and cleaning of manure spreader must be carried out in accordance with the following precautions:

Disconnect the cardan shaft from the tractor and remove it from the manure spreader

Disconnect the hydraulic power from the tractor distributor, install the protective caps to the quick couplings of the manure spreader hydraulic circuits and put them carefully into their housings.



DO NOT ENTER THE MANURE SPREADER TANK

when the spreader is attached to the tractor and the drive systems are operating or activated

Under no circumstances, should any person enter the tank of the manure spreader, given that the washing and cleaning can be carried out from outside the tank. It is extremely dangerous to enter the tank due to the presence of material conveying chains, which, if accidentally activated, can cause the operator's loss of balance, and expose them to the serious danger of contact with the spreading mechanical organs, potentially in motion.



PERFORM WASHING AND CLEANING OPERATIONS ONLY WITH MANURE SPREADER STOPPED AND DISCONNECTED FROM THE TRACTOR DRIVING SYSTEMS

Be sure to read the descriptive paragraph of the washing and cleaning instructions contained in this manual under the heading "ROUTINE MAINTENANCE"





11.9 While Performing Spreader Maintenance

Routine maintenance, granted to operators identified in paragraph 3 "Identification of Operators" of this instructions manual", sums up to the following operations:

- Machine washing with systems like mops, brooms, continuous jet of water or pressure equipment such as "hydro washers"
- Lubrication of joints and pins
- Checking and replenishing the oil level of the hydraulic systems
- Checking and replenishing the oil level of the various gear boxes
- Checking and adjusting the tension of the transmission chains
- Checking and adjusting the tension of chains conveying the material into the tank
- Checking and tightening the bolts of the wheel axles, etc.
- Other (see specific paragraph).

Extraordinary maintenance, granted to operators as identified in paragraph 3 "Identification of Operators of this instructions manual", sums up to the following operations:

- Disassembly and assembly for replacement of damaged or worn parts
- Adjusting working hydraulic pressures
- Restore functions for failures or breakages
- Other (see specific paragraph)

These operations involve the occurrence of risks related to:



- ✓ Unexpected movements of the machine
- ✓ Risks related to falling parts during disassembly, replacement, or adjustment
- ✓ Risks associated with the handling and possible splashing of lubricants and detergents

Operators, within their specific expertise, will ensure that such operations are carried out with care and attention in accordance with the instructions given in the instruction manual, in particular:

- Always engage the spreader parking brake when the spreader is disconnected from the tractor
- Unplug the spreader power supply from the tractor
- Acquire appropriate personal protective equipment for hands, eyes, body and feet against potential collision, contact, and crushing with mechanical parts and against potential contact with lubricants, detergents, etc.

Personal protective equipment for these operations:



Risk of serious injury or death in case of intervention on the manure spreader with safeguards removed or not correctly installed with tractor connected and drive systems in operation.

Can be avoided instructing operators that routine maintenance of the manure spreader must be carried out in accordance with the following precautions:

Disconnect the cardan shaft from the tractor and remove it from the spreader

Disconnect the hydraulic power from the tractor distributor, install the protective caps to the quick couplings of the manure spreader hydraulic circuits and put them carefully into their housings.



PERFORM ROUTINE MAINTENANCE OPERATIONS ONLY WITH MANURE SPREADER STOPPED AND DISCONNECTED FROM THE TRACTOR DRIVING SYSTEMS

Be sure to read the descriptive paragraph of the scheduled routine maintenance performance under the heading "ROUTINE MAINTENANCE"





11.10 Residual Energy

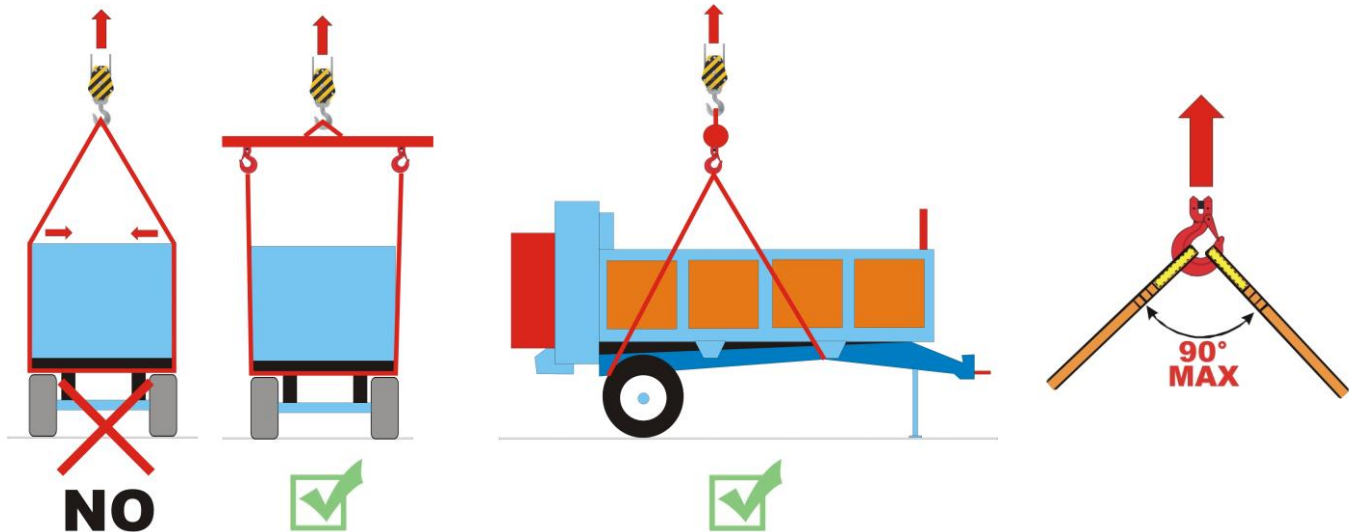
The machine is powered by the tractor electric and hydraulic circuits. At times of removal of a hose connection or a component of the hydraulic circuit, a hydraulic fluid leakage may occur. Pay attention to such events and provide rags to immediately clean up any residual hydraulic oil on the machine and adopt the correct collecting procedures regarding oil spilled on the ground.

12 Lifting of Manure Spreader for Loading on Vehicle

Personal protective equipment for these operations:



When delivered to the customer, the manure spreader is normally loaded on the flatbed of a truck with adequate capacity and size. To lift the trailer, it is recommended to take an elevator equipped with a gripping hook with barbell and rods in textile fiber that will support the spreader, harnessing it from under the tank as shown in the figure below.



Arrange the textile fiber rods in the points of the frame of the manure spreader as from the figure on the left.

CAUTION !! Before harnessing and lifting the spreader make sure to choose suitable harnessing devices, matching each type with the weight of the spreader as shown in the "TECHNICAL DATA" tables of paragraph 12.1.



CAUTION !! DO NOT USE FORK LIFT DEVICES TO LIFT THE SPREADER BUT ONLY FIBER TEXTILE GUYS OF ADEQUATE CAPACITY TO ENSURE A STABLE HARNESS.





12.1 Technical Data of Various Models of Manure Spreaders



F.V.S. TOP Manure spreaders



With rigid suspension and localised spreading on rows in vineyards orchards, etc. Complete with no. 2 adjustable casings for localised distribution on the row. The structure is made of cut tube profiles with pickled sheet steel. The deck and sides are made of treated larch planks. Special guides for chain running, extensible drawbar complete with wheel-arch, axle without brake. Without the road lighting/indication system.

F.V.S. TOP Manure spreaders

Rotary manure spreader with the super "S" special rotator with 2 powered driving caps, **COMPLETE WITH EDGE WITH CHAIN FEED, HYDRAULIC ENGINE FOR BINDING CHAIN**, with a hydraulic control valve for speed regulation and a direction inverter with quick coupling operation of the tractor.

Mod. 1200	A	Y	B	C	D	F	G	H	I TYRES	M ³	Empty weight Kg	Space between row
F.V.S. 25 TOP VIGNERON	300	85	405	140	460	145	120	155	10/75/15 12 PR	2.50	1380	180
F.V.S. 35 TOP VIGNERON	370	85	455	140	520	145	120	155	10/75/15 12 PR	2.90	1500	180
NEW F.V.S. 40 TOP VIGNERON	400	85	495	150	550	155	130	165	11/80/15 16 PR	3.30	1680	300
NEW F.V.S. 45 TOP VIGNERON	450	85	565	150	600	155	130	165	11/80/15 16 PR	3.60	1750	300

Mod. 1300	A	Y	B	C	D	F	G	H	I TYRES	M ³	Empty weight Kg	Space between row
F.V.S. 25 TOP	320	85	415	140	470	165	130	165	10/75/15 12 PR	3.00	1470	210
F.V.S. 35 TOP	370	85	465	140	520	165	130	165	10/75/15 12 PR	3.30	1550	210
NEW F.V.S. 40 TOP	400	85	495	150	550	185	130	185	13,0/65-18 16 PR	3.50	1680	300
NEW F.V.S. 45 TOP	450	85	565	150	600	185	130	185	13,0/65-18 16 PR	4.00	1750	300

ACCESSORIES ON REQUEST: SEE Page 45-46



**F.V.S. TOP
Spreader**
 Super "S" special rotator with 2 powered driving caps and chain transmission as standard supply



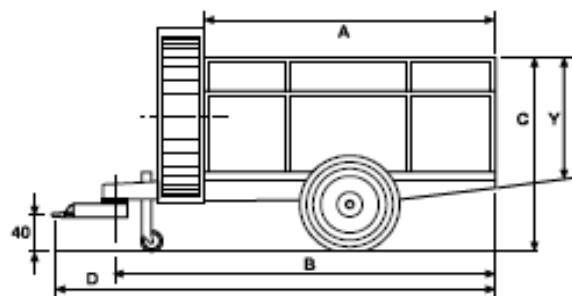
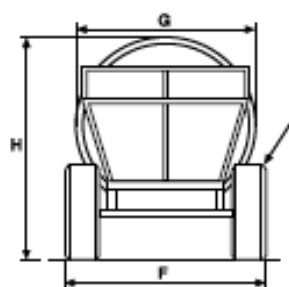
STANDARD EQUIPMENT



engine for hydraulic binding chain

edge with chain feed

Mod. F.V.S. TOP





Manure spreaders A.F.O. - A.F.O.RE



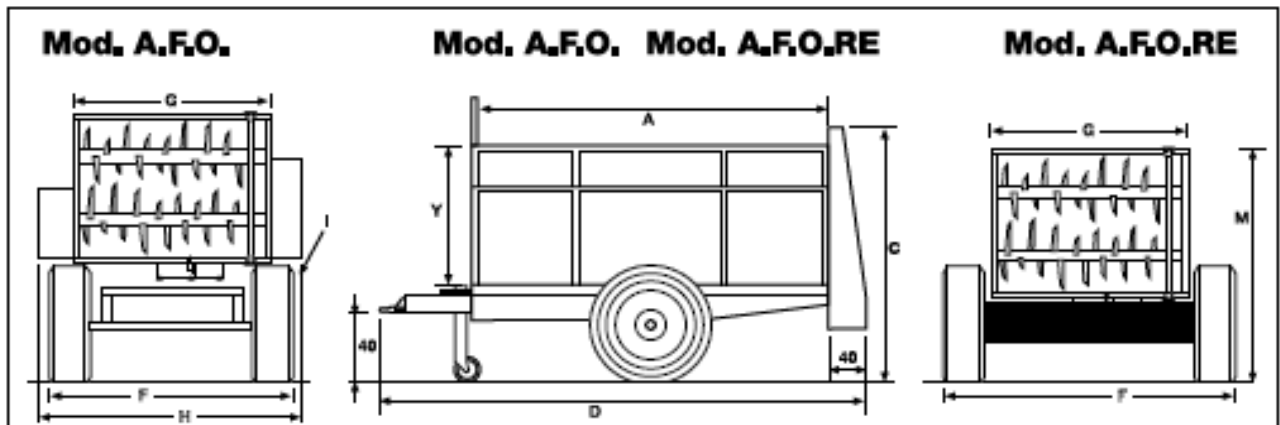
Rigid suspension with horizontal equipment and two balanced rollers, rear spreading, hydraulic binding chain feed with quick coupling operation. The structure is made of cut tube profiles, the deck and sides are made of treated larch planks. It is equipped with special guides for chain running, sliding drawbar, axle without brake. Without road lighting/indication system.

Mod.	A	Y	D	C	F	G	H	I TYRES	M ³	Empty weight Kg	Space between rows
A.F.O. 10 <small>NO RECOMMENDED TYRES</small>	300	85	430	210	105	85	105	10/75/15 12 PR	2.00	1000	130
A.F.O. 15	300	85	430	210	140	115	135	10/75/15 12 PR	2.80	1160	170
A.F.O. 15 S	350	85	480	210	140	115	135	10/75/15 12 PR	3.30	1280	170
A.F.O. 25	300	85	430	210	140	125	155	10/75/15 12 PR	3.00	1250	190
A.F.O. 25 S	350	85	480	210	155	125	155	10/75/15 12 PR	3.50	1380	190
A.F.O. 35	350	85	480	210	160	150	180	13.055 16	4.40	1560	230



A.F.O.RE Manure spreaders with external wheels

Mod.	A	Y	D	G	H	C	I TYRES	F	M	M ³	Empty weight Kg	Space between rows
NEW A.F.O.RE 25	300	85	430	125	190	185	10/75/15 12 PR	190	180	3.00	1250	250
A.F.O.RE 35	350	85	480	150	210	185	10/75/15 12 PR	210	180	4.40	1350	270

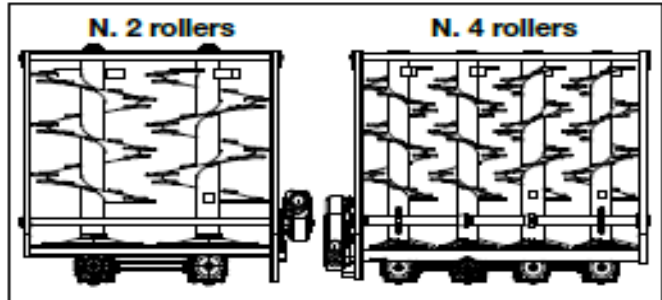




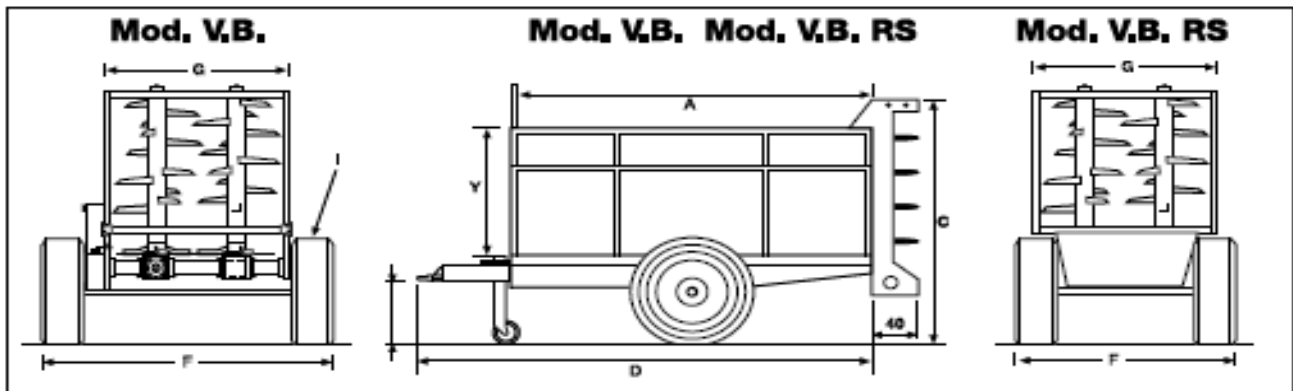
Manure spreaders with vertical balanced rollers



With rigid suspension, rear spreading and hydraulic binding chain feed with quick coupling operation. The structure is made of cut tube profiles, the deck and sides are made of treated larch planks. It is equipped with special guides for chain running, axle without brake. Without road lighting/indication system.



Mod.		A	Y	D	C	F	G	H	I TYRES	M ³	Empty weight Kg	Space between rows
2 ROLLERS	V.B. 25 RE	300	80	415	170	185	125	135	10/75/15 12 PR 2 wheels	3.00	900	225
	V.B. 35 RE	350	80	465	170	185	125	135	10/75/15 12 PR 2 wheels	3.50	1200	225
	NEW V.B. 25 RS	300	80	415	200	135	125	135	10/75/15 12 PR 2 wheels	3.00	1200	180
	V.B. 35 RS	350	80	465	200	135	125	135	10/75/15 12 PR 2 wheels	3.50	1500	180
4 ROLLERS	V.B. 40 RE	350	80	465	170	220	160	175	10/75/15 12 PR 2 wheels	4.40	1900	270
	V.B. 40 RS	350	80	465	200	170	160	175	13.0/55-16 2 wheels	4.40	2100	220
	N.S. 55 RS	400	80	505	220	190	180	195	435/50 19.5 16P sizes 95x43	5.70	2300	220
	N.S. 75 RS	460	80	565	220	240	200	230	435/50 19.5 16P sizes 95x43	7.30	2600	---



ACCESSORIES ON REQUEST: SEE Page 45-46





Manure spreader for straddle tractor Mod. SP.TS



Manure spreader with vertical balanced rollers



Rear spreading, hydraulic binding chain feed with quick coupling operation. The structure is made of cut tube profiles, the deck and sides are made of treated larch planks. It is equipped with special guides for chain running and road lighting/indication system.

- ★ SUITABLE FRONT PROTECTION
- ★ NO. 4 SUITABLE SUPPORT FEET FOR DISASSEMBLING FROM THE TRACTOR DECK
- ★ SPECIAL INSTALLATION DEVICE ONTO THE STRADDLE TRACTOR


PRICE FOR ASSEMBLING TO THE STRADDLE TRACTOR

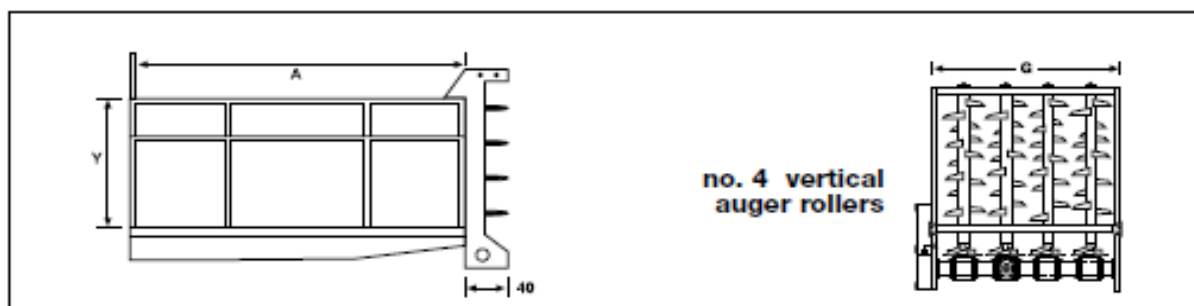
NET PRICE

HYDRAULIC PARTS TO BE INSTALLED ON THE STRADDLE TRACTOR

PRICE: TO BE SETTLED

"PRICE FOR TRANSPORT + DISTANCE IN KM: TO BE SETTLED."

	A	Y	G	M ³	 Empty weight kg
Mod. SP. TS	200	100	225	2,00	1600
Mod. SP. TS	300	100	225	4,50	2300



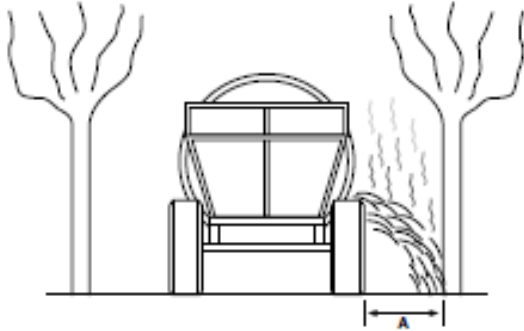
ACCESSORIES ON REQUEST: SEE Page 45-46





WORKING DISTANCES

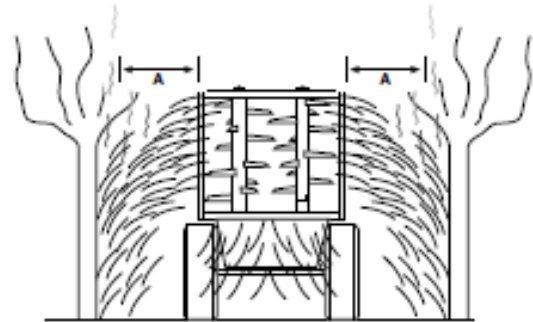
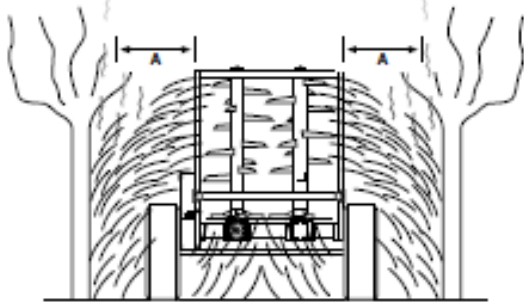
Mod. F.V.S.



A = Min. 20 cm.
Max 150 cm.

The casings can be adjusted

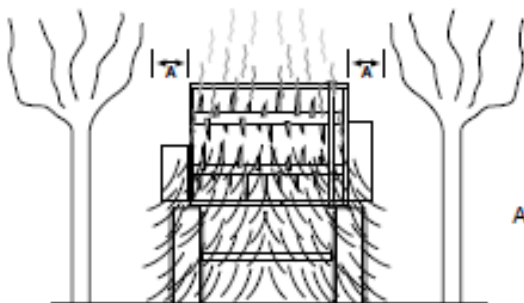
Vertical-roller models



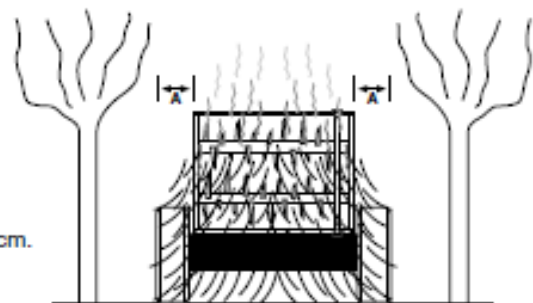
A = Min. 120-150 cm.
Max 120-150 cm.

★ To gather the product towards the central part - see the accessory "pair of rear stabilizers".

Mod. A.F.O. - A.F.O.RE



A = Min. 10 cm.
Max 25-30 cm.



- ★ Working distances are indicative
- ★ 1) Important: the operation of the machine can vary according to the characteristics of the product to be distributed
- ★ 2) The adjusting system of the manure spreader
 - A) edge with chain feed, if supplied, or the chains only
 - B) the turns of the tractor for the roller speed
 - C) feed speed



Manure spreader with compensating suspensions



Particularly recommended for the companies looking for a machine with special characteristics

The advantages:

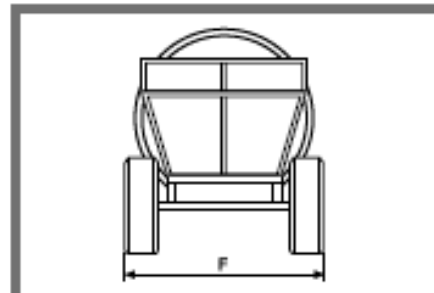
- ★ Total stability during the transport and working phases also with very narrow machines on steep slopes
- ★ Minimum stepping on the ground thanks to the Tandem system and to the 4 supporting wheels

Compensating system Tandem with tyres 200/60.14,5 10 PR.



4 compensating wheels
 tyres 200/60.14.14.5
 Only for models
 F.V.S. - F.V.S. VIGNERON - F.V.N. - A.F.O. 15
 A.F.O. 25 - A.F.O. 25 RE - V.B. 25 - V.B. 25 RS

With mechanical brake



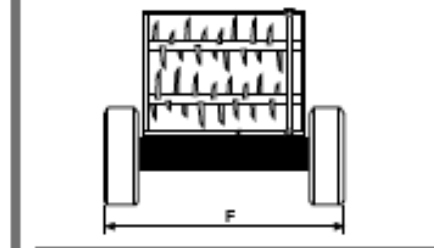
F The width gauge may vary to more than 20cm compared to what is shown in the technical data.

Compensating system Tandem with tyres 10.75/15 12 PR.

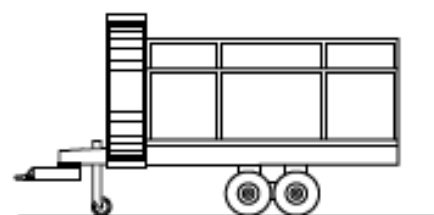
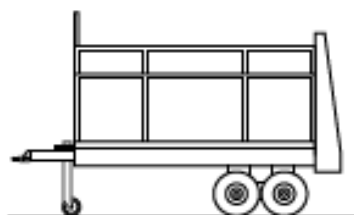
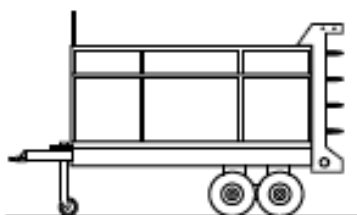


4 compensating wheels
 tyres 10.75/15.3
 Only for models
 A.F.O. 35 - A.F.O. 35 RS - V.B. 40 N°S 75

With mechanical brake



F The width gauge may vary to more than 20cm compared to what is shown in the technical data.



- ★ The gauge width shown in the technical data can be increased by 20 cm



Accessories on request for all the listed manure spreaders



Edge with chain feed, complete with hydraulic engine and reduction gear for binding chain with valve and hydraulic control for regulating the speed of the binding chain and direction inverter with oil and quick coupling operation of the tractor (to be added to the prices of **Mod. A.F.O. - A.F.O.RE - V.B.RS - ecc.**)



Independent system complete with pump and oil tank.
 It activates:
 • Edge with on chain feed
 • Drawbar with hydraulic shift



Drawbar with hydraulic shift and quick coupling operation to facilitate row entry and exit.



Bascule drawbar coupling



Pair of rear fins for vertical rollers.



Bascule drawbar coupling for lifter: not homologated for Italian law



Axle with mechanical brake.



Hydraulic, bayonet rear tailgate with quick coupling operation for liquid, compost products, etc.



Manual braking system with hydraulic lever, approved for 60q

Hydraulic braking system with tractor pedal if supplied with 60q approval



Axle with hydraulic brake with external jacks and an adjustment valve for brake regulation.



Double joint coupling



Openable side boards
 Height 300mm



Pneumatic braking system
 6.000-8.000kg



AGROFER SPECIAL APPLICATIONS



Mod. AFO LP

- Rear closing plate for covering the rollers
- 30° "Hydraulic" opening, oil operation of the tractor and no. 2 quick coupling



Mod. AFO PL

- Rear discs with mechanical transmission P.T.O.
- Rear closing plate for covering the rollers. 30° "Hydraulic" opening, oil operation of the tractor and no. 2 quick coupling

Mechanical transmission P.T.O.

Cod. AS002

Hydraulic tractor oil transmission (Recommended tractor 60 lt.)

Cod. AS003

Hydraulic system transmission with pump and oil tank for discs operation



Mod. AFO TA DX

- Rubber carpet with hydraulic transmission
- Rear closing plate that can be dismantled
- Lengthening of the carpet for adjustment to the row

Hydraulic tractor oil transmission (Recommended tractor 60 lt.)

Cod. AS005

Hydraulic system transmission with pump and oil tank for carpet operation.

Cod. AS006





13 Storage

During periods of inactivity, in order to protect your machine from weather elements store the manure spreader in a sheltered place, and free from aggressive chemicals.

Wash the tank carefully to remove debris that may have elements which are corrosive for the painted or galvanized metal parts.

Grease pins and joints profusely, and cover with a coat of grease all chains for transmission of motion to the mechanisms and the chain sliding guides inside the tank.

The machine must be stored in an environment with suitable temperature (-10 to 40°C).

In case of long periods of inactivity, it is recommended to protect the jack rods with a protective film of oil and cover the entire machine with a tarp to prevent build-up of dust or dirt from the environment that could affect the proper functioning when restarting.

Store with care the quick couplings of the hydraulic circuits, the fixed cardan shaft and the terminal of the electrical connection so as to avoid contact with the ground or with soiled parts of the machine.

In case of disposal of packaging materials, comply with specific regulations in force in the country of use.

14 Installation and Preparation for Use

The operations to connect the manure spreader to the tractor must be carried out on a flat area, large enough to allow the positioning of the spreader and minimum operation for the connection of the tractor.



CAUTION!! ONCE DELIMITED THE OPERATION AREA, ENSURE THAT NO UNAUTHORIZED PERSONNEL NOR ANIMALS WILL INTRUDE DURING THE OPERATIONS.

The preparation of the area where to connect the manure spreader to the tractor will be the user responsibility and must comply with the following safety requirements:

- In accordance with the provisions of the legislation on health and safety in the workplace, the area must ensure safe viability and lighting conditions, and the absence of any potentially interfering activity
- The area should be flat, with a floor guaranteed to resist under the weight of the spreader and of the vehicles provided for the connection operations, in order to prevent dangerous sinking that could lead to the loss of stability of vehicles and spreader.

Before starting the connection procedure, ensure that:

- The tractor intended for the connection of the manure spreader is of adequate power and capacity for hooking and towing a full loaded spreader
- There is availability of gloves and tools to install safety pins
- The manure spreader is completely immovable (parking brake engaged, stop wedges under wheels, etc.) in order to prevent unexpected movements
- The spreader drawbar coupling is at the right distance from the ground, otherwise act on the parking foot or on the support wheel associated with the drawbar
- There are no people or animals in the dangerous area between the spreader and the tractor
- There is no damage to tractor and spreader indicating a malfunction
- You are wearing appropriate personal protective equipment as shown below.

Personal protective equipment provided for these operations:





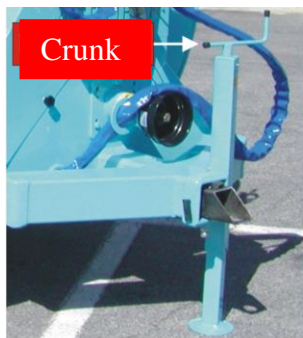
14.1 Attaching to Tractor

After the above actions, to connect the manure spreader to the tractor follow this sequence of operations:

- 1) Bring the rear coupling point of the tractor to the eye of the spreader up to a distance of about 10 cm



- 2) Adjust the height of the drawbar of the manure spreader by acting on the parking foot, on the wheel brake connected to the drawbar, on the top crank (in case of manually operated foot or wheel) or on the hydraulic controls of the tractor (for models with hydraulic controlled foot or wheel brake), in which case the quick couplings of the hydraulic circuits of the spreader should be connected (see specific section "CONNECTING THE HYDRAULIC SYSTEM")



Manually operated foot



Hydraulic operated foot



Manually operated wheel

- 3) Attach the spreader by matching its eye with the towing hook of the tractor, inserting the pin of the towing hook and securing the anti-extension safety plug
- 4) Lift the stand foot or the supporting wheel at maximum height from the ground
- 5) Caution!! The process of hooking and unhooking the spreader from the tractor can be accomplished by a single operator or with the collaboration of a second person, in which case the person driving the tractor will have to carefully follow the directions of the person on the ground, responsible for coupling, in order to prevent risks of injury due to crushing in case of misunderstandings about the operations.

14.2 Connecting the Cardan Shaft

Install a removable mechanical transmission (cardan shaft) to connect the PTO of the tractor to the fitting of the transmission power of the manure spreader.

CAUTION!!! The connection of the cardan shaft between the tractor and the manure spreader must be made with full awareness of the risks to workers installing the cardan shaft and then using the spreader with cardan shaft enabled. Read carefully the safety instructions below.





14.2.1 Safety Warnings for the Cardan Shaft

Personal protective equipment provided for these operations:



Use the Cardan shaft supplied with the manure spreader to ensure it is suitable for power, speed of rotation, working angle, and length.

Verify the presence and the efficiency of the safeguards on the Cardan shaft, on the tractor and on the machine, so that the whole transmission assembly is protected.

Work with restraint and equal joint angles, and disengage the PTO during operations in which the joint angles exceed 35°.

Check that the length of the shaft could compensate for the movements of the machine (steering, etc.)

Mounting: Fasten the shaft to the PTO, respecting the direction, and fasten the chains.

During use: Drive the tractor complying with the limitations imposed by transmission and by the connected machine.

After work: Clean, check that the mechanical parts and the protections are efficient and position the cardan shaft to the proper support on the machine.

Periodically: Apply grease and perform routine maintenance in accordance with the instructions given by the Cardan shaft manufacturer.



WARNINGS

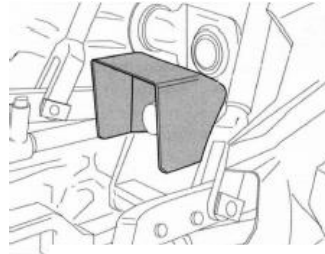
- Do not use Cardan shafts with different length or strength than the one supplied with the spreader
- Before connecting the Cardan shaft to the PTO, switch off the tractor engine and remove the ignition key
- Do not exceed the scheduled rotational speed: 540 rpm
- Use a protected Cardan shaft and check that the uncovered coupling part is protected by a cap surrounding the splined shaft of tractor and machine PTO, with an overlap of at least 5 cm
- Before commissioning, check that the shaft is properly attached to the tractor PTO shaft and splined manure spreader shaft
- Immediately replace the protective devices in the event of breakage or wear
- Grease the motion transmission organs according to the manufacturer's schedule and, in any case, after each idle period, also checking the state of efficiency of the safety devices
- Avoid wearing loose clothing (belts, scarves, aprons, ...) that could get caught
- Switch off the PTO whenever the operation gives the motion transmission system an excessive angle, or use constant-velocity cardan shafts
- Do not perform any operations or repairs other than routine maintenance
- Deal only with authorized and specialized service.



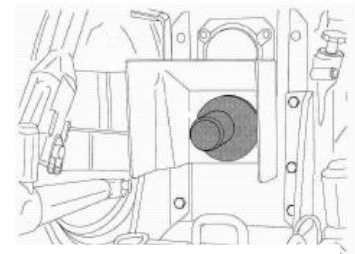
14.2.2 Risk Analysis and Safety Procedures

The use of the Cardan shaft can result in severe injuries, in the event of failures of mechanical guards (missing, incomplete or damaged) or incorrect procedures (wrongdoing). Basically, accidents consist in catching and dragging of body parts in rotating organs; important measures are underlined below.

First, in the Cardan motion transmission, should be ensured proper installation of tractor safety devices, which are to be complete in all their parts, and also be included a protective shield plate and a shield terminal at the level of the transmission shaft.



Steel protection shield

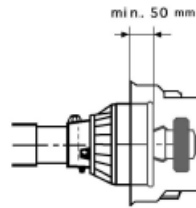


Terminal cover p.t.o.

Secondly, operators should wear tight working clothing, free of loose parts such as laces, ties, scarves, etc. Another useful measure is wrapping hair, as they are an easy grip for rotating parts.

It is also important to ensure that in the surrounding area of the operating machine with an active motion transmission there are no third persons and, in particular, children. The assembly tractor-spreader should never be left unattended on the premises, near housing or public roads, with the engine running, with the ignition key inserted in the dashboard, or even with a rotating Cardan shaft.

It is paramount that similar and adequate protections (casings, cuffs, counter cuffs) should be present both on the machine side, and on the tractor side; in particular, these protections must overlap with that of the Cardan shaft for at least 50 mm when the Cardan is aligned.



compliant cuffs and counter cuffs

MAINTENANCE OF CARDAN SHAFT

The user must ensure the continuous functionality of the Cardan shaft; maintenance and repair should be carried out in accordance with the manufacturer's instructions in the instruction manual.

First of all, these operations should be carried out wearing the appropriate PPE: gloves, overalls and safety shoes.

A proper maintenance procedure involves, firstly, to stop the engine and remove the keys from the ignition of the tractor, before approaching the manure spreader.

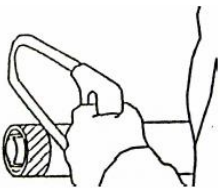
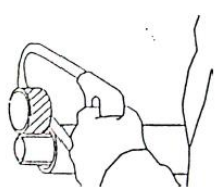
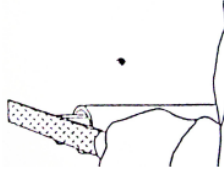
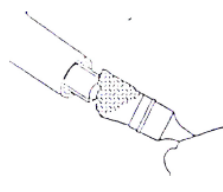
The various components of the transmission must be lubricated following procedures and scheduling in the manual, or after long periods of inactivity.

It is important to grease the telescopic elements separating the two parts of the Cardan shaft .

Transport the Cardan in a horizontal position to prevent accidents or guards damage due to potential slippage.

The replacement of any damaged or missing part must be made with original parts, which must be installed properly, without modification or tampering with of any component.

Also, verify that the length of the shaft is adequate; if necessary, proceed as follows:

			
Shorten the plastic protections	Shorten the inner tubes with same size	Carefully remove any burrs	Grease the inner tube



14.3 Connecting Hydraulic Circuits

The manure spreader has hydraulic circuits driving movement to the chain conveying the material towards the spreading group or hydraulic circuits intended to drive installed options. If your manure spreader has a hydraulic steering with lateral connections, the hydraulic circuits will be of the type shown in the image on the left.



Couplings with **GREEN** cover = DRIVING OF DRAWBAR WITH LATERAL MOVEMENT

Couplings with **BLUE** cover = DRIVING OF THE CONVEYING CHAIN

Caution! In some models the hydraulic connections can have **RED** plastic cover, in which case the connection will have to be identified as a CHAIN driving system.

14.4 Connecting Electric Circuits

The spreader is equipped with light-signalling systems intended for transit on the road network. To power these devices, connect the power plug shown in the image on the left, in the socket of the tractor towing the spreader.



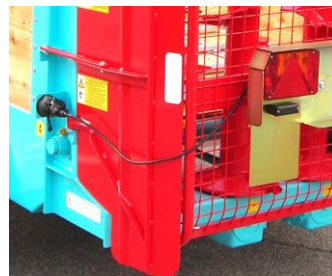
Caution! Check that the power supply voltage of the available outlet is 12 volts, and that the connections is performed correctly and firmly so as to prevent unexpected circuits disconnection during the movement.

During the preparation of the manure spreader for transit on road networks, the protections provided under the heading "TRANSIT ON ROAD NETWORK" should be installed, connecting the relative power sockets.

During inactivity of the manure spreader, put the electric plug back in its housing "custody" as shown in the figure. Ensure good cleaning of the housing before placing the plug.



Horizontal rollers spreader



Vertical rollers spreader



Rotating spreader

Examples of electric connections of manure spreaders



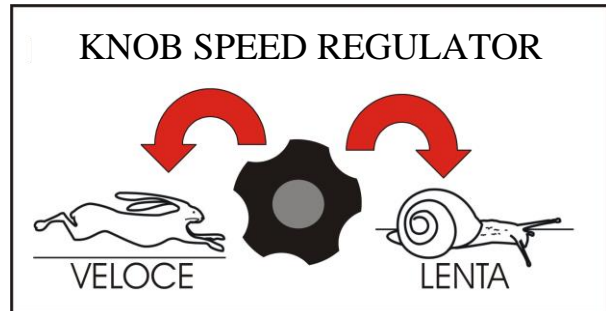
14.5 Control Devices and Their Location

Typical control devices of the manure spreader are on the various models produced, and are divided into two different types:

CONTROLS FOR ADVANCING OF MATERIAL CONVEYING CHAIN



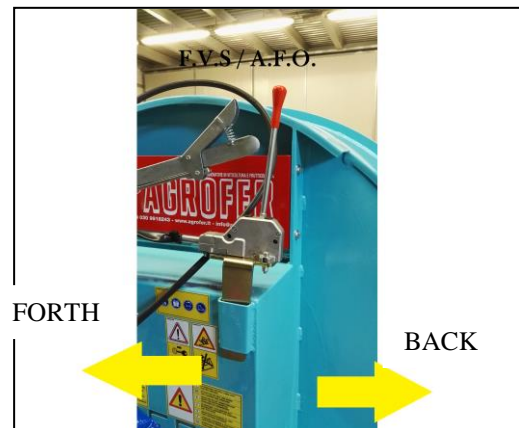
Chain Speed Regulator



The adjustment of the chain advancing or retreating speed can be performed during the spreading activities of the trailer.



The direction of travel of the chain is determined by operating the control lever shown in figure and placed in the tractor's cabin:

Moving the lever forward (marching gear) will advance the chain in the forward direction;
 Moving the lever back (rearing gear) will reverse the moving direction of the chain.



CONTROLS FOR ADJUSTING MATERIAL SPREADING QUANTITY

The quantity of material to be spread is determined by several factors:

Speed of rotation of the spreading organs (horizontal or vertical rollers or rotary group)	Is determined by the number of revolutions RPM set in the Cardan shaft connected to the tractor
Forward speed of the tractor	Forward speed of the tractor determines the greater or lesser quantity of material to be spread over the work area
Material discharge mouth opening during spreading. Only for rotary model	 <p>The output of material from the rotary type manure spreader is also determined by the adjustment of the opening</p> 



15 Transiting on Road Networks and Moving Spreader Around Workplace

IMPORTANT!! Before driving on the roads, the manure spreaders must be ready for circulation. Depending on your model, observe the following spreader preparation guidelines:

VERTICAL OR HORIZONTAL ROLLERS SPREADER

For transit on road networks, the manure spreader must be equipped with spreading organs protective casings.

Install the casings (cages) to the appropriate couplings, making sure to insert the anti-extension safety plugs in every coupling.

Always check the integrity of the light-signalling devices present on the casing, also checking the integrity of the tractor power connection electric cables.

Carry out operation test of light-signalling systems, once connected the power plug.

VERY IMPORTANT!! Do not proceed with transit on public roads in case of spreader not complying with the **APPROVAL** conditions provided.

Ensure that there is no dispelling of loaded material.

Ensure that accidental activation of the manure spreader control functions while transiting on the roads, is no possible.

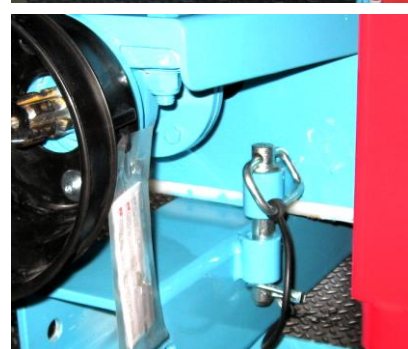
Disconnect the hydraulic and Cardan power so as to prevent dangerous accidental operations while transiting on the roads.

In case of abnormal noise of the spreader while running, check that all fasteners are properly installed and that the safety plugs are in place and properly fastened.

DRAWBAR LATERAL MOVEMENT LOCKING

If your manure spreader is fitted with the control of the lateral movement of the drawbar, ensure to lock the drawbar position by inserting the locking mechanical pin shown in the figure.

CAUTION!! Transit on the road networks is not allowed with the drawbar not mechanically fastened using the specific pin.

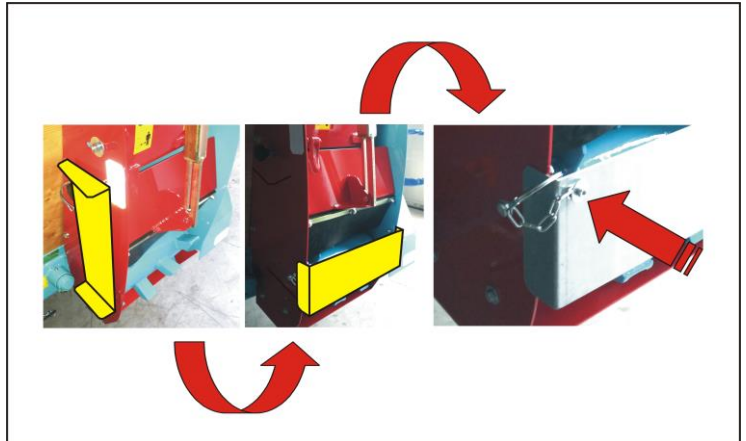




ROTARY MANURE SPREADER

For transit on road networks, the manure spreader must be equipped with spreading organs protective casings.

Install the protective casing at the mouth of the lateral discharge (shown in yellow in the photo on the left) to the appropriate couplings, making sure to install the anti-extension safety plugs in every coupling.



DRAWBAR LATERAL MOVEMENT LOCKING

If your manure spreader is fitted with the control of the lateral movement of the drawbar, ensure to lock the drawbar position by inserting the locking mechanical pin shown in the figure.

CAUTION !! Transit on the road networks is not allowed with the drawbar not mechanically fastened using the specific pin.

Carry out operation test of light-signalling systems, once connected the power plug.



VERY IMPORTANT !! Do not proceed with transit on public roads in case of spreader not complying with the **APPROVAL** conditions provided.

Ensure that there is no dispelling of loaded material.

Ensure that accidental activation of the manure spreader control functions while transiting on the roads is not possible.

Disconnect the hydraulic and Cardan power so as to prevent dangerous accidental operations during transit on the roads.

Check the suitability of the tractor, the manure spreader owned is suitable for a tractor with the maximum towing weight appropriate to its mass.





16 Loading of Material into Manure Spreader Tank

(See also paragraph 11.5 Risks associated with the operations to be performed)

Personal protective equipment for these operations:



The loading of the material into the tank of the manure spreader is an operation not without risk for the operator.
In order to work safely, respect the instructions below:

1. Ensure that the area intended for loading the material into the tank of the manure spreader, is free from obstacles that could impede the safe movement of vehicles and pedestrians
2. Engage the manure spreader parking brake to prevent dangerous unexpected movement during loading, or in case of accidental impact with the mechanical arm used for loading
3. Check that there are no animals or people in the areas of operation of the manure spreader
4. Load the material into the spreader tank respecting the tank capacity to avoid wasting excess material during transit and spreading
5. Ensure that the manure spreader warning labels and light-signalling devices are not soiled and rendered illegible
6. Avoid excessive pressure of the load against the spreading equipment: starting must be done without excessive constraints
7. Ensure the proper closing of the banks that are open, at the end of loading
8. At the end of loading, please remove the material accidentally ended on the spreader structures out of the tank, so that it is not lost during transit on the road networks.



17 Spreading of Material

Personal protective equipment for these operations:



Once arrived on the spreading place, prepare the spreader following the instructions for connecting the Cardan shaft and the hydraulic circuits, and place adequately the control devices inside the tractor cabin.
For a safe work, follow scrupulously the instructions below:

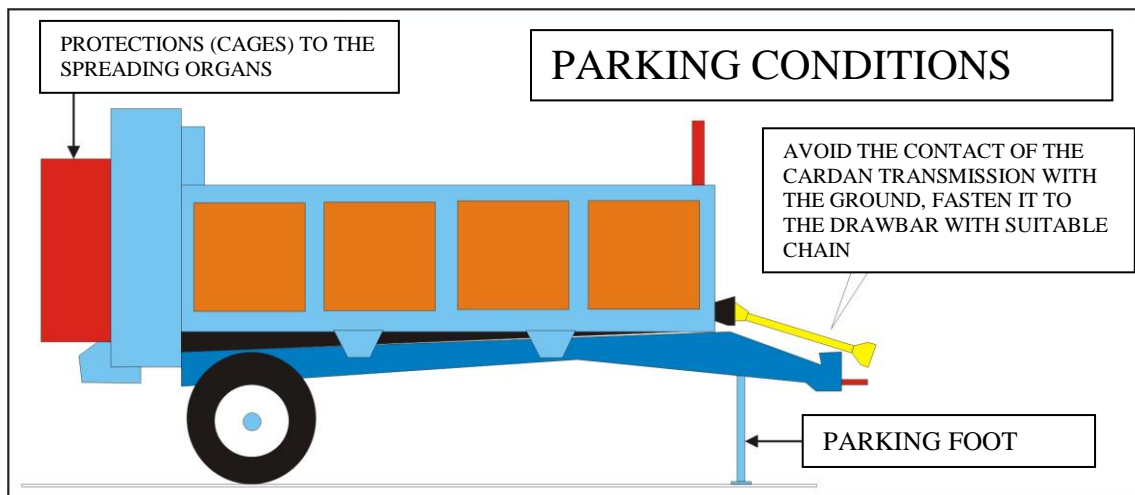
1. Ensure no people, animals and/or objects are within spreader range of action
2. Ensure the proper levelling of the ground of operation
3. Check the available space to allow for safe operations with particular attention to power lines
4. Remove or turn (depending on the owned model) the protection grid of the spreading group
5. Adjust the speed of the belt conveyor in order to increase or reduce the amount of product to be spread (See section 14.5.)
6. For front wheel models, adjust the opening casing on the outlet of the product to define the orientation output
7. Activate the motion of the Cardan shaft using the controls supplied with the tractor
8. Drive the tractor slowly forward, avoiding sharp turns or braking which could lead to instability of the configuration tractor – spreader
9. Follow the spreading visually to prevent unexpected accidental events (smearing of roads, bumping



into plants near the field edge, block of the spreading rollers due to branches or stones inside the product, etc.)

18 Parking of Manure Spreader

Personal protective equipment for these operations:



1. Place the spreader as much as possible on the flat, with the parking brake ALWAYS engaged
2. The banks must ALWAYS be securely fastened
3. The parking foot supplied with the spreader must ALWAYS be installed
4. The cardan shaft must be positioned so as to avoid contact with the ground or with elements which could compromise its integrity
5. The parking foot should be placed on the ground
6. The protections of the spreader group made in metal casings must necessarily be placed in the appropriate housings: CONSIDER THIS AS AN OBLIGATORY PROTECTIVE LIMIT FOR SAFETY WITH MACHINE ORGANS BOTH IN MOTION AND STILL.
7. Always make sure that children or unauthorized people do not come in contact with the parked machine, and always check that there is no tampering with the security systems, whatsoever!

19 Routine Maintenance

IMPORTANT:

ROUTINE MAINTENANCE includes all the operations that authorized machine operators can perform without requiring the intervention of skilled technicians. It is, therefore, absolutely prohibited for unauthorized persons to perform operations that are not expressly listed in this routine maintenance paragraph.



DO NOT PERFORM MAINTENANCE WITH ORGANS MOVING – TURN OFF AND UNPLUG THE MACHINE FROM HYDRAULIC AND CARDAN POWER

Personal protective equipment for these operations:



CAUTION!! Do not improvise yourselves maintenance technicians if you're not, you must know very well what you need to do before you start any maintenance, and consult Section 3.5 - Duties of maintenance, regarding routine maintenance and extraordinary maintenance.



SAFETY MEASURES FOR MAINTENANCE OPERATIONS

During maintenance operations:

- Keep the work area free from clutter, clean and dry to allow complete and safe maintenance operator mobility
- It is absolutely forbidden to use open flames for any operation
- Do not use gasoline or solvents, or other flammable liquids
- If elements of the manure spreader must be lifted make sure you have suitable lifting and supporting equipment with adequate capacity, and perform the clench in a balanced way
- Do not walk or stand under suspended loads
- Wear appropriate personal protective equipment as shown in the various steps of maintenance
- Notify the machine maintenance status so that no other operator can inadvertently operate or perform actions on the machine under maintenance
- Use equipment appropriate to the operations to be performed
- If you have doubts about the action to take for little knowledge of safety procedures, ask your supervisor or manager so as not to attempt behaviours that may cause dangers

SYMBOLS USED IN THE PARAGRAPH



Identifies a visual check on the state of wear or on the proper functioning of a component



Identifies a cleanup of a component



Identifies a mechanical intervention (general adjustments, repairs, replacements) to be performed on the component



Identifies a lubrication intervention with grease distributed on the surface



Identifies a mechanical intervention (tensioning) to be performed on the component



Identifies a grease lubrication intervention



Identifies a synthetic oil lubrication intervention



Identifies a paint recovery intervention

The routine maintenance operations permitted for the staff in charge of operating the machine, are as follows:

Intended subject: User of the machine

The subject will be responsible for:

-
- 19.1 Cleaning and washing the machine
 - 19.2 Checking and adjusting the tension of the motion transmission chains
 - 19.3 Lubricating and replenishing the lubricant level



- 19.4 Greasing sliding guides, pins, chains, etc.
- 19.5 Checking and restoring the pressure of wheels

19.1 Cleaning



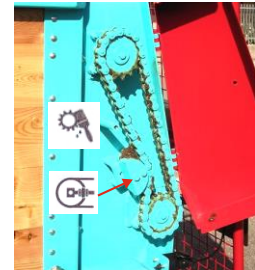
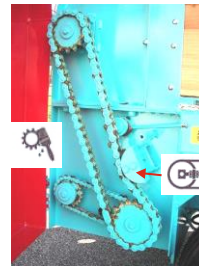
- The cleaning of the manure spreader can be made using a jet of water or pressure equipment type pressure washers
- Wear appropriate personal protective equipment to prevent injuries from contact with sprays or cleaning fluids (gloves, masks, boots, aprons, goggles, etc.)
- The machine must be cleaned and washed with common cleaning systems, such as detergents, sponges, cloths, etc.
- Do not use compressed air to clean mechanical parts very heavily soiled with grease, oil, or debris, for it will only stir the particles through the working area!
- Be especially careful not to hit the machine electrical equipment with the jet of water, such areas should be cleaned with a dry cloth, and normal cleaning brushes, brooms, etc.

Personal protective equipment for these operations:



19.2 Checking and Adjusting Proper Tension of Transmission Chains

The chains for transmission to the rear spreading rollers should be maintained under proper tension. Check for correct tension of chain, if necessary, by moving and properly lubricating the tensioner in Teflon.



19.3 Lubrication and Replenishment of Lubricant Oil Level



Check periodically and replenish the oil level in the gearbox (if available on your model) as needed, using only the recommended type of oil.

Check the oil of the various gears and gearboxes through the gauges, and if necessary top up with oil type **TAMOIL EP 150**.



OIL CAP
OIL LEVEL



OIL CAP

Personal protective equipment for these operations:





19.4 Greasing of Guides, Pins, Chains, etc.

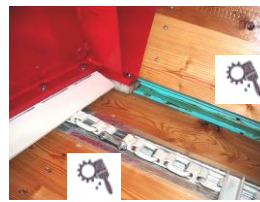


The parts of the spreader must be oiled and greased with grease type 00 as follows:

- FOR ALL MODELS, monitor and ensure greasing of wheel hub bearings.
- FOR THE TWO AXLES MODELS: Grease 4 spring pins and the thrust bearing group.

Lubricate with "ecological, suitable for spreading in the environment" grease, with the help of a brush, the following elements:

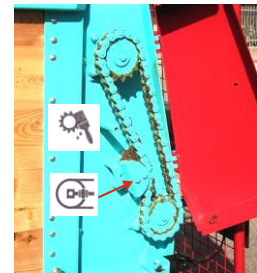
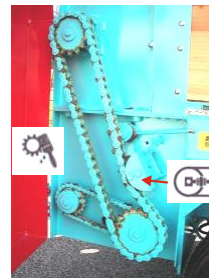
- Sliding guides of the conveying belt chains and guides of the moving banks inside the tank



- **Rear rollers manure spreader:**

Lubricate with type 0 grease, with the help of a brush, the following elements:

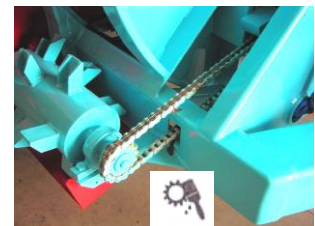
- Transmission chain to the spreading rear rollers. Check for correct tension of chain, if necessary, by moving and properly lubricating the tensioner in Teflon.



- **Manure spreader with rotating spreading system:**

Lubricate with type 0 grease, with the help of a brush, the following elements:

- Front wheel transmission group



The symbol shown to the left is applied with an adhesive sticker on the spreader near the points where there is a **GREASER**.

Use a grease gun to push grease into the nipples and act as indicated below:

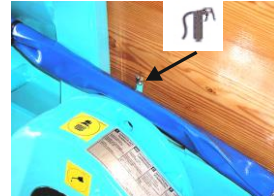
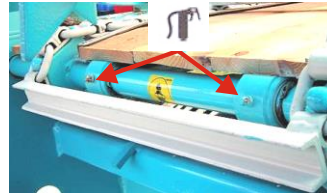
- Insert grease into the nipples until it gets out of the sides of the joints or bushes that are been greased.
- Clean the excess grease with a cloth to avoid dispersion in the environment while using the manure spreader.





Grease through the nipples all the elements listed below:

- Sprockets pins and conveying belt chain.



- Eye of the drawbar.



- Parking foot at the drawbar.



- Lateral movement drawbar (optional).



For spreaders fitted with tandem system (dual axle optional) grease as shown in Figure.



FREQUENCY TABLE OF GREASING PERFORMANCES

Greasing part	Daily	Monthly	Periodically
Chain sliding guides	Ecological		
Moving bank sliding guides	Ecological		
Spreading rear rollers transmission chains	Type 0		
Spreading front wheel transmission chains	Type 0		
Chain conveying sprockets pins		Type 0	
Lateral orienting drawbar joint		Type 0	
Towing drawbar eye		Type 0	
Drawbar parking foot		Type 0	
For spreaders with tandem type axle		Type 0	
Wheel hub bearings			Type 00
For 2 axles: Leaf spring plugs			Type 00
For 2 axles: Thrust bearing group			Type 00

The word **Ecological** indicates the use of **ECOLOGICAL** type grease that can be dispersed in the environment coming into contact with the spreading product.



19.5 Maintenance of Wheels

IMPORTANT

- After about 20 hours of operation of the vehicle, tighten the axle hub crowned bolts and wheel bolts, repeating until full settlement.
- Check that tread wear is evenly distributed, otherwise consult competent technicians.
- Replace the tyres when they show excessive wear or damage.
- The tyre pressure should be checked periodically, following the instructions in the table below.



Tyres type and working pressure

MANURE SPREADER WITH BALANCED VERTICAL ROLLERS		
MODEL	TYRES SIZE	WORKING PRESSURE (BAR)
V. B. - 25	10/75/15	3.5 - 5
V. B. - 40	10/75/15	3.5 - 5
N.S. - 55	12/5 - 20	6 - 6.5
N.S. - 75	12/5 - 20	6 - 6.5
S.C. - 95	12/5 - 20	6 - 6.5
S.C.I. - 120	12/5 - 20	6 - 6.5
WITH BALANCED HORIZONTAL ROLLERS		
MODEL	TYRES SIZE	WORKING PRESSURE (BAR)
A. F. O.	10/75/15	3.5 - 5
A. F. O. RE	10/75/15	3.5 - 5
ROTATING MANURE SPREADER		
MODEL	TYRES SIZE	WORKING PRESSURE (BAR)
F. V. S.	10/75/15	3.5 - 5

19.6 Periodic Checks and Inspections

Daily:

- Check the cleanliness of the machine and prevent build-up of material on the frame and spreading organs
- Check for any leakage of hydraulic oil
- Check the proper tightening of the mounting hardware
- Check the correct installation of safety plugs
- Check that there are no damages to the flexible hydraulic pipes
- Check that there are no damages to the tractor connection electric cables
- Check the integrity of the controls

Weekly:



- Thorough machine cleaning and washing
- Supports and joints greasing through the greasing nipples
- Check tightness of mounting bolts of entire machine



Checking of oil level of the various gears and gearboxes

Check the oil level using the appropriate level indicators
If needed, refill the oil level by unscrewing the cap shown in the figure

Cleaning of warning labels



Monthly:

Check the tightness of the fittings securing the hydraulic system
Check the integrity of flexible hydraulic pipes which shall show no cracking, not even on the surface
Check the frame condition which shall have no signs of corrosion



N.B. RECORD THE SCHEDULED MAINTENANCE ON THE RELEVANT PAGE OF THIS MANUAL
FAILURE TO MAINTAIN AND FILL UP A SIGNED RECORD WILL VOID THE MANURE SPREADER WARRANTY
USE ONLY AGROFER GENUINE PARTS

A periodic, regular maintenance and proper use, are essential preconditions to ensure the manure spreader long-term duration. For this purpose, it is necessary to respect the schedule and the instructions under the heading "Routine Maintenance and Periodic Inspections".

20 Extraordinary Maintenance

IMPORTANT:

EXTRAORDINARY MAINTENANCE includes all the operations that users of the machine cannot perform because pertaining to specialized technicians.
It is therefore absolutely forbidden to unauthorized persons to perform operations listed in the extraordinary maintenance paragraph.

The extraordinary maintenance operations only permitted to specialized and expressly authorized personnel are as follows:

Intended subject: Specialized technician

The subject will be responsible for:

- Verifying and checking the good condition of preservation and operation of the mechanical parts and hydraulic and electric devices
- Restoring the proper functioning of the machine following a malfunction, a break or an incident
- Contacting the manufacturer for the necessary permissions for the replacement of major components (transmission components, spreading elements, etc.)
- Performing the cleaning of internal mechanical parts (aspiration, washing, degreasing, etc.)
- Performing disassembly, repair and reassembly of worn parts
- Performing removal and replacement of damaged parts with new parts
- Checking the operation of mechanical, electric and hydraulic components



21 Reports and List of Warnings

For a proper understanding of the safety signs on the machine and in this manual, the following is the meaning and explanation of the warnings for further knowledge of the operators.

<p>Ban - Cleaning, oiling or greasing the moving organs and elements of the machine is forbidden Forbidden to carry out repairs or adjustments on moving organs and elements of the machine Ban - Removing the safeguards of the moving parts of the machine</p>	
<p>Prescription - Obligation to wear appropriate personal protective equipment</p>	
<p>1 – Danger: Read carefully the instructions for use and maintenance before operating the machine or performing maintenance 2 – Risk of tipping or tilting on slopes 3 – Danger: Do not stand in the operation area of machine, keep a safe distance 4 – Caution!! Moving machine, keep a safe distance</p>	<p style="text-align: center;">1 2 3 4</p>
<p>The arrows indicate the points in which the chains that transmit movement to the conveying and spreading organs shall be tightened properly to prevent malfunction of the manure spreader</p>	
<p>Indicates points that require greasing or lubrication</p>	<p>Indicates the attaching points of lifting accessories</p>

Safety Warnings:

<p>I ATTENZIONE! Parti in movimento, allontanare tutte le persone dalla zona pericolosa. GB WARNING! Moving parts, Keep away from this dangerous area. D VORSICHT! Bewegliche Teile, Personen aus dem Gefahrenbereich verweisen. F ATTENTION! Pièces en mouvement, éloigner toute personne de la zone dangereuse. E ATENCIÓN! Partes en movimiento, alejarse a todas las personas de la zona peligrosa. P ATENÇÃO! Partes em movimento, afastar todas as pessoas da zona perigosa. RU ВНИМАНИЕ! Запрещается находиться в опасной зоне возле движущихся частей оборудования.</p>	<p>I VIETATO SOSTARE NEL RAGGIO D'AZIONE DELLA MACCHINA. GB DO NOT STAND WITHIN THE WORKING RADIUS OF THE MACHINE. D ES IST VERBOTEN SICH IM WIRKUNGSBEREICH DER MASCHINE AUFZUHALTEN. F IL EST DÉTENDU DE RESTER DANS LA RAYON D'ACTION DE LA MACHINE. E PROHIBIDO PARARSE EN EL RADIO DE ACCIÓN DE LA MÁQUINA. P É PROIBIDO PERMANECER NO RAIO DE ACÇÃO DA MÁQUINA. RU запрещается находиться в радиусе действия машины.</p>	<p>I Prima di ogni manovra accertarsi dell'assenza di persone o cose nel raggio d'azione del rimorchio GB Before starting with any kind of operation make sure that there are no persons or objects within the trailer's range D Sich vor jedem arbeitszyklus vergewissern, dass sich keine personen oder gegenstände im arbeitsbereich des anhängers befinden F Avant de chaque manoeuvre assurez-vous qu'il n'y a pas de personnes ou d'objets dans le rayon d'action du remorque E Antes de cada maniobra asegurarse de que no haya personas o cosas en el radio de acción del remolque. P Antes de cada manobra verificar se não existem pessoas ou coisas no raio de acção do reboque. RU Перед началом любых маневров убедиться, что в радиусе действия прицепа нет людей или предметов</p>
<p>I ATTENZIONE ! VIETATO L'USO CON CARTER RIMOSSI GB ATTENTION ! DO NOT USE WHEN THE CASINGS ARE REMOVED D ACHTUNG ! ES IST VERBOTEN DAS GERÄT BEI EINTGERENTEN GEHÄUSEN ZU VERWENDEN F ATTENTION ! L'UTILISATION EST INTERDITE LORSQUE LES CARTERS ONT ÉTÉ ÔTÉS E ¡ATENCIÓN ! PROHIBIDO EL USO CON CARTERS QUITADOS P ATENÇÃO ! PROIBIDA A UTILIZAÇÃO COM CARTER REMOVIDOS RU ВНИМАНИЕ! ЭКСПЛУАТАЦИЯ СО СНЯТЫМИ ЗАЩИТАМИ ЗАПРЕЩЕНА</p>	<p>540 R. P. M.</p>	<p>AGROFER</p>



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22 Training of Manure Spreader Operative Staff

Before using the wagon manure spreader, it is recommended to train with experienced staff in order to ensure safe use:

- Before starting the machine, examine carefully the warnings and safety signals shown in the manual or directly on the machine. ALWAYS keep in good condition the safety accessories, replacing them if damaged
- Learn how to use the controls safely, always check that the machine is in proper condition for use. Conversely, before any other type of operation, perform the appropriate interventions that will restore the optimal operating conditions. It is your responsibility to understand and correctly perform all the instructions relating to the machine, as well as apply all the rules and regulations relevant to the working steps. Losing control of the manure spreader, for technical or human factors, can cause serious accidents
- Ensure there's enough space to perform safe operations
- Make sure the materials to be spread are solely manure or compost
- Make sure before starting any operation to be in a good responsive condition
- Make sure to properly attach the machine to the towing tractor
- Wear personal protective equipment before any maintenance or use
- Never wear loose clothes (scarves, belts etc.)
- NEVER carry or pick up other operators on the machine during any operation, to prevent falls which can cause serious injury.
- Operate the machine in a quiet and steady manner
- Make sure you have fully understood and assessed the functions of speed, braking, stability, and timing, before performing any operation
- Provide ongoing internal training of operators involved in the use of the machine
- Information relating to the safety instructions in this manual does not replace safety codes, insurance standards, laws and regulations, state and local business in force at the time of using the machine
- Ensure proper cleaning and greasing of machine according to the routine maintenance schedule
- Always make sure the control devices are in a good condition to avoid unnecessary downtime or dangerous uncontrolled operations.
- Avoid contact with skin and eyes, and ingestion of oil and lubricant for the machine
- Do not perform maintenance operations in areas not suitable or not equipped
- Learn maintenance procedures before starting to work, do so in a proper and restricted area, in order to keep the working area clean and dry. Avoid performing any lubrication, repair or adjustment with the machine in motion
- In order to monitor the efficiency of the overall machine, the prevention and protection service department must provide with scheduled maintenance
- Keep hands/feet at a safe distance from moving parts
- Do not smoke while performing maintenance on the machine
- To maintain a high level of safety for the operator, it is necessary to ban smoking or sources of ignition (open flames, sparks)
- Do not use diesel fuel, fuel oil or other fuel products to clean the machine. Use water and biodegradable cleaner for cleaning, taking care to collect all liquids produced and processed in accordance with the regulations in force
- Make sure that no safeguards are damaged, otherwise restore them with the utmost urgency
- Keep all parts in a good condition and properly installed, repairing them immediately, and replacing with diligence worn or broken parts
- Remove any build-up of grease, oil or debris.
- Always adopt individual protective measures (gloves, shoes, etc.) before doing any work on the plumbing
- If pressured fluid escapes, it can penetrate the skin and cause serious injury
- To prevent this risk, decrease the pressure adequately before disconnecting hydraulic lines or other components
- Tighten all connections before applying pressure. In case of accident, seek a doctor immediately
- Check the tightening of the screws
- In case of failure, stop the machine immediately, notify your manager or bring the machine to a qualified technician for repair
- Caution! Do not perform any manual operation with a moving machine
- Do not use heat sources near pressurized fluid, because they can cause accidental rupture with spraying of flammable liquid and burn operators.
- Dispose of waste properly, using airtight containers for the disposal of oils.

Ensure that operators read this instruction manual for use and maintenance, and the instruction booklet attached regarding the installed equipment, and make sure they understand all instructions before allowing operation or maintenance of machine.





23 Troubleshooting

Problem	Possible cause	Solution
The light-signalling devices do not work.	- Improper connection to the tractor power source	Check the connection to the tractor power source
	- Damages to the electric cables connecting to the tractor power source	Check the integrity of electric cables
	Lack of power supply	Check the charge of the tractor battery
The control devices of the spreader do not control the movements of the chain or of the steering drawbar if installed.	Possible faulty or damaged hydraulic connection	Check the integrity of the hydraulic lines of the machine Check for oil leaks from the system
The hydraulic movements respond slowly or inefficiently to controls	Oil level too low in the tank hydraulic system	Check the oil level in the tank and replenish it if necessary to the correct level
The spreader works, but it is not possible to control the steering of the drawbar (if any)	Possible engagement of mechanical stop intended for the transfer of the spreader on road networks	Check the presence of the mechanical stop on the frame of the drawbar, and, if necessary, remove and place it back in its housing
Sudden block of the mechanical spreading organs	Presence of a foreign body in the material to be spread	Check that there are no rigid elements (branches, metal objects, etc.) blocking the spreader operation



**CAUTION!!
IMPORTANT!!**

The execution of the operations described in the Troubleshooting table should be carried out only by qualified and authorized operators.

Do not improvise yourselves maintenance technicians, if it is not clear what operation to perform and whether such operation is your competence. Always notify your manager in order to receive correct instructions.

It might be helpful also to refer to this manual, in the Section "Professional Requirements Of Users". Before performing any inspection or removal of the cause of malfunction, equip yourself with specific personal protective equipment which may prove necessary.

24 Discard and Disposal



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A complete overhaul of the machine is possible and recommended, performed by the exclusive manufacturer after (for example) 10 years of use. If conditions do not allow for the regeneration of the machine or for continuing use (evaluation performed by the manufacturer) you will have to replace it.

24.1 Decommissioning and Discard

The end of the expected life of the machine is divided into dismantling and transport of the machine or dismantling and transportation of parts, scrapping and disposal.

- The dismantling and destruction possibly pertain (subject to agreement) to the manufacturer instead of the user. The latter must inform and be informed in advance of any changes made or substances present in addition to those provided in the original supply (oil, grease, etc.).

24.2 Waste Handling and Decommissioning

The machine is composed of iron, steel and general metal parts, of plastic elements (pipes, seals, etc.), of mixed components (hydraulic control unit) and hydraulic oil and grease.

Separate and divide the various parts before disposal.

CAUTION

Regarding "treatment and disposal", ensure that disassembly and recovery of finished components is handled by authorized companies. Disposal must be made by delivering the entire machine or its parts to facilities owned by specific specialized companies, and authorized by the laws in force. You can recover the oil, and clean the grease from the machine with rags, placing them both in specific sealed containers before transporting the machine and/or its parts to waste handling facilities, removing any packaging.

25 Spare Parts and Components

To order machine spare parts, locate the following information available in the "EC" serial on the frame before proceeding with the request:

- Type of machine - Year of Manufacture - Serial number.

For accessories and spare parts, you can visit directly our website: www.agrofer.it

CHECK REGISTER



MANURE SPREADERS



Model
Factory Number
Year of Manufacture.....

TABLE OF CONTAINT

1. INSTRUCTIONS FOR COMPILING
2. TRANSFERS OF OWNERSHIP
3. REPLACEMENT OF MECHANISMS
4. REPLACEMENT OF STRUCTURAL ELEMENTS
5. REPLACEMENT OF SAFETY DEVICES AND RELATED COMPONENTS
6. SIGNIFICANT FAILURES AND RELATED REPAIRS

1. INSTRUCTIONS FOR COMPILING

These instructions are provided in accordance with the known dispositions on the date of machine first marketing.

New regulations may intervene to change the user's obligations.

The register is intended to record, according to planning, the following events affecting the life of the machine:

- Transfer of ownership
- Replacement of engines, mechanisms, structural elements, safety devices and related components
- Significant failures and related repairs
- Maintenance and periodic inspections



Date.....replaced element.....
Manufacturer.....Supplier.....
Reason for replacement.....
.....
.....
Representative of spare part company User
.....

Date.....replaced element.....
Manufacturer.....Supplier.....
Reason for replacement.....
.....
.....
Representative of spare part company User
.....

Date.....replaced element.....
Manufacturer.....Supplier.....
Reason for replacement.....
.....
.....
Representative of spare part company User
.....

4. REPLACEMENT OF STRUCTURAL ELEMENTS

Date.....replaced element.....
Manufacturer.....Supplier.....
Reason for replacement.....
.....
.....
Representative of spare part company User



.....

Date.....replaced element.....

Manufacturer.....Supplier.....

Reason for replacement.....

.....

.....

Representative of spare part company User

.....

Date.....replaced element.....

Manufacturer.....Supplier.....

Reason for replacement.....

.....

.....

Representative of spare part company User

.....

Date.....replaced element.....

Manufacturer.....Supplier.....

Reason for replacement.....

.....

.....

Representative of spare part company User

.....

5. REPLACEMENT OF SAFETY DEVICES AND RELATED COMPONENTS

Date.....replaced element.....

Manufacturer.....Supplier.....

Reason for replacement.....

.....

.....

Representative of spare part company User

.....



Date.....replaced element.....

Manufacturer.....Supplier.....

Reason for replacement.....

.....

Representative of spare part company
 User

Date.....replaced element.....

Manufacturer.....Supplier.....

Reason for replacement.....

.....

Representative of spare part company
 User

.....

Date.....replaced element.....

Manufacturer.....Supplier.....

Reason for replacement.....

.....

Representative of spare part company
 User

.....

6. SIGNIFICANT FAILURES AND RELATED REPAIRS

Description of failure.....

.....

Reason.....

Repairs undertaken.....

.....



.....
 Place and date
 Signature of representative of repair company Signature of user

Description of failure.....

 Reason.....

 Repairs undertaken.....

 Place and date
 Signature of representative of repair company Signature of user

Description of failure.....

 Reason.....

 Repairs undertaken.....

 Place and date
 Signature of representative of repair company Signature of user

SCHEDULED MAINTENANCE RECORDING CARD

MODEL OF MANURE SPREADER: _____ DATE OF MANUFACTURE: _____ SERIAL NUMBER No.: _____
--



MINIMUM MAINTENANCE CYCLE OF WORKS AND CHECKS

1. WASHING AND CLEANING WITH JET OF WATER OR EXTERNAL PRESSURE WASHER AND ELIMINATION OF WASTE MATERIAL
2. CHECK THE PROPER TIGHTENING OF MOVING MECHANICAL COMPONENTS
3. GREASE ALL SPREADER PINS AND JOINTS
4. CHECK LEVEL OF LUBRICANT OIL
5. MAKE SURE THAT ALL PIPES ARE NOT DAMAGED AND PERFECTLY INTACT
ELIMINATE ALL POTENTIAL OIL LEAKAGES
6. CHECK THE STATUS OF THE ELECTRICAL CONNECTIONS AND EVENTUALLY CLEAN AND PROTECT THEM WITH
PROPER ELECTRIC CONTACTS PROTECTON
7. CHECK THAT ALL METAL SHEETS ASSEMBLING SCREWS ARE CORRECTLY TIGHTENED
8. CHECK THE OPERATION OF THE ELECTRIC SYSTEM, AND THE LIGHT-SIGNALLING SYSTEM

DATE:	DESCRIPTION OF OPERATION	REFERENCE	SIGNATURE

DATE:	DESCRIPTION OF OPERATION	REFERENCE	SIGNATURE

